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EDITORIAL NOTICE

This batch of *Minor Planet Circulars* is again being dated and published a few days after the date of full moon, and the same situation will arise with next month's batch.

L. D. Schmadel, Astronomisches Rechen-Institut, writes:

"During the last decade significant efforts have been made to collect material concerning the naming history of minor planets. This work was inaugurated by the Study Group on the Origin of Minor Planet Names. As chairman of this group, I prepared the *Dictionary of Minor Planet Names* under the auspices of IAU Commission 20. The fourth edition of this publication is scheduled to appear in 1999 and will contain discovery details and naming citations for more than 10 000 numbered minor planets.

"There is relatively little information on the discoverers themselves. Therefore, we have started a biographical project to summarize the available information on discoverers with the intention of publishing a *Biography of Minor Planet Discoverers* in 2001. Discoverers of numbered minor planets are requested to contact me (s21@ix.urz.uni-heidelberg.de) to obtain a short questionnaire. We also hope to make this questionnaire available on the WWW."

In view of the impending publication of a new edition of the *Dictionary of Minor Planet Names*, discoverers of unnamed minor planets are invited to submit proposed names and citations to the Minor Planet Center. These should be sent via e-mail, using the format specified by the Minor Planet Center, which can be contacted for further details. Names for inclusion in the new edition of *DMPN* must be received no later than 1999 Apr. 1 (and preferably much earlier), so that the last of them can be considered by the IAU Division III Small Bodies Names Committee in time for publication in the batch of *MPCs* to be published around 1999 May 30. This particularly applies to minor planets up to (4044), for which, under the "ten-year" rule, discoverers will lose their naming privileges.

ERRATA

<i>MPC</i>	Line	
22053	- 8	The identification 1990 QM = 1979 WW is invalid.
31464	-31	For L. V. Zhuravleva read L. I. Chernykh, N. S. Chernykh
32570	-11	Add E. W. Elst as a measurer.
32789	-35	For Discovered read Discovered
32789	-25	For Discovered read Discovered

32789	- 1	For discoverer read discoverers
32790	-29	For 1973 Jan. 29 read 1973 Sept. 29

CORRECTED OBSERVATIONS

The following observations correct those previously published.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Mag.	N Obs.
1992 EZ ₁	1992 03	10.63525	11 15 18.26	-12 23 56.6	<i>MPC</i> 20086		413
1998 RH ₆₇	1998 10	02.24931	00 33 16.36	+09 15 43.2	<i>MPS</i> 2634	18.1	292
1998 ST ₂	1998 10	26.76571	00 18 59.96	+25 07 56.7	<i>MPS</i> 2669		1 596
1998 ST ₂	1998 10	26.77549	00 18 59.52	+25 07 50.7	<i>MPS</i> 2669		1 596
1998 ST ₂	1998 10	26.79357	00 18 58.76	+25 07 42.8	<i>MPS</i> 2669		1 596
1998 UG ₂₃ *	1998 10	23.71726	23 29 52.89	+10 03 29.6	<i>MPS</i> 2897	19.8 R	561
1998 UG ₂₃	1998 10	23.73185	23 29 52.50	+10 03 25.9	<i>MPS</i> 2897	19.2 R	561
1998 UG ₂₃	1998 10	23.74539	23 29 52.14	+10 03 21.5	<i>MPS</i> 2897	19.6 R	561

Note 1: time corrected by +1 hour.

DELETED OBSERVATIONS

The following observations are to be deleted.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	N Obs.
1998 UE ₁₉	1998 10	28.88575	02 45 38.95	+15 03 16.0	<i>MPS</i> 2894	1 120
1998 UE ₁₉	1998 10	28.89859	02 45 38.06	+15 03 12.7	<i>MPS</i> 2894	1 120
(2791)	1978 06	02.85556	21 15 51.44	-52 23 14.4	<i>MPC</i> 9936	323

Note 1: These are the first-night observations of 1998 UC₂₀.

IDENTIFICATION CHANGES

Continuation to *MPC* 32819.

Object	Date	UT	α_{2000}	δ_{2000}	Originally	Mag.	Obs.
1981 HD	* 1981 04	26.48632	11 25 39.12	+04 21 09.6	1981 EV ₃₉		413
1986 TY ₁₈	* 1986 10	02.87262	23 42 36.88	-01 10 56.4	1986 RG ₇	16.5 V	095
1987 SP ₃₀	* 1987 09	18.98685	01 41 06.82	+07 42 33.4	1987 UZ	16.5 V	095
1989 GT ₈	* 1989 04	04.16597	13 00 30.00	-12 01 43.3	1989 GH ₃		809
1989 GT ₈	1989 04	04.17639	13 00 29.37	-12 01 37.3	1989 GH ₃		809
1992 AY ₆	* 1992 01	14.71111	10 02 30.23	+16 09 42.5	1992 AN ₁		877
1992 AY ₆	1992 01	14.73750	10 02 29.42	+16 09 46.8	1992 AN ₁		877

1992 CP ₈	* 1992 02 02.13056	07 43 42.69	+12 30 01.7	1992 BN ₂	809
1992 CP ₈	1992 02 02.14375	07 43 41.55	+12 30 04.9	1992 BN ₂	809
1992 CP ₈	1992 02 02.15694	07 43 40.73	+12 30 07.3	1992 BN ₂	809
1993 HR ₈	* 1993 04 16.52653	11 58 44.86	+03 48 25.2	1993 FJ ₆	18.3 413
1993 UL ₉	* 1993 10 21.22986	02 13 34.08	+06 03 04.8	1993 TY ₄₅	18.3 809
1993 UL ₉	1993 10 21.24306	02 13 33.37	+06 03 01.2	1993 TY ₄₅	809
1993 UL ₉	1993 10 21.25625	02 13 32.70	+06 02 57.3	1993 TY ₄₅	809
1997 JV ₁₈	* 1997 05 05.19292	12 16 46.43	−03 41 17.8	1997 HK ₃	18.5 V 691
1997 JV ₁₈	1997 05 05.21605	12 16 45.90	−03 41 15.3	1997 HK ₃	18.5 V 691
1997 JV ₁₈	1997 05 05.23800	12 16 45.41	−03 41 12.7	1997 HK ₃	18.6 V 691
1997 PF ₆	* 1997 08 01.25589	20 42 46.11	−17 30 59.4	1996 GG ₂₀	688
1997 PF ₆	1997 08 01.26978	20 42 45.25	−17 31 02.5	1996 GG ₂₀	688
1998 QL ₁₀₇	* 1998 08 31.36838	03 24 25.10	+15 15 16.8	3347 T-2	18.9 704
1998 QL ₁₀₇	1998 08 31.37798	03 24 25.56	+15 15 18.9	3347 T-2	18.9 704
1998 QL ₁₀₇	1998 08 31.38773	03 24 26.02	+15 15 20.9	3347 T-2	18.9 704
1998 QL ₁₀₇	1998 08 31.39746	03 24 26.57	+15 15 23.1	3347 T-2	19.2 704
1998 SO ₁₆₄	* 1998 09 24.35338	01 39 39.68	+04 01 41.8	1998 SX ₂₄	17.9 R 699
1998 SO ₁₆₄	1998 09 24.37822	01 39 38.74	+04 01 28.3	1998 SX ₂₄	699
1998 SO ₁₆₄	1998 09 24.40306	01 39 37.84	+04 01 15.3	1998 SX ₂₄	699
1998 SP ₁₆₄	* 1998 09 29.71722	00 01 32.37	+01 31 13.6	1998 SY ₄₃	18.5 327
1998 SP ₁₆₄	1998 09 29.72390	00 01 32.09	+01 31 11.8	1998 SY ₄₃	327
1998 SP ₁₆₄	1998 09 29.73050	00 01 31.74	+01 31 09.5	1998 SY ₄₃	327
1998 UB ₃₁	* 1998 10 17.39596	01 39 25.61	+10 42 01.5	1998 TG ₃₁	18.2 R 699
1998 UB ₃₁	1998 10 17.40591	01 39 24.97	+10 42 00.7	1998 TG ₃₁	699
1998 UB ₃₁	1998 10 17.41587	01 39 24.42	+10 42 00.9	1998 TG ₃₁	699
1998 UD ₃₁	* 1998 10 30.90543	02 02 32.11	+22 22 42.5	1998 UH ₂₁	17.0 V 560
1998 UD ₃₁	1998 10 30.91752	02 02 31.35	+22 22 39.7	1998 UH ₂₁	16.9 V 560
1998 UD ₃₁	1998 10 30.93039	02 02 30.52	+22 22 36.6	1998 UH ₂₁	16.9 V 560

COMETARY IDENTIFICATION

The following cometary identification, by S. Nakano, continues the list on *MPC* 32128:

1998 UQ₁₃ = P/1998 U2 (Mueller)

CRITICAL LIST OF MINOR PLANETS

The following list updates and is in the same form as that on *MPC* 31046:

- Object observed at only one opposition:
(719)
- Objects observed at only two oppositions:
(4581) (4688) (5335) (5797) (6489) (6491) (7025) (7236)
(7822) (7839) (8014) (8034)
- Objects observed at only three oppositions:
(2608) (3360) (3757) (3908) (4544) (5324) (5370) (6130)
(6618) (7335) (7336) (8566) (8709) (9172)

- Objects observed at four or more oppositions, last more than ten years ago:
(1915) (2428) (4008)
- Objects observed at four or more oppositions, only one night in last ten years:
(344) (587) (815) (1368) (2050) (2135) (3248) (3269)
(3554) (3849) (3892) (3902) (4237) (4255)
- Other poorly-observed objects observed at four or more oppositions:
(2100) (2340) (2915) (3200) (3362) (3416) (3460) (3607)
(3753) (3800) (3838) (4034) (4268) (4384) (4559) (4578)
(4601) (4609) (4730) (4769) (4825) (4878) (4956) (5011)
(5224) (5277) (5378) (5381) (5402) (5469) (5585) (5590)
(5604) (5620) (5670) (5721) (5736) (5786) (5828) (5856)
(5983) (6033) (6054) (6239) (6271) (6324) (6326) (6338)
(6446) (6454) (6496) (6877) (6974) (6976) (6979) (6985)
(6995) (7017) (7023) (7032) (7050) (7059) (7061) (7072)
(7079) (7095) (7099) (7161) (7172) (7201) (7202) (7262)
(7280) (7344) (7364) (7451) (7495) (7536) (7543) (7546)
(7547) (7553) (7614) (7619) (7625) (7628) (7661) (7664)
(7673) (7678) (7681) (7682) (7705) (7709) (7717) (7766)
(7790) (7801) (7803) (7834) (7894) (8176) (8507) (9202)

NUMBERING OF A PERIODIC COMET

Continuation to the list on *MPC* 32128.

139P/1939 TN = 1998 WG₂₂ (Väisälä-Oterma)

OBSERVATIONS OF COMETS

Observations are published here for the following observatory codes:

- Kleť. 0.57-m *f*/5.2 reflector + CCD. Observers J. Tichá, M. Tichý and Z. Moravec.
- Rozhen. 0.5-m *f*/1.4 Schmidt + CCD. Observers V. Redeva, G. Borisov and L. Vasileva.
- Wise Observatory. 1.0-m *f*/7 reflector + CCD. Observers E. O. Ofek and I. Manulis. Measured by E. O. Ofek.
- Crni vrh. 0.36-m *f*/6.7 Schmidt-Cassegrain + CCD. Observers H. Mikuz and S. Maticic.
- Cavezzo. 0.40-m *f*/5.5 reflector + CCD. Observers M. Nicolini and M. Facchini. Measured by M. Nicolini.
- Montelupo. 0.30-m *f*/5.7 Schmidt-Cassegrain + CCD. Observers M. Tombelli, D. Guidetti, G. Forti and E. Masotti.
- Drebach. 0.18-m *f*/9 refractor + CCD. Observers G. Lehmann and J. Kandler.
- Modra. 0.6-m *f*/5.5 reflector + CCD. Observers A. Galád, L. Kornoš and J. Tóth.
- Gnosca. 0.20-m *f*/6.3 reflector + CCD. Observer S. Sposetti.
- Bray et Lu. 0.08-m *f*/8 refractor + CCD. Observer L. Parmeggiani.
- Cortina. 0.50-m *f*/3.8 reflector + CCD. Observer A. Dimai.
- Xinglong. 0.60-m Schmidt + CCD. Observers J. Zhu, X. S. Liu, Y. J. Chen, X. Y. Li and X. M. Teng.
- Sakamoto. 0.15-m *f*/7.0 lens + CCD. Observer Y. Kitamura.

352	Konan. 0.25-m $f/6$ reflector + CCD. Observer M. Hotta.
355	Hadano. 0.28-m $f/5.0$ reflector + CCD. Observer A. Asami.
360	Kuma Kogen. 0.60-m $f/5.8$ Ritchey-Chrétien + CCD. Observer A. Nakamura.
372	Geisei. 0.60-m $f/3.5$ reflector. Observer T. Seki.
402	Dynic Astronomical Observatory. 0.60-m $f/4.0$ reflector + CCD. Observer A. Sugie.
411	Oizumi. 0.41-m $f/4.3$ reflector + CCD. Observer T. Kobayashi.
426	Woomera. 0.30-m $f/3.3$ Schmidt-Cassegrain + CCD. Observer F. B. Zoltowski.
469	Courroux. 0.20-m $f/10.0$ reflector + CCD. Observer H. Lehmann. Measured by R. Behrend.
476	Bussoleno. 0.30-m $f/4.0$ reflector + CCD. Observer P. Pognant.
491	Yebes. 0.40-m $f/5$ astrograph + CCD. Observers J. F. Lahulla, J. García and A. Martin.
504	Le Creusot. 0.40-m $f/5$ reflector + CCD. Observers J. C. Merlin, D. Merlin and G. Merlin. Measured by J. C. Merlin.
540	Linz. 0.3-m $f/5.2$ Schmidt-Cassegrain + CCD. Observers E. Meyer, E. Obermair and H. Raab.
552	Osservatorio San Vittore. 0.45-m $f/3.3$ reflector + CCD. Observers C. Vacchi, G. Sassi, E. Colomini and R. di Luca.
561	Piszkéstető. 0.60-m Schmidt + CCD. Observers K. Sárneczky and L. Kiss.
587	Sormano. 0.5-m reflector + CCD. Observers F. Manca, A. Testa, P. Sicoli, P. Ghezzi, V. Giuliani and M. Cavagna.
658	Dominion Astrophysical Observatory. 1.82-m Plaskett telescope + CCD. Observers D. D. Balam and G. C. L. Aikman.
688	Lowell Observatory, Anderson Mesa Station. 1.8-m reflector + CCD. Observer L. H. Wasserman. Measured by M. W. Buie.
691	Kitt Peak. 0.91-m Spacewatch telescope. Observers J. V. Scotti, J. Larsen and J. Montani.
693	University of Arizona, Catalina Station. 1.5-m reflector + CCD. Observer S. M. Larson. Measured by C. W. Hergenrother and T. B. Spahr.
695	Kitt Peak. 4-m reflector + CCD. Observers R. L. Millis, M. W. Buie, R. M. Wagner and J. L. Elliot. Measured by M. W. Buie, R. L. Millis, J. L. Elliot and S. MacDonald.
699	LONEOS. 0.59-m Schmidt + CCD. Observers W. D. Ferris, B. A. Skiff and B. W. Koehn. Measured by B. W. Koehn and E. Bowell.
703	Catalina Sky Survey. 0.41-m $f/3$ Schmidt + CCD. Observer T. B. Spahr.
704	LINEAR. 1.0-m $f/2.15$ reflector + CCD. Observers M. Blythe, F. Shelly and M. Bezpalko. Measured by J. Stuart, H. Viggh and R. Sayer.
709	Cloudcroft. 0.60-m $f/7$ Ritchey-Chrétien + CCD. Observer W. Offutt.
713	Thornton. 0.20-m $f/10$ Schmidt-Cassegrain + CCD. Observer R. A. Koff.
734	Eskridge. 0.30-m Schmidt-Cassegrain + CCD. Observers G. Hug and G. Bell.
747	Baton Rouge. 0.5-m $f/8.4$ Ritchey-Chretien + CCD. Observer W. R. Cooney.
750	Hobbs Observatory, Fall Creek. 0.6-m $f/5$ telescope + CCD. Observer R. Elliott.
758	Cocoa. 0.3-m reflector + CCD. Observer I. Griffin.
761	Zephyrhills. 0.18-m $f/9.4$ reflector + CCD. Observer R. A. Kowalski.
844	Los Molinos. 0.35-m $f/6.4$ reflector + CCD. Observer R. Salvo.
860	Valinhos. 0.20-m $f/3.3$ reflector + CCD. Observer P. R. Holvorcem.
867	Saji Observatory. 1.03-m $f/4.8$ reflector + CCD. Observers M. Yamanishi, A. Miyamoto, M. Aimoto and T. Oribe.

897	Chiyoda. 0.25-m $f/6.0$ reflector + CCD. Observer T. Kojima.						
900	Moriyama. 0.25-m $f/6.3$ reflector + CCD. Observer Y. Ikari.						
963	Werrington. 0.28-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer J. Mackey.						
Object	Date	UT	α_{2000}	δ_{2000}	Mag.	N	Obs.
C/1995 O1 (Hale-Bopp)							
C/1995 O1	1998 11 19.11897	07 07 05.62	-71 12 58.5				844
C/1995 O1	1998 11 19.12509	07 07 05.06	-71 13 01.0				844
C/1995 O1	1998 11 19.15258	07 07 03.01	-71 13 14.1				844
C/1996 J1 (Evans-Drinkwater)							
C/1996 J1-B	1998 11 13.66912	04 13 45.74	+35 46 45.5	19.0	T		867
C/1996 J1-B	1998 11 13.67780	04 13 45.46	+35 46 44.8				867
C/1996 J1-B	1998 11 13.68405	04 13 45.19	+35 46 44.3				867
C/1996 J1-B	1998 11 13.69065	04 13 45.00	+35 46 43.0				867
C/1996 J1-B	1998 11 14.73266	04 13 09.16	+35 45 10.2	19.0	T		867
C/1996 J1-B	1998 11 14.73926	04 13 08.93	+35 45 10.0				867
C/1996 J1-B	1998 11 14.74829	04 13 08.63	+35 45 08.8				867
C/1997 BA ₆ (Spacewatch)							
C/1997 BA ₆	1998 11 15.82865	10 07 56.56	-28 27 14.9	15.3	T		360
C/1997 BA ₆	1998 11 15.83108	10 07 56.59	-28 27 17.1				360
C/1997 BA ₆	1998 11 28.82882	10 09 13.33	-31 39 47.7	15.2	T		360
C/1997 BA ₆	1998 11 28.83125	10 09 13.34	-31 39 49.8				360
C/1997 J2 (Meunier-Dupouy)							
C/1997 J2	1998 08 17.68333	21 36 45.09	+13 22 04.7	14.1	T		372
C/1997 J2	1998 09 02.67448	21 19 54.41	+06 43 22.4	14.5	T		372
C/1997 J2	1998 09 07.43038	21 15 37.07	+04 44 51.4				372
C/1997 J2	1998 09 07.44184	21 15 36.54	+04 44 33.4	13.9	T		372
C/1997 J2	1998 09 13.51910	21 10 44.49	+02 17 02.7	12.5	T		372
C/1997 J2	1998 09 16.53038	21 08 36.38	+01 06 14.4	14.2	T		372
C/1997 J2	1998 09 17.50476	21 07 57.44	+00 43 43.2	14.3	T		372
C/1997 J2	1998 10 08.42378	20 59 01.18	-06 23 41.9				372
C/1997 J2	1998 10 09.42708	20 58 49.61	-06 41 14.7				372
C/1997 J2	1998 10 18.52136	20 58 00.78	-09 07 49.9	15.4	T		372
C/1997 J2	1998 11 08.43993	21 01 49.67	-13 26 26.1	13.0	T		360
C/1997 J2	1998 11 08.44236	21 01 49.73	-13 26 27.9				360
C/1997 J2	1998 11 10.83440	21 02 41.78	-13 49 54.4	14.1	T		504
C/1997 J2	1998 11 10.83841	21 02 41.90	-13 49 56.4	14.2	T		504
C/1997 J2	1998 11 11.73940	21 03 02.82	-13 58 28.4				046
C/1997 J2	1998 11 11.74142	21 03 02.87	-13 58 29.5				046
C/1997 J2	1998 11 11.74324	21 03 02.91	-13 58 30.5				046
C/1997 J2	1998 11 11.79581	21 03 04.17	-13 58 59.6	14.2	T		504
C/1997 J2	1998 11 11.79803	21 03 04.28	-13 59 00.7	14.2	T		504
C/1997 J2	1998 11 11.80166	21 03 04.32	-13 59 02.6	14.1	T		504
C/1997 J2	1998 11 11.80336	21 03 04.33	-13 59 03.9	14.1	T		504
C/1997 J2	1998 11 12.41251	21 03 18.82	-14 04 44.3	14.2	T		900
C/1997 J2	1998 11 12.42002	21 03 18.98	-14 04 48.6				900
C/1997 J2	1998 11 12.44439	21 03 19.56	-14 05 00.4	15.0	T		351
C/1997 J2	1998 11 12.44675	21 03 19.60	-14 05 03.7				351
C/1997 J2	1998 11 12.44969	21 03 19.69	-14 05 04.4				351
C/1997 J2	1998 11 12.45424	21 03 19.82	-14 05 07.6				351
C/1997 J2	1998 11 12.99787	21 03 33.03	-14 10 07.8	17.1	T		750

C/1997 J2	1998 11 13.03976	21 03 34.07	-14 10 30.4	17.9 T	750
C/1997 J2	1998 11 13.04075	21 03 34.07	-14 10 31.3	18.0 T	750
C/1997 J2	1998 11 14.39134	21 04 07.96	-14 22 41.9	13.8 T	402
C/1997 J2	1998 11 14.39274	21 04 08.00	-14 22 42.6		402
C/1997 J2	1998 11 14.39413	21 04 08.05	-14 22 43.3		402
C/1997 J2	1998 11 18.77984	21 06 07.47	-14 59 58.8		118
C/1997 J2	1998 11 18.78807	21 06 07.68	-15 00 03.3	15.0 T	118
C/1997 J2	1998 11 22.79012	21 08 08.67	-15 31 10.4	13.9	504
C/1997 J2	1998 11 22.79264	21 08 08.76	-15 31 12.7	14.0	504
C/1997 J2	1998 11 22.79631	21 08 08.87	-15 31 14.3	13.9	504
C/1997 J2	1998 11 22.79836	21 08 08.90	-15 31 14.9	14.0	504
C/1997 J2	1998 11 23.42066	21 08 28.69	-15 35 51.2	13.2 T	360
C/1997 J2	1998 11 23.42378	21 08 28.79	-15 35 52.6		360
C/1997 J2	1998 11 23.99595	21 08 47.26	-15 40 03.6	16.6 T	750
C/1997 J2	1998 11 24.00390	21 08 47.45	-15 40 07.1	16.6 T	750
C/1997 J2	1998 11 24.02285	21 08 48.08	-15 40 13.3	16.0 T	750
C/1997 J2	1998 11 26.41392	21 10 07.43	-15 57 08.2	15.5 T	351
C/1997 J2	1998 11 26.41808	21 10 07.34	-15 57 11.8		351

P/1997 T3 (Lagerkvist-Carsenty)

P/1997 T3	1998 11 14.78266	04 50 24.02	+23 07 45.2	19.2 T	867
P/1997 T3	1998 11 14.78891	04 50 23.80	+23 07 44.9		867
P/1997 T3	1998 11 14.80245	04 50 23.33	+23 07 44.2		867
P/1997 T3	1998 11 15.69759	04 49 56.01	+23 07 45.1	19.5 T	867
P/1997 T3	1998 11 15.70523	04 49 55.78	+23 07 45.1		867
P/1997 T3	1998 11 15.71183	04 49 55.50	+23 07 45.1		867
P/1997 T3	1998 11 18.42696	04 48 29.78	+23 07 36.7	19.3 T	695
P/1997 T3	1998 11 18.49839	04 48 27.42	+23 07 36.1		695
P/1997 T3	1998 11 22.41595	04 46 17.99	+23 07 07.7		693
P/1997 T3	1998 11 22.42506	04 46 17.65	+23 07 07.8		693
P/1997 T3	1998 11 22.43314	04 46 17.37	+23 07 07.6	18.8 T	693
P/1997 T3	1998 11 25.23353	04 44 41.77	+23 06 35.4	19.0 T	688
P/1997 T3	1998 11 25.37339	04 44 36.83	+23 06 34.0		688
P/1997 T3	1998 11 25.42936	04 44 34.84	+23 06 32.6		688
P/1997 T3	1998 11 26.34905	04 44 03.02	+23 06 20.5	18.7 T	688
P/1997 T3	1998 11 26.39362	04 44 01.42	+23 06 19.6		688

C/1998 K5 (LINEAR)

C/1998 K5	1998 10 21.72594	03 07 50.71	+15 03 27.7	14.7 T	372
C/1998 K5	1998 10 24.67361	03 03 38.92	+14 21 15.5	15.3 T	372
C/1998 K5	1998 10 26.07012	03 01 41.77	+14 01 54.9	14.7 T	561
C/1998 K5	1998 10 26.07153	03 01 41.64	+14 01 53.8	14.7 T	561
C/1998 K5	1998 10 26.07317	03 01 41.50	+14 01 52.5	14.7 T	561
C/1998 K5	1998 10 26.07419	03 01 41.43	+14 01 51.6	14.8 T	561
C/1998 K5	1998 10 29.59965	02 56 55.36	+13 15 22.5	15.2 T	372
C/1998 K5	1998 11 08.61248	02 44 57.02	+11 22 31.4	13.9 T	900
C/1998 K5	1998 11 08.62166	02 44 56.40	+11 22 26.0		900
C/1998 K5	1998 11 10.45816	02 43 03.29	+11 05 01.7	14.8 T	372
C/1998 K5	1998 11 10.55972	02 42 57.06	+11 04 06.6	14.6 T	360
C/1998 K5	1998 11 10.56233	02 42 56.92	+11 04 05.2		360
C/1998 K5	1998 11 12.59792	02 40 58.60	+10 46 06.8	14.7 T	372
C/1998 K5	1998 11 14.61403	02 39 09.19	+10 29 33.7	14.3 T	355
C/1998 K5	1998 11 14.61738	02 39 08.99	+10 29 32.5		355
C/1998 K5	1998 11 14.62082	02 39 08.78	+10 29 31.1		355

C/1998 K5	1998 11 14.62738	02 39 08.34	+10 29 27.7	14.0 T	352
C/1998 K5	1998 11 14.63086	02 39 08.21	+10 29 26.2		352
C/1998 K5	1998 11 14.63433	02 39 07.98	+10 29 24.3		352
C/1998 K5	1998 11 18.62038	02 35 55.41	+10 00 23.9	15.5 T	372
C/1998 K5	1998 11 18.87008	02 35 44.43	+09 58 42.2		491
C/1998 K5	1998 11 18.89671	02 35 43.51	+09 58 32.0		491
C/1998 K5	1998 11 22.59720	02 33 14.23	+09 36 10.9	14.6 T	351
C/1998 K5	1998 11 22.60278	02 33 14.03	+09 36 09.4		351
C/1998 K5	1998 11 22.60640	02 33 13.82	+09 36 08.3		351
C/1998 K5	1998 11 23.30986	02 32 48.69	+09 32 20.7		693
C/1998 K5	1998 11 23.32286	02 32 48.20	+09 32 16.3		693
C/1998 K5	1998 11 23.33531	02 32 47.75	+09 32 12.4	14.8 T	693
C/1998 K5	1998 11 23.57587	02 32 39.50	+09 30 56.3	15.4 T	360
C/1998 K5	1998 11 23.57830	02 32 39.42	+09 30 55.6		360
C/1998 K5	1998 11 26.48376	02 31 06.95	+09 16 55.1	14.8 T	351
C/1998 K5	1998 11 26.48746	02 31 06.75	+09 16 54.8		351
C/1998 K5	1998 11 26.50587	02 31 06.32	+09 16 50.0	15.0 T	402
C/1998 K5	1998 11 26.50726	02 31 06.26	+09 16 49.7		402
C/1998 K5	1998 11 26.50865	02 31 06.24	+09 16 49.3		402
C/1998 K5	1998 11 28.48079	02 30 12.71	+09 08 37.8	14.8 T	355
C/1998 K5	1998 11 28.48382	02 30 12.63	+09 08 37.2		355
C/1998 K5	1998 11 28.48886	02 30 12.50	+09 08 36.1		355

C/1998 M2 (LINEAR)

C/1998 M2	1998 11 08.41372	18 28 45.19	+21 55 34.2	15.2 T	360
C/1998 M2	1998 11 08.41563	18 28 45.35	+21 55 34.5		360
C/1998 M2	1998 11 14.38547	18 37 26.96	+22 19 45.7	16.0 T	402
C/1998 M2	1998 11 14.38686	18 37 27.08	+22 19 45.7		402
C/1998 M2	1998 11 14.38825	18 37 27.20	+22 19 46.1		402
C/1998 M2	1998 11 23.40747	18 51 14.41	+23 02 20.7	15.4 T	360
C/1998 M2	1998 11 23.40990	18 51 14.62	+23 02 21.3		360
C/1998 M2	1998 11 25.69161	18 54 50.79	+23 14 20.3		046
C/1998 M2	1998 11 25.69322	18 54 50.93	+23 14 20.9		046
C/1998 M2	1998 11 25.69544	18 54 51.13	+23 14 21.5		046

C/1998 M5 (LINEAR)

C/1998 M5	1998 10 09.87972	19 21 32.42	+38 54 22.5	12.5 T	154
C/1998 M5	1998 10 09.88912	19 21 31.36	+38 54 18.9		154
C/1998 M5	1998 10 12.83698	19 16 18.48	+38 34 57.9		154
C/1998 M5	1998 10 23.68932	19 01 15.27	+37 25 53.0		561
C/1998 M5	1998 10 23.69980	19 01 14.55	+37 25 49.5		561
C/1998 M5	1998 10 25.75764	18 59 03.68	+37 14 04.4		154
C/1998 M5	1998 11 08.43403	18 49 07.00	+36 15 46.9	11.3 T	360
C/1998 M5	1998 11 08.43628	18 49 06.91	+36 15 46.6		360
C/1998 M5	1998 11 08.86020	18 48 55.10	+36 14 36.7		504
C/1998 M5	1998 11 08.86493	18 48 54.98	+36 14 35.0		504
C/1998 M5	1998 11 09.75264	18 48 31.61	+36 12 19.8		963
C/1998 M5	1998 11 10.44225	18 48 14.25	+36 10 41.7	12.4 T	351
C/1998 M5	1998 11 10.44630	18 48 14.18	+36 10 41.9		351
C/1998 M5	1998 11 10.75929	18 48 06.62	+36 09 58.8		963
C/1998 M5	1998 11 11.76373	18 47 43.80	+36 07 54.8	14.2 N	143
C/1998 M5	1998 11 11.77156	18 47 43.61	+36 07 53.9	14.2 N	143
C/1998 M5	1998 11 11.77940	18 47 43.45	+36 07 52.8	14.2 N	143
C/1998 M5	1998 11 13.74022	18 47 04.27	+36 04 35.3	12.3 T	540

C/1998 M5	1998 11 13.74161	18 47 04.26	+36 04 35.5		540	C/1998 P1	1998 11 19.82750	13 23 28.98	-20 02 37.2		897
C/1998 M5	1998 11 13.74265	18 47 04.21	+36 04 35.0		540	C/1998 P1	1998 11 19.82894	13 23 28.76	-20 02 36.6	10 T	897
C/1998 M5	1998 11 14.37907	18 46 52.98	+36 03 45.0	12.0 T	402	C/1998 P1	1998 11 19.83756	13 23 28.56	-20 02 29.8		897
C/1998 M5	1998 11 14.38046	18 46 52.95	+36 03 44.9		402	C/1998 P1	1998 11 19.84048	13 23 28.57	-20 02 26.9		897
C/1998 M5	1998 11 14.38185	18 46 52.92	+36 03 44.8		402	C/1998 P1	1998 11 19.84476	13 23 28.46	-20 02 23.8	11.0 T	351
C/1998 M5	1998 11 15.38194	18 46 36.76	+36 02 38.2		867	C/1998 P1	1998 11 19.84710	13 23 28.42	-20 02 21.2		351
C/1998 M5	1998 11 15.38507	18 46 36.71	+36 02 37.9		867	C/1998 P1	1998 11 19.84881	13 23 28.36	-20 02 20.5		351
C/1998 M5	1998 11 15.38819	18 46 36.65	+36 02 37.8		867	C/1998 P1	1998 11 22.28848	13 22 45.32	-19 27 49.4		860
C/1998 M5	1998 11 15.42165	18 46 36.18	+36 02 35.4	13.9 T	351	C/1998 P1	1998 11 22.29377	13 22 45.23	-19 27 45.3		860
C/1998 M5	1998 11 15.42396	18 46 35.99	+36 02 35.1		351	C/1998 P1	1998 11 22.84345	13 22 34.70	-19 19 55.7	11.1 T	351
C/1998 M5	1998 11 15.42813	18 46 36.05	+36 02 35.3		351	C/1998 P1	1998 11 22.84527	13 22 34.65	-19 19 53.8		351
C/1998 M5	1998 11 16.75734	18 46 17.37	+36 01 32.7		963	C/1998 P1	1998 11 22.84939	13 22 34.57	-19 19 50.4	10.7 T	900
C/1998 M5	1998 11 18.81185	18 45 53.91	+36 00 54.8		491	C/1998 P1	1998 11 22.85106	13 22 34.59	-19 19 50.5		351
C/1998 M5	1998 11 18.83953	18 45 53.75	+36 00 53.9		491	C/1998 P1	1998 11 22.85441	13 22 34.48	-19 19 45.4		351
C/1998 M5	1998 11 18.84391	18 45 53.71	+36 00 55.3		491	C/1998 P1	1998 11 22.85509	13 22 34.52	-19 19 45.5		900
C/1998 M5	1998 11 18.84697	18 45 53.70	+36 00 53.0		491	C/1998 P1	1998 11 24.84095	13 21 54.62	-18 50 45.5		355
C/1998 M5	1998 11 18.85043	18 45 53.52	+36 00 54.5		491	C/1998 P1	1998 11 24.84240	13 21 54.59	-18 50 44.1	10.7 T	355
C/1998 M5	1998 11 22.80465	18 45 27.45	+36 03 11.4	12.2	504	C/1998 P1	1998 11 24.84523	13 21 54.52	-18 50 41.4		355
C/1998 M5	1998 11 23.41372	18 45 25.38	+36 03 58.7	11.2 T	360	C/1998 P1	1998 11 28.83756	13 20 22.51	-17 49 48.6	10.2 T	900
C/1998 M5	1998 11 23.41615	18 45 25.36	+36 03 58.9		360	C/1998 P1	1998 11 28.84673	13 20 22.22	-17 49 39.8		900
C/1998 M5	1998 11 25.68618	18 45 22.49	+36 07 50.7		046	C/1998 P1	1998 11 28.84757	13 20 22.33	-17 49 39.6	9.9 T	360
C/1998 M5	1998 11 25.68729	18 45 22.50	+36 07 50.8		046	C/1998 P1	1998 11 28.84931	13 20 22.29	-17 49 37.9		360
C/1998 M5	1998 11 25.68848	18 45 22.49	+36 07 50.8		046	C/1998 P1	1998 12 03.40152	13 18 14.33	-16 35 02.5	11.7 N	758
C/1998 M5	1998 11 26.37848	18 45 22.88	+36 09 21.0	12.0 T	402	C/1998 P1	1998 12 03.40505	13 18 14.29	-16 34 58.7	11.5 N	758
C/1998 M5	1998 11 26.37987	18 45 22.88	+36 09 21.1		402	C/1998 P1	1998 12 03.40921	13 18 14.22	-16 34 54.6	11.4 N	758
C/1998 M5	1998 11 26.38126	18 45 22.88	+36 09 21.3		402	C/1998 P1	1998 12 04.39740	13 17 42.75	-16 17 50.9	11.2 T	758
C/1998 M5	1998 11 26.45330	18 45 22.90	+36 09 30.5	12.7 T	351	C/1998 P1	1998 12 04.40302	13 17 42.53	-16 17 45.4	11.2 T	758
C/1998 M5	1998 11 26.45584	18 45 22.90	+36 09 31.2		351	C/1998 P1	1998 12 04.40719	13 17 42.37	-16 17 40.9	11.1 T	758
C/1998 M5	1998 11 26.45917	18 45 22.94	+36 09 32.0		351	C/1998 Q1 (LINEAR)					
C/1998 M5	1998 11 28.05644	18 45 26.56	+36 13 35.4	15.3 T	750	C/1998 Q1	1998 11 22.16940	23 16 51.95	-23 47 59.0		693
C/1998 M5	1998 11 28.06048	18 45 26.55	+36 13 36.0	15.3 T	750	C/1998 Q1	1998 11 22.17345	23 16 52.20	-23 47 57.9		693
C/1998 M5	1998 12 03.73412	18 46 03.79	+36 34 44.4		046	C/1998 Q1	1998 11 22.17899	23 16 52.61	-23 47 57.4	19.6 T	693
C/1998 M5	1998 12 03.73527	18 46 03.80	+36 34 44.8		046	P/1998 QP ₅₄ (LONEOS-Tucker)					
C/1998 M5	1998 12 03.73647	18 46 03.81	+36 34 45.1		046	P/1998 QP ₅₄	1998 10 09.48177	23 57 19.5	+20 40 39	16.6 T	372
C/1998 M5	1998 12 05.46075	18 46 22.27	+36 43 17.8		351	P/1998 QP ₅₄	1998 10 21.62951	23 48 29.36	+22 07 46.0		372
C/1998 M5	1998 12 05.46348	18 46 22.22	+36 43 19.1	11.9 T	351	P/1998 QP ₅₄	1998 10 24.56389	23 47 04.91	+22 23 46.5	15.9 T	372
C/1998 M5	1998 12 05.46950	18 46 22.33	+36 43 19.0		351	P/1998 QP ₅₄	1998 11 08.49844	23 45 10.76	+23 26 46.0	16.5 T	360
C/1998 M6 (Montani)						P/1998 QP ₅₄	1998 11 08.50104	23 45 10.74	+23 26 46.6		360
C/1998 M6	1998 11 12.39829	19 47 49.13	-08 53 35.5	19.5 T	867	P/1998 QP ₅₄	1998 11 11.74646	23 45 57.18	+23 38 03.6		046
C/1998 M6	1998 11 12.40697	19 47 49.21	-08 53 33.0		867	P/1998 QP ₅₄	1998 11 11.75113	23 45 57.22	+23 38 05.0		046
C/1998 M6	1998 11 12.41322	19 47 49.29	-08 53 31.7		867	P/1998 QP ₅₄	1998 11 11.75292	23 45 57.25	+23 38 05.2		046
C/1998 M6	1998 11 16.06734	19 48 33.13	-08 38 05.9	19.9 T	691	P/1998 QP ₅₄	1998 11 12.43296	23 46 10.15	+23 40 27.4	15.2 T	900
C/1998 M6	1998 11 16.07155	19 48 33.15	-08 38 05.4	19.9 T	691	P/1998 QP ₅₄	1998 11 12.44213	23 46 10.22	+23 40 27.6		900
C/1998 M6	1998 11 16.07781	19 48 33.23	-08 38 04.2	20.2 T	691	P/1998 QP ₅₄	1998 11 12.49549	23 46 11.14	+23 40 39.8	16.3 T	360
C/1998 P1 (Williams)						P/1998 QP ₅₄	1998 11 12.50069	23 46 11.25	+23 40 40.7		360
C/1998 P1	1998 11 14.85311	13 24 44.10	-21 10 17.5	10.9 T	402	P/1998 QP ₅₄	1998 11 13.76332	23 46 38.18	+23 44 53.1	14.5 T	118
C/1998 P1	1998 11 14.85416	13 24 44.11	-21 10 16.0		402	P/1998 QP ₅₄	1998 11 19.44505	23 49 24.47	+24 04 03.1	15.8 T	402
C/1998 P1	1998 11 14.85520	13 24 43.98	-21 10 14.5		402	P/1998 QP ₅₄	1998 11 19.44644	23 49 24.53	+24 04 03.3		402
C/1998 P1	1998 11 14.85833	13 24 43.90	-21 10 12.1	7.9 T	372	P/1998 QP ₅₄	1998 11 19.44782	23 49 24.55	+24 04 03.7		402
C/1998 P1	1998 11 14.86007	13 24 43.82	-21 10 10.0		372	P/1998 QP ₅₄	1998 11 22.21609	23 51 11.01	+24 13 27.9		693
C/1998 P1	1998 11 15.85740	13 24 29.95	-20 56 49.5	8.0 T	372	P/1998 QP ₅₄	1998 11 22.23602	23 51 11.83	+24 13 32.1		693
C/1998 P1	1998 11 15.86097	13 24 29.92	-20 56 46.8		372	P/1998 QP ₅₄	1998 11 22.24876	23 51 12.34	+24 13 34.6	16.2 T	693

P/1998 QP ₅₄	1998 11 23.51094	23 52 06.66	+24 17 55.2	16.9 T	360
P/1998 QP ₅₄	1998 11 23.51510	23 52 06.82	+24 17 56.0		360
P/1998 QP ₅₄	1998 11 25.72581	23 53 49.87	+24 25 38.8		046
P/1998 QP ₅₄	1998 11 25.72699	23 53 49.89	+24 25 39.5		046
P/1998 QP ₅₄	1998 11 25.72876	23 53 49.99	+24 25 39.7		046
P/1998 QP ₅₄	1998 11 25.72992	23 53 50.07	+24 25 39.9		046

P/1998 S1 (LINEAR-Mueller)

P/1998 S1	1998 10 21.58907	00 54 45.03	+13 03 57.9	16.6 T	372
P/1998 S1	1998 10 21.67274	00 54 41.19	+13 03 58.2		372
P/1998 S1	1998 10 24.57361	00 52 40.10	+13 04 06.0	15.8 T	372
P/1998 S1	1998 10 29.62049	00 49 26.39	+13 04 06.1	15.6 T	372
P/1998 S1	1998 11 08.52622	00 44 31.64	+13 05 22.2	15.9 T	360
P/1998 S1	1998 11 08.52865	00 44 31.58	+13 05 22.2		360
P/1998 S1	1998 11 09.55525	00 44 08.38	+13 05 42.4		355
P/1998 S1	1998 11 09.55727	00 44 08.36	+13 05 42.9	15.2 T	355
P/1998 S1	1998 11 09.56216	00 44 08.24	+13 05 42.8		355
P/1998 S1	1998 11 10.78633	00 43 42.92	+13 06 11.7	15.6 T	143
P/1998 S1	1998 11 10.79417	00 43 42.81	+13 06 10.5	15.5 T	143
P/1998 S1	1998 11 10.80200	00 43 42.60	+13 06 11.5	15.6 T	143
P/1998 S1	1998 11 11.87221	00 43 21.93	+13 06 41.8		1 118
P/1998 S1	1998 11 11.88023	00 43 21.76	+13 06 42.2	15.9 T	1 118
P/1998 S1	1998 11 12.47425	00 43 11.25	+13 07 01.7	14.7 T	900
P/1998 S1	1998 11 12.48695	00 43 10.96	+13 07 01.8		900
P/1998 S1	1998 11 12.51267	00 43 10.47	+13 07 03.1	16.1 T	360
P/1998 S1	1998 11 12.51580	00 43 10.43	+13 07 03.2		360
P/1998 S1	1998 11 12.58959	00 43 09.02	+13 07 05.1	15.2 T	867
P/1998 S1	1998 11 12.59446	00 43 08.94	+13 07 05.3		867
P/1998 S1	1998 11 15.48396	00 42 25.50	+13 08 57.0	15.4 T	355
P/1998 S1	1998 11 15.48922	00 42 25.46	+13 08 57.6		355
P/1998 S1	1998 11 15.49504	00 42 25.41	+13 08 58.4		355
P/1998 S1	1998 11 22.27782	00 41 34.65	+13 15 54.8		693
P/1998 S1	1998 11 22.28314	00 41 34.63	+13 15 55.0		693
P/1998 S1	1998 11 22.28882	00 41 34.61	+13 15 55.4	15.8 T	693
P/1998 S1	1998 11 23.52795	00 41 33.52	+13 17 37.7	16.3 T	360
P/1998 S1	1998 11 23.53073	00 41 33.53	+13 17 38.0		360
P/1998 S1	1998 11 25.43365	00 41 36.60	+13 20 31.7	15.8 T	402
P/1998 S1	1998 11 25.43505	00 41 36.62	+13 20 31.6		402
P/1998 S1	1998 11 25.43644	00 41 36.60	+13 20 32.2		402
P/1998 S1	1998 11 25.74007	00 41 37.64	+13 21 00.6		046
P/1998 S1	1998 11 25.74120	00 41 37.62	+13 21 01.1		046
P/1998 S1	1998 11 25.74244	00 41 37.63	+13 21 01.0		046
P/1998 S1	1998 11 25.74365	00 41 37.65	+13 21 01.2		046

C/1998 T1 (LINEAR)

C/1998 T1	1998 10 09.46649	01 39 38.43	+22 02 13.5	16 T	372
C/1998 T1	1998 10 13.88588	01 29 56.14	+21 10 28.8		154
C/1998 T1	1998 10 13.89019	01 29 55.67	+21 10 26.0		154
C/1998 T1	1998 10 18.59393	01 19 13.59	+20 08 33.6	16.7 T	372
C/1998 T1	1998 10 19.74532	01 16 34.04	+19 52 22.5		327
C/1998 T1	1998 10 19.74951	01 16 33.48	+19 52 18.8	15.8 T	327
C/1998 T1	1998 10 19.76075	01 16 31.87	+19 52 09.2	15.9 T	327
C/1998 T1	1998 10 19.76497	01 16 31.34	+19 52 05.7		327
C/1998 T1	1998 10 19.77623	01 16 29.73	+19 51 56.3		327

C/1998 T1	1998 10 19.78032	01 16 29.16	+19 51 52.6		327
C/1998 T1	1998 10 21.64167	01 12 09.94	+19 24 56.0	16.5 T	372
C/1998 T1	1998 10 24.60069	01 05 16.12	+18 40 08.6	16.3 T	372
C/1998 T1	1998 11 08.51997	00 31 27.75	+14 29 42.4	16.3 T	360
C/1998 T1	1998 11 08.52240	00 31 27.44	+14 29 40.1		360
C/1998 T1	1998 11 08.58830	00 31 18.90	+14 28 30.9	16.1 T	900
C/1998 T1	1998 11 08.59747	00 31 17.68	+14 28 21.3		900
C/1998 T1	1998 11 10.76400	00 26 42.95	+13 50 23.7	17.1 T	143
C/1998 T1	1998 11 10.77184	00 26 42.08	+13 50 13.2	17.0 T	143
C/1998 T1	1998 11 10.77968	00 26 41.08	+13 50 04.6	17.5 T	143
C/1998 T1	1998 11 10.81829	00 26 36.20	+13 49 23.1		504
C/1998 T1	1998 11 10.81950	00 26 36.02	+13 49 21.9		504
C/1998 T1	1998 11 10.82072	00 26 35.87	+13 49 21.5		504
C/1998 T1	1998 11 10.82481	00 26 35.37	+13 49 16.3	15.7 T	504
C/1998 T1	1998 11 10.82657	00 26 35.13	+13 49 14.5		504
C/1998 T1	1998 11 11.75613	00 24 39.53	+13 32 56.9		046
C/1998 T1	1998 11 11.75882	00 24 39.21	+13 32 54.3		046
C/1998 T1	1998 11 11.76064	00 24 38.98	+13 32 52.1		046
C/1998 T1	1998 11 12.50608	00 23 07.18	+13 19 49.7	16.2 T	360
C/1998 T1	1998 11 12.50885	00 23 06.83	+13 19 46.9		360
C/1998 T1	1998 11 13.77738	00 20 32.99	+12 57 36.9		118
C/1998 T1	1998 11 13.78071	00 20 32.58	+12 57 32.9	17 T	118
C/1998 T1	1998 11 13.78225	00 20 32.42	+12 57 31.6		118
C/1998 T1	1998 11 14.44182	00 19 13.51	+12 46 02.5	16.3 T	402
C/1998 T1	1998 11 14.44322	00 19 13.34	+12 46 00.9		402
C/1998 T1	1998 11 14.44461	00 19 13.17	+12 45 59.4		402
C/1998 T1	1998 11 14.57323	00 18 57.73	+12 43 45.0		352
C/1998 T1	1998 11 14.58017	00 18 56.89	+12 43 37.9		352
C/1998 T1	1998 11 14.58365	00 18 56.48	+12 43 34.3		352
C/1998 T1	1998 11 15.46674	00 17 12.39	+12 28 14.0	16.1 T	355
C/1998 T1	1998 11 15.47127	00 17 11.87	+12 28 08.4		355
C/1998 T1	1998 11 15.47602	00 17 11.27	+12 28 04.4		355
C/1998 T1	1998 11 20.01423	00 08 38.74	+11 10 24.5	16.6 T	860
C/1998 T1	1998 11 20.01664	00 08 38.51	+11 10 23.2	16.6 T	860
C/1998 T1	1998 11 20.01898	00 08 38.29	+11 10 21.1	16.2 T	860
C/1998 T1	1998 11 20.02097	00 08 38.16	+11 10 18.5	16.3 T	860
C/1998 T1	1998 11 23.17819	00 03 06.10	+10 17 47.3		693
C/1998 T1	1998 11 23.18747	00 03 05.16	+10 17 38.3		693
C/1998 T1	1998 11 23.19331	00 03 04.56	+10 17 32.6		693
C/1998 T1	1998 11 23.52049	00 02 31.33	+10 12 11.3	16.2 T	360
C/1998 T1	1998 11 23.52396	00 02 30.97	+10 12 08.3		360
C/1998 T1	1998 11 24.08072	00 01 34.98	+10 03 05.5	17.0 T	750
C/1998 T1	1998 11 24.09336	00 01 33.55	+10 02 50.9	15.7 T	750
C/1998 T1	1998 11 25.73422	23 58 52.49	+09 36 27.0		046
C/1998 T1	1998 11 25.73561	23 58 52.35	+09 36 25.7		046
C/1998 T1	1998 11 25.73694	23 58 52.23	+09 36 24.7		046
C/1998 T1	1998 11 25.73825	23 58 52.11	+09 36 23.3		046
C/1998 T1	1998 11 26.41166	23 57 47.56	+09 25 42.9	17.2 T	402
C/1998 T1	1998 11 26.41304	23 57 47.45	+09 25 41.8		402
C/1998 T1	1998 11 26.41443	23 57 47.33	+09 25 40.2		402
C/1998 T1	1998 12 02.75336	23 48 27.21	+07 49 32.5		046
C/1998 T1	1998 12 02.75461	23 48 27.12	+07 49 31.5		046
C/1998 T1	1998 12 02.75572	23 48 27.01	+07 49 30.3		046

C/1998 T1	1998 12 03.75256	23 47 06.63	+07 35 11.0	046
C/1998 T1	1998 12 03.75363	23 47 06.55	+07 35 09.9	046
C/1998 T1	1998 12 04.71811	23 45 50.83	+07 21 31.9	097
C/1998 T1	1998 12 04.72815	23 45 50.05	+07 21 23.6	097

C/1998 U1 (LINEAR)

C/1998 U1	1998 10 24.68403	03 44 37.21	+32 49 52.6	18.9 T	372
C/1998 U1	1998 10 24.75139	03 44 28.98	+32 49 19.5		372
C/1998 U1	1998 10 29.70660	03 34 23.53	+32 05 48.7	19 T	372
C/1998 U1	1998 10 29.74826	03 34 18.31	+32 05 25.8		372
C/1998 U1	1998 11 10.51632	03 10 01.24	+29 59 44.7	19.0 T	372
C/1998 U1	1998 11 10.57465	03 09 54.01	+29 59 02.0	18.5 T	360
C/1998 U1	1998 11 10.57917	03 09 53.39	+29 58 58.5		360
C/1998 U1	1998 11 10.58351	03 09 52.88	+29 58 55.4		360
C/1998 U1	1998 11 12.52019	03 05 57.01	+29 35 35.7	18.0 T	402
C/1998 U1	1998 11 12.52296	03 05 56.70	+29 35 33.8		402
C/1998 U1	1998 11 12.52852	03 05 56.03	+29 35 29.7		402
C/1998 U1	1998 11 12.55486	03 05 52.87	+29 35 11.7		372
C/1998 U1	1998 11 12.57361	03 05 50.55	+29 34 57.9	19.1 T	372
C/1998 U1	1998 11 14.19334	03 02 35.45	+29 14 58.9	19.4 T	704
C/1998 U1	1998 11 14.21533	03 02 32.62	+29 14 41.4	19.3 T	704
C/1998 U1	1998 11 14.23738	03 02 29.94	+29 14 24.0	19.4 T	704
C/1998 U1	1998 11 14.25996	03 02 27.18	+29 14 06.7	19.6 T	704
C/1998 U1	1998 11 14.28200	03 02 24.23	+29 13 49.0	19.7 T	704
C/1998 U1	1998 11 14.57535	03 01 49.42	+29 10 11.8	18.9 T	372
C/1998 U1	1998 11 15.55226	02 59 53.03	+28 57 53.6	18.3 T	360
C/1998 U1	1998 11 15.55729	02 59 52.40	+28 57 49.9		360
C/1998 U1	1998 11 15.56198	02 59 51.84	+28 57 46.6		360
C/1998 U1	1998 11 15.70521	02 59 34.66	+28 55 58.2	19.1 T	372
C/1998 U1	1998 11 16.09257	02 58 49.08	+28 51 02.3	18.1 T	704
C/1998 U1	1998 11 16.11376	02 58 46.70	+28 50 44.6		704
C/1998 U1	1998 11 16.13492	02 58 44.18	+28 50 30.6		704
C/1998 U1	1998 11 16.15616	02 58 41.47	+28 50 14.3		704
C/1998 U1	1998 11 16.17732	02 58 38.95	+28 49 58.0		704
C/1998 U1	1998 11 17.82153	02 55 25.78	+28 28 51.5		046
C/1998 U1	1998 11 17.96833	02 55 08.64	+28 26 57.4		046
C/1998 U1	1998 11 17.96993	02 55 08.38	+28 26 55.3		046
C/1998 U1	1998 11 17.97175	02 55 08.19	+28 26 54.7		046
C/1998 U1	1998 11 17.97273	02 55 08.14	+28 26 53.9	18.5 T	587
C/1998 U1	1998 11 17.97280	02 55 08.02	+28 26 54.3		046
C/1998 U1	1998 11 17.97682	02 55 07.57	+28 26 50.4	18.2 T	046
C/1998 U1	1998 11 17.97900	02 55 07.37	+28 26 49.5		587
C/1998 U1	1998 11 17.98373	02 55 06.84	+28 26 45.5		587
C/1998 U1	1998 11 18.94947	02 53 14.91	+28 14 12.1	18.0 T	046
C/1998 U1	1998 11 18.95162	02 53 14.62	+28 14 10.1		046
C/1998 U1	1998 11 18.95433	02 53 14.43	+28 14 08.3		046
C/1998 U1	1998 11 19.08811	02 52 58.92	+28 12 23.6		734
C/1998 U1	1998 11 19.09532	02 52 58.16	+28 12 18.7		734
C/1998 U1	1998 11 19.10238	02 52 57.19	+28 12 08.8	18.8 T	734
C/1998 U1	1998 11 23.36211	02 44 57.38	+27 15 46.9		693
C/1998 U1	1998 11 23.36997	02 44 56.51	+27 15 40.5	18.2 T	693
C/1998 U1	1998 11 23.58403	02 44 33.15	+27 12 48.6	18.5 T	360
C/1998 U1	1998 11 23.58854	02 44 32.60	+27 12 44.4		360

C/1998 U1	1998 11 23.59236	02 44 32.20	+27 12 41.2		360
C/1998 U1	1998 11 26.49450	02 39 20.21	+26 33 35.5	18.3 T	402
C/1998 U1	1998 11 26.49589	02 39 20.11	+26 33 33.8		402
C/1998 U1	1998 11 26.49728	02 39 19.88	+26 33 32.7		402
C/1998 U1	1998 11 29.59263	02 34 00.72	+25 51 36.4	18.0 T	402
C/1998 U1	1998 11 29.59402	02 34 00.66	+25 51 35.0		402
C/1998 U1	1998 11 29.59679	02 34 00.46	+25 51 33.7		402

P/1998 U2 (Mueller)

P/1998 U2	1998 10 24.58333	01 23 17.79	+12 21 41.6	16.7 T	372
P/1998 U2	1998 10 24.59201	01 23 17.49	+12 21 41.1		372
P/1998 U2	1998 10 29.67092	01 20 56.13	+12 11 50.9	17 T	372
P/1998 U2	1998 11 08.53264	01 17 39.66	+11 56 03.4	17.1 T	360
P/1998 U2	1998 11 08.53542	01 17 39.63	+11 56 03.2		360
P/1998 U2	1998 11 11.06370	01 17 10.73	+11 53 14.0	18.8 T	704
P/1998 U2	1998 11 11.08612	01 17 10.34	+11 53 12.8	18.3 T	704
P/1998 U2	1998 11 11.10833	01 17 10.03	+11 53 09.7	18.3 T	704
P/1998 U2	1998 11 11.13008	01 17 09.73	+11 53 13.0	18.3 T	704
P/1998 U2	1998 11 11.15185	01 17 09.41	+11 53 08.2	18.3 T	704
P/1998 U2	1998 11 11.89145	01 17 02.71	+11 52 25.5	17.1 T	118
P/1998 U2	1998 11 11.89839	01 17 02.63	+11 52 25.2		118
P/1998 U2	1998 11 12.52066	01 16 57.79	+11 51 55.5	16.8 T	360
P/1998 U2	1998 11 12.52483	01 16 57.77	+11 51 55.1		360
P/1998 U2	1998 11 12.57641	01 16 57.24	+11 51 51.9	16.2 T	867
P/1998 U2	1998 11 12.58336	01 16 57.18	+11 51 51.7		867
P/1998 U2	1998 11 12.60037	01 16 57.03	+11 51 50.3		867
P/1998 U2	1998 11 17.79963	01 16 41.77	+11 49 10.2	16.4 T	504
P/1998 U2	1998 11 23.25117	01 17 14.84	+11 50 12.9		693
P/1998 U2	1998 11 23.25926	01 17 14.93	+11 50 13.4		693
P/1998 U2	1998 11 23.26731	01 17 15.00	+11 50 13.7	17.4 T	693
P/1998 U2	1998 11 23.53542	01 17 18.15	+11 50 21.9	17.4 T	360
P/1998 U2	1998 11 23.53924	01 17 18.17	+11 50 22.0		360
P/1998 U2	1998 11 24.72141	01 17 33.27	+11 51 09.3		561
P/1998 U2	1998 11 24.72569	01 17 33.32	+11 51 09.5		561
P/1998 U2	1998 11 24.73215	01 17 33.39	+11 51 09.6	17.9 T	561
P/1998 U2	1998 11 25.74568	01 17 48.07	+11 52 01.2		046
P/1998 U2	1998 11 25.74785	01 17 48.08	+11 52 01.5		046
P/1998 U2	1998 11 25.75010	01 17 48.12	+11 52 01.1		046
P/1998 U2	1998 11 25.75120	01 17 48.17	+11 52 01.6		046
P/1998 U2	1998 11 26.42442	01 17 58.96	+11 52 42.5	17.1 T	402
P/1998 U2	1998 11 26.42582	01 17 58.95	+11 52 42.7		402
P/1998 U2	1998 11 26.42860	01 17 59.01	+11 52 42.5		402
P/1998 U2	1998 12 04.84880	01 21 20.43	+12 06 33.6		097
P/1998 U2	1998 12 04.86153	01 21 20.82	+12 06 34.7		097

P/1998 U3 (Jäger)

P/1998 U3	1998 10 29.59375	06 48 33.47	+41 35 10.8	14.4 T	372
P/1998 U3	1998 10 29.63948	06 48 35.79	+41 35 12.1	14.3 T	372
P/1998 U3	1998 11 08.55282	06 55 43.45	+41 36 01.3		352
P/1998 U3	1998 11 08.55560	06 55 43.46	+41 36 01.3		352
P/1998 U3	1998 11 08.55838	06 55 43.56	+41 36 01.0		352
P/1998 U3	1998 11 08.68999	06 55 47.99	+41 36 01.7	11.8 T	900
P/1998 U3	1998 11 08.69766	06 55 48.23	+41 36 01.5		900
P/1998 U3	1998 11 10.65712	06 56 50.37	+41 35 25.8	12.6 T	360

P/1998 U3	1998 11 10.65955	06 56 50.43	+41 35 25.8		360	P/1998 U3	1998 11 22.83564	07 00 14.26	+41 24 18.2		351
P/1998 U3	1998 11 10.93120	06 56 58.18	+41 35 17.9		963	P/1998 U3	1998 11 24.19500	07 00 16.94	+41 22 01.7		046
P/1998 U3	1998 11 11.05044	06 57 01.71	+41 35 16.6	12.6 T	144	P/1998 U3	1998 11 24.19618	07 00 16.94	+41 22 01.6		046
P/1998 U3	1998 11 11.05325	06 57 01.73	+41 35 16.6	12.6 T	144	P/1998 U3	1998 11 24.19722	07 00 16.95	+41 22 01.4		046
P/1998 U3	1998 11 11.05604	06 57 01.75	+41 35 16.5	12.5 T	144	P/1998 U3	1998 11 24.27253	07 00 17.36	+41 21 53.7	14.8 T	750
P/1998 U3	1998 11 11.05958	06 57 01.77	+41 35 16.5	12.7 T	144	P/1998 U3	1998 11 24.27879	07 00 17.33	+41 21 53.6	14.7 T	750
P/1998 U3	1998 11 11.64201	06 57 18.56	+41 35 01.5	11.9 T	355	P/1998 U3	1998 11 25.72118	07 00 15.33	+41 19 14.3	12.0 T	360
P/1998 U3	1998 11 11.64734	06 57 18.68	+41 35 01.9		355	P/1998 U3	1998 11 25.72344	07 00 15.31	+41 19 14.1		360
P/1998 U3	1998 11 12.20291	06 57 33.38	+41 34 45.9		046	P/1998 U3	1998 11 26.52799	07 00 12.45	+41 17 34.9	12.5 T	351
P/1998 U3	1998 11 12.20398	06 57 33.41	+41 34 45.9		046	P/1998 U3	1998 11 26.53034	07 00 12.42	+41 17 34.2		351
P/1998 U3	1998 11 12.20510	06 57 33.43	+41 34 45.9		046	P/1998 U3	1998 11 26.53278	07 00 12.40	+41 17 34.3		351
P/1998 U3	1998 11 12.87005	06 57 50.94	+41 34 23.4	12.4 T	540	P/1998 U3	1998 11 26.57403	07 00 12.12	+41 17 29.5		352
P/1998 U3	1998 11 12.87126	06 57 51.10	+41 34 23.8		540	P/1998 U3	1998 11 26.57750	07 00 12.07	+41 17 29.6		352
P/1998 U3	1998 11 12.87257	06 57 51.15	+41 34 23.7		540	P/1998 U3	1998 11 26.58096	07 00 12.00	+41 17 29.1		352
P/1998 U3	1998 11 13.16562	06 57 58.44	+41 34 15.8	12.7 T	758	P/1998 U3	1998 11 28.23185	07 00 00.99	+41 13 49.7	14.5 T	750
P/1998 U3	1998 11 13.16910	06 57 58.48	+41 34 15.5	12.7 T	758	P/1998 U3	1998 11 28.24034	07 00 00.90	+41 13 48.9	14.2 T	750
P/1998 U3	1998 11 13.81317	06 58 13.41	+41 33 54.0	12.8 T	351	P/1998 U3	1998 11 28.93038	06 59 54.59	+41 12 09.3		587
P/1998 U3	1998 11 13.81569	06 58 13.50	+41 33 53.9		351	P/1998 U3	1998 11 28.93368	06 59 54.55	+41 12 09.0		587
P/1998 U3	1998 11 13.81812	06 58 13.48	+41 33 53.6		351	P/1998 U3	1998 11 28.93570	06 59 54.53	+41 12 08.6		587
P/1998 U3	1998 11 13.88706	06 58 15.34	+41 33 46.8		963	P/1998 U3	1998 11 29.73459	06 59 45.50	+41 10 10.3	11.6 T	402
P/1998 U3	1998 11 14.65367	06 58 32.57	+41 33 20.0	12.0 T	355	P/1998 U3	1998 11 29.73598	06 59 45.47	+41 10 10.2		402
P/1998 U3	1998 11 14.65595	06 58 32.54	+41 33 20.1		355	P/1998 U3	1998 11 29.73737	06 59 45.44	+41 10 09.9		402
P/1998 U3	1998 11 14.65824	06 58 32.65	+41 33 19.6		355	P/1998 U3	1998 12 03.98145	06 58 36.00	+40 57 40.2		097
P/1998 U3	1998 11 14.68262	06 58 32.94	+41 33 19.0		352	P/1998 U3	1998 12 03.98430	06 58 35.95	+40 57 39.7		097
P/1998 U3	1998 11 14.68609	06 58 32.98	+41 33 18.9		352	P/1998 U3	1998 12 04.05096	06 58 34.47	+40 57 24.7		046
P/1998 U3	1998 11 14.68956	06 58 33.06	+41 33 19.8		352	P/1998 U3	1998 12 04.05198	06 58 34.45	+40 57 24.5		046
P/1998 U3	1998 11 14.75963	06 58 34.58	+41 33 16.2	11.8 T	402	P/1998 U3	1998 12 04.05307	06 58 34.41	+40 57 24.2		046
P/1998 U3	1998 11 14.76102	06 58 34.61	+41 33 16.2		402	P/1998 U4 (Spahr)					
P/1998 U3	1998 11 14.76241	06 58 34.64	+41 33 16.1		402	P/1998 U4	1998 11 10.60330	04 02 20.37	-13 44 30.5	17.3 T	360
P/1998 U3	1998 11 15.74757	06 58 54.50	+41 32 32.1	12.3 T	360	P/1998 U4	1998 11 10.60781	04 02 20.22	-13 44 32.2		360
P/1998 U3	1998 11 15.75035	06 58 54.55	+41 32 31.9		360	P/1998 U4	1998 11 10.61198	04 02 20.08	-13 44 33.8		360
P/1998 U3	1998 11 15.92523	06 58 57.99	+41 32 20.7		143	P/1998 U4	1998 11 11.58340	04 01 49.90	-13 50 59.2		355
P/1998 U3	1998 11 15.93307	06 58 58.14	+41 32 20.7		143	P/1998 U4	1998 11 11.61069	04 01 48.96	-13 51 08.8	17.4 T	355
P/1998 U3	1998 11 15.94091	06 58 58.29	+41 32 20.3		143	P/1998 U4	1998 11 12.58196	04 01 18.41	-13 57 26.7	18.0 T	402
P/1998 U3	1998 11 17.94887	06 59 31.52	+41 30 30.5	11.5 T	108	P/1998 U4	1998 11 12.58473	04 01 18.34	-13 57 28.0		402
P/1998 U3	1998 11 17.98195	06 59 31.44	+41 30 31.9	12.3 T	476	P/1998 U4	1998 11 12.58751	04 01 18.24	-13 57 28.9		402
P/1998 U3	1998 11 17.98889	06 59 31.62	+41 30 31.3	12.3 T	476	P/1998 U4	1998 11 12.60139	04 01 17.84	-13 57 34.5	17.3 T	360
P/1998 U3	1998 11 18.00347	06 59 31.79	+41 30 30.6	12.3 T	476	P/1998 U4	1998 11 12.60625	04 01 17.66	-13 57 36.0		360
P/1998 U3	1998 11 18.01528	06 59 31.93	+41 30 30.2	12.3 T	476	P/1998 U4	1998 11 12.61007	04 01 17.52	-13 57 37.4		360
P/1998 U3	1998 11 19.80333	06 59 53.63	+41 28 30.3	12.4 T	351	P/1998 U4	1998 11 15.71337	03 59 37.56	-14 16 29.4	17.3 T	360
P/1998 U3	1998 11 19.80567	06 59 53.59	+41 28 29.5		351	P/1998 U4	1998 11 15.71771	03 59 37.40	-14 16 30.8		360
P/1998 U3	1998 11 20.29394	06 59 58.36	+41 27 58.4	11.7 T	860	P/1998 U4	1998 11 22.67429	03 55 46.47	-14 52 08.6	17.0 T	900
P/1998 U3	1998 11 20.29613	06 59 58.36	+41 27 58.2	12.3 T	860	P/1998 U4	1998 11 22.68188	03 55 46.10	-14 52 10.5		900
P/1998 U3	1998 11 22.07663	07 00 11.09	+41 25 26.5	13.1 T	113	P/1998 U4	1998 11 23.59913	03 55 15.56	-14 56 10.1	17.5 T	360
P/1998 U3	1998 11 22.08374	07 00 11.17	+41 25 25.8	13.3 T	113	P/1998 U4	1998 11 23.60451	03 55 15.37	-14 56 11.1		360
P/1998 U3	1998 11 22.08663	07 00 11.16	+41 25 25.6	13.3 T	113	P/1998 U4	1998 11 26.52810	03 53 37.78	-15 07 40.0	17.9 T	402
P/1998 U3	1998 11 22.16418	07 00 11.43	+41 25 17.6	13.5 T	113	P/1998 U4	1998 11 26.52949	03 53 37.73	-15 07 41.0		402
P/1998 U3	1998 11 22.19907	07 00 11.46	+41 25 14.4	13.4 T	1 540	P/1998 U4	1998 11 26.53088	03 53 37.67	-15 07 41.1		402
P/1998 U3	1998 11 22.20139	07 00 11.57	+41 25 15.6		1 540	C/1998 U5 (LINEAR)					
P/1998 U3	1998 11 22.44187	07 00 13.07	+41 24 56.0		693	C/1998 U5	1998 11 08.48993	05 48 26.43	+45 51 54.9	8.9 T	372
P/1998 U3	1998 11 22.45248	07 00 12.96	+41 24 55.0		693	C/1998 U5	1998 11 08.49583	05 48 21.82	+45 52 46.0		372
P/1998 U3	1998 11 22.45652	07 00 12.97	+41 24 54.6	11.7 T	693	C/1998 U5	1998 11 08.51672	05 48 05.48	+45 55 42.4		372
P/1998 U3	1998 11 22.83336	07 00 14.25	+41 24 18.5	12.4 T	351						

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C/1998 U5	1998 11 08.52690	05 47 57.26	+45 57 11.3		352
C/1998 U5	1998 11 08.52968	05 47 55.09	+45 57 35.7		352
C/1998 U5	1998 11 08.53245	05 47 52.81	+45 57 58.6	10.8 T	352
C/1998 U5	1998 11 08.53715	05 47 49.20	+45 58 39.2	8.9 T	372
C/1998 U5	1998 11 08.65396	05 46 15.47	+46 15 18.6		900
C/1998 U5	1998 11 08.65786	05 46 12.28	+46 15 51.6	10.2 T	900
C/1998 U5	1998 11 09.61515	05 32 17.77	+48 33 05.6	10.3 T	355
C/1998 U5	1998 11 09.61591	05 32 17.06	+48 33 12.2		355
C/1998 U5	1998 11 09.61661	05 32 16.38	+48 33 18.0		355
C/1998 U5	1998 11 10.63299	05 14 52.58	+50 59 50.4		372
C/1998 U5	1998 11 10.64063	05 14 43.92	+51 00 56.0		372
C/1998 U5	1998 11 10.64913	05 14 34.34	+51 02 09.1	10.1 T	360
C/1998 U5	1998 11 10.65052	05 14 32.78	+51 02 21.1		360
C/1998 U5	1998 11 10.65191	05 14 31.22	+51 02 33.1		360
C/1998 U5	1998 11 10.65451	05 14 28.24	+51 02 55.7		372
C/1998 U5	1998 11 10.85777	05 10 37.43	+51 31 46.8		504
C/1998 U5	1998 11 10.85817	05 10 36.96	+51 31 49.9		504
C/1998 U5	1998 11 10.85868	05 10 36.36	+51 31 54.0		504
C/1998 U5	1998 11 10.85890	05 10 36.11	+51 31 55.8		504
C/1998 U5	1998 11 10.85917	05 10 35.79	+51 31 58.5		504
C/1998 U5	1998 11 10.85940	05 10 35.56	+51 32 00.7		504
C/1998 U5	1998 11 10.85964	05 10 35.21	+51 32 02.3		504
C/1998 U5	1998 11 10.85990	05 10 34.96	+51 32 05.2		504
C/1998 U5	1998 11 10.86162	05 10 32.92	+51 32 19.5	10.6 T	504
C/1998 U5	1998 11 10.86184	05 10 32.68	+51 32 21.8	10.6 T	504
C/1998 U5	1998 11 10.86230	05 10 32.14	+51 32 25.2	10.6 T	504
C/1998 U5	1998 11 10.86280	05 10 31.53	+51 32 29.6	10.6 T	504
C/1998 U5	1998 11 10.86304	05 10 31.28	+51 32 32.0		504
C/1998 U5	1998 11 10.86329	05 10 31.01	+51 32 34.3	10.6 T	504
C/1998 U5	1998 11 10.86356	05 10 30.69	+51 32 36.5	10.7 T	504
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C/1998 U5	1998 11 11.63458	04 54 36.70	+53 20 50.7	10.8 T	355
C/1998 U5	1998 11 11.63660	04 54 34.01	+53 21 07.1		355
C/1998 U5	1998 11 11.78090	04 51 20.69	+53 40 50.2		372
C/1998 U5	1998 11 12.51054	04 34 01.66	+55 16 59.5	12.0 T	351
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C/1998 U5	1998 11 12.66691	04 30 01.39	+55 36 47.8	8.3 T	372
C/1998 U5	1998 11 12.85243	04 25 11.90	+55 59 30.4	11.1 T	540
C/1998 U5	1998 11 12.85348	04 25 10.28	+55 59 37.8		540
C/1998 U5	1998 11 12.85446	04 25 08.71	+55 59 45.1		540
C/1998 U5	1998 11 13.08302	04 18 57.56	+56 27 06.8		143
C/1998 U5	1998 11 13.09361	04 18 40.04	+56 28 21.0		143
C/1998 U5	1998 11 13.10537	04 18 20.59	+56 29 43.1		143
C/1998 U5	1998 11 13.11410	04 18 08.56	+56 30 41.7	13.7 T	750
C/1998 U5	1998 11 13.11513	04 18 06.73	+56 30 48.9	13.7 T	750
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C/1998 U5	1998 11 13.14747	04 17 13.42	+56 34 37.2	14.1 T	750

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C/1998 U5	1998 11 13.15478	04 17 01.03	+56 35 31.7	11.6 T	758
C/1998 U5	1998 11 13.15686	04 16 57.55	+56 35 46.8	11.5 T	758
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C/1998 U5	1998 11 13.16598	04 16 42.79	+56 36 45.2	11.9 T	713
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C/1998 U5	1998 11 14.67464	03 30 40.56	+59 04 38.3		352
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C/1998 U5	1998 11 17.81752	01 39 01.29	+60 11 17.1		504
C/1998 U5	1998 11 17.81880	01 38 58.55	+60 11 14.8		504
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C/1998 U5	1998 11 17.82164	01 38 52.57	+60 11 08.2		504
C/1998 U5	1998 11 17.82233	01 38 51.15	+60 11 07.3		504
C/1998 U5	1998 11 17.82248	01 38 50.82	+60 11 07.0		504
C/1998 U5	1998 11 17.82299	01 38 49.72	+60 11 05.6		504
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C/1998 U5	1998 11 18.85660	01 03 57.47	+59 15 27.8		469

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C/1998 U5	1998 11 20.96603	00 04 16.37	+55 57 57.3		504	C/1998 U5	1998 12 02.74890	21 53 52.80	+34 49 57.8		046
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C/1998 U5	1998 11 20.96891	00 04 12.13	+55 57 37.6		504	C/1998 U5	1998 12 05.80818	21 42 38.92	+31 17 47.4		963
C/1998 U5	1998 11 20.96993	00 04 10.70	+55 57 30.6		504	C/1998 U5	1998 12 06.79325	21 39 45.58	+30 18 26.9		963
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C/1998 U5	1998 11 22.71219	23 27 17.51	+52 29 12.5		561	P/1998 W1	1998 11 16.40318	04 33 22.31	-10 36 25.8	16.5 T	703
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C/1998 U5	1998 11 22.71681	23 27 12.45	+52 28 38.2		561	P/1998 W1	1998 11 17.91109	04 32 18.15	-10 25 02.0		587
C/1998 U5	1998 11 22.81395	23 25 26.24	+52 16 33.5		504	P/1998 W1	1998 11 17.96348	04 32 15.62	-10 24 36.0	16 T	046
C/1998 U5	1998 11 22.81410	23 25 26.00	+52 16 31.8	11.0 T	504	P/1998 W1	1998 11 17.96520	04 32 15.53	-10 24 35.0		046
C/1998 U5	1998 11 22.81424	23 25 25.88	+52 16 31.1		504	P/1998 W1	1998 11 17.96637	04 32 15.46	-10 24 34.4		046
C/1998 U5	1998 11 22.81439	23 25 25.66	+52 16 29.6		504	P/1998 W1	1998 11 17.98176	04 32 14.80	-10 24 26.8		106
C/1998 U5	1998 11 22.81453	23 25 25.57	+52 16 28.9		504	P/1998 W1	1998 11 17.99847	04 32 14.00	-10 24 19.1		106
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C/1998 U5	1998 11 22.81499	23 25 25.03	+52 16 25.5		504	P/1998 W1	1998 11 18.02162	04 32 12.91	-10 24 08.0		106
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C/1998 U5	1998 11 22.81822	23 25 21.57	+52 16 00.7		504	P/1998 W1	1998 11 18.28081	04 32 01.63	-10 21 59.6	16.1 T	691
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C/1998 U5	1998 11 22.81876	23 25 20.90	+52 15 56.6		504	P/1998 W1	1998 11 18.45025	04 31 53.54	-10 20 35.0		703
C/1998 U5	1998 11 23.89774	23 07 33.46	+50 00 52.4	11.7 T	476	P/1998 W1	1998 11 18.46000	04 31 53.11	-10 20 30.1		703
C/1998 U5	1998 11 23.90590	23 07 25.94	+49 59 49.6	11.7 T	476	P/1998 W1	1998 11 18.46330	04 31 52.96	-10 20 27.8		703
C/1998 U5	1998 11 23.90920	23 07 22.94	+49 59 25.1	11.7 T	476	P/1998 W1	1998 11 18.47045	04 31 52.60	-10 20 24.8		703
C/1998 U5	1998 11 24.17182	23 03 30.37	+49 26 41.7	13.9 T	750	P/1998 W1	1998 11 18.47565	04 31 53.30	-10 20 23.4		897
C/1998 U5	1998 11 24.18544	23 03 18.56	+49 24 59.4	13.9 T	750	P/1998 W1	1998 11 18.48102	04 31 52.95	-10 20 20.1		897
C/1998 U5	1998 11 25.39567	22 47 30.86	+46 56 42.6	11.1 T	402	P/1998 W1	1998 11 18.48970	04 31 52.61	-10 20 15.4		897
C/1998 U5	1998 11 25.39637	22 47 30.35	+46 56 37.5		402	P/1998 W1	1998 11 18.49824	04 31 52.19	-10 20 11.8	15.7 T	897
C/1998 U5	1998 11 25.39706	22 47 29.86	+46 56 32.6		402	P/1998 W1	1998 11 18.57101	04 31 48.75	-10 19 35.7	16.1 T	355
C/1998 U5	1998 11 25.72091	22 43 45.60	+46 17 46.4		046	P/1998 W1	1998 11 18.57631	04 31 48.53	-10 19 33.2		355
C/1998 U5	1998 11 25.72174	22 43 45.04	+46 17 40.6		046	P/1998 W1	1998 11 18.57828	04 31 48.41	-10 19 31.6		355
C/1998 U5	1998 11 25.72260	22 43 44.45	+46 17 34.3		046	P/1998 W1	1998 11 18.67691	04 31 43.62	-10 18 41.2	16 T	372
C/1998 U5	1998 11 25.72326	22 43 43.99	+46 17 29.6		046	P/1998 W1	1998 11 18.69802	04 31 42.64	-10 18 29.7		372
C/1998 U5	1998 11 26.46478	22 35 50.21	+44 50 53.8	11.8 T	351	P/1998 W1	1998 11 19.52333	04 31 05.55	-10 11 19.8		897
C/1998 U5	1998 11 26.46746	22 35 48.60	+44 50 35.4		351	P/1998 W1	1998 11 19.53208	04 31 05.11	-10 11 15.5	16.3 T	897
C/1998 U5	1998 11 28.19448	22 20 30.56	+41 41 04.8	14.3 T	750						

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P/1998 W1	1998 11 19.57821	04 31 02.82	-10 10 50.9	16.0 T	355
P/1998 W1	1998 11 19.58131	04 31 02.68	-10 10 49.4		355
P/1998 W1	1998 11 19.58476	04 31 02.51	-10 10 47.3		355
P/1998 W1	1998 11 20.21384	04 30 32.84	-10 04 52.6	15.8 T	860
P/1998 W1	1998 11 20.22723	04 30 32.26	-10 04 46.8	16.2 T	860
P/1998 W1	1998 11 20.61146	04 30 14.34	-10 01 17.0	16.1 T	372
P/1998 W1	1998 11 20.61979	04 30 13.90	-10 01 12.4		372
P/1998 W1	1998 11 20.63542	04 30 13.12	-10 01 03.0	15.8 T	360
P/1998 W1	1998 11 20.63837	04 30 12.98	-10 01 01.3		360
P/1998 W1	1998 11 20.64132	04 30 12.83	-10 00 59.7		360
P/1998 W1	1998 11 20.97669	04 29 56.91	-09 57 46.4	15.6 T	504
P/1998 W1	1998 11 20.97932	04 29 56.77	-09 57 44.4	15.8 T	504
P/1998 W1	1998 11 20.98956	04 29 56.30	-09 57 39.1		504
P/1998 W1	1998 11 22.32896	04 28 50.91	-09 43 58.5		693
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P/1998 W1	1998 11 22.35394	04 28 49.61	-09 43 42.6	15.7 T	693
P/1998 W1	1998 11 22.63733	04 28 35.62	-09 40 40.9		372
P/1998 W1	1998 11 22.65347	04 28 34.79	-09 40 30.3		372
P/1998 W1	1998 11 22.76266	04 28 29.06	-09 39 20.5	16.1 T	900
P/1998 W1	1998 11 22.77534	04 28 28.38	-09 39 11.5		900
P/1998 W1	1998 11 23.41171	04 27 56.63	-09 32 10.0		703
P/1998 W1	1998 11 23.42194	04 27 56.04	-09 32 03.5		703
P/1998 W1	1998 11 23.55109	04 27 50.17	-09 30 36.9	16.2 T	355
P/1998 W1	1998 11 23.55491	04 27 49.93	-09 30 34.0		355
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P/1998 W1	1998 11 25.01587	04 26 34.76	-09 13 25.2		046
P/1998 W1	1998 11 26.56292	04 25 14.16	-08 53 48.0	16.2 T	402
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C/1998 W2 (Hergenrother)

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C/1998 W2	1998 11 22.11424	21 17 28.64	-14 07 22.7		703
C/1998 W2	1998 11 22.12267	21 17 29.82	-14 07 07.6		703
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C/1998 W2	1998 11 23.12154	21 19 51.86	-13 37 15.8		693
C/1998 W2	1998 11 23.12350	21 19 52.10	-13 37 12.4		693
C/1998 W2	1998 11 23.12544	21 19 52.38	-13 37 09.1		693

C/1998 W2	1998 11 23.12934	21 19 52.95	-13 37 01.7		693
C/1998 W2	1998 11 23.13182	21 19 53.25	-13 36 57.7	18.2 T	691
C/1998 W2	1998 11 23.14006	21 19 54.41	-13 36 42.2	21.0 N	691
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C/1998 W2	1998 11 23.44010	21 20 37.35	-13 27 44.8	17.7 T	360
C/1998 W2	1998 11 23.44427	21 20 37.99	-13 27 37.4		360
C/1998 W2	1998 11 24.07679	21 22 08.45	-13 08 42.0	21.6 N	691
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C/1998 W2	1998 11 24.14717	21 22 18.48	-13 06 35.3	18.3 T	709
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C/1998 W2	1998 11 24.15329	21 22 19.33	-13 06 24.2	18.3 T	709
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C/1998 W2	1998 11 28.37032	21 32 27.06	-11 00 03.9		402
C/1998 W2	1998 11 28.37192	21 32 27.19	-11 00 02.0		402
C/1998 W2	1998 11 28.46674	21 32 40.86	-10 57 04.0		426
C/1998 W2	1998 11 28.47869	21 32 42.52	-10 56 42.3		426
C/1998 W2	1998 11 28.49038	21 32 44.14	-10 56 20.1		426
C/1998 WO ₂	1998 11 28.90035	02 58 09.50	+13 30 08.2	19.0 T	552
C/1998 WO ₂	1998 11 28.91314	02 58 08.95	+13 30 06.5		552

C/1998 W3 (LINEAR)

C/1998 W3	1998 11 25.29950	08 46 07.70	+29 49 30.4	18.4 N	704
C/1998 W3	1998 11 25.31005	08 46 07.36	+29 49 38.0	18.4 N	704
C/1998 W3	1998 11 25.32060	08 46 06.84	+29 49 47.1	18.1 N	704
C/1998 W3	1998 11 25.33119	08 46 06.42	+29 49 53.6	18.1 N	704
C/1998 W3	1998 11 25.34174	08 46 05.98	+29 50 01.9	18.1 N	704
C/1998 W3	1998 11 26.36627	08 45 24.46	+30 02 11.7		734
C/1998 W3	1998 11 26.37038	08 45 24.16	+30 02 16.8		734
C/1998 W3	1998 11 26.37848	08 45 23.68	+30 02 23.2		734
C/1998 W3	1998 11 27.42897	08 44 39.41	+30 15 04.9	19.0 N	747
C/1998 W3	1998 11 27.44056	08 44 38.81	+30 15 12.4	18.5 N	747
C/1998 W3	1998 11 27.44281	08 44 38.82	+30 15 13.5	19.3 N	747
C/1998 W3	1998 11 28.04905	08 44 12.55	+30 22 33.1		046
C/1998 W3	1998 11 28.05166	08 44 12.43	+30 22 35.0		046
C/1998 W3	1998 11 28.05347	08 44 12.36	+30 22 36.8		046
C/1998 W3	1998 11 28.05530	08 44 12.29	+30 22 37.8		046
C/1998 W3	1998 11 28.05714	08 44 12.22	+30 22 39.1	16.3 T	046
C/1998 W3	1998 11 28.05899	08 44 12.10	+30 22 40.5		046
C/1998 W3	1998 11 28.68111	08 43 44.67	+30 30 15.9		411
C/1998 W3	1998 11 28.68521	08 43 44.43	+30 30 19.6		411
C/1998 W3	1998 11 28.69341	08 43 44.07	+30 30 25.6		411
C/1998 W3	1998 11 28.78854	08 43 39.72	+30 31 34.6	16.8 T	900
C/1998 W3	1998 11 28.80111	08 43 39.16	+30 31 44.0		900
C/1998 W3	1998 11 29.64918	08 43 00.74	+30 42 07.7	16.3 T	402
C/1998 W3	1998 11 29.65196	08 43 00.54	+30 42 09.7		402

C/1998 W3	1998 11 29.65473	08 43 00.42	+30 42 11.9		402	21P	1998 11 13.71381	19 53 27.72	-10 12 20.9	11.2 T	540
C/1998 W3	1998 12 03.99252	08 39 26.78	+31 36 25.4		097	21P	1998 11 13.71490	19 53 28.04	-10 12 23.1		540
C/1998 W3	1998 12 04.00960	08 39 25.90	+31 36 38.9		097	21P	1998 11 13.71589	19 53 28.30	-10 12 25.0		540
C/1998 W3	1998 12 04.05928	08 39 23.35	+31 37 16.8		046	21P	1998 11 14.37164	19 56 35.08	-10 32 32.1	11.4 T	402
C/1998 W3	1998 12 04.06052	08 39 23.27	+31 37 17.9		046	21P	1998 11 14.37442	19 56 35.87	-10 32 36.9		402
C/1998 W3	1998 12 04.06385	08 39 23.02	+31 37 19.6		046	21P	1998 11 14.37581	19 56 36.27	-10 32 39.5		402
4P/Faye						21P	1998 11 15.41359	20 01 34.68	-11 04 24.5	12.1 T	351
4P	1998 11 08.42639	20 05 23.39	-12 56 05.3	15.5 T	360	21P	1998 11 15.41481	20 01 35.10	-11 04 27.0		351
4P	1998 11 08.42969	20 05 23.64	-12 56 05.1		360	21P	1998 11 15.41685	20 01 35.65	-11 04 30.8		351
4P	1998 11 14.37744	20 13 26.01	-12 52 54.1	16.2 T	867	21P	1998 11 16.68881	20 07 46.48	-11 43 14.7	11.3 T	118
4P	1998 11 14.38230	20 13 26.42	-12 52 54.0		867	21P	1998 11 16.70093	20 07 50.02	-11 43 36.3		118
4P	1998 11 14.38716	20 13 26.81	-12 52 53.7		867	21P	1998 11 17.76003	20 13 02.55	-12 15 35.0		504
4P	1998 11 15.40851	20 14 53.37	-12 51 54.7	15.5 T	360	21P	1998 11 17.76068	20 13 02.73	-12 15 35.8		504
4P	1998 11 15.41128	20 14 53.60	-12 51 55.1		360	21P	1998 11 17.76111	20 13 02.89	-12 15 36.3		504
4P	1998 11 16.75312	20 16 49.08	-12 50 27.8	16.4 T	118	21P	1998 11 17.76179	20 13 03.05	-12 15 37.7		504
4P	1998 11 16.75973	20 16 49.67	-12 50 27.2		118	21P	1998 11 17.76242	20 13 03.27	-12 15 39.2		504
4P	1998 11 17.77769	20 18 18.53	-12 49 12.1	16.0 T	504	21P	1998 11 17.76263	20 13 03.30	-12 15 40.0		504
4P	1998 11 17.78463	20 18 19.10	-12 49 10.7	16.1 T	504	21P	1998 11 17.76321	20 13 03.51	-12 15 40.8		504
4P	1998 11 22.77581	20 25 49.60	-12 41 09.5	16.4 T	504	21P	1998 11 17.76344	20 13 03.58	-12 15 41.4		504
4P	1998 11 22.78101	20 25 50.06	-12 41 09.0	16.4 T	504	21P	1998 11 17.76383	20 13 03.72	-12 15 42.2		504
4P	1998 11 29.40752	20 36 23.86	-12 25 36.7	15.4 T	351	21P	1998 11 17.76546	20 13 04.16	-12 15 45.2		504
4P	1998 11 29.41324	20 36 24.48	-12 25 39.6		351	21P	1998 11 17.76568	20 13 04.26	-12 15 45.4		504
9P/Tempel 1						21P	1998 11 17.76625	20 13 04.39	-12 15 46.8		504
9P	1998 11 22.50311	09 11 12.34	+25 34 54.3		693	21P	1998 11 17.76666	20 13 04.51	-12 15 47.0		504
9P	1998 11 22.52450	09 11 12.75	+25 34 57.5		693	21P	1998 11 17.76919	20 13 05.24	-12 15 50.8		504
9P	1998 11 22.54608	09 11 13.14	+25 35 00.7	20.6 T	693	21P	1998 11 17.76957	20 13 05.34	-12 15 52.4		504
21P/Giacobini-Zinner						21P	1998 11 17.77046	20 13 05.65	-12 15 53.0		504
21P	1998 10 12.79034	17 51 48.42	+05 10 12.2		154	21P	1998 11 18.79403	20 18 10.90	-12 46 31.0	11.0 T	071
21P	1998 10 12.80006	17 51 50.13	+05 09 58.4		154	21P	1998 11 18.79668	20 18 11.66	-12 46 36.0	11.7 T	071
21P	1998 10 25.74653	18 34 09.61	-00 39 13.8		154	21P	1998 11 18.79895	20 18 12.31	-12 46 39.9	12.0 T	071
21P	1998 11 07.70884	19 26 05.50	-07 06 57.6		107	21P	1998 11 18.80053	20 18 12.91	-12 46 42.2	11.6 T	071
21P	1998 11 07.71596	19 26 07.43	-07 07 10.7		107	21P	1998 11 22.09147	20 34 55.69	-14 23 08.8		693
21P	1998 11 07.72436	19 26 09.52	-07 07 27.9		154	21P	1998 11 22.09874	20 34 57.91	-14 23 21.1		693
21P	1998 11 07.72668	19 26 09.99	-07 07 30.1		107	21P	1998 11 22.10126	20 34 58.68	-14 23 25.3	8.9 T	693
21P	1998 11 10.42994	19 38 14.13	-08 30 59.5	11.7 T	351	21P	1998 11 22.76029	20 38 23.23	-14 42 18.9		504
21P	1998 11 10.43131	19 38 14.52	-08 31 02.6		351	21P	1998 11 22.76053	20 38 23.33	-14 42 19.4		504
21P	1998 11 10.43874	19 38 16.47	-08 31 16.1		351	21P	1998 11 22.76089	20 38 23.43	-14 42 19.8		504
21P	1998 11 12.37494	19 47 10.83	-09 31 05.2	11.0 T	402	21P	1998 11 22.76223	20 38 23.85	-14 42 21.9		504
21P	1998 11 12.37633	19 47 11.21	-09 31 07.7		402	21P	1998 11 22.76372	20 38 24.26	-14 42 24.2		504
21P	1998 11 12.37772	19 47 11.59	-09 31 10.4		402	21P	1998 11 22.76394	20 38 24.37	-14 42 25.2		504
21P	1998 11 12.38229	19 47 12.90	-09 31 18.4		867	21P	1998 11 22.76491	20 38 24.67	-14 42 26.7		504
21P	1998 11 12.38576	19 47 13.82	-09 31 24.9		867	21P	1998 11 22.76532	20 38 24.81	-14 42 27.0		504
21P	1998 11 12.38889	19 47 14.70	-09 31 30.7		867	21P	1998 11 22.76538	20 38 24.81	-14 42 27.0		504
21P	1998 11 12.39076	19 47 15.19	-09 31 34.2		900	21P	1998 11 22.76682	20 38 25.27	-14 42 30.2		504
21P	1998 11 12.39650	19 47 16.81	-09 31 44.7		900	21P	1998 11 22.76726	20 38 25.37	-14 42 30.5		504
21P	1998 11 12.67088	19 48 33.74	-09 40 14.0		118	21P	1998 11 22.76854	20 38 25.78	-14 42 32.6		504
21P	1998 11 12.67765	19 48 35.63	-09 40 26.8		118	21P	1998 11 22.76918	20 38 26.01	-14 42 33.6		504
21P	1998 11 12.68413	19 48 37.43	-09 40 38.5		118	21P	1998 11 22.76940	20 38 26.03	-14 42 34.6		504
21P	1998 11 12.99338	19 50 04.21	-09 50 10.1	13.9 T	750	21P	1998 11 22.76978	20 38 26.14	-14 42 35.0		504
21P	1998 11 13.00879	19 50 08.50	-09 50 38.8	14.0 T	750	21P	1998 11 23.97309	20 44 42.63	-15 16 30.7	14.4 T	750
21P	1998 11 13.04458	19 50 18.48	-09 51 44.6	14.1 T	750	21P	1998 11 23.97994	20 44 44.67	-15 16 42.3	14.1 T	750
						21P	1998 11 23.98655	20 44 46.73	-15 16 53.6	14.1 T	750
						21P	1998 11 26.36877	20 57 21.93	-16 22 02.5	11.6 T	402
						21P	1998 11 26.37016	20 57 22.37	-16 22 04.6		402

21P	1998 11 26.37155	20 57 22.80	-16 22 06.8		402	52P	1998 11 23.70243	07 18 10.39	+40 06 59.8		360
21P	1998 11 26.40436	20 57 33.27	-16 22 59.9	11.9 T	351	52P	1998 11 24.19906	07 18 33.26	+40 08 51.1		046
21P	1998 11 26.40689	20 57 33.99	-16 23 03.6		351	52P	1998 11 24.20015	07 18 33.31	+40 08 51.3		046
21P	1998 11 26.40947	20 57 34.92	-16 23 06.4		351	52P	1998 11 24.20135	07 18 33.36	+40 08 51.5		046
21P	1998 11 29.42253	21 13 47.46	-17 41 01.8	12.0 T	351	52P	1998 11 26.53874	07 20 16.69	+40 17 34.3	12.3 T	351
21P	1998 11 29.42818	21 13 49.30	-17 41 09.7		351	52P	1998 11 26.54342	07 20 16.79	+40 17 36.0		351
21P	1998 12 04.70819	21 42 47.92	-19 43 09.0		097	52P	1998 11 26.59024	07 20 18.66	+40 17 47.5		352
21P	1998 12 04.71576	21 42 50.59	-19 43 17.6		097	52P	1998 11 26.59372	07 20 18.78	+40 17 48.0		352
48P/Johnson						52P	1998 11 26.59719	07 20 18.97	+40 17 48.8		352
48P	1998 09 16.48944	04 43 11.43	+07 47 19.2		693	52P	1998 12 04.05486	07 24 16.21	+40 42 44.0		046
48P	1998 09 16.49358	04 43 11.53	+07 47 18.6		693	52P	1998 12 04.05595	07 24 16.23	+40 42 44.2		046
48P	1998 09 16.49766	04 43 11.62	+07 47 18.2	18.4 T	693	52P	1998 12 04.05718	07 24 16.25	+40 42 44.3		046
48P	1998 11 14.75697	04 27 14.84	+05 29 22.8	18.8 T	867	59P/Kearns-Kwee					
48P	1998 11 14.76322	04 27 14.50	+05 29 22.1		867	59P	1998 10 25.54516	22 41 55.63	+00 32 27.4	20.1 T	867
48P	1998 11 14.77606	04 27 13.90	+05 29 20.9		867	59P	1998 10 25.55211	22 41 55.55	+00 32 26.8		867
48P	1998 11 15.67155	04 26 31.39	+05 28 29.6	18.3 T	867	59P	1998 10 25.55905	22 41 55.44	+00 32 25.7		867
48P	1998 11 15.67850	04 26 31.08	+05 28 29.3		867	60P/Tsuchinshan 2					
48P	1998 11 15.68822	04 26 30.53	+05 28 29.8		867	60P	1998 11 15.72622	06 44 51.51	+28 28 55.7	20.3 N	360
48P	1998 11 23.40839	04 20 12.52	+05 24 27.2		693	60P	1998 11 15.79740	06 44 53.20	+28 28 46.0		360
48P	1998 11 23.42150	04 20 11.85	+05 24 27.6		693	60P	1998 11 15.80156	06 44 53.30	+28 28 46.1		360
48P	1998 11 23.43152	04 20 11.34	+05 24 27.4	18.6 T	693	60P	1998 11 22.95903	06 47 16.84	+28 12 55.9	18.7 T	2 561
52P/Harrington-Abell						60P	1998 11 22.97010	06 47 17.00	+28 12 54.0		2 561
52P	1998 10 23.15514	06 37 27.26	+37 50 24.9	14.4 T	561	60P	1998 11 22.98145	06 47 17.06	+28 12 54.6		2 561
52P	1998 10 23.15785	06 37 27.52	+37 50 25.6		561	60P	1998 11 23.66719	06 47 25.06	+28 11 14.7	19.3 T	360
52P	1998 10 23.16044	06 37 27.77	+37 50 26.4		561	60P	1998 11 23.67622	06 47 25.12	+28 11 14.1		360
52P	1998 10 26.09050	06 42 16.70	+38 04 04.4	14.2 T	561	60P	1998 11 23.68802	06 47 25.19	+28 11 12.6		360
52P	1998 10 26.09236	06 42 16.87	+38 04 05.0		561	60P	1998 11 25.03611	06 47 38.00	+28 07 49.1	19.4 T	561
52P	1998 10 26.09410	06 42 17.04	+38 04 05.4		561	60P	1998 11 25.04144	06 47 38.03	+28 07 48.4		561
52P	1998 10 26.09581	06 42 17.21	+38 04 05.9		561	60P	1998 11 25.04653	06 47 38.09	+28 07 47.4		561
52P	1998 11 10.86922	07 05 00.67	+39 14 15.6	11.9 T	504	65P/Gunn					
52P	1998 11 10.87378	07 05 01.00	+39 14 16.0	12.0 T	504	65P	1998 11 10.58993	03 24 49.85	+14 36 56.4	17.6 T	360
52P	1998 11 10.87554	07 05 01.13	+39 14 17.1	12.3 T	504	65P	1998 11 10.59479	03 24 49.64	+14 36 55.7		360
52P	1998 11 13.82378	07 08 31.34	+39 26 56.3	12.9 T	351	65P	1998 11 18.24483	03 19 17.68	+14 25 52.1	18.2 T	704
52P	1998 11 13.82698	07 08 31.66	+39 26 56.3		351	65P	1998 11 18.28947	03 19 15.70	+14 25 47.4	18.1 T	704
52P	1998 11 13.83007	07 08 31.85	+39 26 56.8		351	65P	1998 11 18.33395	03 19 13.81	+14 25 44.2	18.5 T	704
52P	1998 11 14.69352	07 09 30.85	+39 30 35.2		352	65P	1998 11 18.37841	03 19 11.86	+14 25 42.1	19.0 T	704
52P	1998 11 14.69699	07 09 30.96	+39 30 36.3		352	65P	1998 11 25.57604	03 14 08.00	+14 16 19.2	17.8 T	360
52P	1998 11 14.70046	07 09 31.19	+39 30 36.6		352	65P	1998 11 25.57986	03 14 07.86	+14 16 18.8		360
52P	1998 11 15.75469	07 10 40.87	+39 35 02.3	12.4 T	360	68P/Klemola					
52P	1998 11 15.75712	07 10 41.01	+39 35 02.8		360	68P	1998 11 15.57674	03 18 57.30	+03 16 05.3	18.4 T	360
52P	1998 11 15.88461	07 10 49.55	+39 35 29.8	14.1 N	143	68P	1998 11 15.58229	03 18 57.03	+03 16 04.0	18.9 N	360
52P	1998 11 15.89245	07 10 50.03	+39 35 32.0	14.1 N	143	68P	1998 11 25.67222	03 11 28.32	+02 46 12.7	18.5 T	360
52P	1998 11 15.90420	07 10 50.83	+39 35 35.0	14.2 N	143	68P	1998 11 25.67743	03 11 28.09	+02 46 11.9	19.0 N	360
52P	1998 11 19.81362	07 14 47.01	+39 51 40.8	12.8 T	351	68P	1998 11 28.54514	03 09 37.31	+02 41 27.5	19.0 T	402
52P	1998 11 19.81635	07 14 47.28	+39 51 42.0		351	68P	1998 11 28.54653	03 09 37.22	+02 41 26.1		402
52P	1998 11 19.81906	07 14 47.31	+39 51 42.8		351	68P	1998 11 28.54792	03 09 37.12	+02 41 25.9		402
52P	1998 11 22.47926	07 17 09.98	+40 02 16.6		693	74P/Smirnova-Chernykh					
52P	1998 11 22.49019	07 17 10.33	+40 02 19.2		693	74P	1998 11 11.28203	03 41 01.47	+16 14 13.0	17.0 T	699
52P	1998 11 22.49464	07 17 10.53	+40 02 20.2		693	74P	1998 11 11.31168	03 41 00.30	+16 14 10.7		699
52P	1998 11 22.82693	07 17 27.18	+40 03 36.3		900	74P	1998 11 11.33582	03 40 59.28	+16 14 08.4		699
52P	1998 11 22.83466	07 17 27.57	+40 03 38.3		900	74P	1998 11 14.29780	03 39 01.64	+16 09 57.9	17.8 T	691
52P	1998 11 23.69878	07 18 10.23	+40 06 58.9	12.2 T	360						

74P	1998 11 14.32100	03 39 00.63	+16 09 55.9	17.4 T	691	93P	1998 11 10.84845	06 32 29.51	+46 36 20.7	14.0 T	504
74P	1998 11 14.34313	03 38 59.74	+16 09 54.0	17.4 T	691	93P	1998 11 10.85123	06 32 29.65	+46 36 21.7	13.9 T	504
74P	1998 11 15.58889	03 38 09.90	+16 08 08.7	17.1 T	360	93P	1998 11 10.85293	06 32 29.70	+46 36 22.5	13.9 T	504
74P	1998 11 15.59410	03 38 09.70	+16 08 08.3		360	93P	1998 11 12.53266	06 33 54.13	+46 47 11.5	14.8 T	351
74P	1998 11 18.25522	03 36 22.33	+16 04 24.5	17.5 T	704	93P	1998 11 12.53646	06 33 54.38	+46 47 13.0		351
74P	1998 11 18.29986	03 36 20.43	+16 04 20.6	17.4 T	704	93P	1998 11 15.86045	06 36 12.01	+47 06 56.7	15.6 N	143
74P	1998 11 18.34432	03 36 18.58	+16 04 16.7	17.3 T	704	93P	1998 11 15.86476	06 36 12.13	+47 06 58.3	15.6 N	143
74P	1998 11 18.38909	03 36 16.73	+16 04 13.0	17.7 T	704	93P	1998 11 15.86906	06 36 12.30	+47 06 59.9	15.6 N	143
74P	1998 11 18.43382	03 36 14.79	+16 04 08.6	18.4 T	704	93P	1998 11 17.93924	06 37 18.15	+47 18 13.0	14.0 T	476
74P	1998 11 20.93387	03 34 33.97	+16 00 42.9	16.3 T	504	93P	1998 11 17.94722	06 37 18.44	+47 18 14.9	14.0 T	476
74P	1998 11 20.94858	03 34 33.40	+16 00 41.5	15.9 T	504	93P	1998 11 17.95347	06 37 18.58	+47 18 17.2	14.0 T	476
74P	1998 11 20.95808	03 34 32.97	+16 00 39.8	16.0 T	504	93P	1998 11 17.96042	06 37 18.82	+47 18 19.5	14.0 T	476
74P	1998 11 21.24222	03 34 21.60	+16 00 18.5	17.8 T	704	93P	1998 11 22.82100	06 38 52.15	+47 40 41.7	14.8 T	351
74P	1998 11 21.27983	03 34 20.00	+16 00 15.4	17.6 T	704	93P	1998 11 22.82368	06 38 52.19	+47 40 41.2		351
74P	1998 11 21.31744	03 34 18.43	+16 00 12.5	17.6 T	704	93P	1998 11 22.82631	06 38 52.26	+47 40 42.1		351
74P	1998 11 21.35479	03 34 16.87	+16 00 11.0	18.2 T	704	93P	1998 11 23.45843	06 38 58.59	+47 43 12.1		693
74P	1998 11 21.39191	03 34 15.35	+16 00 08.4	18.5 T	704	93P	1998 11 23.46738	06 38 58.62	+47 43 14.1		693
74P	1998 11 23.39003	03 32 54.97	+15 57 25.8		693	93P	1998 11 23.47127	06 38 58.63	+47 43 14.9	13.0 T	693
74P	1998 11 23.40215	03 32 54.47	+15 57 24.8	16.9 T	693	93P	1998 11 23.64757	06 39 00.85	+47 43 54.0	13.5 T	360
74P	1998 11 25.58542	03 31 27.44	+15 54 33.9	17.2 T	360	93P	1998 11 23.65069	06 39 00.85	+47 43 54.7		360
74P	1998 11 25.58958	03 31 27.26	+15 54 33.5		360	93P	1998 11 24.22590	06 39 05.00	+47 45 58.1	15.8 T	750
74P	1998 11 25.59549	03 31 27.01	+15 54 33.2		360	93P	1998 11 24.26354	06 39 05.22	+47 46 08.3	18.9 T	750
77P/Longmore						93P	1998 11 26.56330	06 39 09.87	+47 53 40.9		352
77P	1998 09 16.41245	01 20 34.78	+08 59 19.6		693	93P	1998 11 26.56677	06 39 09.82	+47 53 42.3		352
77P	1998 09 16.42080	01 20 34.48	+08 59 19.5		693	93P	1998 11 26.57024	06 39 09.86	+47 53 43.1		352
77P	1998 09 16.42885	01 20 34.20	+08 59 18.4	21.6 T	693	93P	1998 11 28.22157	06 39 02.02	+47 58 10.2	16.6 T	750
77P	1998 11 22.25693	00 40 18.54	+07 28 17.8		3 693	116P/Wild 4					
77P	1998 11 22.26235	00 40 18.40	+07 28 17.7		3 693	116P	1998 11 22.11131	22 35 49.06	-11 07 58.8		693
77P	1998 11 22.26983	00 40 18.24	+07 28 16.8	21.0 T	3 693	116P	1998 11 22.12017	22 35 49.23	-11 07 56.9		693
88P/Howell						116P	1998 11 22.12601	22 35 49.37	-11 07 56.5	20.4 T	693
88P	1998 11 10.41677	19 21 44.48	-25 59 37.3	14.1 T	351	117P/Helin-Roman-Alu 1					
88P	1998 11 10.41936	19 21 45.03	-25 59 38.6		351	117P	1998 11 10.51545	00 12 58.85	-09 56 06.4	16.5 T	360
88P	1998 11 12.37358	19 28 53.60	-25 44 41.9		900	117P	1998 11 10.51927	00 12 58.79	-09 56 06.4		360
88P	1998 11 12.38120	19 28 55.23	-25 44 38.3	13.2 T	900	117P	1998 11 23.19940	00 11 09.85	-09 29 22.4		693
88P	1998 11 12.43175	19 29 06.24	-25 44 15.8	14.3 T	351	117P	1998 11 23.21872	00 11 09.82	-09 29 18.9		693
88P	1998 11 12.43589	19 29 07.08	-25 44 12.2		351	117P	1998 11 23.23093	00 11 09.79	-09 29 17.0	16.6 T	693
88P	1998 11 15.40226	19 39 50.81	-25 19 17.6	11.7 T	360	130P/McNaught-Hughes					
88P	1998 11 15.40503	19 39 51.40	-25 19 16.1		360	130P	1998 11 12.54201	01 56 32.60	+02 22 09.2	18.8 T	360
88P	1998 11 23.40052	20 08 03.57	-23 59 49.0	11.7 T	360	130P	1998 11 12.54792	01 56 32.34	+02 22 09.2		360
88P	1998 11 23.40260	20 08 03.99	-23 59 47.5		360	130P	1998 11 13.64377	01 55 49.64	+02 22 06.4	19.4 T	867
88P	1998 11 26.38797	20 18 18.30	-23 26 01.2	14.0 T	351	130P	1998 11 13.65037	01 55 49.38	+02 22 06.4		867
88P	1998 11 26.39758	20 18 20.05	-23 25 53.3		351	130P	1998 11 13.65697	01 55 49.11	+02 22 06.5		867
93P/Lovas 1						130P	1998 11 23.27588	01 50 34.95	+02 29 09.7		693
93P	1998 11 08.54288	06 30 18.07	+46 20 49.9		352	130P	1998 11 23.29036	01 50 34.55	+02 29 10.8		693
93P	1998 11 08.54566	06 30 18.28	+46 20 50.5		352	130P	1998 11 23.30250	01 50 34.21	+02 29 11.9	18.9 T	693
93P	1998 11 08.54844	06 30 18.48	+46 20 51.6		352	130P	1998 11 26.46144	01 49 16.73	+02 34 23.8	19.7 T	402
93P	1998 11 08.66950	06 30 25.44	+46 21 45.5	14.1 T	900	130P	1998 11 26.46491	01 49 16.61	+02 34 23.9		402
93P	1998 11 08.67875	06 30 25.96	+46 21 49.4		900	130P	1998 11 26.46838	01 49 16.54	+02 34 25.4		402
93P	1998 11 10.66389	06 32 19.42	+46 35 14.7	13.5 T	360						
93P	1998 11 10.66667	06 32 19.55	+46 35 15.9		360						
93P	1998 11 10.84679	06 32 29.35	+46 36 20.3	13.8 T	504						

136P/Mueller 3

136P	1998 11 15.41649	21 26 20.27	-18 23 19.4	18.8 T	360
136P	1998 11 15.42066	21 26 20.55	-18 23 18.2		360
136P	1998 11 15.42483	21 26 20.76	-18 23 17.1		360

138P/Shoemaker-Levy 7

138P	1998 11 14.81495	08 04 24.37	+30 55 48.5	19.2 T	867
138P	1998 11 14.82120	08 04 24.59	+30 55 46.9		867
138P	1998 11 14.82711	08 04 24.90	+30 55 45.3		867
138P	1998 11 15.76163	08 05 01.72	+30 52 30.8	19.8 T	360
138P	1998 11 15.76788	08 05 01.96	+30 52 29.9		360
138P	1998 11 15.77274	08 05 02.12	+30 52 28.4		360
138P	1998 11 23.49398	08 08 31.55	+30 27 01.7		693
138P	1998 11 23.50762	08 08 31.74	+30 26 59.1		693
138P	1998 11 23.51970	08 08 31.91	+30 26 56.8	19.0 T	693

139P/Väisälä-Oterma

139P	1998 11 18.25966	03 40 20.80	+19 53 48.8	19.0 T	704
139P	1998 11 18.30431	03 40 18.84	+19 53 42.4	19.1 T	704
139P	1998 11 18.34877	03 40 16.98	+19 53 33.7	19.2 T	704
139P	1998 11 18.39379	03 40 15.06	+19 53 24.9	19.6 T	704
139P	1998 11 21.24665	03 38 18.89	+19 45 12.7	18.6 T	704
139P	1998 11 21.28462	03 38 17.24	+19 45 06.2	18.5 T	704
139P	1998 11 21.35923	03 38 14.02	+19 44 53.7	19.1 T	704
139P	1998 11 24.17264	03 36 20.46	+19 36 42.6	18.3 T	704
139P	1998 11 24.26860	03 36 16.56	+19 36 23.4	19.1 T	704
139P	1998 11 24.31722	03 36 14.41	+19 36 13.5	19.2 T	704
139P	1998 11 24.36465	03 36 12.35	+19 36 05.0	19.2 T	704
139P	1998 12 06.30443	03 28 44.43	+19 02 35.8		658
139P	1998 12 06.30946	03 28 44.28	+19 02 34.7		658
139P	1998 12 07.12825	03 28 16.79	+19 00 25.8	18.3 T	709
139P	1998 12 07.12015	03 28 17.06	+19 00 27.0	18.1 T	709

Note 1: involved with star. 2: bad seeing. 3: faint image.

OBSERVATIONS OF MINOR PLANETS

The summary lists, for each observatory code, the designation of each object observed (an asterisk signifying a new discovery), with three numbers indicating the number of observations, the number of different nights on which the object was observed and the arc (in days) covered by the observations; at the end of each observatory listing there is a count of the total number of observations, of the number of objects and of the number of discoveries followed by an asterisk, together with the total range of dates covered by the observations.

012 Uccle

T. Pauwels, Koninklijke Sterrenwacht van België, Ringlaan 3, B-1180 Brussels, Belgium [Thierry.Pauwels@oma.be]

Observers E. Elst, T. Pauwels
 Measurer T. Pauwels
 0.85-m $f/2.5$ Schmidt + CCD
 GSC 1.2

1992 GB₁, 7, 2, 1; 1994 PS₁₀, 5, 1, 0; 1994 PQ₃₁, 7, 2, 1; 1997 RG₉, 6, 2, 1; 1998 WN *, 14, 3, 6; [39, 5, 1*, 1998/11/16–1998/11/22]

022 Pino Torinese

Observer G. Massone
 Measurers P. Tanga, G. De Sanctis
 Reosc 105 mm + CCD
 GSC
 1998 VO₃₃, 3, 1, 0; [3, 1, 0*, 1998/11/18]

046 Kleť

J. Tichá, Hvězdárna Kleť, Zátkovo nábřeží 4, CZ-37001 České Budějovice, Czech Republic [klet@klet.cz]

Observers J. Tichá, M. Tichý, Z. Moravec
 Measurer M. Tichý
 0.57-m $f/5.2$ reflector + CCD
 GSC, USNO-SA1.0

1979 SO, 6, 2, 1; 1981 EZ₆, 8, 2, 3; 1981 RQ, 6, 2, 5; 1987 VR, 9, 3, 6; 1994 TN₃, 6, 2, 1; 1996 AO₁, 4, 1, 0; 1996 HF₁, 6, 2, 1; 1996 HR₂₄, 6, 2, 1; 1997 PY₁, 6, 2, 1; 1997 PU₂, 6, 2, 11; 1997 PE₃, 6, 2, 11; 1997 QF, 9, 3, 12; 1997 QK, 6, 2, 5; 1997 TY₇, 6, 2, 11; 1997 TB₁₂, 6, 2, 11; 1997 VB₁, 9, 3, 12; 1998 QS₅₂, 3, 1, 0; 1998 SZ₃₅, 6, 2, 1; 1998 SB₃₆, 6, 2, 1; 1998 SX₁₆₃, 10, 2, 1; 1998 SF₁₆₄, 9, 2, 1; 1998 TU₃, 3, 1, 0; 1998 TE₅, 13, 3, 5; 1998 TH₆, 7, 2, 1; 1998 TJ₆, 12, 4, 13; 1998 UO₁, 4, 1, 0; 1998 UM₆, 8, 2, 13; 1998 UN₆, 9, 3, 14; 1998 UO₆, 12, 4, 14; 1998 UA₁₅, 9, 3, 12; 1998 UT₁₈, 4, 1, 0; 1998 VG, 6, 2, 6; 1998 VN, 12, 3, 2; 1998 VO, 16, 4, 13; 1998 VP, 9, 2, 1; 1998 VQ, 4, 1, 0; 1998 VR, 20, 5, 21; 1998 VS, 11, 3, 13; 1998 VT, 4, 1, 0; 1998 VU *, 17, 4, 18; 1998 VZ₄, 4, 1, 0; 1998 VC₃₁ *, 21, 5, 15; 1998 VD₃₁, 23, 4, 11; 1998 VE₃₁, 5, 1, 0; 1998 VF₃₁, 4, 1, 0; 1998 VD₃₂, 10, 2, 9; 1998 VE₃₂, 5, 1, 0; 1998 VO₃₃, 7, 2, 6; 1998 WL, 4, 1, 0; 1998 WM, 7, 2, 6; 1998 WQ *, 7, 2, 1; 1998 WR, 4, 1, 0; 1998 WS, 3, 1, 0; 1998 WT, 7, 2, 6; 1998 WY₁, 5, 1, 0; 1998 WZ₁, 5, 1, 0; 1998 WA₂, 4, 1, 0; 1998 WB₂, 7, 2, 6; 1998 WP₅, 4, 1, 0; 1998 WQ₅, 4, 1, 0; 1998 WR₅, 4, 1, 0; 1998 WS₅, 5, 1, 0; 1998 WL₆ *, 10, 2, 1; 1998 WM₆ *, 11, 2, 1; 1998 WZ₆, 4, 1, 0; 1998 WO₇, 8, 2, 1; 1998 WT₇, 5, 1, 0; 1998 WL₈ *, 7, 2, 3; 1998 WC₉, 5, 1, 0; 1998 WT₂₄, 6, 1, 0; 1998 XB, 4, 1, 0; (3705), 6, 2, 1; (4114), 3, 1, 0; (4143), 3, 1, 0; (9572), 4, 1, 0; [544, 75, 6*, 1998/11/07–1998/12/04]

089 Nikolaev

L. A. Gudkova, 1 Observatornay Street, Nikolaev 327030, Ukraine
gudkova@mao.nikolaev.ua

Observers G. K. Gorel, L. A. Gudkova
 0.12-m $f/17$ astrograph
 PPM

(1), 211, 211, 12079; (2), 257, 256, 12280; (3), 243, 241, 11942; (4), 232, 229, 12130; (5), 4, 4, 9; (6), 219, 219, 12000; (7), 193, 193, 12081; (11), 191, 191, 11860; (15), 12, 12, 1539; (18), 209, 209, 10717; (25), 34, 34, 5621; (39), 237, 236, 11276; (40), 203, 203, 11930; (148), 8, 8, 123; (185), 6, 4, 85; (389), 4, 4, 39; (433), 11, 8, 57; (532), 68, 68, 5666; (704), 65, 65, 5987; [2407, 19, 0*, 1961/04/04–1995/03/01]

097 Wise Observatory, Mitzpeh Ramon

E. O. Ofek, Wise Observatory, Tel-Aviv University, IL-69978 Tel-Aviv, Israel
eran@wise1.tau.ac.il

Observers E. O. Ofek, I. Manulis
 Measurer E. O. Ofek
 1.0-m $f/7$ reflector + CCD
 USNO-A1.0

1988 RL₉, 2, 1, 0; 1997 NU, 2, 1, 0; 1998 OQ₁₁, 2, 1, 0; 1998 XB, 4, 2, 1; [10, 4, 0*, 1998/12/03–1998/12/05]

104 San Marcello Pistoiese

L. Tesi, Osservatorio di Pian dei Termini, Viale Panoramico 45, I-51028 San Marcello Pistoiese (PT), Italy [iau@arcetri.astro.it]

Observers L. Tesi, A. Boattini, M. Tombelli
 Measurers G. Forti, L. Tesi, M. Tombelli, A. Boattini

0.40-m $f/5$ reflector + CCD

GSC

1989 TH₁, 3, 1, 0; 1990 QM, 4, 1, 0; 1992 EA₆, 3, 1, 0; 1993 EQ, 3, 1, 0; 1996 CJ₇, 2, 1, 0; 1996 CL₇, 3, 1, 0; 1996 CN₇, 2, 1, 0; 1996 CY₇, 6, 2, 13; 1996 FO₅, 3, 1, 0; 1997 NZ₂, 3, 1, 0; 1997 NK₁₀, 6, 2, 2; 1997 OC₁, 4, 1, 0; 1998 TU₃, 3, 1, 0; 1998 TG₅, 12, 3, 7; 1998 TB₂₉, 8, 2, 1; 1998 UT₁₈, 3, 1, 0; 1998 UT₂₂, 6, 1, 0; 1998 VR, 3, 1, 0; 1998 VB₄, 3, 1, 0; 1998 VC₄, 4, 1, 0; 1998 VD₃₁, 4, 1, 0; 1998 VE₃₁, 2, 1, 0; 1998 VF₃₁, 3, 1, 0; 1998 VJ₃₃, 3, 1, 0; 1998 VK₃₃ *, 12, 3, 2; 1998 VL₃₃ *, 8, 3, 13; 1998 VO₃₃, 4, 1, 0; 1998 VS₃₄ *, 4, 1, 0; 1998 WG *, 13, 4, 13; 1998 WH *, 13, 4, 13; 1998 WB₂, 4, 1, 0; 1998 WP₂, 2, 1, 0; 1998 WQ₂, 6, 1, 0; 1998 WZ₆, 1, 1, 0; 1998 WQ₇ *, 6, 2, 1; (9538), 3, 1, 0; (9573), 3, 1, 0; (9598), 3, 1, 0; (9629), 3, 1, 0; (9667), 3, 1, 0; [184, 40, 6*, 1998/11/08–1998/11/29]

106 Crni vrh

H. Mikuž, Kersnikova 11, SI-61000 Ljubljana, Slovenia [herman.mikuz@uni-lj.si]

Observers H. Mikuž, S. Maticic, B. Dintinjana, J. Skvarc

36-cm $f/6.7$ S-C + CCD + V filter

GSC 1.1, USNO-SA1.0

1998 UZ₂₀, 8, 2, 1; 1998 VN, 4, 1, 0; 1998 VO, 7, 2, 1; 1998 VP, 4, 1, 0; 1998 VR, 7, 2, 1; 1998 VG₁, 8, 3, 2; 1998 VD₃₁, 4, 1, 0; 1998 VO₃₃, 9, 1, 0; 1998 WL, 4, 1, 0; 1998 WM, 4, 1, 0; 1998 WA₂, 4, 1, 0; 1998 WB₂, 4, 1, 0; (11), 2, 1, 0; (19), 2, 1, 0; (40), 4, 1, 0; (113), 2, 1, 0; (181), 2, 1, 0; (349), 2, 1, 0; (1036), 2, 1, 0; (6957), 4, 1, 0; [87, 20, 0*, 1998/11/11–1998/11/19]

107 Cavezzo

M. Nicolini, via C. Battisti 48, I-41032 Carpi (MO), Italy [mnico@iol.it]

Observers M. Nicolini, M. Facchini, P. Negrelli

Measurer M. Nicolini

0.40-m $f/5.5$ reflector + CCD

GSC

1995 DZ₁, 5, 2, 11; (7095), 3, 1, 0; [8, 2, 0*, 1998/11/07–1998/11/18]

108 Montelupo

M. Tombelli, Via Bozzeto 26, I-50056 Montelupo (Fi), Italy

[iau@arcetri.astro.it]

Observers M. Tombelli, A. Boattini, D. Guidetti, G. Forti, E. Masotti

Measurers M. Tombelli, G. Forti

0.30-m $f/5.7$ Schmidt-Cassegrain + CCD

GSC

1996 CL₇, 3, 1, 0; 1998 VE₃₂, 3, 1, 0; 1998 VF₃₂, 6, 1, 0; 1998 WL, 3, 1, 0; 1998 WT, 3, 1, 0; [18, 5, 0*, 1998/11/17]

113 Volkssternwarte Drebach, Schönbrunn

G. Lehmann, Persterstrasse 6h, D-09430 Drebach, Germany

[g.lehmann@abo.freiepresse.de]

Observers G. Lehmann, J. Kandler

0.50-m $f/4$ reflector + CCD, 0.18-m $f/9.0$ refractor + CCD

USNO-A1.0

1982 DW₃, 2, 1, 0; 1987 WT₁, 3, 1, 0; 1989 AJ₆, 2, 1, 0; 1989 WU₄, 2, 1, 0; 1990 TU₁₁, 2, 1, 0; 1990 TG₁₃, 3, 1, 0; 1991 AC₃, 2, 1, 0; 1991 RS₂, 2, 1, 0; 1991 RB₃, 2, 1, 0; 1991 RT₃, 2, 1, 0; 1991 RJ₇, 2, 1, 0; 1991 TC₃, 2, 1, 0; 1991 TX₄, 3, 1, 0; 1991 TO₁₃, 2, 1, 0; 1991 UE₅, 3, 1, 0; 1991 YL₁, 2, 1, 0; 1992 HS₄, 2, 1, 0; 1992 SJ₂, 2, 1, 0; 1998 UO₁₈, 1, 1, 0; [41, 19, 0*, 1998/11/21–1998/11/22]

118 Modra

A. Galád, AGO MFF UK, P.O. Box 4, SK-90001 Modra, Slovakia

[ago.modra@center.fmph.uniba.sk]

Observers A. Galád, D. Kalmančok, L. Kornoš, P. Kolény, J. Tóth

0.6-m $f/5.5$ reflector + CCD

GSC, USNO-SA1.0

1989 UR, 5, 2, 8; 1996 ER₂, 7, 3, 17; 1998 KU₂, 3, 1, 0; 1998 MQ, 4, 2, 19; 1998 ML₁₄, 3, 1, 0; 1998 QR₁₅, 3, 1, 0; 1998 QS₅₂, 5, 2, 12; 1998 QU₁₀₆, 6, 2, 1; 1998 TT₃, 3, 1, 0; 1998 UO₁, 2, 1, 0; 1998 UQ₁, 4, 2, 8; 1998 UT₁₈, 3, 1, 0; 1998 VF, 14, 5, 12; 1998 VN, 6, 2, 5; 1998 VO, 9, 3, 13; 1998 VP, 3, 1, 0; 1998 VQ, 6, 2, 5; 1998 VR, 16, 6, 19; 1998 VS, 3, 1, 0; 1998 VD₃₁, 12, 5, 16; 1998 VD₃₂, 8, 3, 4; 1998 VE₃₂, 13, 5, 12; 1998 VF₃₂, 3, 1, 0; 1998 VO₃₃, 9, 3, 5; 1998 WL, 3, 1, 0; 1998 WM, 9, 3, 5; 1998 WT, 8, 3, 2; 1998 WA₂, 3, 1, 0; 1998 WB₂, 11, 4, 9; 1998 WP₅, 3, 1, 0; 1998 WQ₅, 3, 1, 0; 1998 WR₅, 2, 1, 0; 1998 WR₆ *, 9, 3, 5; 1998 WZ₆, 3, 1, 0; 1998 WO₇, 3, 1, 0; 1998 WT₇, 3, 1, 0; (250), 2, 1, 0; (1017), 2, 1, 0; (2880), 3, 1, 0; (7358), 2, 1, 0; (9172), 3, 1, 0; [222, 41, 1*, 1998/11/11–1998/12/05]

120 Višňjan

K. Korlević, Istarska 5, HR-51463 Višňjan, Croatia [korado@astro.hr]

Observers K. Korlević, P. Korlević, A. Ritosa, M. Dusić

Measurers K. Korlević, M. Jurić

0.41-m $f/4.3$ reflector + CCD

USNO-SA1.0

1981 EM₂₄, 2, 1, 0; 1981 QJ₃, 2, 1, 0; 1982 UC₁₁, 5, 2, 1; 1986 QT₁, 3, 1, 0; 1987 DN₆, 8, 3, 4; 1987 RN₆, 3, 2, 13; 1987 WT₁, 2, 1, 0; 1990 QM, 6, 1, 0; 1990 QJ₅, 3, 1, 0; 1990 RT₈, 2, 1, 0; 1991 GP₃, 5, 2, 2; 1991 GA₆, 5, 2, 3; 1991 RX₂₅, 3, 1, 0; 1991 XZ, 3, 1, 0; 1992 EP₆, 3, 1, 0; 1992 EG₁₄, 3, 1, 0; 1992 YH₂, 4, 1, 0; 1993 FJ₅₀, 3, 1, 0; 1993 QE₁, 2, 1, 0; 1993 VL₃, 2, 1, 0; 1994 PA₂, 2, 1, 0; 1994 VL, 7, 3, 4; 1994 VE₁, 5, 2, 4; 1996 AB₄, 1, 1, 0; 1996 EO₁₂, 3, 1, 0; 1996 HT₁₆, 2, 1, 0; 1996 HR₂₁, 7, 2, 15; 1996 HP₂₃, 7, 2, 4; 1996 JN₆, 5, 2, 1; 1996 KX₂, 2, 1, 0; 1997 GJ₁₃, 3, 1, 0; 1997 GK₂₁, 2, 1, 0; 1997 JH₁₈, 3, 1, 0; 1997 NU₁, 2, 1, 0; 1997 NZ₂, 2, 1, 0; 1997 TS₂₅, 2, 1, 0; 1998 QR₆, 2, 1, 0; 1998 QJ₉₁, 5, 2, 2; 1998 QR₉₃, 2, 1, 0; 1998 QS₉₈, 2, 1, 0; 1998 SE₁₃, 11, 4, 4; 1998 SO₃₅, 2, 1, 0; 1998 SG₄₉, 4, 2, 2; 1998 SU₅₂, 10, 2, 2; 1998 SR₁₄₆, 10, 5, 6; 1998 SV₁₄₇, 2, 1, 0; 1998 TF, 17, 5, 6; 1998 TV₁, 12, 1, 0; 1998 TL₂, 11, 4, 4; 1998 TN₂, 5, 2, 2; 1998 TE₅, 3, 1, 0; 1998 TF₅, 2, 1, 0; 1998 TG₅, 3, 1, 0; 1998 TJ₅, 3, 1, 0; 1998 TM₅, 2, 1, 0; 1998 TN₅, 5, 2, 4; 1998 TS₅, 1, 1, 0; 1998 TT₅, 2, 1, 0; 1998 TV₅, 3, 1, 0; 1998 TX₅, 3, 1, 0; 1998 TY₅, 3, 1, 0; 1998 TD₆, 3, 1, 0; 1998 TE₆, 2, 1, 0; 1998 TF₆, 2, 1, 0; 1998 TT₆, 3, 1, 0; 1998 TU₆, 2, 1, 0; 1998 TV₆, 5, 2, 4; 1998 TD₁₅, 2, 1, 0; 1998 TR₁₅, 8, 4, 4; 1998 TH₁₆, 2, 1, 0; 1998 TR₁₇, 2, 1, 0; 1998 TW₁₇, 2, 1, 0; 1998 TX₁₇, 5, 2, 11; 1998 TY₁₇, 2, 1, 0; 1998 TV₂₉, 2, 1, 0; 1998 TT₃₃, 2, 1, 0; 1998 TV₃₃, 4, 2, 9; 1998 UW₁, 6, 2, 2; 1998 UX₁, 2, 1, 0; 1998 UF₂, 4, 1, 0; 1998 UC₄, 2, 1, 0; 1998 UE₄, 2, 1, 0; 1998 UF₄, 2, 1, 0; 1998 UL₆, 3, 1, 0; 1998 UT₆, 2, 1, 0; 1998 UZ₆, 2, 1, 0; 1998 UA₇, 2, 1, 0; 1998 UB₇, 2, 1, 0; 1998 UC₇, 4, 2, 1; 1998 UE₇, 2, 1, 0; 1998 UF₇, 6, 2, 19; 1998 UH₇, 2, 1, 0; 1998 UJ₇, 2, 1, 0; 1998 UL₇, 2, 1, 0; 1998 UQ₇, 2, 1, 0; 1998 UT₇, 5, 2, 2; 1998 UX₇, 5, 2, 11; 1998 UY₇, 2, 1, 0; 1998 UB₈, 3, 1, 0; 1998 UD₈, 6, 2, 4; 1998 UE₈, 7, 2, 2; 1998 UF₈, 7, 2, 3; 1998 UG₈, 7, 2, 2; 1998 UP₈, 2, 1, 0; 1998 UE₁₅, 2, 1, 0; 1998 UL₁₅, 4, 2, 11; 1998 UM₁₅, 4, 1, 0; 1998 UO₁₅, 2, 1, 0; 1998 UR₁₅, 8, 3, 35; 1998 UQ₁₅, 4, 2, 1; 1998 US₁₅, 2, 1, 0; 1998 UK₁₆, 2, 1, 0; 1998 UL₁₆, 10, 3, 4; 1998 UN₁₆, 3, 1, 0; 1998 UO₁₆, 4, 1, 0; 1998 UP₁₆, 2, 1, 0; 1998 UQ₁₆, 6, 2, 4; 1998 UY₁₈, 8, 3, 4; 1998 UZ₁₈, 3, 1, 0; 1998 UA₁₉, 2, 1, 0; 1998 UC₁₉, 2, 1, 0; 1998 UA₂₀, 2, 1, 0; 1998 UB₂₀, 2, 1, 0; 1998 UC₂₀, 5, 1, 0; 1998 UG₂₀, 9, 3, 17; 1998 UN₂₀, 5, 2, 3; 1998 UP₂₀, 2, 1, 0; 1998 UT₂₀, 4, 2, 12; 1998 UU₂₀, 3, 1, 0; 1998 UV₂₀, 2, 1, 0; 1998 UW₂₂, 2, 1, 0; 1998 UA₂₃, 2, 1, 0; 1998 UR₂₄, 5, 2, 1; 1998 UV₂₄, 4, 2, 9; 1998 UU₂₈, 2, 1, 0; 1998 UQ₄₀, 2, 1, 0; 1998 VG₁, 2, 1, 0; 1998 VJ₁, 4, 2, 1; 1998 VA₃, 3, 1, 0; 1998 VN₃, 2, 1, 0; 1998 VN₄, 2, 1, 0; 1998 VA₅ *, 4, 2, 2; 1998 VB₅ *, 6, 3, 15; 1998 VC₅ *, 10, 4, 18; 1998 VD₅ *, 9, 3, 15; 1998 VE₅ *, 9, 3, 15; 1998 VF₅ *, 4, 2, 1; 1998 VG₅ *, 4, 2, 1; 1998 VA₉, 5, 2, 4; 1998 VH₁₇, 2, 1, 0; 1998 VP₁₇, 3, 1, 0; 1998 VH₁₉, 3, 1, 0; 1998 VP₂₀, 2, 1, 0; 1998 VO₂₄, 2, 1, 0; 1998 VG₂₅, 2, 1, 0; 1998 VT₂₇, 2, 1, 0; 1998 VK₂₈, 6, 2, 3; 1998 VB₂₉, 3, 1, 0; 1998 VN₃₁ *, 5, 2, 4; 1998 VO₃₁ *, 9, 3, 15; 1998 VP₃₁ *, 6, 2, 2; 1998 VW₃₂, 2, 1, 0; 1998 VX₃₂, 2, 1, 0; 1998 VA₃₃, 4, 1, 0; 1998 VL₃₃, 2, 1, 0; 1998 VO₃₃, 3, 1, 0; 1998 VE₃₅ *, 7, 3, 12; 1998 VZ₃₇, 2, 1, 0; 1998 WL, 2, 1, 0; 1998 WN₅, 2, 1, 0; 1998 WA₆, 4, 2, 3; 1998 WY₇ *, 10, 4, 5; 1998 WU₈ *, 4, 2, 1; 1998 WD₉ *, 5, 2, 1; 1998 WE₉ *, 10, 2, 1; 1998 WF₉ *, 5, 2, 1; 1998 WG₉ *, 5, 2, 1; 1998 WH₉ *, 6, 2, 1; 1998 WJ₉ *, 5, 2, 1; 1998 WM₉ *, 6, 2, 3; 1998 WN₉ *, 10, 3, 10; 1998 WO₉ *, 5, 2, 1; 1998 WP₉ *, 5, 2, 1; 1998 WQ₉ *, 5, 2, 1; 1998 WR₉ *, 4, 2, 1; 1998 WS₉ *, 4, 2, 1; 1998 WU₁₀, 2, 1, 0; 1998 WV₁₀, 2, 1, 0; 1998 WF₁₂, 2, 1, 0; 1998 WJ₁₂, 2, 1, 0; 1998 WC₁₄, 2, 1, 0; 1998 WH₁₄, 2, 1, 0; 1998 WM₁₄, 2, 1, 0; 1998 WT₁₄, 2, 1, 0; 1998 WU₁₄, 2, 1, 0; 1998 WS₂₁, 2, 1, 0; 1998 WM₂₂, 2, 1, 0; 1998 WO₂₂, 2, 1, 0; 1998 WP₂₂, 2, 1, 0; 1998 WQ₂₂, 2, 1, 0; 1998 WR₂₅, 3, 1, 0; 4602 P-L, 3, 1, 0; 4812 P-L, 1, 1, 0; 4882 P-L, 7, 3, 4; 9062 P-L, 2, 1, 0; (423), 2, 1, 0; (618), 3, 1, 0; (729), 2, 1, 0; (813), 2, 1, 0; (1032), 3, 1, 0; (1650), 2, 1, 0; (1748), 2, 1, 0; (1968), 2, 1, 0; (2482), 2, 1, 0; (2505), 4, 2, 2; (2528), 2, 1, 0; (2954), 2, 1, 0; (3049), 4, 1, 0; (3173), 3, 1, 0; (4057), 2, 1, 0; (4078), 9, 3, 12; (4537), 3, 1, 0; (4767), 3, 1, 0; (4948), 2, 1, 0; (5018), 3, 1, 0; (5020), 2, 1, 0; (5030), 9, 3, 6; (5375), 3, 1, 0; (5721), 2, 1, 0; (5945), 4, 2, 16; (6098), 6, 2, 15; (6171), 5, 2, 1; (6208), 2, 1, 0; (6282), 3, 1, 0; (6366), 2, 1, 0; (6876), 3, 1, 0; (6887), 3, 1, 0; (6925), 3, 1, 0; (6967), 3, 1, 0; (7067), 2, 1, 0; (7462), 4, 1, 0; (7768), 2, 1, 0; (7812), 2, 1, 0; (7859), 3, 1, 0; (7901), 2, 1, 0; (7980), 3, 1, 0; (9532), 2, 1, 0; (9566), 3, 1, 0; (9586), 3, 1, 0; (9600), 2, 1, 0; (9672), 2, 1, 0; (9693), 2, 1, 0; [920, 252, 26*, 1998/10/23–1998/12/06]

121 Kharkov University, Chuguevskaya Station

Yu. N. Krugly, Astronomical Observatory, Kharkov State University, Sumska
Street 35, Kharkov 310022, Ukraine [krugly@astron.kharkov.ua]

0.70-m $f/4$ reflector + CCD

GSC

1998 VR, 4, 1, 0; [4, 1, 0*, 1998/11/14]

127 Bornheim

N. Ehring, Stationenweg 54, D-53332 Bornheim, Germany [norbert.ehring@t-online.de]

0.19-m $f/4$ FFC + CCD

GSC

1978 SH₃, 2, 1, 0; 1981 VN, 2, 1, 0; 1982 TS₁, 10, 4, 9; 1986 RB₁₂, 4, 2, 9; 1987 SH₇, 4, 2, 4; 1989 TH₁, 4, 2, 4; 1989 UR, 2, 1, 0; 1990 QB₅, 2, 1, 0; 1991 AK, 2, 1, 0; 1991 TH₁, 4, 2, 2; 1992 EK₁₄, 4, 2, 9; 1994 VE₁, 2, 1, 0; 1998 RG₁₆, 2, 1, 0; 1998 VY₃₃ *, 15, 4, 9; 5211 T-2, 2, 1, 0; (2920), 2, 1, 0; (6100), 2, 1, 0; (9595), 4, 2, 9; [69, 18, 1*, 1998/10/30–1998/11/20]

130 Lumezzane

S. Foglia, F. Bisleri 11, I-20418 Milan, Italy [md3576@mcmlink.it]

Observers G. Pizzetti, W. Marinello

Measurer G. Pizzetti

0.40-m $f/4$ reflector + CCD

USNO-SA1.0

(457), 4, 1, 0; (1002), 3, 1, 0; [7, 2, 0*, 1998/11/07–1998/11/08]

132 Bedoin

P. Antonini, 47 rue Guillaume Puy, F-84000 Avignon, France

[Pierre.Antonini@wanadoo.fr]

0.20-m $f/3.5$ reflector + CCD

GSC

1993 GC₁, 3, 1, 0; 1997 UV₁₀, 3, 1, 0; 1997 VV, 2, 1, 0; 1998 QG₆, 3, 1, 0; 1998 SR₁, 4, 1, 0; 1998 TL₂, 3, 1, 0; 1998 UQ₂, 4, 1, 0; [22, 7, 0*, 1998/11/11–1998/11/20]

133 Les Tardieux

M. Boeuf, Les Tardieux, St Julien, F-13500 Martigues, France

[Michel.Boeuf@wanadoo.fr]

0.20-m $f/3.5$ reflector + CCD

GSC

1998 SA, 4, 2, 1; 1998 WJ₆ *, 7, 3, 4; [11, 2, 1*, 1998/11/07–1998/11/26]

138 Village-Neuf

C. Demeautis, 9 rue de Huningue, F-68300 Saint-Louis, France

[Sky.walker@wanadoo.fr]

Observers C. Demeautis, D. Matter, D. Christen

Measurer C. Demeautis

0.30-m $f/4$ reflector + CCD

GSC

1997 VV, 4, 1, 0; 1998 WN₆ *, 7, 2, 2; [11, 2, 1*, 1998/11/22–1998/11/24]

143 Gnosca

S. Sposetti, CH-6525 Gnosca, Switzerland [spo@dial.eunet.ch]

0.20-m $f/7.1$ reflector + CCD

GSC, USNO-SA1.0

1989 UR, 3, 1, 0; 1997 PJ₄, 3, 1, 0; 1997 UV₁₀, 2, 1, 0; 1998 KU₂, 9, 3, 9; 1998 MK₃₀, 3, 1, 0; 1998 VN, 3, 1, 0; 1998 VO, 7, 2, 8; 1998 VR, 11, 3, 8; 1998 VT₅ *, 27, 8, 11; 1998 VE₃₂, 2, 1, 0; 1998 VF₃₂, 4, 1, 0; 1998 VO₃₃, 3, 1, 0; (1508), 3, 1, 0; (3289), 3, 1, 0; (3352), 6, 2, 11; (3603), 6, 2, 1; (4060), 3, 1, 0; (4339), 3, 1, 0; (5600), 5, 1, 0; (5732), 3, 1, 0; (5738), 3, 1, 0; (6326), 3, 1,

0; (6338), 6, 2, 11; (6935), 3, 1, 0; (7172), 6, 1, 0; (7201), 5, 2, 8; (7202), 3, 1, 0; (7358), 11, 3, 8; [149, 28, 1*, 1998/11/10–1998/11/22]

145 's-Gravenwezel Observatory

T. Alderweireldt, Rozenlaan 14, B-2970 's-Gravenwezel, Belgium

[Tom.Alderweireldt@ping.be]

0.20-m $f/2$ Schmidt-Cassegrain + CCD

Hipparcos, ACT, Tycho, PPM, GSC 1.2

1988 VR₂, 4, 1, 0; (4834), 2, 1, 0; (9541), 4, 1, 0; [10, 3, 0*, 1998/11/16–1998/11/18]

151 Eschenberg Observatory, Winterthur

M. Griesser, Breitenstrasse 2, CH-8542 Wiesendangen, Switzerland

[griesser@spectraweb.ch]

0.25-m $f/8.0$ reflector + CCD

GSC

1989 UR, 4, 2, 11; 1998 PG, 3, 1, 0; 1998 UT₁₈, 3, 1, 0; 1998 VR, 9, 3, 11; 1998 VE₃₂, 3, 1, 0; 1998 VO₃₃, 6, 2, 5; 1998 WS, 6, 2, 6; (344), 2, 1, 0; (1036), 2, 1, 0; (1373), 2, 1, 0; (1508), 2, 1, 0; (1627), 2, 1, 0; (4268), 2, 1, 0; (5164), 2, 1, 0; (5732), 2, 1, 0; (6618), 2, 1, 0; (6877), 2, 1, 0; (6985), 2, 1, 0; [56, 18, 0*, 1998/11/11–1998/11/29]

154 Cortina

A. Dimai, Via Pecol 95, I-32043 Cortina d' Ampezzo (BL), Italy

Observer A. Dimai

Measurer V. Goretti

0.50-m $f/3.8$ Newton + CCD

GSC

(9263), 1, 1, 0; [1, 1, 0*, 1998/10/25]

158 Promiod

G. A. Sala, CCD Astronomy Research Centre, Via Cottalorda 27, I-21022 Azzate (VA), Italy [g.sala@skylink.it]

0.30-m $f/7$ Schmidt-Cassegrain + CCD

USNO-SA1.0

1998 TP₁₇, 5, 2, 1; 1998 VD₃₁, 3, 1, 0; 1998 VF₃₁, 3, 1, 0; [11, 3, 0*, 1998/11/17–1998/11/18]

159 Monte Agliale

M. M. M. Santangelo, Monte Agliale Astronomical Observatory, Borgo a Mozzano, Lucca, Italy [ilra@comune.lucca.it]

0.51-m $f/4.5$ Newtonian reflector + CCD

USNO-A1.0

1984 DQ, 5, 1, 0; 1998 WK₁ *, 19, 4, 6; 1998 WL₉ *, 12, 2, 1; 2048 P-L, 5, 1, 0; (6390), 7, 2, 2; [48, 5, 2*, 1998/10/30–1998/11/29]

292 Burlington

T. Handley, 13 Linden Road, Burlington, NJ 08016, U.S.A.

0.30-m $f/3.0$ Schmidt-Cassegrain + focal reducer + CCD

GSC

1998 QH₅₅, 9, 3, 13; 1998 RH₆₇, 2, 1, 0; 1998 RM₆₇, 9, 3, 10; 1998 SS₆₁, 12, 3, 10; 1998 SZ₉₁, 3, 1, 0; [35, 5, 0*, 1998/10/15–1998/10/30]

294 Astrophysical Observatory, College of Staten Island

I. Robbins, The College of Staten Island, 2800 Victory Boulevard, Staten Island, NY 10314, U.S.A. [robbins@postbox.csi.cuny.edu]

Observer I. Robbins

Measurers S. Parello, J. Zito

0.41-m $f/4.7$ Schmidt-Cassegrain + CCD

GSC, USNO-SA1.0

1987 UX, 4, 2, 4; 1998 PG, 9, 4, 23; (453), 4, 2, 2; (3368), 4, 2, 19; (5186), 4, 2, 14; (6020), 6, 3, 2; [31, 6, 0*, 1998/09/24–1998/10/21]

327 Peking Observatory, Xinglong Station

J. Zhu, Peking Astronomical Observatory, Chinese Academy of Sciences,
Zhongguancun, Peking 100101, Peoples Republic of China
[zj@bac.pku.edu.cn]

Observers J. Zhu, X. S. Liu, Y. J. Chen, X. Y. Li, X. M. Teng, Y. H. Li
Measurers X. Y. Li, Y. J. Chen, X. M. Teng, J. Zhu
0.60-m Schmidt + CCD

1972 TE, 9, 3, 8; 1975 UE, 12, 4, 8; 1976 YR₁, 3, 1, 0; 1978 UN₅, 3, 1, 0; 1981 RQ, 3, 1, 0; 1982 FA, 3, 1, 0; 1985 QP, 3, 1, 0; 1985 QD₆, 3, 1, 0; 1985 TU, 3, 1, 0; 1988 VY, 3, 1, 0; 1989 BV₁, 3, 1, 0; 1989 TD₁₆, 6, 2, 4; 1990 QX₁₇, 6, 2, 1; 1990 SK₂₈, 6, 2, 23; 1990 UU₁, 3, 1, 0; 1991 NC₁, 3, 1, 0; 1991 PM₁₃, 3, 1, 0; 1991 PL₁₈, 3, 1, 0; 1991 UR, 3, 1, 0; 1992 AJ₁, 3, 1, 0; 1992 PK₂, 3, 1, 0; 1992 UP₆, 3, 1, 0; 1993 OS₁₀, 3, 1, 0; 1993 RY₁₁, 3, 1, 0; 1993 TV₁₂, 3, 1, 0; 1994 RO, 3, 1, 0; 1994 TQ₁, 9, 3, 8; 1994 TR₁, 3, 1, 0; 1994 TQ₃, 3, 1, 0; 1994 UQ₁, 3, 1, 0; 1994 VB₇, 3, 1, 0; 1995 BB, 3, 1, 0; 1995 XE, 3, 1, 0; 1995 YO₃, 3, 1, 0; 1996 AB₄, 3, 1, 0; 1996 CU₈, 3, 1, 0; 1996 GP₁, 6, 1, 0; 1997 FY₂, 3, 1, 0; 1997 GQ₆, 3, 1, 0; 1997 GC₁₉, 6, 2, 26; 1997 GX₂₀, 6, 2, 2; 1997 SS₃₁, 3, 1, 0; 1997 WZ₁₆, 3, 1, 0; 1998 OB₁₃, 4, 1, 0; 1998 QZ, 3, 1, 0; 1998 QN₁, 3, 1, 0; 1998 QP₁, 3, 1, 0; 1998 QP₆, 6, 1, 0; 1998 QL₂₄, 3, 1, 0; 1998 QT₂₄, 3, 1, 0; 1998 QS₃₀, 3, 1, 0; 1998 QE₃₁, 3, 1, 0; 1998 QF₃₅, 3, 1, 0; 1998 QF₄₇, 3, 1, 0; 1998 QT₅₅, 3, 1, 0; 1998 QT₆₂, 3, 1, 0; 1998 QK₆₃, 6, 2, 5; 1998 QJ₇₃, 3, 1, 0; 1998 QF₈₀, 9, 3, 8; 1998 QP₉₀, 3, 1, 0; 1998 QR₉₁, 3, 1, 0; 1998 QE₁₀₁, 3, 1, 0; 1998 QH₁₀₄, 6, 2, 1; 1998 RR₂, 3, 1, 0; 1998 RF₄, 3, 1, 0; 1998 RU₁₅, 3, 1, 0; 1998 RD₁₉, 6, 2, 5; 1998 RP₂₂, 3, 1, 0; 1998 RP₂₈, 3, 1, 0; 1998 RR₂₉, 3, 1, 0; 1998 RC₄₈, 3, 1, 0; 1998 RC₅₁, 3, 1, 0; 1998 RD₅₁, 3, 1, 0; 1998 RQ₅₃, 3, 1, 0; 1998 RR₅₃, 3, 1, 0; 1998 RM₅₄, 3, 1, 0; 1998 RO₅₄, 6, 2, 5; 1998 RP₅₄, 3, 1, 0; 1998 RF₅₅, 3, 1, 0; 1998 RR₅₅, 3, 1, 0; 1998 RU₅₅, 3, 1, 0; 1998 RR₅₆, 6, 2, 9; 1998 RU₅₆, 3, 1, 0; 1998 RY₅₆, 3, 1, 0; 1998 RB₅₇, 3, 1, 0; 1998 RH₅₈, 3, 1, 0; 1998 RQ₅₈, 3, 1, 0; 1998 RR₅₈, 3, 1, 0; 1998 RU₅₈, 3, 1, 0; 1998 RS₅₈, 3, 1, 0; 1998 RA₅₉, 3, 1, 0; 1998 RC₅₉, 3, 1, 0; 1998 RO₈₀, 3, 1, 0; 1998 SD₄, 3, 1, 0; 1998 SW₄, 3, 1, 0; 1998 SU₈, 3, 1, 0; 1998 SJ₉, 3, 1, 0; 1998 SO₉, 3, 1, 0; 1998 SZ₂₁, 3, 1, 0; 1998 SA₂₂, 3, 1, 0; 1998 SV₂₂, 6, 2, 17; 1998 SW₂₂, 6, 2, 2; 1998 SD₂₇, 6, 2, 11; 1998 SZ₃₆, 3, 1, 0; 1998 SM₄₁, 3, 1, 0; 1998 SL₄₂, 3, 1, 0; 1998 SP₄₂, 3, 1, 0; 1998 SJ₄₃, 3, 1, 0; 1998 SL₄₃, 6, 2, 6; 1998 SQ₄₃, 3, 1, 0; 1998 SR₄₃, 3, 1, 0; 1998 SW₄₃, 6, 2, 2; 1998 SG₄₆, 12, 4, 30; 1998 SP₄₈, 3, 1, 0; 1998 SL₅₀, 3, 1, 0; 1998 ST₅₀, 6, 1, 0; 1998 SV₅₀, 3, 1, 0; 1998 SQ₅₂, 3, 1, 0; 1998 SU₅₂, 3, 1, 0; 1998 SZ₅₃, 6, 2, 5; 1998 SB₅₄, 9, 2, 2; 1998 SL₅₄, 6, 2, 1; 1998 SN₅₄, 3, 1, 0; 1998 SP₅₄, 6, 2, 15; 1998 SQ₅₄, 3, 1, 0; 1998 SS₅₄, 6, 2, 2; 1998 SU₅₄, 3, 1, 0; 1998 SY₅₄, 3, 1, 0; 1998 SB₅₅, 3, 1, 0; 1998 SQ₅₉, 3, 1, 0; 1998 SS₅₉, 3, 1, 0; 1998 SY₆₂, 3, 1, 0; 1998 SD₆₃, 9, 2, 4; 1998 SH₆₃, 6, 2, 5; 1998 SH₇₉, 3, 1, 0; 1998 SJ₇₉, 3, 1, 0; 1998 SB₈₀, 3, 1, 0; 1998 SA₈₁, 3, 1, 0; 1998 SU₈₁, 3, 1, 0; 1998 SV₈₉, 3, 1, 0; 1998 SZ₁₀₈, 3, 1, 0; 1998 SC₁₀₉, 3, 1, 0; 1998 SB₁₁₁, 3, 1, 0; 1998 SF₁₁₁, 3, 1, 0; 1998 SQ₁₁₁, 3, 1, 0; 1998 SX₁₁₁, 3, 1, 0; 1998 SA₁₁₂, 3, 1, 0; 1998 SP₁₁₄, 3, 1, 0; 1998 SS₁₁₄, 3, 1, 0; 1998 SJ₁₁₅, 3, 1, 0; 1998 SM₁₁₅, 3, 1, 0; 1998 SN₁₁₅, 3, 1, 0; 1998 SO₁₁₅, 3, 1, 0; 1998 SP₁₁₅, 3, 1, 0; 1998 SX₁₁₅, 3, 1, 0; 1998 SB₁₁₆, 3, 1, 0; 1998 SJ₁₁₆, 3, 1, 0; 1998 SK₁₁₈, 9, 2, 4; 1998 SZ₁₁₈, 3, 1, 0; 1998 SE₁₁₉, 3, 1, 0; 1998 SO₁₂₀, 3, 1, 0; 1998 SY₁₂₂, 6, 2, 4; 1998 SN₁₃₁, 12, 4, 11; 1998 SS₁₃₁, 3, 1, 0; 1998 SC₁₃₂, 3, 1, 0; 1998 SG₁₃₂, 6, 2, 7; 1998 SS₁₃₂, 9, 3, 8; 1998 SQ₁₃₉, 3, 1, 0; 1998 SU₁₃₉, 3, 1, 0; 1998 SY₁₃₉, 3, 1, 0; 1998 SC₁₄₀, 3, 1, 0; 1998 SP₁₄₄, 3, 1, 0; 1998 SB₁₄₆, 6, 2, 1; 1998 SD₁₄₈, 3, 1, 0; 1998 SC₁₅₅, 3, 1, 0; 1998 SF₁₅₅, 3, 1, 0; 1998 SW₁₅₅, 3, 1, 0; 1998 SN₁₅₆, 3, 1, 0; 1998 SK₁₅₇, 3, 1, 0; 1998 SJ₁₆₂, 6, 2, 1; 1998 SQ₁₆₄, 6, 2, 3; 1998 SR₁₆₄, 6, 2, 3; 1998 TN₂, 3, 1, 0; 1998 TP₅, 6, 2, 19; 1998 TR₅, 9, 2, 20; 1998 TP₇, 6, 2, 17; 1998 TE₈, 3, 1, 0; 1998 TL₁₀, 6, 2, 8; 1998 TN₁₀, 3, 1, 0; 1998 TV₁₂, 3, 1, 0; 1998 TB₁₅, 3, 1, 0; 1998 TC₁₇, 6, 2, 1; 1998 TK₁₇, 3, 1, 0; 1998 TE₁₈, 3, 1, 0; 1998 TF₁₈, 6, 2, 1; 1998 TD₁₉, 3, 1, 0; 1998 TE₁₉, 3, 1, 0; 1998 TG₁₉, 3, 1, 0; 1998 TO₁₉, 3, 1, 0; 1998 TP₁₉, 3, 1, 0; 1998 TU₂₂, 3, 1, 0; 1998 TE₂₃, 3, 1, 0; 1998 TF₂₃, 3, 1, 0; 1998 TV₂₉, 6, 2, 7; 1998 TG₃₀, 3, 1, 0; 1998 TR₃₀, 3, 1, 0; 1998 TL₃₂, 9, 3, 13; 1998 TM₃₂, 3, 1, 0; 1998 TQ₃₃, 3, 1, 0; 1998 TK₃₄, 3, 1, 0; 1998 UL₆, 6, 2, 1; 1998 UO₆, 3, 1, 0; 1998 UV₆, 3, 1, 0; 1998 UD₇, 3, 1, 0; 1998 UO₈, 3, 1, 0; 1998 UP₈, 6, 2, 1; 1998 UR₈, 6, 2, 16; 1998 US₈, 3, 1, 0; 1998 UV₈, 3, 1, 0; 1998 UW₈, 3, 1, 0; 1998 UX₈, 3, 1, 0; 1998 UY₈, 3, 1, 0; 1998 UZ₈, 3, 1, 0; 1998 UA₉, 9, 3, 17; 1998 UB₉, 3, 1, 0; 1998 UY₁₅, 3, 1, 0; 1998 UG₁₇, 3, 1, 0; 1998 UQ₁₇, 6, 2, 1; 1998 UT₁₇, 6, 2, 16; 1998 UX₁₇, 3, 1, 0; 1998 UZ₁₇, 3, 1, 0; 1998 UE₁₈, 3, 1, 0; 1998 UA₂₀, 3, 1, 0; 1998 UB₂₀, 3, 1, 0; 1998 UJ₂₀, 3, 1, 0; 1998 UJ₂₈, 15, 5, 13; 1998 UE₃₁, 6, 2, 3; 1998 UF₃₁, 6, 2, 6; 1998 UG₃₁, 6, 2, 8; 1998 UH₃₁, 6, 2, 5; 1998 UJ₃₁, 6, 2, 4; 1998 UK₃₁, 6, 2, 6; 1998 UL₃₁, 6, 2, 9; 1998 UM₃₁, 6, 2, 2, 4; 1998 UN₃₁, 6, 2, 1; 1998 UO₃₁, 6, 2, 1; 1998 UP₃₁, 6, 2, 1; 1998 UQ₃₁, 6, 2, 1; 1998 UR₃₁, 6, 2, 5; 1998 US₃₁, 6, 2, 1; 1998 UT₃₁, 6, 2, 7; 1998 UU₃₁, 6, 2, 9; 1998 UV₃₁, 6, 2, 4; 1998 UW₃₁, 9, 3, 4; 1998 UX₃₁, 9, 3, 4; 1998 UY₃₁, 6, 2, 3; 1998 UZ₃₁, 6, 2, 6; 1998 UA₃₂, 6, 2, 5; 1998 UB₃₂, 6, 2, 5; 1998 UC₃₂, 6, 2, 5; 1998 UD₃₂, 6, 2, 5; 1998 UE₃₂, 6, 2, 5; 1998 UF₃₂, 6, 2, 5; 1998 UG₃₂, 6, 2, 5; 1998 UH₃₂, 6, 2, 5; 1998 UJ₃₂, 6, 2, 7; 1998 UK₃₂, 19, 6, 6; 1998 UL₃₂, 6, 2, 1; 1998 UM₃₂, 6, 2, 1; 1998 UN₃₂, 6, 7, 2, 3;

1998 UO₃₂, 6, 2, 2; 1998 UP₃₂, 6, 2, 2; 1998 UQ₃₂, 6, 2, 2; 1998 VV₅, 9, 3, 6; 1998 VF₇, 12, 3, 15; 1998 VN₈, 3, 1, 0; 1998 VO₈, 3, 1, 0; 1998 VQ₈, 3, 1, 0; 1998 VS₁₃, 6, 2, 2; 1998 VV₁₄, 3, 1, 0; 1998 VM₁₇, 6, 2, 12; 1998 VL₃₁, 3, 1, 0; 1998 VH₃₅, 6, 2, 8; 1998 VJ₃₅, 6, 2, 2; 1998 VL₃₅, 6, 2, 2; 1998 VM₃₅, 6, 2, 1; 1998 VN₃₅, 6, 2, 1; 1998 VO₃₅, 6, 2, 1; 1998 VP₃₅, 6, 2, 5; 1998 VQ₃₅, 6, 2, 5; 1998 VR₃₅, 6, 2, 5; 1998 VS₃₅, 6, 2, 5; 1998 VT₃₅, 6, 2, 5; 1998 VU₃₅, 6, 2, 5; 1998 VV₃₅, 6, 2, 5; 1998 VW₃₅, 6, 2, 5; 1998 VX₃₅, 6, 2, 2; 1998 VY₃₅, 9, 2, 2; 1998 VZ₃₅, 6, 2, 2; 1998 WT₃, 6, 2, 1; 1998 WY₅, 6, 2, 3; 1998 WT₂₄, 3, 1, 0; 1998 WU₂₄, 3, 1, 0; 1998 WB₂₅, 6, 2, 4; 1998 WC₂₅, 7, 2, 3; 1998 XB*, 18, 4, 5; 1998 XC*, 6, 2, 1; 1998 XD*, 6, 2, 1; 1998 XE*, 9, 2, 1; 1998 XF*, 6, 2, 1; 4075 P-L, 6, 1, 0; 6105 P-L, 3, 1, 0; 6608 P-L, 3, 1, 0; 2049 T-2, 3, 1, 0; 3033 T-2, 6, 2, 5; 1014 T-3, 3, 1, 0; 3268 T-3, 3, 1, 0; (17), 9, 3, 2; (62), 3, 1, 0; (282), 6, 2, 2; (379), 6, 2, 3; (580), 6, 2, 1; (642), 3, 1, 0; (726), 6, 1, 0; (789), 3, 1, 0; (899), 3, 1, 0; (948), 3, 1, 0; (968), 3, 1, 0; (1083), 3, 1, 0; (1274), 6, 2, 34; (1313), 3, 1, 0; (1635), 3, 1, 0; (1702), 3, 1, 0; (1751), 6, 2, 1; (1821), 3, 1, 0; (1824), 3, 1, 0; (1938), 3, 1, 0; (1977), 3, 1, 0; (2032), 15, 5, 6; (2069), 6, 2, 37; (2103), 3, 1, 0; (2123), 3, 1, 0; (2219), 6, 2, 27; (2287), 12, 4, 7; (2474), 6, 2, 7; (2519), 3, 1, 0; (2526), 3, 1, 0; (2739), 3, 1, 0; (2836), 3, 1, 0; (2953), 3, 1, 0; (3451), 3, 1, 0; (3470), 9, 3, 8; (3494), 3, 1, 0; (3975), 3, 1, 0; (4102), 3, 1, 0; (4138), 6, 2, 2; (4139), 3, 1, 0; (4293), 9, 3, 11; (4344), 6, 2, 1; (4449), 3, 1, 0; (4457), 3, 1, 0; (4554), 6, 2, 3; (4557), 3, 1, 0; (4646), 9, 3, 16; (4861), 3, 1, 0; (4962), 4, 1, 0; (4980), 4, 1, 0; (5124), 13, 4, 6; (5543), 3, 1, 0; (5568), 6, 2, 17; (5694), 3, 1, 0; (5760), 3, 1, 0; (6058), 3, 1, 0; (6099), 3, 1, 0; (6132), 3, 1, 0; (6254), 3, 1, 0; (6375), 6, 2, 2; (6415), 3, 1, 0; (6416), 6, 2, 4; (6900), 12, 4, 9; (6923), 3, 1, 0; (6960), 3, 1, 0; (7361), 3, 1, 0; (7433), 3, 1, 0; (7580), 3, 1, 0; (7768), 3, 1, 0; (7841), 3, 1, 0; (7846), 3, 1, 0; (7904), 3, 1, 0; (8027), 3, 1, 0; (8169), 3, 1, 0; (9173), 3, 1, 0; (9193), 3, 1, 0; (9260), 3, 1, 0; (9272), 3, 1, 0; (9361), 3, 1, 0; (9415), 3, 1, 0; (9423), 3, 1, 0; (9522), 3, 1, 0; (9527), 3, 1, 0; (9573), 3, 1, 0; (9586), 3, 1, 0; (9618), 3, 1, 0; (9621), 3, 1, 0; (9630), 9, 3, 27; (9668), 3, 1, 0; (9671), 3, 1, 0; (9681), 3, 1, 0; (9693), 3, 1, 0; (9694), 3, 1, 0; (9707), 3, 1, 0; [1834, 412, 63*, 1998/09/26–1998/12/06]

355 Hadano

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0.2-m $f/6.0$ reflector + CCD, 0.28-m $f/5.0$ reflector + CCD
GSC

1998 PG, 2, 1, 0; 1998 UT₁₈, 3, 1, 0; 1998 VN, 3, 1, 0; 1998 VO, 3, 1, 0; 1998 VR, 10, 3, 7; 1998 VE₃₂, 3, 1, 0; 1998 VO₃₃, 7, 2, 1; 1998 WS, 10, 3, 7; 1998 WZ₆, 6, 2, 2; 1998 WN₇, 3, 1, 0; (1036), 3, 1, 0; [53, 11, 0*, 1998/11/11–1998/11/26]

358 Nanyou

T. Okuni, 158-28, Mitsuma-dori, Nanyou, Yamagata-Ken, 999-22 Japan
0.28-m $f/6.3$ Schmidt-Cassegrain + CCD
GSC

1990 OX₁, 2, 1, 0; 1998 UL₂₃, 6, 2, 1; 1998 UN₂₃, 5, 2, 3; 1998 VB₃₅, 9, 4, 3; 1998 WW₁₆, 6, 2, 3; [28, 5, 1*, 1998/11/12–1998/11/29]

360 Kuma Kogen Astronomical Observatory

A. Nakamura, Shimo-Hatanokawa, Kuma, Kamiukena-Gun, Ehime-Ken, 791-1212
Japan [a-nakamu@mx2.nisiq.net]

0.60-m $f/5.8$ Ritchey-Chrétien + CCD
GSC, USNO-A2.0

1988 CT₂, 3, 1, 0; 1989 UR, 6, 2, 10; 1990 VS₄, 3, 1, 0; 1993 WD, 3, 1, 0; 1994 XP, 3, 1, 0; 1995 DG₁, 3, 1, 0; 1996 HM₁, 3, 1, 0; 1997 OY, 2, 1, 0; 1997 US₉, 3, 1, 0; 1998 FR₁₁, 3, 1, 0; 1998 MQ, 3, 1, 0; 1998 MX₅, 3, 1, 0; 1998 ML₁₄, 3, 1, 0; 1998 QR₁₅, 3, 1, 0; 1998 QR₅₂, 3, 1, 0; 1998 QS₅₂, 3, 1, 0; 1998 QK₅₆, 3, 1, 0; 1998 SG₂, 3, 1, 0; 1998 SJ₂, 3, 1, 0; 1998 ST₄, 3, 1, 0; 1998 SY₁₄, 4, 1, 0; 1998 SE₃₅, 3, 1, 0; 1998 SF₃₅, 3, 1, 0; 1998 SR₄₉, 3, 1, 0; 1998 SS₄₉, 6, 2, 7; 1998 TT₃, 3, 1, 0; 1998 TU₃, 6, 2, 4; 1998 UL₁, 3, 1, 0; 1998 UN₁, 3, 1, 0; 1998 UO₁, 6, 2, 7; 1998 UQ₁, 3, 1, 0; 1998 UT₁₈, 6, 2, 12; 1998 VN, 9, 3, 8; 1998 VO, 3, 1, 0; 1998 VP, 3, 1, 0; 1998 VQ, 3, 1, 0; 1998 VS, 3, 1, 0; 1998 VD₃₁, 6, 2, 3; 1998 VE₃₁, 3, 1, 0; 1998 VF₃₁, 3, 1, 0; 1998 VD₃₂, 3, 1, 0; 1998 VO₃₃, 3, 1, 0; 1998 VF₃₄, 3, 1, 0; 1998 WM, 3, 1, 0; 1998 WO, 3, 1, 0; 1998 WT, 3, 1, 0; 1998 WY₁, 6, 2, 6; 1998 WZ₁, 6, 2, 6; 1998 WA₂, 3, 1, 0; 1998 WB₂, 6, 2, 5; 1998 WP₅, 3, 1, 0; 1998 WQ₅, 3, 1, 0; 1998 WZ₆, 3, 1, 0; 1998 WO₇, 3, 1, 0; 1998 WP₇, 3, 1, 0; (1618), 2, 1, 0; (4138), 2, 1, 0; (4300), 2, 1, 0; (5038), 2, 1, 0; (5179), 3, 1, 0; (6895), 2, 1, 0; (7801), 2, 1, 0; (9368), 3, 1, 0; (9658), 3, 1, 0; [225, 66, 0*, 1998/11/08–1998/11/28]

365 Kashihara

F. Uto, 12-1 Shirakashi Cho 7 Chome, Kashihara, Nara-Ken, 634 Japan

[nag01736@niftyserve.or.jp]

0.28-m $f/6.3$ refractor + CCD

GSC

1998 WC₂₀ *, 4, 2, 3; 1998 WD₂₀ *, 4, 2, 3; [8, 2, 2*, 1998/11/26–1998/11/29]**367 Yatsuka**

H. Abe, 461-2, Futago, Yatsuka-Cho, Shimane-Ken, 690-14 Japan

0.26-m $f/6.0$ reflector + CCD

GSC

1993 XM, 2, 1, 0; 1993 YD, 2, 1, 0; 1994 YD₁, 2, 1, 0; 1995 AF, 2, 1, 0; 1995 YD₁, 2, 1, 0; 1996 BS₁, 2, 1, 0; 1997 GA₂₆, 2, 1, 0; 1997 SJ₄, 2, 1, 0; 1998 WZ₆, 3, 1, 0; [19, 9, 0*, 1998/11/14–1998/11/26]**369 Chichibu**

N. Sato, 743-27, Kitairiso Sayama, Saitama-Ken 350-13, Japan

[mx055240@niftyserve.or.jp]

0.31-m $f/4.0$ reflector + CCD, 0.25-m $f/4.2$ Wright-Schmidt + CCD

GSC

1997 QS₄, 5, 2, 3; 1998 UF₁₆, 5, 3, 4; 1998 VA₅, 7, 3, 3; 1998 VW₃₂ *, 9, 4, 17; 1998 VX₃₂ *, 11, 5, 17; 1998 VY₃₂ *, 14, 5, 17; 1998 VZ₃₂ *, 10, 5, 17; 1998 VA₃₃ *, 11, 5, 17; 1998 VB₃₃ *, 11, 5, 17; 1998 VC₃₃ *, 5, 2, 3; 1998 WW₈ *, 5, 2, 10; 1998 WX₈ *, 4, 2, 10; 1998 WY₈ *, 5, 2, 10; (2142), 7, 3, 3; (2904), 5, 2, 2; (3165), 5, 3, 3; (3339), 6, 3, 3; [125, 17, 10*, 1998/11/11–1998/11/28]**376 Uenohara**

N. Kawasato, 3-11-10, Hana-Koganei, Kodaira, Tokyo, 187 Japan

0.30-m reflector + CCD

GSC

1998 UZ₁₉, 2, 1, 0; 1998 VQ₂₈, 4, 2, 3; 1998 VM₂₉, 5, 2, 3; 1998 VN₂₉, 2, 1, 0; 1998 VY₃₀, 2, 1, 0; 1998 VC₃₄ *, 9, 4, 7; 1998 VD₃₄ *, 9, 4, 11; 1998 VQ₃₄ *, 7, 3, 5; 1998 VR₃₄ *, 9, 4, 11; 1998 WA₇ *, 4, 2, 6; 1998 WB₇ *, 8, 4, 11; 1998 WD₇ *, 6, 3, 6; 1998 WK₈ *, 6, 3, 5; 1998 WT₂₁, 4, 2, 3; 1998 WJ₂₃, 2, 1, 0; 1998 WF₂₄ *, 4, 2, 3; [83, 16, 9*, 1998/11/12–1998/11/28]**385 Nihondaira Observatory**

T. Urata, 1-8, Dobayashi 1 Chome, Shimizu, Shizuoka-Ken 424-0851, Japan

[urata@sannet.ne.jp]

0.31-m $f/4.7$ reflector + CCD

GSC, USNO-A1.0

1987 UR, 2, 1, 0; 1991 DE, 2, 1, 0; 1993 UT, 6, 2, 1; 1994 NS, 2, 1, 0; 1995 EF, 1, 1, 0; 1997 RZ₇, 2, 1, 0; 1997 RF₈, 2, 1, 0; 1997 UB₁₁, 2, 1, 0; 1998 VH₅, 2, 1, 0; 1998 VJ₅, 2, 1, 0; 1998 VK₅, 2, 1, 0; 1998 VL₅, 2, 1, 0; 1998 VM₅, 2, 1, 0; 1998 VN₅, 2, 1, 0; 1998 VC₆, 2, 1, 0; 1998 VF₆, 2, 1, 0; 1998 VL₆, 2, 1, 0; 1998 VM₆, 2, 1, 0; 1998 VN₆, 2, 1, 0; 1998 VO₆, 2, 1, 0; 1998 VB₃₁, 3, 1, 0; 1998 WF₃, 3, 1, 0; 1998 WK₅, 3, 1, 0; 1998 WN₅, 2, 1, 0; 1998 WV₅, 2, 1, 0; 1998 WW₅, 3, 1, 0; 1998 WX₅, 2, 1, 0; 1998 WZ₅, 2, 1, 0; 1998 WE₇ *, 2, 1, 0; 1998 WF₇ *, 2, 1, 0; 1998 WG₇ *, 2, 1, 0; (3820), 2, 1, 0; [71, 32, 3*, 1998/11/13–1998/11/23]**399 Kushiro**

H. Kaneda, Taiyo MS 2-H, 2-15, Kawazoe 8 Jo 2 Chime, Minami-Ku, Sapporo, 005

Japan

Observer S. Ueda

Measurer H. Kaneda

0.25-m $f/3.4$ hyperboloid astrocamera

GSC

1989 WD₃, 4, 2, 1; 1998 QN₉₃, 4, 2, 6; 1998 UK₂₀, 6, 3, 7; 1998 UL₂₀, 5, 3, 7; 1998 UF₂₁, 4, 2, 6; 1998 UO₂₄, 4, 2, 1; 1998 UC₃₁ *, 12, 6, 28; 1998 VH₁₈, 12, 6, 33; 1998 VJ₁₈, 12, 6, 28; 1998 VM₁₈, 6, 3, 8; 1998 VO₁₈, 8, 4, 22; 1998 VN₂₈, 6, 3, 4; 1998 VU₂₉, 4, 2, 1; 1998 VX₂₉, 4, 2, 1; 1998 VZ₂₉, 4, 2, 6; 1998 VM₃₀, 4, 2, 1; 1998 VV₃₀, 4, 2, 6; 1998 VY₃₃, 5, 3, 7; 1998 VT₃₄, 4, 2, 6; 1998 VU₃₄ *, 4, 2, 6; 1998 VV₃₄ *, 12, 6, 33; 1998 VW₃₄ *, 8, 4, 10; 1998 VX₃₄ *, 8, 4,10; 1998 VY₃₄ *, 10, 5, 25; 1998 VZ₃₄ *, 10, 5, 25; 1998 VA₃₅ *, 7, 4, 10; 1998 VC₃₅ *, 8, 4, 10; 1998 VF₃₅ *, 6, 3, 7; 1998 WR₃ *, 4, 2, 1; 1998 WS₃ *, 5, 3, 7; 1998 WT₃ *, 4, 2, 1; 1998 WU₃ *, 5, 3, 7; 1998 WF₄ *, 4, 2, 1; 1998 WG₄ *, 4, 2, 1; 1998 WH₄ *, 4, 2, 1; 1998 WA₆ *, 4, 2, 1; 1998 WB₆ *, 4, 2, 1; 1998 WC₆ *, 6, 3, 4; 1998 WD₆ *, 4, 2, 1; 1998 WC₇ *, 4, 2, 1; 1998 WA₈ *, 4, 2, 1; 1998 WB₈ *, 4, 2, 1; 1998 WC₈ *, 4, 2, 1; [249, 43, 25*, 1998/10/20–1998/11/22]**400 Kitami**

K. Endate, 3-17, Hinode 1 Chome, Mihoro Cho, Abashiri-Gun, Hokkaido, 092 Japan

Observer K. Endate

0.25-m $f/3.4$ hyperboloid astrocamera + CCD

GSC

1998 WZ₆, 4, 1, 0; [4, 1, 0*, 1998/11/26]**402 Dynic Astronomical Observatory**

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0.60-m $f/5.0$ reflector + CCD

GSC

1989 NA, 3, 1, 0; 1997 CU₂₆, 6, 2, 15; 1998 KU₂, 3, 1, 0; 1998 ML₁₄, 3, 1, 0; 1998 QS₅₂, 6, 2, 13; 1998 QP₆₃, 3, 1, 0; 1998 QA₉₆, 6, 2, 13; 1998 RE, 3, 1, 0; 1998 SF₃₅, 3, 1, 0; 1998 TT₃, 2, 1, 0; 1998 UD₁, 6, 2, 11; 1998 UL₁, 3, 1, 0; 1998 UO₁, 6, 2, 11; 1998 UQ₁, 3, 1, 0; 1998 UT₁₈, 3, 1, 0; 1998 VN, 4, 1, 0; 1998 VO, 7, 2, 14; 1998 VP, 4, 1, 0; 1998 VQ, 4, 1, 0; 1998 VR, 13, 4, 16; 1998 VS, 13, 4, 16; 1998 VT, 4, 1, 0; 1998 VZ₄, 7, 2, 1; 1998 VD₃₁, 17, 5, 14; 1998 VE₃₁, 6, 2, 12; 1998 VF₃₁, 10, 3, 14; 1998 VD₃₂, 9, 3, 7; 1998 VO₃₃, 6, 2, 3; 1998 WL, 3, 1, 0; 1998 WM, 3, 1, 0; 1998 WS, 3, 1, 0; 1998 WT, 7, 2, 6; 1998 WA₂, 6, 2, 2; 1998 WB₂, 13, 4, 10; 1998 WA₄, 6, 2, 2; 1998 WP₅, 3, 1, 0; 1998 WQ₅, 3, 1, 0; 1998 WR₅, 6, 2, 2; 1998 WS₅, 6, 2, 2; 1998 WZ₆, 9, 3, 3; 1998 WO₇, 9, 3, 3; 1998 WP₇, 4, 1, 0; 1998 WB₉, 4, 1, 0; 1998 WC₉, 4, 1, 0; 1998 WU₂₄, 4, 1, 0; (3200), 3, 1, 0; (6100), 3, 1, 0; [262, 47, 0*, 1998/11/12–1998/11/29]**411 Oizumi**

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0.25-m $f/4.4$ reflector + CCD, 0.41-m $f/4.3$ reflector + CCD

GSC

1990 UC₂, 7, 3, 3; 1992 CF, 2, 1, 0; 1994 WH₁, 6, 3, 15; 1994 YR, 2, 1, 0; 1995 AE₄, 4, 2, 1; 1996 JK₃, 4, 2, 1; 1997 LC₄, 4, 2, 1; 1998 SK₁₃₃, 2, 1, 0; 1998 TH, 2, 1, 0; 1998 UJ₈, 2, 1, 0; 1998 UK₈, 2, 1, 0; 1998 UL₈, 2, 1, 0; 1998 UM₈, 2, 1, 0; 1998 UO₁₈, 2, 1, 0; 1998 UP₁₈, 5, 2, 15; 1998 UQ₁₈, 2, 1, 0; 1998 UR₁₈, 5, 2, 14; 1998 VB, 4, 2, 6; 1998 VV₅ *, 6, 3, 9; 1998 VR₆ *, 6, 3, 8; 1998 VS₆ *, 6, 3, 8; 1998 VT₆ *, 6, 3, 8; 1998 VU₆ *, 7, 3, 8; 1998 VV₆ *, 6, 3, 8; 1998 VW₆ *, 6, 3, 8; 1998 VH₃₁ *, 6, 3, 6; 1998 VJ₃₁ *, 6, 3, 6; 1998 VK₃₁ *, 6, 3, 6; 1998 VL₃₁ *, 6, 3, 6; 1998 VM₃₁ *, 6, 3, 6; 1998 VM₃₃ *, 6, 3, 11; 1998 VN₃₃ *, 7, 3, 11; 1998 WU *, 6, 3, 8; 1998 WV *, 7, 3, 8; 1998 WL₁ *, 6, 3, 7; 1998 WM₁ *, 7, 3, 7; 1998 WN₁ *, 6, 3, 7; 1998 WO₁ *, 6, 3, 7; 1998 WP₁ *, 6, 3, 7; 1998 WQ₁ *, 6, 3, 7; 1998 WR₁ *, 6, 3, 7; 1998 WS₁ *, 7, 3, 7; 1998 WT₁ *, 6, 3, 7; 1998 WU₁ *, 6, 3, 7; 1998 WV₁ *, 6, 3, 7; 1998 WG₃ *, 6, 3, 9; 1998 WH₃ *, 6, 3, 9; 1998 WJ₃ *, 6, 3, 9; 1998 WK₃ *, 6, 3, 9; 1998 WL₃ *, 6, 3, 9; 1998 WM₃ *, 6, 3, 9; 1998 WN₃ *, 6, 3, 9; 1998 WO₃ *, 6, 3, 9; 1998 WP₃ *, 6, 3, 9; 1998 WQ₃ *, 6, 3, 9; 1998 WY₅ *, 6, 3, 6; 1998 WO₆ *, 6, 3, 5; 1998 WP₆ *, 6, 3, 5; 1998 WQ₆ *, 6, 3, 5; 1998 WZ₆ *, 14, 5, 5; 1998 WD₈ *, 6, 3, 3; 1998 WE₈ *, 6, 3, 3; 1998 WF₈ *, 6, 3, 3; 1998 WG₈ *, 6, 3, 3; 1998 WH₈ *, 6, 3, 3; 6059 P-L, 4, 2, 1; 6519 P-L, 4, 2, 5; 6599 P-L, 4, 2, 1; [366, 68, 47*, 1998/09/16–1998/11/28]**413 Siding Spring**

R. H. McNaught, Anglo-Australian Observatory, Coonabarabran, N.S.W. 2357, Australia [rmn@aaocbn2.aao.gov.au] (1)

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Observers R. H. McNaught, G. J. Garradd

Measurers R. H. McNaught, A. Gnädig, G. V. Williams

1.2-m U.K. Schmidt, 1.0-m reflector + CCD

(1) 1994 AB₁, 2, 1, 0; [2, 1, 0*, 1995/03/28]

(5) 1995 GO₇, 3, 2, 361; 1995 VR₁, 2, 1, 0; 1996 AF₁₁, 4, 2, 87; 1997 TV₂₆, 2, 1, 0; 1997 WQ₉, 2, 1, 0; 1998 QH₈, 4, 2, 53; 1998 QS₅₅, 2, 1, 0; 1998 RB₇₇, 2, 1, 0; 1998 SG₂₅, 4, 2, 4341; 1998 TO₁₅, 2, 1, 0; 2626 P-L, 2, 1, 0; 2643 P-L, 4, 2, 2352; 4112 P-L, 10, 5, 6203; [43, 13, 0*, 1976/05/29–1993/09/07]

(6) 1997 NU, 2, 1, 0; [2, 1, 0*, 1984/03/29]

423 North Ryde

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0.2-m $f/4$ hyperbolic astrograph + CCD

GSC

1992 AM, 8, 4, 10; 1996 JK, 5, 2, 3; [13, 2, 0*, 1998/11/21–1998/12/01]

426 Woomera

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0.30-m $f/3.3$ Schmidt-Cassegrain + CCD

USNO-SA1.0

1981 EW₁₇, 6, 2, 2; 1982 JD₁, 5, 2, 1; 1985 PB₂, 6, 2, 1; 1988 GF, 5, 2, 1; 1988 UT, 6, 2, 1; 1989 TX₂, 5, 2, 3; 1989 UR, 7, 2, 1; 1990 RF₂, 6, 2, 2; 1990 WD₂, 5, 2, 1; 1992 RJ₅, 6, 2, 1; 1992 SJ₂, 6, 2, 1; 1993 KZ₁, 5, 2, 2; 1994 AL₁, 5, 2, 1; 1994 PN, 7, 3, 3; 1994 UF, 5, 2, 1; 1995 AH, 8, 3, 3; 1995 BF, 5, 2, 2; 1996 BR₁, 5, 2, 1; 1996 BW₄, 6, 2, 2; 1996 UX₃, 6, 2, 1; 1997 NY, 6, 2, 1; 1997 RY₂, 6, 3, 5; 1997 RJ₁₀, 6, 2, 1; 1997 SR, 8, 3, 28; 1997 SS₃₁, 6, 2, 4; 1998 PG₁, 4, 2, 6; 1998 QB₉₃, 6, 2, 3; 1998 QB₁₀₅, 6, 2, 5; 1998 RG, 3, 2, 1; 1998 RH, 4, 2, 1; 1998 RC₂, 4, 2, 6; 1998 SC, 5, 2, 2; 1998 SF₂, 6, 2, 2; 1998 SW₂₂, 5, 2, 1; 1998 SY₂₂, 6, 2, 3; 1998 SF₂₈, 3, 2, 5; 1998 TU₃, 7, 2, 10; 1998 UK₁, 8, 3, 25; 1998 UL₁, 3, 1, 0; 1998 UN₁, 3, 1, 0; 1998 UQ₁, 3, 1, 0; 1998 UG₁₅, 6, 2, 1; 1998 UZ₂₄, 6, 2, 2; 1998 VN, 7, 2, 7; 1998 VA₄, 5, 2, 2; 1998 VZ₄, 3, 1, 0; 1998 VZ₃₀, 5, 2, 1; 1998 VD₃₁, 11, 4, 11; 1998 VE₃₁, 8, 3, 2; 1998 VF₃₁, 6, 2, 2; 1998 VE₃₂, 6, 2, 1; 1998 VF₃₂, 7, 2, 7; 1998 VO₃₃, 3, 1, 0; 1998 WL, 5, 2, 3; 1998 WT, 3, 1, 0; 1998 WA₂, 3, 1, 0; 1998 WB₂, 3, 1, 0; 1998 WC₂, 6, 2, 5; 1998 WA₄, 5, 2, 4; 1998 WO₄, 6, 2, 5; 1998 WZ₆, 4, 1, 0; 1998 WO₇, 4, 1, 0; 1998 WP₇, 6, 2, 2; 1998 WT₇, 7, 2, 2; 1998 WW₁₉ *, 6, 2, 1; 1998 WY₁₉ *, 6, 2, 1; 1998 WZ₁₉ *, 5, 2, 1; 1998 WA₂₀ *, 4, 2, 1; 1998 WB₂₀ *, 6, 2, 1; 2076 P-L, 6, 2, 1; 2198 T-1, 6, 2, 2; (3064), 3, 2, 2; (3362), 6, 2, 2; (3494), 3, 1, 0; (3892), 5, 2, 3; (4559), 6, 2, 1; (5402), 5, 2, 3; (6054), 6, 2, 1; (6681), 6, 2, 1; (7126), 3, 1, 0; (7543), 6, 2, 1; (7585), 6, 2, 1; (7894), 6, 2, 1; (8566), 7, 3, 4; (9665), 3, 1, 0; [458, 85, 5*, 1998/10/20–1998/12/01]

428 Reedy Creek

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0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1989 UR, 4, 1, 0; 1998 OH₁₂, 2, 1, 0; 1998 OM₁₂, 3, 3, 9; 1998 QE₄, 1, 1, 0; 1998 QQ₄₃, 2, 1, 0; 1998 QB₉₃, 2, 1, 0; 1998 RV, 2, 1, 0; 1998 RE₁, 1, 1, 0; 1998 RD₅, 4, 2, 16; 1998 RE₅, 4, 2, 16; 1998 SP₁₀, 2, 1, 0; 1998 SU₁₂₇, 1, 1, 0; 1998 SA₁₂₉, 2, 1, 0; 1998 TR₁, 3, 2, 11; 1998 TX₁, 3, 3, 26; 1998 TY₁, 1, 1, 0; 1998 TZ₁, 4, 2, 11; 1998 TU₃, 8, 3, 30; 1998 TP₆, 3, 2, 8; 1998 TQ₆, 11, 6, 32; 1998 TY₆, 4, 2, 12; 1998 TZ₆, 4, 2, 12; 1998 UG₄, 5, 3, 20; 1998 US₁₆, 4, 2, 16; 1998 UF₁₈, 4, 2, 16; 1998 UT₂₂, 5, 3, 24; 1998 VF₃₁, 2, 1, 0; 1998 VE₃₂, 8, 2, 1; 1998 VH₃₂ *, 8, 4, 16; 1998 VJ₃₂ *, 7, 4, 12; 1998 VK₃₂ *, 8, 4, 12; 1998 VE₃₃ *, 6, 4, 11; 1998 VO₃₃, 6, 1, 0; 1998 WL, 2, 1, 0; 1998 WJ₈ *, 9, 4, 8; (4190), 2, 1, 0; (9241), 2, 1, 0; [149, 37, 5*, 1998/10/15–1998/12/04]

491 Yebes

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Observers J. F. Lahulla, J. García

0.40-m $f/5$ astrograph + CCD

GSC

(1036), 8, 2, 6; (1508), 2, 1, 0; (3352), 2, 1, 0; [12, 3, 0*, 1998/11/18–1998/11/24]

504 Le Creusot

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0.40-m $f/5.1$ reflector + CCD

GSC

(4114), 3, 1, 0; [3, 1, 0*, 1998/11/11]

517 Geneva

R. Behrend, Geneva Observatory, CH-1290 Sauverny, Switzerland
[Raoul.Behrend@Obs.UniGe.ch]

Observers R. Behrend, F. Allegrini

0.20-m $f/10.0$ reflector + CCD

GSC

(344), 5, 2, 35; [5, 1, 0*, 1998/01/08–1998/02/12]

540 Linz

E. Meyer, F. Marklstrasse 1/62, A-4040 Linz, Austria [erich.meyer@ooenet.at]
0.30-m $f/5.2$ Schmidt Cassegrain + CCD

GSC

1998 UT₁₈, 4, 1, 0; 1998 VN, 4, 1, 0; 1998 VO, 4, 1, 0; 1998 VR, 12, 3, 13; 1998 VD₃₁, 4, 1, 0; 1998 WM, 4, 1, 0; 1998 WS, 11, 3, 7; [43, 7, 0*, 1998/11/12–1998/11/25]

544 Wilhelm Foerster Observatory, Berlin

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Observers W. Hasse, S. Klose, C. Linke, K. Toedte

Measurers M. Dentel, C. Haase, W. Hasse, F. Kugler, K. Toedte, F. Vetter

0.15-m $f/15$ double refractor, 0.75-m $f/7.7$ Ritchey-Chrétien reflector + CCD

Hipparcos, USNO A1.0

1991 DK, 2, 1, 0; (19), 2, 1, 0; (27), 2, 1, 0; (30), 2, 1, 0; (349), 2, 1, 0; (422), 2, 1, 0; (511), 6, 3, 33; [18, 7, 0*, 1997/08/17–1998/04/11]

552 San Vittore

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[ermes.colombini@iol.it]

Observers C. Vacchi, C. Sassi, E. Colombini, R. Di Luca

0.45-m $f/3.3$ reflector + CCD

GSC

1997 JR, 4, 2, 1; 1997 QU₁, 4, 2, 2; 1998 UN₂₀, 4, 2, 2; 1998 UX₂₀, 9, 2, 9; 1998 WO₂ *, 4, 2, 2; [25, 5, 1*, 1998/11/16–1998/11/28]

557 Ondřejov

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Observers P. Pravec, L. Šarounová

0.65-m $f/3.6$ reflector + CCD

USNO-SA1.0, GSC

1987 RN₆, 3, 1, 0; 1989 UR, 9, 2, 12; 1994 AB₁, 3, 1, 0; 1995 EA₈, 2, 1, 0; 1996 HP, 4, 2, 1; 1996 LJ₁, 2, 1, 0; 1997 RA₁, 5, 2, 22; 1997 SN₁, 4, 2, 11; 1997 UH, 3, 2, 22; 1997 UJ, 5, 2, 5; 1997 UU₇, 4, 2, 11; 1997 UX₇, 2, 1, 0; 1998 AN₈, 4, 2, 34; 1998 MX₅, 3, 1, 0; 1998 QR₁, 2, 1, 0; 1998 QO₄, 4, 2, 12; 1998 QE₂₉, 4, 2, 1; 1998 QN₆₀, 2, 1, 0; 1998 QO₆₀, 3, 1, 0; 1998 QP₆₀, 2, 1, 0; 1998 RM, 2, 1, 0; 1998 RP₂₀, 4, 2, 12; 1998 SU₂, 2, 1, 0; 1998 ST₄, 2, 1, 0; 1998 SB₅, 3, 1, 0; 1998 SW₁₀, 3, 2, 10; 1998 SA₁₃, 4, 2, 12; 1998 SB₁₃, 3, 2, 12; 1998 SD₁₃, 3, 1, 0; 1998 SS₂₆, 5, 2, 12; 1998 SU₂₆, 2, 1, 0; 1998 SV₂₆, 5, 2, 12; 1998 SH₂₇, 4, 2, 12; 1998 SF₃₅, 2, 1, 0; 1998 SK₃₆, 4, 2, 17; 1998 TL₆, 4, 2, 1; 1998 TM₆, 4, 2, 1; 1998 TO₆, 3, 1, 0; 1998 TT₂₆, 4, 2, 1; 1998 UL, 4, 2, 9; 1998 UB₁, 4, 2, 1; 1998 UC₁, 7, 3, 12; 1998 UO₁, 5, 2, 12; 1998 UZ₇, 4, 2, 1; 1998 UJ₈, 7, 2, 1; 1998 UC₁₅, 6, 3, 12; 1998 UR₂₀, 5, 2, 2; 1998 UZ₂₀, 5, 2, 2; 1998 UT₂₉, 4, 2, 1; 1998 VN, 8, 2, 1; 1998 VO, 7, 2, 1; 1998 VP, 7, 2, 1; 1998 VQ, 5, 2, 1; 1998 VR, 8, 2, 1; 1998 VS, 11, 3, 9;

1998 VT₈, 2, 1; 1998 VG₁, 5, 2, 1; 1998 VU₄ *, 9, 3, 9; 1998 VV₄ *, 4, 2, 1; 1998 VW₄ *, 8, 4, 12; 1998 VX₄ *, 3, 2, 1; 1998 VZ₄, 2, 1, 0; 1998 VZ₆ *, 10, 4, 11; 1998 VD₃₁, 5, 2, 1; 1998 VE₃₁, 4, 1, 0; 1998 VF₃₁, 3, 1, 0; 1998 VO₃₃, 5, 1, 0; 1998 VF₃₄, 4, 1, 0; 1998 WM₃, 3, 1, 0; 1998 WA₂, 6, 2, 4; 1998 WB₂, 6, 2, 4; 1998 WP₅, 7, 2, 3; 1998 WQ₅, 6, 2, 3; 1998 WR₅, 6, 2, 3; 1998 WS₅, 6, 3, 3; 1998 WM₆, 3, 1, 0; 1998 WZ₆, 3, 1, 0; 1998 WO₇, 2, 1, 0; 1998 WP₇, 4, 2, 1; 1998 WT₈ *, 5, 2, 5; 1998 WB₉, 4, 1, 0; 1998 WC₉, 3, 1, 0; 1998 WU₂₄, 2, 1, 0; (1328), 2, 1, 0; (2641), 2, 1, 0; (3352), 8, 2, 3; (4453), 3, 1, 0; (5367), 2, 1, 0; (7358), 10, 2, 3; (9552), 6, 1, 0; [399, 90, 6*, 1998/10/21–1998/11/29]

560 Madonna di Dossobuono

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Observers L. Lai, I. Rocchetti, G. Vesentini

0.40-m *f*/3.5 reflector + CCD

GSC

1998 PG₂, 2, 1, 0; 1998 UG₂₁, 3, 1, 0; 1998 WO₅ *, 12, 4, 14; 1998 WT₅ *, 9, 3, 2; 1998 WU₅ *, 9, 3, 2; [35, 5, 3*, 1998/11/05–1998/11/19]

561 Piskéztető

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Observers K. Sárneczky, Gy. Szabó, L. Kiss

Measurers L. Kiss, K. Sárneczky

0.60-m Schmidt telescope + CCD

USNO-A1.0

1958 TL₁, 4, 1, 0; 1964 VN₁, 7, 2, 2; 1969 TQ₁, 3, 1, 0; 1970 OF, 3, 1, 0; 1972 PA, 4, 1, 0; 1972 TE, 3, 1, 0; 1973 SS, 4, 1, 0; 1973 SF₁, 3, 1, 0; 1973 SJ₁, 3, 1, 0; 1973 SN₁, 3, 1, 0; 1973 SA₂, 3, 1, 0; 1974 SE, 3, 1, 0; 1975 LF₁, 4, 2, 2; 1975 NC, 3, 1, 0; 1975 SB₁, 3, 1, 0; 1975 SE₁, 4, 1, 0; 1975 SE₂, 3, 1, 0; 1975 TJ₃, 3, 1, 0; 1975 VV₂, 3, 1, 0; 1984 LK, 3, 1, 0; 1989 NA, 3, 1, 0; 1991 VE, 3, 1, 0; 1991 VZ₂, 3, 1, 0; 1992 SK, 4, 1, 0; 1993 MG₁, 3, 1, 0; 1994 PN, 3, 1, 0; 1994 SE, 3, 1, 0; 1994 XV, 6, 2, 2; 1995 BL₂, 3, 1, 0; 1997 CX₅, 3, 1, 0; 1997 GD, 9, 3, 4; 1998 QP₃₆, 3, 1, 0; 1998 QH₄₉, 2, 1, 0; 1998 QZ₈₄, 3, 1, 0; 1998 RG₃, 4, 1, 0; 1998 UH, 4, 1, 0; 1998 UG₂₃, 11, 2, 32; 1998 VR, 4, 1, 0; 1998 WX₆ *, 7, 2, 2; 1998 WY₆ *, 10, 3, 3; 1998 WR₈ *, 7, 2, 1; 1998 WS₈ *, 7, 2, 1; (792), 6, 2, 3; (1508), 6, 2, 4; (1865), 14, 2, 3; (3200), 3, 1, 0; (3504), 7, 2, 1; (5131), 3, 1, 0; (6239), 2, 1, 0; (8156), 3, 1, 0; (9172), 3, 1, 0; [221, 51, 4*, 1998/10/22–1998/11/25]

563 Seewalchen

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0.25-m *f*/6 reflector + CCD

GSC

1993 FS₁₄, 7, 2, 36; 1995 QS₃, 6, 2, 35; (9308), 7, 2, 13; [20, 3, 0*, 1998/02/18–1998/09/23]

566 Haleakala-NEAT/GEODSS

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Observers E. F. Helin, S. H. Pravdo, K. J. Lawrence, D. L. Rabinowitz, S. Groom,

C. Clark, R. Bamberg, S. Levin, J. Lorre, S. Shaklan, R. Byrd, A. Esquibel,

C. Cotton, D. Bascon

1-m *f*/2.2 Ritchey-Chrétien + CCD

1971 UK₁, 3, 1, 0; 1977 TO₆, 3, 1, 0; 1980 BA, 3, 1, 0; 1981 EZ, 3, 1, 0; 1981 EF₂, 3, 1, 0; 1981 EW₂₄, 3, 1, 0; 1981 QJ₃, 3, 1, 0; 1987 QT, 3, 1, 0; 1989 TB₅, 3, 1, 0; 1990 QL₃, 3, 1, 0; 1990 RY₂, 3, 1, 0; 1990 TO₄, 3, 1, 0; 1990 VW₈, 3, 1, 0; 1990 WR₂, 3, 1, 0; 1991 BK, 3, 1, 0; 1991 EJ, 3, 1, 0; 1991 PJ₁₁, 3, 1, 0; 1991 PJ₁₃, 3, 1, 0; 1991 PR₁₆, 3, 1, 0; 1991 SA, 3, 1, 0; 1991 UN₃, 3, 1, 0; 1992 CG₃, 3, 1, 0; 1992 UM₉, 3, 1, 0; 1993 NO, 3, 1, 0; 1994 PS, 3, 1, 0; 1994 PO₃₂, 3, 1, 0; 1994 PN₃₇, 3, 1, 0; 1994 TW, 3, 1, 0; 1994 UQ, 3, 1, 0; 1994 VB, 3, 1, 0; 1994 VH, 3, 1, 0; 1994 VF₂, 3, 1, 0; 1994 WW₂, 3, 1, 0; 1994 XQ₄, 3, 1, 0; 1994 YC, 3, 1, 0; 1995 DZ₁, 3, 1, 0; 1995 FV₁₄, 3, 1, 0; 1995 GO₇, 3, 1, 0; 1995 OK₈, 3, 1, 0; 1996 AA, 3, 1, 0; 1996 BS₁, 3, 1, 0; 1996 DE, 3, 1, 0; 1996 EM₁₆ *, 6, 2, 36; 1996 GL₃, 3, 1, 0; 1997 FN₃, 3, 1, 0; 1997 GL₈, 3, 1, 0; 1997 GB₁₉, 3, 1, 0; 1997 GR₂₄, 3, 1, 0; 1997 JN₁₆, 3, 1, 0; 1997 MR₁, 3, 1, 0; 1997 OY, 3, 1, 0; 1997 PG₃, 3, 1, 0; 1998 FS₂₂, 3, 1, 0; 1998 PG, 3, 1, 0; 1998 QM₄₀, 3, 1, 0; 1998 QN₄₂, 3, 1, 0; 1998 QA₉₃, 3, 1, 0; 1998 QB₉₃, 3, 1, 0; 1998 RK₄₇, 3, 1, 0; 1998 RE₈₀, 3, 1, 0; 1998 SL₂, 3, 1, 0; 1998 SS₂, 3, 1, 0; 1998 ST₂, 3, 1, 0; 1998 SM₉, 3, 1, 0; 1998 SC₁₂, 3, 1, 0; 1998 SW₂₂, 3, 1, 0; 1998 SZ₂₄, 3, 1, 0; 1998 SA₂₅, 3, 1, 0; 1998 SB₃₅, 3, 1, 0; 1998 SN₃₇, 3, 1, 0;

1998 SN₆₄, 3, 1, 0; 1998 ST₆₄, 3, 1, 0; 1998 SG₆₅, 3, 1, 0; 1998 SL₆₅, 3, 1, 0; 1998 SO₆₅, 3, 1, 0; 1998 SV₆₅, 3, 1, 0; 1998 SE₆₆, 3, 1, 0; 1998 SU₇₁, 3, 1, 0; 1998 SQ₇₂, 3, 1, 0; 1998 SA₇₃, 3, 1, 0; 1998 SJ₁₀₉, 3, 1, 0; 1998 SQ₁₀₉, 3, 1, 0; 1998 SR₁₁₁, 3, 1, 0; 1998 SE₁₃₂, 3, 1, 0; 1998 SM₁₄₀, 3, 1, 0; 1998 SD₁₄₁, 3, 1, 0; 1998 SJ₁₄₄, 3, 1, 0; 1998 SV₁₆₃, 3, 1, 0; 1998 SE₁₆₄, 3, 1, 0; 1998 SF₁₆₄, 3, 1, 0; 1998 TZ₁, 3, 1, 0; 1998 TG₃, 3, 1, 0; 1998 TN₃, 3, 1, 0; 1998 TO₃, 3, 1, 0; 1998 TM₆, 3, 1, 0; 1998 TL₁₅, 3, 1, 0; 1998 TX₂₈, 3, 1, 0; 1998 TB₂₉, 3, 1, 0; 1998 TN₃₀, 3, 1, 0; 1998 TR₃₀, 3, 1, 0; 1998 TF₃₃, 3, 1, 0; 1998 TG₃₄, 3, 1, 0; 1998 UA₁, 3, 1, 0; 1998 UQ₂, 3, 1, 0; 1998 UF₄, 3, 1, 0; 1998 UZ₆, 3, 1, 0; 1998 UP₇, 3, 1, 0; 1998 UZ₇, 3, 1, 0; 1998 UF₁₅, 3, 1, 0; 1998 US₁₅, 3, 1, 0; 1998 UU₁₅, 3, 1, 0; 1998 UW₁₅, 3, 1, 0; 1998 UE₁₆, 3, 1, 0; 1998 UO₁₆, 3, 1, 0; 1998 UV₁₉, 3, 1, 0; 1998 UW₂₂, 3, 1, 0; 1998 UO₂₃, 3, 1, 0; 1998 VG, 3, 1, 0; 1998 VW, 3, 1, 0; 1998 VM₁, 3, 1, 0; 1998 VB₃, 3, 1, 0; 1998 VX₃, 3, 1, 0; 1998 VY₃, 3, 1, 0; 1998 VB₅, 3, 1, 0; 1998 VG₅, 3, 1, 0; 1998 VE₆, 3, 1, 0; 1998 VF₆, 3, 1, 0; 1998 VG₆, 3, 1, 0; 1998 VH₆, 3, 1, 0; 1998 VJ₆, 3, 1, 0; 1998 VF₇, 3, 1, 0; 1998 VS₇, 3, 1, 0; 1998 VX₇, 3, 1, 0; 1998 VC₈, 3, 1, 0; 1998 VJ₈, 3, 1, 0; 1998 VG₉, 3, 1, 0; 1998 VZ₁₀, 3, 1, 0; 1998 VK₁₁, 3, 1, 0; 1998 VQ₁₂, 3, 1, 0; 1998 VU₁₂, 3, 1, 0; 1998 VD₁₃, 3, 1, 0; 1998 VH₁₃, 3, 1, 0; 1998 VM₁₃, 3, 1, 0; 1998 VN₁₃, 3, 1, 0; 1998 VP₁₃, 3, 1, 0; 1998 VR₁₃, 3, 1, 0; 1998 VS₁₃, 3, 1, 0; 1998 VU₁₃, 3, 1, 0; 1998 VV₁₄, 3, 1, 0; 1998 VB₁₅, 3, 1, 0; 1998 VY₁₅, 3, 1, 0; 1998 VA₁₆, 3, 1, 0; 1998 VM₁₆, 3, 1, 0; 1998 VN₁₆, 3, 1, 0; 1998 VO₁₆, 3, 1, 0; 1998 VP₁₆, 3, 1, 0; 1998 VT₁₆, 3, 1, 0; 1998 VV₁₆, 3, 1, 0; 1998 VD₁₇, 3, 1, 0; 1998 VT₁₉, 3, 1, 0; 1998 VU₁₉, 3, 1, 0; 1998 VW₁₉, 3, 1, 0; 1998 VX₁₉, 3, 1, 0; 1998 VA₂₂, 3, 1, 0; 1998 VE₂₂, 3, 1, 0; 1998 VR₂₅, 3, 1, 0; 1998 VY₂₅, 3, 1, 0; 1998 VJ₂₆, 3, 1, 0; 1998 VK₂₆, 3, 1, 0; 1998 VM₂₆, 3, 1, 0; 1998 VO₂₆, 3, 1, 0; 1998 VP₂₆, 3, 1, 0; 1998 VG₂₇, 3, 1, 0; 1998 VM₂₇, 3, 1, 0; 1998 VQ₂₇, 3, 1, 0; 1998 VR₂₇, 3, 1, 0; 1998 VX₂₈, 3, 1, 0; 1998 VO₂₉, 3, 1, 0; 1998 VP₂₉, 3, 1, 0; 1998 VA₃₀, 3, 1, 0; 1998 VX₃₂, 3, 1, 0; 1998 VL₃₃, 3, 1, 0; 1998 VR₃₃, 3, 1, 0; 1998 WL *, 3, 1, 0; 1998 WE₄, 3, 1, 0; 3306 T-1, 3, 1, 0; 4271 T-1, 3, 1, 0; 1093 T-2, 3, 1, 0; 5211 T-2, 3, 1, 0; 2272 T-3, 3, 1, 0; (34), 3, 1, 0; (42), 3, 1, 0; (119), 3, 1, 0; (256), 3, 1, 0; (281), 3, 1, 0; (282), 3, 1, 0; (295), 3, 1, 0; (345), 3, 1, 0; (513), 3, 1, 0; (607), 3, 1, 0; (659), 3, 1, 0; (673), 3, 1, 0; (683), 3, 1, 0; (784), 3, 1, 0; (799), 3, 1, 0; (804), 3, 1, 0; (853), 3, 1, 0; (934), 3, 1, 0; (1101), 3, 1, 0; (1129), 3, 1, 0; (1143), 3, 1, 0; (1147), 3, 1, 0; (1188), 3, 1, 0; (1201), 3, 1, 0; (1298), 3, 1, 0; (1376), 3, 1, 0; (1476), 3, 1, 0; (1490), 3, 1, 0; (1510), 3, 1, 0; (1520), 3, 1, 0; (1651), 3, 1, 0; (1666), 3, 1, 0; (1674), 3, 1, 0; (1738), 3, 1, 0; (1772), 3, 1, 0; (1869), 3, 1, 0; (1977), 3, 1, 0; (1991), 3, 1, 0; (2104), 3, 1, 0; (2172), 3, 1, 0; (2184), 3, 1, 0; (2212), 3, 1, 0; (2427), 3, 1, 0; (2443), 3, 1, 0; (2500), 3, 1, 0; (2505), 3, 1, 0; (2546), 3, 1, 0; (2609), 3, 1, 0; (2759), 3, 1, 0; (2791), 3, 1, 0; (2854), 3, 1, 0; (2867), 3, 1, 0; (3026), 3, 1, 0; (3049), 3, 1, 0; (3107), 3, 1, 0; (3128), 3, 1, 0; (3151), 3, 1, 0; (3207), 3, 1, 0; (3263), 3, 1, 0; (3316), 3, 1, 0; (3350), 3, 1, 0; (3368), 3, 1, 0; (3387), 3, 1, 0; (3412), 3, 1, 0; (3466), 3, 1, 0; (3588), 3, 1, 0; (3676), 3, 1, 0; (3695), 3, 1, 0; (3705), 3, 1, 0; (3747), 3, 1, 0; (3808), 3, 1, 0; (3928), 3, 1, 0; (4047), 3, 1, 0; (4058), 3, 1, 0; (4081), 3, 1, 0; (4103), 3, 1, 0; (4115), 3, 1, 0; (4144), 3, 1, 0; (4154), 3, 1, 0; (4184), 3, 1, 0; (4193), 3, 1, 0; (4313), 3, 1, 0; (4323), 3, 1, 0; (4396), 3, 1, 0; (4590), 3, 1, 0; (4610), 3, 1, 0; (4635), 3, 1, 0; (4675), 3, 1, 0; (4771), 3, 1, 0; (4849), 3, 1, 0; (4893), 3, 1, 0; (4932), 3, 1, 0; (4983), 3, 1, 0; (5002), 3, 1, 0; (5053), 3, 1, 0; (5080), 3, 1, 0; (5111), 3, 1, 0; (5180), 3, 1, 0; (5283), 3, 1, 0; (5307), 3, 1, 0; (5346), 3, 1, 0; (5441), 3, 1, 0; (5559), 3, 1, 0; (5730), 3, 1, 0; (5769), 3, 1, 0; (5800), 3, 1, 0; (5826), 3, 1, 0; (6074), 3, 1, 0; (6131), 3, 1, 0; (6355), 3, 1, 0; (6400), 3, 1, 0; (6425), 3, 1, 0; (6705), 3, 1, 0; (6753), 3, 1, 0; (6765), 3, 1, 0; (6843), 3, 1, 0; (6856), 3, 1, 0; (6897), 3, 1, 0; (6915), 3, 1, 0; (6920), 3, 1, 0; (6933), 3, 1, 0; (6950), 3, 1, 0; (6983), 3, 1, 0; (7050), 3, 1, 0; (7095), 3, 1, 0; (7400), 3, 1, 0; (7433), 3, 1, 0; (7653), 3, 1, 0; (7730), 3, 1, 0; (7732), 3, 1, 0; (7780), 3, 1, 0; (7792), 3, 1, 0; (7795), 3, 1, 0; (8048), 3, 1, 0; (9199), 3, 1, 0; (9260), 3, 1, 0; (9261), 3, 1, 0; (9311), 3, 1, 0; (9314), 3, 1, 0; (9333), 3, 1, 0; (9348), 3, 1, 0; (9374), 3, 1, 0; (9419), 3, 1, 0; (9513), 3, 1, 0; (9533), 3, 1, 0; (9534), 3, 1, 0; (9535), 3, 1, 0; (9538), 3, 1, 0; (9539), 3, 1, 0; (9545), 3, 1, 0; (9559), 3, 1, 0; (9563), 3, 1, 0; (9584), 3, 1, 0; (9598), 3, 1, 0; (9627), 3, 1, 0; (9709), 3, 1, 0; [1041, 346, 2*, 1996/03/15–1998/11/16]

568 Mauna Kea

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U.S.A. [tholen@hale.ifa.hawaii.edu]

Observers D. J. Tholen, R. Whiteley, J. Bauer, H. Dahle

Measurers R. Whiteley, D. J. Tholen

2.2-m reflector + CCD

USNO-A1.0, USNO-A2.0

1998 QM₁₀₇ *, 27, 9, 99; [27, 1, 1*, 1998/08/21–1998/11/28]

587 Sormano

P. Sicoli, Via Valli 9, I-23846 Garbagnate Monastero (Lecco), Italy

[sormano@tin.it]

Observers F. Manca, P. Sicoli, A. Testa, V. Giuliani, M. Cavagna

0.5-m reflector + CCD

GSC

1996 HW₆, 3, 1, 0; 1997 RO₇, 11, 4, 5; 1997 TC₄, 4, 2, 2; 1998 TU₃, 2, 1, 0; 1998 UO₁, 2, 1, 0; 1998 UV₆, 4, 2, 2; 1998 VN₂, 2, 1, 0; 1998 VO₂, 1, 0; 1998 VR₂, 1, 0; 1998 VS₂, 2, 1, 0; 1998 VD₃₁, 2, 1, 0; 1998 VE₃₁, 2, 1, 0; 1998 VF₃₁, 2, 1, 0; 1998 VO₃₃, 4, 2, 11; 1998 VS₃₃ *, 15, 6, 13; 1998 VT₃₃ *, 11, 5, 13; 1998 VG₃₄ *, 13, 5, 13; 1998 WM₂, 2, 1, 0; 1998 WS₂, 2, 1, 0; 1998 WY₁, 2, 1, 0; 1998 WA₂, 2, 1, 0; 1998 WB₂, 5, 2, 9; 1998 WD₂ *, 12, 6, 11; 1998 WP₅, 2, 1, 0; 1998 WR₅, 1, 1, 0; 1998 WZ₆, 2, 1, 0; 1998 WO₇, 3, 1, 0; *[116, 27, 4*, 1998/11/15–1998/11/29]*

589 Santa Lucia Stroncone

A. Vagnozzi, Via Santa Lucia 68, I-05039 Stroncone (Terni), Italy

[vagnozzi@freenet.hut.fi]

Observers A. Vagnozzi, G. Bernabei, V. Risoldi, V. Scirri

0.50-m $f/2.8$ Ritchey-Chrétien + CCD

GSC

1998 SR₄, 4, 1, 0; 1998 SR₂₆, 3, 1, 0; 1998 UB₄, 8, 2, 12; *[15, 3, 0*, 1998/11/08–1998/11/20]*

595 Farra d'Isonzo

L. Bittesini, Via dei Conventi 10, I-34070 Farra D'Isonzo (GO), Italy

[ccaf@tmedia.it]

Observers A. Toso, E. Pettarin, M. Spolaor, G. Lombardi, L. Bittesini, L. Drigo

Measurers E. Pettarin, G. Lombardi, A. Toso

0.4-m $f/4.5$ reflector + CCD

GSC

1979 EL₄, 4, 2, 6; 1981 EP₁₃, 2, 1, 0; 1994 FQ₄, 4, 2, 1; 1998 ST₂, 4, 2, 1; 1998 SE₃₅, 4, 2, 2; 1998 SQ₄₂, 4, 2, 2; 1998 UX₆, 2, 1, 0; 1998 VM₃₂, 4, 2, 1; 1998 VZ₃₃ *, 9, 4, 9; 1998 WH₂ *, 6, 3, 8; 1998 WJ₂ *, 6, 3, 8; 1998 WB₄ *, 6, 3, 6; 1998 WC₄ *, 7, 3, 6; *[62, 13, 5*, 1998/11/11–1998/11/26]*

596 Colleverde di Guidonia

V. S. Casulli, Via M. Rosa 1, I-00010 Colleverde di Guidonia (RM), Italy

[v.casulli@priminet.it]

0.40-m $f/3.2$ reflector + CCD

GSC

1995 DO₂, 6, 2, 2; 1997 NQ₄, 4, 2, 2; 1998 UQ₃₀, 3, 1, 0; 1998 VO₃₃, 3, 1, 0; 1998 WM₂, 2, 1, 0; (4190), 3, 1, 0; *[21, 6, 0*, 1998/11/15–1998/11/18]*

604 Archenhold Sternwarte, Berlin-Treptow

A. Doppler, c/o Archenhold-Sternwarte, Alt-Treptow 1, D-12435 Berlin, Germany

[doppler@mind.de]

Observers A. Doppler, A. Gnädig

Measurer A. Gnädig

0.15-m reflector + CCD

USNO-SA1.0

1995 GO₇, 1, 1, 0; *[1, 1, 0*, 1998/11/21]*

610 Pianoro

V. Goretti, Via Resistenza 93, I-40065 Pianoro (BO), Italy

[astrofil@astbo1.bo.cnr.it]

0.25-m $f/4$ Schmidt-Cassegrain + CCD

GSC

1989 SW₈, 5, 1, 0; 1989 UR₂₅, 1, 0; 1993 FL₁, 5, 1, 0; 1993 YD₅, 1, 0; 1994 PZ₂₉, 5, 1, 0; 1994 UJ₁, 5, 1, 0; 1994 YJ₁, 5, 1, 0; 1997 NZ₂, 5, 1, 0; 1997 NK₁₀, 10, 2, 2; 1998 UL₂₃, 10, 2, 2; 1998 VJ₃₃ *, 15, 3, 2; 1998 VL₃₃, 5, 1, 0; 1998 VS₃₄, 10, 2, 2; 1998 WP₂ *, 10, 2, 2; 1998 WQ₂ *, 15, 3, 11; (44), 49, 3, 18; (732), 5, 1, 0; (933), 5, 1, 0; (1010), 5, 1, 0; (1143), 15, 3, 2; (1358), 5, 1, 0; (1412), 5, 1, 0; (2099), 32, 2, 2; (2887), 5, 1, 0; (3797), 5, 1, 0; (4057), 5, 1, 0; (4184), 5, 1, 0; (4325), 10, 2, 2; (4635), 5, 1, 0; (5142), 5, 1, 0; (5347), 5, 1, 0; (6173), 9, 2, 1; (7022), 20, 4, 12; (7653), 15, 3, 2; *[345, 34, 3*, 1998/10/24–1998/11/28]*

611 Starkenburg Sternwarte, Heppenheim

M. Busch, Giessener Strasse 4, D-64646 Heppenheim, Germany [mab@iez.com]

Observers R. Stoss, J. Volpp, M. Busch, P. Geffert, E. Schwab

Measurers R. Stoss, M. Busch

0.45-m $f/4.4$ reflector + CCD

USNO-SA1.0, USNO-A1.0

1998 UM₂₀, 3, 1, 0; 1998 VN₃, 3, 1, 0; 1998 VO₂, 2, 1, 0; 1998 VR₄, 1, 0; 1998 VD₃₁, 7, 2, 10; 1998 WP₅, 3, 1, 0; 1998 WR₅, 3, 1, 0; (7686), 2, 1, 0; (7687), 2, 1, 0; *[29, 9, 0*, 1998/11/11–1998/11/21]*

619 Sabadell

F. Casarramona, P.O. Box 50, E-8200 Sabadell (BCN), Spain

[astrosab@redestb.es]

Observers F. Casarramona, J. Presa, D. Araujo, D. Granados

Measurer F. Casarramona

0.51-m $f/3.9$ reflector + CCD

GSC

1998 VO₂, 2, 1, 0; 1998 VR₃, 3, 1, 0; *[5, 2, 0*, 1998/11/11]*

620 Observatorio Astronómico de Mallorca

M. Blasco, Afueras s/n, E-07144 Costitx, Balears, Spain

[astroam@dinky.bitel.es]

Observers A. Lopez, R. Pacheco

0.30-m $f/3.3$ Schmidt-Cassegrain + CCD

GSC

1997 LL₆, 9, 3, 8; 1997 PU₄, 3, 1, 0; 1998 WD₄ *, 6, 2, 1; *[18, 3, 1*, 1998/11/14–1998/11/22]*

621 Bergisch Gladbach

W. Bickel, Schau ins Land 21, D-51429 Bergisch Gladbach, Germany [0220455671-

0001@t-online.de]

0.60-m $f/5$ reflector + CCD

USNO-SA1.0

1995 YS₂₅, 7, 2, 1; 1997 UO₂₄, 6, 2, 1; 1998 ON₁, 9, 2, 1; 1998 QK₆₃, 9, 3, 9; 1998 QL₆₃, 6, 2, 2; 1998 RY₅₅, 3, 1, 0; 1998 SM₄₉, 9, 2, 1; 1998 SO₄₉, 11, 3, 2; 1998 SP₄₉, 7, 2, 1; 1998 SX₇₂, 14, 4, 3; 1998 WM₈ *, 9, 2, 1; 1998 WN₈ *, 10, 2, 1; 1998 WO₈ *, 12, 3, 2; *[112, 13, 3*, 1998/10/18–1998/11/22]*

627 Blauvac

R. Roy, Le Badassier St Esteve, F-84570 Blauvac, France [Rene.Roy@wanadoo.fr]

0.26-m $f/4.7$ reflector + CCD

GSC

1997 NU₆, 2, 1, 0; 1998 QZ₅, 6, 2, 5; 1998 SA₁, 3, 1, 0; 1998 SH₁₀, 3, 1, 0; 1998 SS₁₆₃, 3, 1, 0; 1998 TP₂, 3, 1, 0; 1998 UQ₂, 3, 1, 0; 1998 UC₃, 3, 1, 0; 1998 VR₃, 1, 0; 1998 VT₅, 3, 1, 0; 1998 VO₃₃, 4, 1, 0; 1998 WL₂, 1, 0; 4812 P-L, 3, 1, 0; (2076), 3, 1, 0; (7067), 3, 1, 0; (9262), 2, 1, 0; (9517), 3, 1, 0; *[52, 17, 0*, 1998/11/09–1998/11/22]*

631 Hamburg-Georgswerder

M. Buck, Niedergeorgswerder Deich 96a, D-21109 Hamburg, Germany

[michael.buck@joice.net]

0.15-m $f/8$ refractor + CCD

GSC

(799), 3, 2, 1; (7641), 3, 2, 1; (9154), 4, 2, 1; (9513), 2, 1, 0; (9535), 3, 2, 1; (9541), 3, 2, 1; (9542), 3, 2, 1; (9566), 3, 2, 1; *[24, 8, 0*, 1998/11/20–1998/11/22]*

635 Perpignan

J.-M. Llapasset, 66 Cours De Lassus, F-66000 Perpignan, France [Jean-

Marie.Llapasset@wanadoo.fr]

0.28-m $f/6.3$ reflector + CCD

USNO-SA1.0

1998 KU₂, 4, 1, 0; 1998 PG, 4, 1, 0; [8, 2, 0*, 1998/11/09–1998/11/15]

638 Detmold

U. Borcheld, Klusstraße 39, D-32756 Detmold, Germany

[100265.2520@compuserve.com]

0.25-m Schmidt-Cassegrain + CCD

GSC

(4294), 2, 1, 0; (6877), 2, 1, 0; (7641), 2, 1, 0; [6, 3, 0*, 1998/11/11–1998/11/22]

652 Sandringham, Calgary

K. Yeung, 139 Sandringham Place NW, Calgary, Alberta T3K 3V8, Canada

[cyber_bill@sprynet.com]

0.25-m $f/3.3$ Schmidt-Cassegrain + CCD

(1222), 1, 1, 0; (1978), 4, 2, 2; (3985), 2, 1, 0; (6162), 1, 1, 0; (6419), 2, 1, 0; [10, 5, 0*, 1998/11/11–1998/11/26]

653 Torus Observatory, Buckley

R. J. Williams, 224th Ave. E., Buckley, WA 98321, U.S.A.

[richjwilliams@msn.com]

0.4-m $f/10$ Cassegrain reflector + CCD

GSC

(6162), 1, 1, 0; [1, 1, 0*, 1998/11/26]

658 Dominion Astrophysical Observatory, Victoria

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V8W 3P6, Canada [universe@uvvm.uvic.ca]

Observers G. C. L. Aikman, D. D. Balam

1.82-m Plaskett telescope + CCD

GSC, USNO-A1.0

1958 TL₁, 2, 1, 0; 1989 UR, 3, 1, 0; 1997 BQ, 3, 1, 0; 1998 ML₁₄, 3, 1, 0; 1998 PB₁, 3, 1, 0; 1998 QR₅₂, 3, 1, 0; 1998 QS₅₂, 3, 1, 0; 1998 ST₄, 3, 1, 0; 1998 SO₁₀, 4, 1, 0; 1998 SB₁₅, 3, 1, 0; 1998 SE₃₅, 2, 1, 0; 1998 SF₃₆, 3, 1, 0; 1998 SS₄₉, 3, 1, 0; 1998 SU₆₃, 3, 1, 0; 1998 UD₁, 3, 1, 0; 1998 UT₁₈, 3, 1, 0; 1998 VP, 3, 1, 0; 1998 VQ, 3, 1, 0; 1998 VR, 6, 2, 25; (3200), 3, 1, 0; (6239), 2, 1, 0; [64, 21, 0*, 1998/11/11–1998/12/06]

670 Camarillo

J. E. Rogers, 441 Rowland Avenue, Camarillo, CA 93010, U.S.A.

[72401.3174@compuserve.com]

0.25-m Schmidt-Cassegrain + CCD

GSC

1989 UR, 3, 1, 0; 1996 FG₃, 2, 1, 0; 1998 VN, 3, 1, 0; 1998 VO, 4, 1, 0; 1998 VR, 6, 2, 14; 1998 WB₂, 6, 1, 0; [24, 6, 0*, 1998/11/12–1998/12/03]

673 Table Mountain Observatory

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Pasadena, CA 91109-8099 [wmo@wansor.jpl.nasa.gov]

Observers D. L. Rabinowitz, A. Boattini, W. M. Owen

0.6-m reflector + CCD

1998 VD₃₁, 2, 1, 0; 1998 VF₃₁, 2, 1, 0; (2), 6, 2, 27; (4), 2, 1, 0; (10), 4, 1, 0; (11), 2, 1, 0; (15), 7, 3, 27; (20), 2, 1, 0; (29), 5, 2, 1; (42), 5, 2, 1; (45), 6, 2, 26; (46), 2, 1, 0; (49), 2, 1, 0; (51), 3, 1, 0; (52), 3, 1, 0; (60), 2, 1, 0; (65), 2, 1, 0; (69), 2, 1, 0; (70), 3, 1, 0; (89), 3, 1, 0; (124), 2, 1, 0; (132), 4, 2, 26; (146), 2, 1, 0; (147), 7, 3, 27; (187), 2, 1, 0; (196), 3, 1, 0; (245), 4, 2, 26; (270), 6, 3, 27; (358), 4, 2, 1; (389), 2, 1, 0; (489), 1, 1, 0; (702), 3, 1, 0; (790), 2, 1, 0; (978), 1, 1, 0; (1036), 5, 2, 27; [113, 35, 0*, 1998/11/06–1998/12/03]

675 Palomar

E. F. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.
[efh@alps.jpl.nasa.gov] (2)

C. S. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A.

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9 = 6 + 3

Observers T. Gehrels (4, L), E. F. Helin (2, S), H. E. Holt (3, S), K. Lawrence (2, S), C. S. Shoemaker (3, S), E. M. Shoemaker (3, S), K. W. Zeigler (3, S)

Measurers A. Gnädig (5), K. Lawrence (2), B. A. Skiff (6), C. J. van Houten (4), I. van Houten-Groeneveld (4), G. V. Williams (7), A. Wisse (4)

1.2-m Oschin Schmidt (L), 0.46-m Schmidt (S)

(2) 1997 PE, 8, 4, 28; [8, 1, 0*, 1990/07/22–1990/08/19]

(4) 2027 P-L *, 8, 8, 32; 2167 P-L *, 3, 3, 3; 2507 P-L *, 10, 9, 32; 2681 P-L *, 8, 8, 32; 2722 P-L *, 9, 5, 23; 2730 P-L *, 6, 3, 4; 2731 P-L *, 7, 7, 32; 2814 P-L *, 6, 5, 23; 4013 P-L *, 8, 8, 32; 4105 P-L *, 8, 8, 32; 4112 P-L *, 9, 8, 32; 4285 P-L *, 5, 5, 23; 4664 P-L *, 7, 7, 32; 4770 P-L *, 8, 5, 28; 4784 P-L *, 4, 4, 4; 4810 P-L *, 7, 7, 32; 4859 P-L *, 5, 5, 23; 4862 P-L *, 7, 4, 4; 5552 P-L *, 4, 4, 9; 6075 P-L *, 8, 7, 32; 6577 P-L *, 9, 8, 32; 6793 P-L *, 6, 6, 28; 9089 P-L *, 4, 4, 9; 9097 P-L *, 5, 5, 32; 9541 P-L *, 4, 4, 9; 9543 P-L *, 4, 4, 9; 9573 P-L *, 3, 3, 4; 1191 T-1 *, 5, 4, 8; 1272 T-1 *, 5, 4, 3; 2140 T-1 *, 11, 9, 53; 2200 T-1 *, 5, 4, 3; 2304 T-1 *, 6, 4, 3; 2307 T-1 *, 13, 9, 53; 4044 T-1 *, 6, 4, 9; 4048 T-1 *, 5, 4, 9; 4055 T-1 *, 4, 3, 3; 4315 T-1 *, 5, 4, 9; 1259 T-2 *, 20, 8, 16; 1468 T-2 *, 6, 3, 5; 1550 T-2 *, 7, 4, 6; 2047 T-2 *, 15, 8, 16; 2107 T-2 *, 15, 8, 16; 3092 T-2 *, 15, 8, 16; 3161 T-2 *, 15, 8, 16; 3222 T-2 *, 24, 8, 16; 4092 T-2 *, 15, 8, 16; 4257 T-2 *, 15, 8, 16; 4297 T-2 *, 10, 5, 10; 4304 T-2 *, 8, 4, 6; 4832 T-2 *, 7, 4, 6; 1090 T-3 *, 10, 5, 11; 2349 T-3 *, 13, 7, 15; 3168 T-3 *, 13, 7, 15; 3229 T-3 *, 13, 7, 15; 3320 T-3 *, 13, 7, 15; 3393 T-3 *, 13, 7, 15; 4049 T-3 *, 12, 7, 15; 4196 T-3 *, 12, 6, 11; 4205 T-3 *, 13, 7, 15; 4371 T-3 *, 7, 4, 6; 4445 T-3 *, 7, 4, 6; 5004 T-3 *, 6, 3, 5; 5173 T-3 *, 6, 3, 5; 5706 T-3 *, 8, 4, 6; [555, 64, 64*, 1960/09/24–1977/10/22]

(5) 1995 GO₇, 2, 1, 0; 1995 VR₁, 2, 1, 0; 1997 FW₁, 2, 1, 0; 1998 TO₁₅, 1, 1, 0; 2643 P-L, 2, 1, 0; [9, 5, 0*, 1953/03/09–1994/01/11]

(7) 1997 NU, 2, 1, 0; [2, 1, 0*, 1990/10/15]

(9) 1992 WK₁, 2, 1, 0; [2, 1, 0*, 1990/05/25]

681 Calgary

G. W. Billings, 2320 Cherokee Dr NW, Calgary, Alberta T2L 0X7, Canada

[gbillings@talisman-energy.com]

0.235-m $f/3.3$ Schmidt-Cassegrain + CCD

GSC

(2099), 11, 4, 19; (2528), 6, 3, 2; [17, 2, 0*, 1998/09/12–1998/10/25]

683 Goodricke-Pigott Observatory, Tucson

R. A. Tucker, 5500 West Nebraska Street, Tucson, AZ 85746, U.S.A.

[tucker@noao.edu]

0.36-m $f/11$ Schmidt-Cassegrain + CCD

GSC

1989 AT, 8, 3, 3; 1998 QC₇₁, 6, 2, 2; 1998 SA₃, 3, 1, 0; 1998 SW₁₀, 3, 1, 0; 1998 TP, 6, 2, 1; 1998 UT₁₆, 6, 2, 1; 1998 UJ₂₃, 6, 2, 1; 1998 UK₂₃, 6, 2, 1; 1998 VK, 6, 2, 1; 1998 VL, 6, 2, 1; 1998 VF₃₃ *, 6, 2, 1; 1998 VG₃₃ *, 9, 3, 13; 1998 WF *, 12, 4, 7; 1998 WE₅ *, 11, 4, 6; 1998 WF₅ *, 6, 2, 1; 1998 WG₅ *, 9, 3, 2; 1998 WX₁₉ *, 6, 2, 1; [115, 17, 7*, 1998/11/11–1998/11/27]

684 Prescott

P. G. Comba, 1411 Galaxy Lane, Prescott, AZ 86303, U.S.A.

[comba@northlink.com]

0.46-m $f/4.5$ reflector + CCD

GSC

1987 RN₆, 4, 1, 0; 1996 HX, 5, 2, 2; 1997 JT₃, 6, 3, 2; 1997 LC, 2, 1, 0; 1997 LA₅, 5, 2, 1; 1997 NA₁, 5, 2, 1; 1997 NU₁, 4, 2, 1; 1997 PK₁, 4, 2, 1; 1997 RQ₅, 4, 2, 1; 1998 RP₁, 3, 2, 1; 1998 SB₂, 4, 2, 1; 1998 SE₄, 2, 1, 0; 1998 SM₄, 3, 2, 1; 1998 SB₂₈, 5, 2, 3; 1998 SC₂₈, 4, 2, 3; 1998 US, 4, 2, 1; 1998 UG₇, 2, 1, 0; 1998 VL₃₁, 4, 2, 1; 1998 VR₃₁ *, 6, 3, 5; 1998 VS₃₁ *, 7, 3, 2; 1998 VF₃₄, 2, 1, 0; 1998 WJ *, 10, 5, 9; 1998 WK *, 10, 5, 9; 1998 WO, 2, 1, 0; 1998 WW *, 4, 2, 2; 1998 WX *, 5, 2, 2; 1998 WY *, 9, 4, 8; 1998 WZ *, 4, 2, 2; 1998 WA₁ *, 4, 2, 2; 1998 WB₁ *, 5, 2, 2; 1998 WE₂ *, 5, 2, 1; 1998 WF₂ *, 4, 2, 1; 1998 WG₂ *, 8, 4, 7; 1998 WJ₄ *, 4, 2, 1; 1998 WK₄ *, 8, 4, 5; 1998 WD₅, 4, 2, 1; 1998 WQ₅, 4, 2, 1; 1998 WM₆, 6, 2, 1; 1998 WZ₆, 3, 1, 0; 1998 WZ₇ *, 4, 2, 1; (5016), 2, 1, 0; [190, 41, 16*, 1998/11/10–1998/11/27]

688 Lowell Observatory, Anderson Mesa Station

M. W. Buie, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff AZ 86001,

U.S.A. [buie@lowell.edu]

Observer L. H. Wassermann

Measurer M. W. Buie

1.8-m reflector + CCD

USNO-A2.0

1994 UF, 4, 1, 0; 1996 BR₁, 2, 1, 0; 1998 UZ₈, 3, 1, 0; 1998 WR₂₁, 2, 1, 0; 1998 WH₂₄, 27, 3, 2; 1998 WJ₂₄, 3, 1, 0; 1998 WK₂₄, 2, 1, 0; 1998 WL₂₄, 2, 1, 0; 1998 WM₂₄, 2, 1, 0; 1998 WN₂₄, 2, 1, 0; 1998 WO₂₄, 2, 1, 0; 1998 WP₂₄, 4, 2, 1; 1998 WQ₂₄, 2, 1, 0; 1998 WR₂₄, 2, 1, 0; 1998 WS₂₄, 2, 1, 0; [61, 15, 0*, 1997/05/13–1998/11/26]

691 Kitt Peak, Steward Observatory

R. S. McMillan, Space Sciences Building, University of Arizona, Tucson, AZ 85721,

U.S.A. [bob@lpl.arizona.edu]

Observers T. Gehrels, J. Larsen, J. Montani, J. V. Scotti, A. Gleason, N. Danzl

0.91-m Spacewatch telescope + CCD

GSC

1973 SS, 3, 1, 0; 1973 SR₁, 9, 3, 8; 1980 FY₂, 3, 1, 0; 1981 EZ, 6, 2, 4; 1981 EW₁₃, 5, 2, 7; 1981 EO₁₈, 3, 1, 0; 1981 EE₁₉, 9, 3, 12; 1981 EY₁₉, 3, 1, 0; 1981 EW₃₀, 3, 1, 0; 1981 EM₃₁, 3, 1, 0; 1981 EQ₃₃, 3, 1, 0; 1981 UU₂₉, 3, 1, 0; 1984 SZ₅, 6, 2, 2; 1986 QP₂, 3, 1, 0; 1986 SC₂, 2, 1, 0; 1987 GA, 3, 1, 0; 1987 UA₁, 6, 2, 6; 1988 DJ₂, 3, 1, 0; 1988 GD, 3, 1, 0; 1988 PL, 3, 1, 0; 1988 RV₄, 6, 2, 4; 1988 VY, 6, 2, 10; 1989 SK₁, 6, 2, 10; 1989 UR, 3, 1, 0; 1989 VS₁, 3, 1, 0; 1989 WH, 3, 1, 0; 1991 AK, 3, 1, 0; 1991 LU₁, 6, 2, 24; 1991 RS₂, 3, 1, 0; 1991 VL₁, 3, 1, 0; 1991 YL₁, 5, 2, 10; 1992 DZ₂, 3, 1, 0; 1993 DL₃ *, 6, 2, 21; 1993 FH₇, 6, 2, 5; 1993 FG₂₃, 3, 1, 0; 1993 FW₂₄, 3, 1, 0; 1993 FW₇₃, 3, 1, 0; 1993 HS, 3, 1, 0; 1993 TD₁₇, 8, 3, 12; 1994 AC₃, 5, 2, 12; 1994 HB, 6, 2, 2; 1994 PP₁₆, 3, 1, 0; 1994 RM₂₉ *, 5, 2, 2; 1994 SZ₁, 6, 2, 5; 1994 SS₉, 3, 1, 0; 1994 TR₁, 3, 1, 0; 1994 VA₁, 6, 2, 10; 1994 XP, 3, 1, 0; 1995 CY₁₀ *, 6, 2, 14; 1995 EJ₉ *, 6, 2, 6; 1995 GO₇, 3, 1, 0; 1995 WP₁₇, 3, 1, 0; 1996 BL₂, 6, 2, 3; 1996 ER₂, 3, 1, 0; 1996 ER₁₂, 3, 1, 0; 1996 GU₈, 8, 3, 12; 1996 GG₂₀, 3, 1, 0; 1996 HC₁, 9, 3, 13; 1996 HF₁₁, 3, 1, 0; 1996 HC₁₂, 7, 2, 3; 1996 HR₂₁, 6, 2, 1; 1996 KX₈, 3, 1, 0; 1996 OO, 3, 1, 0; 1997 BQ, 6, 2, 7; 1997 GX₂₀, 3, 1, 0; 1997 HM₁₀, 3, 1, 0; 1997 LF₁₈ *, 6, 2, 23; 1997 NU₁, 5, 2, 8; 1997 UX₂₀, 2, 1, 0; 1998 MK₃₀, 3, 1, 0; 1998 QR₆, 6, 2, 4; 1998 QA₉₃, 3, 1, 0; 1998 QS₉₈, 6, 2, 12; 1998 RA₅₅, 6, 2, 5; 1998 RM₆₅, 6, 2, 1; 1998 RP₇₁, 3, 1, 0; 1998 RC₇₂, 3, 1, 0; 1998 RA₇₇, 6, 2, 1; 1998 SN₂, 5, 2, 3; 1998 SF₁₀, 2, 1, 0; 1998 SO₃₅, 6, 2, 4; 1998 SQ₃₅, 3, 1, 0; 1998 SR₃₅, 6, 2, 3; 1998 SU₃₅, 6, 2, 2; 1998 SO₅₆, 6, 2, 2; 1998 SX₆₀, 9, 3, 7; 1998 SS₈₅, 6, 2, 1; 1998 SZ₉₆, 6, 2, 2; 1998 TV₁, 3, 1, 0; 1998 TP₅, 3, 1, 0; 1998 TO₆, 3, 1, 0; 1998 TS₁₀, 6, 2, 3; 1998 TU₁₂, 3, 1, 0; 1998 TV₁₂, 6, 2, 2; 1998 TX₁₂, 3, 1, 0; 1998 TH₁₅, 6, 2, 3; 1998 TL₁₅, 3, 1, 0; 1998 TJ₁₆, 3, 1, 0; 1998 TT₂₂, 6, 2, 4; 1998 TU₂₂, 3, 1, 0; 1998 TX₂₂, 3, 1, 0; 1998 TQ₂₅, 6, 2, 3; 1998 TU₂₅, 6, 2, 3; 1998 TZ₂₅, 6, 2, 3; 1998 TH₂₆, 6, 2, 3; 1998 TN₂₆, 6, 2, 3; 1998 TT₂₆, 3, 1, 0; 1998 TV₂₆, 5, 2, 3; 1998 TD₂₇, 3, 1, 0; 1998 TS₂₉, 6, 2, 3; 1998 TV₂₉, 6, 2, 4; 1998 TG₃₀, 3, 1, 0; 1998 TQ₃₃, 9, 3, 10; 1998 UB₁, 3, 1, 0; 1998 UD₇, 3, 1, 0; 1998 UB₈, 9, 3, 12; 1998 UB₉, 6, 2, 4; 1998 UG₁₀, 6, 2, 4; 1998 UF₁₆, 3, 1, 0; 1998 UP₁₆, 3, 1, 0; 1998 UY₁₈, 6, 2, 6; 1998 UY₁₉, 3, 1, 0; 1998 UA₂₀, 3, 1, 0; 1998 UB₂₀, 9, 3, 10; 1998 UC₂₀, 3, 1, 0; 1998 UE₂₁, 3, 1, 0; 1998 UU₂₂, 3, 1, 0; 1998 UV₂₂, 3, 1, 0; 1998 UX₂₂, 9, 3, 9; 1998 UM₂₄, 6, 2, 2; 1998 UV₂₄, 3, 1, 0; 1998 VC, 3, 1, 0; 1998 VE, 3, 1, 0; 1998 VU₁, 3, 1, 0; 1998 VZ₁, 3, 1, 0; 1998 VF₂, 3, 1, 0; 1998 VP₂, 3, 1, 0; 1998 VT₂, 5, 2, 4; 1998 VU₂, 5, 2, 4; 1998 VV₂, 3, 1, 0; 1998 VW₂, 5, 2, 4; 1998 VX₂, 3, 1, 0; 1998 VY₂, 3, 1, 0; 1998 VZ₂, 2, 1, 0; 1998 VF₃, 3, 1, 0; 1998 VJ₃, 3, 1, 0; 1998 VN₃, 3, 1, 0; 1998 VR₃, 3, 1, 0; 1998 VV₃, 9,

3, 9; 1998 VK₄, 3, 1, 0; 1998 VO₄, 3, 1, 0; 1998 VP₄, 3, 1, 0; 1998 VQ₄, 3, 1, 0; 1998 VR₄, 3, 1, 0; 1998 VT₄, 3, 1, 0; 1998 VA₅, 3, 1, 0; 1998 VB₅, 3, 1, 0; 1998 VC₅, 3, 1, 0; 1998 VD₅, 3, 1, 0; 1998 VE₅, 3, 1, 0; 1998 VZ₇, 6, 2, 1; 1998 VK₁₃, 7, 2, 5; 1998 VB₁₅, 3, 1, 0; 1998 VG₁₅, 13, 4, 41; 1998 VH₁₅, 3, 1, 0; 1998 VJ₁₅, 3, 1, 0; 1998 VM₁₅, 9, 3, 10; 1998 VN₁₅, 3, 1, 0; 1998 VL₁₇, 7, 2, 5; 1998 VA₁₉, 9, 3, 9; 1998 VN₂₀, 3, 1, 0; 1998 VO₂₀, 3, 1, 0; 1998 VX₂₀, 3, 1, 0; 1998 VY₂₀, 3, 1, 0; 1998 VG₂₁, 3, 1, 0; 1998 VJ₂₁, 3, 1, 0; 1998 VR₂₂, 3, 1, 0; 1998 VW₂₂, 3, 1, 0; 1998 VB₂₃, 3, 1, 0; 1998 VC₂₃, 6, 2, 3; 1998 VY₂₅, 3, 1, 0; 1998 VA₂₆, 3, 1, 0; 1998 VT₂₇, 3, 1, 0; 1998 VB₂₉, 3, 1, 0; 1998 VK₂₉, 3, 1, 0; 1998 VM₂₉, 3, 1, 0; 1998 VG₃₂, 2, 1, 0; 1998 VW₃₂, 3, 1, 0; 1998 VD₃₃, 3, 1, 0; 1998 VH₃₃ *, 4, 2, 2; 1998 VJ₃₃, 3, 1, 0; 1998 VL₃₃, 3, 1, 0; 1998 VU₃₃, 3, 1, 0; 1998 VW₃₃, 9, 3, 12; 1998 VX₃₃, 3, 1, 0; 1998 VF₃₄ *, 6, 2, 2; 1998 VK₃₄, 3, 1, 0; 1998 VL₃₄, 3, 1, 0; 1998 VP₃₄, 3, 1, 0; 1998 VQ₃₄, 3, 1, 0; 1998 VW₃₄, 3, 1, 0; 1998 VD₃₅ *, 12, 4, 11; 1998 VM₃₈, 6, 2, 3; 1998 VO₃₉ *, 6, 2, 1; 1998 VP₃₉ *, 6, 2, 2; 1998 VQ₃₉ *, 6, 2, 2; 1998 VR₃₉ *, 6, 2, 2; 1998 VS₃₉ *, 6, 2, 2; 1998 VT₃₉ *, 5, 2, 2; 1998 VU₃₉ *, 6, 2, 2; 1998 VV₃₉ *, 5, 2, 2; 1998 VW₃₉ *, 6, 2, 2; 1998 VX₃₉ *, 6, 2, 2; 1998 VY₃₉ *, 6, 2, 2; 1998 VZ₃₉ *, 6, 2, 2; 1998 VA₄₀ *, 6, 2, 2; 1998 VB₄₀ *, 6, 2, 2; 1998 VC₄₀ *, 6, 2, 2; 1998 VD₄₀ *, 5, 2, 2; 1998 VE₄₀ *, 6, 2, 2; 1998 VF₄₀ *, 6, 2, 2; 1998 VG₄₀ *, 5, 2, 2; 1998 VH₄₀ *, 6, 2, 2; 1998 VJ₄₀ *, 6, 2, 2; 1998 VK₄₀ *, 5, 2, 2; 1998 VL₄₀ *, 5, 2, 2; 1998 VM₄₀ *, 5, 2, 2; 1998 VN₄₀ *, 6, 2, 2; 1998 VO₄₀ *, 6, 2, 2; 1998 VP₄₀ *, 6, 2, 2; 1998 VQ₄₀ *, 5, 2, 2; 1998 VR₄₀ *, 6, 2, 2; 1998 VS₄₀ *, 6, 2, 2; 1998 VT₄₀ *, 6, 2, 2; 1998 VU₄₀ *, 6, 2, 2; 1998 VV₄₀ *, 6, 2, 2; 1998 VW₄₀ *, 6, 2, 2; 1998 VX₄₀ *, 6, 2, 2; 1998 VY₄₀ *, 6, 2, 2; 1998 VZ₄₀ *, 6, 2, 2; 1998 VA₄₁ *, 6, 2, 2; 1998 VB₄₁ *, 6, 2, 2; 1998 VC₄₁ *, 6, 2, 2; 1998 VD₄₁ *, 6, 2, 2; 1998 VE₄₁ *, 6, 2, 2; 1998 VF₄₁ *, 6, 2, 2; 1998 VG₄₁ *, 6, 2, 2; 1998 VH₄₁ *, 6, 2, 2; 1998 VJ₄₁ *, 6, 2, 2; 1998 VK₄₁ *, 6, 2, 2; 1998 VL₄₁ *, 6, 2, 2; 1998 VM₄₁ *, 6, 2, 2; 1998 VN₄₁ *, 6, 2, 2; 1998 VO₄₁ *, 6, 2, 2; 1998 VP₄₁ *, 5, 2, 4; 1998 VQ₄₁ *, 5, 2, 4; 1998 VR₄₁ *, 5, 2, 4; 1998 VS₄₁ *, 5, 2, 2; 1998 VT₄₁ *, 6, 2, 1; 1998 VU₄₁ *, 6, 2, 4; 1998 VV₄₁ *, 6, 2, 4; 1998 VW₄₁ *, 6, 2, 4; 1998 VX₄₁ *, 6, 2, 4; 1998 VY₄₁ *, 6, 2, 4; 1998 VZ₄₁ *, 6, 2, 4; 1998 VA₄₂ *, 6, 2, 4; 1998 VB₄₂ *, 6, 2, 4; 1998 VC₄₂ *, 6, 2, 4; 1998 VD₄₂ *, 6, 2, 4; 1998 VE₄₂ *, 6, 2, 4; 1998 VF₄₂ *, 6, 2, 4; 1998 VG₄₂ *, 6, 2, 4; 1998 VH₄₂ *, 6, 2, 4; 1998 VJ₄₂ *, 6, 2, 4; 1998 VK₄₂ *, 6, 2, 4; 1998 VL₄₂ *, 6, 2, 4; 1998 VM₄₂ *, 6, 2, 4; 1998 VN₄₂ *, 6, 2, 4; 1998 VO₄₂ *, 6, 2, 4; 1998 VP₄₂ *, 6, 2, 4; 1998 VQ₄₂ *, 6, 2, 4; 1998 VR₄₂ *, 6, 2, 4; 1998 VS₄₂ *, 6, 2, 4; 1998 VT₄₂ *, 6, 2, 4; 1998 VU₄₂ *, 6, 2, 4; 1998 VV₄₂ *, 6, 2, 4; 1998 VW₄₂ *, 6, 2, 4; 1998 VX₄₂ *, 6, 2, 4; 1998 VY₄₂ *, 6, 2, 2; 1998 VZ₄₂ *, 6, 2, 4; 1998 VA₄₃ *, 6, 2, 2; 1998 VB₄₃ *, 6, 2, 4; 1998 VC₄₃ *, 6, 2, 4; 1998 VD₄₃ *, 6, 2, 4; 1998 VE₄₃ *, 6, 2, 4; 1998 VF₄₃ *, 6, 2, 4; 1998 VG₄₃ *, 6, 2, 4; 1998 VH₄₃ *, 5, 2, 4; 1998 VJ₄₃ *, 6, 2, 3; 1998 VK₄₃ *, 6, 2, 3; 1998 VL₄₃ *, 6, 2, 4; 1998 VM₄₃ *, 6, 2, 4; 1998 VN₄₃ *, 6, 2, 4; 1998 VO₄₃ *, 6, 2, 3; 1998 VP₄₃ *, 6, 2, 3; 1998 VQ₄₃ *, 6, 2, 4; 1998 VR₄₃ *, 6, 2, 4; 1998 VS₄₃ *, 6, 2, 4; 1998 VT₄₃ *, 6, 2, 4; 1998 VU₄₃ *, 6, 2, 4; 1998 VV₄₃ *, 6, 2, 4; 1998 VW₄₃ *, 6, 2, 4; 1998 VX₄₃ *, 6, 2, 4; 1998 VY₄₃ *, 6, 2, 4; 1998 VZ₄₃ *, 6, 2, 4; 1998 VA₄₄ *, 6, 2, 4; 1998 VB₄₄ *, 6, 2, 3; 1998 VS₄₄ *, 6, 2, 3; 1998 WU₂, 3, 1, 0; 1998 WV₂, 3, 1, 0; 1998 WW₂, 3, 1, 0; 1998 WY₂, 6, 2, 2; 1998 WZ₂, 9, 3, 9; 1998 WL₄ *, 15, 5, 10; 1998 WK₆, 2, 1, 0; 1998 WJ₇ *, 8, 3, 6; 1998 WW₁₀, 6, 2, 2; 1998 WK₁₉, 6, 2, 4; 1998 WN₂₀, 6, 2, 4; 1998 WW₂₀, 6, 2, 2; 1998 WX₂₁, 6, 2, 2; 1998 WD₂₅ *, 6, 2, 5; 1998 WE₂₅ *, 6, 2, 3; 1998 WF₂₅ *, 6, 2, 5; 1998 WG₂₅ *, 6, 2, 5; 1998 WH₂₅ *, 7, 2, 5; 1998 WJ₂₅ *, 6, 2, 5; 1998 WK₂₅ *, 7, 2, 5; 1998 WL₂₅ *, 6, 2, 5; 1998 WM₂₅ *, 7, 2, 3; 1998 WN₂₅ *, 7, 2, 3; 1998 WO₂₅ *, 6, 2, 5; 1998 WP₂₅ *, 7, 2, 5; 1998 WQ₂₅ *, 7, 2, 5; 1998 WS₂₅ *, 6, 2, 3; 1998 WT₂₅ *, 6, 2, 3; 1998 WU₂₅ *, 6, 2, 5; 1998 WV₂₅ *, 6, 2, 3; 1998 WW₂₅ *, 6, 2, 5; 1998 WX₂₅ *, 6, 2, 5; 1998 WY₂₅ *, 6, 2, 5; 1998 WZ₂₅ *, 6, 2, 3; 1998 WA₂₆ *, 6, 2, 3; 1998 WB₂₆ *, 6, 2, 3; 1998 WC₂₆ *, 6, 2, 3; 1998 WD₂₆ *, 6, 2, 3; 1998 WE₂₆ *, 6, 2, 3; 1998 WF₂₆ *, 6, 2, 3; 1998 WG₂₆ *, 6, 2, 3; 1998 WH₂₆ *, 6, 2, 3; 1998 WJ₂₆ *, 5, 2, 3; 1998 WK₂₆ *, 6, 2, 3; 1998 WL₂₆ *, 6, 2, 3; 1998 WM₂₆ *, 6, 2, 3; 1998 WN₂₆ *, 6, 2, 3; 1998 WO₂₆ *, 6, 2, 3; 1998 WP₂₆ *, 6, 2, 3; 1998 WQ₂₆ *, 6, 2, 3; 1998 WR₂₆ *, 6, 2, 3; 1998 WS₂₆ *, 6, 2, 3; 1998 WT₂₆ *, 6, 2, 3; 1998 WU₂₆ *, 5, 2, 5; 1998 WV₂₆ *, 6, 2, 3; 1998 WW₂₆ *, 6, 2, 2; 1998 WX₂₆ *, 6, 2, 5; 1998 WY₂₆ *, 6, 2, 5; 1998 WZ₂₆ *, 5, 2, 2; 1998 WA₂₇ *, 5, 2, 2; 1998 WB₂₇ *, 5, 2, 2; 1998 WC₂₇ *, 5, 2, 2; 1998 WD₂₇ *, 5, 2, 2; 1998 WE₂₇ *, 5, 2, 2; 1998 WF₂₇ *, 6, 2, 2; 1998 WG₂₇ *, 6, 2, 4; 1998 WH₂₇ *, 5, 2, 4; 1998 WJ₂₇ *, 6, 2, 3; 1998 WK₂₇ *, 6, 2, 3; 1998 WL₂₇ *, 5, 2, 3; 1998 WM₂₇ *, 6, 2, 3; 1998 WN₂₇ *, 6, 2, 3; 1998 WU₂₇ *, 6, 2, 3; 1998 WV₂₇ *, 5, 2, 3; 1998 WW₂₇ *, 6, 2, 3; 1998 WX₂₇ *, 6, 2, 3; 1998 WY₂₇ *, 6, 2, 3; 1998 WZ₂₇ *, 6, 2, 3; 1998 WA₂₈ *, 6, 2, 3; 1998 WB₂₈ *, 6, 2, 3; 1998 WC₂₈ *, 6, 2, 3; 1998 WD₂₈ *, 6, 2, 3; 1998 WE₂₈ *, 6, 2, 3; 1998 WF₂₈ *, 6, 2, 3; 1998 WG₂₈ *, 6, 2, 3; 1998 WH₂₈ *, 6, 2, 4; 1998 WJ₂₈ *, 6, 2, 4; 1998 WK₂₈ *, 6, 2, 4; 1998 WL₂₈ *, 6, 2, 4; 1998 WM₂₈ *, 6, 2, 4; 1998 WN₂₈ *, 5, 2, 4; 1998 WO₂₈ *, 6, 2, 2; 1998 WP₂₈ *, 6, 2, 2; 1998 WQ₂₈ *, 6, 2, 2; 1998 WR₂₈ *, 6, 2, 2; 1998 WS₂₈ *, 6, 2, 3; 1998 WT₂₈ *, 6, 2, 3; 1998 WU₂₈ *, 6, 2, 3; 1998 WV₂₈ *, 6, 2, 3; 1998 WW₂₈ *, 6, 2, 3; 1998 WX₂₈ *, 6, 2, 3; 1998 WY₂₈ *, 6, 2, 3; 1998 WZ₂₈ *, 6, 2, 3; 1998 WA₂₉ *, 6, 2, 3; 1998 WB₂₉ *, 6, 2, 3; 1998 WC₂₉ *, 6, 2, 3; 1998 WD₂₉ *, 6, 2, 3; 1998 WE₂₉ *, 6, 2, 3; 1998 WF₂₉ *, 6, 2, 3; 1998 WG₂₉ *, 6, 2, 3; 1998 WH₂₉ *, 6, 2, 3; 1998 WJ₂₉ *, 6, 2, 3; 1998 WK₂₉ *, 6, 2, 3; 1998 WL₂₉ *, 6, 2, 3; 1998 WM₂₉ *, 6, 2, 3; 1998 WN₂₉ *, 6, 2, 3; 1998 WO

3; 1998 WR₂₉ *, 6, 2, 3; 1998 WS₂₉ *, 5, 2, 3; 1998 WT₂₉ *, 6, 2, 3; 1998 WU₂₉ *, 6, 2, 1; 1998 WV₂₉ *, 6, 2, 3; 1998 WW₂₉ *, 6, 2, 3; 1998 WX₂₉ *, 6, 2, 3; 1998 WY₂₉ *, 6, 2, 3; 1998 WZ₂₉ *, 6, 2, 3; 1998 WA₃₀ *, 6, 2, 3; 1998 WB₃₀ *, 6, 2, 3; 1998 WC₃₀ *, 6, 2, 3; 1998 WD₃₀ *, 6, 2, 3; 1998 WE₃₀ *, 6, 2, 3; 1998 WF₃₀ *, 6, 2, 3; 1998 WG₃₀ *, 6, 2, 2; 1998 WH₃₀ *, 6, 2, 2; 1998 WJ₃₀ *, 6, 2, 2; 1998 WK₃₀ *, 6, 2, 2; 1998 WL₃₀ *, 6, 2, 1; 1998 WM₃₀ *, 6, 2, 1; 1998 WN₃₀ *, 6, 2, 1; 1998 WO₃₀ *, 6, 2, 1; 1998 WP₃₀ *, 6, 2, 1; 1998 WQ₃₀ *, 6, 2, 1; 1998 WR₃₀ *, 6, 2, 1; 1998 WS₃₀ *, 6, 2, 1; 2228 P-L, 3, 1, 0; 2577 P-L, 3, 1, 0; 4602 P-L, 6, 2, 5; 4812 P-L, 3, 1, 0; 6328 P-L, 3, 1, 0; 6645 P-L, 6, 2, 2; 1217 T-1, 3, 1, 0; 2172 T-1, 3, 1, 0; 3064 T-1, 3, 1, 0; 3300 T-1, 2, 1, 0; 4271 T-1, 3, 1, 0; 4081 T-2, 3, 1, 0; 4310 T-3, 9, 3, 7; 4327 T-3, 9, 3, 12; (396), 6, 2, 3; (420), 6, 2, 6; (610), 3, 1, 0; (640), 3, 1, 0; (826), 6, 2, 3; (1081), 6, 2, 3; (1143), 6, 2, 8; (1495), 3, 1, 0; (1552), 6, 2, 7; (1647), 6, 2, 7; (1650), 3, 1, 0; (1738), 3, 1, 0; (1758), 6, 2, 1; (1788), 3, 1, 0; (1827), 6, 2, 6; (1968), 6, 2, 5; (1969), 9, 3, 10; (2103), 3, 1, 0; (2180), 2, 1, 0; (2197), 6, 2, 7; (2496), 5, 2, 4; (2505), 3, 1, 0; (2515), 3, 1, 0; (2528), 3, 1, 0; (2587), 3, 1, 0; (2610), 3, 1, 0; (2626), 6, 2, 6; (2702), 3, 1, 0; (2708), 3, 1, 0; (2785), 3, 1, 0; (2862), 6, 2, 3; (2920), 3, 1, 0; (3005), 2, 1, 0; (3049), 3, 1, 0; (3290), 3, 1, 0; (3504), 3, 1, 0; (3543), 3, 1, 0; (3832), 3, 1, 0; (3834), 3, 1, 0; (3898), 6, 2, 6; (3957), 6, 2, 1; (3975), 3, 1, 0; (4047), 3, 1, 0; (4059), 6, 2, 6; (4153), 6, 2, 9; (4468), 9, 3, 12; (4537), 2, 1, 0; (4548), 3, 1, 0; (4589), 2, 1, 0; (4940), 3, 1, 0; (4960), 6, 2, 5; (5269), 3, 1, 0; (5876), 3, 1, 0; (5919), 6, 2, 7; (6208), 6, 2, 7; (6289), 6, 2, 12; (6464), 6, 2, 10; (6629), 3, 1, 0; (6864), 7, 2, 9; (6875), 3, 1, 0; (6953), 6, 2, 11; (6960), 6, 2, 8; (6995), 5, 2, 13; (7067), 6, 2, 8; (7180), 6, 2, 1; (7367), 3, 1, 0; (7459), 6, 2, 7; (7653), 2, 1, 0; (7817), 6, 2, 6; (7852), 6, 2, 12; (7887), 6, 2, 4; (7935), 3, 1, 0; (7940), 6, 2, 7; (8100), 6, 2, 4; (8133), 3, 1, 0; (9374), 3, 1, 0; (9445), 3, 1, 0; (9542), 6, 2, 8; (9549), 3, 1, 0; (9559), 6, 2, 6; (9566), 3, 1, 0; (9573), 6, 2, 5; (9574), 3, 1, 0; (9586), 6, 2, 5; (9590), 6, 2, 3; (9592), 3, 1, 0; (9600), 6, 2, 5; (9629), 6, 2, 7; (9693), 6, 2, 5; [2935, 575, 264*, 1993/02/26-1998/11/27]

693 University of Arizona, Catalina Station

C. W. Hergenrother, Space Sciences Building, University of Arizona, Tucson, AZ 85721, U.S.A. [chergen@pirl.lpl.arizona.edu]

Observers C. W. Hergenrother, S. M. Larson, T. B. Spahr

Measurers C. W. Hergenrother, T. B. Spahr

1.54-m reflector + CCD

USNO-A1.0, GSC-1.0

1998 QM₂₄, 3, 1, 0; [3, 1, 0*, 1998/11/22]

695 Kitt Peak

M. W. Buie, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff AZ 86001, U.S.A. [buie@lowell.edu]

D. J. Tholen, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, U.S.A. [tholen@hale.ifa.hawaii.edu]

Observers R. L. Millis, M. W. Buie, R. M. Wagner, J. L. Elliot, D. W. Willmarth, D. L. Harmer, G. Rosenstein, W. K. Hughes, J. Luu

Measurers M. W. Buie, R. L. Millis, J. L. Elliot, S. MacDonald, D. J. Tholen

3.8-m reflector + CCD, 3.6-m WIYN reflector + CCD

USNO-A2.0

1998 QM₁₀₇, 5, 2, 1; 1998 UZ₈, 3, 1, 0; 1998 UR₄₃ *, 5, 2, 27; 1998 US₄₃ *, 4, 2, 27; 1998 WR₂₁, 2, 1, 0; 1998 WG₂₄ *, 4, 2, 1; 1998 WH₂₄ *, 2, 1, 0; 1998 WJ₂₄ *, 3, 1, 0; 1998 WK₂₄ *, 2, 1, 0; 1998 WL₂₄ *, 3, 1, 0; 1998 WM₂₄ *, 2, 1, 0; 1998 WN₂₄ *, 2, 1, 0; 1998 WO₂₄ *, 3, 1, 0; 1998 WP₂₄ *, 2, 1, 0; 1998 WQ₂₄ *, 2, 1, 0; 1998 WR₂₄ *, 2, 1, 0; 1998 WS₂₄ *, 3, 1, 0; 1998 WV₂₄ *, 4, 3, 9; 1998 WW₂₄ *, 6, 3, 9; 1998 WX₂₄ *, 4, 3, 9; 1998 WY₂₄ *, 4, 3, 9; 1998 WZ₂₄ *, 4, 2, 8; 1998 WA₂₅ *, 6, 3, 8; [77, 23, 20*, 1998/10/15-1998/11/27]

696 F. L. Whipple Observatory, Mount Hopkins

M. Holman, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [mholman@cfa.harvard.edu]

Observers M. Holman, O. Naranjo

1.2-m $f/8$ reflector + CCD

USNO-A1.0

1992 EB₁, 3, 1, 0; 1992 EQ₂₇, 5, 1, 0; 1997 YX₃, 3, 1, 0; 1998 EC₃, 4, 1, 0; 1998 FX₂, 3, 1, 0; (245), 4, 2, 1; (8807), 3, 1, 0; (8813), 5, 1, 0; (8855), 7, 1, 0; (8969), 4, 1, 0; (9138), 4, 1, 0; [45, 11, 0*, 1998/05/05-1998/11/28]

699 Lowell Observatory-LONEOS

E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff AZ 86001, U.S.A. [elgb@lowell.edu]

Observers W. D. Ferris, B. W. Koehn, M. E. Van Ness, B. A. Skiff, A. U. Tomatic
Measurer B. W. Koehn

0.59-m LONEOS Schmidt + CCD

USNO-A1.0

1971 UK₁, 6, 2, 26; 1975 SB₁, 3, 1, 0; 1975 TJ₃, 3, 1, 0; 1976 YR₁, 3, 1, 0; 1977 QN₁, 3, 1, 0; 1978 PA₃, 3, 1, 0; 1978 SH₃, 3, 1, 0; 1978 UD₇, 3, 1, 0; 1978 WU₃, 3, 1, 0; 1980 GB₃, 3, 1, 0; 1981 EY₁₉, 3, 1, 0; 1981 EW₃₀, 3, 1, 0; 1981 EQ₄₇, 3, 1, 0; 1981 QJ₃, 3, 1, 0; 1981 RW₄, 3, 1, 0; 1981 UU₂₉, 3, 1, 0; 1982 FA₃, 3, 1, 0; 1982 UC₁₁, 3, 1, 0; 1984 SA₃, 3, 1, 0; 1984 SJ₇, 3, 1, 0; 1985 CU₁, 3, 1, 0; 1985 CL₂, 6, 2, 22; 1985 QP₃, 3, 1, 0; 1985 RN₃, 6, 2, 54; 1986 QP₂, 3, 1, 0; 1987 SL₅, 9, 3, 82; 1987 SP₁₂, 3, 1, 0; 1987 SD₁₃, 6, 2, 53; 1987 WD₃, 3, 1, 0; 1987 WT₁, 3, 1, 0; 1987 YU₁, 3, 1, 0; 1988 CT₂, 3, 1, 0; 1988 DE₃, 3, 1, 0; 1988 PL₃, 3, 1, 0; 1988 RQ₈, 6, 2, 53; 1988 VP₃, 3, 1, 0; 1989 CS₂, 3, 1, 0; 1989 DB₉, 2, 26; 1989 HA₃, 3, 1, 0; 1989 SK₁, 3, 1, 0; 1989 SQ₄, 3, 1, 0; 1989 ST₄, 3, 1, 0; 1990 EJ₃, 3, 1, 0; 1990 EN₃, 3, 1, 0; 1990 QJ₄, 3, 1, 0; 1990 QL₉, 3, 1, 0; 1990 RY₂, 3, 1, 0; 1990 SY₃, 3, 1, 0; 1990 SZ₃, 3, 1, 0; 1990 TF₈, 3, 1, 0; 1990 UU₁, 3, 1, 0; 1990 VN₁, 3, 1, 0; 1990 VS₄, 3, 1, 0; 1990 WA₅, 3, 1, 0; 1991 DY₃, 3, 1, 0; 1991 GA₆, 3, 1, 0; 1991 GR₇, 3, 1, 0; 1991 GD₈, 3, 1, 0; 1991 LL₂, 3, 1, 0; 1991 PO₁₈, 3, 1, 0; 1991 PB₂₀, 3, 1, 0; 1991 RE₁, 3, 1, 0; 1991 RS₂, 3, 1, 0; 1991 RC₉, 6, 2, 53; 1991 RU₉, 6, 2, 57; 1991 RK₁₅, 3, 1, 0; 1991 RW₁₇, 3, 1, 0; 1991 TO₃, 3, 1, 0; 1991 UR₃, 3, 1, 0; 1991 VA₃, 3, 1, 0; 1991 VE₃, 3, 1, 0; 1992 BP₂, 6, 2, 20; 1992 BQ₂, 3, 1, 0; 1992 DZ₂, 3, 1, 0; 1992 DF₈, 3, 1, 0; 1992 DM₉, 3, 1, 0; 1992 EB₂₆, 3, 1, 0; 1992 HD₄, 3, 1, 0; 1992 SQ₂₄, 3, 1, 0; 1992 UM₉, 3, 1, 0; 1992 WF₁, 3, 1, 0; 1993 DF₂, 3, 1, 0; 1993 EU₃, 3, 1, 0; 1993 FZ₆, 3, 1, 0; 1993 FH₇, 3, 1, 0; 1993 FM₁₄, 3, 1, 0; 1993 FS₂₆, 3, 1, 0; 1993 FS₃₁, 6, 2, 53; 1993 FW₄₁, 3, 1, 0; 1993 FS₄₆, 6, 2, 9; 1993 HX₃, 3, 1, 0; 1993 LS₁, 3, 1, 0; 1993 MB₃, 3, 1, 0; 1993 RQ₅, 3, 1, 0; 1993 SO₂, 3, 1, 0; 1993 SU₄, 3, 1, 0; 1993 TL₁₈, 3, 1, 0; 1993 TY₂₂, 3, 1, 0; 1993 TN₃₀, 3, 1, 0; 1993 TU₃₈, 3, 1, 0; 1993 UW₆, 3, 1, 0; 1994 AJ₁, 3, 1, 0; 1994 BD₄, 3, 1, 0; 1994 NA₅, 3, 1, 0; 1994 PC₂, 2, 1, 0; 1994 PP₁₇, 3, 1, 0; 1994 PG₂₄, 3, 1, 0; 1994 PS₂₇, 3, 1, 0; 1994 PO₃₂, 3, 1, 0; 1994 PV₃₇, 3, 1, 0; 1994 PV₃₉, 3, 1, 0; 1994 TW₉, 3, 1, 47; 1994 TR₁, 3, 1, 0; 1994 TB₃, 3, 1, 0; 1994 TZ₁₄, 3, 1, 0; 1994 TW₁₅, 3, 1, 0; 1994 UJ₁, 3, 1, 0; 1994 UQ₁, 6, 2, 1; 1994 UW₉, 3, 1, 0; 1994 VU₆, 3, 1, 0; 1994 VY₆, 3, 1, 0; 1994 WA₄, 3, 1, 0; 1994 XQ₄, 3, 1, 0; 1994 YM₂, 6, 2, 27; 1995 AO₁, 3, 1, 0; 1995 DZ₁, 3, 1, 0; 1995 DZ₁₁, 6, 2, 24; 1995 ED₉, 3, 1, 0; 1995 GO₇, 3, 1, 0; 1995 RC₃, 3, 1, 0; 1995 VR₁, 6, 2, 27; 1995 WU₇, 3, 1, 0; 1995 WA₈, 3, 1, 0; 1995 YX₁, 3, 1, 0; 1995 YY₁, 3, 1, 0; 1996 AB₄, 3, 1, 0; 1996 BE₂, 3, 1, 0; 1996 BL₂, 3, 1, 0; 1996 CT₇, 3, 1, 0; 1996 CG₉, 3, 1, 0; 1996 GL₁, 3, 1, 0; 1996 GV₁, 3, 1, 0; 1996 HC₁, 3, 1, 0; 1996 JK₃, 3, 1, 0; 1996 JN₆, 3, 1, 0; 1997 AJ₁₉, 3, 1, 0; 1997 BC₉, 3, 1, 0; 1997 CJ₁, 3, 1, 0; 1997 EQ₄₁, 6, 2, 32; 1997 EB₅₄, 3, 1, 0; 1997 FQ₃, 3, 1, 0; 1997 FX₃, 6, 2, 26; 1997 GL₃, 3, 1, 0; 1997 GM₆, 3, 1, 0; 1997 GU₆, 3, 1, 0; 1997 GM₈, 3, 1, 0; 1997 GJ₁₃, 3, 1, 0; 1997 GA₁₇, 3, 1, 0; 1997 GB₁₉, 3, 1, 0; 1997 GS₂₁, 3, 1, 0; 1997 GJ₂₃, 3, 1, 0; 1997 GA₂₆, 3, 1, 0; 1997 GX₃₅, 3, 1, 0; 1997 GD₄₂, 3, 1, 0; 1997 HX₇, 3, 1, 0; 1997 HJ₈, 3, 1, 0; 1997 JL₃, 3, 1, 0; 1997 JD₁₂, 3, 1, 0; 1997 JB₁₅, 3, 1, 0; 1997 JH₁₆, 3, 1, 0; 1997 KE₃, 6, 2, 52; 1997 LZ₄, 3, 1, 0; 1997 MZ₂, 3, 1, 0; 1997 OY₃, 3, 1, 0; 1997 PG₃, 3, 1, 0; 1997 RB₇, 3, 1, 0; 1997 VV₁, 3, 1, 0; 1998 BK₂, 3, 1, 0; 1998 HJ₁₃₂, 3, 1, 0; 1998 HE₁₄₅, 6, 2, 32; 1998 KA₂₇, 6, 2, 20; 1998 KL₃₈, 3, 1, 0; 1998 PG₃, 3, 1, 0; 1998 PL₁, 3, 1, 0; 1998 QZ₃, 3, 1, 0; 1998 QU₂, 3, 1, 0; 1998 QL₆, 6, 2, 24; 1998 QN₆, 3, 1, 0; 1998 QO₆, 3, 1, 0; 1998 QP₆, 3, 1, 0; 1998 QV₇, 3, 1, 0; 1998 QR₁₅, 3, 1, 0; 1998 QX₁₉, 3, 1, 0; 1998 QA₂₆, 3, 1, 0; 1998 QM₂₈, 6, 2, 23; 1998 QX₃₀, 3, 1, 0; 1998 QG₃₅, 3, 1, 0; 1998 QG₃₉, 3, 1, 0; 1998 QT₃₉, 3, 1, 0; 1998 QC₄₂, 6, 2, 47; 1998 QW₄₄, 3, 1, 0; 1998 QF₄₅, 6, 2, 16; 1998 QR₄₅, 3, 1, 0; 1998 QS₄₅, 3, 1, 0; 1998 QK₄₆, 3, 1, 0; 1998 QR₄₆, 3, 1, 0; 1998 QU₄₆, 3, 1, 0; 1998 QL₄₇, 3, 1, 0; 1998 QU₄₇, 3, 1, 0; 1998 QG₄₈, 3, 1, 0; 1998 QS₄₈, 6, 2, 20; 1998 QZ₄₈, 3, 1, 0; 1998 QN₄₉, 6, 2, 19; 1998 QB₅₀, 3, 1, 0; 1998 QT₅₀, 3, 1, 0; 1998 QZ₅₀, 3, 1, 0; 1998 QO₅₃, 3, 1, 0; 1998 QF₅₄, 3, 1, 0; 1998 QC₅₄, 3, 1, 0; 1998 QT₅₄, 3, 1, 0; 1998 QW₅₄, 6, 2, 23; 1998 QX₅₄, 3, 1, 0; 1998 QY₅₄, 3, 1, 0; 1998 QM₅₅, 6, 2, 10; 1998 QN₅₅, 3, 1, 0; 1998 QK₆₁, 6, 2, 46; 1998 QT₆₂, 3, 1, 0; 1998 QV₆₃, 3, 1, 0; 1998 QA₆₉, 6, 2, 25; 1998 QB₆₉, 3, 1, 0; 1998 QD₇₅, 3, 1, 0; 1998 QZ₇₆, 3, 1, 0; 1998 QK₇₇, 3, 1, 0; 1998 QK₇₈, 3, 1, 0; 1998 QF₈₀, 3, 1, 0; 1998 QV₉₁, 3, 1, 0; 1998 QF₉₂, 3, 1, 0; 1998 QJ₉₂, 3, 1, 0; 1998 QM₉₂, 3, 1, 0; 1998 QA₉₃, 3, 1, 0; 1998 QG₉₃, 3, 1, 0; 1998 QR₉₃, 3, 1, 0; 1998 QM₉₄, 3, 1, 0; 1998 QF₉₆, 6, 2, 17; 1998 QQ₁₀₁, 3, 1, 0; 1998 QQ₁₀₃, 3, 1, 0; 1998 QF₁₀₄, 3, 1, 0; 1998 QW₁₀₄, 3, 1, 0; 1998 RS₃, 3, 1, 0; 1998 RD₁, 3, 1, 0; 1998 RD₃, 3, 1, 0; 1998 RC₃, 3, 1, 0; 1998 RP₅, 3, 1, 0; 1998 RY₅, 6, 2, 51; 1998 RZ₅, 6, 2, 43; 1998 RK₆, 3, 1, 0; 1998 RZ₇, 3, 1, 0; 1998 RJ₁₇, 3, 1, 0; 1998 RC₁₈, 3, 1, 0; 1998 RP₂₈, 3, 1, 0; 1998 RF₄₁, 3, 1, 0; 1998 RB₄₃, 3, 1, 0; 1998 RD₄₃, 3, 1, 0; 1998 RD₄₄, 3, 1, 0; 1998 RP₄₆, 6, 2, 55; 1998 RW₄₆, 3, 1, 0; 1998 RE₄₇, 3, 1, 0; 1998 RK₄₇, 6, 2, 22; 1998 RR₄₇, 3, 1, 0; 1998 RC₄₈, 3, 1, 0; 1998 RW₄₈, 3, 1, 0; 1998 RB₄₉, 3, 1, 0; 1998 RD₄₉, 3, 1, 0; 1998 RT₅₀, 3, 1, 0; 1998 RW₅₀, 3, 1, 0; 1998 RC₅₁, 3, 1, 0; 1998 RD₅₁, 6, 2, 20; 1998 RC₅₂, 6, 2, 47; 1998 RF₅₂, 6, 2, 16; 1998 RW₅₂, 3, 1, 0; 1998 RZ₅₂, 3, 1, 0; 1998 RF₅₃, 3, 1, 0; 1998 RD₅₄, 3, 1, 0; 1998 RN₅₄, 3, 1, 0; 1998 RO₅₄, 3, 1, 0; 1998 RP₅₄, 6, 2, 22; 1998 RZ₅₄, 6, 2, 22; 1998 RF₅₅, 3, 1, 0; 1998 RR₅₅, 3, 1, 0; 1998 RV₅₅, 3, 1, 0;

0; 1998 RC₅₆, 3, 1, 0; 1998 RL₅₆, 3, 1, 0; 1998 RR₅₆, 3, 1, 0; 1998 RU₅₆, 3, 1, 0; 1998 RA₅₇, 3, 1, 0; 1998 RB₅₇, 3, 1, 0; 1998 RY₅₇, 3, 1, 0; 1998 RC₅₈, 3, 1, 0; 1998 RJ₅₈, 6, 2, 55; 1998 RM₅₈, 3, 1, 0; 1998 RQ₅₈, 3, 1, 0; 1998 RS₅₈, 3, 1, 0; 1998 RA₅₉, 6, 2, 9; 1998 RC₅₉, 3, 1, 0; 1998 RL₅₉, 3, 1, 0; 1998 RU₅₉, 3, 1, 0; 1998 RA₆₀, 6, 2, 45; 1998 RF₆₀, 3, 1, 0; 1998 RG₆₀, 6, 2, 57; 1998 RL₆₁, 3, 1, 0; 1998 RR₆₁, 9, 3, 76; 1998 RT₆₁, 3, 1, 0; 1998 RU₆₁, 3, 1, 0; 1998 RK₆₂, 3, 1, 0; 1998 RZ₆₂, 6, 2, 51; 1998 RQ₆₄, 3, 1, 0; 1998 RS₆₄, 3, 1, 0; 1998 RJ₆₅, 3, 1, 0; 1998 RK₆₅, 6, 2, 46; 1998 RL₆₅, 3, 1, 0; 1998 RH₆₅, 3, 1, 0; 1998 RJ₆₆, 3, 1, 0; 1998 RT₆₆, 3, 1, 0; 1998 RA₆₈, 3, 1, 0; 1998 RK₆₈, 3, 1, 0; 1998 RN₆₈, 3, 1, 0; 1998 RV₆₉, 3, 1, 0; 1998 RW₇₀, 3, 1, 0; 1998 RF₇₁, 3, 1, 0; 1998 RY₇₁, 9, 3, 54; 1998 RJ₇₂, 3, 1, 0; 1998 RK₇₂, 9, 3, 96; 1998 RS₇₂, 3, 1, 0; 1998 RX₇₂, 3, 1, 0; 1998 RH₇₃, 3, 1, 0; 1998 RR₇₃, 3, 1, 0; 1998 RS₇₃, 3, 1, 0; 1998 RC₇₄, 3, 1, 0; 1998 RH₇₄, 3, 1, 0; 1998 RK₇₄, 3, 1, 0; 1998 RQ₇₄, 3, 1, 0; 1998 RS₇₄, 3, 1, 0; 1998 RT₇₄, 3, 1, 0; 1998 RF₇₅, 3, 1, 0; 1998 RJ₇₅, 3, 1, 0; 1998 RK₇₅, 3, 1, 0; 1998 RW₇₅, 3, 1, 0; 1998 RZ₇₇, 3, 1, 0; 1998 RM₇₉, 3, 1, 0; 1998 RH₈₀, 6, 2, 18; 1998 RL₈₀, 3, 1, 0; 1998 RM₈₀, 3, 1, 0; 1998 RN₈₀, 3, 1, 0; 1998 RP₈₀, 6, 2, 32; 1998 SD, 3, 1, 0; 1998 SY, 3, 1, 0; 1998 SK₁, 3, 1, 0; 1998 SO₁, 3, 1, 0; 1998 SG₂, 3, 1, 0; 1998 SE₄, 3, 1, 0; 1998 SL₄, 3, 1, 0; 1998 SN₄, 3, 1, 0; 1998 SW₄, 3, 1, 0; 1998 SX₄, 3, 1, 0; 1998 SO₈, 3, 1, 0; 1998 SM₉, 6, 2, 32; 1998 SO₉, 3, 1, 0; 1998 SW₉, 3, 1, 0; 1998 SF₁₀, 3, 1, 0; 1998 SL₁₀, 3, 1, 0; 1998 SU₁₀, 3, 1, 0; 1998 SC₁₂, 3, 1, 0; 1998 SL₁₂, 6, 2, 32; 1998 SE₁₃, 9, 2, 35; 1998 SR₁₄, 6, 2, 18; 1998 SS₁₄, 3, 1, 0; 1998 SX₁₆, 3, 1, 0; 1998 SX₂₁, 6, 2, 32; 1998 SJ₂₂, 3, 1, 0; 1998 SP₂₂, 3, 1, 0; 1998 ST₂₂, 3, 1, 0; 1998 SV₂₄, 3, 1, 0; 1998 SK₂₅, 3, 1, 0; 1998 SU₂₅, 6, 2, 23; 1998 SW₂₅, 3, 1, 0; 1998 SY₂₅, 3, 1, 0; 1998 SB₂₆, 3, 1, 0; 1998 SJ₂₆, 3, 1, 0; 1998 SG₂₇, 3, 1, 0; 1998 SN₃₃, 3, 1, 0; 1998 SP₃₃, 3, 1, 0; 1998 SK₃₅, 3, 1, 0; 1998 SQ₃₅, 3, 1, 0; 1998 SU₃₅, 3, 1, 0; 1998 SF₃₇, 3, 1, 0; 1998 SP₃₇, 3, 1, 0; 1998 SR₃₇, 3, 1, 0; 1998 SU₃₇, 3, 1, 0; 1998 SA₄₃, 3, 1, 0; 1998 SH₄₃, 6, 2, 31; 1998 SQ₄₃, 3, 1, 0; 1998 SR₄₃, 3, 1, 0; 1998 SS₄₃, 3, 1, 0; 1998 SC₄₆, 3, 1, 0; 1998 SM₄₆, 3, 1, 0; 1998 SR₄₈, 3, 1, 0; 1998 SF₄₉, 3, 1, 0; 1998 SH₄₉, 3, 1, 0; 1998 SM₄₉, 3, 1, 0; 1998 SO₄₉, 3, 1, 0; 1998 SK₅₀, 3, 1, 0; 1998 SB₅₁, 3, 1, 0; 1998 SU₅₂, 3, 1, 0; 1998 ST₅₄, 3, 1, 0; 1998 SB₅₅, 3, 1, 0; 1998 SC₅₅, 3, 1, 0; 1998 SD₅₈, 3, 1, 0; 1998 SR₅₈, 3, 1, 0; 1998 ST₅₈, 3, 1, 0; 1998 SA₅₉, 6, 2, 18; 1998 SB₅₉, 3, 1, 0; 1998 SF₅₉, 3, 1, 0; 1998 SP₅₉, 3, 1, 0; 1998 SK₆₀, 6, 2, 23; 1998 SR₆₀, 3, 1, 0; 1998 SL₆₁, 3, 1, 0; 1998 SO₆₁, 3, 1, 0; 1998 SS₆₁, 3, 1, 0; 1998 SZ₆₂, 3, 1, 0; 1998 SK₆₃, 6, 2, 18; 1998 SQ₆₃, 3, 1, 0; 1998 SR₆₃, 3, 1, 0; 1998 ST₆₃, 3, 1, 0; 1998 SY₆₃, 3, 1, 0; 1998 SJ₆₄, 6, 2, 23; 1998 SL₆₄, 3, 1, 0; 1998 SV₆₄, 3, 1, 0; 1998 SZ₆₄, 6, 2, 23; 1998 SB₆₅, 3, 1, 0; 1998 SG₆₅, 6, 2, 23; 1998 SH₆₅, 6, 2, 22; 1998 SK₆₅, 3, 1, 0; 1998 SL₆₅, 6, 2, 23; 1998 SN₆₅, 6, 2, 23; 1998 SO₆₅, 6, 2, 32; 1998 SP₆₅, 3, 1, 0; 1998 SQ₆₅, 3, 1, 0; 1998 SU₆₅, 3, 1, 0; 1998 SV₆₅, 6, 2, 23; 1998 SY₆₅, 6, 2, 32; 1998 SA₆₆, 3, 1, 0; 1998 SB₆₆, 3, 1, 0; 1998 SC₆₆, 3, 1, 0; 1998 SE₆₆, 3, 1, 0; 1998 SD₆₇, 3, 1, 0; 1998 SE₆₇, 3, 1, 0; 1998 SN₆₇, 6, 2, 23; 1998 SS₆₇, 3, 1, 0; 1998 SY₆₉, 6, 2, 34; 1998 SR₇₀, 3, 1, 0; 1998 SB₇₁, 9, 3, 53; 1998 SJ₇₁, 6, 2, 31; 1998 SB₇₂, 3, 1, 0; 1998 SX₇₂, 3, 1, 0; 1998 SY₇₂, 6, 2, 23; 1998 SZ₇₂, 6, 2, 23; 1998 SA₇₃, 6, 2, 22; 1998 SN₇₃, 3, 1, 0; 1998 ST₇₃, 3, 1, 0; 1998 SU₇₃, 3, 1, 0; 1998 SH₇₄, 3, 1, 0; 1998 SR₇₄, 3, 1, 0; 1998 ST₇₄, 3, 1, 0; 1998 SK₇₅, 3, 1, 0; 1998 SN₇₅, 6, 2, 32; 1998 SH₇₉, 3, 1, 0; 1998 SL₇₉, 6, 2, 18; 1998 SA₈₁, 3, 1, 0; 1998 SP₉₇, 3, 1, 0; 1998 SQ₉₇, 3, 1, 0; 1998 SK₁₀₀, 3, 1, 0; 1998 SA₁₀₁, 6, 2, 8; 1998 SE₁₀₂, 3, 1, 0; 1998 SH₁₀₆, 3, 1, 0; 1998 SJ₁₀₆, 9, 3, 34; 1998 SM₁₀₆, 6, 2, 47; 1998 SO₁₀₆, 9, 3, 25; 1998 SZ₁₀₆, 3, 1, 0; 1998 SK₁₀₇, 3, 1, 0; 1998 SM₁₀₇, 6, 2, 56; 1998 SR₁₀₇, 3, 1, 0; 1998 SQ₁₀₈, 6, 2, 54; 1998 SA₁₀₉, 3, 1, 0; 1998 SJ₁₀₉, 6, 2, 54; 1998 SQ₁₀₉, 3, 1, 0; 1998 SD₁₁₀, 3, 1, 0; 1998 SJ₁₁₀, 6, 2, 54; 1998 SB₁₁₁, 3, 1, 0; 1998 SF₁₁₁, 9, 3, 56; 1998 SH₁₁₁, 6, 2, 32; 1998 SQ₁₁₁, 6, 2, 25; 1998 SR₁₁₁, 3, 1, 0; 1998 SX₁₁₁, 6, 2, 32; 1998 SA₁₁₂, 3, 1, 0; 1998 SC₁₁₂, 3, 1, 0; 1998 SD₁₁₂, 3, 1, 0; 1998 SU₁₁₂, 3, 1, 0; 1998 SC₁₁₄, 3, 1, 0; 1998 SN₁₁₄, 3, 1, 0; 1998 SS₁₁₄, 3, 1, 0; 1998 SV₁₁₄, 3, 1, 0; 1998 SZ₁₁₄, 3, 1, 0; 1998 SK₁₁₅, 6, 2, 56; 1998 SM₁₁₅, 3, 1, 0; 1998 SO₁₁₅, 3, 1, 0; 1998 SP₁₁₅, 6, 2, 54; 1998 SB₁₁₆, 6, 2, 54; 1998 SM₁₁₆, 3, 1, 0; 1998 SZ₁₁₆, 3, 1, 0; 1998 SH₁₁₇, 3, 1, 0; 1998 SV₁₁₇, 3, 1, 0; 1998 SD₁₁₈, 6, 2, 57; 1998 SL₁₁₈, 3, 1, 0; 1998 SQ₁₁₈, 3, 1, 0; 1998 SZ₁₁₈, 3, 1, 0; 1998 SK₁₁₉, 3, 1, 0; 1998 SQ₁₁₉, 3, 1, 0; 1998 SR₁₁₉, 3, 1, 0; 1998 ST₁₁₉, 6, 2, 2; 1998 SU₁₁₉, 3, 1, 0; 1998 SK₁₂₁, 3, 1, 0; 1998 SD₁₂₂, 9, 3, 57; 1998 SH₁₂₂, 3, 1, 0; 1998 SJ₁₂₂, 3, 1, 0; 1998 SL₁₂₂, 3, 1, 0; 1998 SW₁₂₂, 3, 1, 0; 1998 SY₁₂₂, 3, 1, 0; 1998 SD₁₂₃, 6, 2, 53; 1998 SE₁₂₃, 3, 1, 0; 1998 SF₁₂₃, 3, 1, 0; 1998 SK₁₂₃, 3, 1, 0; 1998 SM₁₂₃, 3, 1, 0; 1998 SN₁₂₃, 6, 2, 53; 1998 SQ₁₂₃, 6, 2, 22; 1998 SS₁₂₃, 6, 2, 32; 1998 ST₁₂₃, 6, 2, 32; 1998 SX₁₂₃, 3, 1, 0; 1998 SG₁₂₄, 3, 1, 0; 1998 SK₁₂₄, 6, 2, 1; 1998 SR₁₂₄, 3, 1, 0; 1998 SU₁₂₄, 6, 2, 54; 1998 SC₁₂₅, 3, 1, 0; 1998 SA₁₂₆, 3, 1, 0; 1998 SF₁₂₇, 6, 2, 23; 1998 SL₁₂₇, 6, 2, 48; 1998 SR₁₂₇, 3, 1, 0; 1998 SU₁₂₇, 3, 1, 0; 1998 SW₁₂₇, 9, 3, 48; 1998 SX₁₂₇, 3, 1, 0; 1998 SY₁₂₇, 6, 2, 16; 1998 SD₁₂₈, 3, 1, 0; 1998 SE₁₂₈, 3, 1, 0; 1998 SU₁₂₈, 3, 1, 0; 1998 SW₁₂₈, 3, 1, 0; 1998 SB₁₂₉, 6, 2, 23; 1998 SO₁₂₉, 6, 2, 22; 1998 SQ₁₂₉, 3, 1, 0; 1998 SS₁₂₉, 6, 2, 23; 1998 SU₁₂₉, 9, 3, 53; 1998 SW₁₂₉, 6, 2, 53; 1998 SC₁₃₀, 6, 2, 53; 1998 SD₁₃₀, 3, 1, 0; 1998 SK₁₃₀, 6, 2, 57; 1998 SN₁₃₀, 3, 1, 0; 1998 SP₁₃₀, 3, 1, 0; 1998 SR₁₃₀, 3, 1, 0; 1998 ST₁₃₀, 6, 2, 26; 1998 SZ₁₃₀, 9, 3, 57; 1998 SB₁₃₁, 6, 2, 57; 1998 SH₁₃₁, 3, 1, 0; 1998 SD₁₃₂, 3, 1, 0; 1998 SE₁₃₂, 3, 1, 0; 1998 ST₁₃₂, 3, 1, 0; 1998 SW₁₃₂, 3, 1, 0; 1998 SX₁₃₂, 3, 1, 0; 1998 SA₁₃₃, 3, 1, 0; 1998 SC₁₃₃, 3, 1, 0; 1998 SG₁₃₃, 3, 1, 0; 1998 SK₁₃₃, 3, 1, 0; 1998 SL₁₃₃, 3, 1, 0; 1998 SP₁₃₃, 3, 1, 0; 1998 SZ₁₃₃, 3, 1, 0; 1998 SC₁₃₄, 6, 2, 53; 1998 SE₁₃₄, 3, 1, 0; 1998 SG₁₃₄, 3, 1, 0; 1998 SN₁₃₄, 3, 1, 0; 1998 SP₁₃₄, 6, 2, 31; 1998 SR₁₃₄, 3, 1, 0; 1998 SW₁₃₄, 3, 1, 0; 1998 SH₁₃₅, 3, 1, 0; 1998 SN₁₃₅, 3, 1, 0; 1998 SO₁₃₅, 3, 1, 0; 1998 SP₁₃₅, 3, 1, 0; 1998 SA₁₃₆, 6, 2, 48; 1998 SB₁₃₆, 3, 1, 0; 1998 SP₁₃₇, 6, 2, 25; 1998 SQ₁₃₇, 3, 1, 0; 1998 SV₁₃₇, 9, 3, 53; 1998 SX₁₃₇, 3, 1, 0; 1998 SZ₁₃₇, 6, 2, 22; 1998 SS₁₃₈, 3, 1, 0; 1998 SV₁₃₈, 3, 1, 0; 1998 SA₁₃₉,

6, 2, 27; 1998 SB₁₃₉, 6, 2, 27; 1998 SK₁₃₉, 3, 1, 0; 1998 SR₁₃₉, 3, 1, 0; 1998 SC₁₄₀, 3, 1, 0; 1998 SF₁₄₀, 3, 1, 0; 1998 SQ₁₄₀, 3, 1, 0; 1998 SX₁₄₀, 3, 1, 0; 1998 SZ₁₄₀, 3, 1, 0; 1998 SC₁₄₁, 6, 2, 26; 1998 SD₁₄₁, 6, 2, 26; 1998 SF₁₄₁, 3, 1, 0; 1998 SJ₁₄₁, 3, 1, 0; 1998 SK₁₄₁, 3, 1, 0; 1998 SK₁₄₂, 3, 1, 0; 1998 SL₁₄₂, 6, 2, 23; 1998 ST₁₄₂, 6, 2, 26; 1998 SB₁₄₃, 3, 1, 0; 1998 SN₁₄₃, 3, 1, 0; 1998 SW₁₄₃, 3, 1, 0; 1998 SY₁₄₃, 3, 1, 0; 1998 SJ₁₄₄, 6, 2, 26; 1998 SK₁₄₄, 3, 1, 0; 1998 SM₁₄₄, 3, 1, 0; 1998 ST₁₄₄, 6, 2, 26; 1998 SU₁₄₄, 3, 1, 0; 1998 SA₁₄₅, 6, 2, 27; 1998 SD₁₄₅, 6, 2, 22; 1998 SK₁₄₅, 3, 1, 0; 1998 SO₁₄₅, 6, 2, 26; 1998 SQ₁₄₅, 3, 1, 0; 1998 SR₁₄₅, 3, 1, 0; 1998 SW₁₄₅, 3, 1, 0; 1998 SY₁₄₅, 3, 1, 0; 1998 SB₁₄₆, 3, 1, 0; 1998 SH₁₄₆, 6, 2, 26; 1998 SK₁₄₆, 3, 1, 0; 1998 SR₁₄₆, 6, 2, 35; 1998 SG₁₄₇, 3, 1, 0; 1998 SL₁₄₇, 3, 1, 0; 1998 SZ₁₄₇, 6, 2, 30; 1998 SA₁₄₈, 3, 1, 0; 1998 SA₁₅₅, 3, 1, 0; 1998 SP₁₅₆, 9, 2, 54; 1998 SL₁₅₈, 3, 1, 0; 1998 SH₁₆₁, 3, 1, 0; 1998 SL₁₆₁, 3, 1, 0; 1998 SS₁₆₁, 3, 1, 0; 1998 SX₁₆₁, 3, 1, 0; 1998 SC₁₆₂, 3, 1, 0; 1998 SG₁₆₂, 3, 1, 0; 1998 SJ₁₆₂, 6, 2, 26; 1998 SR₁₆₂, 3, 1, 0; 1998 SE₁₆₃, 9, 3, 19; 1998 SS₁₆₃, 3, 1, 0; 1998 SV₁₆₃, 3, 1, 0; 1998 SA₁₆₄, 6, 2, 9; 1998 SG₁₆₄, 3, 1, 0; 1998 SK₁₆₄, 3, 1, 0; 1998 TC, 3, 1, 0; 1998 TE, 6, 1, 0; 1998 TG, 3, 1, 0; 1998 TH, 3, 1, 0; 1998 TJ, 3, 1, 0; 1998 TK, 3, 1, 0; 1998 TL, 3, 1, 0; 1998 TM, 3, 1, 0; 1998 TU₁, 3, 1, 0; 1998 TW₁, 3, 1, 0; 1998 TX₁, 3, 1, 0; 1998 TL₂, 3, 1, 0; 1998 TO₃, 3, 1, 0; 1998 TR₃, 3, 1, 0; 1998 TC₅, 3, 1, 0; 1998 TN₅, 6, 2, 32; 1998 TR₅, 3, 1, 0; 1998 TF₆, 3, 1, 0; 1998 TS₆, 3, 1, 0; 1998 TV₆, 3, 1, 0; 1998 TU₁₂, 3, 1, 0; 1998 TT₁₃, 6, 2, 32; 1998 TV₁₃, 3, 1, 0; 1998 TR₁₄, 6, 2, 57; 1998 TD₁₅, 3, 1, 0; 1998 TB₁₆, 3, 1, 0; 1998 TJ₁₆, 3, 1, 0; 1998 TW₁₇, 3, 1, 0; 1998 TA₁₈, 3, 1, 0; 1998 TF₁₈, 3, 1, 0; 1998 TX₂₂, 3, 1, 0; 1998 TR₂₈, 3, 1, 0; 1998 TE₂₉, 3, 1, 0; 1998 TJ₂₉, 3, 1, 0; 1998 TK₃₀, 3, 1, 0; 1998 TJ₃₁, 6, 2, 53; 1998 TR₃₂, 6, 2, 57; 1998 TV₃₃, 3, 1, 0; 1998 TN₃₄, 3, 1, 0; 1998 UL, 3, 1, 0; 1998 UQ, 3, 1, 0; 1998 UX, 3, 1, 0; 1998 UC₄, 3, 1, 0; 1998 UG₄, 3, 1, 0; 1998 UD₅, 3, 1, 0; 1998 UT₅, 3, 1, 0; 1998 UV₆, 3, 1, 0; 1998 UK₇, 3, 1, 0; 1998 UN₇, 3, 1, 0; 1998 UO₇, 3, 1, 0; 1998 UD₈, 3, 1, 0; 1998 UJ₈, 3, 1, 0; 1998 UN₈, 3, 1, 0; 1998 UP₈, 3, 1, 0; 1998 UR₈, 3, 1, 0; 1998 UV₈, 3, 1, 0; 1998 UN₁₅, 3, 1, 0; 1998 UO₁₅, 3, 1, 0; 1998 UP₁₅, 3, 1, 0; 1998 UR₁₅, 3, 1, 0; 1998 UT₁₅, 3, 1, 0; 1998 UU₁₅, 3, 1, 0; 1998 UV₁₅, 3, 1, 0; 1998 UW₁₅, 3, 1, 0; 1998 UD₁₆, 3, 1, 0; 1998 UL₁₆, 3, 1, 0; 1998 UM₁₆, 3, 1, 0; 1998 UR₁₆, 6, 2, 24; 1998 UW₁₈, 3, 1, 0; 1998 UX₁₈, 6, 2, 22; 1998 UE₁₉, 3, 1, 0; 1998 US₁₉, 3, 1, 0; 1998 UV₁₉, 6, 2, 23; 1998 UW₁₉, 3, 1, 0; 1998 UX₁₉, 3, 1, 0; 1998 UY₁₉, 6, 2, 22; 1998 UZ₁₉, 3, 1, 0; 1998 UM₂₀, 6, 2, 26; 1998 UN₂₀, 3, 1, 0; 1998 UQ₂₀, 3, 1, 0; 1998 UR₂₀, 6, 2, 23; 1998 UU₂₀, 6, 1, 0; 1998 UV₂₀, 6, 2, 24; 1998 UX₂₀, 3, 1, 0; 1998 UZ₂₀, 3, 1, 0; 1998 UC₂₁, 3, 1, 0; 1998 UE₂₁, 6, 2, 23; 1998 UF₂₁, 3, 1, 0; 1998 UP₂₁, 6, 2, 57; 1998 UZ₂₁, 6, 2, 25; 1998 UN₂₂, 3, 1, 0; 1998 UT₂₂, 3, 1, 0; 1998 UU₂₂, 3, 1, 0; 1998 UV₂₂, 3, 1, 0; 1998 UW₂₂, 3, 1, 0; 1998 UX₂₂, 3, 1, 0; 1998 UB₂₃, 3, 1, 0; 1998 UD₂₃, 3, 1, 0; 1998 UJ₂₃, 3, 1, 0; 1998 US₂₃, 3, 1, 0; 1998 UT₂₃, 3, 1, 0; 1998 UP₂₄, 3, 1, 0; 1998 UQ₂₄, 3, 1, 0; 1998 UR₂₄, 3, 1, 0; 1998 US₂₄, 3, 1, 0; 1998 UT₂₄, 3, 1, 0; 1998 UO₂₅, 3, 1, 0; 1998 UQ₂₅, 6, 1, 0; 1998 UM₂₆, 3, 1, 0; 1998 UP₂₆, 6, 2, 28; 1998 UQ₂₆, 3, 1, 0; 1998 UV₂₆, 3, 1, 0; 1998 UW₂₆, 3, 1, 0; 1998 UZ₂₆, 3, 1, 0; 1998 UA₂₇, 3, 1, 0; 1998 UH₂₇, 3, 1, 0; 1998 UE₂₈, 3, 1, 0; 1998 UK₃₂, 3, 1, 0; 1998 VC, 3, 1, 0; 1998 VE, 6, 2, 22; 1998 VT₇, 3, 1, 0; 1998 VA₁, 3, 1, 0; 1998 VG₁, 3, 1, 0; 1998 VH₁, 3, 1, 0; 1998 VJ₁, 3, 1, 0; 1998 VK₁, 3, 1, 0; 1998 VL₁, 3, 1, 0; 1998 VS₁, 3, 1, 0; 1998 VD₂, 6, 2, 23; 1998 VL₂, 3, 1, 0; 1998 VV₂, 6, 2, 23; 1998 VA₃, 3, 1, 0; 1998 VP₄, 3, 1, 0; 1998 VU₄, 3, 1, 0; 1998 VK₅, 3, 1, 0; 1998 VU₅, 3, 1, 0; 1998 VM₆, 3, 1, 0; 1998 VL₇, 3, 1, 0; 1998 VS₇, 3, 1, 0; 1998 VC₈, 3, 1, 0; 1998 VF₈, 3, 1, 0; 1998 VD₁₀, 3, 1, 0; 1998 VJ₁₁, 3, 1, 0; 1998 VU₁₂, 3,

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3, 1, 0; (9610), 3, 1, 0; (9615), 3, 1, 0; (9622), 3, 1, 0; (9627), 3, 1, 0; (9644), 3, 1, 0; (9651), 3, 1, 0; (9657), 3, 1, 0; (9661), 3, 1, 0; (9663), 3, 1, 0; (9665), 3, 1, 0; (9666), 3, 1, 0; (9669), 3, 1, 0; (9676), 3, 1, 0; (9677), 3, 1, 0; (9684), 3, 1, 0; (9687), 1, 1, 0; (9688), 3, 1, 0; (9691), 3, 1, 0; (9697), 3, 1, 0; (9700), 3, 1, 0; (9707), 3, 1, 0; [4726, 1383, 2*, 1998/01/07-1998/12/01]

701 Sierra Vista

D. Healy, Junk Bond Observatory, 6929 Madera Dr, Sierra Vista, AZ 85635, U.S.A.
[76443.1440@compuserve.com]

Observer D. Healy

Measurer J. Medkeff

0.4-m Schmidt-Cassegrain + CCD

GSC, USNO-SA1.0

1991 RT₅, 4, 2, 3; 1994 WE₂, 4, 2, 3; 1995 VG₂, 2, 1, 0; [10, 3, 0*, 1998/09/22-1998/09/28]

703 Catalina Sky Survey

C. W. Hergenrother, Space Sciences Building, University of Arizona, Tucson, AZ
85721, U.S.A. [chergen@pir1.lpl.arizona.edu]

Observers C. W. Hergenrother, T. B. Spahr, J. W. Brownlee

Measurers C. W. Hergenrother, T. B. Spahr

0.41-m $f/3$ Schmidt + CCD

GSC-1.0

1994 TT₃, 3, 1, 0; 1998 NA, 3, 1, 0; 1998 OU₇, 3, 1, 0; 1998 TU₂₉, 3, 1, 0; 1998 UV₁₆, 2, 1, 0; 1998 UW₁₆, 3, 1, 0; 1998 UZ₁₆, 2, 1, 0; 1998 UL₁₈, 2, 1, 0; 1998 UM₁₈, 5, 2, 1; 1998 UN₁₈, 6, 2, 1; 1998 UA₃₁ *, 8, 3, 19; 1998 VA₆ *, 9, 3, 6; 1998 VB₆ *, 8, 3, 6; 1998 VP₃₂ *, 7, 3, 8; 1998 VQ₃₂ *, 5, 2, 1; 1998 VR₃₂ *, 8, 3, 8; 1998 VS₃₂ *, 5, 2, 1; 1998 VT₃₂ *, 5, 2, 1; 1998 VU₃₂ *, 5, 2, 1; 1998 VV₃₂ *, 5, 2, 1; 1998 WA *, 8, 3, 3; 1998 WB *, 8, 3, 7; 1998 WC *, 5, 2, 1; 1998 WD *, 8, 3, 2; 1998 WC₁ *, 9, 3, 4; 1998 WD₁ *, 5, 2, 2; 1998 WE₁ *, 5, 2, 2; 1998 WF₁ *, 9, 3, 6; 1998 WG₁ *, 7, 3, 3; 1998 WH₁ *, 8, 3, 3; 1998 WJ₁ *, 7, 3, 3; 1998 WC₂ *, 12, 3, 2; 1998 WL₂ *, 8, 3, 6; 1998 WM₂ *, 8, 3, 5; 1998 WA₄ *, 15, 4, 3; 1998 WM₄ *, 7, 3, 6; 1998 WN₄ *, 8, 3, 5; 1998 WO₄ *, 6, 2, 6; 1998 WP₄ *, 7, 3, 6; 1998 WQ₄ *, 5, 2, 4; 1998 WR₄ *, 7, 3, 5; 1998 WS₄ *, 5, 2, 4; 1998 WT₄ *, 7, 3, 5; 1998 WU₄ *, 5, 2, 4; 1998 WV₄ *, 9, 3, 4; 1998 WW₄ *, 8, 3, 3; 1998 WX₄ *, 5, 2, 2; 1998 WY₄ *, 5, 2, 2; 1998 WZ₄ *, 5, 2, 2; 1998 WA₅ *, 5, 2, 2; 1998 WB₅ *, 6, 2, 1; 1998 WC₅ *, 6, 2, 1; 1998 WH₅ *, 5, 2, 5; 1998 WJ₅ *, 5, 2, 5; 2084 T-2, 3, 1, 0; (3151), 3, 1, 0; (5986), 3, 1, 0; [344, 57, 44*, 1998/10/29-1998/11/23]

704 Lincoln Laboratory Experimental Test System, New Mexico

H. Viggh, MIT Lincoln Laboratory, 244 Wood Street, Lexington, MA 02173,
U.S.A. [viggh@ll.mit.edu]

Observers M. Blythe, F. Shelly, M. Bezpalko

Measurers J. Stuart, H. Viggh, R. Sayer

1.0-m $f/2.15$ reflector + CCD

USNO-SA1.0

1971 UK₁, 20, 4, 14; 1973 SS, 8, 2, 6; 1973 SX, 7, 2, 1; 1973 SF₁, 9, 2, 3; 1973 SJ₁, 14, 3, 6; 1973 SO₁, 4, 1, 0; 1973 SP₁, 3, 1, 0; 1973 SA₂, 3, 1, 0; 1975 SB₁, 5, 1, 0; 1975 TJ₃, 10, 2, 1; 1975 VW₅, 10, 2, 1; 1976 QA, 9, 2, 3; 1976 SR₅, 5, 1, 0; 1976 YR₁, 5, 1, 0; 1976 YF₃, 18, 4, 11; 1977 DF₂, 10, 2, 1; 1978 PA₃, 15, 2, 1; 1978 RR₅, 5, 1, 0; 1978 RH₉, 7, 2, 1; 1978 SH₃, 9, 2, 1; 1978 SD₇, 9, 2, 1; 1978 VM₇, 5, 1, 0; 1978 YM, 5, 1, 0; 1979 MK, 4, 1, 0; 1979 MW₆, 3, 1, 0; 1979 SO, 5, 1, 0; 1980 BA, 5, 1, 0; 1980 FH₁, 9, 2, 2; 1980 FX₃, 8, 2, 6; 1981 EZ, 8, 2, 1; 1981 EF₂, 10, 2, 5; 1981 EQ₁₀, 9, 2, 3; 1981 EP₁₃, 4, 1, 0; 1981 EW₁₃, 8, 2, 1; 1981 ED₁₅, 9, 2, 7; 1981 EW₁₇, 4, 1, 0; 1981 EY₁₉, 4, 1, 0; 1981 EW₂₄, 10, 2, 1; 1981 EP₂₇, 4, 1, 0; 1981 EH₂₈, 8, 2, 1; 1981 EW₃₀, 10, 2, 1; 1981 EX₃₈, 5, 1, 0; 1981 EQ₄₇, 10, 2, 1; 1981 FL, 4, 1, 0; 1981 QJ₃, 6, 2, 1; 1981 RQ₅, 9, 2, 2; 1981 RB₂, 9, 2, 2; 1981 RW₄, 19, 4, 14; 1981 UU₂₉, 7, 2, 7; 1981 VN, 10, 2, 1; 1981 YG, 3, 1, 0; 1982 DP₁, 5, 1, 0; 1982 DW₃, 5, 1, 0; 1982 FA, 5, 1, 0; 1982 JD₁, 5, 1, 0; 1982 TK_U, 4, 1, 0; 1982 TS₁, 10, 2, 6; 1982 US₆, 9, 2, 1; 1982 UC₁₁, 9, 2, 1; 1982 VB₄, 10, 2, 1; 1984 QU, 4, 1, 0; 1984 RA, 4, 1, 0; 1984 SA, 15, 3, 8; 1984 SS, 5, 1, 0; 1984 SO₄, 20, 4, 14; 1984 WJ₁, 10, 2, 1; 1984 YL₁, 4, 1, 0; 1985 CL₂, 9, 2, 1; 1985 PN, 5, 1, 0; 1985 PE₁, 18, 4, 11; 1985 QP₅, 5, 1, 0; 1985 RN₃, 9, 2, 1; 1985 SX₂, 24, 5, 14; 1985 SC₃, 9, 2, 1; 1985 UC, 9, 2, 1; 1985 UO₃, 5, 1, 0; 1986 CP₁, 8, 2, 6; 1986 CB₂, 10, 2, 1; 1986 JC, 4, 1, 0; 1986 JD, 5, 1, 0; 1986 QG₁, 4, 1, 0; 1986 QR₁, 11, 3, 10; 1986 QK₂, 3, 1, 0; 1986 QP₂, 17, 4, 13; 1986 RP₅, 5, 1, 0; 1986 RB₁₂, 9, 2, 2; 1986 SC₂, 9, 2, 1; 1987 BS₁, 10, 2, 2; 1987 DF₆, 8, 2, 2; 1987 DN₆, 9, 2, 1; 1987 GA, 18, 4, 11; 1987 QT, 4, 1, 0; 1987 SV₃, 9, 2, 2; 1987 SL₅, 10, 2, 1; 1987 SO₅, 10, 2, 2; 1987 SH₇, 5, 1, 0; 1987 ST₁₁, 10, 2, 1; 1987 SR₁₂, 5, 1, 0; 1987 SD₁₃, 9, 2, 1; 1987 SQ₁₇,

4, 1, 0; 1987 UT, 4, 1, 0; 1987 UX, 9, 2, 1; 1987 UA₁, 17, 4, 11; 1987 UU₄, 5, 1, 0; 1987 WF₁, 5, 1, 0; 1987 WJ₁, 10, 2, 1; 1987 WT₁, 7, 2, 7; 1987 YU₁, 4, 1, 0; 1988 BX₃, 3, 1, 0; 1988 CO₁, 9, 2, 2; 1988 CU₁, 8, 2, 6; 1988 CT₂, 5, 1, 0; 1988 CF₆, 5, 1, 0; 1988 FE, 4, 1, 0; 1988 FM, 4, 1, 0; 1988 GF, 4, 1, 0; 1988 JW, 3, 1, 0; 1988 PL, 7, 2, 1; 1988 RQ₂, 8, 2, 2; 1988 RY₅, 5, 1, 0; 1988 RQ₈, 14, 3, 13; 1988 RQ₁₂, 3, 1, 0; 1988 RF₁₃, 3, 1, 0; 1988 UO, 3, 1, 0; 1988 VY, 10, 2, 1; 1988 VR₂, 5, 1, 0; 1988 VP₃, 5, 1, 0; 1988 VT₃, 19, 4, 14; 1989 AT, 5, 1, 0; 1989 AL₃, 3, 1, 0; 1989 AN₅, 5, 1, 0; 1989 CS₂, 3, 1, 0; 1989 CT₂, 9, 2, 1; 1989 CB₃, 8, 2, 1; 1989 DB, 19, 4, 14; 1989 EZ₂, 4, 1, 0; 1989 GC₁, 14, 3, 6; 1989 GF₁, 4, 1, 0; 1989 GR₄, 5, 1, 0; 1989 NE₁, 13, 3, 6; 1989 OL, 9, 2, 3; 1989 RD₁, 5, 1, 0; 1989 SF₁, 5, 1, 0; 1989 SA₂, 5, 1, 0; 1989 ST₄, 9, 2, 1; 1989 SV₅, 5, 1, 0; 1989 SW₈, 10, 2, 1; 1989 SY₁₃, 5, 1, 0; 1989 TH₁, 10, 2, 2; 1989 TM₁, 9, 1, 0; 1989 TU₄, 8, 2, 1; 1989 TB₅, 3, 1, 0; 1989 TR₁₁, 5, 1, 0; 1989 UX₇, 18, 4, 14; 1989 VS₁, 5, 1, 0; 1989 WH, 9, 2, 1; 1989 WD₃, 15, 3, 6; 1989 WU₄, 4, 1, 0; 1990 EQ₂, 8, 2, 1; 1990 EN₃, 9, 2, 1; 1990 EN₄, 9, 1, 0; 1990 FK₁, 5, 1, 0; 1990 FM₁, 10, 2, 6; 1990 HG, 5, 1, 0; 1990 LR, 7, 2, 7; 1990 OS₁, 5, 1, 0; 1990 QM, 10, 2, 1; 1990 QZ₁, 9, 2, 2; 1990 QK₃, 4, 1, 0; 1990 QL₃, 8, 2, 1; 1990 QJ₄, 7, 2, 7; 1990 QB₅, 10, 2, 1; 1990 QN₇, 9, 2, 6; 1990 RE₂, 9, 2, 14; 1990 RR₂, 15, 3, 8; 1990 RY₂, 18, 4, 14; 1990 RS₆, 4, 1, 0; 1990 RM₉, 5, 1, 0; 1990 SD₅, 8, 2, 6; 1990 SG₈, 10, 2, 6; 1990 SX₁₀, 5, 1, 0; 1990 ST₁₅, 14, 3, 6; 1990 TM₅, 4, 1, 0; 1990 TF₈, 9, 2, 1; 1990 TK₁₅, 5, 1, 0; 1990 UA₁, 4, 1, 0; 1990 UU₁, 4, 1, 0; 1990 UQ₂, 3, 1, 0; 1990 UE₅, 5, 1, 0; 1990 VK₄, 7, 2, 1; 1990 VS₄, 9, 2, 1; 1990 VQ₅, 5, 1, 0; 1990 VG₆, 5, 1, 0; 1990 VP₆, 9, 2, 1; 1990 WD₂, 5, 1, 0; 1990 WR₂, 5, 1, 0; 1991 AK, 10, 2, 1; 1991 AS₁, 4, 1, 0; 1991 AN₂, 5, 1, 0; 1991 BV₁, 5, 1, 0; 1991 CL, 4, 1, 0; 1991 CC₃, 11, 3, 6; 1991 DK, 10, 2, 6; 1991 DY, 3, 1, 0; 1991 EJ, 8, 2, 2; 1991 EN, 9, 2, 2; 1991 GJ₁, 4, 1, 0; 1991 GX₁, 4, 1, 0; 1991 GP₃, 9, 2, 1; 1991 GA₆, 8, 2, 7; 1991 GZ₆, 4, 1, 0; 1991 LL₂, 3, 1, 0; 1991 NE₇, 4, 1, 0; 1991 OL₁, 5, 1, 0; 1991 PV, 4, 1, 0; 1991 PG₃, 4, 1, 0; 1991 PE₅, 5, 1, 0; 1991 PW₉, 4, 1, 0; 1991 PJ₁₃, 9, 2, 1; 1991 PR₁₆, 9, 2, 1; 1991 RE₁, 5, 1, 0; 1991 RE₂, 7, 2, 10; 1991 RF₂, 5, 1, 0; 1991 RT₃, 9, 2, 1; 1991 RR₄, 9, 2, 14; 1991 RA₅, 22, 5, 14; 1991 RJ₇, 5, 1, 0; 1991 RL₈, 9, 2, 1; 1991 RC₉, 10, 2, 1; 1991 RU₉, 13, 3, 13; 1991 RE₁₅, 10, 2, 2; 1991 RV₁₆, 4, 1, 0; 1991 RU₁₇, 10, 2, 1; 1991 RK₂₆, 10, 2, 1; 1991 RJ₄₁, 9, 2, 1; 1991 SM₂, 10, 2, 1; 1991 TO, 4, 1, 0; 1991 TP₁, 3, 1, 0; 1991 TX₄, 5, 1, 0; 1991 UK₁, 4, 1, 0; 1991 UJ₂, 9, 2, 1; 1991 UO₂, 9, 2, 1; 1991 UN₃, 12, 3, 14; 1991 UE₅, 9, 2, 2; 1991 VP₁, 5, 1, 0; 1991 VQ₁, 13, 3, 14; 1991 VR₂, 5, 1, 0; 1991 VZ₂, 9, 2, 1; 1991 VG₃, 5, 1, 0; 1991 VA₄, 10, 2, 1; 1991 VM₅, 10, 2, 1; 1991 XL, 15, 3, 6; 1991 XZ, 5, 1, 0; 1991 YX, 5, 1, 0; 1991 YL₁, 5, 1, 0; 1992 AJ₁, 22, 5, 23; 1992 AO₁, 10, 2, 1; 1992 AU₁, 5, 1, 0; 1992 AT, 3, 1, 0; 1992 CG₃, 5, 1, 0; 1992 DG₁, 5, 1, 0; 1992 DZ₂, 17, 4, 11; 1992 DV₉, 5, 1, 0; 1992 EA₆, 5, 1, 0; 1992 EP₁₀, 4, 1, 0; 1992 EK₁₄, 10, 2, 1; 1992 FV₁, 8, 2, 7; 1992 GB₁, 4, 1, 0; 1992 HD₄, 10, 2, 1; 1992 HS₄, 5, 1, 0; 1992 JQ, 3, 1, 0; 1992 JB₂, 20, 4, 14; 1992 OF₁, 4, 1, 0; 1992 OP₁, 10, 2, 1; 1992 PH₂, 14, 2; 1992 RD₁, 5, 1, 0; 1992 RB₃, 10, 1, 0; 1992 RO₃, 4, 1, 0; 1992 RX₆, 9, 2, 2; 1992 RM₇, 10, 2, 3; 1992 SB₁, 10, 2, 2; 1992 SJ₄, 4, 1, 0; 1992 SF₁₁, 4, 1, 0; 1992 SQ₂₄, 5, 1, 0; 1992 UM₉, 18, 4, 13; 1993 BY₄, 4, 1, 0; 1993 CB, 10, 2, 1; 1993 DF₂, 4, 1, 0; 1993 DG₂, 5, 1, 0; 1993 EE, 3, 1, 0; 1993 EQ, 9, 2, 1; 1993 EU, 9, 2, 1; 1993 FL₁, 18, 4, 14; 1993 FH₇, 12, 3, 10; 1993 FG₅, 5, 1, 0; 1993 FL₈, 9, 2, 1; 1993 FW₉, 9, 2, 1; 1993 FO₁₂, 4, 1, 0; 1993 FM₁₄, 16, 4, 11; 1993 FU₁₇, 19, 4, 14; 1993 FG₂₃, 9, 2, 2; 1993 FR₂₃, 8, 2, 5; 1993 FV₂₇, 4, 1, 0; 1993 FS₃₁, 4, 1, 0; 1993 FW₄₁, 4, 1, 0; 1993 FE₇₆, 4, 1, 0; 1993 GA₁, 9, 2, 1; 1993 HX, 9, 2, 1; 1993 HL₆, 5, 1, 0; 1993 KZ₁, 4, 1, 0; 1993 MG₁, 8, 2, 2; 1993 NO, 9, 2, 14; 1993 NA₂, 4, 1, 0; 1993 OM₃, 4, 1, 0; 1993 OH₁₂, 12, 3, 10; 1993 QE₁, 5, 1, 0; 1993 SS₁, 4, 1, 0; 1993 SO₂, 9, 2, 1; 1993 TV₁₂, 16, 4, 14; 1993 TL₁₇, 4, 1, 0; 1993 TV₁₉, 9, 2, 1; 1993 TU₂₉, 16, 4, 14; 1993 TN₃₀, 4, 1, 0; 1993 TM₃₁, 4, 1, 0; 1993 TU₃₈, 5, 1, 0; 1993 TW₃₈, 19, 4, 14; 1993 UJ₁, 15, 3, 3; 1993 UT₆, 5, 1, 0; 1993 VL₃, 10, 2, 3; 1993 VD₄, 10, 2, 1; 1993 VV₄, 8, 2, 1; 1993 VV₇, 5, 1, 0; 1993 XM₅, 5, 1, 0; 1993 YD, 10, 2, 1; 1993 YF, 10, 2, 1; 1994 AC₃, 3, 1, 0; 1994 NO₁, 14, 3, 13; 1994 OB, 4, 1, 0; 1994 PS, 5, 1, 0; 1994 PU, 4, 1, 0; 1994 PC₂, 9, 2, 1; 1994 PK₈, 8, 2, 1; 1994 PS₁₀, 9, 2, 1; 1994 PQ₁₆, 4, 1, 0; 1994 PP₁₇, 19, 4, 14; 1994 PD₁₈, 9, 2, 1; 1994 PA₁₉, 10, 2, 1; 1994 PX₂₀, 3, 1, 0; 1994 PG₂₄, 9, 2, 1; 1994 PM₂₅, 10, 2, 1; 1994 PW₂₇, 17, 4, 13; 1994 PM₂₈, 4, 1, 0; 1994 PE₂₉, 14, 3, 6; 1994 PZ₂₉, 10, 2, 3; 1994 PX₃₁, 9, 2, 2; 1994 PQ₃₂, 5, 1, 0; 1994 PU₃₂, 14, 3, 6; 1994 PE₃₃, 18, 4, 13; 1994 PE₃₅, 9, 2, 1; 1994 PN₃₇, 9, 2, 1; 1994 QA, 5, 1, 0; 1994 RV, 9, 2, 2; 1994 RH₉, 5, 1, 0; 1994 RA₁₁, 8, 2, 1; 1994 RJ₁₁, 9, 2, 2; 1994 SB, 5, 1, 0; 1994 ST₇, 8, 2, 6; 1994 SH₁₁, 18, 4, 14; 1994 TQ₃, 9, 2, 9; 1994 TK₁₁, 10, 2, 1; 1994 TM₁₄, 5, 1, 0; 1994 TO₁₅, 3, 1, 0; 1994 UQ, 5, 1, 0; 1994 UY, 9, 2, 1; 1994 UB₁, 16, 4, 13; 1994 UC₁, 22, 5, 14; 1994 UM₁, 9, 2, 1; 1994 UR₆, 4, 1, 0; 1994 VB, 10, 2, 1; 1994 VH, 5, 1, 0; 1994 VL, 9, 2, 1; 1994 VT, 4, 1, 0; 1994 VD₁, 3, 1, 0; 1994 VE₁, 10, 2, 1; 1994 VH₁, 10, 2, 1; 1994 VA₂, 5, 1, 0; 1994 VR₂, 5, 1, 0; 1994 VY₆, 5, 1, 0; 1994 VW₁₅, 15, 3, 10; 1994 WM, 15, 3, 6; 1994 WJ₁, 4, 1, 0; 1994 WP₁, 17, 4, 13; 1994 WW₂, 9, 2, 1; 1994 XJ, 3, 1, 0; 1994 XP, 25, 5, 14; 1994 XQ₄, 9, 2, 1; 1994 YD₁, 20, 4, 14; 1994 YJ₁, 5, 1, 0; 1994 YX₁, 17, 4, 11; 1994 YA₂, 4, 1, 0; 1995 AF, 10, 2, 2; 1995 AH, 5, 1, 0; 1995 BB, 9, 2, 1; 1995 BY, 9, 2, 1; 1995 BP₁, 5, 1, 0; 1995 BA₃, 10, 2, 1; 1995 CD₂, 5, 1, 0; 1995 DK, 4, 1, 0; 1995 DL, 11, 3, 14; 1995 DZ₁, 22, 5, 14; 1995 DO₂, 4, 1, 0; 1995 DZ₁₁, 8, 2, 7; 1995 EF, 5, 1, 0; 1995 EQ₁, 8, 2, 3; 1995 EE₈, 5, 1, 0; 1995 ED₉, 19, 4, 14; 1995 FV₁₄, 10, 2, 1; 1995 GJ₇, 5, 1, 0; 1995 GO₇, 22, 5, 14; 1995 HY₂, 10, 2, 1; 1995 OK₈, 4, 1, 0; 1995 UW₄, 4, 1, 0; 1995 WS₇, 8, 2, 1; 1995 WP₈, 10, 2, 1; 1995 YD₁, 10, 2, 3; 1995 YH₁, 9, 2, 1; 1995 YX₁, 19, 4, 14; 1995 YM₃, 5, 1, 0; 1995 YN₃, 9, 2, 3; 1996 AA₁, 5, 1, 0; 1996 AJ₂, 4, 1, 0; 1996 AB₄, 9, 2, 1; 1996 AW₄, 9, 2, 1; 1996 AK₁₀, 8, 2, 1; 1996 BS₁, 9, 2, 14; 1996 BX₁, 5, 1, 0; 1996 BE₂, 23, 5, 13; 1996 BL₂, 13, 3, 8; 1996 BW₄,

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10, 2, 1; 1998 SW₁₂₈, 9, 2, 1; 1998 SY₁₂₈, 8, 2, 1; 1998 SB₁₂₉, 18, 4, 14; 1998 SD₁₂₉, 8, 2, 1; 1998 SF₁₂₉, 9, 2, 1; 1998 SK₁₂₉, 9, 2, 1; 1998 SL₁₂₉, 10, 2, 1; 1998 SM₁₂₉, 8, 2, 1; 1998 SN₁₂₉, 10, 2, 1; 1998 SO₁₂₉, 19, 4, 14; 1998 SQ₁₂₉, 10, 2, 1; 1998 SR₁₂₉, 8, 2, 1; 1998 SS₁₂₉, 20, 4, 14; 1998 SU₁₂₉, 19, 4, 14; 1998 SV₁₂₉, 9, 2, 1; 1998 SY₁₂₉, 8, 2, 1; 1998 SA₁₃₀, 8, 2, 1; 1998 SC₁₃₀, 9, 2, 1; 1998 SD₁₃₀, 19, 4, 14; 1998 SE₁₃₀, 9, 2, 1; 1998 SF₁₃₀, 10, 2, 1; 1998 SG₁₃₀, 10, 2, 1; 1998 SH₁₃₀, 8, 2, 1; 1998 SJ₁₃₀, 8, 2, 1; 1998 SK₁₃₀, 9, 2, 1; 1998 SM₁₃₀, 9, 2, 1; 1998 SN₁₃₀, 10, 2, 1; 1998 SP₁₃₀, 10, 2, 1; 1998 SR₁₃₀, 19, 4, 14; 1998 SS₁₃₀, 8, 2, 1; 1998 ST₁₃₀, 18, 4, 14; 1998 SV₁₃₀, 9, 2, 1; 1998 SY₁₃₀, 7, 2, 1; 1998 SZ₁₃₀, 19, 4, 14; 1998 SB₁₃₁, 19, 4, 14; 1998 SC₁₃₁, 10, 2, 1; 1998 SD₁₃₁, 14, 3, 14; 1998 SH₁₃₁, 18, 4, 14; 1998 SK₁₃₁, 18, 4, 14; 1998 SL₁₃₁, 9, 2, 1; 1998 SN₁₃₁, 10, 2, 1; 1998 SP₁₃₁, 8, 2, 1; 1998 ST₁₃₁, 13, 3, 13; 1998 SV₁₃₁, 19, 4, 14; 1998 SZ₁₃₁, 18, 4, 14; 1998 SC₁₃₂, 10, 2, 1; 1998 SD₁₃₂, 18, 4, 14; 1998 SE₁₃₂, 19, 4, 14; 1998 SG₁₃₂, 19, 4, 14; 1998 SJ₁₃₂, 15, 4, 14; 1998 SK₁₃₂, 17, 4, 14; 1998 SL₁₃₂, 8, 2, 1; 1998 SO₁₃₂, 9, 2, 1; 1998 SP₁₃₂, 9, 2, 1; 1998 SR₁₃₂, 17, 4, 14; 1998 SS₁₃₂, 10, 2, 1; 1998 ST₁₃₂, 17, 4, 14; 1998 SU₁₃₂, 19, 4, 14; 1998 SV₁₃₂, 19, 4, 14; 1998 SW₁₃₂, 19, 4, 14; 1998 SX₁₃₂, 9, 2, 1; 1998 SA₁₃₃, 14, 3, 13; 1998 SC₁₃₃, 9, 2, 1; 1998 SE₁₃₃, 8, 2, 1; 1998 SF₁₃₃, 17, 4, 14; 1998 SG₁₃₃, 18, 4, 14; 1998 SH₁₃₃, 9, 2, 1; 1998 SJ₁₃₃, 10, 2, 1; 1998 SK₁₃₃, 17, 4, 14; 1998 SL₁₃₃, 19, 4, 14; 1998 SM₁₃₃, 18, 4, 14; 1998 SN₁₃₃, 18, 4, 14; 1998 SO₁₃₃, 9, 2, 1; 1998 SP₁₃₃, 10, 2, 1; 1998 SQ₁₃₃, 10, 2, 1; 1998 SR₁₃₃, 18, 4, 14; 1998 SS₁₃₃, 18, 4, 14; 1998 SU₁₃₃, 8, 2, 1; 1998 SV₁₃₃, 8, 2, 1; 1998 SY₁₃₃, 7, 2, 1; 1998 SZ₁₃₃, 9, 2, 1; 1998 SB₁₃₄, 9, 2, 1; 1998 SC₁₃₄, 20, 4, 14; 1998 SE₁₃₄, 20, 4, 14; 1998 SF₁₃₄, 10, 2, 1; 1998 SG₁₃₄, 10, 2, 1; 1998 SH₁₃₄, 19, 4, 14; 1998 SN₁₃₄, 9, 2, 1; 1998 SO₁₃₄, 9, 2, 1; 1998 SP₁₃₄, 9, 2, 1; 1998 SR₁₃₄, 20, 4, 14; 1998 SS₁₃₄, 9, 2, 1; 1998 ST₁₃₄, 17, 4, 14; 1998 SU₁₃₄, 9, 2, 1; 1998 SV₁₃₄, 20, 4, 14; 1998 SW₁₃₄, 17, 4, 14; 1998 SX₁₃₄, 9, 2, 1; 1998 SZ₁₃₄, 9, 2, 1; 1998 SB₁₃₅, 9, 2, 1; 1998 SD₁₃₅, 15, 4, 14; 1998 SE₁₃₅, 9, 2, 1; 1998 SF₁₃₅, 19, 4, 14; 1998 SJ₁₃₅, 9, 2, 1; 1998 SK₁₃₅, 19, 4, 14; 1998 SN₁₃₅, 10, 2, 1; 1998 SO₁₃₅, 8, 2, 1; 1998 SP₁₃₅, 10, 2, 1; 1998 SR₁₃₅, 9, 2, 1; 1998 SV₁₃₅, 10, 2, 1; 1998 SW₁₃₅, 18, 4, 14; 1998 SZ₁₃₅, 10, 2, 1; 1998 SE₁₃₆, 14, 3, 13; 1998 SF₁₃₆, 10, 2, 1; 1998 SG₁₃₆, 8, 2, 1; 1998 SH₁₃₆, 6, 2, 1; 1998 SK₁₃₆, 9, 2, 1; 1998 SL₁₃₆, 10, 2, 1; 1998 SM₁₃₆, 18, 4, 14; 1998 SN₁₃₆, 10, 2, 1; 1998 SO₁₃₆, 10, 2, 1; 1998 SV₁₃₆, 10, 2, 1; 1998 SX₁₃₆, 8, 2, 1; 1998 SY₁₃₆, 9, 2, 1; 1998 SZ₁₃₆, 9, 2, 1; 1998 SC₁₃₇, 8, 2, 1; 1998 SJ₁₃₇, 9, 2, 1; 1998 SM₁₃₇, 18, 4, 14; 1998 SP₁₃₇, 9, 2, 1; 1998 SQ₁₃₇, 8, 2, 1; 1998 SR₁₃₇, 9, 2, 1; 1998 SV₁₃₇, 18, 4, 14; 1998 SZ₁₃₇, 19, 4, 14; 1998 SA₁₃₈, 7, 2, 1; 1998 SC₁₃₈, 8, 2, 1; 1998 SD₁₃₈, 8, 2, 1; 1998 SE₁₃₈, 18, 4, 14; 1998 SF₁₃₈, 19, 4, 14; 1998 SH₁₃₈, 8, 2, 1; 1998 SK₁₃₈, 10, 2, 1; 1998 SM₁₃₈, 10, 2, 1; 1998 SN₁₃₈, 17, 4, 14; 1998 SO₁₃₈, 17, 4, 14; 1998 SX₁₃₈, 15, 4, 14; 1998 SY₁₃₈, 19, 4, 14; 1998 SZ₁₃₈, 17, 4, 14; 1998 SA₁₃₉, 19, 4, 14; 1998 SB₁₃₉, 19, 4, 14; 1998 SC₁₃₉, 9, 2, 1; 1998 SD₁₃₉, 18, 4, 14; 1998 SE₁₃₉, 9, 2, 1; 1998 SF₁₃₉, 9, 2, 1; 1998 SG₁₃₉, 9, 2, 1; 1998 SH₁₃₉, 17, 4, 14; 1998 SJ₁₃₉, 9, 2, 1; 1998 SK₁₃₉, 18, 4, 14; 1998 SL₁₃₉, 17, 4, 14; 1998 SM₁₃₉, 17, 4, 14; 1998 SN₁₃₉, 17, 4, 14; 1998 SO₁₃₉, 17, 4, 14; 1998 SV₁₃₉, 17, 4, 14; 1998 SW₁₃₉, 17, 4, 14; 1998 SX₁₃₉, 17, 4, 14; 1998 SY₁₃₉, 17, 4, 14; 1998 SZ₁₃₉, 17, 4, 14; 1998 SA₁₄₀, 16, 4, 14; 1998 SB₁₄₀, 8, 2, 1; 1998 SC₁₄₀, 19, 4, 14; 1998 SD₁₄₀, 8, 2, 1; 1998 SE₁₄₀, 9, 2, 1; 1998 SF₁₄₀, 17, 4, 14; 1998 SG₁₄₀, 8, 2, 1; 1998 SH₁₄₀, 8, 2, 1; 1998 SL₁₄₀, 9, 2, 1; 1998 SM₁₄₀, 9, 2, 1; 1998 SO₁₄₀, 19, 4, 14; 1998 SQ₁₄₀, 19, 4, 14; 1998 SR₁₄₀, 9, 2, 1; 1998 ST₁₄₀, 14, 3, 13; 1998 SU₁₄₀, 9, 2, 1; 1998 SV₁₄₀, 9, 2, 1; 1998 SW₁₄₀, 9, 2, 1; 1998 SX₁₄₀, 16, 4, 14; 1998 SZ₁₄₀, 18, 4, 14; 1998 SC₁₄₁, 18, 4, 14; 1998 SD₁₄₁, 18, 4, 14; 1998 SF₁₄₁, 13, 3, 14; 1998 SJ₁₄₁, 19, 4, 14; 1998 SK₁₄₁, 16, 4, 14; 1998 SN₁₄₁, 18, 4, 14; 1998 SO₁₄₁, 9,

1; 1998 TA₁₀, 10, 2, 1; 1998 TE₉, 9, 2, 1; 1998 TF₉, 9, 2, 1; 1998 TG₉, 9, 2, 1; 1998 TH₉, 9, 2, 1; 1998 TJ₁₇, 17, 4, 14; 1998 TK₉, 9, 2, 1; 1998 TL₁₈, 18, 4, 14; 1998 TM₁₈, 18, 4, 14; 1998 TU₉, 9, 2, 1; 1998 TV₁₀, 10, 2, 1; 1998 TW₁₀, 10, 2, 1; 1998 TZ₁₀, 10, 2, 1; 1998 TC₂, 8, 2, 1; 1998 TD₂, 9, 2, 1; 1998 TE₂, 17, 4, 14; 1998 TF₂, 9, 2, 1; 1998 TG₂, 9, 2, 1; 1998 TH₃, 10, 2, 1; 1998 TL₃, 9, 2, 1; 1998 TO₃, 9, 2, 1; 1998 TQ₃, 5, 1, 0; 1998 TR₃, 19, 4, 18; 1998 TT₃, 5, 1, 0; 1998 TJ₄, 16, 4, 14; 1998 TC₅, 5, 1, 0; 1998 TE₅, 9, 2, 1; 1998 TF₅, 9, 2, 1; 1998 TG₅, 10, 2, 1; 1998 TH₅, 10, 2, 1; 1998 TJ₅, 9, 2, 1; 1998 TK₅, 10, 2, 1; 1998 TL₅, 10, 2, 1; 1998 TM₅, 7, 2, 1; 1998 TN₅, 10, 2, 1; 1998 TO₅, 10, 2, 1; 1998 TP₅, 10, 2, 1; 1998 TR₅, 10, 2, 1; 1998 TS₅, 10, 2, 1; 1998 TT₅, 10, 2, 1; 1998 TV₅, 9, 2, 1; 1998 TX₅, 18, 4, 14; 1998 TY₅, 9, 2, 1; 1998 TA₆, 5, 1, 0; 1998 TC₆, 10, 2, 1; 1998 TD₆, 10, 2, 1; 1998 TE₆, 10, 2, 1; 1998 TF₆, 10, 2, 1; 1998 TM₆, 5, 1, 0; 1998 TU₆, 10, 2, 1; 1998 TV₆, 9, 2, 1; 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1998 UF₁₉, 10, 2, 1; 1998 UL₁₉, 9, 2, 1; 1998 UM₁₉, 4, 1, 0; 1998 UO₁₉, 9, 2, 1; 1998 UR₁₉, 10, 2, 1; 1998 US₁₉, 7, 2, 1; 1998 UY₁₉, 17, 4, 11; 1998 UZ₁₉, 6, 2, 1; 1998 UA₂₀, 7, 2, 1; 1998 UB₂₀, 9, 2, 1; 1998 UC₂₀, 9, 2, 1; 1998 UJ₂₀, 14, 3, 10; 1998 UL₂₀, 10, 2, 3; 1998 UM₂₀, 8, 2, 1; 1998 UO₂₀, 16, 4, 11; 1998 UQ₂₀, 9, 2, 1; 1998 UV₂₀, 6, 2, 1; 1998 UW₂₀, 10, 2, 13; 1998 UC₂₁, 9, 2, 3; 1998 UE₂₁, 8, 2, 1; 1998 UF₂₁, 19, 4, 11; 1998 UZ₂₁, 9, 2, 1; 1998 UN₂₂, 7, 2, 1; 1998 UP₂₂, 8, 2, 1; 1998 UW₂₂, 10, 2, 1; 1998 UY₂₂, 15, 4, 11; 1998 UA₂₃, 16, 4, 11; 1998 UB₂₃, 17, 4, 11; 1998 UL₂₃, 10, 2, 3; 1998 UM₂₃, 9, 2, 3; 1998 UN₂₃, 10, 2, 3; 1998 US₂₃, 19, 4, 14; 1998 UT₂₃, 9, 2, 1; 1998 UE₂₄, 8, 2, 1; 1998 UL₂₄, 9, 2, 1; 1998 UP₂₄, 10, 2, 4; 1998 UQ₂₄, 18, 4, 11; 1998 UR₂₄, 9, 2, 3; 1998 US₂₄, 9, 2, 3; 1998 UT₂₄, 9, 2, 3; 1998 UW₂₄, 9, 2, 1; 1998 UB₂₅, 8, 2, 1; 1998 UL₂₅, 10, 2, 1; 1998 UM₂₅, 10, 2, 1; 1998 UN₂₅, 7, 2, 1; 1998 UO₂₅, 9, 2, 1; 1998 UP₂₅, 7, 2, 1; 1998 UQ₂₅, 7, 2, 1; 1998 UY₂₅, 9, 2, 1; 1998 UX₂₅, 10, 2, 1; 1998 UB₂₆, 10, 2, 1; 1998 UC₂₆, 7, 2, 1; 1998 UF₂₆, 8, 2, 1; 1998 UJ₂₆, 8, 2, 1; 1998 UM₂₆, 10, 2, 1; 1998 UN₂₆, 9, 2, 1; 1998 UP₂₆, 10, 2, 1; 1998 UQ₂₆, 10, 2, 1; 1998 UT₂₆, 10, 2, 1; 1998 UV₂₆, 10, 2, 1; 1998 UW₂₆, 10, 2, 1; 1998 UY₂₆, 9, 2, 1; 1998 UZ₂₆, 10,

2, 1; 1998 UA₂₇, 10, 2, 1; 1998 UD₂₇, 10, 2, 1; 1998 UH₂₇, 8, 2, 1; 1998 UN₂₇, 7, 2, 1; 1998 US₂₇, 7, 2, 1; 1998 UZ₂₇, 8, 2, 1; 1998 UA₂₈ *, 13, 3, 13; 1998 UB₂₈ *, 9, 2, 12; 1998 UC₂₈ *, 9, 2, 12; 1998 UD₂₈ *, 9, 2, 13; 1998 UE₂₈ *, 10, 2, 13; 1998 UF₂₈ *, 7, 2, 12; 1998 UG₂₈ *, 8, 2, 13; 1998 UH₂₈ *, 8, 2, 12; 1998 UJ₂₈ *, 19, 4, 22; 1998 UU₂₈, 6, 2, 1; 1998 UX₂₈, 8, 2, 2; 1998 UO₃₂, 8, 2, 1; 1998 UR₃₂ *, 10, 2, 1; 1998 US₃₂ *, 8, 2, 1; 1998 UT₃₂ *, 9, 2, 1; 1998 UY₃₂ *, 10, 2, 1; 1998 UV₃₂ *, 9, 2, 1; 1998 UW₃₂ *, 10, 2, 1; 1998 UX₃₂ *, 10, 2, 1; 1998 UY₃₂ *, 10, 2, 1; 1998 UZ₃₂ *, 10, 2, 1; 1998 UA₃₃ *, 10, 2, 1; 1998 UB₃₃ *, 10, 2, 1; 1998 UC₃₃ *, 10, 2, 1; 1998 UD₃₃ *, 10, 2, 1; 1998 UE₃₃ *, 10, 2, 1; 1998 UF₃₃ *, 10, 2, 1; 1998 UG₃₃ *, 10, 2, 1; 1998 UH₃₃ *, 9, 2, 1; 1998 UJ₃₃ *, 10, 2, 1; 1998 UK₃₃ *, 10, 2, 1; 1998 UL₃₃ *, 7, 2, 1; 1998 UM₃₃ *, 10, 2, 1; 1998 UN₃₃ *, 10, 2, 1; 1998 UO₃₃ *, 10, 2, 1; 1998 UP₃₃ *, 10, 2, 1; 1998 UQ₃₃ *, 10, 2, 1; 1998 UR₃₃ *, 10, 2, 1; 1998 US₃₃ *, 10, 2, 1; 1998 UT₃₃ *, 7, 2, 1; 1998 UV₃₃ *, 7, 2, 1; 1998 UV₃₃ *, 8, 2, 1; 1998 UW₃₃ *, 9, 2, 1; 1998 UX₃₃ *, 8, 2, 1; 1998 UY₃₃ *, 9, 2, 1; 1998 UZ₃₃ *, 9, 2, 1; 1998 UA₃₄ *, 9, 2, 1; 1998 UB₃₄ *, 8, 2, 1; 1998 UC₃₄ *, 9, 2, 1; 1998 UD₃₄ *, 10, 2, 1; 1998 UE₃₄ *, 10, 2, 1; 1998 UF₃₄ *, 9, 2, 1; 1998 UG₃₄ *, 17, 4, 14; 1998 UH₃₄ *, 8, 2, 1; 1998 UJ₃₄ *, 9, 2, 1; 1998 UK₃₄ *, 9, 2, 1; 1998 UL₃₄ *, 9, 2, 1; 1998 UM₃₄ *, 9, 2, 1; 1998 UN₃₄ *, 8, 2, 1; 1998 UO₃₄ *, 9, 2, 1; 1998 UP₃₄ *, 10, 2, 1; 1998 UQ₃₄ *, 10, 2, 1; 1998 UR₃₄ *, 8, 2, 1; 1998 US₃₄ *, 7, 2, 1; 1998 UT₃₄ *, 10, 2, 1; 1998 UU₃₄ *, 9, 2, 1; 1998 UV₃₄ *, 8, 2, 1; 1998 UW₃₄ *, 8, 2, 1; 1998 UX₃₄ *, 8, 2, 1; 1998 UY₃₄ *, 8, 2, 1; 1998 UZ₃₄ *, 8, 2, 1; 1998 UA₃₅ *, 7, 2, 1; 1998 UB₃₅ *, 9, 2, 1; 1998 UC₃₅ *, 8, 2, 1; 1998 UD₃₅ *, 8, 2, 1; 1998 UE₃₅ *, 8, 2, 1; 1998 UF₃₅ *, 8, 2, 1; 1998 UG₃₅ *, 9, 2, 1; 1998 UH₃₅ *, 8, 2, 1; 1998 UJ₃₅ *, 8, 2, 1; 1998 UK₃₅ *, 9, 2, 1; 1998 UL₃₅ *, 9, 2, 1; 1998 UM₃₅ *, 7, 2, 1; 1998 UO₃₅ *, 9, 2, 1; 1998 UP₃₅ *, 7, 2, 1; 1998 UQ₃₅ *, 9, 2, 1; 1998 UR₃₅ *, 9, 2, 1; 1998 US₃₅ *, 8, 2, 1; 1998 UT₃₅ *, 17, 4, 14; 1998 UU₃₅ *, 9, 2, 1; 1998 UV₃₅ *, 9, 2, 1; 1998 UW₃₅ *, 9, 2, 1; 1998 UX₃₅ *, 8, 2, 1; 1998 UY₃₅ *, 9, 2, 1; 1998 UZ₃₅ *, 9, 2, 1; 1998 UA₃₆ *, 17, 4, 14; 1998 UB₃₆ *, 9, 2, 1; 1998 UC₃₆ *, 9, 2, 1; 1998 UD₃₆ *, 9, 2, 1; 1998 UE₃₆ *, 9, 2, 1; 1998 UF₃₆ *, 9, 2, 1; 1998 UG₃₆ *, 9, 2, 1; 1998 UH₃₆ *, 9, 2, 1; 1998 UJ₃₆ *, 8, 2, 1; 1998 UK₃₆ *, 8, 2, 1; 1998 UL₃₆ *, 8, 2, 1; 1998 UM₃₆ *, 9, 2, 1; 1998 UN₃₆ *, 8, 2, 1; 1998 UO₃₆ *, 9, 2, 1; 1998 UP₃₆ *, 9, 2, 1; 1998 UQ₃₆ *, 8, 2, 1; 1998 UR₃₆ *, 8, 2, 1; 1998 US₃₆ *, 9, 2, 1; 1998 UT₃₆ *, 9, 2, 1; 1998 UV₃₆ *, 9, 2, 1; 1998 UX₃₆ *, 8, 2, 1; 1998 UY₃₆ *, 8, 2, 1; 1998 UZ₃₆ *, 9, 2, 1; 1998 UA₃₇ *, 9, 2, 1; 1998 UB₃₇ *, 8, 2, 1; 1998 UC₃₇ *, 9, 2, 1; 1998 UE₃₇ *, 8, 2, 1; 1998 UF₃₇ *, 9, 2, 1; 1998 UG₃₇ *, 8, 2, 1; 1998 UH₃₇ *, 9, 2, 1; 1998 UJ₃₇ *, 9, 2, 1; 1998 UK₃₇ *, 9, 2, 1; 1998 UL₃₇ *, 9, 2, 1; 1998 UM₃₇ *, 9, 2, 1; 1998 UN₃₇ *, 9, 2, 1; 1998 UO₃₇ *, 9, 2, 1; 1998 UP₃₇ *, 8, 2, 1; 1998 UQ₃₇ *, 9, 2, 1; 1998 UR₃₇ *, 9, 2, 1; 1998 US₃₇ *, 9, 2, 1; 1998 UT₃₇ *, 9, 2, 1; 1998 UV₃₇ *, 9, 2, 1; 1998 UW₃₇ *, 8, 2, 1; 1998 UX₃₇ *, 8, 2, 1; 1998 UY₃₇ *, 9, 2, 1; 1998 UZ₃₇ *, 9, 2, 1; 1998 UA₃₈ *, 9, 2, 1; 1998 UB₃₈ *, 9, 2, 1; 1998 UC₃₈ *, 9, 2, 1; 1998 UD₃₈ *, 9, 2, 1; 1998 UE₃₈ *, 9, 2, 1; 1998 UF₃₈ *, 9, 2, 1; 1998 UG₃₈ *, 8, 2, 1; 1998 UH₃₈ *, 9, 2, 1; 1998 UJ₃₈ *, 9, 2, 1; 1998 UK₃₈ *, 8, 2, 1; 1998 UL₃₈ *, 9, 2, 1; 1998 UM₃₈ *, 9, 2, 1; 1998 UN₃₈ *, 9, 2, 1; 1998 UO₃₈ *, 8, 2, 1; 1998 UP₃₈ *, 9, 2, 1; 1998 UQ₃₈ *, 9, 2, 1; 1998 UR₃₈ *, 9, 2, 1; 1998 US₃₈ *, 9, 2, 1; 1998 UT₃₈ *, 9, 2, 1; 1998 UV₃₈ *, 9, 2, 1; 1998 UW₃₈ *, 9, 2, 1; 1998 UX₃₈ *, 9, 2, 1; 1998 UY₃₈ *, 9, 2, 1; 1998 UZ₃₈ *, 9, 2, 1; 1998 UA₃₉ *, 9, 2, 1; 1998 UB₃₉ *, 9, 2, 1; 1998 UC₃₉ *, 8, 2, 1; 1998 UD₃₉ *, 8, 2, 1; 1998 UE₃₉ *, 9, 2, 1; 1998 UF₃₉ *, 9, 2, 1; 1998 UG₃₉ *, 9, 2, 1; 1998 UH₃₉ *, 9, 2, 1; 1998 UJ₃₉ *, 9, 2, 1; 1998 UK₃₉ *, 8, 2, 1; 1998 UL₃₉ *, 9, 2, 1; 1998 UM₃₉ *, 9, 2, 1; 1998 UN₃₉ *, 9, 2, 1; 1998 UO₃₉ *, 8, 2, 1; 1998 UP₃₉ *, 9, 2, 1; 1998 UQ₃₉ *, 9, 2, 1; 1998 UR₃₉ *, 9, 2, 1; 1998 US₃₉ *, 8, 2, 1; 1998 UT₃₉ *, 9, 2, 1; 1998 UV₃₉ *, 9, 2, 1; 1998 UW₃₉ *, 8, 2, 1; 1998 UX₃₉ *, 9, 2, 1; 1998 UY₃₉ *, 7, 2, 1; 1998 UZ₃₉ *, 7, 2, 1; 1998 UA₄₀ *, 9, 2, 1; 1998 UB₄₀ *, 8, 2, 1; 1998 UC₄₀ *, 8, 2, 1; 1998 UD₄₀ *, 8, 2, 1; 1998 UE₄₀ *, 9, 2, 1; 1998 UF

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1998 UP₄₃ *, 8, 2, 1; 1998 UQ₄₃ *, 7, 2, 1; 1998 VA₁₂, 3, 72; 1998 VG₁₀, 2, 1; 1998 VJ₅, 1, 0; 1998 VN *, 15, 2, 1; 1998 VO *, 15, 2, 1; 1998 VP *, 14, 2, 1; 1998 VQ *, 13, 2, 1; 1998 VR *, 29, 5, 11; 1998 VS *, 7, 2, 1; 1998 VT *, 8, 2, 3; 1998 VU *, 7, 2, 1; 1998 VV *, 9, 2, 1; 1998 VW *, 10, 2, 1; 1998 VX *, 10, 2, 1; 1998 VY *, 8, 2, 1; 1998 VZ *, 10, 2, 1; 1998 VA₁ *, 10, 2, 1; 1998 VB₁ *, 8, 2, 1; 1998 VC₁ *, 7, 2, 1; 1998 VD₁ *, 7, 2, 1; 1998 VE₁ *, 10, 2, 1; 1998 VF₁ *, 8, 2, 1; 1998 VG₁ *, 10, 2, 1; 1998 VH₁ *, 15, 2, 1; 1998 VJ₁ *, 10, 2, 1; 1998 VK₁ *, 10, 2, 1; 1998 VL₁ *, 10, 2, 1; 1998 VM₁ *, 8, 2, 1; 1998 VN₁ *, 15, 3, 8; 1998 VO₁ *, 17, 4, 11; 1998 VV₂, 8, 2, 3; 1998 VB₃, 9, 2, 1; 1998 VS₄ *, 6, 2, 2; 1998 VY₄, 9, 2, 3; 1998 VZ₄ *, 3, 1, 0; 1998 VB₅, 10, 2, 3; 1998 VC₅, 8, 2, 3; 1998 VD₅, 10, 2, 3; 1998 VE₅, 18, 4, 11; 1998 VF₅, 22, 5, 14; 1998 VG₅, 17, 4, 14; 1998 VH₅, 10, 2, 1; 1998 VJ₅, 9, 2, 1; 1998 VK₅, 8, 2, 1; 1998 VL₅, 10, 2, 1; 1998 VM₅, 10, 2, 1; 1998 VN₅, 9, 2, 1; 1998 VO₅, 14, 3, 6; 1998 VP₅, 6, 2, 1; 1998 VT₅, 4, 1, 0; 1998 VX₅, 9, 2, 3; 1998 VB₆, 4, 1, 0; 1998 VD₆, 8, 2, 3; 1998 VE₆, 10, 2, 1; 1998 VF₆, 10, 2, 1; 1998 VH₆, 10, 2, 1; 1998 VJ₆, 9, 2, 1; 1998 VK₆, 10, 2, 1; 1998 VL₆, 10, 2, 1; 1998 VM₆, 9, 2, 1; 1998 VN₆, 8, 2, 1; 1998 VO₆, 10, 2, 1; 1998 VQ₆, 9, 2, 6; 1998 VX₆ *, 15, 3, 5; 1998 VY₆ *, 13, 3, 5; 1998 VZ₆, 8, 2, 3; 1998 VA₇ *, 7, 2, 1; 1998 VB₇ *, 18, 4, 14; 1998 VC₇ *, 8, 2, 1; 1998 VD₇ *, 8, 2, 1; 1998 VE₇ *, 6, 2, 1; 1998 VF₇ *, 19, 4, 14; 1998 VG₇ *, 19, 4, 14; 1998 VH₇ *, 7, 2, 1; 1998 VJ₇ *, 9, 2, 1; 1998 VK₇ *, 18, 4, 14; 1998 VL₇ *, 20, 4, 14; 1998 VM₇ *, 9, 2, 1; 1998 VN₇ *, 10, 2, 1; 1998 VO₇ *, 10, 2, 1; 1998 VP₇ *, 9, 2, 1; 1998 VQ₇ *, 19, 4, 14; 1998 VS₇ *, 18, 4, 14; 1998 VT₇ *, 10, 2, 1; 1998 VU₇ *, 10, 2, 1; 1998 VV₇ *, 17, 4, 14; 1998 VW₇ *, 17, 4, 14; 1998 VX₇ *, 17, 4, 14; 1998 VY₇ *, 9, 2, 1; 1998 VA₈ *, 9, 2, 1; 1998 VB₈ *, 9, 2, 1; 1998 VC₈ *, 18, 4, 14; 1998 VD₈ *, 8, 2, 1; 1998 VE₈ *, 9, 2, 1; 1998 VF₈ *, 14, 4, 14; 1998 VG₈ *, 9, 2, 1; 1998 VH₈ *, 6, 2, 1; 1998 VJ₈ *, 9, 2, 1; 1998 VK₈ *, 9, 2, 1; 1998 VL₈ *, 8, 2, 1; 1998 VM₈ *, 9, 2, 1; 1998 VN₈ *, 9, 2, 1; 1998 VO₈ *, 9, 2, 1; 1998 VP₈ *, 8, 2, 1; 1998 VQ₈ *, 17, 4, 14; 1998 VR₈ *, 8, 2, 1; 1998 VS₈ *, 8, 2, 1; 1998 VT₈ *, 7, 2, 1; 1998 VU₈ *, 9, 2, 1; 1998 VV₈ *, 17, 4, 14; 1998 VW₈ *, 18, 4, 14; 1998 VX₈ *, 18, 4, 14; 1998 VY₈ *, 18, 4, 14; 1998 VZ₈ *, 8, 2, 1; 1998 VA₉ *, 6, 2, 1; 1998 VB₉ *, 18, 4, 14; 1998 VC₉ *, 7, 2, 1; 1998 VD₉ *, 18, 4, 14; 1998 VE₉ *, 8, 2, 1; 1998 VF₉ *, 6, 2, 1; 1998 VG₉ *, 17, 4, 14; 1998 VH₉ *, 18, 4, 14; 1998 VJ₉ *, 6, 2, 1; 1998 VK₉ *, 10, 2, 1; 1998 VL₉ *, 19, 4, 14; 1998 VM₉ *, 17, 4, 14; 1998 VN₉ *, 9, 2, 1; 1998 VO₉ *, 10, 2, 1; 1998 VP₉ *, 10, 2, 1; 1998 VQ₉ *, 7, 2, 1; 1998 VR₉ *, 16, 4, 14; 1998 VT₉ *, 17, 4, 14; 1998 VU₉ *, 17, 4, 14; 1998 VV₉ *, 17, 4, 14; 1998 VW₉ *, 10, 2, 1; 1998 VX₉ *, 8, 2, 1; 1998 VY₉ *, 8, 2, 1; 1998 VZ₉ *, 8, 2, 1; 1998 VA₁₀ *, 10, 2, 1; 1998 VB₁₀ *, 9, 2, 1; 1998 VC₁₀ *, 9, 2, 1; 1998 VD₁₀ *, 9, 2, 1; 1998 VE₁₀ *, 8, 2, 1; 1998 VF₁₀ *, 8, 2, 1; 1998 VG₁₀ *, 10, 2, 1; 1998 VH₁₀ *, 9, 2, 1; 1998 VJ₁₀ *, 8, 2, 1; 1998 VK₁₀ *, 10, 2, 1; 1998 VL₁₀ *, 9, 2, 1; 1998 VM₁₀ *, 10, 2, 1; 1998 VN₁₀ *, 7, 2, 1; 1998 VO₁₀ *, 10, 2, 1; 1998 VP₁₀ *, 7, 2, 1; 1998 VQ₁₀ *, 8, 2, 1; 1998 VR₁₀ *, 10, 2, 1; 1998 VS₁₀ *, 9, 2, 1; 1998 VT₁₀ *, 10, 2, 1; 1998 VU₁₀ *, 7, 2, 1; 1998 VV₁₀ *, 7, 2, 1; 1998 VW₁₀ *, 8, 2, 1; 1998 VX₁₀ *, 6, 2, 1; 1998 VY₁₀ *, 7, 2, 1; 1998 VZ₁₀ *, 10, 2, 1; 1998 VA₁₁ *, 8, 2, 1; 1998 VB₁₁ *, 9, 2, 1; 1998 VC₁₁ *, 10, 2, 1; 1998 VD₁₁ *, 8, 2, 1; 1998 VE₁₁ *, 10, 2, 1; 1998 VF₁₁ *, 6, 2, 1; 1998 VG₁₁ *, 9, 2, 1; 1998 VH₁₁ *, 8, 2, 1; 1998 VJ₁₁ *, 9, 2, 1; 1998 VK₁₁ *, 9, 2, 1; 1998 VL₁₁ *, 8, 2, 1; 1998 VM₁₁ *, 9, 2, 1; 1998 VN₁₁ *, 10, 2, 1; 1998 VO₁₁ *, 8, 2, 1; 1998 VP₁₁ *, 10, 2, 1; 1998 VQ₁₁ *, 8, 2, 1; 1998 VR₁₁ *, 9, 2, 1; 1998 VS₁₁ *, 10, 2, 1; 1998 VT₁₁ *, 8, 2, 1; 1998 VU₁₁ *, 9, 2, 1; 1998 VV₁₁ *, 9, 2, 1; 1998 VW₁₁ *, 9, 2, 1; 1998 VX₁₁ *, 9, 2, 1; 1998 VY₁₁ *, 8, 2, 1; 1998 VZ₁₁ *, 10, 2, 1; 1998 VA₁₂ *, 9, 2, 1; 1998 VB₁₂ *, 6, 2, 1; 1998 VC₁₂ *, 9, 2, 1; 1998 VD₁₂ *, 9, 2, 1; 1998 VE₁₂ *, 9, 2, 1; 1998 VF₁₂ *, 9, 2, 1; 1998 VG₁₂ *, 9, 2, 1; 1998 VH₁₂ *, 9, 2, 1; 1998 VJ₁₂ *, 9, 2, 1; 1998 VK₁₂ *, 9, 2, 1; 1998 VL₁₂ *, 8, 2, 1; 1998 VM₁₂ *, 9, 2, 1; 1998 VN₁₂ *, 8, 2, 1; 1998 VO₁₂ *, 9, 2, 1; 1998 VP₁₂ *, 9, 2, 1; 1998 VQ₁₂ *, 10, 2, 1; 1998 VR₁₂ *, 9, 2, 1; 1998 VS₁₂ *, 9, 2, 1; 1998 VT₁₂ *, 10, 2, 1; 1998 VU₁₂ *, 10, 2, 1; 1998 VV₁₂ *, 10, 2, 1; 1998 VX₁₂ *, 7, 2, 1; 1998 VY₁₂ *, 9, 2, 1; 1998 VZ₁₂ *, 10, 2, 1; 1998 VA₁₃ *, 10, 2, 1; 1998 VB₁₃ *, 9, 2, 1; 1998 VC₁₃ *, 7, 2, 1; 1998 VD₁₃ *, 9, 2, 1; 1998 VE₁₃ *, 8, 2, 1; 1998 VF₁₃ *, 10, 2, 1; 1998 VG₁₃ *, 8, 2, 1; 1998 VH₁₃ *, 9, 2, 1; 1998 VJ₁₃ *, 8, 2, 1; 1998 VK₁₃ *, 7, 2, 1; 1998 VL₁₃ *, 10, 2, 1; 1998 VM₁₃ *, 10, 2, 1; 1998 VN₁₃ *, 7, 2, 1; 1998 VO₁₃ *, 9, 2, 1; 1998 VP₁₃ *, 10, 2, 1; 1998 VQ₁₃ *, 9, 2, 1; 1998 VR₁₃ *, 10, 2, 1; 1998 VS₁₃ *, 9, 2, 1; 1998 VT₁₃ *, 10, 2, 1; 1998 VU₁₃ *, 10, 2, 1; 1998 VV₁₃ *, 8, 2, 1; 1998 VW₁₃ *, 8, 2, 1; 1998 VX₁₃ *, 8, 2, 1; 1998 VY₁₃ *, 8, 2, 1; 1998 VZ₁₃ *, 10, 2, 1; 1998 VA₁₄ *, 8, 2, 1; 1998 VB₁₄ *, 7, 2, 1; 1998 VC₁₄ *, 8, 2, 1; 1998 VD₁₄ *, 9, 2, 1; 1998 VE₁₄ *, 8, 2, 1; 1998 VF₁₄ *, 8, 2, 1; 1998 VG₁₄ *, 7, 2, 1; 1998 VH₁₄ *, 7, 2, 1; 1998 VJ₁₄ *, 9, 2, 1; 1998 VK₁₄ *, 10, 2, 1; 1998 VL₁₄ *, 10, 2, 1; 1998 VM₁₄ *, 6, 2, 1; 1998 VN₁₄ *, 9, 2, 1; 1998 VO₁₄ *, 8, 2, 1; 1998 VP₁₄ *, 10, 2, 1; 1998 VQ₁₄ *, 10, 2, 1; 1998 VR₁₄ *, 10, 2, 1; 1998 VS₁₄ *, 8, 2, 1; 1998 VT₁₄ *, 9, 2, 1; 1998 VU₁₄ *, 6, 2, 1; 1998 VV₁₄ *, 9, 2, 1; 1998 VW₁₄ *, 9, 2, 1; 1998 VX₁₄ *, 10, 2, 1; 1998 VY₁₄ *, 6, 2, 1; 1998 VZ₁₄ *, 7, 2, 1; 1998 VA₁₅ *, 10, 2, 1; 1998 VB₁₅ *, 8, 2, 1; 1998 VC₁₅ *, 8, 2, 1; 1998 VD₁₅ *, 10, 2, 1; 1998 VE₁₅ *, 8, 2, 1; 1998 VF₁₅ *, 9, 2, 1; 1998 VG₁₅ *, 9, 2, 1; 1998 VH₁₅ *, 9, 2, 1; 1998 VJ₁₅ *, 9, 2, 1; 1998 VK₁₅ *, 10, 2, 1; 1998 VL₁₅ *, 9, 2, 1; 1998 VM₁₅ *, 10, 2, 1; 1998 VN₁₅ *, 8, 2, 1; 1998 VO₁₅ *, 9, 2, 1; 1998 VP₁₅ *, 7, 2, 1; 1998 VQ₁₅ *, 9, 2, 1; 1998 VR₁₅ *, 10, 2, 1; 1998 VS₁₅ *, 10, 2, 1; 1998 VT₁₅ *, 10, 2, 1; 1998 VU₁₅ *, 9, 2, 1; 1998 VV₁₅ *, 7, 2, 1; 1998 VW₁₅ *, 8, 2, 1; 1998 VX₁₅ *, 9, 2, 1; 1998 VY₁₅ *, 9, 2, 1; 1998 VZ₁₅ *, 8, 2, 1; 1998 VA₁₆ *, 9, 2, 1; 1998 VB₁₆ *, 10, 2, 1; 1998 VC₁₆ *, 10, 2, 1; 1998 VD₁₆ *, 10, 2, 1; 1998 VE₁₆ *, 6, 2, 1; 1998 VF₁₆ *, 7, 2, 1; 1998 VG₁₆ *, 7, 2, 1; 1998 VH₁₆ *, 8, 2, 1; 1998 VJ₁₆ *, 9, 2, 1; 1998 VK₁₆ *, 7, 2, 1; 1998 VL₁₆ *, 8, 2, 1; 1998 VM₁₆ *, 10, 2, 1; 1998 VN₁₆ *, 9, 2, 1;

1998 VO₁₆ *, 10, 2, 1; 1998 VP₁₆ *, 9, 2, 1; 1998 VQ₁₆ *, 9, 2, 1; 1998 VR₁₆ *, 9, 2, 1; 1998 VS₁₆ *, 10, 2, 1; 1998 VT₁₆ *, 10, 2, 1; 1998 VU₁₆ *, 9, 2, 1; 1998 VV₁₆ *, 8, 2, 1; 1998 VW₁₆ *, 8, 2, 1; 1998 VX₁₆ *, 8, 2, 1; 1998 VY₁₆ *, 10, 2, 1; 1998 VZ₁₆ *, 8, 2, 1; 1998 VA₁₇ *, 8, 2, 1; 1998 VB₁₇ *, 10, 2, 1; 1998 VC₁₇ *, 8, 2, 1; 1998 VD₁₇ *, 10, 2, 1; 1998 VE₁₇ *, 8, 2, 1; 1998 VF₁₇ *, 9, 2, 1; 1998 VG₁₇ *, 9, 2, 1; 1998 VH₁₇ *, 9, 2, 1; 1998 VJ₁₇ *, 9, 2, 1; 1998 VK₁₇ *, 9, 2, 1; 1998 VL₁₇ *, 8, 2, 1; 1998 VM₁₇ *, 9, 2, 1; 1998 VO₁₇ *, 9, 2, 1; 1998 VP₁₇ *, 8, 2, 1; 1998 VQ₁₇ *, 10, 2, 1; 1998 VR₁₇ *, 9, 2, 1; 1998 VS₁₇ *, 10, 2, 1; 1998 VT₁₇ *, 7, 2, 1; 1998 VU₁₇ *, 10, 2, 1; 1998 VV₁₇ *, 7, 2, 1; 1998 VW₁₇ *, 9, 2, 1; 1998 VX₁₇ *, 7, 2, 1; 1998 VY₁₇ *, 10, 2, 1; 1998 VZ₁₇ *, 7, 2, 1; 1998 VA₁₈ *, 9, 2, 1; 1998 VB₁₈ *, 9, 2, 1; 1998 VC₁₈ *, 10, 2, 1; 1998 VD₁₈ *, 10, 2, 1; 1998 VE₁₈ *, 10, 2, 1; 1998 VF₁₈ *, 9, 2, 1; 1998 VG₁₈ *, 9, 2, 1; 1998 VH₁₈ *, 10, 2, 1; 1998 VJ₁₈ *, 10, 2, 1; 1998 VK₁₈ *, 8, 2, 1; 1998 VL₁₈ *, 9, 2, 1; 1998 VM₁₈ *, 9, 2, 1; 1998 VN₁₈ *, 9, 2, 1; 1998 VO₁₈ *, 10, 2, 1; 1998 VP₁₈ *, 9, 2, 1; 1998 VQ₁₈ *, 10, 2, 1; 1998 VR₁₈ *, 10, 2, 1; 1998 VS₁₈ *, 7, 2, 1; 1998 VT₁₈ *, 8, 2, 1; 1998 VU₁₈ *, 10, 2, 1; 1998 VV₁₈ *, 8, 2, 1; 1998 VW₁₈ *, 9, 2, 1; 1998 VX₁₈ *, 9, 2, 1; 1998 VY₁₈ *, 8, 2, 1; 1998 VZ₁₈ *, 9, 2, 1; 1998 VA₁₉ *, 7, 2, 1; 1998 VB₁₉ *, 9, 2, 1; 1998 VC₁₉ *, 9, 2, 1; 1998 VD₁₉ *, 8, 2, 1; 1998 VE₁₉ *, 9, 2, 1; 1998 VF₁₉ *, 8, 2, 1; 1998 VG₁₉ *, 9, 2, 1; 1998 VH₁₉ *, 8, 2, 1; 1998 VJ₁₉ *, 9, 2, 1; 1998 VK₁₉ *, 6, 2, 1; 1998 VL₁₉ *, 9, 2, 1; 1998 VM₁₉ *, 9, 2, 1; 1998 VN₁₉ *, 10, 2, 1; 1998 VO₁₉ *, 9, 2, 1; 1998 VP₁₉ *, 8, 2, 1; 1998 VQ₁₉ *, 9, 2, 1; 1998 VR₁₉ *, 8, 2, 1; 1998 VS₁₉ *, 10, 2, 1; 1998 VT₁₉ *, 10, 2, 1; 1998 VU₁₉ *, 10, 2, 1; 1998 VV₁₉ *, 10, 2, 1; 1998 VW₁₉ *, 10, 2, 1; 1998 VX₁₉ *, 10, 2, 1; 1998 VY₁₉ *, 9, 2, 1; 1998 VZ₁₉ *, 9, 2, 1; 1998 VA₂₀ *, 8, 2, 1; 1998 VB₂₀ *, 10, 2, 1; 1998 VC₂₀ *, 7, 2, 1; 1998 VD₂₀ *, 7, 2, 1; 1998 VE₂₀ *, 8, 2, 1; 1998 VF₂₀ *, 8, 2, 1; 1998 VG₂₀ *, 9, 2, 1; 1998 VH₂₀ *, 9, 2, 1; 1998 VJ₂₀ *, 7, 2, 1; 1998 VK₂₀ *, 10, 2, 1; 1998 VL₂₀ *, 10, 2, 1; 1998 VM₂₀ *, 10, 2, 1; 1998 VN₂₀ *, 7, 2, 1; 1998 VO₂₀ *, 10, 2, 1; 1998 VP₂₀ *, 9, 2, 1; 1998 VQ₂₀ *, 10, 2, 1; 1998 VR₂₀ *, 9, 2, 1; 1998 VS₂₀ *, 7, 2, 1; 1998 VT₂₀ *, 10, 2, 1; 1998 VU₂₀ *, 8, 2, 1; 1998 VV₂₀ *, 8, 2, 1; 1998 VW₂₀ *, 8, 2, 1; 1998 VX₂₀ *, 9, 2, 1; 1998 VY₂₀ *, 9, 2, 1; 1998 VZ₂₀ *, 8, 2, 1; 1998 VA₂₁ *, 8, 2, 1; 1998 VB₂₁ *, 10, 2, 1; 1998 VC₂₁ *, 8, 2, 1; 1998 VD₂₁ *, 10, 2, 1; 1998 VE₂₁ *, 8, 2, 1; 1998 VF₂₁ *, 8, 2, 1; 1998 VG₂₁ *, 9, 2, 1; 1998 VH₂₁ *, 10, 2, 1; 1998 VJ₂₁ *, 10, 2, 1; 1998 VK₂₁ *, 9, 2, 1; 1998 VL₂₁ *, 6, 2, 1; 1998 VM₂₁ *, 8, 2, 1; 1998 VN₂₁ *, 8, 2, 1; 1998 VO₂₁ *, 8, 2, 1; 1998 VP₂₁ *, 8, 2, 1; 1998 VQ₂₁ *, 8, 2, 1; 1998 VR₂₁ *, 9, 2, 1; 1998 VS₂₁ *, 9, 2, 1; 1998 VT₂₁ *, 9, 2, 1; 1998 VU₂₁ *, 10, 2, 1; 1998 VV₂₁ *, 7, 2, 1; 1998 VW₂₁ *, 8, 2, 1; 1998 VX₂₁ *, 10, 2, 1; 1998 VY₂₁ *, 9, 2, 1; 1998 VZ₂₁ *, 8, 2, 1; 1998 VA₂₂ *, 9, 2, 1; 1998 VB₂₂ *, 8, 2, 1; 1998 VC₂₂ *, 8, 2, 1; 1998 VD₂₂ *, 9, 2, 1; 1998 VE₂₂ *, 8, 2, 1; 1998 VF₂₂ *, 9, 2, 1; 1998 VG₂₂ *, 10, 2, 1; 1998 VH₂₂ *, 7, 2, 1; 1998 VJ₂₂ *, 7, 2, 1; 1998 VK₂₂ *, 10, 2, 1; 1998 VL₂₂ *, 7, 2, 1; 1998 VM₂₂ *, 10, 2, 1; 1998 VN₂₂ *, 6, 2, 1; 1998 VO₂₂ *, 10, 2, 1; 1998 VP₂₂ *, 7, 2, 1; 1998 VQ₂₂ *, 10, 2, 1; 1998 VR₂₂ *, 10, 2, 1; 1998 VS₂₂ *, 9, 2, 1; 1998 VT₂₂ *, 8, 2, 1; 1998 VU₂₂ *, 8, 2, 1; 1998 VV₂₂ *, 9, 2, 1; 1998 VW₂₂ *, 8, 2, 1; 1998 VX₂₂ *, 9, 2, 1; 1998 VY₂₂ *, 10, 2, 1; 1998 VZ₂₂ *, 8, 2, 1; 1998 VA₂₃ *, 7, 2, 1; 1998 VB₂₃ *, 10, 2, 1; 1998 VC₂₃ *, 6, 2, 1; 1998 VD₂₃ *, 6, 2, 1; 1998 VE₂₃ *, 10, 2, 1; 1998 VF₂₃ *, 9, 2, 1; 1998 VG₂₃ *, 8, 2, 1; 1998 VH₂₃ *, 7, 2, 1; 1998 VJ₂₃ *, 10, 2, 1; 1998 VK₂₃ *, 9, 2, 1; 1998 VL₂₃ *, 10, 2, 1; 1998 VM₂₃ *, 8, 2, 1; 1998 VN₂₃ *, 10, 2, 1; 1998 VO₂₃ *, 9, 2, 1; 1998 VP₂₃ *, 10, 2, 1; 1998 VQ₂₃ *, 9, 2, 1; 1998 VR₂₃ *, 8, 2, 1; 1998 VS₂₃ *, 10, 2, 1; 1998 VT₂₃ *, 6, 2, 1; 1998 VU₂₃ *, 10, 2, 1; 1998 VV₂₃ *, 10, 2, 1; 1998 VW₂₃ *, 7, 2, 1; 1998 VX₂₃ *, 10, 2, 1; 1998 VY₂₃ *, 10, 2, 1; 1998 VZ₂₃ *, 9, 2, 1; 1998 VA₂₄ *, 10, 2, 1; 1998 VB₂₄ *, 9, 2, 1; 1998 VC₂₄ *, 8, 2, 1; 1998 VD₂₄ *, 10, 2, 1; 1998 VE₂₄ *, 9, 2, 1; 1998 VF₂₄ *, 10, 2, 1; 1998 VG₂₄ *, 10, 2, 1; 1998 VH₂₄ *, 6, 2, 1; 1998 VJ₂₄ *, 9, 2, 1; 1998 VK₂₄ *, 8, 2, 1; 1998 VL₂₄ *, 8, 2, 1; 1998 VM₂₄ *, 10, 2, 1; 1998 VN₂₄ *, 8, 2, 1; 1998 VO₂₄ *, 7, 2, 1; 1998 VP₂₄ *, 8, 2, 1; 1998 VQ₂₄ *, 8, 2, 1; 1998 VR₂₄ *, 9, 2, 1; 1998 VS₂₄ *, 7, 2, 1; 1998 VT₂₄ *, 6, 2, 1; 1998 VU₂₄ *, 6, 2, 1

1998 VH₂₈ *, 7, 2, 1; 1998 VJ₂₈ *, 6, 2, 1; 1998 VK₂₈ *, 7, 2, 1; 1998 VL₂₈ *, 7, 2, 1; 1998 VM₂₈ *, 7, 2, 1; 1998 VN₂₈ *, 9, 2, 1; 1998 VO₂₈ *, 15, 4, 11; 1998 VP₂₈ *, 19, 4, 11; 1998 VQ₂₈ *, 8, 2, 1; 1998 VR₂₈ *, 14, 4, 11; 1998 VS₂₈ *, 16, 4, 11; 1998 VT₂₈ *, 8, 2, 1; 1998 VU₂₈ *, 9, 2, 1; 1998 VV₂₈ *, 10, 2, 1; 1998 VW₂₈ *, 7, 2, 1; 1998 VX₂₈ *, 18, 4, 14; 1998 VY₂₈ *, 8, 2, 1; 1998 VZ₂₈ *, 18, 4, 11; 1998 VA₂₉ *, 17, 4, 11; 1998 VB₂₉ *, 8, 2, 1; 1998 VC₂₉ *, 17, 4, 11; 1998 VD₂₉ *, 8, 2, 1; 1998 VE₂₉ *, 7, 2, 1; 1998 VF₂₉ *, 7, 2, 1; 1998 VG₂₉ *, 7, 2, 1; 1998 VH₂₉ *, 17, 4, 11; 1998 VJ₂₉ *, 8, 2, 1; 1998 VK₂₉ *, 8, 2, 1; 1998 VL₂₉ *, 17, 4, 11; 1998 VM₂₉ *, 15, 4, 11; 1998 VN₂₉ *, 17, 4, 11; 1998 VO₂₉ *, 16, 4, 11; 1998 VP₂₉ *, 14, 4, 11; 1998 VQ₂₉ *, 19, 4, 11; 1998 VR₂₉ *, 10, 2, 1; 1998 VS₂₉ *, 8, 2, 1; 1998 VT₂₉ *, 7, 2, 1; 1998 VU₂₉ *, 19, 4, 14; 1998 VV₂₉ *, 18, 4, 14; 1998 VW₂₉ *, 17, 4, 14; 1998 VX₂₉ *, 9, 2, 1; 1998 VY₂₉ *, 18, 4, 14; 1998 VZ₂₉ *, 19, 4, 14; 1998 VA₃₀ *, 17, 4, 14; 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1998 VG₃₂ *, 9, 2, 3; 1998 VX₃₂ *, 9, 2, 3; 1998 VY₃₂ *, 10, 2, 3; 1998 VZ₃₂ *, 10, 2, 3; 1998 VA₃₃ *, 6, 2, 3; 1998 VB₃₃ *, 10, 2, 3; 1998 VL₃₃ *, 9, 2, 3; 1998 VO₃₃ *, 9, 2, 3; 1998 VP₃₃ *, 8, 2, 2; 1998 VQ₃₃ *, 7, 2, 2; 1998 VR₃₃ *, 14, 3, 13; 1998 VE₃₄ *, 8, 2, 3; 1998 VQ₃₄ *, 10, 2, 3; 1998 VT₃₄ *, 5, 1, 0; 1998 VU₃₄ *, 10, 2, 6; 1998 VX₃₄ *, 10, 2, 3; 1998 VA₃₅ *, 9, 2, 3; 1998 VF₃₅ *, 8, 2, 2; 1998 VG₃₅ *, 10, 2, 3; 1998 VK₃₅ *, 9, 2, 4; 1998 VA₃₆ *, 9, 2, 4; 1998 VB₃₆ *, 9, 2, 4; 1998 VC₃₆ *, 8, 2, 4; 1998 VD₃₆ *, 9, 2, 4; 1998 VE₃₆ *, 9, 2, 4; 1998 VF₃₆ *, 10, 2, 4; 1998 VG₃₆ *, 9, 2, 4; 1998 VH₃₆ *, 10, 2, 4; 1998 VJ₃₆ *, 9, 2, 4; 1998 VK₃₆ *, 9, 2, 4; 1998 VL₃₆ *, 10, 2, 4; 1998 VM₃₆ *, 10, 2, 4; 1998 VN₃₆ *, 10, 2, 4; 1998 VO₃₆ *, 10, 2, 3; 1998 VP₃₆ *, 9, 2, 3; 1998 VQ₃₆ *, 10, 2, 6; 1998 VR₃₆ *, 10, 2, 6; 1998 VT₃₆ *, 8, 2, 1; 1998 VU₃₆ *, 8, 2, 1; 1998 VV₃₆ *, 7, 2, 1; 1998 VW₃₆ *, 7, 2, 1; 1998 VX₃₆ *, 7, 2, 1; 1998 VY₃₆ *, 9, 2, 1; 1998 VZ₃₆ *, 10, 2, 1; 1998 VA₃₇ *, 8, 2, 1; 1998 VB₃₇ *, 8, 2, 1; 1998 VC₃₇ *, 8, 2, 1; 1998 VD₃₇ *, 8, 2, 1; 1998 VE₃₇ *, 9, 2, 1; 1998 VF₃₇ *, 8, 2, 1; 1998 VG₃₇ *, 9, 2, 1; 1998 VH₃₇ *, 10, 2, 1; 1998 VJ₃₇ *, 9, 2, 1; 1998 VK₃₇ *, 10, 2, 1; 1998 VL₃₇ *, 10, 2, 1; 1998 VM₃₇ *, 9, 2, 1; 1998 VN₃₇ *, 7, 2, 1; 1998 VO₃₇ *, 8, 2, 1; 1998 VP₃₇ *, 8, 2, 1; 1998 VQ₃₇ *, 7, 2, 1; 1998 VR₃₇ *, 10, 2, 1; 1998 VS₃₇ *, 10, 2, 1; 1998 VT₃₇ *, 8, 2, 1; 1998 VU₃₇ *, 9, 2, 1; 1998 VV₃₇ *, 10, 2, 1; 1998 VW₃₇ *, 10, 2, 1; 1998 VX₃₇ *, 10, 2, 1; 1998 VY₃₇ *, 10, 2, 1; 1998 VZ₃₇ *, 10, 2, 1; 1998 VA₃₈ *, 7, 2, 1; 1998 VB₃₈ *, 8, 2, 1; 1998 VC₃₈ *, 8, 2, 1; 1998 VD₃₈ *, 9, 2, 1; 1998 VE₃₈ *, 9, 2, 1; 1998 VF₃₈ *, 10, 2, 1; 1998 VG₃₈ *, 8, 2, 1; 1998 VH₃₈ *, 9, 2, 1; 1998 VJ₃₈ *, 10, 2, 1; 1998 VK₃₈ *, 8, 2, 1; 1998 VL₃₈ *, 8, 2, 1; 1998 VM₃₈ *, 8, 2, 1; 1998 VN₃₈ *, 9, 2, 1; 1998 VO₃₈ *, 10, 2, 1; 1998 VP₃₈ *, 10, 2, 1; 1998 VQ₃₈ *, 10, 2, 1; 1998 VR₃₈ *, 10, 2, 1; 1998 VS₃₈ *, 9, 2, 1; 1998 VT₃₈ *, 9, 2, 1; 1998 VU₃₈ *, 6, 2, 1; 1998 VV₃₈ *, 8, 2, 1; 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1998 WF₆ *, 8, 2, 3; 1998 WG₆ *, 9, 2, 3; 1998 WH₆ *, 8, 2, 3; 1998 WJ₆ *, 9, 2, 3; 1998 WK₆ *, 10, 2, 3; 1998 WU₆ *, 8, 2, 3; 1998 WB₇ *, 10, 2, 3; 1998 WC₇ *, 10, 2, 3; 1998 WH₇ *, 7, 2, 3; 1998 WK₇ *, 9, 2, 2; 1998 WL₇ *, 9, 2, 2; 1998 WM₇ *, 10, 2, 1; 1998 WN₇ *, 10, 2, 3; 1998 WO₇ *, 9, 2, 2; 1998 WT₇ *, 12, 3, 2; 1998 WA₈ *, 10, 2, 3; 1998 WB₈ *, 10, 2, 3; 1998 WB₉ *, 4, 1, 0; 1998 WC₉ *, 4, 1, 0; 1998 WK₉ *, 10, 2, 3; 1998 WN₉ *, 9, 2, 3; 1998 WO₉ *, 10, 2, 3; 1998 WP₉ *, 9, 2, 3; 1998 WQ₉ *, 9, 2, 3; 1998 WR₉ *, 9, 2, 3; 1998 WS₉ *, 10, 2, 3; 1998 WT₉ *, 9, 2, 5; 1998 WU₉ *, 8, 2, 5; 1998 WV₉ *, 10, 2, 3; 1998 WW₉ *, 9, 2, 1; 1998 WX₉ *, 19, 4, 6; 1998 WY₉ *, 9, 2, 1; 1998 WZ₉ *, 8, 2, 1; 1998 WA₁₀ *, 7, 2, 1; 1998 WB₁₀ *, 10, 2, 3; 1998 WC₁₀ *, 10, 2, 3; 1998 WD₁₀ *, 9, 2, 3; 1998 WE₁₀ *, 10, 2, 3; 1998 WF₁₀ *, 10, 2, 3; 1998 WG₁₀ *, 8, 2, 3; 1998 WH₁₀ *, 10, 2, 3; 1998 WI₁₀ *, 9, 2, 3; 1998 WJ₁₀ *, 8, 2, 3; 1998 WK₁₀ *, 9, 2, 3; 1998 WL₁₀ *, 8, 2, 3; 1998 WM₁₀ *, 8, 2, 3; 1998 WN₁₀ *, 8, 2, 3; 1998 WO₁₀ *, 9, 2, 3; 1998 WP₁₀ *, 7, 2, 3; 1998 WQ₁₀ *, 9, 2, 3; 1998 WR₁₀ *, 7, 2, 3; 1998 WS₁₀ *, 18, 4, 14; 1998 WT₁₀ *, 8, 2, 3; 1998 WU₁₀ *, 9, 2, 3; 1998 WV₁₀ *, 8, 2, 3; 1998 WW₁₀ *, 9, 2, 3; 1998 WX₁₀ *, 10, 2, 3; 1998 WY₁₀ *, 9, 2, 3; 1998 WZ₁₀ *, 8, 2, 3; 1998 WA₁₁ *, 8, 2, 3; 1998 WB₁₁ *, 9, 2, 3; 1998 WC₁₁ *, 8, 2, 3; 1998 WD₁₁ *, 7, 2, 3; 1998 WE₁₁ *, 8, 2, 3; 1998 WF₁₁ *, 9, 2, 3; 1998 WG₁₁ *, 8, 2, 3; 1998 WH₁₁ *, 8, 2,

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(7119), 10, 2, 2; (7137), 4, 1, 0; (7147), 4, 1, 0; (7152), 13, 3, 8; (7172), 8, 2, 14; (7174), 4, 1, 0; (7176), 15, 3, 8; (7181), 5, 1, 0; (7183), 5, 1, 0; (7186), 4, 1, 0; (7207), 10, 2, 6; (7209), 9, 2, 2; (7222), 10, 2, 1; (7244), 8, 2, 6; (7274), 9, 2, 2; (7294), 10, 2, 1; (7315), 5, 1, 0; (7344), 5, 1, 0; (7349), 13, 3, 6; (7358), 4, 1, 0; (7360), 5, 1, 0; (7362), 10, 2, 1; (7368), 5, 1, 0; (7382), 9, 2, 1; (7400), 24, 5, 13; (7433), 10, 2, 1; (7439), 6, 1, 0; (7440), 9, 2, 2; (7455), 9, 2, 6; (7459), 9, 2, 1; (7462), 5, 1, 0; (7487), 5, 1, 0; (7516), 5, 1, 0; (7531), 4, 1, 0; (7576), 5, 1, 0; (7641), 15, 3, 8; (7653), 23, 5, 14; (7687), 22, 5, 14; (7690), 10, 2, 1; (7695), 9, 2, 11; (7705), 4, 1, 0; (7715), 5, 1, 0; (7716), 7, 2, 1; (7730), 5, 1, 0; (7732), 4, 1, 0; (7736), 5, 1, 0; (7738), 4, 1, 0; (7739), 10, 2, 1; (7740), 10, 2, 1; (7741), 5, 1, 0; (7757), 5, 1, 0; (7765), 5, 1, 0; (7768), 9, 2, 1; (7773), 10, 2, 1; (7776), 4, 1, 0; (7779), 9, 2, 1; (7780), 9, 2, 1; (7783), 10, 2, 1; (7792), 9, 2, 1; (7795), 5, 1, 0; (7799), 19, 4, 14; (7804), 5, 1, 0; (7805), 9, 2, 1; (7807), 8, 2, 1; (7808), 15, 3, 8; (7811), 5, 1, 0; (7812), 24, 5, 14; (7813), 5, 1, 0; (7814), 5, 1, 0; (7817), 8, 2, 7; (7824), 5, 1, 0; (7828), 12, 3, 8; (7830), 9, 2, 1; (7835), 9, 2, 1; (7846), 7, 2, 1; (7848), 5, 1, 0; (7849), 5, 1, 0; (7852), 23, 5, 14; (7871), 4, 1, 0; (7874), 5, 1, 0; (7887), 5, 1, 0; (7891), 5, 1, 0; (7895), 5, 1, 0; (7896), 10, 2, 1; (7898), 10, 2, 14; (7901), 5, 1, 0; (7902), 8, 2, 1; (7903), 5, 1, 0; (7905), 5, 1, 0; (7911), 4, 1, 0; (7916), 4, 1, 0; (7920), 8, 2, 2; (7923), 3, 1, 0; (7928), 4, 1, 0; (7936), 5, 1, 0; (7942), 10, 2, 2; (7948), 5, 1, 0; (7949), 4, 1, 0; (7950), 7, 2, 2; (7965), 5, 1, 0; (7971), 3, 1, 0; (7983), 8, 2, 6; (7991), 5, 1, 0; (7994), 4, 1, 0; (7995), 3, 1, 0; (7996), 4, 1, 0; (8000), 5, 1, 0; (8033), 5, 1, 0; (8046), 10, 2, 6; (8048), 10, 2, 1; (8059), 5, 1, 0; (8061), 5, 1, 0; (8062), 5, 1, 0; (8066), 5, 1, 0; (8068), 4, 1, 0; (8074), 20, 4, 14; (8077), 5, 1, 0; (8084), 18, 4, 11; (8086), 8, 2, 1; (8092), 4, 1, 0; (8093), 4, 1, 0; (8111), 4, 1, 0; (8115), 3, 1, 0; (8132), 5, 1, 0; (8144), 5, 1, 0; (8150), 3, 1, 0; (8174), 5, 1, 0; (8183), 4, 1, 0; (8185), 4, 1, 0; (8188), 2, 1, 0; (8195), 4, 1, 0; (8204), 8, 2, 6; (8241), 4, 1, 0; (8352), 5, 1, 0; (8982), 5, 1, 0; (9021), 5, 1, 0; (9068), 5, 1, 0; (9083), 5, 1, 0; (9154), 10, 2, 2; (9193), 4, 1, 0; (9241), 5, 1, 0; (9261), 10, 2, 1; (9290), 10, 2, 1; (9295), 4, 1, 0; (9298), 9, 2, 1; (9307), 10, 2, 2; (9308), 4, 1, 0; (9314), 10, 2, 1; (9322), 10, 2, 1; (9328), 4, 1, 0; (9348), 10, 2, 1; (9369), 9, 2, 1; (9370), 10, 2, 1; (9387), 5, 1, 0; (9390), 9, 2, 1; (9425), 10, 2, 2; (9431), 5, 1, 0; (9438), 3, 1, 0; (9513), 18, 4, 11; (9514), 9, 2, 1; (9515), 9, 2, 2; (9520), 9, 2, 1; (9522), 8, 2, 1; (9527), 8, 2, 1; (9529), 4, 1, 0; (9530), 9, 2, 1; (9531), 4, 1, 0; (9532), 17, 4, 11; (9533), 9, 2, 1; (9534), 10, 2, 1; (9535), 10, 2, 1; (9537), 4, 1, 0; (9538), 10, 2, 1; (9539), 9, 2, 1; (9540), 10, 2, 1; (9541), 9, 2, 14; (9542), 10, 2, 1; (9543), 10, 2, 2; (9545), 5, 1, 0; (9546), 4, 1, 0; (9547), 4, 1, 0; (9549), 10, 2, 1; (9550), 12, 3, 10; (9552), 5, 1, 0; (9553), 4, 1, 0; (9557), 9, 2, 1; (9558), 9, 2, 8; (9559), 10, 2, 1; (9560), 5, 1, 0; (9561), 9, 2, 1; (9562), 10, 2, 1; (9563), 10, 2, 1; (9564), 5, 1, 0; (9565), 20, 4, 14; (9566), 14, 3, 8; (9567), 10, 2, 1; (9568), 9, 2, 1; (9569), 4, 1, 0; (9572), 10, 2, 1; (9573), 10, 2, 1; (9574), 12, 3, 8; (9575), 10, 2, 1; (9580), 14, 3, 13; (9581), 10, 2, 1; (9582), 8, 2, 1; (9584), 13, 3, 4; (9586), 10, 2, 1; (9588), 9, 2, 1; (9589), 8, 2, 1; (9592), 9, 2, 7; (9594), 9, 2, 1; (9595), 5, 1, 0; (9596), 5, 1, 0; (9597), 9, 2, 1; (9598), 10, 2, 1; (9600), 17, 4, 11; (9601), 4, 1, 0; (9602), 7, 2, 14; (9606), 9, 2, 1; (9607), 15, 3, 10; (9608), 10, 2, 1; (9609), 10, 2, 1; (9610), 15, 3, 6; (9612), 10, 2, 2; (9613), 7, 2, 1; (9616), 10, 2, 1; (9617), 5, 1, 0; (9618), 9, 2, 1; (9619), 5, 1, 0; (9620), 5, 1, 0; (9624), 10, 2, 1; (9629), 10, 2, 1; (9630), 8, 2, 1; (9631), 10, 2,

1; (9634), 9, 2, 1; (9637), 20, 4, 14; (9642), 10, 2, 1; (9643), 5, 1, 0; (9645), 5, 1, 0; (9649), 5, 1, 0; (9650), 3, 1, 0; (9651), 4, 1, 0; (9652), 9, 2, 2; (9655), 17, 4, 11; (9656), 9, 2, 1; (9659), 5, 1, 0; (9662), 5, 1, 0; (9663), 10, 2, 1; (9666), 9, 2, 1; (9667), 9, 2, 1; (9669), 10, 2, 1; (9670), 5, 1, 0; (9679), 6, 2, 1; (9683), 13, 3, 11; (9684), 9, 2, 1; (9686), 9, 2, 1; (9687), 9, 2, 1; (9690), 5, 1, 0; (9693), 15, 2, 1; (9694), 9, 2, 1; (9696), 4, 1, 0; (9698), 9, 2, 1; (9699), 3, 1, 0; (9702), 9, 2, 1; (9704), 9, 2, 1; (9706), 9, 2, 1; (9709), 4, 1, 0; [*39575, 4389, 1401*, 1998/03/26-1998/12/01*]

709 W & B Observatory, Cloudcroft

W. Offutt, P.O. Drawer 1130, Cloudcroft, NM 88317, U.S.A.

[loffutt@galileo.apo.nmsu.edu]

0.60-m *f*/7 Ritchey-Chrétien + CCD

USNO-SA1.0

1992 FL₁, 16, 4, 5; 1997 BQ, 8, 2, 3; 1997 CX₅, 3, 1, 0; 1998 TL₇, 6, 1, 0; 1998 WU₂₄, 7, 1, 0; [*40, 5, 0*, 1998/11/11-1998/12/04*]

711 McDonald Observatory

P. J. Shelus, McDonald Observatory, University of Texas, Austin, TX 78712-1013,

U.S.A. [pjs@astro.as.utexas.edu]

Observers P. J. Shelus, J. G. Ries

0.76-m *f*/3.0 reflector + CCD

GSC

1990 BA, 4, 2, 1; 1991 PM₅, 3, 2, 1; 1998 ML₁₄, 4, 2, 1; 1998 MR₁₇, 2, 1, 0; 1998 MT₂₄, 5, 3, 2; 1998 OH, 3, 2, 1; 1998 QA₁, 3, 2, 1; 1998 QD₂, 2, 1, 0; 1998 QR₅₂, 4, 2, 1; 1998 QQ₆₃, 4, 2, 1; 1998 QA₉₆, 2, 1, 0; 1998 RR₂, 2, 1, 0; 1998 RO₄, 4, 2, 1; 1998 ST₄, 3, 2, 1; 1998 SG₃₆, 3, 2, 2; 1998 UD₁, 2, 1, 0; 1998 VD₃₁, 6, 2, 1; 1998 VF₃₁, 6, 2, 1; 1998 VD₃₂, 6, 2, 1; 1998 VE₃₂, 6, 2, 1; 1998 VF₃₂, 3, 1, 0; 1998 VO₃₃, 6, 2, 1; 1998 VF₃₄, 3, 1, 0; 1998 WL, 3, 1, 0; 1998 WM, 5, 2, 1; 1998 WS, 3, 1, 0; 1998 WT, 3, 1, 0; 1998 WZ₁, 3, 1, 0; (3288), 3, 2, 1; (5189), 3, 2, 1; (5587), 2, 1, 0; (6239), 2, 2, 1; (7474), 3, 2, 1; (9551), 2, 1, 0; [*118, 34, 0*, 1998/11/15-1998/11/18*]

713 Thornton

R. A. Koff, 1915 W. 101st Ave., Thornton, CO 80221, U.S.A.

[Bob.Koff@worldnet.att.net]

0.20-m *f*/10 Schmidt-Cassegrain + CCD

USNO-SA1.0

1998 VN, 3, 1, 0; 1998 VO, 5, 1, 0; 1998 VR, 4, 1, 0; 1998 VO₃₃, 6, 2, 1; 1998 WQ₅, 2, 1, 0; 1998 WZ₆, 3, 1, 0; 1998 XB, 4, 1, 0; (3603), 5, 2, 3; [*32, 8, 0*, 1998/11/11-1998/12/04*]

715 Las Cruces

D. Dixon, 3208 Jupiter Rd., Las Cruces, NM 88012, U.S.A.

[ddixon@lascruces.com]

0.2-m *f*/4.3 Schmidt-Cassegrain + CCD

GSC

1991 AN₂, 9, 3, 3; 1994 NF₁, 2, 1, 0; (1627), 6, 2, 1; (6326), 14, 5, 15; [*31, 4, 0*, 1998/11/08-1998/11/26*]

716 Palmer Divide Observatory

B. D. Warner, 17995 Bakers Farm Rd., Colorado Springs, CO 80908, U.S.A.

[brianwmpo@compuserve.com]

0.25-m *f*/6.3 Schmidt-Cassegrain + CCD

1994 RV, 5, 2, 1; 1994 RJ₁₁, 4, 2, 1; 1997 NZ, 4, 2, 1; (9515), 6, 3, 4; [*19, 4, 0*, 1998/11/14-1998/11/26*]

720 Universidad de Monterrey

P. V. Sada, Apartado Postal 134-C, MX-66270 San Pedro Garza García, Nuevo

Leon, Mexico [psada@ix.netcom.com]

0.18-m *f*/15.0 Maksutov + focal reducer + CCD

USNO-A1.0

(45), 7, 2, 1; (49), 7, 2, 1; (245), 7, 2, 1; (2099), 5, 2, 1; (6326), 6, 2, 1; (6338), 6, 2, 1; (6985), 4, 2, 1; [*42, 7, 0*, 1998/11/15-1998/11/16*]

721 Lime CreekR. Linderholm, R2 Box 79, Cambridge, NE 69022, U.S.A. [lindh@swnebr.net]0.25-m $f/3.3$ Schmidt-Cassegrain + CCD

GSC

1998 SO₂, 2, 1, 0; 1998 TL₇, 2, 1, 0; 1998 VY₅ *, 6, 2, 1; 1998 WX₇ *, 4, 2, 2; (2535), 4, 2, 2; [18, 5, 2*, 1998/11/11–1998/11/26]**725 Fair Oaks Ranch**J. V. McClusky, McClusky Observatory, 31789 Sunland, Fair Oaks Ranch, TX 78015, U.S.A. [mccclusky@lonestar.utsa.edu]0.46-m $f/4.5$ Newtonian reflector + CCD

USNO-SA1.0

1990 OS₁, 3, 1, 0; 1991 XC, 3, 1, 0; 1992 PB₁, 5, 2, 4; 1994 TW₁₅, 5, 2, 5; 1997 NQ₂, 5, 2, 4; 1998 QJ₄₀, 3, 1, 0; 1998 QK₇₅, 3, 1, 0; 1998 QN₁₀₀, 8, 3, 10; 1998 RT₄₉, 7, 2, 5; 1998 RW₅₂, 2, 1, 0; 1998 RD₅₃, 6, 2, 6; 1998 VS₅ *, 10, 3, 14; 1998 VH₃₄ *, 8, 3, 11; 1998 VJ₃₄ *, 6, 2, 5; 1998 WR₇ *, 5, 2, 6; 1998 WS₇ *, 6, 2, 6; 1998 WA₉ *, 4, 2, 4; 2549 P-L, 5, 2, 4; (2775), 3, 1, 0; (3943), 3, 1, 0; (7205), 3, 1, 0; [103, 21, 6*, 1998/11/02–1998/11/26]**727 Zeno Observatory, Edmond**

T. Stafford, 2947 Village Circle, Edmond, OK 73013, U.S.A.

[tsaffor@aig.vialink.com]0.15-m $f/6$ refractor + CCD

GSC

1989 UX₇, 6, 2, 1; 1991 UN₃, 3, 1, 0; 1993 FU₁₇, 6, 2, 1; 1998 UZ, 9, 3, 12; 1998 UA₁, 11, 4, 12; 1998 UN₂₃, 3, 1, 0; 1998 VY₄ *, 17, 6, 13; 1998 VG₃₂ *, 14, 5, 12; 1998 WE *, 12, 4, 8; 1998 WK₆ *, 6, 2, 1; (2069), 3, 1, 0; (9572), 6, 2, 1; (9637), 5, 2, 1; [101, 13, 4*, 1998/11/11–1998/11/24]**731 Rose-Hulman Observatory, Terre Haute**R. Ditteon, Rose-Hulman Institute of Technology, Box 171, 5500 Wabash Avenue, Terre Haute, IN 47803, U.S.A. [ditteon@rose-hulman.edu]0.30-m $f/3.3$ Schmidt-Cassegrain + CCD1994 YJ₁, 3, 1, 0; (281), 3, 1, 0; (4115), 6, 2, 2; (4184), 6, 2, 2; (4416), 6, 2, 2; (4635), 6, 2, 2; [30, 6, 0*, 1998/11/05–1998/11/07]**734 Farpoint Observatory, Eskridge**G. Hug, RTE 1 Box 35c, Eskridge, KS 66423, U.S.A. [frogstar@inlandnet.net]

Observers G. Hug, G. Bell

0.30-m Schmidt-Cassegrain + CCD

GSC, USNO-SA1.0

1998 QB₉₃, 3, 1, 0; 1998 VA, 6, 2, 12; 1998 VZ₄, 3, 1, 0; 1998 VZ₅ *, 27, 8, 13; 1998 VD₃₁, 3, 1, 0; 1998 VF₃₁, 3, 1, 0; 1998 VE₃₂, 3, 1, 0; 1998 VO₃₃, 3, 1, 0; 1998 WL, 3, 1, 0; 1998 WM, 2, 1, 0; 1998 WR, 3, 1, 0; 1998 WT, 3, 1, 0; 1998 WB₂, 3, 1, 0; 1998 WO₇, 3, 1, 0; 1998 WC₉, 3, 1, 0; 1998 WT₂₄, 3, 1, 0; 1998 WU₂₄, 3, 1, 0; [77, 17, 1*, 1998/11/13–1998/11/26]**735 George Observatory, Needville**

W. G. Dillon, 4703 Birkenhead Circle, Missouri City, TX 77459, U.S.A.

[bdillon@houston.geoquest.slb.com]

Observers D. Borgman, C. Gustava, K. Rivich

Measurer K. Rivich

0.46-m reflector + CCD

USNO-A1.0

1998 SJ₄, 3, 1, 0; [3, 1, 0*, 1998/11/11]**737 New Bullpen Observatory, Alpharetta**

M. L. Spearman, 16290 New Bullpen Road, Alpharetta, GA 30004, U.S.A.

[mark.spearman@isye.gatech.edu]0.28-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1998 WO, 3, 1, 0; [3, 1, 0*, 1998/11/27]

739 Sunflower Observatory, Olathe

L. Robinson, Sunflower Observatory, 14680 W 144 St, Olathe, KS 66062, U.S.A.

[lrobinson@ix.netcom.com]0.25-m $f/4.1$ Schmidt-Cassegrain + CCD

GSC 1.1

(15), 3, 1, 0; (497), 4, 1, 0; (866), 3, 1, 0; (2379), 3, 1, 0; (2915), 3, 1, 0; (4268), 2, 1, 0; (5164), 2, 1, 0; (6979), 3, 1, 0; (7543), 3, 1, 0; [26, 9, 0*, 1998/11/28–1998/12/05]

744 Doyan Rose Observatory, Indianapolis

J. Ruthroff, 5229 Telford Court, Indianapolis, IN 46254, U.S.A.

[jruthroff@sprintmail.com]0.25-m $f/7.5$ Schmidt-Cassegrain + CCD

GSC 1.1

1972 TE, 5, 2, 4; 1975 UE, 5, 2, 2; 1979 WX₃, 5, 2, 4; 1981 EW₁₇, 5, 2, 3; 1990 QZ₁, 6, 2, 3; 1991 RR₄, 6, 2, 3; 1992 GB₁, 6, 2, 3; 1992 RX₆, 5, 2, 2; 1992 SB₁, 3, 1, 0; 1993 FU₁₇, 5, 2, 2; 1993 NO, 5, 2, 3; 1994 TY₂, 2, 1, 0; 1994 UW, 3, 1, 0; 1996 DF, 7, 3, 7; [68, 14, 0*, 1998/11/19–1998/12/02]**746 Brooks Observatory, Mt. Pleasant**

W. Osborn, Physics Department, Central Michigan University, Mt. Pleasant, MI

48859, U.S.A. [email: osborn@dune.phy.cmich.edu]

Observers J. Helmboldt, W. Osborn, D. Ferrer

Measurer W. Osborn

0.40-m $f/12$ Cassegrain reflector + CCD

USNO-A1.0

1996 BX₁, 2, 1, 0; (110), 1, 1, 0; (420), 2, 1, 0; [5, 3, 0*, 1998/10/29]**747 Baton Rouge Observatory**

W. R. Cooney, 10330 Dunn Dr., Baton Rouge, LA 70810, U.S.A.

[walt@sprintmail.com]

Observers W. R. Cooney, P. M. Motl

Measurer W. R. Cooney

0.51-m $f/8.4$ reflector + CCD

USNO-A2.0

1973 SJ₁, 9, 2, 3; 1994 TU₁, 3, 1, 0; 1994 YR, 2, 1, 0; 1995 EQ₁, 4, 2, 5; 1997 SJ₄, 6, 2, 1; 1998 SG₂₇, 6, 2, 1; 1998 SK₃₅, 7, 2, 1; 1998 SL₃₅, 6, 2, 1; 1998 WS₆ *, 11, 4, 5; 1998 WT₆ *, 6, 2, 1; 1998 WU₆ *, 12, 4, 5; 1998 WV₆ *, 6, 2, 1; 1998 WW₆ *, 9, 4, 5; 1998 WQ₈ *, 10, 3, 2; 1998 WK₉ *, 7, 2, 1; (6993), 7, 2, 2; (7119), 4, 2, 2; (8084), 6, 2, 1; (9263), 7, 2, 2; (9565), 7, 3, 2; [135, 20, 7*, 1998/10/24–1998/11/30]**750 Hobbs Observatory, Fall Creek**

R. Elliott, S475 County Road K, Fall Creek, WI 54742, U.S.A.

[elliottb@uwec.edu]0.60-m $f/5$ reflector + CCD

GSC

1998 VA, 6, 2, 11; 1998 VO₃₃, 4, 2, 4; 1998 WS, 6, 2, 4; [16, 3, 0*, 1998/11/13–1998/11/28]**757 High Point**

D. K. Chesney, 4210 Lauren Place, High Point, NC 27265, U.S.A.

[dkchesney@aol.com]

0.25-m Schmidt-Cassegrain + CCD

USNO-A1.0

1998 VR₂₇, 3, 1, 0; 1998 WP *, 8, 4, 13; [11, 2, 1*, 1998/11/16–1998/11/29]

758 BCC Observatory, Cocoa

I. P. Griffin, BCC Observatory, 1519 Clearlake Road, Cocoa, FL 32922, U.S.A.

[griffini@brevard.cc.fl.us]

0.30-m $f/5$ Maksutov + CCD

GSC

1977 RD₂, 3, 1, 0; 1978 YM, 15, 5, 4; 1980 FO₁, 3, 1, 0; 1981 EP₁₃, 9, 3, 10; 1981 RB₂, 3, 1, 0; 1986 RB₁₂, 3, 1, 0; 1989 UR, 4, 1, 0; 1990 XF, 2, 1, 0; 1991 RF₆, 5, 2, 1; 1991 VQ₁, 6, 2, 4; 1991 XN, 12, 4, 16; 1994 WN₃, 3, 1, 0; 1996 AP₃, 3, 1, 0; 1998 TB, 6, 2, 1; 1998 UF₁₅, 22, 8, 26; 1998 VJ, 38, 11, 19; 1998 VN, 4, 1, 0; 1998 VO, 5, 1, 0; 1998 VR, 5, 1, 0; 1998 VE₃₂, 8, 2, 1; 1998 VL₃₂ *, 16, 6, 5; 1998 VM₃₂ *, 21, 8, 14; 1998 VN₃₂ *, 18, 6, 10; 1998 VO₃₂ *, 23, 8, 13; 1998 VO₃₃, 3, 1, 0; 1998 WO *, 16, 5, 8; 1998 WK₂ *, 12, 4, 8; 1998 WX₅, 9, 3, 2; 1998 WU₇ *, 9, 3, 2; 1998 WV₇ *, 5, 2, 1; 1998 WW₇ *, 15, 5, 4; 1998 WP₈ *, 5, 2, 1; 1998 WV₈ *, 5, 2, 1; 1998 XA *, 9, 3, 6; 1998 XB, 10, 2, 1; (1531), 3, 1, 0; (6809), 3, 1, 0; (9595), 8, 3, 3; [349, 38, 12*, 1998/11/10–1998/12/07]

761 Zephyrhills

R. A. Kowalski, 7630 Conrad St, Zephyrhills, FL 33544-2729, U.S.A.

[bitnik@bitnik.com]

0.178-m $f/9.45$ reflector + CCD

GSC

1998 VA, 7, 3, 15; 1998 VO₃₃, 2, 1, 0; 1998 WL, 2, 1, 0; (2915), 6, 3, 15; (4268), 2, 1, 0; (4559), 4, 2, 1; (5721), 4, 2, 1; (6877), 2, 1, 0; (6979), 5, 2, 1; (7017), 2, 1, 0; (7344), 4, 2, 1; (7543), 4, 2, 1; [44, 12, 0*, 1998/11/13–1998/11/28]

807 Cerro Tololo

G. Bernstein, Dept. of Astronomy, University of Michigan, Ann Arbor, MI 48013,

U.S.A. [garyb@astro.lsa.umich.edu]

Observers R. L. Allen, M. Jarvis, G. Bernstein

Measurer R. L. Allen

4-m Blanco reflector + CCD

USNO-A1.0

1998 FS₁₄₄ *, 6, 3, 4; 1998 KD₆₆ *, 3, 3, 10; 1998 KE₆₆ *, 3, 3, 10; 1998 KF₆₆ *, 3, 3, 10; 1998 KG₆₆ *, 3, 3, 10; [18, 5, 5*, 1998/03/23–1998/05/30]

809 European Southern Observatory

E. W. Elst, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels, Belgium [ericelst@helios.oma.be] (4)

C.-I. Lagerkvist, Uppsala Observatory, Box 515, S-75120 Uppsala, Sweden

[classe@laban.uu.se] (8)

Observers C.-I. Lagerkvist, M. Lindgren, G. Pizarro, O. Pizarro

Measurers E. W. Elst, O. Hernius, C.-I. Lagerkvist

1.0-m Schmidt

(4) 1989 TB₅, 6, 2, 1; 1990 QB₅, 6, 2, 1; 1991 QJ, 6, 2, 1; 1992 AO₂, 6, 2, 1; 1992 CF, 3, 1, 0; 1993 DG₂, 6, 2, 1; 1993 VV₄, 6, 2, 1; 1995 CN, 6, 2, 1; 1996 DL, 6, 2, 1; 1996 HP₁₄, 3, 1, 0; 1996 HN₁₅, 3, 1, 0; 1996 LC₅, 3, 1, 0; 1997 JR, 6, 2, 1; 1998 QP₉₂, 6, 2, 1; 1998 QU₉₂, 6, 2, 1; 1998 QX₉₂, 6, 2, 1; 1998 QF₉₃, 6, 2, 1; 1998 QP₉₃, 6, 2, 1; 1998 SH₂₇, 6, 2, 1; 1998 SL₁₆₄, 6, 2, 1; 1998 TV₁, 6, 2, 1; 1998 TS₅, 6, 2, 1; 1998 TT₅, 3, 1, 0; 1998 TL₆, 6, 2, 1; 1998 TM₆, 6, 2, 1; 1998 TY₆, 6, 2, 1; 1998 TH₁₆, 6, 2, 1; 1998 TX₁₇, 6, 2, 1; 1998 UD₄, 6, 2, 1; 1998 UB₇, 6, 2, 1; 1998 UH₇, 6, 2, 1; 1998 UW₇, 6, 2, 1; 1998 US₁₆, 6, 2, 1; 1998 UA₂₅ *, 6, 2, 1; 1998 UB₂₅ *, 6, 2, 1; 1998 UC₂₅ *, 6, 2, 1; 1998 UD₂₅ *, 6, 2, 1; 1998 UE₂₅ *, 6, 2, 1; 1998 UF₂₅ *, 6, 2, 1; 1998 UG₂₅ *, 6, 2, 1; 1998 UH₂₅ *, 6, 2, 1; 1998 UJ₂₅ *, 6, 2, 1; 1998 UK₂₅ *, 6, 2, 1; 1998 UL₂₅ *, 6, 2, 1; 1998 UM₂₅ *, 6, 2, 1; 1998 UN₂₅ *, 6, 2, 1; 1998 UO₂₅ *, 6, 2, 1; 1998 UP₂₅ *, 6, 2, 1; 1998 UQ₂₅ *, 6, 2, 1; 1998 UR₂₅ *, 6, 2, 1; 1998 US₂₅ *, 6, 2, 1; 1998 UT₂₅ *, 6, 2, 1; 1998 UU₂₅ *, 6, 2, 1; 1998 UV₂₅ *, 6, 2, 1; 1998 UX₂₅ *, 6, 2, 1; 1998 UY₂₅ *, 6, 2, 1; 1998 UZ₂₅ *, 6, 2, 1; 1998 UA₂₆ *, 6, 2, 1; 1998 UB₂₆ *, 6, 2, 1; 1998 UC₂₆ *, 6, 2, 1; 1998 UD₂₆ *, 6, 2, 1; 1998 UE₂₆ *, 6, 2, 1; 1998 UF₂₆ *, 6, 2, 1; 1998 UG₂₆ *, 6, 2, 1; 1998 UH₂₆ *, 6, 2, 1; 1998 UJ₂₆ *, 6, 2, 1; 1998 UK₂₆ *, 6, 2, 1; 1998 UL₂₆ *, 6, 2, 1; 1998 UM₂₆ *, 6, 2, 1; 1998 UN₂₆ *, 6, 2, 1; 1998 UO₂₆ *, 6, 2, 1; 1998 UP₂₆ *, 6, 2, 1; 1998 UQ₂₆ *, 6, 2, 1; 1998 UR₂₆ *, 6, 2, 1; 1998 US₂₆ *, 6, 2, 1; 1998 UT₂₆ *, 6, 2, 1; 1998 UU₂₆ *, 6, 2, 1; 1998 UV₂₆ *, 6, 2, 1; 1998 UW₂₆ *, 6, 2, 1; 1998 UX₂₆ *, 6, 2, 1; 1998 UY₂₆ *, 6, 2, 1; 1998 UZ₂₆ *, 6, 2, 1; 1998 UA₂₇ *, 6, 2, 1; 1998 UB₂₇ *, 6, 2, 1; 1998 UC₂₇ *, 6, 2, 1; 1998 UD₂₇ *, 6, 2, 1; 1998 UE₂₇ *,

6, 2, 1; 1998 UF₂₇ *, 6, 2, 1; 1998 UG₂₇ *, 6, 2, 1; 1998 UH₂₇ *, 6, 2, 1; 1998 UJ₂₇ *, 6, 2, 1; 1998 UK₂₇ *, 6, 2, 1; 1998 UL₂₇ *, 6, 2, 1; 1998 UM₂₇ *, 6, 2, 1; 1998 UN₂₇ *, 6, 2, 1; 1998 UO₂₇ *, 6, 2, 1; 1998 UP₂₇ *, 6, 2, 1; 1998 UQ₂₇ *, 6, 2, 1; 1998 UR₂₇ *, 6, 2, 1; 1998 US₂₇ *, 6, 2, 1; 1998 UT₂₇ *, 6, 2, 1; 1998 UU₂₇ *, 6, 2, 1; 1998 UV₂₇ *, 6, 2, 1; 1998 UW₂₇ *, 6, 2, 1; 1998 UX₂₇ *, 6, 2, 1; 1998 UY₂₇ *, 6, 2, 1; 1998 UZ₂₇ *, 6, 2, 1; 1998 UK₂₈ *, 6, 2, 1; 1998 UL₂₈ *, 6, 2, 1; 1998 UM₂₈ *, 6, 2, 1; 1998 UN₂₈ *, 6, 2, 1; 1998 UO₂₈ *, 6, 2, 1; 1998 UP₂₈ *, 6, 2, 1; 1998 UQ₂₈ *, 6, 2, 1; 1998 UR₂₈ *, 6, 2, 1; 1998 US₂₈ *, 6, 2, 1; 1998 UT₂₈ *, 6, 2, 1; 1998 UU₂₈ *, 6, 2, 1; 1998 UV₂₈ *, 6, 2, 1; 1998 UW₂₈ *, 6, 2, 1; 1998 UX₂₈ *, 6, 2, 1; 1998 UY₂₈ *, 6, 2, 1; 1998 UZ₂₈ *, 6, 2, 1; 1998 UA₂₉ *, 6, 2, 1; 1998 UB₂₉ *, 6, 2, 1; 1998 UC₂₉ *, 6, 2, 1; 1998 UD₂₉ *, 6, 2, 1; 1998 UE₂₉ *, 6, 2, 1; 1998 UF₂₉ *, 6, 2, 1; 1998 UG₂₉ *, 6, 2, 1; 1998 UH₂₉ *, 6, 2, 1; 1998 UJ₂₉ *, 6, 2, 1; 1998 UK₂₉ *, 6, 2, 1; 1998 UL₂₉ *, 6, 2, 1; 1998 UM₂₉ *, 6, 2, 1; 1998 UN₂₉ *, 6, 2, 1; 1998 UO₂₉ *, 6, 2, 1; 1998 UP₂₉ *, 6, 2, 1; 1998 UQ₂₉ *, 6, 2, 1; 1998 UR₂₉ *, 6, 2, 1; 1998 US₂₉ *, 6, 2, 1; 1998 UT₂₉ *, 6, 2, 1; 1998 UU₂₉ *, 6, 2, 1; 1998 UV₂₉ *, 6, 2, 1; 1998 UW₂₉ *, 6, 2, 1; 1998 UX₂₉ *, 6, 2, 1; 1998 UY₂₉ *, 6, 2, 1; 1998 UZ₂₉ *, 6, 2, 1; 1998 UA₃₀ *, 6, 2, 1; 1998 UB₃₀ *, 6, 2, 1; 1998 UC₃₀ *, 6, 2, 1; 1998 UD₃₀ *, 6, 2, 1; 1998 UE₃₀ *, 6, 2, 1; 1998 UF₃₀ *, 6, 2, 1; 1998 UG₃₀ *, 6, 2, 1; 1998 UH₃₀ *, 6, 2, 1; 1998 UJ₃₀ *, 6, 2, 1; 1998 UK₃₀ *, 6, 2, 1; 1998 UL₃₀ *, 6, 2, 1; 1998 UM₃₀ *, 6, 2, 1; 1998 UN₃₀ *, 6, 2, 1; 1998 UO₃₀ *, 6, 2, 1; 1998 UP₃₀ *, 6, 2, 1; 1998 UQ₃₀ *, 6, 2, 1; 1998 UR₃₀ *, 6, 2, 1; 1998 US₃₀ *, 6, 2, 1; 1998 UT₃₀ *, 6, 2, 1; 1998 UU₃₀ *, 6, 2, 1; 1998 UV₃₀ *, 6, 2, 1; 1998 UW₃₀ *, 6, 2, 1; 1998 UX₃₀ *, 6, 2, 1; 1998 UY₃₀ *, 6, 2, 1; 1998 UZ₃₀ *, 6, 2, 1; 5046 T-3, 6, 2, 1; (423), 6, 2, 1; (439), 6, 2, 1; (1030), 6, 2, 1; (1043), 6, 2, 1; (1413), 6, 2, 1; (2582), 6, 2, 1; (2767), 6, 2, 1; (4190), 3, 1, 0; (5450), 6, 2, 1; (6374), 6, 2, 1; (6878), 3, 1, 0; (7807), 6, 2, 1; (9431), 6, 2, 1; [1113, 189, 141*, 1993/07/19–1998/10/19]

(8) 1998 VO₃₃ *, 2, 1, 0; [2, 1, 1*, 1998/11/15]**825 Granville**

R. G. Davis, 209 Edgebrook Drive, Boylston, MA 01505, U.S.A.

[richdave@ma.ultranet.com]

0.20-m $f/3.3$ Schmidt-Cassegrain + CCD

GSC

1988 VS₁, 6, 2, 3; 1992 WK₁, 9, 3, 13; 1998 KU₂, 15, 6, 30; 1998 SR₁₄₄, 8, 3, 4; 1998 UC₁, 4, 2, 1; 1998 UH₁₅, 6, 3, 7; 1998 VT₃₄ *, 6, 3, 6; (681), 6, 2, 3; (3352), 6, 2, 1; (3502), 6, 2, 3; (4501), 6, 2, 3; (6338), 6, 2, 3; (6877), 5, 2, 3; (7028), 6, 2, 3; (7172), 6, 2, 3; [101, 15, 1*, 1998/10/20–1998/12/02]

829 Complejo Astronómico El Leoncito

R. B. Orellana, Observatorio Astronómico de La Plata (1900), La Plata, Argentina

[rorellan@fcaglp.fcaglp.unlp.edu.ar]

Observer S. A. Cellone, A. Silva

Measurer S. A. Cellone, R. B. Orellana

2.15-m $f/2.8$ reflector + CCD

USNO A1.0

(2060), 27, 5, 492; [27, 1, 0*, 1996/12/22–1998/04/28]

835 Drum Hill Station, Chelmsford

R. Sinnott, Sky & Telescope, P. O. Box 9111, Belmont, MA 02478-9111, U.S.A.

[rsinnott@skypub.com]

0.20-m $f/3.3$ Schmidt-Cassegrain + CCD

GSC

1998 VO, 3, 1, 0; 1998 VR, 2, 1, 0; [5, 2, 0*, 1998/11/12]

836 Furnace Brook Observatory, Cranston

D. P. Pray, 40 Hillcrest Dr., Cranston, RI 02921, U.S.A.

[DPPRAY@worldnet.att.net]

0.25-m $f/6$ Newtonian reflector + CCD

1998 WT, 6, 2, 3; [6, 1, 0*, 1998/11/18–1998/11/22]

844 Los Molinos

T. Gallardo, Departamento de Astronomía, Facultad de Ciencias, Montevideo,

Uruguay [gallardo@fisica.edu.uy]

Observers R. Salvo, J. García

Measurer R. Salvo

0.35-m $f/6.4$ reflector + CCD

USNO-A1.0

(1866), 6, 2, 3; [6, 1, 0*, 1998/11/19–1998/11/22]

860 Valinhos

P. R. Holvorcem, Departamento de Matematica/IMECC, Universidade Estadual de
Campiñas SP, BR-13081-970, Brazil [canis@mpc.com.br]

0.20-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1989 UR, 7, 2, 18; 1998 UQ₁, 3, 1, 0; 1998 UT₁₈, 6, 2, 7; 1998 VN, 2, 1, 0; 1998 VF₃₂, 4, 1, 0;
1998 VO₃₃, 3, 1, 0; 1998 WB₂, 2, 1, 0; 1998 WA₄, 2, 1, 0; 1998 WD₅ *, 5, 2, 3; 1998 WN₇ *, 4,
2, 3; (588), 2, 1, 0; (5016), 3, 1, 0; [43, 12, 2*, 1998/10/21–1998/11/23]

867 Saji Observatory

M. Yamanishi, 1071-1 Takayama, Saji, Yazu-Gun, Tottori-Ken, 689-13 Japan

[sajinet@infosakyu.ne.jp]

Observers M. Yamanishi, A. Miyamoto, M. Aimoto, T. Oribe

1.03-m $f/4.2$ reflector + CCD

GSC

1998 VS₃₆ *, 8, 3, 12; [8, 1, 1*, 1998/11/14–1998/11/26]

886 Susono

M. Akiyama, 1655-23, Chabatake, Susono, Shizuoka-Ken, 410-11 Japan

0.25-m $f/6.3$ reflector + CCD

GSC

1988 VP₃, 4, 2, 12; 1998 QP₉₈, 2, 1, 0; 1998 TA, 7, 3, 16; 1998 UH₈, 4, 2, 15; 1998 UC₂₃, 2, 1,
0; 1998 VE, 2, 1, 0; 1998 VH₅, 4, 2, 8; 1998 VJ₅, 4, 2, 8; 1998 VK₅, 4, 2, 8; 1998 VL₅, 4, 2, 8;
1998 VM₅, 2, 1, 0; 1998 VN₅, 2, 1, 0; 1998 VQ₅, 2, 1, 0; 1998 VR₅, 2, 1, 0; 1998 VF₆, 2, 1, 0;
1998 VG₆, 2, 1, 0; 1998 VN₆, 4, 2, 4; 1998 VO₆, 4, 2, 4; 1998 VQ₆, 2, 1, 0; 1998 VB₃₁, 2, 1, 0;
[61, 20, 0*, 1998/11/07–1998/11/23]

888 Gekko Observatory

T. Kagawa, 1308-222, Kuwahara, Kannami-cho, Tagata-gun, Shizuoka-Ken, 419-
010, Japan

0.50-m $f/4.0$ reflector

GSC 1.1

1989 TU₁, 3, 1, 0; 1991 DE, 1, 1, 0; 1991 RS₁₃, 3, 1, 0; 1993 DG₂, 3, 1, 0; 1993 EE, 3, 1, 0;
1994 OB, 3, 1, 0; 1994 UY, 3, 1, 0; 1994 UB₁, 3, 1, 0; 1994 UC₁, 3, 1, 0; 1997 QD₂, 3, 1, 0;
1997 QC₄, 3, 1, 0; 1997 RZ₇, 6, 2, 274; 1997 RF₈, 2, 1, 0; 1998 PG, 3, 1, 0; 1998 SS₂, 3, 1, 0;
1998 SQ₁₂₇, 3, 1, 0; 1998 SE₁₂₈, 8, 3, 3; 1998 SQ₁₃₆, 7, 3, 3; 1998 TB, 5, 2, 12; 1998 TE, 3, 1, 0;
1998 UP₆, 3, 1, 0; 1998 UT₆, 5, 2, 15; 1998 UU₆, 5, 2, 11; 1998 UH₈, 2, 1, 0; 1998 UU₂₂, 5, 2,
11; 1998 UV₂₂, 6, 2, 7; 1998 UP₃₀, 5, 2, 1; 1998 UT₃₀, 5, 2, 3; 1998 VC, 5, 2, 14; 1998 VD, 10,
4, 19; 1998 VE, 6, 2, 3; 1998 VO, 3, 1, 0; 1998 VH₅, 3, 1, 0; 1998 VJ₅, 2, 1, 0; 1998 VK₅, 3, 2, 1;
1998 VL₅, 3, 2, 1; 1998 VM₅, 5, 2, 8; 1998 VN₅, 6, 2, 8; 1998 VO₅ *, 15, 7, 17; 1998 VP₅ *, 8,
5, 15; 1998 VQ₅ *, 11, 5, 15; 1998 VR₅ *, 11, 5, 15; 1998 VU₅ *, 13, 5, 14; 1998 VW₅ *, 5, 2, 1;
1998 VX₅ *, 11, 5, 12; 1998 VC₆ *, 12, 4, 9; 1998 VD₆ *, 13, 6, 18; 1998 VE₆, 6, 2, 9; 1998 VF₆,
3, 1, 0; 1998 VH₆, 3, 1, 0; 1998 VK₆, 8, 3, 9; 1998 VM₆, 9, 3, 3; 1998 VP₆, 2, 1, 0; 1998 VQ₆, 3,
1, 0; 1998 VB₂₂, 6, 2, 2; 1998 VX₂₆, 6, 2, 1; 1998 VG₂₇, 6, 2, 2; 1998 VM₃₀, 5, 2, 1; 1998 VB₃₁,
3, 1, 0; 1998 VG₃₁ *, 12, 5, 17; 1998 VD₃₃ *, 7, 2, 1; 1998 VE₃₄ *, 10, 4, 8; 1998 WD₃ *, 10, 4, 8;
1998 WE₃ *, 10, 4, 8; 1998 WF₃ *, 8, 3, 5; 1998 WE₄ *, 10, 4, 6; 1998 WK₅, 2, 1, 0; 1998 WL₅ *,
9, 4, 9; 1998 WM₅ *, 9, 4, 9; 1998 WN₅ *, 10, 5, 18; 1998 WV₅, 5, 2, 3; 1998 WW₅, 5, 2, 3;
1998 WX₅, 2, 1, 0; 1998 WZ₆, 12, 3, 5; 1998 WE₇, 4, 2, 2; 1998 WF₇, 4, 2, 2; 1998 WG₇, 5, 2, 5;
1998 WH₇ *, 7, 4, 3; [453, 78, 20*, 1998/02/06–1998/11/29]

894 Otomo

S. Otomo, Kiyosato 3545-3902, Takane, Kitakoma-Gun, Yamanashi-Ken, 407-03
Japan

0.25-m $f/3.4$ reflector

PPM

1998 VG₃₅ *, 6, 3, 10; [6, 1, 1*, 1998/11/15–1998/11/25]

897 YGCO Chiyoda Station

T. Kojima, 45 Shimonakamori, Chiyoda, Ohra-Gun, Gunma-Ken, 370-07 Japan

[kojitaku@scorpius.bekkoame.or.jp]

0.25-m $f/6.0$ reflector + CCD

GSC

1998 VD₃₁, 4, 1, 0; 1998 WZ₆, 4, 1, 0; [8, 2, 0*, 1998/11/15–1998/11/24]

900 Moriyama

Y. Ikari, Katube-Cho 626, Moriyama, Shiga-Ken 524, Japan

[ikari@gold.ocn.ne.jp]

0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1998 VN, 2, 1, 0; 1998 VO, 4, 2, 1; 1998 VQ, 2, 1, 0; 1998 VR, 4, 2, 1; 1998 WD₅, 2, 1, 0;
1998 WQ₅, 2, 1, 0; 1998 WZ₆, 2, 1, 0; 1998 WN₇, 2, 1, 0; 1998 WO₇, 2, 1, 0; 1998 WZ₈ *, 4, 2,
1; 1998 XB, 2, 1, 0; (5016), 2, 1, 0; (6195), 2, 1, 0; [32, 13, 1*, 1998/11/11–1998/12/05]

905 Nachi-Katsuura Observatory

T. Urata, 1-8, Dobayashi 1 Chome, Shimizu, Shizuoka-Ken 424, Japan

[urata@sannet.ne.jp]

Observer Y. Shimizu

Measurer T. Urata

0.40-m $f/3.3$ Baker-Schmidt

GSC

1991 RS₁₃, 2, 1, 0; 1998 UC₂₃, 4, 2, 1; 1998 VH₅ *, 2, 1, 0; 1998 VJ₅ *, 2, 1, 0; 1998 VK₅ *,
4, 2, 11; 1998 VL₅ *, 4, 2, 1; 1998 VM₅ *, 4, 2, 1; 1998 VN₅ *, 4, 2, 1; 1998 VE₆ *, 6, 3, 7;
1998 VF₆ *, 4, 2, 1; 1998 VG₆ *, 6, 3, 7; 1998 VH₆ *, 6, 3, 7; 1998 VJ₆ *, 4, 2, 1; 1998 VK₆ *,
4, 2, 1; 1998 VL₆ *, 2, 1, 0; 1998 VM₆ *, 2, 1, 0; 1998 VN₆ *, 4, 2, 8; 1998 VO₆ *, 4, 2, 8;
1998 VP₆ *, 3, 2, 1; 1998 VQ₆ *, 4, 2, 1; 1998 VA₂₂, 2, 1, 0; 1998 VC₂₂, 2, 1, 0; 1998 VB₂₈, 2, 1,
0; 1998 VU₂₈, 2, 1, 0; 1998 VV₂₈, 2, 1, 0; 1998 VX₃₀, 2, 1, 0; 1998 VB₃₁, 3, 1, 0; 1998 WK₅ *, 2,
1, 0; 1998 WV₅ *, 2, 1, 0; 1998 WW₅ *, 2, 1, 0; 1998 WX₅ *, 2, 1, 0; 1998 WZ₅ *, 2, 1, 0; [100,
32, 23*, 1998/11/08–1998/11/20]

910 Caussols-ODAS

A. Maury, Observatoire de la Côte d'Azur, B.P. 229, F-06304 Nice, France

[maury@obs-azur.fr]

G. Hahn, DLR Institute of Planetary Exploration, Rudower Chaussee 5, D-12489

Berlin, Germany [Gerhard.Hahn@DLR.de]

Observers A. Maury, D. Albanese, G. Hahn, M. Hoffmann

Measurers A. Maury, G. Hahn

0.90-m Schmidt + CCD

GSC

1979 MW₆, 1, 1, 0; 1981 EY₁₉, 14, 5, 9; 1981 EY₂₇, 6, 2, 1; 1981 UU₂₉, 9, 3, 10; 1982 UC₁₁, 9,
3, 3; 1983 RP₃, 3, 1, 0; 1987 SJ₂, 3, 1, 0; 1988 TT, 3, 1, 0; 1990 EN₃, 3, 1, 0; 1990 QE₇, 6, 2,
1; 1990 RO₇, 6, 2, 5; 1990 SV₁₃, 3, 1, 0; 1990 UC₂, 3, 1, 0; 1991 GA₆, 3, 1, 0; 1991 RL₈, 3, 1,
0; 1991 VQ₁, 6, 2, 2; 1992 FV₁, 9, 3, 9; 1992 YN₂, 3, 1, 0; 1993 FR₁₁, 3, 1, 0; 1993 FB₃₂, 3, 1,
0; 1993 TA₂₄, 3, 1, 0; 1994 AC₃, 9, 3, 2; 1994 CA₅, 3, 1, 0; 1994 PX₂₀, 3, 1, 0; 1994 TR₆, 3, 1,
0; 1994 WJ, 6, 2, 1; 1995 BA, 3, 1, 0; 1995 DZ₁₁, 3, 1, 0; 1995 WS₁, 6, 2, 1; 1996 BY₂, 3, 1, 0;
1996 GA₂, 3, 1, 0; 1996 GG₂₀, 3, 1, 0; 1996 HX₁₆, 3, 1, 0; 1996 OO, 6, 2, 7; 1996 TL₅, 3, 1, 0;
1997 CA₂₂, 9, 3, 3; 1997 FN₃, 3, 1, 0; 1997 GL₂₂, 3, 1, 0; 1997 GJ₂₃, 3, 1, 0; 1997 GW₃₂, 3, 1,
0; 1997 GX₃₅, 3, 1, 0; 1997 HP₈, 3, 1, 0; 1997 JZ, 3, 1, 0; 1997 JE₁₅, 3, 1, 0; 1997 JR₁₇, 6, 2, 5;
1997 ML₂, 6, 2, 2; 1997 NU₁, 6, 2, 2; 1997 OJ₁, 3, 1, 0; 1997 VE₈, 3, 1, 0; 1997 WQ₃₇, 3, 1, 0;
1998 BN₄₈, 3, 1, 0; 1998 OT₆, 6, 2, 1; 1998 OC₇, 3, 1, 0; 1998 ON₁₂, 6, 2, 1; 1998 OD₁₃, 9, 2, 2;
1998 OR₁₃, 9, 3, 2; 1998 OU₁₄, 6, 2, 2; 1998 OB₁₅, 6, 2, 1; 1998 PE, 9, 3, 2; 1998 QQ₁, 3, 1, 0;
1998 QK₆, 3, 1, 0; 1998 QP₆, 3, 1, 0; 1998 QU₁₂, 6, 2, 2; 1998 QT₁₉, 3, 1, 0; 1998 QV₁₉, 6, 2, 5;
1998 QM₂₀, 9, 3, 2; 1998 QC₂₁, 9, 2, 2; 1998 QJ₂₁, 3, 1, 0; 1998 QL₂₃, 3, 1, 0; 1998 QW₂₃, 6, 2,
5; 1998 QM₂₄, 6, 2, 2; 1998 QV₂₄, 6, 2, 1; 1998 QZ₂₄, 3, 1, 0; 1998 QS₃₀, 3, 1, 0; 1998 QQ₃₁, 3,
1, 0; 1998 QS₃₁, 6, 2, 1; 1998 QB₃₂, 3, 1, 0; 1998 QO₃₅, 3, 1, 0; 1998 QQ₃₅, 6, 2, 1; 1998 QX₃₅, 3,
1, 0; 1998 QQ₃₉, 3, 1, 0; 1998 QP₄₃, 6, 2, 1; 1998 QK₅₅, 3, 1, 0; 1998 QM₈₀, 9, 2, 1; 1998 QR₉₁,
3, 1, 0; 1998 QL₉₂, 3, 1, 0; 1998 QS₉₈, 6, 2, 2; 1998 RE₁, 3, 1, 0; 1998 RU₈, 6, 2, 5; 1998 RX₁₆,

6, 2, 2; 1998 RC₁₈, 9, 3, 2; 1998 RD₄₉, 3, 1, 0; 1998 RW₇₀, 3, 1, 0; 1998 SJ₂, 3, 1, 0; 1998 SO₂, 3, 1, 0; 1998 ST₅₂, 3, 1, 0; 1998 SE₁₃₂, 3, 1, 0; 1998 SA₁₃₃, 3, 1, 0; 1998 SP₁₃₇, 3, 1, 0; 1998 SB₁₃₉, 3, 1, 0; 1998 SL₁₄₀, 3, 1, 0; 1998 SQ₁₄₀, 3, 1, 0; 1998 SK₁₄₂, 3, 1, 0; 1998 SM₁₄₂, 3, 1, 0; 1998 SJ₁₄₄, 3, 1, 0; 1998 SR₁₄₄, 3, 1, 0; 1998 SA₁₄₅, 3, 1, 0; 1998 SZ₁₄₇, 3, 1, 0; 1998 TJ₁₀, 3, 1, 0; 1998 TR₂₆, 6, 2, 2; 1998 TE₂₉, 3, 1, 0; 1998 TG₃₀, 3, 1, 0; 1998 TF₃₂, 3, 1, 0; 1998 TM₃₂, 3, 1, 0; 1998 TA₃₃, 3, 1, 0; 1998 TO₃₄, 3, 1, 0; 1998 TR₃₄, 3, 1, 0; 1998 TT₃₄, 3, 1, 0; 1998 UZ₇, 3, 1, 0; 1998 UL₈, 3, 1, 0; 1998 US₁₂, 3, 1, 0; 1998 UO₁₅, 15, 5, 9; 1998 UR₁₅, 6, 2, 2; 1998 UV₁₉, 9, 3, 2; 1998 UW₁₉, 12, 4, 3; 1998 UY₁₉, 9, 3, 9; 1998 UP₂₀, 9, 3, 3; 1998 UR₂₀, 12, 3, 2; 1998 UZ₂₀, 6, 2, 1; 1998 UE₂₁, 12, 4, 10; 1998 UN₂₂, 3, 1, 0; 1998 UU₂₂, 15, 5, 10; 1998 UV₂₂, 12, 4, 8; 1998 UX₂₂, 6, 2, 2; 1998 VC₂, 6, 2, 2; 1998 VD₂, 9, 3, 3; 1998 VE₂, 9, 3, 3; 1998 VP₁ *, 6, 2, 1; 1998 VQ₁ *, 6, 2, 2; 1998 VR₁ *, 6, 2, 2; 1998 VS₁ *, 7, 2, 1; 1998 VT₁ *, 6, 2, 1; 1998 VU₁ *, 6, 2, 1; 1998 VV₁ *, 6, 2, 1; 1998 VW₁ *, 6, 2, 1; 1998 VX₁ *, 6, 2, 1; 1998 VY₁ *, 6, 2, 1; 1998 VZ₁ *, 12, 4, 3; 1998 VA₂ *, 6, 2, 1; 1998 VB₂ *, 6, 2, 1; 1998 VC₂ *, 6, 2, 1; 1998 VD₂ *, 12, 4, 10; 1998 VE₂ *, 6, 2, 3; 1998 VF₂ *, 6, 2, 3; 1998 VG₂ *, 6, 2, 1; 1998 VH₂ *, 12, 3, 3; 1998 VJ₂ *, 6, 2, 2; 1998 VK₂ *, 6, 2, 2; 1998 VL₂ *, 6, 2, 2; 1998 VM₂ *, 12, 3, 3; 1998 VN₂ *, 6, 2, 2; 1998 VO₂ *, 6, 2, 1; 1998 VP₂ *, 12, 4, 8; 1998 VQ₂ *, 6, 2, 2; 1998 VR₂ *, 6, 2, 2; 1998 VS₂ *, 6, 2, 2; 1998 VT₂ *, 6, 2, 2; 1998 VU₂ *, 6, 2, 2; 1998 VV₂ *, 6, 2, 2; 1998 VW₂ *, 6, 2, 2; 1998 VX₂ *, 6, 2, 2; 1998 VY₂ *, 6, 2, 2; 1998 VZ₂ *, 9, 3, 9; 1998 VA₃ *, 6, 2, 2; 1998 VB₃ *, 6, 2, 2; 1998 VC₃ *, 6, 2, 2; 1998 VD₃ *, 6, 2, 1; 1998 VE₃ *, 6, 2, 2; 1998 VF₃ *, 6, 2, 1; 1998 VG₃ *, 6, 2, 2; 1998 VH₃ *, 6, 2, 1; 1998 VJ₃ *, 9, 3, 9; 1998 VK₃ *, 9, 3, 9; 1998 VL₃ *, 12, 4, 9; 1998 VM₃ *, 12, 4, 9; 1998 VN₃ *, 12, 4, 9; 1998 VO₃ *, 6, 2, 1; 1998 VP₃ *, 6, 2, 2; 1998 VQ₃ *, 9, 3, 7; 1998 VR₃ *, 12, 4, 9; 1998 VS₃ *, 12, 4, 9; 1998 VT₃ *, 6, 2, 1; 1998 VU₃ *, 12, 4, 9; 1998 VV₃ *, 6, 2, 1; 1998 VW₃ *, 9, 3, 9; 1998 VX₃ *, 6, 2, 2; 1998 VY₃ *, 9, 3, 8; 1998 VZ₃ *, 6, 2, 2; 1998 VA₄ *, 6, 2, 2; 1998 VB₄ *, 6, 2, 2; 1998 VC₄ *, 6, 2, 2; 1998 VD₄ *, 6, 2, 2; 1998 VE₄ *, 9, 3, 9; 1998 VF₄ *, 9, 3, 9; 1998 VG₄ *, 6, 2, 2; 1998 VH₄ *, 9, 3, 2; 1998 VJ₄ *, 9, 3, 2; 1998 VK₄ *, 11, 4, 7; 1998 VL₄ *, 9, 3, 2; 1998 VM₄ *, 9, 3, 2; 1998 VN₄ *, 9, 3, 2; 1998 VO₄ *, 9, 3, 8; 1998 VP₄ *, 15, 5, 9; 1998 VQ₄ *, 15, 5, 9; 1998 VR₄ *, 12, 4, 7; 1998 VT₄ *, 6, 2, 8; 1998 VF₅, 3, 1, 0; 1998 VZ₇ *, 6, 2, 7; 1998 VU₁₂, 6, 2, 17; 1998 VJ₁₃, 3, 1, 0; 1998 VD₃₁ *, 27, 4, 9; 1998 VU₃₃ *, 9, 3, 9; 1998 VV₃₃ *, 6, 2, 6; 1998 VX₃₃ *, 6, 2, 6; 1998 VA₃₄ *, 6, 2, 8; 1998 VB₃₄ *, 6, 2, 8; 1998 VF₃₄, 4, 2, 2; 1998 VK₃₄ *, 6, 2, 9; 1998 VL₃₄ *, 6, 2, 9; 1998 VM₃₄ *, 6, 2, 9; 1998 VN₃₄ *, 6, 2, 9; 1998 VO₃₄ *, 6, 2, 9; 1998 VP₃₄ *, 6, 2, 9; 1998 WN₂ *, 6, 2, 1; 1998 WR₂ *, 6, 2, 2; 1998 WS₂ *, 6, 2, 2; 1998 WT₂ *, 6, 2, 2; 1998 WU₂ *, 6, 2, 2; 1998 WV₂ *, 6, 2, 2; 1998 WW₂ *, 6, 2, 2; 1998 WX₂ *, 6, 2, 2; 1998 WY₂ *, 6, 2, 2; 1998 WZ₂ *, 6, 2, 2; 1998 WA₃ *, 6, 2, 1; 1998 WB₃ *, 6, 2, 1; 1998 WC₃ *, 6, 2, 1; 4026 P-L, 3, 1, 0; 3064 T-1, 15, 5, 9; 3424 T-3, 3, 1, 0; (104), 3, 1, 0; (215), 6, 2, 1; (512), 3, 1, 0; (537), 6, 2, 10; (555), 3, 1, 0; (1268), 3, 1, 0; (1623), 6, 2, 1; (1748), 3, 1, 0; (1759), 3, 1, 0; (1965), 6, 2, 1; (1976), 3, 1, 0; (2058), 6, 2, 1; (2195), 6, 2, 1; (2371), 10, 3, 10; (2574), 3, 1, 0; (2602), 3, 1, 0; (2626), 3, 1, 0; (2850), 3, 1, 0; (2942), 6, 2, 1; (3071), 6, 2, 1; (3128), 3, 1, 0; (3191), 3, 1, 0; (3221), 3, 1, 0; (3447), 9, 3, 2; (3701), 6, 2, 1; (3739), 6, 2, 1; (3864), 6, 2, 1; (3962), 6, 2, 5; (4017), 3, 1, 0; (4032), 3, 1, 0; (4035), 3, 1, 0; (4151), 3, 1, 0; (4172), 3, 1, 0; (4252), 6, 2, 5; (4305), 9, 3, 2; (4593), 9, 3, 2; (4656), 3, 1, 0; (4684), 6, 2, 2; (4723), 3, 1, 0; (5543), 3, 1, 0; (5600), 6, 2, 2; (5880), 6, 2, 1; (6045), 9, 3, 9; (6115), 3, 1, 0; (6283), 3, 1, 0; (6295), 3, 1, 0; (6300), 6, 2, 2; (6492), 6, 2, 1; (6738), 9, 3, 2; (6771), 6, 2, 3; (6942), 3, 1, 0; (6996), 9, 3, 2; (7008), 12, 4, 3; (7067), 3, 1, 0; (7172), 6, 2, 2; (7210), 3, 1, 0; (7443), 6, 2, 2; (7666), 6, 2, 1; (7675), 3, 1, 0; (7679), 6, 2, 2; (7705), 6, 2, 2; (7854), 3, 1, 0; (8093), 3, 1, 0; (8247), 3, 1, 0; (9155), 7, 3, 2; (9185), 3, 1, 0; (9267), 6, 2, 1; (9283), 6, 2, 2; (9284), 9, 3, 2; (9286), 3, 1, 0; (9293), 6, 2, 1; (9309), 3, 1, 0; (9310), 3, 1, 0; (9359), 6, 2, 3; (9409), 3, 1, 0; (9410), 3, 1, 0; (9448), 6, 2, 5; (9472), 12, 4, 3; (9497), 3, 1, 0; (9504), 3, 1, 0; (9532), 3, 1, 0; (9546), 3, 1, 0; (9566), 6, 2, 1; (9592), 15, 5, 9; (9600), 6, 2, 2; (9668), 6, 2, 1; (9675), 6, 2, 1; [1950, 337, 106*, 1997/02/09–1998/11/30]

947 Saint-Sulpice

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0.60-m $f/5.6$ relector + CCD

GSC, USNO-SA1.0

(7382), 1, 1, 0; (7602), 1, 1, 0; [2, 2, 0*, 1998/11/21]

952 Marxuquera

J. J. Gómez D., Cardenal Cisneros 55-4-8, E-46700 Gandia, Spain
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0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1989 UR, 4, 1, 0; 1991 VZ₂, 3, 1, 0; 1996 AP₃, 3, 1, 0; 1998 KU₂, 3, 1, 0; (5231), 2, 1, 0; [15, 5, 0*, 1998/10/17–1998/11/20]

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Observer P. Dupouy

Measurer P. Dupouy, J.-F. Lahitte

0.318-m $f/5.6$ reflector + CCD

GSC

1998 QW₁₅, 6, 3, 2; 1998 QR₅₃, 5, 2, 1; [11, 2, 0*, 1998/11/06–1998/11/08]

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C/1997 BA₆ (Spacewatch)

Epoch 1999 Dec. 8.0 TT = JDT 2451520.5

T	1999 Nov. 27.5827 TT		Nakano	
q	3.436372	(2000.0)	P	Q
z	+0.000325	ω 285.9385	+0.0105734	+0.7657391
	± 0.000003	Ω 317.6638	+0.0017635	−0.6431137
e	0.998884	i 72.7148	−0.9999425	+0.0069627

From 214 observations 1997 Jan. 11–1998 Nov. 28, mean residual 0".6.

C/1998 M6 (Montani)

Epoch 1998 Sept. 24.0 TT = JDT 2451080.5

T	1998 Oct. 6.5685 TT		Nakano	
q	5.978677	(2000.0)	P	Q
z	+0.000168	ω 9.1467	+0.5852631	−0.1160907
	± 0.000020	Ω 306.6036	−0.7927174	−0.2900147
e	0.998994	i 91.5404	−0.1704882	+0.9499550

From 84 observations 1998 June 30–Nov. 16, mean residual 0".7.

C/1998 P1 (Williams)

Epoch 1998 Nov. 3.0 TT = JDT 2451120.5

<i>T</i>	1998 Oct. 17.8534 TT		Nakano	
<i>q</i>	1.146578	(2000.0)	P	Q
<i>z</i>	+0.000344	ω 294.4844	−0.6810940	−0.6965576
	±0.000032	Ω 156.3761	−0.2759688	+0.5296692
<i>e</i>	0.999606	<i>i</i> 145.7297	−0.6781977	+0.4840021

From 149 observations 1998 Aug. 11–Nov. 28, mean residual 0^{''}.6.**P/1998 S1 (LINEAR-Mueller)**

Epoch 1998 Nov. 3.0 TT = JDT 2451120.5

<i>T</i>	1998 Nov. 2.6588 TT		Nakano	
<i>q</i>	2.548634	(2000.0)	P	Q
<i>n</i>	0.1079040	ω 26.3350	+0.9023235	−0.4310517
<i>a</i>	4.369628	Ω 359.1857	+0.3560460	+0.7486930
<i>e</i>	0.416739	<i>i</i> 10.5615	+0.2429888	+0.5036400

P 9.13From 155 observations 1998 Sept. 17–Nov. 25, mean residual 0^{''}.5.**C/1998 T1 (LINEAR)***T* 1999 June 25.1967 TT

<i>q</i>	1.468278	(2000.0)	P	Q
		ω 226.2903	+0.2978076	−0.9515423
		Ω 153.3304	−0.8193821	−0.2135831
<i>e</i>	1.0	<i>i</i> 170.1651	−0.4898201	−0.2212452

From 182 observations 1998 Oct. 2–Dec. 4.

C/1998 U1 (LINEAR)*T* 1998 May 2.6128 TT

<i>q</i>	3.975911	(2000.0)	P	Q
		ω 124.6712	+0.1082562	+0.9732360
		Ω 210.4579	+0.7299028	+0.0606242
<i>e</i>	1.0	<i>i</i> 156.4279	+0.6749240	−0.2216673

From 91 observations 1998 Oct. 18–Nov. 29.

P/1998 U2 (Mueller)

Epoch 1998 Nov. 3.0 TT = JDT 2451120.5

<i>T</i>	1998 Oct. 20.7392 TT		Nakano	
<i>q</i>	2.025293	(2000.0)	P	Q
<i>n</i>	0.1131707	ω 49.5246	+0.9004648	−0.4346551
<i>a</i>	4.232986	Ω 336.2266	+0.3865639	+0.8160850
<i>e</i>	0.521545	<i>i</i> 2.1934	+0.1993275	+0.3808939

P 8.71From 119 observations 1998 Sept. 14–Dec. 4, mean residual 0^{''}.6.**P/1998 U3 (Jäger)***T* 1999 Mar. 10.0173 TT

<i>q</i>	2.134345	(2000.0)	P	Q
<i>n</i>	0.0659585	ω 180.8615	−0.5644239	−0.7789422
<i>a</i>	6.066741	Ω 303.5489	+0.7593153	−0.3600446
<i>e</i>	0.648189	<i>i</i> 19.1406	+0.3238301	−0.5134364

P 14.9

From 251 observations 1998 Oct. 24–Dec. 4.

P/1998 U4 (Spahr)*T* 1999 Feb. 27.5514 TT

<i>q</i>	3.840911	(2000.0)	P	Q
<i>n</i>	0.0749399	ω 251.9495	+0.2859305	−0.9581276
<i>a</i>	5.571780	Ω 181.6818	+0.9494057	+0.2810857
<i>e</i>	0.310649	<i>i</i> 31.5031	−0.1298942	−0.0546101

P 13.2

From 47 observations 1998 Oct. 27–Nov. 26.

C/1998 U5 (LINEAR)

Epoch 1998 Dec. 13.0 TT = JDT 2451160.5

<i>T</i>	1998 Dec. 21.8307 TT		Nakano	
<i>q</i>	1.236080	(2000.0)	P	Q
<i>z</i>	+0.011732	ω 51.1829	+0.7248543	+0.0742916
	±0.000275	Ω 66.6417	+0.1080231	−0.9941272
<i>e</i>	0.985499	<i>i</i> 131.7526	+0.6803802	+0.0786885

From 242 observations 1998 Oct. 30–Dec. 6, mean residual 0^{''}.6.**P/1998 W1 (Spahr)***T* 1999 Jan. 18.2478 TT

<i>q</i>	1.726231	(2000.0)	P	Q
<i>n</i>	0.1482162	ω 346.8700	+0.0048937	−0.9303768
<i>a</i>	3.536218	Ω 101.9220	+0.9479958	−0.1123463
<i>e</i>	0.511843	<i>i</i> 22.0029	+0.3182453	+0.3489661

P 6.65

From 78 observations 1998 Nov. 16–28.

C/1998 W2 (Hergenrother)*T* 1998 Nov. 29.5715 TT

<i>q</i>	1.541433	(2000.0)	P	Q
		ω 9.1258	+0.9979096	−0.0416982
		Ω 352.6989	−0.0066348	+0.6938479
<i>e</i>	1.0	<i>i</i> 22.8619	+0.0642840	+0.7189133

From 28 observations 1998 Nov. 21–28.

C/1998 W3 (LINEAR)*T* 1998 Sept. 29.0038 TT

<i>q</i>	4.909311	(2000.0)	P	Q
		ω 5.8814	−0.5010580	+0.5779973
		Ω 123.8933	+0.7590156	−0.0640306
<i>e</i>	1.0	<i>i</i> 129.1090	+0.4157356	+0.8135227

From 29 observations 1998 Nov. 25–Dec. 4.

60P/Tsuchinshan 2

Epoch 1999 Mar. 3.0 TT = JDT 2451240.5

<i>T</i>	1999 Mar. 8.1888 TT		Nakano	
<i>q</i>	1.770378	(2000.0)	P	Q
<i>n</i>	0.1451189	ω 203.1871	−0.6585847	−0.7442591
<i>a</i>	3.586356	Ω 288.2007	+0.7074350	−0.5620220
<i>e</i>	0.506357	<i>i</i> 6.7165	+0.2565187	−0.3608457

P 6.79From 55 observations 1965–1998, mean residual 0^{''}.9. Nongravitational parameters
 $A_1 = -0.04$, $A_2 = -0.0031$.

139P/Väisälä-Oterma

Epoch 1998 Sept. 24.0 TT = JDT 2451080.5

 T 1998 Sept. 28.7751 TT

Marsden

q	3.382168	(2000.0)	P	Q
n	0.1032836	ω 165.5472	+0.6687794	-0.7425837
a	4.498992	Ω 242.4657	+0.6780061	+0.6291043
e	0.248239	i 2.3335	+0.3050276	+0.2297763
P	9.54			

From 16 observations 1939–1998, mean residual 1".0.

(9710)* 1964 VN₁ = 1964 VY₂ = 1994 WX₁₂

Discovered 1964 Nov. 9 at the Purple Mountain Observatory.

Id. K. Hurukawa (d, *JAM* 1344), T. Kobayashi (*MPC* 24893)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	38.32735	(2000.0)	P	Q
n	0.26197691	ω 341.36292	+0.65535689	-0.74673295
a	2.4189527	Ω 67.52032	+0.70767790	+0.55448691
e	0.2249671	i 7.05978	+0.26400632	+0.36733386
P	3.76	H 14.5	G 0.15	U 2

Residuals in seconds of arc

1964 11 09	330	0.3+	1.3-	1994 12 03	675	0.1-	0.5-	1998 10 30	704	0.5-	0.2+
1964 11 12	330	(2.0-	3.6-)	1994 12 03	675	0.3+	0.4+	1998 10 30	704	1.1+	0.2-
1964 11 27	330	1.5-	1.0+	1996 03 26	684	0.7-	0.3-	1998 10 30	704	0.8+	0.5-
1964 12 23	330	0.1+	0.1+	1996 03 26	684	0.7-	0.0	1998 11 20	561	0.2-	0.5+
1964 12 25	330	0.4+	0.8-	1996 03 27	684	0.4+	0.1+	1998 11 20	561	0.2+	0.4+
1965 01 01	330	1.2+	0.3+	1996 03 27	684	1.6+	1.6-	1998 11 20	561	0.3-	0.2+
1994 11 28	675	0.3+	0.3-	1996 03 27	684	0.1+	0.1-	1998 11 20	561	0.5-	0.5+
1994 11 28	675	0.2+	0.3-	1996 03 28	684	0.6-	0.1+	1998 11 22	561	0.2-	0.3+
1994 11 30	675	0.1-	0.8-	1996 03 28	684	0.9-	0.0	1998 11 22	561	0.1-	0.2+
1994 11 30	675	0.4+	0.6-	1998 10 30	704	0.0	0.8+	1998 11 22	561	0.2-	0.1+

(9711)* 1972 PA = 1993 TE₂₂

Discovered 1972 Aug. 7 by P. Wild at Zimmerwald.

Id. E. Bowell (*MPC* 23120)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	30.83890	(2000.0)	P	Q
n	0.19221425	ω 91.82407	+0.98622568	+0.06750168
a	2.9735756	Ω 264.32649	-0.12087651	+0.91730006
e	0.1231318	i 8.72825	+0.11290609	+0.39243358
P	5.13	H 11.8	G 0.15	U 2

Residuals in seconds of arc

1972 08 07	026	1.1+	0.7-	1998 09 11	681	0.1+	0.0	1998 10 11	629	1.6+	0.1-
1972 08 10	026	0.2+	0.3-	1998 09 14	703	0.5-	0.9-	1998 10 11	629	0.2-	0.9-
1972 09 04	026	0.8-	0.5+	1998 09 14	703	0.6-	0.9-	1998 10 11	629	0.5+	0.7-
1972 09 08	026	0.7-	0.8+	1998 09 14	703	0.5-	0.8-	1998 10 11	629	0.8+	0.2-
1993 10 13	675	0.1+	1.1-	1998 09 15	703	0.2-	0.5-	1998 10 11	629	0.2+	0.1-
1993 10 13	675	0.4+	1.3-	1998 09 15	703	0.6-	0.6-	1998 10 18	704	0.0	0.1+
1993 10 15	675	0.2+	1.3-	1998 09 19	886	0.2-	0.5-	1998 10 18	704	0.0	0.9+
1995 01 27	399	0.6+	0.3-	1998 09 19	886	1.6-	0.1+	1998 10 18	704	0.2-	0.2-
1995 01 27	399	0.1-	0.1-	1998 09 19	900	0.4-	0.3+	1998 10 18	704	1.1-	0.3+
1995 01 28	399	0.3-	0.8+	1998 09 19	900	0.8-	0.1+	1998 10 18	704	0.5-	0.6-
1995 01 28	399	0.2+	0.8+	1998 09 19	402	0.5-	0.2+	1998 10 18	699	0.1+	0.1+
1998 06 30	704	0.3-	0.5-	1998 09 19	402	0.5-	0.2+	1998 10 18	699	0.3+	0.1+
1998 06 30	704	0.6+	0.5+	1998 09 19	402	0.5-	0.2+	1998 10 18	699	0.4+	0.1-
1998 06 30	704	1.3-	0.4+	1998 09 20	127	0.2+	0.4+	1998 10 22	610	0.5+	0.0
1998 06 30	704	(1.9-	2.5+)	1998 09 20	127	0.0	0.5+	1998 10 22	610	0.3+	0.6+
1998 06 30	704	0.0	1.1+	1998 09 23	017	0.9+	0.4+	1998 10 22	610	0.1+	1.1+
1998 08 27	761	0.3+	0.2+	1998 09 23	017	1.0+	0.5+	1998 10 27	561	0.6-	0.4-
1998 08 27	761	0.4+	0.1-	1998 09 25	699	0.5+	1.1+	1998 10 27	561	0.4-	0.0
1998 08 30	761	0.2-	0.8+	1998 09 25	699	0.7+	1.3+	1998 10 27	561	0.2-	0.2-

1998 08 30	761	0.0	0.3-	1998 09 25	699	0.4+	1.6+	1998 10 27	561	1.3+	0.6+
1998 09 01	681	0.1-	0.2-	1998 10 04	681	0.6-	0.2-	1998 11 20	561	0.2+	0.4+
1998 09 01	681	0.3-	0.7-	1998 10 04	681	0.1-	0.3-	1998 11 20	561	0.0	0.4+
1998 09 11	681	0.1+	0.1-	1998 10 04	681	0.2-	0.3-	1998 11 20	561	0.1-	0.4+
1998 09 11	681	0.0	0.0	1998 10 04	681	0.0	0.2-	1998 11 20	561	0.1+	0.4+

(9712)* 1973 SO₁ = 1978 EO₉ = 1989 EB₈

Discovered 1973 Sept. 19 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 18280)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	339.74420	(2000.0)	P	Q
n	0.08248936	ω 272.42500	+0.01502176	-0.99985076
a	5.2264173	Ω 176.67812	+0.96591720	+0.01230532
e	0.1289216	i 8.46820	+0.25841500	+0.01212623
P	11.95	H 10.8	G 0.15	U 0

Residuals in seconds of arc

1973 09 19	675	0.7-	0.3-	1973 10 04	675	0.3-	0.7+	1997 10 30	704	1.2+	0.5-
1973 09 19	675	1.3-	0.9+	1973 10 05	675	1.7+	0.8-	1997 10 30	704	0.3+	0.7-
1973 09 20	675	0.5-	0.6+	1973 10 05	675	1.3-	0.4+	1997 10 30	704	0.2-	0.3-
1973 09 20	675	1.4+	0.9+	1973 10 05	675	0.5+	1.4-	1998 10 19	699	0.0	0.1+
1973 09 24	675	0.3-	0.2+	1973 10 05	675	0.6-	0.2+	1998 10 19	699	0.2-	0.4+
1973 09 24	675	0.0	1.1-	1978 03 15	675	0.2+	0.2-	1998 10 19	699	0.6+	0.1-
1973 09 24	675	0.4-	0.9+	1978 03 16	675	1.3+	0.9-	1998 10 23	734	0.3-	0.3+
1973 09 24	675	0.4-	0.5+	1989 03 03	809	0.1+	0.8-	1998 10 23	734	0.1+	0.1+
1973 09 25	675	(1.1+	4.3-)	1989 03 03	809	0.7-	0.4-	1998 10 23	734	0.1-	0.1+
1973 09 25	675	0.4-	1.8+	1989 03 03	809	1.5-	0.5-	1998 10 25	734	0.1-	0.2-
1973 09 25	675	1.2-	0.2-	1996 09 13	809	0.1+	0.2-	1998 10 25	734	0.0	0.1+
1973 09 25	675	0.0	0.6+	1996 09 14	809	0.5-	0.2-	1998 10 25	734	0.2+	0.0
1973 09 29	675	1.1-	1.1-	1996 09 14	809	0.6-	0.4-	1998 10 29	704	0.2+	0.8+
1973 09 29	675	2.1+	2.5-	1996 09 14	809	0.5+	0.0	1998 10 29	704	0.1+	1.2+
1973 09 29	675	0.5-	0.3-	1996 09 15	809	0.7-	0.0	1998 10 29	704	1.2-	0.9+
1973 09 29	675	0.5+	0.6-	1996 09 15	809	0.7-	0.0	1998 10 29	704	0.7-	0.6+
1973 09 30	675	1.8+	2.2-	1997 10 10	557	0.1-	0.0	1998 10 29	704	1.2-	0.2-
1973 09 30	675	1.0+	0.4+	1997 10 10	557	0.0	0.1-	1998 11 11	704	0.3+	0.0
1973 09 30	675	0.0	0.6-	1997 10 12	557	0.6+	0.2+	1998 11 11	704	1.2+	0.2-
1973 09 30	675	0.2+	0.0	1997 10 12	557	0.3+	0.2+	1998 11 11	704	0.2+	0.9-
1973 10 04	675	0.1-	0.1-	1997 10 12	557	0.1+	0.1-	1998 11 11	704	0.1+	0.2-
1973 10 04	675	1.1-	1.3+	1997 10 30	704	0.9+	0.1+				
1973 10 04	675	1.1+	0.5-	1997 10 30	704	0.4+	0.2+				

(9713)* 1973 SP₁ = 1986 VM₈ = 1996 RC₂₇

Discovered 1973 Sept. 19 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 29607)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	310.11896	(2000.0)	P	Q
n	0.08269283	ω 311.31775	-0.29962291	-0.95360621
a	5.2178406	Ω 156.06926	+0.89552507	-0.29171632
e	0.0580317	i 4.14904	+0.32903033	-0.07440952
P	11.92	H 11.1	G 0.15	U 0

Residuals in seconds of arc

1973 09 19	675	0.1+	1.1-	1973 10 04	675	0.0	0.2-	1997 10 30	704	0.2+	1.2-
1973 09 19	675	0.7-	0.7+	1973 10 05	675	1.6-	0.8+	1997 10 30	704	(3.1+	3.0-)
1973 09 19	675	0.5-	1.0+	1973 10 05	675	0.9+	0.7-	1997 10 30	704	0.1-	0.4-
1973 09 19	675	0.1+	0.2+	1986 11 04	675	2.3+	0.1-	1998 10 14	699	0.2+	0.1+
1973 09 20	675	0.2-	0.0	1986 11 04	675	(3.3+	0.1+)	1998 10 14	699	0.0	0.1+
1973 09 20	675	0.5-	0.7+	1992 04 30	691	0.4-	0.2-	1998 10 14	699	0.8-	0.1-
1973 09 24	675	0.8+	0.6-	1992 04 30	691	0.4-	0.6-	1998 10 20	120	0.1+	0.7+
1973 09 24	675	0.9-	0.6+	1992 04 30	691	0.1+	0.1-	1998 10 20	120	0.1-	0.9-
1973 09 24	675	0.7+	0.1+	1996 09 10	809	0.7+	1.0+	1998 10 28	120	0.4-	0.6+
1973 09 24	675	1.0-	0.9-	1996 09 11	809	0.2-	0.3-	1998 10 28	120	0.3-	0.1-
1973 09 25	675	0.9-	0.7+	1996 09 11	809	0.2-	0.0	1998 10 29	704	0.9+	0.2+

1973 09 25	675	1.1+	1.0-	1996 09 12	809	0.0	0.6+	1998 10 29	704	1.0+	1.0-
1973 09 25	675	0.2-	0.9+	1996 09 12	809	0.1-	0.8+	1998 10 29	704	0.0	0.1-
1973 09 29	675	0.5+	0.7-	1996 09 13	809	0.4+	0.6+	1998 10 29	704	0.9-	0.5+
1973 09 29	675	1.1+	0.2-	1997 09 19	658	0.2+	0.1-	1998 10 29	704	0.4-	0.3-
1973 09 29	675	0.0	0.2-	1997 09 19	658	0.3-	0.2-	1998 11 11	704	0.1+	0.6+
1973 09 30	675	0.2+	0.4-	1997 09 19	658	0.3-	0.1-	1998 11 11	704	0.5+	0.1+
1973 09 30	675	0.1-	0.6-	1997 10 30	704	0.4+	1.8-	1998 11 11	704	1.7-	1.3+

(9714)* 1975 LF₁ = 1993 TT₁₁

Discovered 1975 June 1 by R. H. McNaught at Siding Spring.

Id. A. Lowe (*MPC* 23120)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	56.60658		(2000.0)	P	Q
<i>n</i>	0.17923564	ω	284.70900	+0.61560246	+0.77523958
<i>a</i>	3.1154429	Ω	25.02262	-0.53046319	+0.54047527
<i>e</i>	0.0545542	<i>i</i>	19.55182	-0.58278848	+0.32694049
<i>P</i>	5.50	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1954 07 31	675	0.3-	0.1-	1997 04 09	689	0.9-	0.3-	1998 09 21	704	0.3+	0.9-
1954 07 31	675	0.1+	0.3-	1998 09 01	426	0.4-	0.2+	1998 09 21	704	0.1-	0.8-
1975 06 01	413	0.4-	0.2+	1998 09 01	426	0.2-	0.3+	1998 09 28	699	0.1+	0.7+
1975 06 01	413	0.7+	0.3+	1998 09 01	426	0.4-	0.3+	1998 09 28	699	0.9+	0.0
1975 06 03	413	0.3-	0.7-	1998 09 03	426	1.1-	0.2-	1998 09 28	699	0.5+	0.5+
1975 06 03	413	0.4+	0.8-	1998 09 03	426	0.7-	0.2-	1998 11 20	561	0.2+	0.1+
1993 10 13	675	0.6+	1.0-	1998 09 21	704	0.2+	0.3+	1998 11 20	561	0.2+	0.2-
1993 10 13	675	0.6+	0.8-	1998 09 21	704	0.5+	0.7-	1998 11 22	561	1.4-	0.6+
1993 10 15	675	0.4+	0.0	1998 09 21	704	0.2+	0.1+	1998 11 22	561	0.2-	1.7+

(9715)* 1975 SB₁ = 1995 FO₁₄

Discovered 1975 Sept. 30 by S. J. Bus at Palomar.

Id. K. Ichikawa (*MPC* 25635)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	328.25207		(2000.0)	P	Q
<i>n</i>	0.17493519	ω	68.28475	-0.17954455	-0.97966984
<i>a</i>	3.1662941	Ω	32.46535	+0.82969555	-0.19968286
<i>e</i>	0.0437597	<i>i</i>	9.59817	+0.52855374	-0.01933276
<i>P</i>	5.63	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 09 30	675	1.5+	0.1-	1995 04 08	691	0.8-	0.7-	1998 10 29	704	0.8-	1.0-
1975 10 01	675	0.1-	1.3-	1995 04 23	691	0.5-	1.0-	1998 11 10	699	0.7-	0.3-
1975 10 02	675	2.2+	0.4+	1995 04 23	691	0.6-	0.3-	1998 11 10	699	0.3+	0.3-
1975 10 15	675	1.7-	1.9-	1995 04 23	691	0.8-	0.9-	1998 11 10	699	0.1+	0.6-
1975 10 16	675	(4.8-	4.8-)	1997 08 12	684	0.9-	0.4+	1998 11 18	704	0.3+	0.4+
1995 03 24	033	0.9+	0.1+	1997 08 12	684	0.1-	0.0	1998 11 18	704	0.2+	0.5-
1995 03 24	033	1.6+	0.5+	1997 08 12	684	0.4-	0.3-	1998 11 18	704	1.2+	0.3+
1995 03 27	691	0.8-	0.5-	1997 08 13	684	0.6+	0.4-	1998 11 18	704	0.2+	0.7+
1995 03 27	691	0.8-	0.2-	1997 08 13	684	0.7+	0.2-	1998 11 18	704	1.0-	0.5-
1995 03 27	691	0.6-	0.3-	1997 08 13	684	0.7+	0.4-	1998 11 24	561	0.1-	0.1-
1995 03 27	033	0.1-	0.3-	1998 10 29	704	1.0+	0.3-	1998 11 24	561	0.2-	0.0
1995 03 28	033	1.1+	0.7+	1998 10 29	704	0.8-	0.6+	1998 11 24	561	0.1-	0.1-
1995 04 08	691	0.7-	0.7-	1998 10 29	704	0.2+	0.6+				
1995 04 08	691	0.6-	0.6-	1998 10 29	704	0.5+	0.2+				

(9716)* 1975 UE = 1986 PB₄

Discovered 1975 Oct. 27 by P. Wild at Zimmerwald.

Id. T. Kobayashi (*MPC* 13151)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	101.90949		(2000.0)	P	Q
<i>n</i>	0.26122171	ω	142.42643	+0.80957587	+0.58701418
<i>a</i>	2.4236126	Ω	181.62940	-0.54769459	+0.75465802
<i>e</i>	0.2069339	<i>i</i>	2.26148	-0.21122865	+0.29309661
<i>P</i>	3.77	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 10 27	026	2.0-	0.4+	1990 09 21	372	(2.8+	0.4+)	1998 10 27	327	0.2+	0.1+
1975 10 28	026	1.4+	0.4+	1993 03 23	675	1.5-	0.5+	1998 10 27	327	0.3+	0.0
1975 10 29	026	0.6+	0.6+	1993 03 23	675	1.2-	0.1+	1998 10 27	327	0.2+	0.1-
1986 08 02	046	1.2-	1.2-	1993 03 24	675	0.6-	1.5+	1998 11 01	327	0.3+	0.3-
1986 08 02	046	1.0+	0.0	1993 03 24	675	0.1-	1.1-	1998 11 01	327	0.3+	0.3-
1986 08 03	046	0.2-	0.5+	1993 05 21	675	0.3-	0.1+	1998 11 01	327	0.2+	0.4-
1986 08 03	046	0.7-	1.0-	1993 05 21	675	0.1+	0.5-	1998 11 03	327	0.7+	0.9-
1986 08 05	046	2.3+	1.3+	1993 05 24	675	0.4-	0.5-	1998 11 03	327	0.6+	0.7-
1986 08 05	046	(3.6+	2.9+)	1993 05 24	675	0.3+	0.8-	1998 11 03	327	0.3-	0.1+
1986 08 07	046	0.2+	0.9-	1994 10 31	399	0.9-	1.3+	1998 11 04	327	0.2+	0.4-
1986 08 07	046	0.9-	1.3-	1994 10 31	399	0.5-	0.8+	1998 11 04	327	0.2+	1.2-
1986 08 09	095	0.6+	0.2+	1994 11 08	894	0.3-	0.4-	1998 11 04	327	0.2+	0.5-
1986 08 09	046	(3.4+	0.2+)	1994 11 08	894	(2.3-	0.1+)	1998 11 25	744	0.1+	0.6-
1986 08 09	046	1.0+	0.9-	1994 11 10	894	0.9-	1.5+	1998 11 25	744	0.0	1.0-
1990 09 18	026	(3.9-	0.7+)	1994 11 10	894	0.9-	0.7-	1998 11 27	744	0.4+	1.4-
1990 09 19	026	1.9-	0.4+	1997 05 12	689	1.1+	0.3-	1998 11 27	744	0.7+	0.3-
1990 09 21	372	0.3+	0.3-	1997 05 13	689	0.5+	0.2-	1998 11 27	744	0.1+	0.8-

(9717)* 1976 SR₅ = 1976 UT₆ = 1969 UX = 1990 RR₁₁ = 1996 HL₂

Discovered 1976 Sept. 24 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. H. Oishi (d, *JAM* 1664), C. M. Bardwell (d, *MPC* 9064), G. V. Williams (*MPC* 27301)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Bardwell

<i>M</i>	64.40861		(2000.0)	P	Q
<i>n</i>	0.27627484	ω	18.34496	+0.60705294	-0.79107295
<i>a</i>	2.3347578	Ω	34.39305	+0.71134804	+0.49864173
<i>e</i>	0.1089467	<i>i</i>	7.67439	+0.35421843	+0.35434449
<i>P</i>	3.57	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1969 10 16	095	0.8+	1.5-	1996 03 26	566	0.8+	1.0+	1997 09 02	566	0.5+	0.6+
1976 09 24	095	1.2-	0.1-	1996 03 26	566	1.0+	0.9+	1997 09 02	566	0.5-	0.7+
1976 10 22	381	0.4+	1.2+	1996 04 12	691	0.1-	0.3+	1997 09 02	566	0.2+	0.5+
1976 10 22	381	0.9-	0.0	1996 04 12	691	0.2-	0.2+	1997 09 02	566	0.3-	0.2+
1976 10 22	381	0.1-	1.0+	1996 04 12	691	0.1-	0.3+	1998 10 02	699	0.8+	0.5-
1976 10 22	381	0.6-	0.2-	1996 04 18	413	1.2+	0.9-	1998 10 02	699	0.0	0.7-
1976 10 24	381	2.0+	2.0+	1996 04 18	413	0.5+	0.6-	1998 10 02	699	1.0-	0.1+
1976 10 24	381	0.9-	0.8-	1996 04 19	691	1.5-	0.7-	1998 11 25	704	1.1-	0.3+
1976 10 24	381	0.3+	1.4-	1996 04 19	691	1.6-	0.1-	1998 11 25	704	0.9-	0.0
1989 05 07	675	0.5-	0.8-	1996 04 19	691	1.5-	0.2+	1998 11 25	704	0.3-	0.6+
1989 05 07	675	0.1+	0.3+	1996 04 21	413	0.1+	0.8-	1998 11 25	704	1.4+	0.4+
1990 09 14	675	0.2+	1.1-	1996 04 21	413	0.6+	0.4-	1998 11 25	704	1.4+	0.3+
1990 09 14	675	0.2+	1.8-	1997 09 02	566	0.5+	0.6+				
1996 03 26	566	0.9+	0.9+	1997 09 02	566	0.5-	0.6+				

(9718)* 1976 YR₁ = 1992 FF₁

Discovered 1976 Dec. 16 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. H. Kaneda (*MPC* 20009)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	9.08428		(2000.0)	P	Q
<i>n</i>	0.27105223	ω	24.90071	-0.33152460	-0.93782907
<i>a</i>	2.3646528	Ω	84.59677	+0.84738142	-0.34389873
<i>e</i>	0.1472828	<i>i</i>	5.92692	+0.41477243	-0.04701375
<i>P</i>	3.64	<i>H</i>	13.8	<i>G</i>	0.15

Residuals in seconds of arc

1954 12 21	675	0.7+	0.3-	1994 11 20	104	0.3+	1.1-	1996 05 23	809	(0.6+	2.2-)
1954 12 21	675	0.0	0.6+	1994 11 20	104	0.1+	0.7-	1996 05 23	809	1.0+	1.2-
1976 12 16	095	(0.7+	3.2-)	1994 11 20	104	0.1+	0.5-	1998 10 28	327	1.5-	1.7+
1976 12 18	095	0.5-	2.4-	1996 05 06	596	0.6-	0.1+	1998 10 28	327	0.2-	0.9+
1976 12 20	095	0.8+	2.1-	1996 05 06	596	0.9+	0.0	1998 10 28	327	0.3-	0.7+
1977 01 13	095	(3.0-	6.2-)	1996 05 06	596	0.4-	0.3+	1998 11 25	704	0.7+	0.3+
1992 03 24	399	0.7-	1.1-	1996 05 21	801	0.3-	0.6-	1998 11 25	704	(2.2+	2.0-)
1992 03 24	399	1.0-	1.3-	1996 05 22	809	(1.7-	5.1-)	1998 11 25	704	0.4+	1.3+
1992 03 28	399	1.4-	1.2+	1996 05 22	809	(1.7-	4.2-)	1998 11 25	704	1.6+	0.1+
1992 03 28	399	(2.6-	0.3+)	1996 05 22	809	(1.4-	4.2-)	1998 11 25	704	1.2+	0.3+
1994 11 14	104	0.0	0.6-	1996 05 23	801	0.2+	0.0	1998 12 01	699	0.4+	0.3-
1994 11 14	104	0.3-	0.1-	1996 05 23	801	0.4+	0.1+	1998 12 01	699	0.8+	1.0+
1994 11 14	104	0.4-	0.3+	1996 05 23	809	(0.4-	3.5-)	1998 12 01	699	0.1+	1.7+

(9719)* 1977 DF₂ = 1991 EQ₁

Discovered 1977 Feb. 18 by H. Kosai and K. Hurukawa at the Kiso Station of the Tokyo Astronomical Observatory.

Id. G. V. Williams (*MPC* 23120)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	294.60885		(2000.0)	P	Q
<i>n</i>	0.21436452	ω	122.75056	-0.61128748	-0.79137156
<i>a</i>	2.7650359	Ω	4.95282	+0.69318890	-0.54006690
<i>e</i>	0.0411189	<i>i</i>	5.08985	+0.38185961	-0.28645907
<i>P</i>	4.60	<i>H</i>	13.4	<i>G</i>	0.15

Residuals in seconds of arc

1977 02 18	381	0.8+	0.9-	1991 03 25	809	0.3-	1.0+	1996 03 22	809	1.8-	0.9-
1977 02 18	381	(5.1-	1.1+)	1991 03 25	809	0.2-	1.2+	1996 03 26	809	1.0+	0.5-
1977 02 19	381	1.1-	1.0+	1991 04 15	675	0.4-	0.0	1996 03 26	809	0.8+	1.2-
1977 02 19	381	(0.7-	6.9+)	1991 04 15	675	0.3+	0.0	1996 03 26	809	0.5+	0.6-
1977 03 12	381	0.2+	0.4+	1993 09 16	809	(2.4+	6.1+)	1998 10 19	699	0.5+	0.2+
1977 03 12	381	0.6+	0.3+	1993 09 16	809	(2.7+	6.8+)	1998 10 19	699	1.1+	0.7-
1989 11 02	675	0.2+	0.8+	1993 09 16	809	(1.6+	6.3+)	1998 10 19	699	0.3+	0.3-
1989 11 02	675	0.8+	0.6+	1993 09 18	675	0.6+	0.6+	1998 11 10	704	0.1+	0.2+
1991 02 13	675	1.5-	0.3-	1993 09 19	675	0.7-	1.4-	1998 11 10	704	0.2-	0.9-
1991 02 13	675	1.3-	0.0	1993 09 19	675	1.0-	0.9-	1998 11 10	704	0.1+	0.4-
1991 03 09	675	0.9+	0.6-	1993 09 23	809	(1.2+	3.4+)	1998 11 10	704	0.3-	0.3-
1991 03 09	675	0.7+	0.1+	1993 09 23	809	1.4+	1.7+	1998 11 10	704	0.7-	0.3+
1991 03 13	046	(4.0-	1.3-)	1993 09 23	809	0.5+	0.4+	1998 11 11	704	0.2+	0.2-
1991 03 13	046	(2.3-	1.5-)	1993 09 23	675	0.4-	1.0-	1998 11 11	704	0.4-	0.8-
1991 03 14	046	(1.1-	2.5-)	1993 09 23	675	0.6-	0.8-	1998 11 11	704	0.1-	1.1-
1991 03 14	046	0.0	1.8-	1996 03 22	809	0.4-	1.4-	1998 11 11	704	0.6+	0.4-
1991 03 25	809	0.0	0.9+	1996 03 22	809	1.2-	1.4-	1998 11 11	704	0.7+	0.5-

(9720)* 1980 FH₁ = 1990 DU

Discovered 1980 Mar. 16 by C.-I. Lagerkvist at the European Southern Observatory.

Id. H. Kaneda (*MPC* 16228)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	281.99116		(2000.0)	P	Q
<i>n</i>	0.19634564	ω	172.84536	-0.93447709	-0.35255090
<i>a</i>	2.9317158	Ω	346.19424	+0.31548218	-0.75542139
<i>e</i>	0.1094080	<i>i</i>	11.99719	+0.16499565	-0.55231005
<i>P</i>	5.02	<i>H</i>	13.1	<i>G</i>	0.15

Residuals in seconds of arc

1980 03 16	809	0.0	0.6+	1990 03 08	809	1.1+	0.3+	1995 02 27	098	0.3+	0.9+
1980 03 16	809	0.5+	0.4-	1990 03 08	809	1.1+	0.4+	1995 02 27	098	0.1-	0.5+
1980 03 16	809	0.5+	0.7+	1990 03 08	809	1.2+	0.4+	1995 03 28	801	0.0	0.3-
1980 03 16	809	0.2+	0.4-	1990 03 17	400	1.0-	0.7+	1995 03 28	801	(1.2+	2.1-)
1980 03 17	809	0.1-	0.0	1990 03 17	400	0.6+	0.3+	1995 03 30	801	0.1-	0.0
1980 03 17	809	0.1+	0.0	1992 09 02	809	0.5-	1.1+	1995 03 30	801	0.1-	0.2-
1980 03 17	809	0.1+	0.3+	1992 09 02	809	0.4-	0.9+	1998 10 18	704	0.4+	0.6-
1980 03 17	809	0.1-	0.2-	1992 09 02	809	1.9-	1.0-	1998 10 18	704	1.3+	0.6-
1980 03 23	809	0.4-	0.0	1992 09 03	809	0.1+	0.1-	1998 10 18	704	0.6-	0.3+
1980 03 23	808	1.3-	0.3-	1992 09 22	809	0.7+	0.9-	1998 10 18	704	1.5-	0.4-
1980 03 23	808	0.3-	0.1+	1992 09 22	809	0.5+	0.1+	1998 10 18	704	(0.7-	2.2-)
1990 02 28	400	1.1+	1.2+	1992 09 22	809	0.2-	0.6-	1998 11 14	704	0.2-	0.6+
1990 02 28	400	0.5+	1.1+	1992 09 23	809	1.8+	0.7-	1998 11 14	704	0.6+	0.0
1990 03 02	400	(3.0+	0.7+)	1992 09 23	809	1.6+	1.2-	1998 11 14	704	0.7+	0.7+
1990 03 02	400	(4.3+	0.4-)	1992 09 23	809	(2.1+	1.4-)	1998 11 14	704	0.9-	1.7+
1990 03 05	809	0.1-	0.7-	1995 02 21	411	0.9-	0.3-	1998 11 14	704	(0.3-	2.3+)
1990 03 05	809	0.1+	0.7-	1995 02 21	411	0.0	1.4-	1998 11 16	704	0.6+	0.4+
1990 03 05	809	0.3+	0.7-	1995 02 25	098	0.0	0.1-	1998 11 16	704	0.2-	0.7-
1990 03 07	809	0.8-	0.8-	1995 02 25	098	1.3-	0.4-	1998 11 16	704	0.4-	0.7-
1990 03 07	809	0.8-	0.8-	1995 02 26	098	1.0-	0.2-	1998 11 16	704	0.1+	0.5-
1990 03 07	809	0.7-	0.8-	1995 02 26	098	0.3-	0.7-				

(9721)* 1980 GB

Discovered 1980 Apr. 14 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	177.78382		(2000.0)	P	Q
<i>n</i>	0.28713221	ω	98.26540	-0.91924665	+0.36764381
<i>a</i>	2.2755241	Ω	103.39573	-0.39341668	-0.84473770
<i>e</i>	0.1033288	<i>i</i>	8.32189	-0.01445409	-0.38891676
<i>P</i>	3.43	<i>H</i>	14.1	<i>G</i>	0.15

Residuals in seconds of arc

1980 03 14	688	0.9+	2.2-	1990 02 24	675	1.0-	1.5-	1998 09 21	704	0.7+	0.7-
1980 04 14	688	1.0-	0.9+	1990 02 24	675	0.1+	1.5-	1998 09 21	704	1.1+	1.7-
1980 04 16	688	0.4+	1.0+	1990 03 30	675	0.4-	0.4+	1998 09 21	704	0.9+	0.5-
1980 04 19	688	0.3-	0.9-	1990 03 30	675	0.9-	0.5+	1998 09 22	699	0.3-	0.4+
1980 05 10	688	1.9+	0.8-	1991 08 06	675	0.6-	0.2-	1998 09 22	699	0.3-	0.2-
1980 05 10	688	1.4-	1.1-	1991 08 06	675	1.3-	0.6-	1998 09 22	699	0.4+	0.3+
1988 10 09	675	0.0	1.6-	1991 09 16	675	0.8-	1.3+	1998 11 11	699	0.2-	0.2-
1988 10 09	675	0.7+	0.4+	1991 09 16	675	0.7-	0.8-	1998 11 11	699	0.0	0.8+
1988 11 04	675	0.6-	1.0-	1998 09 21	704	1.2+	0.9-	1998 11 11	699	0.3+	1.4+
1988 11 04	675	0.7+	0.0	1998 09 21	704	0.6+	0.8-				

(9722)* 1981 EZ

Discovered 1981 Mar. 4 by H. Debehogne and G. DeSanctis at the European Southern Observatory.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	324.80401		(2000.0)	P	Q
<i>n</i>	0.26366296	ω	93.08954	-0.40351147	-0.91494213
<i>a</i>	2.4086293	Ω	20.71359	+0.83058162	-0.36981339
<i>e</i>	0.1744195	<i>i</i>	1.24841	+0.38381331	-0.16161358
<i>P</i>	3.74	<i>H</i>	15.4	<i>G</i>	0.15

Residuals in seconds of arc

1951 02 04	675	0.2-	0.5+	1981 03 09	809	2.3-	0.5+	1996 04 19	566	(3.1-	1.4+)
1951 02 04	675	1.1+	0.0	1981 03 09	809	2.3-	0.3+	1996 04 19	566	(3.7-	1.4+)
1981 02 02	413	0.2-	0.6-	1981 03 09	809	1.9-	0.2+	1998 08 24	910	0.7+	0.4+
1981 02 13	413	0.7-	1.0-	1981 03 10	809	1.7+	0.9-	1998 08 24	910	0.7+	0.4+
1981 03 01	809	0.7-	0.4+	1981 03 10	809	1.8+	0.9-	1998 08 24	910	0.5+	0.6+
1981 03 01	809	0.8-	0.6+	1981 03 10	809	1.8+	0.9-	1998 10 10	699	0.2+	1.9+
1981 03 01	809	0.6-	1.0+	1981 03 11	809	0.5+	0.1+	1998 10 10	699	0.6-	1.7+
1981 03 02	809	(3.2-	0.9-)	1981 03 11	809	0.8+	0.2+	1998 10 10	699	0.6+	0.9+
1981 03 02	809	(2.8-	0.8-)	1981 03 11	809	1.0+	0.1+	1998 10 19	699	1.3+	0.3+

1998 DEC. 8

M.P.C. 33193

1981 03 02	809	2.4−	0.8−	1981 03 11	413	0.3−	0.9+	1998 10 19	699	1.6+	0.2+
1981 03 02	413	2.5−	0.5+	1981 03 11	413	1.3+	0.2−	1998 10 19	699	1.0+	0.9+
1981 03 02	413	0.1−	0.2−	1981 03 12	809	1.1+	0.4+	1998 10 29	704	(0.0	2.2−)
1981 03 03	809	1.9−	0.4+	1981 03 12	809	1.5+	0.2+	1998 10 29	704	0.2+	1.2−
1981 03 03	809	1.6−	0.3+	1981 03 12	809	1.7+	0.0	1998 10 29	704	0.6−	0.4−
1981 03 03	809	1.3−	0.1+	1981 03 15	809	0.6+	0.4+	1998 10 29	704	0.3−	0.1+
1981 03 03	413	1.6−	0.2+	1981 03 15	809	0.9+	0.4+	1998 10 29	704	0.3−	0.1−
1981 03 03	413	1.4+	0.2−	1981 03 15	809	0.9+	0.5+	1998 11 10	704	0.1−	0.4−
1981 03 04	809	(3.8−	1.5+)	1981 03 16	413	(2.8−	1.0+)	1998 11 10	704	0.3+	1.6−
1981 03 04	809	(3.5−	1.5+)	1981 03 16	413	0.5+	0.5+	1998 11 10	704	0.0	0.4−
1981 03 04	809	(3.3−	1.6+)	1981 03 29	413	1.0−	0.5+	1998 11 10	704	1.1+	1.1−
1981 03 05	809	0.6−	0.4−	1981 03 29	413	1.4+	0.1−	1998 11 11	704	0.2+	0.4−
1981 03 05	809	0.1−	0.5−	1981 04 07	413	1.6−	0.3+	1998 11 11	704	0.8+	0.1+
1981 03 05	809	0.2+	0.5−	1981 04 07	413	0.6+	0.3+	1998 11 11	704	1.0−	0.3−
1981 03 06	809	1.3+	1.1−	1981 04 08	413	1.2−	0.7+	1998 11 11	704	0.6+	0.7+
1981 03 06	809	1.7+	1.1−	1981 04 08	413	0.6+	0.0	1998 11 15	691	0.7−	0.5−
1981 03 06	809	1.9+	1.2−	1981 04 11	413	0.2−	0.2−	1998 11 15	691	0.6−	0.3−
1981 03 07	809	0.3−	0.5+	1981 04 11	413	0.9+	0.1+	1998 11 15	691	0.6−	0.3−
1981 03 07	809	0.1−	0.5+	1981 04 30	413	(3.3−	0.9−)	1998 11 16	566	0.2−	0.1+
1981 03 07	809	0.1+	0.5+	1981 05 02	413	2.0−	2.2+	1998 11 16	566	0.3+	0.0
1981 03 07	413	1.3−	1.2+	1981 05 02	413	0.1+	0.4−	1998 11 16	566	0.2−	0.2−
1981 03 07	413	1.7+	0.0	1996 03 16	566	0.3−	1.2−	1998 11 19	691	1.8−	0.1+
1981 03 08	809	0.7−	0.2+	1996 03 16	566	0.1+	1.5−	1998 11 19	691	1.1−	0.1+
1981 03 08	809	0.3+	0.2+	1996 03 16	566	0.2+	1.2−	1998 11 19	691	1.3−	0.1+
1981 03 08	809	0.5+	0.2+	1996 04 19	566	(2.9−	1.0+)				

(9723)* 1981 EP₁₃ = 1985 RH₁

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.
Id. E. Bowell (*MPC* 10159)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
				Williams							
<i>M</i>	101.13568	(2000.0)		P		Q					
<i>n</i>	0.31307119	ω	18.82163	+0.84993853		+0.52259274					
<i>a</i>	2.1480315	Ω	309.48601	−0.49387541		+0.74584733					
<i>e</i>	0.1182962	<i>i</i>	4.98710	−0.18355266		+0.41304792					
<i>P</i>	3.15	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1981 02 12	413	0.3−	0.9−	1985 09 09	046	0.3+	0.4−	1998 09 29	704	0.4+	0.4+
1981 02 12	413	1.0+	1.1−	1985 09 09	046	1.6−	0.3+	1998 09 29	704	0.1+	0.8−
1981 03 01	413	0.6−	0.5+	1985 09 11	046	0.9−	0.4−	1998 09 29	704	0.1+	0.5−
1981 03 01	413	0.6+	0.0	1985 09 11	046	(4.6−	0.8+)	1998 09 29	704	0.3−	0.7−
1981 03 06	413	0.8−	0.2+	1985 09 12	688	0.4+	1.2+	1998 09 29	704	0.7+	0.2−
1981 03 06	413	1.4+	0.5−	1985 09 12	688	(4.3−	1.3+)	1998 11 10	704	0.5+	0.9−
1981 03 08	413	0.6−	0.3+	1985 09 12	046	(2.7+	0.0)	1998 11 10	704	0.2−	0.4+
1981 03 08	413	1.2+	0.2+	1985 09 12	046	0.2−	0.1+	1998 11 10	704	1.6−	0.1+
1981 03 12	413	0.8−	0.5−	1985 09 13	046	1.0−	0.4+	1998 11 10	704	1.3+	0.1−
1981 03 12	413	1.2+	1.1−	1985 09 13	046	(3.4−	2.0−)	1998 11 15	758	0.1−	0.3+
1981 04 06	413	1.7−	0.8+	1989 12 31	413	0.1+	0.1−	1998 11 15	758	0.2−	0.2+
1981 04 06	413	1.1+	0.1−	1989 12 31	413	0.2+	1.3+	1998 11 15	758	0.1+	0.0
1981 04 08	413	(2.6−	0.6+)	1990 01 29	033	1.4−	0.7+	1998 11 18	758	0.2+	0.5+
1981 04 08	413	0.2−	1.4−	1990 01 29	033	0.6+	1.0+	1998 11 18	758	0.5+	0.5+
1981 04 09	413	2.1−	0.8+	1994 06 12	691	0.0	0.1−	1998 11 18	758	0.6+	0.4+
1981 04 09	413	0.1+	0.3−	1994 06 12	691	0.4−	0.2−	1998 11 20	595	0.1−	0.5−
1981 05 03	413	1.0−	1.9−	1998 08 31	704	0.6−	1.6−	1998 11 20	595	0.3+	0.8−
1981 05 03	413	0.7+	0.2+	1998 08 31	704	0.1+	0.3−	1998 11 25	758	0.2−	0.1+
1985 08 20	688	0.4+	0.7−	1998 08 31	704	0.9+	1.5−	1998 11 25	758	0.3−	0.1+
1985 08 20	688	2.2+	0.2−	1998 08 31	704	0.1−	1.5−	1998 11 25	758	0.4−	0.0

(9724)* 1981 EW₁₇ = 1988 AU

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.
Id. B. G. Marsden (*MPC* 15064)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	4.37878	(2000.0)		P		Q					
<i>n</i>	0.26496258	ω	222.34938	+0.16637599		−0.98585711					
<i>a</i>	2.4007468	Ω	218.08629	+0.91320998		+0.16174876					
<i>e</i>	0.1517172	<i>i</i>	1.86913	+0.37197655		+0.04385322					
<i>P</i>	3.72	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1978 06 10	675	1.6+	0.0	1981 04 08	413	0.1−	0.4−	1998 11 24	704	0.2+	0.1−
1978 06 10	675	0.9−	0.5−	1981 04 11	413	0.6−	1.2+	1998 11 24	744	0.2−	0.3−
1981 02 09	413	0.2+	1.5+	1981 04 11	413	1.8+	1.6−	1998 11 24	704	0.4+	0.4−
1981 02 13	413	0.1+	0.4+	1981 04 30	413	0.2+	0.3−	1998 11 24	744	0.0	0.6−
1981 03 02	413	0.4−	0.6+	1981 05 02	413	0.2+	0.4−	1998 11 24	704	0.8+	0.8−
1981 03 03	413	1.5−	1.0+	1988 01 11	033	0.2+	0.9+	1998 11 24	704	0.2−	0.1+
1981 03 03	413	0.4+	1.8−	1988 01 11	033	0.4+	1.0+	1998 11 27	744	0.1−	0.2−
1981 03 07	413	0.1−	0.7+	1992 02 28	675	(1.7+	2.3+)	1998 11 27	744	0.6+	0.4−
1981 03 07	413	(2.7+	1.5−)	1992 02 28	675	(2.9+	1.8+)	1998 11 27	744	0.1−	0.5−
1981 03 11	413	0.2+	0.7+	1994 10 01	675	0.4−	1.1−	1998 11 27	426	0.1−	0.3−
1981 03 11	413	0.5+	0.9−	1994 10 01	675	0.1+	0.6+	1998 11 27	426	0.0	0.3−
1981 03 16	413	0.9−	0.2+	1998 09 29	704	1.0−	1.3+	1998 11 27	426	0.0	0.5−
1981 03 29	413	1.0−	0.2−	1998 09 29	704	0.4−	0.8+	1998 11 29	426	0.1+	0.1+
1981 03 29	413	0.9+	2.3−	1998 09 29	704	1.2+	0.3+	1998 11 29	426	0.5+	0.2+
1981 04 08	413	1.0−	0.9+	1998 09 29	704	1.2−	0.0	1998 11 29	426	0.4−	0.1+

(9725)* 1981 EE₁₉ = 1996 AJ₁₀

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.
Id. G. V. Williams (*MPC* 26737)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
				Williams							
<i>M</i>	162.45228	(2000.0)		P		Q					
<i>n</i>	0.25581707	ω	51.87875	−0.20840884		+0.97793604					
<i>a</i>	2.4576292	Ω	206.10296	−0.90725496		−0.19879684					
<i>e</i>	0.1664525	<i>i</i>	1.87326	−0.36531382		−0.06419438					
<i>P</i>	3.85	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1981 02 09	413	0.0	0.1+	1981 05 02	413	0.9+	0.5−	1998 10 29	704	0.3+	0.2+
1981 02 13	413	0.0	0.0	1992 01 10	691	0.3+	0.3−	1998 10 29	704	(2.2+	0.3+)
1981 03 02	413	1.2−	1.0+	1992 01 10	691	0.1−	0.4−	1998 10 29	704	(2.4+	0.7+)
1981 03 02	413	(4.7+	2.0−)	1992 01 10	691	0.2−	0.5−	1998 10 29	704	1.9+	1.0+
1981 03 03	413	1.1−	0.8+	1996 01 13	691	0.3+	0.0	1998 11 15	691	0.8−	0.5−
1981 03 03	413	1.5+	0.8−	1996 01 13	691	0.0	0.0	1998 11 15	691	0.6−	0.3−
1981 03 07	413	0.7+	0.7+	1996 01 13	691	0.0	0.1−	1998 11 15	691	0.6−	0.1−
1981 03 07	413	0.5+	0.4−	1996 01 20	691	0.2−	0.1−	1998 11 21	691	0.5−	0.4+
1981 03 11	413	0.8−	1.3+	1996 01 20	691	0.3−	0.2−	1998 11 21	691	0.2−	0.4+
1981 03 16	413	(4.3+	0.3−)	1996 01 20	691	0.0	0.2−	1998 11 21	691	0.5−	0.2+
1981 03 29	413	1.8−	0.5+	1996 01 27	691	0.0	0.1−	1998 11 27	691	0.2+	0.0
1981 04 11	413	1.1+	0.1−	1996 01 27	691	0.2−	0.1−	1998 11 27	691	0.4+	0.5+
1981 04 11	413	1.3+	0.9−	1996 01 27	691	0.1+	0.0	1998 11 27	691	0.1+	0.0

(9726)* 1981 EY₁₉ = 1991 GS₁₂

Discovered 1981 Mar. 2 by S. J. Bus at

1981 02 09	413	0.6−	0.3−	1995 01 25	369	1.2+	0.4+	1998 11 11	704	0.1+	0.3−
1981 02 13	413	1.9+	0.5+	1996 03 22	809	0.8+	0.5+	1998 11 11	704	1.1−	0.4+
1981 03 02	413	(2.8−	1.5+)	1996 03 22	809	1.2+	0.4−	1998 11 11	910	0.0	0.0
1981 03 02	413	(3.6+	2.0−)	1996 03 22	809	0.1+	0.2+	1998 11 11	910	0.3−	0.4−
1981 03 03	413	0.3−	0.1−	1996 03 26	809	0.7+	1.2+	1998 11 11	910	0.1−	0.0
1981 03 07	413	0.4−	0.5+	1996 03 26	809	0.5+	1.5+	1998 11 12	910	0.1+	0.0
1981 03 11	413	0.6−	0.9+	1996 03 26	809	0.5−	2.1+	1998 11 12	910	0.2+	0.2+
1981 03 11	413	0.9+	0.1+	1998 10 29	704	(2.4−	1.9+)	1998 11 12	910	0.2+	0.1−
1981 03 29	413	0.5−	0.1+	1998 10 29	704	0.8−	1.1+	1998 11 17	910	1.1+	0.2+
1981 03 29	413	0.8+	0.0	1998 10 29	704	0.6−	0.8+	1998 11 17	910	0.9+	0.4+
1981 04 08	413	(3.0+	1.6−)	1998 10 29	704	0.1−	0.5+	1998 11 19	910	0.1+	0.4+
1981 04 08	413	(3.3+	2.6−)	1998 10 29	704	0.1+	0.3+	1998 11 19	910	0.1+	0.2+
1981 04 30	413	0.6−	0.1−	1998 11 10	699	0.6−	0.7−	1998 11 19	910	0.1+	0.1+
1981 05 02	413	0.5+	0.5−	1998 11 10	699	0.3−	1.3−	1998 11 26	691	(2.2−	0.1−)
1991 04 08	809	0.2+	1.3−	1998 11 10	699	1.6−	0.6−	1998 11 26	691	(2.3−	0.2−)
1991 04 08	809	1.2−	1.0−	1998 11 10	910	0.3+	0.5+	1998 11 26	691	(2.2−	0.0)
1991 04 08	809	1.6−	1.4−	1998 11 11	910	0.5+	0.5+				
1991 04 19	675	1.7−	0.8−	1998 11 11	910	0.4+	0.5+				

(9727)* 1981 EW₂₄ = 1989 WO₃

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

Id. S. Nakano (*MPC* 15880)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i> 54.22620				(2000.0)				Asher			
<i>n</i> 0.20105723				ω 192.55015				P			
<i>a</i> 2.8857338				Ω 162.16163				Q			
<i>e</i> 0.0765070				<i>i</i> 2.35458				+0.99568747			
<i>P</i> 4.90				<i>H</i> 13.0				+0.09191340			
				<i>G</i> 0.15				<i>U</i> 1			

Residuals in seconds of arc

1949 11 21	675	0.1−	0.2+	1991 03 09	675	0.9−	0.2−	1998 10 24	046	0.2−	0.1+
1949 11 21	675	1.4+	0.9+	1991 03 09	675	0.0	1.5−	1998 10 24	046	0.0	0.8+
1952 05 24	675	0.3−	0.1+	1991 04 20	675	1.6−	0.1−	1998 10 24	046	0.1−	0.5+
1952 05 24	675	(2.6−	0.6+)	1991 04 20	675	1.4+	1.2−	1998 10 25	761	0.5−	0.0
1953 08 15	675	0.2+	0.9−	1991 05 12	688	0.2+	0.4+	1998 10 25	046	0.2−	0.2+
1953 08 15	675	0.5−	1.5−	1991 05 12	688	0.3+	0.4+	1998 10 25	046	0.2+	0.7+
1981 02 09	413	1.9+	0.3−	1991 05 13	688	0.5+	0.1+	1998 10 25	046	0.0	0.5+
1981 02 13	413	0.5−	1.4−	1991 05 13	688	0.9+	0.2+	1998 10 25	046	0.2−	0.2+
1981 03 02	413	1.5−	0.7−	1993 10 13	675	1.3+	1.1−	1998 10 25	046	0.0	0.4+
1981 03 06	413	1.3−	1.0−	1993 10 13	675	0.6−	1.2−	1998 10 29	704	0.3+	0.5+
1981 03 06	413	0.6+	1.2−	1993 10 15	675	0.2−	1.0−	1998 10 29	704	0.9−	0.3+
1981 03 11	413	1.9−	0.5−	1995 01 07	691	0.5−	1.0+	1998 10 29	704	0.5+	0.3−
1981 03 11	413	1.3+	1.8−	1995 01 07	691	0.5−	0.7+	1998 10 29	704	0.4−	0.2−
1981 03 15	413	1.8+	1.9−	1995 01 07	691	0.4−	0.5+	1998 10 29	704	0.9−	0.7−
1981 04 05	413	0.6−	0.5+	1996 04 12	104	0.5+	0.9+	1998 11 10	704	0.7+	0.4+
1981 04 05	413	(2.3+	1.5−)	1996 04 12	104	0.3+	0.4+	1998 11 10	704	1.2+	0.4−
1981 04 06	413	1.4−	0.2−	1996 04 12	104	0.7+	0.2+	1998 11 10	704	1.2+	0.3+
1981 04 06	413	0.7−	1.9−	1998 10 15	704	(2.2+	1.5+)	1998 11 10	704	0.3+	0.5−
1981 04 07	413	1.4−	1.0+	1998 10 15	704	0.6+	2.0−	1998 11 10	704	0.1−	2.0−
1981 04 07	413	(3.2+	2.0−)	1998 10 15	704	(2.9+	1.1−)	1998 11 11	704	0.5−	0.4+
1981 04 10	413	0.2−	0.3+	1998 10 15	704	0.2+	0.5−	1998 11 11	704	0.1+	0.0
1981 04 10	413	0.1−	0.1−	1998 10 19	727	0.6+	0.4+	1998 11 11	704	0.9+	0.9+
1981 04 26	413	(2.6+	1.0−)	1998 10 19	727	0.1+	0.2+	1998 11 11	704	0.2−	1.9−
1981 05 01	413	1.0+	0.9+	1998 10 19	727	0.1+	0.9−	1998 11 11	704	0.7−	0.2+
1988 10 07	675	0.3−	1.3−	1998 10 20	699	0.3+	0.7+	1998 11 16	566	0.1+	0.0
1988 10 07	675	0.7−	1.8−	1998 10 20	699	0.4+	0.2+	1998 11 16	566	0.0	0.0
1989 11 29	033	0.3−	0.6+	1998 10 20	699	0.4+	0.4+	1998 11 16	566	0.2−	0.3−
1989 11 29	033	0.8−	0.5−	1998 10 24	761	0.2−	0.3+				
1989 12 02	033	0.3−	0.3+	1998 10 24	761	0.4+	1.4+				

(9728)* 1981 EX₃₈

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

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5						Williams					
M	99.05627		(2000.0)			P			Q		
n	0.25282288		ω	31.33936		+0.55617418			+0.82148799		
a	2.4769950		Ω	272.73798		−0.78617322			+0.47098629		
e	0.1874971		i	7.23575		−0.26944749			+0.32144892		
P	3.90		H	14.6		G	0.15		U	2	
Residuals in seconds of arc											
1954 04 09	675	0.5+	0.6+	1983 12 30	675	1.0−	0.1−	1998 10 18	704	0.1−	0.3+
1954 04 09	675	0.2+	0.2−	1983 12 30	675	0.6+	1.0+	1998 10 18	704	1.4+	1.3−
1981 02 02	413	1.8+	1.8−	1985 03 23	413	1.8−	0.1+	1998 10 18	704	0.2+	1.3−
1981 03 02	413	2.3−	1.1+	1985 03 23	413	1.5+	0.7−	1998 10 18	704	0.2+	1.1−
1981 03 02	413	1.4+	0.4−	1990 09 15	095	(3.4−	2.9+)	1998 11 14	704	0.8+	1.0+
1981 03 07	413	0.8−	0.6+	1994 10 01	675	0.6−	0.1−	1998 11 14	704	0.6+	1.4+
1981 03 07	413	(4.9+	1.6−)	1994 10 01	675	1.4−	0.1−	1998 11 14	704	0.9+	0.2+
1981 03 10	413	1.4−	1.0+	1998 07 27	691	0.4+	0.3+	1998 11 14	704	0.6−	0.1−
1981 03 10	413	(4.2+	0.7−)	1998 07 27	691	1.0−	0.4+	1998 11 14	704	(2.3−	1.1+)
1981 04 29	413	1.2+	1.0−	1998 07 27	691	1.0−	0.2+				

(9729)* 1981 RQ = 1985 QU

Discovered 1981 Sept. 7 by A. Mrkos at Kleť.

Id. T. Kobayashi (*MPC* 12205), H. Oishi (unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i> 64.64252				(2000.0)				P			
<i>n</i> 0.23812275				ω 28.17359				Q			
<i>a</i> 2.5779161				Ω 336.04796				+0.99228168			
<i>e</i> 0.1838310				<i>i</i> 13.12236				+0.01456297			
<i>P</i> 4.14				<i>H</i> 13.5				+0.12314622			
				<i>G</i> 0.15				<i>U</i> 2			

Residuals in seconds of arc

1981 09 07	046	1.4+	0.1-	1994 12 08	046	(2.6+	0.5+)	1996 02 28	046	0.2-	0.3-
1981 09 07	046	1.5+	0.3-	1994 12 08	046	(3.3+	0.2+)	1998 10 04	327	0.4+	1.5+
1981 09 07	046	1.0+	1.0-	1994 12 08	046	(3.1+	0.3+)	1998 10 04	327	0.7+	1.1+
1981 09 07	046	(2.8-	0.2-)	1995 01 05	046	0.3-	0.2+	1998 10 04	327	0.3+	0.3+
1981 09 21	046	(1.2+	4.9+)	1995 01 05	046	0.4+	0.4+	1998 11 13	046	0.3+	0.4+
1981 09 21	046	0.0	1.7+	1995 01 06	046	0.2-	0.1-	1998 11 13	046	0.3+	0.5+
1981 09 22	046	0.5+	1.3+	1995 01 07	046	0.1-	0.3+	1998 11 13	046	0.3+	0.4+
1985 08 21	046	1.4-	0.3-	1995 01 07	046	0.2-	0.1-	1998 11 14	704	0.7+	0.4-
1985 08 21	046	2.6-	2.0-	1995 01 07	046	0.4-	0.3+	1998 11 14	704	0.3-	0.5-
1985 08 21	046	(4.3-	1.1-)	1995 02 28	046	1.0+	0.1-	1998 11 14	704	1.1+	2.1+
1985 08 21	046	(7.1-	0.5+)	1995 02 28	046	0.3-	0.3-	1998 11 14	704	0.5-	0.0
1990 12 20	801	0.4-	0.1-	1995 02 28	046	1.6-	0.9-	1998 11 16	704	0.2+	0.6-
1990 12 20	801	0.2-	0.0	1995 03 01	046	0.7-	0.2-	1998 11 16	704	0.3+	0.5-
1991 02 09	801	0.6-	0.1+	1995 03 01	046	0.5-	0.2+	1998 11 16	704	0.7+	1.4-
1991 02 09	801	0.5-	0.5-	1995 03 01	046	0.1+	0.1+	1998 11 16	704	0.2-	1.3-
1991 02 11	801	0.0	0.5+	1996 02 27	046	0.4-	0.4-	1998 11 16	704	0.1-	2.0-
1991 02 11	801	0.9-	1.3+	1996 02 27	046	0.4+	0.8-	1998 11 18	046	0.1+	0.1+
1994 12 06	046	0.9-	0.7+	1996 02 27	046	0.5+	0.1-	1998 11 18	046	0.0	0.1+
1994 12 06	046	0.2-	0.5+	1996 02 28	046	1.1+	0.6-	1998 11 18	046	0.1+	0.1+
1994 12 06	046	0.6-	0.1+	1996 02 28	046	1.1+	0.5-				

Residuals in seconds of arc

1982 03 23	686	(1.3– 5.3+)	Y	1996 03 24	809	(5.0– 2.9–)	1997 12 01	910	0.1– 1.2+
1982 03 24	686	(1.3– 3.1–)	Y	1996 03 24	809	(5.5– 2.4–)	1997 12 03	910	0.1– 0.1+
1982 03 25	686	(1.8– 6.6–)	Y	1996 03 24	809	(5.3– 3.1–)	1997 12 03	910	0.2– 0.0
1982 04 01	675	0.9– 1.3–		1996 03 27	809	0.4– 0.5+	1997 12 03	910	0.0 0.2+
1982 04 13	675	1.2– 0.3+		1996 03 27	809	1.0– 1.1+	1998 10 28	327	0.2– 1.0+
1989 03 15	402	(8.1– 1.2+)		1996 03 27	809	1.6– 1.2+	1998 10 28	327	0.3– 1.2+
1989 03 15	402	(7.2– 1.0+)		1996 04 15	809	1.1+ 0.5–	1998 10 28	327	0.4– 0.9+
1989 03 15	402	(6.8– 0.7+)		1996 04 15	809	0.8+ 0.9–	1998 11 25	704	2.5+ 1.0–
1989 03 29	402	2.0+ 0.4–		1996 04 15	809	0.8+ 0.9–	1998 11 25	704	1.4+ 0.4–
1989 03 29	402	1.9+ 0.8+		1996 04 17	809	0.7+ 0.6+	1998 11 25	704	0.7– 1.4–
1989 03 30	402	(3.3+ 0.5–)		1996 04 17	809	1.2+ 0.5+	1998 11 25	704	0.0 0.6+
1989 03 30	402	0.2– 1.3+		1996 04 17	809	0.9+ 0.3–	1998 11 25	704	0.9– 1.1–
1991 12 10	033	0.9– 0.8–		1996 05 13	566	1.7– 0.1–	1998 12 01	699	1.0– 0.2+
1991 12 10	033	0.5– 0.4–		1996 05 13	566	1.6– 0.1–	1998 12 01	699	0.2+ 0.5+
1991 12 12	033	0.4– 0.0		1996 05 13	566	1.5– 0.1–	1998 12 01	699	0.5– 0.0
1992 01 07	801	0.6+ 0.4+		1997 12 01	910	0.0 1.1+			
1992 01 07	801	0.4+ 0.4+		1997 12 01	910	0.0 1.3+			

(9731)* 1982 JD₁ = 1993 JC

Discovered 1982 May 15 at Palomar.

Id. S. Nakano (*MPC* 22399)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	180.82867		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26836346	ω	36.29003	−0.31828710	+0.94422269
a	2.3804211	Ω	215.37216	−0.90050810	−0.32899142
e	0.1735919	i	8.39144	−0.29627434	−0.01442736
P	3.67	H	13.7	G 0.15	U 1

Residuals in seconds of arc

1982 05 15	675	1.1+ 1.9–	1993 05 23	361	(0.7– 2.6+)	1997 07 26	610	0.8+ 0.4+
1982 05 16	675	1.1– 0.8+	1993 05 24	691	0.3– 0.1–	1997 07 26	610	1.1+ 0.7+
1982 05 16	675	(1.4– 2.5+)	1993 05 24	691	0.4– 0.2–	1998 10 20	699	0.7– 0.4+
1982 05 17	675	(2.0– 2.7+)	1993 05 24	691	0.2– 0.1–	1998 10 20	699	0.5+ 0.6–
1982 05 18	675	0.0 0.9+	1993 05 24	361	0.1– 0.7+	1998 10 20	699	0.1+ 0.8+
1993 05 14	894	0.2– 1.5–	1993 05 24	361	1.4+ 0.7+	1998 11 24	704	0.5+ 0.5–
1993 05 14	894	1.1+ 0.9+	1993 05 24	361	0.8+ 0.3+	1998 11 24	704	0.0 1.4–
1993 05 15	894	0.4+ 0.6+	1993 05 26	894	0.6– 0.0	1998 11 24	704	0.2+ 1.5–
1993 05 15	894	0.1+ 0.3–	1993 05 26	894	1.0– 1.3–	1998 11 24	704	(2.3– 0.9–)
1993 05 16	894	0.1+ 0.5–	1996 01 12	608	0.2+ 0.6+	1998 11 24	704	0.4+ 0.9–
1993 05 16	894	0.5– 0.2–	1996 01 12	608	0.4+ 0.6+	1998 11 27	426	0.6– 1.2–
1993 05 18	894	0.2– 0.3–	1996 01 29	608	0.3+ 0.8+	1998 11 27	426	0.7+ 0.3–
1993 05 18	894	0.9– 1.6–	1996 01 29	608	0.3+ 0.5+	1998 11 27	426	0.1+ 1.1–
1993 05 20	894	0.2+ 0.6+	1997 07 15	610	0.8– 0.2–	1998 11 28	426	0.6– 0.1–
1993 05 20	894	0.8+ 0.9–	1997 07 15	610	0.6– 0.0	1998 11 28	426	0.9– 0.6–
1993 05 23	894	1.1– 0.9–	1997 07 15	610	0.3– 0.1+			
1993 05 23	894	0.8– 0.7–	1997 07 26	610	0.2+ 0.1–			

(9732)* 1984 SJ₇ = 1989 AA₃

Discovered 1984 Sept. 24 at Smolyan.

Id. B. G. Marsden (*MPC* 14350)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	94.77915		(2000.0)		P	Q	
n	0.29360742	ω	68.08811		+0.98267546	-0.14554580	
a	2.2419437	Ω	300.11562		+0.07819293	+0.88688513	
e	0.1238727	i	7.62250		+0.16803215	+0.43846457	
P	3.36	H	14.0	G	0.15	U	2

Residuals in seconds of arc

1984 09 22	054	0.3– 0.8–	1994 08 14	398	0.0 0.4–	1996 03 19	691	0.5– 1.2–
1984 09 24	071	(3.5– 0.3+)	1994 09 03	801	0.4+ 0.2–	1996 03 27	691	0.7– 1.4–
1984 09 24	071	2.4+ 1.7–	1994 09 03	801	0.1+ 0.1–	1996 03 27	691	0.7– 1.3–
1984 09 24	071	(2.8– 0.8–)	1994 09 03	098	0.3– 0.8–	1996 03 27	691	0.8– 1.1–
1984 09 24	071	(3.4+ 1.1–)	1994 09 05	098	0.9+ 1.5–	1998 10 15	699	0.5+ 0.8+
1984 09 24	054	0.2– 0.3+	1994 09 05	098	1.1+ 2.0–	1998 10 15	699	0.5– 0.8–

1988 12 29	413	(10.6– 0.5–)	1994 09 07	801	0.3– 0.3+	1998 10 15	699	0.1+ 0.3+
1989 01 04	413	1.7– 0.9+	1994 09 07	801	0.2– 0.2–	1998 10 30	704	(0.3– 2.4+)
1989 01 04	413	0.4– 0.3–	1994 09 12	108	0.1– 0.3+	1998 10 30	704	0.3+ 0.3+
1989 01 08	675	1.0+ 0.6+	1994 09 12	108	0.0 0.0	1998 10 30	704	(0.5+ 2.6–)
1989 01 08	675	0.4+ 1.2+	1996 03 13	691	0.7– 0.7–	1998 10 30	704	2.4– 1.5–
1989 01 10	413	0.0 0.8+	1996 03 13	691	0.2– 0.8–	1998 12 01	699	2.2+ 0.2–
1989 01 10	413	0.7+ 0.6–	1996 03 13	691	0.7– 0.8–	1998 12 01	699	0.1+ 0.0
1994 08 14	398	0.4– 0.2–	1996 03 19	691	0.7– 1.3–	1998 12 01	699	1.0+ 0.0
1994 08 14	398	0.4+ 0.4–	1996 03 19	691	1.1– 1.5–			

(9733)* 1985 SC₃ = 1991 LJ₅

Discovered 1985 Sept. 19 by N. S. Chernykh and L. I. Chernykh at the

Crimean Astrophysical Observatory.

Id. G. V. Williams (*MPC* 19018)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	54.14430		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.30458807	ω	130.27461	+0.98559632	+0.15237067
a	2.1877320	Ω	221.11490	−0.16793098	+0.93304216
e	0.1982921	i	6.40620	+0.01997721	+0.32590722
P	3.24	H	15.3	G 0.15	U 2

Residuals in seconds of arc

1985 09 19	095	1.2– 0.2–	1998 09 26	704	0.0 1.2–	1998 10 28	704	0.3+ 0.4–
1985 09 21	095	1.0+ 0.4+	1998 09 26	704	0.2– 0.4–	1998 10 28	704	0.2+ 0.4+
1985 10 18	095	(2.1+ 10.6–)	1998 09 26	704	0.0 0.2–	1998 10 28	704	0.2– 0.4–
1991 06 06	809	0.9– 0.1+	1998 09 26	704	0.7+ 1.7–	1998 10 29	704	1.2– 0.2–
1991 06 06	809	0.2+ 0.3+	1998 10 02	689	0.1+ 0.1–	1998 10 29	704	0.9– 0.4–
1991 06 06	809	(0.9+ 2.2+)	1998 10 14	704	0.3– 1.0+	1998 10 29	704	1.1– 0.4+
1991 06 08	809	0.5+ 0.4–	1998 10 14	704	(0.6– 2.5+)	1998 10 29	704	0.4– 0.7–
1991 06 08	809	0.9+ 1.5–	1998 10 14	704	1.0– 1.3+	1998 10 29	704	1.9– 0.1–
1991 06 08	809	0.2– 1.3–	1998 10 14	704	0.9– 0.9+	1998 11 10	704	0.3+ 0.3–
1997 04 03	704	0.0 0.3+	1998 10 14	704	0.1+ 0.1+	1998 11 10	704	0.1– 0.4–
1997 04 03	704	0.4+ 0.6+	1998 10 15	704	0.1+ 1.4+	1998 11 10	704	0.3+ 1.8–
1997 04 05	704	1.4– 0.1–	1998 10 15	704	0.3+ 1.5+	1998 11 10	704	1.4+ 1.3–
1997 04 05	704	0.5+ 0.4–	1998 10 15	704	0.5+ 1.1+	1998 11 11	704	0.6+ 0.2–
1998 08 28	704	0.9+ 0.9–	1998 10 15	704	0.0 1.1+	1998 11 11	704	0.7+ 0.7–
1998 08 28	704	0.4– 1.1+	1998 10 15	704	0.6– 0.8+	1998 11 11	704	0.6+ 1.1–
1998 08 28	704	(2.7+ 0.4–)	1998 10 26	910	1.7+ 0.6+	1998 11 11	704	0.9+ 1.3–
1998 08 28	704	1.0– 0.2+	1998 10 26	910	0.5+ 0.3+	1998 11 11	704	0.4+ 1.9–
1998 08 28	704	0.2– 0.2+	1998 10 26	910	0.4+ 0.4+			
1998 09 26	704	0.0 1.4+	1998 10 28	704	0.1– 0.2–			

(9734)* 1986 CB₂ = 1993 DU

Discovered 1986 Feb. 12 by H. Debehogne at the European Southern

Observatory.

Id. K. Ichikawa (*MPC* 22052)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	197.26228		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.28513131	ω	285.95091	-0.70043695	$+0.71018518$
a	2.2861573	Ω	299.36369	-0.61976841	-0.65448682
e	0.1192763	i	4.66546	-0.35394237	-0.25939164
P	3.46	H	14.1	G	0.15
				U	1

Residuals in seconds of arc

1986 02 12	809	0.5– 0.4–	1993 02 20	511	(1.8– 9.2–)	1994 09 06	809	0.9+ 0.5–
1986 02 12	809	0.1– 0.3–	1993 02 21	511	1.3– 0.2–	1995 11 24	596	0.1+ 0.3–
1986 02 12	809	0.1+ 0.3–	1993 02 21	399	1.0– 0.7–	1995 11 24	596	0.1– 0.1–
1986 02 13	809	0.7– 0.0	1993 02 21	399	0.1– 0.2–	1995 11 24	596	0.5+ 0.4–
1986 02 13	809	0.6– 0.1–	1993 02 25	399	1.4+ 0.8–	1998 09 29	704	1.0– 0.2+
1986 02 13	809	0.5– 0.2–	1993 02 25	399	(2.9+ 2.4–)	1998 09 29	704	0.5– 0.2+
1986 02 14	809	0.0 0.1–	1994 08 10	809	0.4– 1.1–	1998 09 29	704	0.0 0.0
1986 02 14	809	0.1+ 0.2–	1994 08 10	809	1.3– 1.2–	1998 09 29	704	(3.3– 0.1+)
1986 02 14	809	0.2+ 0.4–	1994 08 10	809	1.2– 1.3–	1998 10 29	704	0.3+ 0.8+
1986 02 15	809	0.8– 0.1–	1994 08 11	809	0.5+ 0.0	1998 10 29	704	1.3+ 0.2–
1986 02 15	809	0.6– 0.1–	1994 08 11	809	0.8+ 0.6+	1998 10 29	704	(0.6+ 2.6–)

1986 02 15	809	0.7−	0.2+	1994 08 11	809	0.4+	0.0	1998 10 29	704	0.5−	0.2+
1986 02 16	809	0.4−	0.0	1994 08 12	809	1.9+	0.4−	1998 10 29	704	0.4+	0.0
1986 02 16	809	0.2−	0.0	1994 08 12	809	0.3+	0.3−	1998 11 10	704	0.5−	0.5−
1986 02 16	809	0.1−	0.0	1994 08 12	809	0.6+	0.5+	1998 11 10	704	0.1+	0.5−
1986 02 17	809	1.1+	0.2+	1994 08 13	809	0.8+	0.0	1998 11 10	704	1.7+	0.2+
1986 02 17	809	1.4+	0.1+	1994 08 13	809	0.5−	0.1−	1998 11 10	704	0.5+	0.5+
1986 02 17	809	1.5+	0.1+	1994 08 13	809	0.1+	0.2+	1998 11 10	704	1.1−	0.7+
1993 02 19	511	0.4−	0.6−	1994 09 05	809	0.2+	0.1−	1998 11 11	704	0.7−	0.5−
1993 02 19	511	(0.0	2.9−)	1994 09 05	809	0.9−	0.5−	1998 11 11	704	0.4−	0.7−
1993 02 19	511	(1.1+	3.0−)	1994 09 05	809	0.4−	0.7−	1998 11 11	704	0.2+	0.0
1993 02 19	511	(4.4+	2.8−)	1994 09 06	809	(2.4+	1.8−)	1998 11 11	704	0.3+	0.2−
1993 02 20	511	(2.3−	8.4−)	1994 09 06	809	0.7+	0.5−	1998 11 11	704	1.1−	1.0+

(9735)* 1986 JD = 1986 LE = 1990 OP₂

Discovered 1986 May 2 at Palomar in the course of the International Near-Earth Asteroid Survey.

Id. S. Singer-Brewster (d, *MPC* 10936), S. Nakano (*MPC* 16871)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

M	165.62076		(2000.0)		P	Q	
n	0.27317144	ω	158.71716		-0.14163135	+0.97821873	
a	2.3524073	Ω	102.89083		-0.92922926	-0.07852634	
e	0.1718702	i	8.95598		-0.34128220	-0.19215028	
P	3.61	H	13.6	G	0.15	U	1

Residuals in seconds of arc

1980 11 29	675	1.9+	0.1−	1990 07 30	675	0.3+	1.0+	1996 01 09	608	0.1−	0.1+
1980 12 01	675	1.7+	0.3−	1990 07 30	675	0.2−	0.0	1996 01 09	608	0.5+	0.2−
1986 05 02	675	0.8−	1.9+	1990 09 14	675	0.5+	1.7−	1996 01 12	608	0.0	0.9+
1986 05 03	675	1.6−	1.1+	1990 09 14	675	1.0+	1.1−	1996 01 12	608	0.1+	0.0
1986 05 03	675	0.7−	1.5−	1991 12 28	691	0.6−	0.6−	1996 01 13	608	0.1−	0.7−
1986 06 03	675	(12.4+	0.7+)	1991 12 28	691	1.0−	0.4−	1996 01 13	608	0.0	0.7−
1986 06 03	675	(10.2+	0.9+)	1991 12 28	691	1.4−	0.4+	1997 05 13	689	0.2+	0.3−
1986 06 08	675	0.0	0.5+	1993 03 23	801	0.2+	0.3−	1998 10 19	699	0.2−	0.0
1986 06 08	675	(1.0−	4.2+)	1993 03 23	801	0.4+	0.4−	1998 10 19	699	0.1−	0.7−
1990 07 25	675	0.0	0.2−	1993 03 27	801	0.2+	0.1+	1998 10 19	699	0.8−	0.9+
1990 07 25	675	0.1+	0.5−	1993 03 27	801	0.0	0.0	1998 11 13	704	0.2−	0.4−
1990 07 28	675	0.4+	0.7+	1993 04 18	801	0.5+	0.2−	1998 11 13	704	1.3−	0.9+
1990 07 28	675	0.2+	0.1+	1993 04 18	801	0.7+	0.1−	1998 11 13	704	0.4+	0.3+
1990 07 29	675	0.1−	0.3+	1993 04 24	801	0.4+	0.6−	1998 11 13	704	0.2−	0.6+
1990 07 29	675	0.5−	0.5+	1993 04 24	801	0.4+	0.6−	1998 11 13	704	0.8−	1.0

(9736)* 1986 QP₂ = 1981 SG₈ = 1989 CT₄

Discovered 1986 Aug. 28 by H. Debehogne at the European Southern Observatory.

Id. D. W. E. Green (*MPC* 14787), S. Nakano (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	86.37520		(2000.0)	P	Q
n	0.17622961	ω	191.13327	+0.76249333	+0.64621821
a	3.1507706	Ω	128.56223	−0.59044834	+0.71505707
e	0.1883780	i	2.32466	−0.26452727	+0.26663722
P	5.59	H	13.4	G 0.15	U 1

Residuals in seconds of arc

1981 09 24	033	1.0−	1.0−	1995 01 29	691	0.1+	0.4−	1998 11 11	699	0.9+	0.1−
1981 09 24	033	0.3−	1.3−	1995 02 01	691	0.2−	0.4−	1998 11 11	704	1.5+	1.0+
1981 10 25	675	0.6+	0.3−	1995 02 01	691	0.1+	0.3−	1998 11 11	699	0.5+	0.8+
1981 10 26	675	0.3−	0.0	1995 02 01	691	0.0	0.5−	1998 11 11	699	1.3+	0.4−
1986 07 27	413	0.8+	0.6−	1995 02 07	691	0.0	0.1+	1998 11 14	691	0.5−	0.0
1986 07 27	413	(2.2+	2.6+)	1995 02 07	691	0.5−	0.6−	1998 11 14	691	0.6−	0.1−
1986 08 01	413	0.6+	1.9−	1995 02 07	691	0.5−	0.7−	1998 11 14	691	0.4−	0.3−
1986 08 01	413	0.9+	0.7+	1996 04 19	691	0.6−	0.4+	1998 11 18	704	0.1−	0.6+
1986 08 28	809	0.4−	0.6−	1996 04 19	691	0.6−	0.2+	1998 11 18	704	0.1−	0.2−
1986 08 28	809	0.2−	0.5−	1996 04 19	691	0.3−	0.2−	1998 11 18	704	1.2−	0.0
1986 08 28	809	0.0	0.4−	1996 04 24	691	0.2+	0.0	1998 11 18	704	0.2−	1.4+
1986 08 30	809	0.1+	0.1+	1996 04 24	691	0.1+	0.1+	1998 11 18	704	0.8+	1.3+

1986 08 30	809	0.1+	0.1+	1996 04 24	691	0.1+	0.0	1998 11 21	704	0.6−	0.1−
1986 08 30	809	0.1+	0.1+	1998 10 29	704	0.4−	0.4+	1998 11 21	704	0.0	0.8−
1986 09 01	809	0.2−	0.8+	1998 10 29	704	0.6+	0.2+	1998 11 21	704	0.9+	1.2−
1986 09 01	809	0.1−	0.7+	1998 10 29	704	0.4−	0.8−	1998 11 21	704	1.6−	0.3−
1986 09 01	809	0.1−	0.4+	1998 10 29	704	0.4−	0.1+	1998 11 24	704	0.5+	0.6+
1989 02 02	033	1.3+	0.2+	1998 10 29	704	0.3−	0.7+	1998 11 24	704	1.0+	0.3+
1989 02 03	033	0.8+	0.4+	1998 11 11	704	0.4−	0.5−	1998 11 24	704	0.7+	0.9−
1995 01 29	691	0.1−	0.3−	1998 11 11	704	0.4+	1.2−	1998 11 24	704	1.0−	0.1+
1995 01 29	691	0.4−	0.3−	1998 11 11	704	1.2−	0.7+				

(9737)* 1986 SC₂ = 1986 RJ₁₇ = 1982 QB₂

Discovered 1986 Sept. 29 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Id. S. Nakano (*MPC* 14790), G. V. Williams (d, *MPC* 21936)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

M	116.60154		(2000.0)	P	Q
n	0.25592574	ω	57.14949	+0.29942036	+0.94180976
a	2.4569335	Ω	231.03958	−0.92784795	+0.25009964
e	0.1793451	i	11.33129	−0.22236372	+0.22459862
P	3.85	H	13.6	G 0.15	U 2

Residuals in seconds of arc

1982 08 16	095	0.5−	0.3−	1994 10 16	292	0.9−	0.5−	1998 10 29	704	0.4−	1.0+
1982 08 23	095	1.0−	0.1−	1994 10 16	292	0.6−	1.5+	1998 10 29	704	0.5+	0.9+
1986 09 09	095	(0.7−	6.5−)	1997 03 10	689	(4.0−	0.2−)	1998 10 29	704	0.7+	0.1+
1986 09 29	095	(4.1+	7.9−)	1997 05 26	689	0.2+	0.1+	1998 10 29	704	0.1−	1.6+
1986 10 03	095	(0.2−	4.4−)	1997 05 27	689	0.8−	0.4+	1998 11 10	704	0.2−	0.2+
1990 10 19	801	0.8+	0.1−	1997 05 28	816	0.2−	0.0	1998 11 10	704	0.6−	0.5−
1990 10 20	801	0.7+	0.2−	1997 05 28	816	0.1−	0.2−	1998 11 10	704	(1.8+	2.2−)
1990 10 21	801	0.6+	0.2−	1997 05 28	816	0.2−	0.1−	1998 11 10	704	1.0+	0.9−
1990 10 21	801	0.7+	0.1−	1997 05 28	816	0.2−	0.1−	1998 11 11	704	0.5+	0.4+
1990 11 15	801	0.7+	0.3+	1997 06 04	816	0.0	0.3−	1998 11 11	704	0.2−	0.7+
1990 11 15	801	0.3+	0.2+	1997 06 04	816	0.1+	0.3−	1998 11 11	704	0.0	1.1−
1990 11 20	801	0.4+	0.1−	1997 06 10	689	0.8+	1.2+	1998 11 11	704	1.0−	0.2−
1990 11 20	801	0.7+	0.3−	1998 10 19	699	0.6+	0.6−	1998 11 11	704	0.0	0.2−
1993 05 24	801	0.6+	0.0	1998 10 19	699	0.8−	0.4−	1998 11 17	691	1.1−	0.2−
1993 05 24	801	0.3+	0.9−	1998 10 19	699	0.0	0.8−	1998 11 17	691	1.0−	0.2−

(9738)* 1987 DF₆ = 1980 RR₇

Discovered 1987 Feb. 23 by H. Debehogne at the European Southern Observatory.

Id. E. Bowell (*MPC* 18286)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	213.86858		(2000.0)	P	Q
n	0.22642250	ω	248.75237	-0.76569526	+0.63411127
a	2.6659766	Ω	330.28408	-0.47948108	-0.67440366
e	0.1207865	i	12.55655	-0.42872913	-0.37826261
P	4.35	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1980 09 13	675	0.2+	0.3+	1987 03 02	809	0.2+	0.2+	1997 10 25	688	0.1+	0.6+
1980 09 14	675	0.3−	0.0	1987 03 02	809	0.3+	0.3+	1997 10 25	688	0.4−	0.0
1987 02 23	809	0.3+	0.5−	1987 03 03	809	0.7−	0.1+	1997 10 26	688	0.2−	0.1+
1987 02 23	809	0.2+	0.1−	1987 03 03	809	0.2−	0.2+	1997 10 26	688	0.3+	0.0
1987 02 23	809	0.1+	0.1+	1987 03 03	809	0.1−	0.3+	1998 10 18	704	(3.1+	0.7+)
1987 02 24	809	0.7+	0.9−	1987 03 04	809	0.1+	0.1−	1998 10 18	704	1.0+	0.7−
1987 02 24	809	0.3+	0.8−	1987 03 04	809	0.3+	0.0	1998 10 18	704	1.1−	0.1+
1987 02 24	809	0.4+	0.5−	1987 03 04	809	0.2+	0.0	1998 10 18	704	1.2+	0.6+
1987 02 25	809	0.5+	0.2−	1987 03 05	809	0.7−	0.1+	1998 11 14	704	0.1−	0.4+
1987 02 25	809	0.7+	0.3+	1987 03 05	809	0.5−	0.1+	1998 11 14	704	(3.3+	2.1−)
1987 02 25	809	1.0+	0.6+	1987 03 05	809	0.7−	0.5+	1998 11 14	704	0.7−	0.3+
1987 02 27	809	0.3−	0.4+	1987 03 06	809	0.6−	0.2−	1998 11 14	704	0.7−	1.7+
1987 02 27	809	0.2−	0.7+	1987 03 06	809	0.5−	0.1−	1998 11 16	704	0.5+	0.1−
1987 02 27	809	0.1+	0.7+	1987 03 06	809	0.6−	0.2−	1998 11 16	704	0.2+	0.5−
1987 02 28	809	0.1+	0.4−	1987 03 07	809	0.6−	0.0	1998 11 16	704	0.3+	1.0−

1987 02 28 809 0.5+ 0.4- 1987 03 07 809 0.5- 0.1- 1998 11 16 704 0.3- 1.3-
 1987 02 28 809 0.6+ 0.4- 1987 03 07 809 0.6- 0.1-
 1987 03 02 809 0.1+ 0.2+ 1997 08 28 428 0.1+ 0.5-

(9739)* 1987 SH₇ = 1994 AS₁

Discovered 1987 Sept. 26 by C. S. Shoemaker at Palomar.

Id. S. Nakano (*MPC* 22951)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	82.03431	(2000.0)	<i>P</i>	Asher	<i>Q</i>
<i>n</i>	0.36490764	ω	53.93133	+0.91979105	+0.25140007
<i>a</i>	1.9394597	Ω	289.77464	-0.37357104	+0.79602574
<i>e</i>	0.0789857	<i>i</i>	18.67394	+0.12012120	+0.55058245
<i>P</i>	2.70	<i>H</i>	13.7	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1987 09 26	675	0.7-	1.5+	1995 07 01	801	0.2-	0.1+	1998 08 29	704	0.8+	1.4-
1987 10 18	675	1.1-	1.3+	1995 07 01	801	0.0	0.0	1998 08 29	704	1.2+	0.3+
1987 10 20	675	0.8-	1.1+	1995 07 28	596	0.6-	0.2+	1998 08 29	704	0.1+	0.5+
1987 11 22	675	0.1-	1.8-	1995 07 28	596	0.6-	0.1+	1998 08 29	704	0.3+	0.2-
1987 11 23	675	0.4+	0.5-	1995 07 28	596	0.5-	0.1+	1998 08 29	704	0.3+	0.3-
1994 01 06	675	0.8+	1.7-	1995 07 29	596	0.3-	0.0	1998 10 15	127	0.8-	0.4-
1994 01 06	675	0.4-	0.3-	1995 07 29	596	0.4-	0.0	1998 10 15	127	0.8-	0.5-
1994 01 08	675	0.8-	1.2-	1995 07 30	801	0.1+	0.3+	1998 10 31	127	1.4+	0.2+
1994 01 08	402	2.1+	1.9+	1995 07 30	801	0.4+	1.0-	1998 10 31	127	1.2+	0.0
1994 01 08	402	0.9+	0.8+	1995 08 01	801	0.8+	1.0-	1998 11 03	127	0.2+	0.1+
1994 01 09	402	0.2+	0.6+	1995 08 01	801	0.5+	0.1-	1998 11 03	127	0.1+	0.1+
1994 01 09	402	1.3+	2.1+	1995 08 07	596	0.1-	0.5+	1998 11 17	704	0.2-	0.5-
1994 02 11	675	1.1-	0.1-	1995 08 07	596	0.1+	0.6+	1998 11 17	704	1.0+	0.7-
1994 02 11	675	0.7-	0.1-	1995 08 07	596	0.0	0.2+	1998 11 17	704	1.4-	0.2+
1995 06 30	801	0.2+	0.2+	1995 11 22	801	0.4+	0.1+	1998 11 17	704	1.0-	1.7-
1995 06 30	801	0.1+	1.1+	1997 03 09	689	0.2-	0.2+	1998 11 17	704	1.6-	0.9+

(9740)* 1987 ST₁₁ = 1969 UQ₂

Discovered 1987 Sept. 23 by H. Debehogne at the European Southern Observatory.

Id. H. Kaneda (*MPC* 16580)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	18.78985	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.27172972	ω	355.47673	+0.75496134	-0.65180734
<i>a</i>	2.3607208	Ω	45.47617	+0.60477918	+0.64961833
<i>e</i>	0.1310511	<i>i</i>	5.79411	+0.25352616	+0.39133517
<i>P</i>	3.63	<i>H</i>	13.8	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1969 10 18	095	(1.6-	5.6-)	1987 09 26	809	0.9-	0.9-	1998 10 15	704	0.3+	0.6+
1969 11 05	095	(3.6+	3.0-)	1987 09 26	809	1.0-	0.9-	1998 10 15	704	0.2-	0.6+
1971 03 24	675	1.7+	0.7-	1987 09 30	809	1.0+	0.6-	1998 10 15	704	0.2+	0.2-
1971 03 26	675	(4.4+	2.7-)	1987 09 30	809	1.2+	0.6-	1998 10 29	704	0.1+	0.0
1971 03 26	675	(4.2+	1.9-)	1987 09 30	809	1.4+	0.5-	1998 10 29	704	0.3-	0.6+
1971 03 27	675	(0.5+	2.9-)	1993 03 24	675	0.8+	0.8+	1998 10 29	704	0.2+	0.1-
1971 04 02	675	1.6-	0.1+	1993 04 21	691	0.2-	0.1+	1998 10 29	704	0.2+	0.5+
1971 04 16	675	0.8-	0.2+	1993 04 21	691	0.2-	0.2-	1998 10 29	704	0.3-	0.7+
1971 04 16	675	0.9+	0.1+	1993 04 21	691	0.3-	0.5-	1998 11 10	704	0.4-	0.0
1971 05 13	675	0.0	0.9+	1998 09 29	704	1.6+	0.5+	1998 11 10	704	0.1+	0.0
1971 05 14	675	0.7+	0.8+	1998 09 29	704	1.6-	0.5+	1998 11 10	704	0.1-	0.3-
1971 05 16	675	0.2+	0.5+	1998 09 29	704	1.3-	0.3+	1998 11 10	704	0.3+	1.0-
1987 09 23	809	(2.7-	0.5+)	1998 09 29	704	0.4-	0.8+	1998 11 10	704	0.2+	0.7-
1987 09 23	809	0.1-	1.4+	1998 10 14	704	0.2-	1.2+	1998 11 11	704	0.1+	0.5+
1987 09 23	809	0.0	1.4+	1998 10 14	704	1.3+	0.7+	1998 11 11	704	0.7-	0.4+
1987 09 24	809	0.4-	0.4+	1998 10 14	704	0.8+	0.6-	1998 11 11	704	0.1+	0.2+
1987 09 24	809	0.1-	0.4+	1998 10 14	704	1.0-	1.6-	1998 11 11	704	0.6+	0.7-
1987 09 24	809	0.0	0.4+	1998 10 14	704	1.0-	1.0-	1998 11 11	704	0.1-	1.0-
1987 09 24	095	(6.2-	0.4-)	1998 10 15	704	0.1-	0.8+				
1987 09 26	809	1.1-	0.9-	1998 10 15	704	0.5+	0.5+				

(9741)* 1987 UU₄ = 1973 UP₁ = 1980 TC₁₃

Discovered 1987 Oct. 22 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. S. Nakano (*MPC* 15250)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	27.19353	(2000.0)	<i>P</i>	Asher	<i>Q</i>
<i>n</i>	0.28136305	ω	51.54125	-0.15832520	-0.98372559
<i>a</i>	2.3065241	Ω	47.79062	+0.86642930	-0.17967734
<i>e</i>	0.1619070	<i>i</i>	6.58600	+0.47353288	-0.00014960
<i>P</i>	3.50	<i>H</i>	13.9	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1973 10 26	095	0.4+	0.2+	1996 05 16	566	1.2-	0.2+	1997 09 02	566	0.5+	0.0
1980 10 10	095	(3.5+	6.0-)	1996 05 16	566	0.9-	1.0+	1997 09 02	566	0.6+	0.3+
1980 10 17	095	0.9+	0.8-	1996 05 16	566	1.0-	0.5+	1998 10 11	699	0.2-	0.3+
1987 10 22	095	1.1-	0.6+	1996 05 16	566	1.5-	0.4+	1998 10 11	699	0.4-	0.4+
1987 10 27	095	(1.5+	3.4-)	1996 05 16	566	1.2-	0.6+	1998 10 11	699	0.2+	0.9+
1987 11 21	095	0.4-	1.2-	1996 05 19	809	(0.7-	2.5+)	1998 10 15	699	0.7-	0.5+
1990 09 14	675	0.3-	1.4-	1996 05 19	809	(0.1-	2.4+)	1998 10 15	699	0.0	0.3-
1990 09 14	675	0.4+	0.8-	1996 05 19	809	0.3+	1.4+	1998 10 15	699	0.1+	0.9+
1996 04 18	809	1.3+	1.2-	1996 05 22	809	1.3+	0.1-	1998 11 25	704	0.2+	0.0
1996 04 18	809	1.5+	1.7-	1996 05 22	809	(2.9+	0.8-)	1998 11 25	704	0.4+	0.2-
1996 04 18	809	1.9+	1.7-	1996 05 22	809	(2.4+	0.4-)	1998 11 25	704	0.1+	0.2+
1996 04 20	809	(3.0+	2.2-)	1997 09 01	566	0.5-	0.8+	1998 11 25	704	0.5+	0.6-
1996 04 20	809	(2.7+	2.5-)	1997 09 01	566	0.4-	1.1+	1998 11 25	704	0.7+	0.7-
1996 04 20	809	(2.8+	3.2-)	1997 09 01	566	0.0	0.6+				
1996 05 16	566	1.5-	0.9+	1997 09 02	566	0.4+	0.3+				

(9742)* 1987 WT₁ = 1991 PQ₇

Discovered 1987 Nov. 26 at Tautenburg.

Id. H. Kaneda (*MPC* 19021)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	293.04600	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.17229704	ω	45.31111	-0.76247612	-0.64208982
<i>a</i>	3.1985330	Ω	94.57315	+0.56872262	-0.72383891
<i>e</i>	0.0971596	<i>i</i>	4.58550	+0.30852026	-0.25254287
<i>P</i>	5.72	<i>H</i>	12.9	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1987 11 26	033	0.2-	0.2-	1992 10 25	675	0.2+	0.6+	1998 10 29	704	0.4-	0.2+
1987 11 26	033	0.1+	0.6-	1992 10 25	675	0.0	0.4-	1998 10 29	704	0.4-	0.1-
1987 12 22	033	0.3-	1.0-	1992 10 31	033	0.5-	0.7-	1998 10 29	704	0.0	0.2+
1987 12 25	033	0.3-	1.3-	1992 10 31	033	0.2-	0.4-	1998 10 29	704	0.6+	0.1-
1987 12 25	033	0.3+	0.4+	1992 11 01	033	0.2+	0.1+	1998 10 29	704	0.3+	0.8+
1989 03 07	675	0.6+	0.7-	1992 11 23	033	0.3-	0.1-	1998 11 11	704	0.4+	0.1+
1989 03 07	675	0.7+	2.3-	1992 11 23	033	0.7-	0.7+	1998 11 11	699	0.4-	0.6+
1989 03 29	675	0.5-	0.4-	1994 01 08	675	1.5+	1.0+	1998 11 11	704	0.7+	0.3-
1989 03 29	675	0.6+	0.7-	1994 01 08	675	0.7+	1.4+	1998 11 11	699	0.1-	0.5+
1991 08 06	809	0.6+	1.2-	1994 01 18	033	0.3-	0.6-	1998 11 11	704	0.8+	0.0
1991 08 06	809	0.4+	1.3-	1994 01 18	033	1.4-	0.0	1998 11 11	699	0.1+	0.2+
1991 08 06	809	(0.6+	2.7-)	1994 01 19	033	0.7-	0.9-	1998 11 18	704	0.9+	0.5+
1991 08 14	809	0.3+	1.5-	1994 04 03	033	0.8-	0.2-	1998 11 18	704	0.6+	0.4-
1991 08 14	809	(0.4+	2.3-)	1994 04 03	033	0.6-	0.4+	1998 11 18	704	0.7+	1.8-
1991 08 14	809	0.0	1.0-	1994 04 06	033	0.3-	0.7-	1998 11 18	704	0.8+	1.8-
1992 09 23	033	1.2+	0.4+	1995 04 23	691	0.7-	0.3+	1998 11 21	113	1.2-	0.6-
1992 09 25	033	0.2-	0.6+	1995 04 23	691	0.4-	0.3+	1998 11 22	113	0.0	0.1-
1992 09 25	033	0.2+	0.8+	1995 04 23	691	0.5-	0.1-	1998 11 22	113	0.5-	0.8-
1992 09 27	033	1.7-	0.3+	1998 10 15	098	0.9+	1.0+	1998 11 28	120	1.6-	0.6+
1992 09 28	033	0.2-	0.5+	1998 10 15	098	(1.4-	2.4-)	1998 11 28	120	1.2+	1.0-

(9743)* 1988 GD

Discovered 1988 Apr. 8 by E. F. Helin at Palomar.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	277.49580		(2000.0)	P	Q
<i>n</i>	0.26020909	ω	127.47614	-0.66606283	+0.74052702
<i>a</i>	2.4298963	Ω	100.51156	-0.70982215	-0.59249390
<i>e</i>	0.1066937	<i>i</i>	5.21284	-0.22915678	-0.31712886
<i>P</i>	3.79	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1988 03 12	675	(0.9- 4.0-)	1992 05 30	675	0.5+	0.4+	1995 02 24	608	0.8+	0.0
1988 03 12	675	1.8- 0.4-	1992 06 01	675	0.7-	1.4-	1995 02 24	608	0.8+	0.2-
1988 04 08	675	1.5+ 1.0-	1992 06 01	675	0.2+	1.1-	1996 07 01	608	0.4+	0.6-
1988 04 10	675	0.1+ 0.2-	1993 09 16	675	0.2-	0.2+	1996 07 01	608	0.0	0.4-
1992 04 08	675	1.3- 0.4+	1993 09 16	675	(1.4- 2.4-)		1996 07 08	608	0.7+	0.1-
1992 04 08	675	0.1- 0.6+	1993 09 18	675	0.8-	0.1+	1996 07 08	608	0.9+	0.1+
1992 05 01	675	0.3- 0.2+	1993 10 10	675	0.8+	0.3+	1998 10 20	910	1.4-	0.0
1992 05 01	675	0.5- 1.4+	1993 10 10	675	0.6+	1.5-	1998 10 20	910	1.0-	0.1-
1992 05 02	675	(2.6- 0.8-)	1993 10 13	675	0.0	0.9-	1998 10 20	910	1.3-	0.1-
1992 05 02	675	(1.0- 3.5-)	1993 10 13	675	0.5-	0.8-	1998 11 18	691	0.3-	1.1+
1992 05 03	675	(0.6- 4.3-)	1995 01 26	608	0.8+	0.0	1998 11 18	691	0.2-	0.5-
1992 05 30	675	0.1- 0.5-	1995 01 26	608	0.9+	0.1-	1998 11 18	691	0.2-	1.5-

(9744)* 1988 JW = 1984 HW

Discovered 1988 May 9 by C. S. Shoemaker at Palomar.

Id. S. Nakano (*MPC* 13451)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	160.51094		(2000.0)	P	Q
<i>n</i>	0.23310522	ω	134.20537	-0.43047282	+0.87506115
<i>a</i>	2.6147773	Ω	109.09552	-0.88044530	-0.35310592
<i>e</i>	0.2959334	<i>i</i>	13.54189	-0.19876930	-0.33103503
<i>P</i>	4.23	<i>H</i>	13.4	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1984 04 29	675	0.3- 0.3-	1992 01 29	691	1.7-	0.3+	1997 07 27	423	0.2+	0.5-
1984 05 01	675	1.2+ 0.5+	1992 02 04	675	0.8+	1.5-	1997 07 27	423	0.2-	0.4-
1984 05 01	675	0.2+ 1.4+	1992 02 04	675	0.3+	2.0-	1997 07 27	423	0.3+	0.1-
1984 07 18	413	0.3- 0.4+	1992 02 08	675	1.0+	0.1-	1997 07 27	423	0.0	0.2-
1984 07 18	413	0.8- 0.1+	1992 02 27	675	1.0+	0.0	1997 07 27	423	0.3-	0.2-
1984 07 18	413	0.5+ 0.2-	1992 02 27	675	0.5+	1.2-	1997 07 27	423	0.4+	0.7-
1984 07 18	413	0.8- 0.5+	1995 12 24	566	0.1+	0.1+	1998 10 29	699	1.1+	0.3-
1988 04 14	675	0.5+ 0.4-	1995 12 24	566	0.1+	0.0	1998 10 29	699	1.3+	1.5-
1988 04 14	675	0.6+ 0.1+	1995 12 24	566	0.1+	0.1+	1998 10 29	699	1.1-	0.2+
1988 05 09	675	0.4- 0.8-	1995 12 25	566	0.4-	0.2+	1998 11 13	704	0.8+	1.4+
1988 05 10	675	0.8+ 1.7-	1995 12 25	566	0.4-	0.2+	1998 11 13	704	(0.5- 2.5+)	
1988 05 13	675	0.4+ 0.2-	1995 12 25	566	0.2-	0.2-	1998 11 13	704	1.4-	0.1-
1992 01 29	691	1.8- 0.4+	1997 07 24	423	0.3+	0.8-				
1992 01 29	691	1.9- 0.8+	1997 07 24	423	0.6-	0.6-				

(9745)* 1988 VY = 1996 HA₁₄

Discovered 1988 Nov. 2 by T. Seki at Geisei.

Id. K. Ichikawa (*MPC* 27710)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	16.43335		(2000.0)	P	Q
<i>n</i>	0.19724205	ω	200.42992	+0.75773655	-0.65247465
<i>a</i>	2.9228265	Ω	200.30997	+0.60286923	+0.70615555
<i>e</i>	0.1060434	<i>i</i>	1.74839	+0.24976791	+0.27499304
<i>P</i>	5.00	<i>H</i>	13.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1988 11 02	372	(0.7- 4.0-)	1997 07 29	684	0.2+	0.1-	1998 10 29	704	0.5+	0.6+
1988 11 02	372	(3.3+ 0.9+)	1997 07 29	684	0.1-	0.1+	1998 10 29	704	(0.6- 4.2+)	
1988 11 03	327	0.6+ 0.7-	1997 07 29	684	0.1-	0.0	1998 10 29	704	0.7+	0.0
1988 11 03	327	0.2+ 0.4-	1997 07 31	684	0.1-	0.1-	1998 10 29	704	0.6+	0.1+
1988 11 03	372	0.1- 1.6-	1997 07 31	684	0.3-	0.6-	1998 10 29	704	0.0	0.3+
1988 11 03	372	0.2+ 1.2-	1997 07 31	684	0.2-	0.4-	1998 10 29	120	0.4+	0.9+

1988 11 04	327	(5.8+ 5.9+)	1997 08 01	684	0.3-	0.2-	1998 11 10	704	0.2+	0.3+
1988 11 05	372	1.8+ 1.3-	1997 08 01	684	0.1-	0.1+	1998 11 10	704	0.5+	0.5+
1988 11 05	046	0.3+ 0.1+	1997 08 01	684	0.0	0.1-	1998 11 10	704	0.6+	0.5-
1988 11 05	046	2.0- 1.8-	1997 10 31	688	0.7+	0.6+	1998 11 10	704	0.5+	0.3-
1988 11 06	372	0.9+ 0.1+	1997 10 31	688	0.8+	0.7+	1998 11 10	704	0.8+	0.3-
1996 04 17	809	(1.8+ 2.9+)	1998 10 15	120	0.2-	0.7+	1998 11 11	704	0.6+	0.4+
1996 04 17	809	(2.6+ 2.1+)	1998 10 18	699	0.8-	0.7+	1998 11 11	704	0.1-	0.0
1996 04 17	809	(2.2+ 3.4+)	1998 10 18	699	0.7-	1.0+	1998 11 11	704	0.1-	0.2-
1996 04 18	809	0.0 0.0	1998 10 18	699	0.2+	1.1+	1998 11 11	704	0.9+	0.5+
1996 04 18	809	0.1- 0.1+	1998 10 20	120	0.1+	0.9+	1998 11 11	704	0.9+	0.1-
1996 04 18	809	0.5- 0.2+	1998 10 22	327	0.6-	0.7+	1998 11 15	691	1.3-	0.5+
1996 05 19	809	1.9+ 1.5+	1998 10 22	327	0.6-	0.7+	1998 11 15	691	1.4-	0.2+
1996 05 19	809	1.7+ 0.8+	1998 10 22	327	0.9-	0.5+	1998 11 15	691	1.4-	0.3+
1996 05 19	809	0.2+ 2.2+	1998 10 23	120	0.2-	0.2+	1998 11 25	691	1.7-	0.5+
1996 05 22	809	0.5+ 0.4+	1998 10 23	120	0.0	0.2+	1998 11 25	691	1.6-	0.3+
1996 05 22	809	1.5- 1.1+	1998 10 28	120	1.1+	0.8+	1998 11 25	691	1.6-	0.3+
1996 05 22	809	(1.0- 2.3+)	1998 10 28	120	0.7+	0.7+				

(9746)* 1988 VS₁ = 1991 RE₃₇ = 1991 RO₄₁

Discovered 1988 Nov. 7 by Y. Kushida and M. Inoue at the Yatsugatake

South Base Observatory.

Id. S. Nakano (*MPC* 26559)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	80.88148		(2000.0)	P	Q
<i>n</i>	0.30042230	ω	245.97278	+0.97710251	+0.20549117
<i>a</i>	2.2079095	Ω	102.13183	-0.16889430	+0.90679466
<i>e</i>	0.2045751	<i>i</i>	3.23512	-0.12940406	+0.36809892
<i>P</i>	3.28	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1988 11 03	033	0.8- 0.8+	1991 09 15	675	0.3- 0.4+	1997 04 08	809	(1.4- 2.1-)
1988 11 03	033	0.6- 0.3+	1995 11 07	327	0.3+ 1.4-	1997 04 08	809	0.7- 1.8-
1988 11 05	033	0.7- 0.3+	1995 11 07	327	1.0+ 0.9-	1997 04 08	809	(0.5- 2.5-)
1988 11 06	033	0.4+ 0.2+	1995 11 07	327	0.0 1.0-	1997 04 08	704	0.1- 0.3+
1988 11 06	675	0.0 0.5+	1996 01 11	411	0.0 0.2+	1997 04 08	704	0.0 1.1+
1988 11 06	675	0.2- 0.2-	1996 01 11	411	0.2- 0.5-	1998 09 29	704	0.1+ 0.3-
1988 11 07	896	(1.2- 3.2+)Y	1996 01 12	411	1.4+ 0.2-	1998 09 29	704	1.6+ 0.9-
1988 11 07	896	(2.2+ 4.3+)Y	1996 01 12	411	0.4+ 0.4+	1998 09 29	704	0.7+ 0.2-
1988 11 08	896	1.3+ 1.6+ Y	1996 01 18	411	1.0- 1.0+	1998 09 29	704	1.4+ 0.6+
1988 11 08	896	(0.7+ 3.5+)Y	1996 01 18	411	0.8- 0.9+	1998 11 13	825	0.0 0.2-
1988 11 12	386	(1.2- 4.5-)	1997 04 02	704	(2.2+ 1.1+)	1998 11 13	825	0.5- 0.2-
1988 11 12	386	(2.9+ 4.0-)	1997 04 02	704	0.9+ 1.2+	1998 11 13	825	1.1- 0.5+
1988 12 05	896	0.1+ 0.4-	1997 04 06	704	0.1- 0.5+	1998 11 16	825	0.6- 0.4+
1988 12 05	896	0.2- 2.0-	1997 04 06	704	0.1+ 0.5-	1998 11 16	825	0.7- 0.4+
1991 09 07	399	0.2+ 0.2-	1997 04 07	809	(2.9- 2.0-)	1998 11 16	825	0.2- 0.6-
1991 09 07	399	(0.9+ 2.4-)	1997 04 07	809	(3.3- 1.6-)			
1991 09 15	675	0.2+ 0.3-	1997 04 07	809	(3.0- 1.9-)			

(9747)* 1989 AT = 1994 AA

Discovered 1989 Jan. 4 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Harada (*MPC* 23513)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	333.96384		(2000.0)	P	Q
<i>n</i>	0.18693585	ω	354.24506	-0.08067964	-0.97095231
<i>a</i>	3.0292909	Ω	100.23198	+0.92337874	-0.15790580
<i>e</i>	0.1156596	<i>i</i>	13.23238	+0.37531654	+0.17977033
<i>P</i>	5.27	<i>H</i>	12.4	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1989 01 04	399	1.2+ 1.9-	1994 01 07	411	0.8-	0.5+	1998 10 27	757	0.4+ 0.2+
1989 01 04	399	1.1+ 2.1-	1994 01 07	411	0.5-	0.2+	1998 10 27	757	0.4+ 0.1+
1989 01 04	399	0.4+ 0.8-	1994 01 07	411	0.2-	0.1-	1998 11 13	704	0.0 0.7+
1989 01 04	399	1.4- 0.9+	1995 04 26	801	0.0	0.3-	1998 11 13	704	0.3- 0.4+
1989 01 06	399	0.6- 0.2+	1995 04 26	801	0.2-	0.0	1998 11 13	704	0.5+ 0.1+
1989 01 06	399	0.8+ 1.1-	1996 05 15	801	0.6-	1.2+	1998 11 13	704	0.3+ 0.6+

1989 01 06	399	1.0−	0.2+	1996 05 15	801	0.2+	0.4+	1998 11 13	704	0.9−	0.4+
1989 01 13	399	1.1+	1.0+	1996 05 23	801	1.2+	0.9+	1998 11 19	683	1.0−	0.3+
1989 01 13	399	0.2−	0.8+	1997 07 08	689	0.1−	0.3−	1998 11 19	683	0.4−	0.0
1989 01 13	399	0.7−	0.3+	1997 07 09	689	0.2+	0.8−	1998 11 19	683	0.7−	0.1−
1994 01 01	411	0.0	0.5+	1998 10 16	704	0.2+	0.3−	1998 11 21	683	0.4+	0.1−
1994 01 01	411	0.6−	0.2−	1998 10 16	704	0.4−	0.1−	1998 11 21	683	0.3+	0.2+
1994 01 01	411	0.4−	0.5+	1998 10 16	704	0.7+	1.0−	1998 11 21	683	0.1−	0.0
1994 01 02	411	0.2−	0.9+	1998 10 16	704	0.7+	1.7−	1998 11 22	683	(1.2−	4.2+)
1994 01 02	411	0.2+	1.4+	1998 10 26	757	0.1+	0.4+	1998 11 22	683	(0.9−	3.8+)
1994 01 02	411	0.2+	0.2−	1998 10 26	757	0.6+	0.4+				

(9748)* 1989 CS₂ = 1987 SU₅

Discovered 1989 Feb. 4 by E. W. Elst at the European Southern Observatory.
Id. S. Nakano (*MPC* 14622)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27559644	ω	50.36063	−0.36298238	+0.93109591		
<i>a</i>	2.3385876	Ω	198.45374	−0.88604508	−0.35689592		
<i>e</i>	0.0660158	<i>i</i>	6.55109	−0.28838846	−0.07540361		
<i>P</i>	3.58	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 09 29	054	1.3+	0.4−	1989 03 03	809	1.0−	0.1−	1998 10 26	120	0.2−	0.1−
1987 09 30	054	0.4+	0.0	1989 03 03	809	0.3+	1.3−	1998 10 28	120	0.0	0.3+
1987 09 30	054	1.5+	0.3+	1993 03 22	809	1.0−	0.5+	1998 10 28	120	0.8−	0.0
1987 10 17	675	0.1−	2.0+	1993 03 26	809	1.4+	0.6−	1998 10 29	704	0.1+	0.1−
1987 10 17	675	(0.8−	2.6+)	1993 03 27	809	1.6+	1.0−	1998 10 29	704	1.0+	0.4+
1989 02 04	809	0.3+	0.5+	1993 04 16	413	(5.3+	0.9+)	1998 10 29	704	0.3+	0.3+
1989 02 04	809	0.5−	0.7+	1994 10 09	691	1.6−	0.1−	1998 10 29	704	0.5−	0.2+
1989 02 04	809	0.1+	0.9+	1994 10 09	691	1.7−	0.4−	1998 10 29	704	0.1+	0.1−
1989 02 07	809	(5.0+	0.4+)	1994 10 09	691	1.7−	0.4−	1998 11 11	704	0.0	0.2+
1989 02 07	809	(3.4+	0.2+)	1998 10 18	699	0.5+	0.2−	1998 11 11	699	1.1−	0.2−
1989 02 07	809	(2.8+	0.1+)	1998 10 18	699	0.8−	0.9−	1998 11 11	704	0.5+	0.4+
1989 03 02	809	0.4−	1.0+	1998 10 18	699	0.1−	0.2−	1998 11 11	699	0.9+	0.3−
1989 03 02	809	0.9−	0.3+	1998 10 23	120	0.6+	0.3−	1998 11 11	704	0.7−	0.4−
1989 03 02	809	0.3−	0.1−	1998 10 24	120	0.5+	0.3+	1998 11 11	699	0.7+	0.5−
1989 03 03	809	0.6−	0.1−	1998 10 26	120	1.5+	0.4−				

(9749)* 1989 GC₁ = 1990 SP₁₁

Discovered 1989 Apr. 3 by E. W. Elst at the European Southern Observatory.
Id. B. G. Marsden (*MPC* 17636)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25799288	ω	29.37046	+0.80621456	+0.58990632		
<i>a</i>	2.4437920	Ω	294.41023	−0.55199673	+0.72263873		
<i>e</i>	0.1282120	<i>i</i>	2.83509	−0.21287950	+0.36028294		
<i>P</i>	3.82	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1989 04 03	809	0.7−	0.8+	1994 10 03	675	0.3+	0.3+	1998 10 29	704	1.0+	0.3−
1989 04 03	809	0.5−	0.2+	1994 10 03	675	0.3+	0.6+	1998 10 29	704	1.8−	0.2+
1989 04 03	809	0.9−	0.5+	1994 10 28	691	0.6−	0.0	1998 11 18	704	0.7+	1.1+
1989 04 05	809	1.1+	0.5−	1994 10 28	691	0.7−	0.1−	1998 11 18	704	0.3+	0.6−
1989 04 05	809	1.1+	1.0−	1994 10 28	691	0.7−	0.0	1998 11 18	704	0.5+	0.4−
1989 04 05	809	0.1+	0.1+	1994 11 05	691	0.8−	0.1−	1998 11 18	704	0.6+	1.0+
1989 04 08	809	0.1−	0.3−	1994 11 05	691	1.3−	0.6+	1998 11 18	704	0.2+	1.2+
1989 04 08	809	0.2+	0.2−	1994 11 05	691	1.1−	0.4+	1998 11 21	704	0.9+	0.4+
1989 04 08	809	0.1+	0.2−	1994 11 29	675	(0.9+	2.2−)	1998 11 21	704	0.2−	1.2−
1989 04 10	809	1.1−	0.3−	1994 11 29	675	1.3−	1.0−	1998 11 21	704	0.8+	0.6−
1989 04 10	809	1.4−	0.5−	1996 02 16	010	(0.7+	3.1+)	1998 11 21	704	(2.4+	0.1+)
1989 04 10	809	(2.6−	0.3−)	1996 02 16	010	(1.7+	2.9+)	1998 11 21	704	0.3−	1.9−
1990 09 16	675	1.3+	1.0−	1996 02 16	010	(2.5+	2.4+)	1998 11 24	704	0.6+	0.2+
1990 09 16	675	0.5+	0.8−	1996 02 16	691	0.3+	0.6−	1998 11 24	704	0.2+	0.3+
1990 09 19	675	0.7+	0.6−	1996 02 16	691	0.2+	0.5−	1998 11 24	704	0.4−	0.4+
1990 09 19	675	0.3+	1.2−	1996 02 16	691	0.3+	0.6−	1998 11 24	704	1.0−	0.0

1990 09 23	095	1.3+	1.6+	1998 10 29	704	0.2−	0.4+
1993 04 19	675	0.5+	0.7+	1998 10 29	704	0.3+	1.1−

(9750)* 1989 NE₁

Discovered 1989 July 8 by A. C. Gilmore and P. M. Kilmartin at the Mount John Observatory.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23967606	ω	258.90104	+0.44175383	+0.88666355		
<i>a</i>	2.5667660	Ω	38.27562	−0.71264719	+0.43935982		
<i>e</i>	0.2531200	<i>i</i>	12.74712	−0.54496563	+0.14418979		
<i>P</i>	4.11	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1976 03 28	413	0.1+	0.2+	1989 09 02	474	0.6+	0.4+	1998 10 29	704	2.1−	0.4+
1976 03 28	413	(2.4+	3.0−)	1989 09 02	474	0.7+	1.2+	1998 11 18	704	0.6+	0.2−
1985 09 05	413	0.5−	0.0	1989 09 04	413	2.0+	0.8−	1998 11 18	704	0.4+	0.2+
1985 09 05	413	0.9−	0.0	1993 06 26	474	0.9+	0.4+	1998 11 18	704	0.3−	1.6+
1989 07 08	474	0.6−	0.5+	1993 06 26	474	0.3−	0.3+	1998 11 18	704	2.3−	1.1+
1989 07 08	474	0.0	0.3+	1993 08 10	474	0.5−	0.2−	1998 11 21	704	0.1+	0.2+
1989 07 23	474	0.8+	1.3+	1993 08 10	474	0.4−	0.2−	1998 11 21	704	0.2−	0.6+
1989 07 23	474	0.8+	0.2+	1993 08 15	474	0.2−	0.1+	1998 11 21	704	0.0	1.4−
1989 07 27	413	1.2−	0.7−	1993 08 15	474	0.2−	0.0	1998 11 21	704	0.2−	0.1−
1989 07 28	474	0.3+	1.1−	1993 09 23	413	0.9−	0.1−	1998 11 21	704	0.4−	2.6−
1989 07 28	474	0.2−	0.9−	1993 09 23	413	0.6−	0.2−	1998 11 24	704	0.3+	0.4−
1989 07 29	474	0.1+	0.1+	1998 10 29	704	0.1−	0.7−	1998 11 24	704	1.2+	0.2+
1989 07 29	474	0.3−	0.0	1998 10 29	704	(1.1+	3.5−)	1998 11 24	704	2.5+	1.0+
1989 08 11	413	0.0	0.4−	1998 10 29	704	(1.2−	4.7−)	1998 11 24	704	0.3+	0.6+

(9751)* 1990 QM

Discovered 1990 Aug. 20 by T. Seki at Geisei.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26072274	ω	125.35455	+0.27476349	+0.96137108		
<i>a</i>	2.4267038	Ω	160.57358	−0.89744069	+0.26255836		
<i>e</i>	0.1807360	<i>i</i>	2.83532	−0.34511627	+0.08263626		
<i>P</i>	3.78	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 08 20	372	(2.3−	4.0+)	1993 04 16	413	(2.4−	4.7+)	1998 10 29	704	0.4−	0.0
1990 08 20	372	(3.6−	6.4+)	1994 09 11	675	0.9+	0.9+	1998 10 29	704	0.8−	0.3−
1990 08 22	675	0.1+	0.5+	1994 09 11	675	0.1−	0.0	1998 10 29	120	0.4+	0.4−
1990 08 22	675	0.8+	1.1−	1994 10 01	801	0.5−	0.0	1998 10 30	120	0.1+	0.5−
1990 08 24	372	0.6+	0.3+	1994 10 01	675	0.1+	0.7+	1998 10 30	120	0.0	0.4−
1990 08 24	372	1.5+	2.0+	1994 10 01	675	0.7−	0.4+	1998 11 09	104	0.4+	0.0
1990 08 26	372	0.0	1.3−	1994 10 04	801	0.0	0.2+	1998 11 09	104	0.2−	0.1−
1990 08 26	372	0.2−	0.2+	1994 10 04	801	0.2−	0.3−	1998 11 09	104	0.1−	0.3−
1990 08 28	372	0.4−	1.2+	1994 11 08	801	0.3+	0.5+	1998 11 09	104	0.3−	0.4+
1990 08 28	372	1.0−	0.5+	1994 11 08	801	0.2−	0.3+	1998 11 10	704	0.3−	0.5−
1990 08 29	675	0.8+	0.4−	1997 04 02	704	0.5+	2.0+	1998 11 10	704	0.7−	0.3+
1990 08 29	675	0.3+	0.1+	1997 04 02	704	1.3+	0.4+	1998 11 10	704	0.5−	0.4+
1990 08 31	372	0.7+	0.9−	1997 04 02	704	0.1−	1.8+	1998 11 10	704	0.2+	1.1+
1990 08 31	372	1.1−	0.8−	1997 04 02	704	0.0	1.9+	1998 11 10	704	0.7−	0.3+
1990 09 14	675	0.2+	0.5−	1998 10 13	120	0.1+	0.4+	1998 11 11	704	0.5−	0.4+
1990 09 14	675	0.1+	0.5−	1998 10 13	120	1.1+	0.0	1998 11 11	704	0.1+	0.3−
1990 09 20	372	2.1−	1.4−	1998 10 13	120	0.2−	0.3+	1998 11 11	704	0.3−	0.8−
1990 09 20	372	(2.9−	1.0+)	1998 10 14	699	0.1−	1.3+	1998 11 11	704	0.6+	0.4−
1993 03 17	372	(0.9+	3.2−)	1998 10 14	699	0.3−	0.2+	1998 11 11	704	0.2+	1.0−
1993 03 17	372	1.5−	1.4+	1998 10 14	699	0.1+	0.7+	1998 11 11	120	1.0+	0.4+
1993 03 18	372	0.0	1.6−	1998 10 20	699	0.4+	0.1−	1998 11 11	120	0.2−	0.3+
1993 03 19	809	1.9+	0.7−	1998 10 20	699	0.1−	0.8+	1998 11 11	120	0.3−	0.8−
1993 03 20	809	0.3−	0.2+	1998 10 20	699	0.4+	0.3+	1998 11 11	120	0.5+	0.4+
1993 03 24	809	0.9−	1.4−	1998 10 29	704	0.2+	0.4+	1998 11 11	120	0.3−	0.2−
1993 04 14	372	0.3+	0.4−	1998 10 29	704	0.4−	0.4+	1998 11 11	120	0.1+	0.3+
1993 04 14	372	0.3−	0.5−	1998 10 29	704	0.3−	0.4−				

(9752)* 1990 QZ₁ = 1992 BD₁

Discovered 1990 Aug. 22 by H. E. Holt at Palomar.

Id. H. Kaneda (*MPC* 19679)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26501154	ω	119.14818	−0.26307465	−0.96430309		
<i>a</i>	2.4004511	Ω	346.00631	+0.83612534	−0.21227208		
<i>e</i>	0.0812690	<i>i</i>	7.17130	+0.48133788	−0.15830385		
<i>P</i>	3.72	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 08 22	675	0.5+	0.5+	1996 02 03	327	0.0	0.8−	1998 11 14	704	0.3+	0.3+
1990 08 22	675	0.4+	0.2−	1996 02 03	327	0.1−	0.6−	1998 11 14	704	0.0	0.1−
1990 08 28	675	0.2+	0.5−	1996 02 03	327	0.2+	0.7−	1998 11 14	704	0.8−	0.2+
1990 08 28	675	0.4+	0.6−	1996 02 03	327	0.2+	0.1−	1998 11 14	704	0.8−	0.8+
1990 09 14	675	0.1−	1.7−	1996 03 21	566	0.5−	0.6+	1998 11 16	704	0.3+	0.1+
1990 09 14	675	0.6+	0.1−	1996 03 21	566	0.1−	0.6+	1998 11 16	704	(1.6+	3.0−)
1990 09 14	675	0.4+	1.3−	1996 03 21	566	0.0	0.7+	1998 11 16	704	0.6−	0.9+
1990 09 14	675	0.4−	1.0+	1997 08 03	566	0.2−	0.1+	1998 11 16	704	(2.3+	0.7+)
1990 09 19	675	(0.1+	3.5−)	1997 08 03	566	0.4+	1.1−	1998 11 16	704	0.7+	0.6−
1990 09 19	675	(0.8+	2.5−)	1997 08 03	566	0.1−	0.0	1998 11 21	744	0.3+	0.5−
1992 01 28	399	(4.0−	1.2+)	1998 08 31	704	0.2+	0.9+	1998 11 21	744	0.2+	0.4−
1992 01 28	399	0.5−	0.6+	1998 08 31	704	0.4+	1.6+	1998 11 21	744	0.2+	0.1−
1992 01 29	399	0.3+	1.8−	1998 09 29	704	0.4+	0.3−	1998 11 24	744	0.2+	0.4−
1992 01 29	399	1.2−	0.7−	1998 09 29	704	0.9−	0.1−	1998 11 24	744	0.0	0.4−
1996 02 02	327	0.2+	0.4−	1998 09 29	704	0.2+	0.1+	1998 11 24	744	0.2+	0.6−
1996 02 02	327	0.0	0.2−	1998 09 29	704	0.5−	0.2+				
1996 02 02	327	0.2+	0.8−	1998 09 29	704	0.6−	0.4+				

(9753)* 1990 QL₃ = 1978 LC

Discovered 1990 Aug. 28 by H. E. Holt at Palomar.

Id. S. Nakano (*MPC* 17214)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26051083	ω	325.37099	+0.70131782	+0.71260519		
<i>a</i>	2.4280197	Ω	349.11975	−0.62968585	+0.60703700		
<i>e</i>	0.1456367	<i>i</i>	5.66480	−0.33413924	+0.35170998		
<i>P</i>	3.78	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 06 01	809	0.4−	0.5−	1990 09 27	809	0.0	0.0	1998 10 29	704	0.5−	0.6−
1978 06 02	809	0.2−	0.1−	1990 09 27	809	0.5+	0.0	1998 10 29	704	1.0−	0.0
1990 08 22	675	0.0	0.4−	1990 09 27	809	0.9+	0.1+	1998 11 10	704	1.6+	0.3−
1990 08 22	675	0.3−	0.5−	1990 09 28	809	0.4−	1.5+	1998 11 10	704	0.1+	1.0−
1990 08 28	675	0.1+	0.3+	1990 09 28	809	0.2−	1.3+	1998 11 10	704	0.8+	1.2−
1990 08 28	675	0.9+	0.0	1990 09 28	809	0.1−	1.2+	1998 11 10	704	0.3+	0.1−
1990 09 14	675	0.4−	0.4−	1993 04 16	675	0.6+	0.2+	1998 11 11	704	0.4+	0.2+
1990 09 14	675	0.3+	0.5−	1993 04 16	675	0.3+	0.9−	1998 11 11	704	(2.2−	1.2−)
1990 09 14	675	1.3−	0.0	1994 09 07	689	0.1+	1.4+	1998 11 11	704	0.8−	1.2−
1990 09 14	675	1.6+	0.4+	1994 10 05	689	0.2+	0.1+	1998 11 11	704	0.1−	0.1+
1990 09 19	675	0.2−	1.3−	1994 10 09	689	0.3+	0.6+	1998 11 16	566	0.2+	0.8+
1990 09 19	675	0.6−	1.5−	1997 05 27	689	0.6−	0.1+	1998 11 16	566	0.1+	0.5+
1990 09 20	675	0.1−	0.2−	1998 10 29	704	0.4−	0.7+	1998 11 16	566	0.3−	0.0
1990 09 20	675	0.5−	0.8−	1998 10 29	704	0.7−	0.1−				
1990 09 21	095	(4.5+	2.9+)	1998 10 29	704	0.1−	0.3−				

(9754)* 1990 QJ₄ = 1993 FX₃₉

Discovered 1990 Aug. 23 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 23514)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26306975	ω	123.80514	+0.17389370	+0.98461358		
<i>a</i>	2.4122488	Ω	156.19135	−0.91702965	+0.16828714		
<i>e</i>	0.1945989	<i>i</i>	2.44710	−0.35891170	+0.04706954		
<i>P</i>	3.75	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 08 23	675	0.4+	1.6−	1990 09 18	675	1.2−	0.7−	1998 10 23	734	0.8−	1.8−
1990 08 23	675	0.1+	1.9−	1993 03 19	809	0.7−	0.6+	1998 10 23	734	1.2−	0.2−
1990 08 27	675	0.2−	1.8−	1993 03 20	809	0.2−	0.3−	1998 10 25	734	0.9−	0.1−
1990 08 27	675	0.5+	0.3−	1993 03 24	809	0.4+	0.8−	1998 10 25	734	0.6+	0.2+
1990 09 11	809	0.2−	1.3+	1994 10 09	691	0.9−	1.0+	1998 10 25	734	0.1−	0.3−
1990 09 11	809	0.6+	1.3+	1994 10 09	691	0.9−	0.6+	1998 11 11	704	1.4+	0.8−
1990 09 11	809	1.5+	1.4+	1994 10 09	691	1.1−	0.8+	1998 11 11	699	0.9−	0.3+
1990 09 12	809	1.4+	0.4+	1997 06 07	809	0.3+	1.3−	1998 11 11	704	1.7+	0.4−
1990 09 12	809	1.9+	0.5+	1997 06 07	809	0.2−	1.8−	1998 11 11	699	1.6+	0.2−
1990 09 12	809	(2.9+	0.6+)	1997 06 07	809	1.0−	1.1−	1998 11 11	704	1.4−	0.9+
1990 09 13	809	1.7−	0.0	1997 06 08	809	0.6+	0.8+	1998 11 11	699	1.6+	0.7−
1990 09 13	809	1.5−	0.2−	1997 06 08	809	0.1−	0.7+	1998 11 18	704	0.1−	1.3−
1990 09 13	809	0.9−	0.1+	1997 06 08	809	0.2−	0.6+	1998 11 18	704	0.4−	0.5+
1990 09 13	675	0.5−	0.3+	1998 10 18	699	0.2−	0.3−	1998 11 18	704	0.9−	2.0−
1990 09 13	675	0.2+	0.1−	1998 10 18	699	1.4+	0.4+	1998 11 18	704	1.8+	0.2+
1990 09 18	675	0.8+	0.5+	1998 10 18	699	0.3−	0.3+				

(9755)* 1990 RR₂ = 1975 XH₄ = 1977 FM₂

Discovered 1990 Sept. 15 by H. E. Holt at Palomar.

Id. H. Kaneda (*MPC* 19504)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25588485	ω	173.16190	+0.99283918	−0.11630529		
<i>a</i>	2.4571952	Ω	193.60782	+0.10337884	+0.95089025		
<i>e</i>	0.1378101	<i>i</i>	6.65499	+0.05985964	+0.28684632		
<i>P</i>	3.85	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1975 12 03	095	(0.9−	5.0+)	1990 09 29	809	0.5+	0.6−	1998 10 20	699	0.3+	0.1+
1977 03 26	095	0.0	0.5+	1990 09 29	809	0.9+	0.4−	1998 10 20	699	0.4+	0.0
1990 08 29	095	0.4+	1.7+	1990 09 29	809	1.5+	0.5−	1998 10 20	699	0.3+	0.1+
1990 08 29	095	(4.3−	1.8−)	1990 10 11	095	(5.1−	1.3+)	1998 10 21	653	0.3+	0.0
1990 09 15	675	(1.3+	2.2−)	1990 10 14	095	1.5−	0.1+	1998 10 21	653	0.2−	0.4+
1990 09 15	095	(0.1−	6.9−)	1990 10 14	095	1.6−	0.4−	1998 11 10	704	0.4+	0.6+
1990 09 15	095	(1.9−	6.5−)	1990 10 15	095	0.6−	1.5−	1998 11 10	704	0.2+	0.1+
1990 09 16	675	0.1−	0.2+	1990 10 15	095	1.7−	1.5−	1998 11 10	704	1.8+	0.1−
1990 09 16	675	0.6−	0.2+	1993 04 17	675	0.1−	1.3−	1998 11 10	704	0.3+	0.8−
1990 09 19	675	0.7−	0.3+	1998 08 28	704	0.9+	0.4−	1998 11 10	704	0.3+	1.0−
1990 09 19	675	0.5−	0.2+	1998 08 28	704	0.2−	0.3−	1998 11 11	704	0.1−	0.4−
1990 09 23	809	0.4+	0.3+	1998 08 28	704	0.5−	0.3+	1998 11 11	704	0.4+	0.8−
1990 09 23	809	0.8+	0.2+	1998 08 28	704	0.7+	1.3+	1998 11 11	704	0.6−	0.6−
1990 09 23	809	0.8+	0.0	1998 08 31	704	0.2−	0.2−	1998 11 11	704	0.3−	0.6−
1990 09 23	095	(2.5−	0.1−)	1998 08 31	704	0.8−	0.3+	1998 11 11	704	0.0	1.8−
1990 09 24	809	0.0	0.1+	1998 08 31	704	0.2−	0.5−	1998 11 18	704	0.3+	0.2+
1990 09 24	809	0.1−	0.0	1998 08 31	704	1.1−	1.6+	1998 11 18	704	0.7−	0.8+
1990 09 24	809	0.3+	0.3+	1998 08 31	704	0.0	1.8+	1998 11 18	704	1.1−	0.4+
1990 09 28	809	0.4+	0.1+	1998 10 02	689	0.0	0.3+	1998 11 18	704	0.3−	0.8+
1990 09 28	809	0.7+	0.1+	1998 10 20	653	0.5+	0.7−	1998 11 18	704	0.8−	0.9+
1990 09 28	809	1.0+	0.0	1998 10 20	653	0.6−	0.1+				

(9756)* 1991 CC₃ = 1988 RD₇ = 1993 TA₃₆

Discovered 1991 Feb. 12 by T. Seki at Geisei.

Id. G. V. Williams (*MPC* 23238)

1998 DEC. 8

M.P.C. 33201

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	221.16067		(2000.0)		P		Q
<i>n</i>	0.21818046	ω	35.49584	−0.81116100	+0.58482277		
<i>a</i>	2.7327012	Ω	180.29553	−0.55290967	−0.76711977		
<i>e</i>	0.1115133	<i>i</i>	4.45578	−0.19054850	−0.26364670		
<i>P</i>	4.52	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 09 01	809	1.2+	0.2−	1991 03 14	809	0.4−	0.1−	1996 05 22	691	0.8+	0.3−
1988 09 01	809	0.3−	0.9+	1991 03 14	809	0.3−	0.0	1996 05 22	691	0.2+	0.2+
1988 09 01	809	1.8−	1.8+	1991 03 14	809	0.3−	0.2+	1998 10 29	704	0.7−	0.0
1988 09 10	675	1.3−	0.1+	1991 03 15	809	0.4+	0.9−	1998 10 29	704	0.6−	0.1−
1988 09 10	675	0.4−	0.6+	1991 03 15	809	0.2+	0.9−	1998 10 29	704	0.5+	0.1−
1991 02 10	675	1.4+	0.6−	1991 03 15	809	0.5+	0.6−	1998 10 29	704	1.7−	0.1−
1991 02 10	675	0.4+	0.1−	1993 10 11	809	(2.3+	2.0−)	1998 10 29	704	0.7+	0.2−
1991 02 12	372	1.6−	0.2+	1993 10 11	809	(1.8+	2.2−)	1998 11 18	704	0.3−	0.6−
1991 02 12	372	1.1−	0.2+	1993 10 11	809	(1.2+	2.5−)	1998 11 18	704	0.1+	1.2−
1991 02 16	372	(0.9−	2.7+)	1993 10 20	809	1.3+	0.7−	1998 11 18	704	0.3+	1.0−
1991 02 16	372	1.6−	1.1+	1993 10 20	809	1.4+	0.3−	1998 11 18	704	0.7+	1.2+
1991 02 20	372	0.9+	0.1−	1993 10 20	809	0.6+	0.0	1998 11 21	704	0.7−	1.1+
1991 02 20	372	0.4−	0.9+	1993 10 20	809	(0.1−	3.1−)	1998 11 21	704	0.5−	0.7+
1991 03 06	372	0.8+	1.0−	1993 10 20	809	(0.3+	3.4−)	1998 11 21	704	0.4+	0.4+
1991 03 06	372	0.6−	1.0+	1993 10 20	809	(0.4−	3.2−)	1998 11 24	704	0.8−	1.2+
1991 03 12	809	0.7+	1.0+	1996 05 11	691	0.2−	0.2+	1998 11 24	704	0.2+	0.6−
1991 03 12	809	0.8+	1.1+	1996 05 11	691	0.3−	0.1+	1998 11 24	704	0.1−	0.3−
1991 03 12	809	0.9+	1.1+	1996 05 11	691	0.1−	0.2+	1998 11 24	704	0.7+	1.0+

(9757)* 1991 GA₆ = 1992 OO₈

Discovered 1991 Apr. 8 by E. W. Elst at the European Southern Observatory.

Id. K. Ichikawa (*MPC* 21942)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	99.02401		(2000.0)		P		Q
<i>n</i>	0.20017308	ω	33.56749	+0.75556750	+0.65488230		
<i>a</i>	2.8942249	Ω	285.51368	−0.60454560	+0.68785217		
<i>e</i>	0.0626015	<i>i</i>	0.93444	−0.25227440	+0.31303126		
<i>P</i>	4.92	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 04 08	809	1.1−	0.4−	1992 07 27	809	0.1+	0.4+	1998 10 29	704	0.2−	0.4−
1991 04 08	809	1.1−	0.3+	1992 07 28	809	1.1−	0.0	1998 10 29	704	0.3−	0.6−
1991 04 08	809	(2.5−	0.8+)	1992 07 28	809	0.6−	0.1+	1998 10 29	704	0.6−	1.1−
1991 04 10	809	0.5+	1.0−	1992 07 28	809	0.1−	0.1+	1998 10 29	704	(0.6−	2.1−)
1991 04 10	809	0.8+	1.5−	1992 07 31	809	0.0	0.8+	1998 11 10	699	1.2+	0.2−
1991 04 10	809	0.0	1.4−	1992 07 31	809	0.2+	0.7+	1998 11 10	699	0.3+	0.6+
1991 04 19	809	0.5+	1.1−	1992 07 31	809	0.4+	0.7+	1998 11 10	699	0.2+	0.1+
1991 04 19	809	0.2+	0.9−	1993 12 08	691	1.0−	0.4−	1998 11 11	704	0.4+	0.4+
1991 04 19	809	0.8+	1.5−	1993 12 08	691	1.1−	0.2−	1998 11 11	704	0.3+	0.1+
1991 04 19	675	0.7−	0.3−	1993 12 08	691	0.8−	0.2+	1998 11 11	704	1.3+	0.9−
1991 04 19	675	0.6+	0.8−	1996 03 22	809	0.1−	0.6+	1998 11 13	910	0.7+	0.0
1991 05 15	675	1.0−	0.5+	1996 03 22	809	0.3+	1.6+	1998 11 13	910	0.7+	0.0
1991 05 15	675	1.4−	0.6+	1996 03 22	809	1.4−	1.0+	1998 11 13	910	0.7+	0.1−
1991 05 17	675	0.1+	0.4+	1996 03 26	809	(1.5+	2.6+)	1998 11 18	704	0.5−	0.4−
1991 05 17	675	1.4+	0.4−	1996 03 26	809	(0.0	3.3+)	1998 11 18	704	0.3−	1.1−
1992 07 22	809	0.6+	0.4−	1996 03 26	809	(0.7−	3.6+)	1998 11 18	704	0.0	0.7−
1992 07 22	809	0.7+	0.2−	1996 05 19	566	0.2−	0.0	1998 11 18	704	0.2−	1.1−
1992 07 22	809	0.8+	0.1−	1996 05 19	566	0.2−	0.0	1998 11 18	704	0.1−	0.5+
1992 07 23	809	0.2−	0.7−	1996 05 19	566	0.4−	0.4−	1998 11 26	120	0.5−	0.0
1992 07 23	809	0.1−	1.4−	1998 10 20	699	0.6+	0.4−	1998 11 26	120	0.1+	0.0
1992 07 24	809	0.3−	0.6−	1998 10 20	699	0.0	0.1+	1998 11 29	120	0.5−	0.9−
1992 07 24	809	0.4+	0.7−	1998 10 20	699	1.0+	1.1−	1998 11 29	120	1.6−	1.2+
1992 07 24	809	0.8+	0.5−	1998 10 23	120	0.5+	0.1−	1998 11 29	120	0.0	1.2+
1992 07 27	809	0.4−	0.3−	1998 10 23	120	1.0+	0.5−				
1992 07 27	809	0.4−	0.0	1998 10 29	704	0.4−	0.2−				

(9758)* 1991 GZ₉

Discovered 1991 Apr. 13 by D. I. Steel at Siding Spring.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	278.29116		(2000.0)		P		Q
<i>n</i>	0.21693304	ω	230.31438	−0.89236987	−0.43299106		
<i>a</i>	2.7431670	Ω	283.68786	+0.44369900	−0.79017890		
<i>e</i>	0.2219435	<i>i</i>	7.52614	+0.08250576	−0.43374652		
<i>P</i>	4.54	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 02 10	413	0.2−	0.2−	1992 08 22	413	0.2+	0.4+	1997 08 13	557	0.1−	0.4+
1982 05 25	413	0.6+	0.7+	1993 09 16	658	0.8−	0.1−	1997 08 13	557	0.1−	0.4+
1982 05 25	413	1.0+	0.4−	1993 09 16	658	0.7−	0.1−	1998 10 29	699	0.4+	0.7−
1988 10 03	413	(2.8+	0.9+)	1993 09 16	658	0.8−	0.0	1998 10 29	699	0.7+	0.2+
1988 10 09	413	0.6−	0.4−	1997 08 07	824	0.5−	0.5−	1998 10 29	699	1.3+	1.3−
1991 02 10	413	0.5−	0.4−	1997 08 07	824	0.3−	0.0	1998 11 14	704	0.6+	1.1−
1991 04 13	413	0.8−	0.3+	1997 08 07	824	0.5+	0.3−	1998 11 14	704	0.2+	0.2−
1991 04 13	413	0.2−	0.3−	1997 08 09	824	(1.7−	2.4−)	1998 11 14	704	0.2−	1.8+
1991 05 07	413	0.3+	0.2+	1997 08 09	824	1.5+	1.8−	1998 11 14	704	1.4−	2.3+
1991 05 13	413	(4.4−	1.6−)	1997 08 09	824	0.4+	0.2−				
1992 08 22	413	0.0	0.4+	1997 08 13	557	0.1−	0.5+				

(9759)* 1991 NE₇ = 1980 PJ₃ = 1981 UB₁₂ = 1988 AM₃ = 1989 EP
= 1994 BS₃

Discovered 1991 July 12 by H. Debehogne at the European Southern

Observatory.

Id. A. Lowe (*MPC* 23338), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	53.07326		(2000.0)		P		Q
<i>n</i>	0.17615811	ω	109.02197	+0.94979833	−0.29951568		
<i>a</i>	3.1516232	Ω	268.48675	+0.24210905	+0.88666906		
<i>e</i>	0.0986259	<i>i</i>	5.18886	+0.19815738	+0.35229013		
<i>P</i>	5.60	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 08 03	675	1.1−	0.4−	1991 07 15	809	0.2−	0.5+	1997 08 22	689	0.6−	0.1−
1980 08 05	675	1.4−	0.2+	1991 07 15	809	0.0	0.7+	1997 09 07	910	0.5+	0.5+
1981 10 22	095	1.0+	0.2−	1991 07 15	809	0.3+	0.7+	1997 09 07	910	0.4+	0.4+
1981 10 24	095	1.3+	0.3+	1991 07 16	809	0.3−	0.0	1997 09 07	910	0.4+	0.6+
1988 01 12	033	0.1+	0.3−	1991 07 16	809	0.1−	0.0	1997 09 09	910	0.6+	0.4+
1988 01 12	033	0.6−	0.4−	1991 07 16	809	0.1+	0.0	1997 09 09	910	0.6+	0.3+
1989 03 02	413	0.1+	0.3−	1992 10 20	675	0.4−	0.3−	1997 09 09	910	0.6+	0.4+
1989 03 02	413	1.0+	0.2+	1992 10 20	675	0.2−	0.2+	1997 09 10	118	0.3−	0.3−
1989 03 04	474	0.6−	0.6+	1992 10 22	675	0.3−	0.0	1997 09 10	118	0.5−	0.0
1989 03 04	474	0.5+	0.5+	1992 10 22	675	0.4−	0.1−	1997 09 10	118	0.4−	0.4−
1989 03 04	413	0.5+	0.1−	1994 01 16	010	(0.6+	4.3+)	1997 09 11	118	0.6−	0.3−
1991 07 12	809	0.8+	1.1−	1994 01 16	010	(0.1+	3.2+)	1997 09 11	118	0.3−	0.3−
1991 07 12	809	0.9+	1.2−	1994 01 17	010	(0.2+	3.6+)	1997 09 11	118	0.3−	0.4−
1991 07 12	809	1.2+	1.0−	1994 01 17	010	(0.2+	2.7+)	1998 08 31	704	0.8−	0.0
1991 07 13	809	0.8−	0.0	1994 01 17	010	0.5−	1.5+	1998 08 31	704	1.0−	0.3+
1991 07 13	809	0.3−	0.1+	1994 01 30	010	0.7−	0.8+	1998 08 31	704	0.4+	0.7+
1991 07 13	809	0.2+	0.2+	1994 01 30	010	1.4+	1.6+	1998 11 10	704	0.1−	0.1−
1991 07 14	809	0.1−	1.0+	1994 01 31	010	1.4−	1.7−	1998 11 10	704	1.8+	0.8−
1991 07 14	809	0.1−	1.0+	1994 01 31	010	(2.3−	0.7−)	1998 11 10	704	0.1+	0.7+
1991 07 14	809	0.1−	0.9+	1994 01 31	010	(2.7−	3.5−)	1998 11 10	704	0.6−	0.4+

(9760)* 1991 PJ₁₃ = 1991 RT₃₄ = 1997 GE₁₄

Discovered 1991 Aug. 5 by H. E. Holt at Palomar.

Id. S

Residuals in seconds of arc

1991 08 05	675	1.2+	1.1-	1997 03 13	809	(2.3-	1.7-)	1998 10 29	704	0.2+	0.4-
1991 08 08	675	0.2+	0.8-	1997 03 13	809	(1.3-	2.6-)	1998 10 29	704	0.0	0.7-
1991 08 08	675	0.2-	0.9-	1997 04 03	704	0.1-	0.4+	1998 11 10	704	0.3+	0.9-
1991 09 05	691	0.0	0.7-	1997 04 03	704	1.2-	0.2-	1998 11 10	704	1.2+	0.4+
1991 09 05	691	0.1+	0.0	1997 04 05	704	0.9-	1.0+	1998 11 10	704	1.2+	0.2-
1991 09 05	691	0.2-	0.3-	1997 04 05	704	0.4+	0.0	1998 11 10	704	1.6-	1.0-
1991 09 12	675	(3.1+	4.0-)	1997 04 06	704	0.3-	1.0-	1998 11 10	704	0.7-	0.6+
1991 09 12	675	0.5+	0.5+	1997 04 06	704	0.2+	1.6-	1998 11 11	704	0.3+	0.2-
1993 01 21	691	0.4-	1.1-	1997 04 07	704	1.1+	0.3+	1998 11 11	704	0.1+	0.5+
1993 01 21	691	0.5-	1.2-	1997 04 07	704	0.0	0.7+	1998 11 11	704	0.7-	0.2-
1993 01 21	691	0.2-	1.2-	1998 10 19	699	0.5+	0.3+	1998 11 11	704	0.5-	1.1+
1997 03 11	809	0.1+	0.4-	1998 10 19	699	0.2+	1.6+	1998 11 16	566	0.2-	0.0
1997 03 11	809	0.3+	0.2-	1998 10 19	699	1.2+	0.1-	1998 11 16	566	0.2-	0.2-
1997 03 11	809	0.1+	0.4-	1998 10 29	704	0.4-	0.7-	1998 11 16	566	0.3-	0.5+
1997 03 13	809	(1.4-	2.6-)	1998 10 29	704	0.7-	0.1-				

(9761)* 1991 RR₄ = 1962 CV = 1993 FB₅₈

Discovered 1991 Sept. 13 by F. Börngen and L. D. Schmadel at Tautenburg.

Id. G. V. Williams (*MPC* 23673, *MPC* 26901)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				(2000.0)		P	Q
<i>M</i>	40.14819						
<i>n</i>	0.29044286	ω	55.97529	+0.84271687	-0.53777506		
<i>a</i>	2.2581992	Ω	336.52710	+0.47090421	+0.75886171		
<i>e</i>	0.1594644	<i>i</i>	3.60214	+0.26091665	+0.36732397		
<i>P</i>	3.39	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1962 02 10	033	1.1+	2.3+	1991 10 04	033	0.3+	0.6+	1998 09 29	704	0.8+	0.0
1962 02 10	033	(5.5+	0.7+)	1991 10 07	033	0.5+	0.2+	1998 09 29	704	0.3-	0.2+
1991 09 10	675	0.1-	1.2-	1991 10 07	033	0.5-	0.0	1998 09 29	704	0.9+	0.1+
1991 09 10	675	1.2+	1.3-	1991 10 08	033	0.3+	0.6+	1998 09 29	704	1.2+	1.2-
1991 09 13	033	0.4+	0.5+	1991 10 09	033	0.3+	0.2+	1998 09 29	704	1.3+	0.6-
1991 09 13	033	0.0	0.4+	1991 10 11	691	0.8-	1.2+	1998 11 10	704	1.8-	0.1+
1991 09 13	675	0.1-	0.1-	1991 10 11	691	0.7-	0.4+	1998 11 10	704	0.3-	0.3-
1991 09 13	675	0.3+	0.2+	1991 10 11	691	1.0-	0.4+	1998 11 10	704	0.7-	0.0
1991 09 13	033	0.6-	0.4+	1993 03 19	809	1.8+	0.5+	1998 11 10	704	0.9-	0.4+
1991 09 14	033	0.1+	0.6+	1993 03 20	809	(3.4+	0.4+)	1998 11 21	744	0.3+	0.4-
1991 09 15	033	0.1+	0.1-	1993 04 15	691	0.4-	1.7-	1998 11 21	744	0.5+	0.3-
1991 09 15	033	0.3-	0.3+	1993 04 15	691	0.5-	1.5-	1998 11 21	744	0.9+	0.6-
1991 09 15	675	0.4-	0.2-	1993 04 15	691	0.6-	0.6-	1998 11 24	704	1.0+	0.1-
1991 09 15	675	0.1-	1.4-	1993 04 17	413	1.0-	1.5-	1998 11 24	744	0.1-	0.0
1991 09 18	033	0.4-	0.1+	1996 02 12	369	0.7-	0.6+	1998 11 24	744	0.1-	0.2-
1991 10 03	046	(0.9+	3.0-)	1996 02 12	369	0.7-	0.6+	1998 11 24	744	0.4-	0.2-
1991 10 03	046	1.1-	1.9-	1996 02 12	369	0.5-	0.5+	1998 11 24	704	(2.5+	0.9-)
1991 10 03	033	0.6+	0.1-	1998 08 31	704	0.9-	0.2+	1998 11 24	704	0.5+	1.5-
1991 10 04	033	0.3+	0.8+	1998 08 31	704	1.4+	0.7-	1998 11 24	704	0.8+	0.7+
1991 10 04	046	(1.8-	2.0-)	1998 08 31	704	0.7-	0.3-	1998 11 24	704	(0.9+	2.6+)
1991 10 04	046	(1.5-	2.5-)	1998 08 31	704	0.1+	0.1-				

(9762)* 1991 RA₅ = 1993 FD₄

Discovered 1991 Sept. 13 by F. Börngen and L. D. Schmadel at Tautenburg.

Id. G. V. Williams (*MPC* 23517)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				(2000.0)		P	Q
<i>M</i>	342.97971						
<i>n</i>	0.29249942	ω	112.84279	-0.13074397	-0.99126634		
<i>a</i>	2.2476018	Ω	344.63990	+0.88408883	-0.10870523		
<i>e</i>	0.0640630	<i>i</i>	3.73072	+0.44865684	-0.07466067		
<i>P</i>	3.37	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 09 13	033	0.3+	0.1+	1993 03 19	809	0.3+	0.2+	1998 11 10	704	1.2+	1.1-
1991 09 13	033	0.6+	0.2-	1993 03 20	809	0.4+	0.1+	1998 11 11	704	0.9-	0.2+
1991 09 13	033	0.0	0.4+	1993 03 24	809	0.0	0.3+	1998 11 11	704	0.3-	1.1-
1991 09 14	033	0.2-	0.1-	1993 04 17	413	0.8-	0.4-	1998 11 11	704	0.6-	0.9-

1991 09 15	033	0.4+	0.6-	1996 01 12	691	0.1+	0.6-	1998 11 11	704	0.1-	1.4+
1991 09 15	033	0.4+	0.2+	1996 01 12	691	0.2-	0.0	1998 11 18	704	0.2+	0.4+
1991 09 18	033	0.0	0.1+	1996 01 12	691	0.0	0.0	1998 11 18	704	0.3+	0.5+
1991 10 03	033	0.8+	0.6-	1996 01 18	691	0.2+	0.3-	1998 11 18	704	0.6-	0.5+
1991 10 04	033	0.7+	0.0	1996 01 18	691	0.2+	0.1-	1998 11 18	704	0.0	0.6+
1991 10 04	033	0.2+	0.0	1996 01 18	691	0.2-	0.5-	1998 11 18	704	0.1+	0.0
1991 10 07	033	0.9+	0.1-	1996 01 25	691	0.3-	0.0	1998 11 21	704	0.4+	0.7+
1991 10 07	033	0.2+	0.6-	1996 01 25	691	0.0	0.1+	1998 11 21	704	0.2+	0.4+
1991 10 08	033	0.2+	0.2-	1996 01 25	691	0.1-	0.1-	1998 11 21	704	0.4+	0.7-
1991 10 09	033	0.9+	0.2-	1998 10 29	704	0.8+	0.3-	1998 11 21	704	(0.7-	2.1-)
1991 10 10	691	(2.1-	0.3+)	1998 10 29	704	0.4-	0.5-	1998 11 21	704	0.5-	1.9-
1991 10 10	691	1.8-	0.1-	1998 10 29	704	1.1+	0.0	1998 11 24	704	0.4+	0.3+
1991 10 10	691	1.9-	0.1+	1998 10 29	704	1.6+	0.3+	1998 11 24	704	0.3-	0.4+
1992 01 02	691	1.1-	0.9+	1998 11 10	704	0.8-	1.2-	1998 11 24	704	0.7-	0.2-
1992 01 02	691	1.6-	1.0+	1998 11 10	704	0.7-	0.8+	1998 11 24	704	0.3-	0.3+
1992 01 02	691	0.3+	0.4+	1998 11 10	704	0.8-	1.4+				

(9763)* 1991 RU₁₇ = 1991 PQ₁₇ = 1985 YT = 1990 FL₁

Discovered 1991 Sept. 13 by H. E. Holt at Palomar.

Id. S. Nakano (d, *MPC* 19822), G. V. Williams (*MPC* 29915)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				(2000.0)		P	Q
<i>M</i>	48.80249						
<i>n</i>	0.29292905	ω	177.98357	+0.98705950	-0.15995907		
<i>a</i>	2.2454036	Ω	191.23981	+0.14630244	+0.92707088		
<i>e</i>	0.0293479	<i>i</i>	3.30976	+0.06564401	+0.33904671		
<i>P</i>	3.36	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1985 12 18	688	0.9-	1.0-	1997 06 07	809	(0.9+	3.4+)	1998 10 15	704	0.6-	1.2+
1985 12 18	688	1.9+	0.5-	1997 06 07	809	(0.1+	3.1+)	1998 10 15	704	0.1-	0.7+
1988 11 06	675	0.7-	0.4+	1997 06 08	809	(1.4+	4.0+)	1998 10 15	704	0.7+	0.5+
1988 11 06	675	0.8-	0.3-	1997 06 08	809	(1.1+	4.3+)	1998 10 15	704	0.4-	0.0
1990 03 27	675	0.7+	0.3-	1997 06 08	809	(0.3+	4.3+)	1998 10 20	699	0.3+	0.6+
1990 03 27	675	1.1-	0.7+	1998 08 23	734	0.2-	0.1+	1998 10 20	699	0.3+	0.8+
1990 03 27	400	(2.2+	9.3+)	1998 08 23	734	0.3+	0.4+	1998 10 20	699	0.3+	0.8+
1990 03 27	400	(2.3+	10.0+)	1998 09 16	910	0.4-	0.3+	1998 10 29	704	0.2-	0.1+
1991 08 08	675	0.7-	0.0	1998 09 16	910	0.3-	0.3+	1998 10 29	704	0.5-	0.2-
1991 09 13	675	0.4+	0.8-	1998 09 16	910	0.4-	0.3+	1998 10 29	704	0.2-	0.9-
1991 09 13	675	0.9-	0.6-	1998 09 17	910	0.0	0.6+	1998 10 29	704	0.0	0.9-
1991 09 15	675	0.3-	0.1-	1998 09 17	910	0.1-	0.5+	1998 10 29	704	0.6-	1.4-
1991 09 15	675	0.2+	0.8-	1998 09 17	910	0.1+	0.5+	1998 11 10	704	0.9+	0.1+
1991 09 16	675	0.0	0.2-	1998 09 29	704	0.5+	1.2+	1998 11 10	704	0.8+	1.3-
1991 09 16	675	0.6+	0.4+	1998 09 29	704	0.6+	0.4-	1998 11 10	704	1.1+	0.3+
1991 09 17	675	0.2+	0.2+	1998 09 29	704	0.6-	0.6+	1998 11 10	704	0.0	0.3+
1991 09 17	675	0.6+	0.6+	1998 09 29	704	0.2+	0.9-	1998 11 10	704	0.4-	0.7+
1991 09 17	675	1.2+	0.1-	1998 09 29	704	1.7-	0.1-	1998 11 11	704	0.3+	0.2-
1991 09 17	675	0.1+	0.8-	1998 10 14	704	1.4+	0.2+	1998 11 11	704	0.7+	0.4-
1997 05 04	809	(2.9+	1.6-)	1998 10 14	704	1.4-	0.6-	1998 11 11	704	0.1-	0.2+
1997 05 04	809	(2.5+	1.3-)	1998 10 14	704	0.9-	1.2-	1998 11 11	704	0.9+	0.6+
1997 05 04	809	(2.7+	1.4-)	1998 10 14	704	0.8-	1.1-	1998 11 11	704	0.3-	0.2+
1997 06 07	809	(0.7+	3.7+)	1998 10 15	704	0.0	0.2+				

1984 12 27	095	(0.4− 2.8−)	1996 03 09	113	0.6− 0.1+	1998 10 30	761	0.6− 0.4+
1991 10 30	033	0.3+ 0.0	1996 03 09	113	0.1− 0.6−	1998 11 14	704	0.2− 0.1−
1991 10 30	033	1.5+ 0.3+	1996 03 09	113	0.2+ 0.5−	1998 11 14	704	0.6+ 0.5+
1991 11 01	033	1.5+ 0.2+	1996 03 19	113	0.3− 0.3−	1998 11 14	704	0.7− 0.7+
1991 12 04	367	0.4− 0.3+	1996 03 19	113	0.2− 0.3−	1998 11 14	704	0.9+ 0.3+
1991 12 04	367	0.9− 0.0	1998 10 16	699	0.2− 0.3+	1998 11 14	704	0.9+ 1.0+
1991 12 04	367	0.6− 0.9−	1998 10 16	699	0.5+ 0.3−	1998 11 16	704	0.5− 0.4+
1991 12 11	033	0.5− 0.1+	1998 10 16	699	0.3− 0.2+	1998 11 16	704	0.4+ 1.1−
1991 12 11	033	0.8− 0.6−	1998 10 18	704	0.2− 0.0	1998 11 16	704	0.6+ 1.1−
1991 12 12	033	0.2+ 0.4+	1998 10 18	704	(0.5+ 2.6+)	1998 11 16	704	1.2+ 1.3−
1994 09 03	033	0.6+ 0.4+	1998 10 18	704	0.3− 0.7+	1998 11 21	113	1.0− 0.8−
1994 09 09	033	0.8+ 0.6−	1998 10 18	704	0.7+ 0.2+	1998 11 21	113	0.9− 0.9−
1994 09 09	033	(2.6− 0.3+)	1998 10 18	704	0.4+ 0.3+	1998 11 21	113	0.7− 0.9−
1994 10 10	033	1.3− 0.6−	1998 10 29	761	0.2+ 0.3+			

(9765)* 1991 XZ = 1975 EB = 1982 FF = 1984 WJ₃

Discovered 1991 Dec. 14 by H. Shiozawa and M. Kizawa at Fujieda.

Id. T. Urata (*MPC* 19684)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	1.21015	(2000.0)	P	Q
<i>n</i>	0.28642099	ω 152.48705	−0.54251178	−0.83921615
<i>a</i>	2.2792895	Ω 330.32323	+0.75619166	−0.46849315
<i>e</i>	0.1766130	<i>i</i> 4.32984	+0.36586219	−0.27609859
<i>P</i>	3.44	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1975 03 04	095	0.9+ 1.2+	1992 01 02	898	1.1− 0.3−	1997 09 01	566	0.2+ 0.4+
1982 02 21	688	(2.3+ 5.8−)	1992 01 02	898	1.4+ 1.6+	1998 10 15	699	0.1+ 0.5−
1982 02 21	688	(1.5+ 3.4−)	1992 01 04	898	0.2− 0.0	1998 10 15	699	0.6− 0.9−
1982 03 21	688	(0.0 4.0−)	1992 01 04	898	0.2+ 2.0+	1998 10 15	699	0.2− 0.9−
1982 03 21	688	(0.3− 2.6−)	1994 09 30	675	1.2− 1.4+	1998 11 25	704	0.5+ 0.7−
1984 11 27	010	2.0+ 0.4+	1994 09 30	675	0.3+ 0.4+	1998 11 25	704	0.5+ 0.1−
1984 11 28	010	0.0 1.2−	1994 11 04	675	0.8+ 0.1−	1998 11 25	704	0.7− 0.5−
1991 12 14	898	0.9− 0.6+	1994 11 04	675	0.9+ 0.5−	1998 11 25	704	0.4− 0.0
1991 12 14	898	0.5− 1.2+	1994 11 06	675	1.1− 0.1−	1998 11 25	704	0.5+ 0.7−
1991 12 30	898	1.6− 1.1−	1994 11 06	675	0.3− 0.6−	1998 11 27	120	0.5+ 0.9−
1991 12 30	898	1.0− 0.1+	1996 06 05	689	0.7− 0.0	1998 11 27	120	0.7+ 0.8−
1992 01 01	898	1.5+ 0.5−	1997 09 01	566	0.0 0.5+	1998 11 27	120	0.6+ 0.8−
1992 01 01	898	1.3− 1.6+	1997 09 01	566	0.4− 0.7+			

(9766)* 1992 DZ₂ = 1981 JX₄ = 1988 FK₁

Discovered 1992 Feb. 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 20341)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	327.71480	(2000.0)	P	Q
<i>n</i>	0.25696720	ω 58.69278	−0.37344813	−0.92747876
<i>a</i>	2.4502906	Ω 53.24618	+0.84333979	−0.34747162
<i>e</i>	0.0819913	<i>i</i> 1.27861	+0.38641234	−0.13800949
<i>P</i>	3.84	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1954 04 08	675	0.1− 0.6+	1996 03 16	566	0.7− 0.4−	1998 11 10	699	0.0 0.6−
1981 05 08	675	0.4− 0.2−	1996 03 18	801	0.1− 1.6−	1998 11 10	704	0.0 0.4+
1981 05 09	675	0.6+ 0.8−	1996 03 18	801	0.1− 1.7−	1998 11 10	704	0.2− 0.2−
1988 03 17	033	1.0+ 1.1+	1996 03 19	801	0.2− 1.3−	1998 11 10	699	0.4+ 0.3+
1988 03 17	033	1.5+ 0.3+	1996 03 19	801	0.2+ 1.2−	1998 11 10	699	0.6+ 0.4−
1992 02 09	691	0.2+ 0.9+	1996 03 19	689	0.5− 1.2−	1998 11 11	704	0.6− 0.3−
1992 02 09	691	0.3+ 0.7+	1996 04 21	566	0.5− 0.4−	1998 11 11	704	0.4+ 0.4+
1992 02 09	691	0.3+ 0.4+	1996 04 21	566	0.3− 0.3−	1998 11 11	704	(0.4+ 2.1+)
1992 02 24	691	0.2− 0.1+	1996 04 21	566	0.1− 0.1−	1998 11 11	704	0.8− 1.5+
1992 02 24	691	0.2− 0.2+	1998 10 18	699	0.3− 0.4+	1998 11 18	704	0.0 0.3+
1992 02 24	691	0.2− 0.2+	1998 10 18	699	0.1+ 0.9−	1998 11 18	704	1.5− 0.3−
1992 02 25	675	1.1− 0.9−	1998 10 18	699	0.4+ 0.3−	1998 11 18	704	0.8+ 0.1+
1992 02 25	675	0.1− 0.7−	1998 10 29	704	0.0 0.3+	1998 11 18	704	0.9+ 0.4+
1992 02 29	691	0.1− 0.6+	1998 10 29	704	0.8− 0.4−	1998 11 18	704	0.3+ 0.9+

1992 02 29	691	0.0 0.5+	1998 10 29	704	0.6− 0.3+	1998 11 21	704	0.7+ 0.4−
1992 02 29	691	0.1− 0.4+	1998 10 29	704	0.1+ 0.3−	1998 11 21	704	1.2+ 0.1−
1992 03 06	809	0.3+ 1.7+	1998 10 29	704	0.8− 0.8−	1998 11 21	704	0.7+ 1.5−
1992 03 08	809	0.7+ 1.7+	1998 10 30	120	0.8+ 0.4−	1998 11 21	704	1.3+ 1.8−
1992 03 09	809	(0.0 2.4+)	1998 10 30	120	0.5+ 0.5+	1998 11 23	691	0.8− 0.1−
1992 04 06	809	0.1+ 0.0	1998 10 31	120	0.2− 0.4−	1998 11 23	691	0.7− 0.1−
1996 03 16	566	0.3− 0.0	1998 11 10	704	0.2+ 1.2−	1998 11 23	691	0.6− 0.1+
1996 03 16	566	0.5− 0.2−	1998 11 10	704	0.5− 0.2+			

(9767)* 1992 EB₁

Discovered 1992 Mar. 10 by D. I. Steel at Siding Spring.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	31.06444	(2000.0)	P	Q
<i>n</i>	0.15857520	ω 231.20324	−0.89704093	+0.40559591
<i>a</i>	3.3804865	Ω 331.42125	−0.19539245	−0.72021644
<i>e</i>	0.5704369	<i>i</i> 21.52634	−0.39640808	−0.56283234
<i>P</i>	6.22	<i>H</i> 16.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1992 03 10	413	0.6+ 1.5−	1992 05 24	413	0.3+ 0.2−	1997 12 27	104	0.5+ 0.4−
1992 03 10	413	0.8+ 1.0+	1992 05 24	413	0.2+ 0.2−	1997 12 27	104	0.6+ 0.0
1992 03 11	413	0.9− 0.6−	1992 06 18	413	0.1− 0.2−	1997 12 27	104	0.1+ 0.0
1992 03 13	413	0.5− 0.2+	1992 06 18	413	0.1− 0.0	1997 12 30	711	0.1− 0.3−
1992 03 14	413	1.3+ 1.2+	1992 06 19	413	0.4− 0.0	1997 12 30	711	0.2− 0.2+
1992 03 15	413	0.5− 0.2+	1992 06 19	413	0.6+ 0.1−	1997 12 31	711	0.1− 0.1−
1992 03 24	413	1.1− 0.7−	1992 07 05	413	0.6− 0.0	1997 12 31	711	0.0 0.2−
1992 03 24	413	0.7− 0.5+	1992 07 05	413	0.5− 0.0	1998 01 01	711	0.2+ 0.1−
1992 03 28	413	0.3+ 0.2−	1992 08 21	413	0.1− 0.7+	1998 01 01	711	0.2− 0.0
1992 04 04	413	0.6+ 0.8+	1992 08 21	413	0.4− 0.6+	1998 05 05	696	0.1+ 0.8+
1992 04 22	413	0.2+ 0.1+	1992 08 22	413	0.4+ 0.8+	1998 05 05	696	0.6+ 0.2−
1992 04 22	413	0.3+ 0.2+	1997 12 24	104	0.3− 0.1+	1998 05 05	696	0.5− 0.2−
1992 04 30	413	0.5− 1.5−	1997 12 24	104	0.3− 0.9+			

(9768)* 1992 GB₁ = 1977 JE = 1996 HT₁₉

Discovered 1992 Apr. 5 by C. S. Shoemaker at Palomar.

Id. B. G. Marsden (*MPC* 27309)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	291.11545	(2000.0)	P	Q
<i>n</i>	0.26076984	ω 136.70289	−0.95913670	−0.11513912
<i>a</i>	2.4264116	Ω 39.01082	−0.08654545	−0.75029198
<i>e</i>	0.2119397	<i>i</i> 24.24226	+0.26938202	−0.65100302
<i>P</i>	3.78	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1977 05 15	095	(1.4− 4.0−)	1994 11 07	675	0.1+ 0.3+	1998 11 14	704	0.3− 0.1+
1988 02 17	381	0.5− 1.9+	1994 11 30	675	0.4− 0.3−	1998 11 14	704	0.7+ 0.1+
1988 02 17	381	0.8+ 0.8−	1994 11 30	675	0.0 0.2−	1998 11 14	704	(2.4+ 0.7−)
1988 02 17	381	0.6− 0.2+	1994 12 02	675	0.4− 1.2+	1998 11 17	012	0.4− 0.2+
1988 02 17	381	0.4+ 0.2−	1994 12 02	675	0.8+ 0.5+	1998 11 17	012	0.7− 0.2+
1988 02 18	381	(0.0 3.4+)	1996 04 18	809	0.7+ 1.0+	1998 11 17	012	1.3+ 0.1+
1988 02 18	381	0.6− 1.1+	1996 04 18	809	0.8+ 0.9+	1998 11 17	012	1.7− 0.5−
1988 02 18	381	(0.0 2.8+)	1996 04 18	809	0.1− 0.9+	1998 11 17	012	0.5+ 0.3−
1988 02 18	381	0.6− 0.4−	1996 04 20	809	0.1+ 0.3+	1998 11 17	012	0.2+ 0.2−
1992 04 05	675	0.2− 0.2+	1996 04 20	809	0.6− 0.4−	1998 11 18	012	0.2+ 0.1+
1992 04 05	675	0.1− 0.4+	1996 04 20	809	0.4− 0.0	1998 11 21	744	0.3− 0.3−
1992 04 07	675	0.2− 0.2+	1998 09 29	704	0.6+ 1.1+	1998 11 21	744	0.3+ 0.1+
1992 04 24	675	0.5+ 1.8−	1998 09 29	704	0.6− 1.7+	1998 11 21	744	0.2+ 0.5−
1992 04 24	675	(0.4+ 2.0−)	1998 09 29	704	0.7+ 0.6−	1998 11 24	744	0.1+ 0.4−
1992 04 26	675	0.4+ 1.8−	1998 09 29	704	0.8− 0.8+	1998 11 24	744	0.0 0.4−
1992 04 29	675	0.1+ 0.6−	1998 09 29	704	(0.6+ 2.3+)	1998 11 24	744	0.2− 0.4−
1994 11 07	675	0.2+ 0.7−	1998 11 14	704	0.2+ 0.0			

(9769)* 1993 DG₂ = 1994 PK₂₇

Discovered 1993 Feb. 24 by A. Natori and T. Urata at JCPM Yakiimo Station.

Id. B. G. Marsden (*MPC* 24567)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29448590	ω	47.44496	−0.99507538	−0.04735981		
<i>a</i>	2.2374828	Ω	129.64888	+0.01614654	−0.94418490		
<i>e</i>	0.1133702	<i>i</i>	6.49340	+0.09779714	−0.32599374		
<i>P</i>	3.35	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1993 02 24	885	0.1+	0.1+	1994 09 05	809	1.1−	1.3−
1993 02 24	885	0.2−	0.6+	1994 09 05	809	1.4−	1.2−
1993 03 02	885	(4.4+ 0.3+)		1994 09 06	809	1.0+	1.7+
1993 03 02	885	0.8+	1.6−	1994 09 06	809	0.8+	1.1+
1993 03 13	411	0.2+	0.1+	1994 09 06	809	0.9+	0.9+
1993 03 13	411	0.3−	0.3+	1995 12 01	385	0.4−	0.6+
1993 03 13	411	1.0+	1.1+	1995 12 01	385	0.2−	0.3+
1993 03 20	885	(2.6− 0.2+)		1995 12 01	385	0.1−	0.4+
1993 03 20	885	0.5−	0.2−	1995 12 15	385	0.6+	1.2−
1993 03 24	675	0.2−	0.5+	1995 12 15	385	0.6+	0.2−
1993 03 24	675	1.5+	1.6+	1995 12 15	385	2.0−	1.6−
1993 03 29	885	0.6+	0.1−	1996 01 21	801	0.4+	1.1−
1993 03 29	885	1.3−	1.6+	1996 02 19	801	0.6+	1.5−
1994 08 12	809	(3.1+ 0.0)		1996 02 19	801	0.8−	0.6+
1994 08 12	809	(3.1+ 0.2−)		1997 07 04	385	0.2+	0.9−
1994 08 12	809	(2.4+ 0.1+)		1997 07 04	385	0.7−	0.2−
1994 08 13	809	(1.2+ 2.1−)		1998 10 18	809	0.4+	0.0
1994 08 13	809	(0.3+ 2.6−)		1998 10 18	809	0.5+	1.2+
1994 08 13	809	(0.2+ 2.7−)		1998 10 18	809	0.7+	0.9+
1994 09 05	809	0.7−	0.5+	1998 10 19	809	0.9−	0.3+

(9770)* 1993 EE = 1994 RJ₁₂

Discovered 1993 Mar. 1 by T. Urata at the Nihondaira Observatory.

Id. E. Bowell (*MPC* 29917), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28583822	ω	67.82870	−0.91020948	+0.41141818		
<i>a</i>	2.2823865	Ω	136.42643	−0.40081123	−0.84623475		
<i>e</i>	0.1468227	<i>i</i>	3.94933	−0.10425478	−0.33855844		
<i>P</i>	3.45	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1993 03 01	385	0.6−	0.4+	1993 03 29	385	1.1−	0.1+
1993 03 01	385	0.3−	1.7−	1993 03 29	385	0.3−	0.7+
1993 03 02	385	0.8+	0.8−	1993 03 29	385	0.3−	1.4+
1993 03 02	385	0.2+	0.3−	1993 04 14	675	0.4+	1.0+
1993 03 02	385	0.2+	0.4−	1993 04 14	675	0.8+	0.4−
1993 03 13	385	0.2−	0.4+	1993 04 14	385	0.4+	0.5−
1993 03 13	385	0.2−	0.1+	1993 04 14	385	0.3+	0.5−
1993 03 13	385	0.1−	0.5+	1993 04 14	385	0.7+	0.8−
1993 03 14	411	0.1−	0.1−	1994 09 01	033	0.1−	0.4−
1993 03 14	411	0.6+	0.1−	1994 09 02	033	0.8+	0.8−
1993 03 14	411	0.1+	0.0	1994 09 12	675	0.3+	0.5−
1993 03 16	372	0.4−	1.1+	1994 09 12	675	0.1−	0.8−
1993 03 16	372	1.3+	1.9+	1997 07 02	385	0.3−	0.5−
1993 03 17	372	1.2−	1.0−	1997 07 02	385	1.1+	1.2+
1993 03 17	372	1.6−	0.3+	1997 07 04	385	0.4+	1.4+
1993 03 20	385	1.0+	0.2−	1997 07 04	385	0.3−	0.4+
1993 03 20	385	0.0	0.6−	1997 08 08	385	0.3−	0.1+
1993 03 20	385	0.1−	0.1−	1997 08 08	385	1.2−	0.3+

(9771)* 1993 FU₁₇ = 1991 SU₂

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

Id. G. V. Williams (*MPC* 23523)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29266128	ω	12.28541	+0.51280331	−0.85340203		
<i>a</i>	2.2467730	Ω	46.94907	+0.77644105	+0.41457060		
<i>e</i>	0.1342533	<i>i</i>	7.34931	+0.36629506	+0.31596866		
<i>P</i>	3.37	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1991 09 12	675	0.5+	0.9+	1996 03 19	801	0.2−	0.2+
1991 09 12	675	0.5+	0.5+	1997 06 23	689	(4.0+ 0.7+)	1998 11 12
1991 09 17	675	0.7+	0.3−	1998 08 31	704	0.4−	0.0
1991 09 17	675	1.8+	0.6+	1998 08 31	704	1.4−	1.6−
1991 09 29	691	0.9−	0.1−	1998 08 31	704	(3.2− 1.1−)	1998 11 18
1991 09 29	691	0.8−	0.3−	1998 08 31	704	2.3−	0.5−
1991 09 29	691	0.8−	0.4−	1998 08 31	704	1.7−	0.2+
1991 10 02	691	0.6−	0.3−	1998 09 29	704	0.1−	0.3−
1991 10 02	691	0.6−	0.3−	1998 09 29	704	1.2−	1.3+
1991 10 02	691	0.5−	0.0	1998 09 29	704	0.3−	1.3+
1991 10 07	675	0.4+	1.8−	1998 09 29	704	0.8+	0.1−
1991 10 08	675	1.3+	0.2+	1998 09 29	704	0.5+	0.0
1993 03 17	809	0.3+	1.5+	1998 11 10	704	0.8+	0.2+
1993 03 18	809	0.2+	0.3+	1998 11 10	704	0.4+	0.9−
1993 03 23	809	0.8+	0.3−	1998 11 10	704	1.1+	1.0−
1993 04 16	413	0.5−	0.3−	1998 11 10	704	2.2+	0.6−
1994 07 13	675	0.1+	0.2+	1998 11 10	704	0.8+	0.0
1994 07 13	675	0.4−	1.6+	1998 11 11	727	0.4−	0.6+
1996 03 17	801	0.3−	0.4−	1998 11 11	727	0.4−	0.5+
1996 03 17	801	0.1+	0.2+	1998 11 11	727	0.2−	0.8+
1996 03 19	801	0.5−	0.2+	1998 11 12	727	0.3−	1.3+

(9772)* 1993 MB = 1949 KR = 1985 UU₆ = 1997 GY₂₁

Discovered 1993 June 16 by T. B. Spahr at the University of Arizona's

Catalina Station.

Id. T. B. Spahr (*MPC* 30275)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22500186	ω	63.45538	−0.05896027	+0.99397268		
<i>a</i>	2.6771866	Ω	203.71695	−0.97802500	−0.07606394		
<i>e</i>	0.1859724	<i>i</i>	13.28429	−0.19997695	+0.07894680		
<i>P</i>	4.38	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1949 05 29	760	0.2+	0.8−	1997 04 11	809	(0.4+ 3.1+)	1998 09 27
1949 05 29	760	0.3−	1.1−	1997 04 11	809	0.4+	1.9+
1985 10 18	095	(1.2+ 2.9+)		1997 04 12	809	0.0	0.3+
1993 06 16	693	0.4+	0.3−	1997 04 12	809	0.1−	0.2−
1993 06 16	693	0.5−	0.6+	1997 04 12	809	0.7−	0.8−
1993 06 17	693	(2.2+ 1.3−)		1997 08 14	658	1.3−	0.1−
1993 06 17	693	1.3+	1.9+	1997 08 14	658	1.3−	0.3−
1993 06 18	693	0.5+	0.8−	1997 08 14	658	1.4−	0.3−
1993 06 18	693	(0.4+ 4.0−)		1998 09 14	704	1.0+	0.8−
1993 06 26	693	1.0−	1.0−	1998 09 14	704	0.1+	0.4−
1993 06 26	693	0.6+	0.1+	1998 09 14	704	0.2−	0.2−
1997 04 02	704	1.1+	0.5−	1998 09 18	704	0.1+	0.6−
1997 04 02	704	0.9+	0.4+	1998 09 18	704	0.0	1.0+
1997 04 06	704	0.6+	1.0−	1998 09 18	704	0.1−	0.8+
1997 04 06	704	0.7+	0.2+	1998 09 18	704	0.2−	0.5+
1997 04 07	809	0.5−	1.8+	1998 09 18	704	0.4−	0.4−
1997 04 07	809	0.4+	0.2−	1998 09 19	704	0.9+	0.1−
1997 04 07	809	(0.9− 2.6+)		1998 09 19	704	0.5+	0.7+
1997 04 07	809	1.3−	1.9+	1998 09 19	704	0.9+	0.1−
1997 04 07	704	(2.8+ 0.8+)		1998 09 26	704	0.3+	0.1−
1997 04 08	809	(0.4− 2.2+)		1998 09 26	704	0.2−	0.3+
1997 04 08	809	(0.6− 2.1+)		1998 09 26	704	0.2−	0.2−
1997 04 08	809	0.5−	1.5+	1998 09 26	704	0.4−	0.7−

1997 04 08	704	0.2+	0.4-	1998 09 26	704	0.7-	0.7+	1998 10 29	704	0.5+	1.0-
1997 04 08	704	0.1+	0.7+	1998 09 27	704	0.1+	0.3+	1998 11 11	699	0.7-	0.7+
1997 04 08	704	0.4+	0.3-	1998 09 27	704	0.6+	0.2+	1998 11 11	699	0.7-	0.5+
1997 04 08	704	0.3+	1.1+	1998 09 27	704	0.2-	0.3-	1998 11 11	699	0.1-	0.2-
1997 04 11	809	(1.1+	2.8+)	1998 09 27	704	0.8+	0.7+				

(9773)* 1993 MG₁

Discovered 1993 June 23 by E. F. Helin at Palomar.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	93.62675						
<i>n</i>	0.22400098	ω	15.53817	+0.38670478	+0.88749322		
<i>a</i>	2.6851554	Ω	277.74877	-0.87077071	+0.26190199		
<i>e</i>	0.3844010	<i>i</i>	14.65151	-0.30367380	+0.37916108		
<i>P</i>	4.40	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 09 30	675	0.9-	1.4+	1993 08 14	801	0.2+	0.5+	1997 05 13	608	0.3-	0.1+
1989 09 30	675	(1.7-	2.6+)	1993 08 20	801	0.0	0.1+	1997 05 13	608	0.5+	0.2-
1989 11 22	675	0.2+	0.8+	1993 08 20	801	0.1+	0.4+	1998 10 18	704	0.5+	0.8-
1989 11 22	675	0.1-	0.3+	1993 09 12	801	0.2-	0.1+	1998 10 18	704	0.9+	0.3-
1993 06 23	675	1.0+	0.2-	1993 09 12	801	0.0	0.3+	1998 10 18	704	1.2+	1.5-
1993 06 23	675	0.0	1.6-	1993 09 13	801	0.1+	0.1-	1998 11 14	704	0.2+	0.0
1993 06 26	675	0.7-	0.5+	1993 09 13	801	0.0	0.1+	1998 11 14	704	0.3+	1.0-
1993 06 26	675	0.9-	0.4+	1993 10 11	801	0.1+	0.4+	1998 11 14	704	0.0	0.9-
1993 07 16	675	(2.3-	1.8-)	1993 10 12	801	0.0	0.2+	1998 11 14	704	(2.8+	2.5-)
1993 07 16	675	1.0-	1.7-	1993 10 13	801	0.3+	0.8+	1998 11 14	704	(1.2-	2.1-)
1993 07 20	675	(2.3-	1.0+)	1993 10 14	801	0.2+	0.7+	1998 11 16	704	0.6-	0.5-
1993 07 20	675	0.3-	1.4+	1993 10 19	801	0.8+	0.7-	1998 11 16	704	0.4-	1.0-
1993 07 22	675	0.2-	0.0	1993 10 19	801	0.0	0.5+	1998 11 16	704	1.1-	0.1-
1993 07 22	675	(2.5+	1.0-)	1993 11 10	801	0.3-	0.3+	1998 11 23	561	0.5-	0.2+
1993 07 24	675	0.5+	0.2+	1993 11 10	801	0.0	0.4+	1998 11 23	561	1.0-	0.5+
1993 07 24	675	0.2+	0.3+	1996 02 20	608	0.6+	0.2-	1998 11 23	561	0.5-	1.0+
1993 08 14	801	0.6+	1.5-	1996 02 20	608	0.9+	1.7+				

(9774)* 1993 NO = 1990 VB₇

Discovered 1993 July 12 by E. W. Elst at the European Southern Observatory.

Id. K. Ichikawa (*MPC* 24231)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	21.85374						
<i>n</i>	0.24445007	ω	80.09152	+0.56955808	-0.82194151		
<i>a</i>	2.5332377	Ω	335.18777	+0.75037226	+0.52192273		
<i>e</i>	0.1232744	<i>i</i>	0.54171	+0.33547738	+0.22805441		
<i>P</i>	4.03	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 11 12	675	0.4+	0.7+	1993 07 26	809	0.3-	0.8-	1998 11 10	704	0.0	0.1-
1990 11 12	675	0.4-	0.1-	1994 12 04	098	(2.2-	1.3+)	1998 11 10	704	(2.2+	0.6-)
1990 11 14	675	0.3-	0.7-	1994 12 04	098	0.6-	1.8+	1998 11 10	704	0.7-	1.5+
1990 11 14	675	0.5+	1.3-	1994 12 04	098	0.1+	0.5+	1998 11 10	704	1.3-	0.9-
1993 07 12	809	0.5+	1.1+	1996 03 15	566	0.4+	0.3+	1998 11 16	566	0.5+	0.2+
1993 07 12	809	0.4+	1.2+	1996 03 15	566	0.2-	0.5+	1998 11 16	566	0.2+	0.7+
1993 07 12	809	0.5+	0.6+	1996 03 15	566	0.1-	0.4+	1998 11 16	566	0.4+	0.1+
1993 07 19	809	(2.1-	1.4-)	1996 04 20	566	0.2+	0.8+	1998 11 21	744	0.7+	1.5+
1993 07 19	809	(2.6-	1.2-)	1996 04 20	566	0.6+	0.0	1998 11 21	744	0.1-	0.9+
1993 07 19	809	(2.7-	1.0-)	1996 04 20	566	0.1+	0.0	1998 11 21	744	0.3-	0.6+
1993 07 19	809	0.1-	0.5-	1998 08 31	704	0.6-	0.9-	1998 11 24	704	0.5+	0.6+
1993 07 19	809	0.3+	0.2-	1998 08 31	704	1.2+	0.0	1998 11 24	704	0.2+	0.1-
1993 07 19	809	1.0+	0.2+	1998 08 31	704	(1.2+	2.3-)	1998 11 24	744	0.6-	0.5+
1993 07 23	809	0.2-	1.2+	1998 08 31	704	1.1+	0.2-	1998 11 24	744	0.2-	0.3+
1993 07 23	809	1.3-	1.2+	1998 09 29	704	0.7+	0.1-	1998 11 24	704	1.2-	0.6-
1993 07 23	809	0.1-	1.4+	1998 09 29	704	0.3-	0.6-	1998 11 24	704	0.1+	1.3-
1993 07 26	809	0.3-	1.4-	1998 09 29	704	(1.4-	2.1+)	1998 11 24	704	0.7+	1.5-
1993 07 26	809	0.9-	1.2-	1998 09 29	704	0.3-	0.8+				

(9775)* 1993 OH₁₂

Discovered 1993 July 19 by E. W. Elst at the European Southern Observatory.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	81.80514						
<i>n</i>	0.23365584	ω	79.36832	+0.87321450	+0.48549216		
<i>a</i>	2.6106679	Ω	251.57552	-0.46275892	+0.79878871		
<i>e</i>	0.1544524	<i>i</i>	2.55863	-0.15280912	+0.35529419		
<i>P</i>	4.22	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1951 08 08	675	0.4-	0.6-	1993 07 23	809	0.1+	0.4-	1998 10 31	120	0.6-	0.1+
1951 08 08	675	0.9+	0.7-	1993 07 23	809	0.3-	0.1-	1998 10 31	120	1.5+	1.2-
1971 03 25	675	0.6-	0.3+	1993 07 26	809	0.0	0.1+	1998 11 11	704	0.4+	0.9-
1971 03 26	675	0.4-	0.2+	1993 07 26	809	0.4+	0.0	1998 11 11	704	1.1-	1.6-
1971 03 26	675	0.5+	0.5-	1993 07 26	809	0.0	0.2+	1998 11 18	704	0.4+	0.5-
1971 04 16	675	(0.3-	3.0-)	1998 10 29	704	0.3+	0.6+	1998 11 18	704	0.8+	0.7-
1971 04 16	675	0.2+	0.8-	1998 10 29	704	0.7-	1.1+	1998 11 18	704	0.9-	1.0-
1993 07 12	809	(1.3+	4.5+)	1998 10 29	704	1.0-	0.8+	1998 11 18	704	0.7+	1.4+
1993 07 12	809	(1.2+	4.0+)	1998 10 29	704	0.8+	1.4+	1998 11 18	704	0.1-	1.1+
1993 07 12	809	(0.6+	3.6+)	1998 10 29	704	0.2+	0.5+	1998 11 21	704	0.9+	0.0
1993 07 19	809	0.2-	1.1+	1998 10 30	120	0.5-	0.1-	1998 11 21	704	0.6-	0.5+
1993 07 19	809	0.3-	0.7+	1998 10 30	120	0.8-	0.2-	1998 11 21	704	(2.8-	0.5-)
1993 07 19	809	0.5	0.4+	1998 10 31	120	0.6+	0.2+	1998 11 21	704	(1.1-	2.3+)
1993 07 23	809	0.5+	0.9-	1998 10 31	120	0.2-	1.1-	1998 11 21	704	(2.7-	3.5+)

(9776)* 1993 VL₃ = 1990 DO₁

Discovered 1993 Nov. 11 by S. Ueda and H. Kaneda at Kushiro.

Id. A. Lowe (*MPC* 22961)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	305.45352						
<i>n</i>	0.19886952	ω	35.28264	-0.60609855	-0.79320359		
<i>a</i>	2.9068586	Ω	92.09769	+0.71553766	-0.57610605		
<i>e</i>	0.0177315	<i>i</i>	3.38060	+0.34734767	-0.19730655		
<i>P</i>	4.96	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 02 21	046	0.1+	0.8-	1996 06 13	566	0.1-	0.6-	1998 11 15	120	0.5-	0.0
1990 02 21	046	0.1-	0.2-	1996 06 13	566	1.0-	0.5-	1998 11 15	120	0.2-	0.1-
1990 02 22	046	0.3+	0.6-	1996 06 13	566	0.3-	0.5-	1998 11 18	704	0.9+	0.2+
1990 02 22	046	0.4-	1.1+	1996 06 13	566	0.4-	0.5-	1998 11 18	704	0.0	0.4-
1993 11 11	399	0.5+	0.3+	1996 06 13	566	0.1-	0.2-	1998 11 18	704	0.6-	0.6-
1993 11 11	399	1.1-	0.0	1996 06 13	566	0.4-	0.3-	1998 11 18	704	0.1-	0.0
1993 11 16	399	1.1-	1.4+	1998 10 20	699	0.3+	0.0	1998 11 18	704	0.9-	0.3+
1993 11 16	399	(3.9-	2.8+)	1998 10 20	699	0.0	0.4+	1998 11 21	704	0.8+	0.2-
1993 11 21	691	0.2+	0.9+	1998 10 20	699	1.1+	0.1+	1998 11 21	704	0.2+	0.1+
1993 11 21	691	0.1-	0.7+	1998 10 29	704	0.8+	0.5-	1998 11 21	704	0.6-	1.0+
1993 11 21	691	0.5+	0.5+	1998 10 29	704	0.4+	0.6-	1998 11 21	704	(1.5-	2.1+)
1996 05 15	566	0.6+	0.8+	1998 10 29	704	0.2-	1.0-	1998 11 21	704	(1.0-	2.2+)
1996 05 15	566	1.1+	0.5+	1998 10 29	704	0.1+	1.0-				
1996 05 15	566	0.4+	1.0+	1998 10 29	704	0.5-	1.9-				

(9777)* 1994 OB = 1990 KS₂

Discovered 1994 July 31 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Id. S. Nakano (*MPC* 29301)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Residuals in seconds of arc

1990 05 17	095	0.7−	1.0−	1998 09 24	699	0.2−	0.5−	1998 10 19	699	0.2+	0.2−
1990 05 17	095	0.3−	0.7−	1998 09 26	704	0.8−	0.3+	1998 10 19	699	0.2−	0.2−
1994 07 31	905	0.1−	0.3+	1998 09 26	704	0.3−	0.3−	1998 10 19	699	0.3−	0.1−
1994 07 31	905	1.9−	0.2+	1998 09 26	704	0.4−	0.7−	1998 10 28	704	0.4+	0.1+
1994 08 03	905	0.2+	0.6+	1998 09 26	704	0.4−	0.3+	1998 10 28	704	0.3+	0.0
1994 08 03	905	0.9−	0.1+	1998 09 26	704	0.6−	0.1+	1998 10 28	704	0.9+	0.3−
1994 08 29	905	0.3+	1.3−	1998 09 27	704	0.5+	0.3+	1998 10 28	704	0.0	0.2−
1994 08 29	905	0.5+	0.4+	1998 09 27	704	0.7+	0.3+	1998 10 28	704	0.2+	0.0
1994 09 25	905	1.7+	0.4+	1998 09 27	704	0.6−	0.6−	1998 10 29	704	0.5+	0.2−
1994 09 25	905	1.7+	0.8+	1998 09 27	704	0.1−	0.0	1998 10 29	704	0.1−	0.6+
1997 03 03	385	0.2+	0.5+	1998 09 27	704	0.3+	0.7+	1998 10 29	704	0.3+	0.4+
1997 03 03	385	0.1+	1.0−	1998 10 10	888	0.1−	0.3+	1998 10 29	704	0.2−	0.1+
1997 03 09	385	0.1+	0.0	1998 10 10	888	0.3−	0.9−	1998 10 29	704	0.2−	1.2−
1997 03 09	385	0.2+	0.4+	1998 10 10	888	1.0−	0.3−	1998 11 08	888	0.0	0.5+
1998 09 13	888	1.8−	0.3−	1998 10 14	704	0.9+	0.3−	1998 11 08	888	0.0	0.2+
1998 09 13	888	1.1−	0.5−	1998 10 14	704	(2.7−	0.8−)	1998 11 08	888	0.0	0.6+
1998 09 13	888	0.4+	0.4−	1998 10 14	704	0.2+	0.2−	1998 11 10	704	0.4+	0.3−
1998 09 19	888	0.2−	0.1+	1998 10 14	704	1.3+	1.5−	1998 11 10	704	1.8+	0.7+
1998 09 19	888	0.0	0.4+	1998 10 14	704	1.3+	1.3−	1998 11 10	704	0.1+	1.9+
1998 09 19	888	0.4−	0.4+	1998 10 18	888	0.2−	0.1−	1998 11 10	704	0.6−	0.3+
1998 09 24	699	0.3−	0.1+	1998 10 18	888	0.2−	0.3−				
1998 09 24	699	0.2+	0.8+	1998 10 18	888	0.3−	0.2−				

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	114.99268		(2000.0)		P		Q				
n	0.27179220	ω	304.21058		+0.15544471		+0.98766976				
a	2.3603590	Ω	334.71261		−0.89141655		+0.13213906				
e	0.2268468	i	2.49356		−0.42569176		+0.08395063				
P	3.63	H	14.3		G	0.15	U	1			
Residuals in seconds of arc											
1954 08 04	675	0.5−	0.6+	1994 09 03	809	(2.3+	2.3+)	1998 10 19	699	0.3+	1.0−
1954 08 04	675	0.2−	0.3+	1994 09 03	809	(1.9+	2.8+)	1998 10 29	704	0.0	0.8−
1976 09 29	095	1.7+	0.3+	1994 09 04	809	0.7+	0.1−	1998 10 29	704	0.7+	0.9+
1993 01 31	691	1.4−	0.9−	1994 09 04	809	1.3+	0.0	1998 10 29	704	0.7−	0.0
1993 01 31	691	1.6−	0.9−	1994 09 04	809	0.3+	0.2−	1998 10 29	704	0.4+	0.3+
1993 01 31	691	1.5−	1.2−	1994 09 09	399	(2.5−	0.1−)	1998 10 29	704	0.6+	0.6−
1994 08 10	809	0.6+	0.1+	1994 09 09	399	0.6−	0.4−	1998 11 10	704	0.2−	1.9+
1994 08 10	809	0.2+	0.4+	1997 03 08	809	1.2+	0.2+	1998 11 10	704	0.7−	3.0+
1994 08 10	809	0.4−	0.4+	1997 03 08	809	0.7+	0.9+	1998 11 10	704	0.1−	0.0
1994 08 11	809	(0.4+	2.5−)	1997 03 08	809	0.6+	0.4+	1998 11 10	704	0.3+	1.5+
1994 08 11	809	0.7−	1.1−	1997 03 09	809	0.5+	1.2+	1998 11 11	704	0.7+	0.5−
1994 08 11	809	0.6−	1.2−	1997 03 09	809	0.6+	0.7+	1998 11 11	704	0.3−	0.8+
1994 09 01	399	(2.2−	1.0+)	1997 03 09	809	0.8+	0.5+	1998 11 11	704	1.4+	0.4−
1994 09 01	399	1.6−	0.2−	1998 10 19	699	1.0−	0.1−	1998 11 11	704	1.5−	0.3−
1994 09 03	809	(2.8+	2.7+)	1998 10 19	699	0.6−	0.2+				

(9778)* 1994 PA₁₉ = 1979 SF₇ = 1988 AM = 1997 LA₁₂

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

Observatory.

Id. G. V. Williams (*MPC* 30276, unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	30.84941		(2000.0)		P	Q
n	0.26065605	ω	190.69137		+0.93672026	−0.35003783
a	2.4271177	Ω	189.80332		+0.32346712	+0.87126250
e	0.1864394	i	1.80214		+0.13388121	+0.34405693
P	3.78	H	14.7	G	0.15	U 2

Residuals in seconds of arc

1979 09 23	095	1.0−	1.1−	1997 06 07	809	1.5+	1.4+	1998 10 15	704	0.4−	0.4−
1988 01 11	033	1.0+	1.8+	1997 06 07	809	0.4+	1.6+	1998 10 15	704	0.4+	0.2−
1988 01 11	033	0.4+	2.0+	1997 06 07	809	1.5−	0.7+	1998 10 15	470	1.0−	0.2−
1992 02 06	691	0.3+	1.6+	1997 06 08	809	1.0+	0.8−	1998 10 15	470	1.1−	0.4−
1992 02 06	691	0.4+	0.8+	1997 06 08	809	0.6+	0.0	1998 10 15	470	1.2−	0.3+
1992 02 06	691	1.5+	2.3+	1997 06 08	809	0.3+	0.1−	1998 10 15	470	1.6−	0.4−
1994 08 12	809	0.7+	1.7+	1998 08 28	704	0.6+	0.3−	1998 10 29	704	0.1+	0.4+
1994 08 12	809	0.3+	1.2+	1998 08 28	704	(2.9−	3.4+)	1998 10 29	704	0.2−	0.4−
1994 08 12	809	0.7−	1.5+	1998 08 28	704	(0.8+	2.5−)	1998 10 29	704	1.4+	2.3+
1994 08 13	809	1.3+	0.6−	1998 08 28	704	0.4−	0.6−	1998 10 29	704	2.2−	1.3+
1994 08 13	809	0.8+	0.6−	1998 08 31	704	2.7−	0.2+	1998 11 10	704	0.7+	0.1−
1994 08 13	809	0.8+	0.1+	1998 08 31	704	0.7−	0.8−	1998 11 10	704	0.0	0.7−
1994 09 05	809	(0.8−	3.0+)	1998 08 31	704	1.3+	1.8−	1998 11 10	704	0.3+	0.8−
1994 09 05	809	(0.3+	2.8+)	1998 08 31	704	1.4+	3.0−	1998 11 10	704	0.4−	0.7−
1994 09 05	809	0.5−	2.1+	1998 08 31	704	0.2+	0.8−	1998 11 10	704	0.4+	0.9−
1994 09 06	809	1.2−	2.2+	1998 10 14	699	0.2+	0.1+	1998 11 11	704	0.2+	0.2+
1994 09 06	809	1.0−	2.1+	1998 10 14	699	0.6+	0.3−	1998 11 11	704	0.9−	0.3+
1994 09 06	809	0.8−	2.7+	1998 10 14	699	0.4+	0.0	1998 11 11	704	1.4+	1.3−
1997 06 01	566	0.4−	0.2−	1998 10 15	704	0.2+	0.7−	1998 11 11	704	1.3+	0.7−
1997 06 01	566	2.4−	1.3−	1998 10 15	704	0.3+	1.5+	1998 11 11	704	1.7+	1.3−
1997 06 01	566	1.5−	1.3−	1998 10 15	704	0.3−	0.0				

(9779)* 1994 RA₁₁ = 1954 PT = 1976 SA₁₁ = 1997 ES₅₄

Discovered 1994 Sept. 1 by S. Ueda and H. Kaneda at Kushiro.

Id. G. V. Williams (*MPC* 30454)(9780)* 1994 SB = 1973 FL₂

Discovered 1994 Sept. 25 by Y. Shimizu and T. Urata at the Nachi-Katsuura

Observatory.

Id. G. V. Williams (unpublished), S. Nakano (unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

M	348.25970		(2000.0)		P		Q
n	0.30208631	ω	201.47404		−0.75600322		−0.64741711
a	2.1997940	Ω	297.80850		+0.61532074		−0.65263480
e	0.1019279	i	6.26274		+0.22324764		−0.39359739
P	3.26	H	13.1	G	0.15	U	2

Residuals in seconds of arc

1973 03 25	095	(3.5+ 2.1+)	1996 03 12	423	0.4+ 0.6−	1996 04 08	423	0.0	1.5+
1994 09 25	905	1.2+ 0.0	1996 03 12	423	0.5− 0.0	1996 04 08	423	0.1+	1.0+
1994 09 25	905	0.5− 0.3−	1996 03 12	423	0.5+ 0.8−	1996 04 08	423	0.3+	1.3+
1994 10 01	905	1.2− 0.9−	1996 03 12	423	0.6+ 0.1+	1996 04 08	423	1.2−	1.3+
1994 10 01	905	0.3− 0.8−	1996 03 13	423	0.3+ 0.7−	1996 04 12	385	0.3+	0.3+
1994 10 13	905	1.5+ 0.1+	1996 03 13	423	0.4+ 0.4+	1996 04 12	385	0.6+	0.3+
1994 10 13	905	0.1+ 0.9−	1996 03 13	423	0.0 0.3−	1996 04 12	385	0.6+	0.3+
1994 10 22	385	0.4− 0.4+	1996 03 13	423	0.6+ 0.6−	1996 05 15	385	0.1−	0.5−
1994 10 22	385	1.1− 0.4−	1996 03 13	423	0.8+ 0.4−	1996 05 15	385	0.0	0.8−
1994 10 22	385	0.2+ 0.2−	1996 03 13	423	0.4− 0.3−	1996 05 15	385	0.1+	1.1−
1994 10 31	905	0.2− 0.4+	1996 03 13	423	0.5− 0.5−	1997 07 02	385	1.8+	0.9−
1994 10 31	905	0.3+ 0.1−	1996 03 19	423	2.0− 1.2−	1997 07 04	385	0.1−	0.2+
1994 11 27	385	0.3− 0.0	1996 03 19	423	0.6− 0.9−	1997 07 04	385	0.4+	0.2−
1994 11 27	385	0.7− 0.3−	1996 03 19	423	0.8− 1.3−	1997 07 19	385	1.0+	0.3−
1994 12 06	887	0.7+ 0.1+	1996 03 19	423	0.1+ 0.2−	1997 07 19	385	1.7+	0.3+
1994 12 06	887	0.6+ 0.1−	1996 03 19	423	0.7− 1.5−	1997 07 19	385	1.1+	0.9−
1994 12 06	887	0.2− 0.5+	1996 03 19	423	0.8− 0.6−	1997 08 16	423	0.2+	0.0
1995 01 01	385	0.2+ 1.1+	1996 03 19	423	1.7− 2.0−	1997 08 16	423	0.2−	0.0
1995 01 01	385	1.2+ 0.1+	1996 03 25	423	0.6− 0.8+	1997 08 16	423	0.6−	0.0
1995 12 23	801	0.0 1.0−	1996 03 25	423	1.9− 0.1−	1997 08 28	385	0.9−	0.8−
1995 12 23	801	0.8+ 0.7−	1996 03 25	423	0.8+ 1.0−	1997 08 28	385	1.0−	0.6−
1996 01 21	801	1.7+ 0.4−	1996 03 25	423	0.8+ 1.6+	1998 10 30	704	0.6−	0.3−
1996 01 21	801	1.4+ 1.2−	1996 03 25	423	1.4− 0.7+	1998 10 30	704	0.2+	0.2−
1996 01 25	801	1.1+ 0.7+	1996 03 25	423	0.6− 0.5+	1998 10 30	704	0.3−	0.8−
1996 01 25	801	1.5+ 0.5−	1996 03 26	423	0.1+ 0.9+	1998 10 30	704	0.6−	1.4−
1996 01 27	385	1.0+ 0.3+	1996 03 26	423	0.8+ 0.3+	1998 11 25	704	0.7−	0.5+
1996 01 27	385	1.0+ 0.4+	1996 03 26	423	1.3− 1.2+	1998 11 25	704	0.7−	0.8−
1996 01 27	385	0.9+ 0.2+	1996 03 26	423	0.6− 0.3+	1998 11 25	704	0.4−	0.5+
1996 02 16	801	1.1+ 0.1−	1996 03 26	423	(0.1− 2.3−)	1998 11 25	704	(2.4− 2.9−)	

1996 02 16 801 0.6+ 0.7- 1996 03 26 423 1.6- 1.2+ 1998 11 25 704 1.1+ 1.0-
 1996 03 12 423 0.2+ 0.4+ 1996 03 26 423 0.0 0.9-

(9781)* 1994 UB₁

Discovered 1994 Oct. 31 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano	
<i>M</i>	110.13014	(2000.0)	P	Q	
<i>n</i>	0.25551022	ω	267.43450	+0.56625778	+0.81924053
<i>a</i>	2.4595965	Ω	37.52639	-0.68477758	+0.52874118
<i>e</i>	0.1757978	<i>i</i>	8.54784	-0.45872846	+0.22198584
<i>P</i>	3.86	<i>H</i>	13.8	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1993 05 18	691	0.6+	0.4+	1994 11 27	887	1.1-	0.3+	1998 11 08	888	0.3+	0.1+
1993 05 18	691	0.9-	0.8-	1994 12 23	385	0.2-	0.3+	1998 11 08	888	0.0	0.4+
1993 05 18	691	0.2+	0.3-	1994 12 23	385	0.8-	0.5-	1998 11 11	704	0.3-	1.1-
1994 10 31	905	1.3+	0.7+	1994 12 23	385	0.3-	0.5-	1998 11 11	704	(2.6+	0.6+)
1994 10 31	905	0.5-	0.8+	1997 05 31	905	0.3-	0.1-	1998 11 11	704	1.1-	1.3-
1994 11 03	905	0.5-	0.0	1997 05 31	905	0.5+	1.1-	1998 11 11	704	0.5-	0.5-
1994 11 03	905	1.3+	0.8+	1997 06 07	385	1.4-	0.5-	1998 11 18	704	1.6+	0.8+
1994 11 04	675	0.2+	1.4-	1997 07 04	385	0.1-	0.7-	1998 11 18	704	0.6+	0.0
1994 11 04	675	0.6-	0.6-	1997 07 04	385	0.2-	0.3-	1998 11 18	704	0.5+	2.0-
1994 11 09	905	0.1-	0.3+	1998 10 24	888	0.7+	0.4+	1998 11 18	704	1.3-	0.8-
1994 11 12	385	0.4+	0.4-	1998 10 24	888	0.2+	0.2+	1998 11 21	704	0.9+	0.3-
1994 11 12	385	0.2+	0.7-	1998 10 24	888	0.7+	0.1+	1998 11 21	704	1.4+	1.7+
1994 11 12	385	0.4+	0.6-	1998 10 29	704	0.7-	1.1-	1998 11 21	704	0.8-	0.5-
1994 11 25	385	0.7+	1.5+	1998 10 29	704	0.3+	0.5-	1998 11 21	704	0.5-	1.5+
1994 11 25	385	0.5+	0.7-	1998 10 29	704	0.9+	0.6-	1998 11 24	704	0.6+	0.3+
1994 11 27	385	0.7-	1.0+	1998 10 29	704	0.7+	1.6-	1998 11 24	704	0.8+	1.7-
1994 11 27	385	0.6-	1.3+	1998 10 29	704	1.8-	0.0	1998 11 24	704	0.8+	1.4-
1994 11 27	385	0.9-	0.9+	1998 10 31	888	0.2-	0.3+	1998 11 24	704	0.5-	1.2-
1994 11 27	887	0.6-	0.5+	1998 10 31	888	0.2+	0.4+				
1994 11 27	887	0.8-	0.6+	1998 11 08	888	0.1-	0.8+				

(9782)* 1994 WM = 1996 HB₁

Discovered 1994 Nov. 25 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 27108), T. Kobayashi (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano	
<i>M</i>	262.44161	(2000.0)	P	Q	
<i>n</i>	0.24111041	ω	127.05287	-0.98229668	+0.12921884
<i>a</i>	2.5565762	Ω	60.74105	-0.17812503	-0.86845925
<i>e</i>	0.1559437	<i>i</i>	8.94377	+0.05800605	-0.47862409
<i>P</i>	4.09	<i>H</i>	13.4	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1993 08 17	675	0.9-	0.8+	1996 04 21	900	0.1-	0.2+	1996 06 08	809	1.3-	1.3-
1993 08 17	675	0.1+	0.8+	1996 04 21	900	0.0	0.2+	1996 06 10	809	1.0-	0.5-
1994 11 25	411	0.1+	0.5+	1996 04 22	353	0.3-	0.4+	1996 06 10	809	1.8-	1.1-
1994 11 25	411	0.4+	1.7+	1996 04 22	353	0.6-	0.9+	1996 06 10	809	(2.2-	0.3-)
1994 11 26	411	0.6-	0.6+	1996 04 22	353	0.8+	0.2-	1996 06 16	689	0.3-	0.3+
1994 11 26	411	0.5+	0.0	1996 04 22	367	0.1-	0.3-	1998 10 13	910	0.5-	0.5-
1994 11 30	411	1.0-	0.2-	1996 04 22	367	0.3+	0.2+	1998 10 13	910	0.2-	0.6-
1994 11 30	411	0.4-	0.2-	1996 04 22	367	0.0	0.3+	1998 10 13	910	0.4-	0.7-
1994 12 03	098	0.3+	0.2+	1996 04 22	897	0.1-	0.2+	1998 10 20	699	0.0	1.0-
1994 12 03	098	1.8-	0.6-	1996 04 22	897	0.2+	0.3+	1998 10 20	699	0.7+	0.4-
1994 12 14	411	0.1-	0.6-	1996 04 22	897	0.2+	0.2+	1998 10 20	699	0.8+	0.3-
1994 12 14	411	0.4+	0.7+	1996 04 22	355	0.4+	0.5-	1998 11 18	704	0.8+	0.7-
1994 12 22	411	0.7+	0.8+	1996 04 22	355	0.1+	0.2+	1998 11 18	704	0.6+	0.4-
1994 12 22	411	1.2+	0.9+	1996 04 24	894	0.7-	0.4-	1998 11 18	704	0.6+	0.1-
1996 04 13	411	0.8+	0.2-	1996 04 24	894	0.3-	1.1-	1998 11 18	704	(2.3+	0.4-)
1996 04 13	411	0.8+	0.2-	1996 04 25	894	0.1+	0.4-	1998 11 18	704	1.2+	0.6+
1996 04 18	411	0.2+	0.4-	1996 04 25	894	1.3-	0.0	1998 11 21	704	0.4-	0.0
1996 04 18	411	0.7+	0.1-	1996 05 05	411	1.0+	0.4-	1998 11 21	704	(2.8+	0.8-)
1996 04 20	411	0.1+	0.1-	1996 05 05	411	0.9+	0.4-	1998 11 21	704	0.0	0.8-

1996 04 20 411 0.0 0.0 1996 05 05 411 0.7+ 0.3- 1998 11 21 704 0.9+ 0.1-
 1996 04 21 367 0.5+ 0.3+ 1996 05 09 411 0.7+ 0.3- 1998 11 21 704 0.0 1.2-
 1996 04 21 367 0.2+ 0.1- 1996 05 15 691 1.1- 0.3+ 1998 11 24 704 0.0 0.7-
 1996 04 21 353 0.3+ 0.5+ 1996 05 15 691 1.1- 0.4+ 1998 11 24 704 0.5- 0.1-
 1996 04 21 367 0.4+ 0.2+ 1996 05 15 691 1.1- 0.0 1998 11 24 704 0.4+ 0.2+
 1996 04 21 353 0.2+ 0.9+ 1996 06 08 809 0.8- 0.8- 1998 11 24 704 0.5- 0.8-
 1996 04 21 353 0.8+ 1.1+ 1996 06 08 809 0.7- 0.3- 1998 11 24 704 1.3- 0.7+

(9783)* 1994 YD₁ = 1976 UU₁₉ = 1982 BP₁₀ = 1991 CC₂ = 1993 PZ₅

Discovered 1994 Dec. 28 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 24752), A. Lowe (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano	
<i>M</i>	24.46682	(2000.0)	P	Q	
<i>n</i>	0.22600767	ω	127.92531	+0.67774101	-0.73452715
<i>a</i>	2.6692378	Ω	279.37189	+0.66344834	+0.63064146
<i>e</i>	0.1028980	<i>i</i>	1.95849	+0.31702274	+0.25052189
<i>P</i>	4.36	<i>H</i>	13.8	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1976 10 24	381	(2.9+	3.6+)	1994 12 31	691	1.4-	0.1+	1998 11 10	704	0.3-	1.1+
1976 10 24	381	0.5-	1.0+	1994 12 31	691	1.6-	0.9-	1998 11 10	704	0.3+	0.2+
1982 01 19	095	(2.7+	2.7-)	1994 12 31	691	1.9-	0.0	1998 11 10	704	1.2-	0.5-
1982 01 20	095	1.1+	0.8+	1995 01 05	411	0.4+	0.2-	1998 11 14	367	0.9-	0.1+
1991 02 15	511	(2.8-	0.9-)	1995 01 05	411	0.4+	0.1-	1998 11 14	367	1.0-	0.4+
1991 02 16	511	(0.0	2.9-)	1995 01 19	411	1.8+	0.3+	1998 11 18	704	0.5+	0.1-
1991 02 20	511	(2.4-	1.4-)	1995 01 19	411	0.3+	0.7-	1998 11 18	704	0.1-	0.7-
1991 02 20	511	(2.5-	3.5-)	1997 07 29	684	0.2+	0.7+	1998 11 18	704	0.6-	0.6-
1993 08 15	010	1.8-	0.9+	1997 07 29	684	0.4+	0.1-	1998 11 18	704	0.4+	0.8-
1993 08 15	010	(2.3-	0.1-)	1997 07 29	684	0.2+	0.0	1998 11 18	704	1.2-	0.4-
1993 08 16	010	0.6+	1.1-	1997 07 31	684	0.1-	0.1-	1998 11 21	704	0.1+	0.4+
1993 08 16	010	0.0	0.7-	1997 07 31	684	0.1+	0.1-	1998 11 21	704	0.1+	0.4+
1993 08 16	010	0.1-	0.9-	1997 07 31	684	0.0	0.2-	1998 11 21	704	0.4+	1.3+
1993 08 19	010	0.3-	0.7+	1998 10 29	704	0.3+	0.3-	1998 11 21	704	(0.2+	2.7+)
1993 08 19	010	0.5+	0.1+	1998 10 29	704	0.2-	0.4-	1998 11 21	704	0.8+	1.5+
1993 08 20	010	0.1+	0.7+	1998 10 29	704	0.8+	0.5-	1998 11 24	704	0.2+	0.9+
1994 12 28	411	0.4-	0.5+	1998 10 29	704	0.0	1.8-	1998 11 24	704	0.1+	0.3+
1994 12 28	411	0.6+	0.6+	1998 10 29	704	1.4+	1.1-	1998 11 24	704	0.5+	0.3+
1994 12 29	411	0.4+	0.2+	1998 11 10	704	0.2+	0.3-	1998 11 24	704	0.3-	0.1+
1994 12 29	411	0.4-	0.2-	1998 11 10	704	0.8+	0.4-	1998 11 24	704	0.4+	0.3-

(9784)* 1994 YJ₁ = 1977 AX₁ = 1984 QV = 1996 FB₁₂

Discovered 1994 Dec. 31 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 27717)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano	
<i>M</i>	11.53108	(2000.0)	P	Q	
<i>n</i>	0.21676415	ω	1.63039	+0.79568625	-0.60316203
<i>a</i>	2.7445917	Ω	35.65661	+0.55464428	+0.68872621
<i>e</i>	0.0565362	<i>i</i>	5.46222	+0.24341963	+0.40230807
<i>P</i>	4.55	<i>H</i>	13.2	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1977 01 13	095	0.2-	1.4-	1998 09 20	809	1.1-	0.1+	1998 10 28	704	0.2+	0.4-
1984 08 24	801	0.3-	1.1-	1998 09 26	704	0.8+	0.7+	1998 10 28	704	0.2-	0.0
1984 08 25	801	1.2-	0.4+	1998 09 26	704	0.9+	1.4-	1998 10 29	704	0.3+	0.5-
1984 08 26	801	1.8+	0.2+	1998 09 26	704	1.2+	0.8-	1998 10 29	704	0.0	0.2-
1984 08 29	801(54.0-	7.2-)		1998 09 26	704	1.5+	0.7+	1998 10 29	704	0.7+	0.0
1994 12 31	411	0.5+	0.7+	1998 09 26	704	(3.2-	2.1-)	1998 10 29	704	0.2+	0.2-
1994 12 31	411	0.4-	0.6+	1998 10 14	704	1.1+	0.1-	1998 10 29	704	0.1+	0.2-
1995 01 01	411	0.2-	0.7+	1998 10 14	704	(4.1+	3.3+)	1998 11 07	731	(2.5-	1.0-)
1995 01 01	411	0.1+	0.6+	1998 10 14	704	0.4-	0.1-	1998 11 07	731	0.8-	1.0+
1995 01 01	411	1.1-	0.2+	1998 10 14	704	1.4-	1.4+	1998 11 07	731	0.5-	0.3+
1995 01 05	411	0.2-	0.2+	1998 10 14	704	(3.1-	1.1+)	1998 11 07	610	0.3+	0.5-
1995 01 07	411	1.2+	0.7-	1998 10 15	704	0.3+	0.1+	1998 11 07	610	0.3+	0.4-
1996 03 22	691	0.1+	0.2-	1998 10 15	704	0.2+	0.3-	1998 11 07	610	0.0	0.4-
1996 03 22	691	0.0	0.2-	1998 10 15	704	0.2+	0.7+	1998 11 07	610	0.1-	0.4-

1996 03 26	691	0.3−	0.3−	1998 10 15	704	0.6+	0.7−	1998 11 07	610	0.2−	0.3−
1996 03 26	691	0.3−	0.4−	1998 10 26	758	0.2+	0.1+	1998 11 11	704	0.4−	0.7+
1996 03 26	691	0.4−	0.5−	1998 10 26	758	0.4+	0.1−	1998 11 11	704	0.8−	1.5−
1998 09 18	809	0.9−	1.5+	1998 10 27	758	0.1−	0.1−	1998 11 11	704	0.8+	0.6−
1998 09 18	809	1.9−	0.4+	1998 10 27	758	0.9−	0.6−	1998 11 11	704	1.0+	0.3+
1998 09 18	809	(2.3−	1.1+)	1998 10 27	758	0.1+	0.2+	1998 11 11	704	0.1−	0.1−
1998 09 20	809	0.4−	0.5+	1998 10 28	704	0.3+	0.3−				
1998 09 20	809	0.9−	0.3−	1998 10 28	704	0.0	0.0				

(9785)* 1994 YX₁ = 1987 KX₂ = 1991 FJ₄

Discovered 1994 Dec. 31 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 24753)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	235.23575		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.21624725	<i>ω</i>	185.94385	−0.94817268		+0.31753310	
<i>a</i>	2.7489636	<i>Ω</i>	12.58945	−0.28924248		−0.84699801	
<i>e</i>	0.0544742	<i>i</i>	3.12632	−0.13155746		−0.42634152	
<i>P</i>	4.56	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 05 30	413	0.6−	0.5+	1994 12 31	411	1.5−	0.4−	1998 10 29	704	1.3+	0.3−
1987 05 30	413	0.8−	0.2+	1994 12 31	411	0.9−	0.3−	1998 11 10	704	0.7−	0.5−
1988 09 11	675	0.9+	0.6+	1995 01 01	411	0.3+	0.9+	1998 11 10	704	(0.7+	2.3−)
1988 09 11	675	0.7+	0.0	1995 01 01	411	0.1+	0.1+	1998 11 10	704	1.8−	0.2+
1991 03 09	675	0.4−	0.2−	1995 01 06	411	0.0	0.0	1998 11 10	704	0.9−	0.9−
1991 03 09	675	0.1+	0.2−	1995 01 06	411	0.0	0.1+	1998 11 11	704	0.5−	0.3−
1991 03 24	809	0.4−	0.4−	1995 01 10	411	0.2−	0.5+	1998 11 11	704	0.4+	0.3+
1991 03 24	809	0.1+	0.3−	1995 01 10	411	0.1+	0.1+	1998 11 11	704	0.7+	1.0−
1991 03 24	809	0.2−	0.1−	1996 05 21	566	0.2+	1.0−	1998 11 18	704	0.4+	0.3+
1991 03 25	809	0.3+	0.1−	1996 05 21	566	0.1−	1.1−	1998 11 18	704	0.3+	0.3−
1991 03 25	809	0.0	0.2+	1996 05 21	566	0.2−	0.6−	1998 11 18	704	0.2+	1.2−
1991 03 25	809	0.2−	0.5+	1996 05 23	801	1.6+	1.3−	1998 11 18	704	0.0	0.3−
1991 04 15	675	0.8−	0.1+	1996 05 23	801	0.2+	0.9−	1998 11 18	704	0.5−	0.4−
1991 04 15	675	0.0	0.3−	1997 07 31	691	1.5−	0.2+	1998 11 21	704	0.5+	0.5+
1993 10 10	809	1.7+	0.3+	1997 07 31	691	1.6−	0.0	1998 11 21	704	1.6+	0.9+
1993 10 10	809	1.7+	0.4+	1997 07 31	691	1.5−	0.1+	1998 11 21	704	0.2+	1.0+
1993 10 10	809	0.5−	1.1−	1998 10 29	704	(2.2−	1.3−)	1998 11 21	704	(0.1+	3.1+)
1993 10 22	809	(2.3+	1.5−)	1998 10 29	704	1.0−	0.2−	1998 11 21	704	0.3−	0.8+
1993 10 22	809	1.0+	1.6−	1998 10 29	704	0.7+	0.5+				
1993 10 22	809	0.1+	1.5−	1998 10 29	704	0.5+	0.8+				

(9786)* 1995 BB = 1987 KM₄ = 1993 RC₆

Discovered 1995 Jan. 19 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 24756)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	53.84429		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.20601116	<i>ω</i>	43.64967	+0.98393330		+0.17791430	
<i>a</i>	2.8392843	<i>Ω</i>	306.09625	−0.16844789		+0.89745708	
<i>e</i>	0.0807284	<i>i</i>	1.05602	−0.05916568		+0.40363013	
<i>P</i>	4.78	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 05 30	413	0.2−	0.1−	1995 01 24	411	0.1−	0.9−	1998 10 15	704	0.1+	0.1−
1987 05 30	413	0.8−	0.3−	1995 01 24	411	1.3+	0.2+	1998 10 15	704	1.1+	0.1+
1991 03 09	675	0.9+	0.2+	1995 01 29	411	0.5+	0.6−	1998 10 15	704	1.0+	0.8−
1991 03 09	675	0.4+	0.5−	1995 01 29	411	0.0	1.5−	1998 10 15	704	1.8+	0.7−
1993 09 15	809	1.5+	0.1+	1995 02 03	411	1.0+	0.6+	1998 10 15	704	0.8+	0.7−
1993 09 15	809	0.2+	0.3−	1995 02 03	411	1.3+	0.4+	1998 10 28	704	0.0	0.1+
1993 09 15	809	0.6−	0.5−	1998 09 14	699	0.0	0.5+	1998 10 28	704	0.9+	0.2−
1993 09 17	809	(3.4+	0.6+)	1998 09 14	699	0.0	0.2+	1998 10 28	704	1.3+	0.3−
1993 09 17	809	1.9+	0.7+	1998 09 14	699	0.1−	0.1−	1998 10 28	704	0.1+	0.1−
1993 09 17	809	0.5+	1.0+	1998 09 21	691	1.6−	0.1−	1998 10 29	704	0.2+	0.1−
1993 09 18	809	0.9+	1.0+	1998 09 21	691	1.7−	0.0	1998 10 29	704	0.8−	0.7−
1993 09 18	809	0.7+	0.7+	1998 09 21	691	1.6−	0.1+	1998 10 29	704	0.2+	0.1+
1993 09 18	809	0.6+	0.8+	1998 09 26	704	(0.6+	2.7−)	1998 10 29	704	0.2−	0.1−

1993 09 18	675	1.6−	0.5−	1998 09 26	704	0.4+	1.0−	1998 10 29	704	0.1+	0.5−
1993 09 18	675	1.9−	0.5−	1998 09 26	704	0.2−	1.2−	1998 11 10	704	0.4+	0.2+
1993 09 22	675	1.0−	1.0−	1998 09 26	704	0.8+	0.6−	1998 11 10	704	0.6−	0.3+
1993 09 22	675	1.0−	0.1−	1998 09 26	704	1.8−	0.2+	1998 11 10	704	0.3+	0.4+
1994 11 28	691	1.3−	0.1−	1998 09 27	691	0.1+	0.3+	1998 11 10	704	0.1−	0.7+
1994 11 28	691	1.0−	0.2−	1998 09 27	691	0.2−	0.0	1998 11 11	704	0.4−	0.7+
1994 11 28	691	1.1−	0.2−	1998 09 30	691	1.6−	0.1+	1998 11 11	704	0.8+	0.6+
1994 12 03	691	1.5−	0.1+	1998 09 30	691	1.3−	0.1+	1998 11 11	704	0.2+	0.5−
1994 12 03	691	0.8−	0.1−	1998 09 30	691	1.7−	0.4+	1998 11 11	704	0.8−	0.1+
1995 01 19	411	0.9+	1.0+	1998 10 14	704	0.9+	0.4−	1998 11 11	704	0.3+	1.0+
1995 01 19	411	1.3−	1.7+	1998 10 14	704	1.2+	0.1+	1998 11 14	327	0.1−	0.7+
1995 01 20	411	0.4+	0.4+	1998 10 14	704	0.2+	0.1+	1998 11 14	327	0.1+	0.7+
1995 01 20	411	0.1+	0.6−	1998 10 14	704	0.8+	0.8−	1998 11 14	327	0.2+	0.5+

(9787)* 1995 BA₃ = 1986 EW₄ = 1993 SF₈

Discovered 1995 Jan. 27 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 24756)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	322.70099		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.21101728	<i>ω</i>	35.74471	−0.34200429		−0.93936666	
<i>a</i>	2.7941992	<i>Ω</i>	74.26586	+0.85601694		−0.32239851	
<i>e</i>	0.1211423	<i>i</i>	1.48634	+0.38764425		−0.11683094	
<i>P</i>	4.67	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1986 03 12	809	2.1+	0.5−	1995 02 04	691	0.4−	0.2+	1998 10 18	699	1.4+	0.1−
1988 09 11	675	0.4−	0.4+	1995 02 04	691	0.6−	0.6−	1998 10 18	691	1.5−	0.0
1988 09 11	675	0.2−	0.7−	1995 02 04	691	0.5−	0.1+	1998 10 18	699	1.2+	1.4−
1991 04 15	675	0.8+	0.7−	1996 06 12	566	0.6−	0.7−	1998 10 29	704	0.1+	0.0
1991 04 15	675	0.0	0.2+	1996 06 12	566	0.5−	0.6−	1998 10 29	704	0.4+	0.1+
1993 09 17	809	0.7+	1.1−	1996 06 12	566	0.0	0.4−	1998 10 29	704	0.7+	0.6−
1993 09 17	809	0.3−	0.2−	1998 10 10	699	0.2+	0.4+	1998 10 29	704	2.1+	0.8−
1993 09 17	809	1.5−	1.4−	1998 10 10	699	0.2−	0.7+	1998 10 29	704	0.3−	1.8−
1993 09 18	809	0.6−	0.1+	1998 10 10	699	0.1+	0.1+	1998 11 10	704	0.8+	0.0
1993 09 18	809	0.5+	0.3+	1998 10 12	691	0.8−	0.2−	1998 11 10	704	0.7+	0.6−
1993 09 18	809	1.1−	0.0	1998 10 12	691	0.6−	0.0	1998 11 10	704	0.6+	0.1+
1995 01 27	399	0.1+	0.2−	1998 10 12	691	0.9−	0.2−	1998 11 10	704	0.8+	0.8+
1995 01 27	399	1.1−	0.1−	1998 10 14	704	0.6−	1.1+	1998 11 10	704	0.1+	0.1+
1995 01 28	399	0.6+	0.9+	1998 10 14	704	0.3+	0.5−	1998 11 11	704	0.6+	0.0
1995 01 28	399	1.1+	0.3−	1998 10 14	704	1.2−	1.7+	1998 11 11	704	1.1+	0.1+
1995 01 31	372	(4.6+	0.4−)	1998 10 14	704	0.8+	2.1+	1998 11 11	704	0.3+	0.4−
1995 02 03	399	1.4−	0.5−	1998 10 18	691	1.5−	0.1+	1998 11 11	704	0.2+	0.1+
1995 02 03	399	1.6−	0.5+	1998 10 18	691	1.6−	0.2+	1998 11 11	704	1.0+	0.1+

(9788)* 1995 EQ₁ = 1989 AV₃ = 1991 PS₁₉

Discovered 1995 Mar. 11 by T. Kobayashi at Oizumi.

Id. K. Ichikawa (*MPC* 25222)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	234.11260		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.18152357	<i>ω</i>	126.03571	−0.89672809		+0.44137377	
<i>a</i>	3.0892095	<i>Ω</i>	80.17622	−0.41598281		−0.81532246	
<i>e</i>	0.1355491	<i>i</i>	1.90059	−0.15111927		−0.37475122	
<i>P</i>	5.43	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1998 DEC. 8

1991 08 14	809	1.9−	0.0	1998 10 29	704	0.5−	1.4+	1998 11 29	747	0.1+	0.7+
1991 08 14	809	1.1−	0.3−	1998 10 29	704	0.3−	1.2−	1998 11 29	747	0.3−	0.5+
1995 02 25	098	0.3+	0.1+	1998 10 29	704	1.7−	0.3+				
1995 02 25	098	1.8−	0.6+	1998 10 29	704	0.8−	1.5−				

(9789)* 1995 GO₇ = 1976 YD₆ = 1986 TG₁₇ = 1989 EX₁₀ = 1991 PZ₂₁

Discovered 1995 Apr. 4 by S. Ueda and H. Kaneda at Kushiro.

Id. A. Gnädig (*MPC* 30665), T. B. Spahr (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	265.53580	(2000.0)	P	Q	
<i>n</i>	0.17697765	ω	130.82666	−0.99698052	−0.07401926
<i>a</i>	3.1418861	Ω	44.94312	+0.05740424	−0.90610672
<i>e</i>	0.1284011	<i>i</i>	1.90423	+0.05229332	−0.41652342
<i>P</i>	5.57	<i>H</i>	12.5	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1976 12 18	095	0.7−	0.3−	1997 09 24	604	1.1+	0.6+	1998 11 16	566	1.0−	0.9−
1986 10 10	095	0.8+	0.2+	1997 09 24	604	0.0	0.3+	1998 11 16	566	0.2+	1.5−
1989 03 05	033	0.6+	0.3+	1997 09 24	604	0.0	0.5−	1998 11 18	704	0.2+	0.9−
1989 03 05	033	0.5+	0.3+	1997 09 24	604	0.5−	0.0	1998 11 18	704	1.4+	2.5−
1990 07 21	413	2.1+	1.3−	1998 10 29	704	1.4−	0.1+	1998 11 18	704	0.4+	2.8−
1991 07 17	413	0.3+	0.0	1998 10 29	704	0.1−	0.4+	1998 11 18	704	0.6−	2.2−
1991 07 17	413	1.3−	0.2−	1998 10 29	704	0.2−	0.8+	1998 11 21	704	0.6+	0.3+
1991 08 10	675	0.8−	1.4−	1998 10 29	704	0.3−	0.7+	1998 11 21	704	0.5+	0.5−
1991 08 10	675	0.4+	0.4−	1998 10 29	704	0.3−	0.3+	1998 11 21	704	0.8+	0.3−
1994 01 11	675	0.5−	1.0+	1998 11 10	704	0.7+	0.3+	1998 11 21	704	0.2−	0.4−
1994 01 11	675	0.6+	0.2+	1998 11 10	704	1.0+	0.7−	1998 11 21	704	0.1−	0.6+
1995 04 04	399	(2.7+ 0.8+)		1998 11 10	699	0.7+	0.3+	1998 11 21	604	0.1+	1.1+
1995 04 04	399	0.2+	1.7+	1998 11 10	704	1.9+	1.1−	1998 11 24	704	0.2+	0.8+
1995 04 20	399	0.6−	0.3+	1998 11 10	704	0.9+	1.8−	1998 11 24	704	0.3+	1.2+
1995 04 20	399	0.4−	0.4+	1998 11 10	699	0.1−	0.8+	1998 11 24	704	0.8+	1.4+
1995 04 27	399	0.7+	1.9−	1998 11 10	699	0.7+	0.7+	1998 11 24	704	0.3−	1.7+
1995 04 27	399	1.9−	0.9−	1998 11 11	704	1.0−	0.8+	1998 11 24	704	0.3+	1.2+
1997 09 22	604	0.9−	1.8+	1998 11 11	704	0.8+	0.4−	1998 11 25	691	1.6−	0.5+
1997 09 22	604	0.1+	0.2+	1998 11 11	704	0.7+	0.5−	1998 11 25	691	1.6−	0.5+
1997 09 24	604	0.6−	0.8+	1998 11 11	704	0.6+	1.2−	1998 11 25	691	1.5−	0.4+
1997 09 24	604	0.8−	0.2+	1998 11 16	566	2.0−	1.0−				

(9790)* 1995 OK₈ = 1987 WY₁ = 1996 TG₅₇

Discovered 1995 July 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 28593), T. Urata (*MPC* 32945)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	45.14607	(2000.0)	P	Q	
<i>n</i>	0.08177883	ω	151.24955	+0.92207989	−0.37857570
<i>a</i>	5.2566468	Ω	231.22120	+0.33243339	+0.88106683
<i>e</i>	0.0554098	<i>i</i>	5.91274	+0.19813308	+0.28355190
<i>P</i>	12.05	<i>H</i>	11.2	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1987 11 26	033	0.0	0.4−	1996 09 16	809	(7.0+ 3.4+)	1997 10 11	691	0.2−	0.0	
1987 11 26	033	0.2+	1.0+	1996 10 02	809	0.0	0.9+	1998 10 24	369	0.4−	0.9−
1995 07 04	691	0.0	0.6−	1996 10 02	809	0.1−	0.3+	1998 10 24	369	0.8−	0.6−
1995 07 04	691	0.0	0.1−	1996 10 02	809	1.3−	0.4+	1998 10 24	369	0.5−	0.2+
1995 07 04	691	0.3−	0.1+	1996 10 03	809	(2.6− 0.1−)		1998 11 16	566	0.5−	0.1+
1995 07 25	691	0.0	0.2+	1996 10 03	809	(2.6− 0.1+)		1998 11 16	566	0.4+	0.3+
1995 07 25	691	0.2−	0.1−	1996 10 03	809	(3.1− 0.0)		1998 11 16	566	0.5+	0.9+
1995 07 25	691	0.1−	0.3−	1997 10 02	691	0.4−	0.0	1998 11 24	704	0.7+	0.3−
1995 07 30	691	0.5+	0.3−	1997 10 02	691	0.3−	0.3+	1998 11 24	704	0.3+	1.0−
1995 07 30	691	0.0	0.1−	1997 10 02	691	0.3−	0.0	1998 11 24	704	1.1+	0.2+
1995 07 30	691	0.2+	0.4−	1997 10 11	691	0.2+	0.1+	1998 11 24	704	0.4−	1.0−
1996 09 16	809	1.7+	0.0	1997 10 11	691	0.0	0.1+				

(9791)* 1995 YD₁

Discovered 1995 Dec. 21 by T. Kobayashi at Oizumi.

M.P.C. 33209

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	106.83401	(2000.0)	P	Q	
<i>n</i>	0.28226384	ω	201.14083	+0.65157782	+0.74482667
<i>a</i>	2.3016143	Ω	109.82169	−0.67221489	+0.65477129
<i>e</i>	0.0712896	<i>i</i>	8.79274	−0.35153021	+0.12848265
<i>P</i>	3.49	<i>H</i>	13.6	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1990 05 25	675	0.2+	0.9−	1996 01 10	411	0.9−	0.7−	1998 11 13	704	0.6+	0.8−
1990 05 25	675	0.6−	0.8+	1996 01 13	385	0.1+	0.2+	1998 11 13	704	0.5+	0.5−
1993 03 24	675	0.1+	0.6+	1996 01 13	385	0.5+	0.2+	1998 11 13	704	0.8−	0.5−
1993 03 24	675	2.1+	1.1+	1996 01 13	385	1.5−	0.6+	1998 11 13	704	0.5+	1.0−
1995 12 21	411	0.4+	0.4−	1996 01 24	411	0.2−	0.2+	1998 11 13	704	1.3+	0.4−
1995 12 21	411	0.1−	0.6−	1996 01 24	411	0.4−	0.7+	1998 11 14	367	0.1+	0.7−
1995 12 22	411	0.3+	0.8−	1997 05 30	124	0.6+	1.3−	1998 11 14	367	0.4+	0.3−
1995 12 22	411	0.5+	0.3−	1997 05 30	124	0.3−	0.2+	1998 11 16	704	1.1+	0.8+
1995 12 26	411	0.3+	0.5−	1997 06 12	688	0.6−	0.6+	1998 11 16	704	0.5−	1.8+
1995 12 26	411	0.7−	0.5−	1997 06 12	688	0.4−	0.0	1998 11 16	704	0.8−	0.1−
1995 12 30	411	0.3−	0.3−	1998 10 16	704	0.2+	0.3+	1998 11 16	704	1.2−	1.2+
1995 12 30	411	0.1+	0.4+	1998 10 16	704	1.0+	0.5+	1998 11 16	704	1.4−	1.4+
1996 01 10	411	0.4+	0.8−	1998 10 16	704	0.7−	0.4+				

(9792)* 1996 BX₁

Discovered 1996 Jan. 23 by T. Kobayashi at Oizumi.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	314.04503	(2000.0)	P	Q	
<i>n</i>	0.27174919	ω	358.71022	−0.37712538	−0.90886871
<i>a</i>	2.3606080	Ω	113.42121	+0.85146597	−0.41591200
<i>e</i>	0.1522492	<i>i</i>	11.19426	+0.36439285	+0.03122304
<i>P</i>	3.63	<i>H</i>	13.8	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1989 03 29	675	0.4−	0.6+	1996 01 23	411	0.8−	0.0	1998 10 16	704	0.1+	0.8−
1989 03 29	675	0.1−	0.5+	1996 01 24	411	0.7−	0.2−	1998 10 16	423	0.9−	0.0
1991 12 01	675	0.4−	0.3−	1996 01 24	411	0.3−	0.2−	1998 10 20	423	0.1−	0.3+
1991 12 01	675	0.6−	0.2−	1996 02 12	411	0.7+	0.3−	1998 10 20	423	1.3−	0.2−
1991 12 02	675	1.1+	0.5+	1996 02 12	411	0.5+	0.1−	1998 10 20	423	0.4−	0.3+
1991 12 02	675	0.2+	1.3+	1996 02 23	411	0.6+	0.4−	1998 10 29	746	0.2+	0.2+
1994 09 07	675	0.0	0.3+	1996 02 23	411	0.4+	0.2−	1998 10 29	746	0.8+	0.0
1994 09 07	675	0.1+	0.8−	1996 03 11	411	0.1+	0.8−	1998 11 13	704	1.1+	1.0−
1995 12 27	566	0.4+	0.1+	1996 03 11	411	0.3+	0.7+	1998 11 13	704	0.6−	0.2+
1995 12 27	566	0.1−	0.3+	1997 06 23	689	0.9+	0.0	1998 11 13	704	0.8+	1.1+
1995 12 27	566	0.2+	0.0	1998 10 16	704	0.4−	1.2−	1998 11 13	704	2.1+	0.0
1996 01 23	411	1.1−	0.2−	1998 10 16	704	1.0−	0.8−	1998 11 13	704	0.8−	0.9+

(9793)* 1996 BW₄ = 1981 UX₂₃

Discovered 1996 Jan. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 26753)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	23.30993	(2000.0)	P	Q	
<i>n</i>	0.29115174	ω	343.89500	+0.55290375	−0.83102542
<i>a</i>	2.2545323	Ω	72.50156	+0.77134741	+0.48287886
<i>e</i>	0.1597843	<i>i</i>	3.65387	+0.31515175	+0.27608830
<i>P</i>	3.39	<i>H</i>	15.2	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1981 10 24	675	0.0	0.5+	1996 01 24	691	0.0	0.1+	1997 05 30	696	(4.9− 3.3−)	
1981 10 25	675	0.8+	0.7+	1996 01 29	691	0.2+	0.6+	1998 09 29	704	0.4+	1.0−
1990 05 26	675	0.5+	1.1−	1996 01 29	691	0.3+	0.3+	1998 09 29	704	1.4−	1.5+
1990 05 26	675	0.2−	0.1−	1996 01 29	691	0.0	0.3+	1998 09 29	704	(2.8− 0.5−)	
1991 10 03	691	0.8−	0.1−	1996 05 22	709	0.7+	0.4+	1998 09 29	704	1.0+	2.0+
1991 10 03	691	0.4−	0.3−	1996 05 22	709	0.7+	0.6+	1998 11 24	704	0.8+	0.3+
1991 10 03	691	1.0−	0.4−	1996 05 22	709	0.7+	0.1+	1998 11 24	704	0.4−	0.5−
1993 03 26	691	1.0−	0.2−	1996 05 22	709	0.4+	0.0	1998 11 24	704	0.2−	0.5+
1993 03 26	691	1.3−	0.0	1996 05 22	709	0.0	0.4+	1998 11 24	704	0.3−	0.8+

1994 08 06	675	0.8–	1.6+	1996 05 22	709	0.1–	0.1+	1998 11 27	426	0.3+	0.7–
1996 01 16	691	0.1–	0.5+	1997 05 29	696	0.8+	0.1–	1998 11 27	426	0.4+	0.7–
1996 01 16	691	0.4–	0.4+	1997 05 29	696	0.5+	0.1–	1998 11 27	426	0.4+	0.7–
1996 01 16	691	0.4–	0.4+	1997 05 29	696	0.8+	0.4–	1998 11 29	426	0.1–	0.9–
1996 01 24	691	0.1–	0.4+	1997 05 30	696	(4.9–	3.1–)	1998 11 29	426	0.5+	0.6–
1996 01 24	691	0.0	0.3+	1997 05 30	696	(4.7–	3.2–)	1998 11 29	426	0.4+	1.0–

(9794)* 1996 FO₅ = 1978 EH₃ = 1978 GJ₁

Discovered 1996 Mar. 25 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 27317)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			Williams		
300.75694			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.27076670	ω	118.82205	–0.75629663	–0.65194799
<i>a</i>	2.3663149	Ω	20.64399	+0.53324719	–0.66262656
<i>e</i>	0.1402786	<i>i</i>	8.90619	+0.37902881	–0.36863242
<i>P</i>	3.64	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1978 03 06	095	(3.8+	0.1+)	1996 04 11	327	0.7+	0.2+	1997 06 08	327	0.2+	0.5+
1978 04 07	095	1.5–	0.9–	1996 04 18	327	0.1–	0.2+	1997 06 08	327	0.5–	0.7+
1989 04 01	675	1.7+	0.4–	1996 04 18	327	0.0	0.1–	1997 07 10	327	0.2+	0.0
1989 04 01	675	0.5+	0.9–	1996 04 18	327	0.1–	0.2+	1997 07 10	327	0.3–	0.7–
1996 03 25	327	0.2+	0.2–	1996 04 24	327	0.2+	0.0	1997 07 10	327	0.9–	0.0
1996 03 25	327	0.0	0.2–	1996 04 24	327	0.0	0.0	1997 07 10	327	0.3+	0.6–
1996 03 25	327	0.2–	0.1–	1996 04 24	327	0.4–	0.0	1997 07 12	327	0.5+	0.7–
1996 03 25	327	0.2–	0.8–	1996 05 01	327	0.8–	0.1–	1997 07 12	327	0.2–	0.0
1996 03 25	327	0.0	0.4–	1996 05 01	327	0.5+	0.4+	1997 07 12	327	0.5–	0.2–
1996 03 25	327	0.6–	0.2–	1996 05 01	327	0.8+	0.1–	1998 09 29	704	(2.1+	0.3–)
1996 03 27	327	0.7–	0.0	1996 05 04	327	0.5–	0.3–	1998 09 29	704	1.6+	1.7+
1996 03 27	327	0.2+	0.3+	1996 05 04	327	0.0	0.4–	1998 09 29	704	1.2+	0.7–
1996 03 27	327	0.1–	0.2–	1996 05 04	327	1.1–	0.3–	1998 10 29	704	0.8–	0.2–
1996 03 27	327	0.1+	0.0	1996 05 17	327	0.2–	0.0	1998 10 29	704	0.1–	0.6–
1996 03 27	327	0.2–	0.4–	1996 05 17	327	0.2+	0.2+	1998 10 29	704	0.0	0.7–
1996 03 27	327	0.4+	0.1+	1996 05 17	327	0.5+	0.4+	1998 10 29	704	0.8–	1.4–
1996 04 06	327	0.3+	0.1–	1996 05 17	327	0.4–	0.3–	1998 10 29	704	0.4–	0.6–
1996 04 06	327	0.2–	0.2+	1996 05 19	327	0.3+	0.6+	1998 11 09	104	0.3–	0.2+
1996 04 06	327	0.2–	0.2+	1996 05 19	327	0.0	0.2+	1998 11 09	104	0.1–	0.2+
1996 04 07	327	0.1–	0.2+	1996 05 19	327	0.1–	1.5+	1998 11 09	104	0.2–	0.3+
1996 04 07	327	0.0	0.5+	1996 05 20	327	0.5+	0.2+	1998 11 10	704	0.0	0.2+
1996 04 07	327	0.2+	0.2–	1996 05 20	327	0.5+	0.6–	1998 11 10	704	0.7+	0.2+
1996 04 08	327	0.1+	0.5–	1996 05 20	327	0.2+	0.5–	1998 11 10	704	0.6–	0.0
1996 04 08	327	0.4+	0.0	1996 06 06	327	1.1–	0.1+	1998 11 10	704	0.5–	0.5–
1996 04 08	327	0.3–	0.2+	1996 06 06	327	0.6–	0.1+	1998 11 10	704	0.2+	1.0–
1996 04 09	327	0.6–	0.7–	1996 06 06	327	0.1–	0.1+	1998 11 11	704	1.0+	0.3+
1996 04 09	327	0.2–	0.4–	1997 06 01	327	0.2–	0.2–	1998 11 11	704	0.9+	0.6+
1996 04 09	327	0.2–	0.2+	1997 06 01	327	0.0	0.1–	1998 11 11	704	0.7+	0.2–
1996 04 11	327	0.1–	0.0	1997 06 08	327	0.2+	0.8–	1998 11 11	704	0.2+	0.1+
1996 04 11	327	0.6+	0.3+	1997 06 08	327	0.8+	0.5–	1998 11 11	704	0.4–	0.2–

(9795)* 1996 GJ₁₉ = 1995 CU₂

Discovered 1996 Apr. 15 by E. W. Elst at the European Southern Observatory.

Id. B. G. Marsden (*MPC* 28862)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			Marsden		
89.89709			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.19915858	ω	151.13929	+0.88596896	+0.46374404
<i>a</i>	2.9040452	Ω	181.23237	–0.43138926	+0.82360931
<i>e</i>	0.0724086	<i>i</i>	1.83508	–0.17018318	+0.32651061
<i>P</i>	4.95	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1995 02 01	691	0.0	0.1+	1996 04 17	809	0.7–	0.8–	1998 11 11	704	0.0	0.1–
1995 02 01	691	0.2–	0.2+	1996 04 17	809	0.8–	1.5–	1998 11 11	704	1.0–	0.3–
1995 02 01	691	0.1–	0.1+	1996 04 17	809	0.8–	1.4–	1998 11 18	704	0.5+	0.7–

1995 02 07	691	0.1–	0.3–	1997 06 29	691	1.6–	0.2–	1998 11 18	704	0.3+	1.6–
1995 02 07	691	0.3+	0.2–	1997 06 29	691	1.7–	0.4–	1998 11 18	704	0.1–	1.1+
1995 02 07	691	0.1+	0.3–	1997 06 29	691	1.6–	0.5–	1998 11 18	704	(0.0	3.0+)
1996 03 24	809	(0.6–	5.1+)	1997 07 08	910	1.6+	0.0	1998 11 21	704	0.3–	0.8–
1996 03 24	809	(3.1–	4.0+)	1997 07 08	910	1.4+	0.3+	1998 11 21	704	0.7+	1.6–
1996 03 24	809	(2.9–	2.9+)	1997 07 08	910	1.7+	0.1+	1998 11 21	704	0.0	0.5–
1996 03 27	809	0.2–	0.6+	1998 10 29	704	0.2+	0.1+	1998 11 21	704	0.3–	1.9–
1996 03 27	809	0.5–	1.2+	1998 10 29	704	0.5–	1.1–	1998 11 24	704	0.7+	0.7+
1996 03 27	809	1.6–	0.7+	1998 10 29	704	0.5+	0.3–	1998 11 24	704	0.6+	0.5–
1996 04 15	809	1.5+	0.5–	1998 10 29	704	0.6+	0.1–	1998 11 24	704	1.2–	1.2+
1996 04 15	809	1.3+	1.0+	1998 10 29	704	1.2–	0.3+	1998 11 24	704	0.1+	1.3+
1996 04 15	809	1.5+	0.3+	1998 11 11	704	0.3+	0.1–	1998 11 24	704	0.2+	1.0+

(9796)* 1996 HW = 3066 T-3

Discovered 1996 Apr. 19 by F. Manca and P. Chiavenna at Sormano.

Id. G. V. Williams (*MPC* 27318)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			Williams		
169.50332			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.23962027	ω	242.83876	–0.03074735	+0.99296090
<i>a</i>	2.5671644	Ω	26.16881	–0.80048371	+0.04406729
<i>e</i>	0.0394547	<i>i</i>	15.03206	–0.59856530	–0.10993967
<i>P</i>	4.11	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1977 10 16	675	0.4+	1.2–	1996 04 24	587	1.0–	0.4+	1998 08 31	704	(3.0–	0.3+)
1977 10 16	675	1.5+	1.2–	1996 05 15	587	0.4–	1.7–	1998 09 29	704	0.8+	0.9+
1977 10 17	675	0.0	0.2+	1996 05 22	587	0.7–	0.9–	1998 09 29	704	1.0–	0.0
1977 10 17	675	0.5–	0.6+	1996 05 22	587	0.1–	0.7–	1998 09 29	704	0.3–	1.1–
1977 10 21	675	1.3+	0.2–	1996 06 09	587	0.2+	1.9–	1998 09 29	704	1.2–	1.3+
1977 10 21	675	1.2+	0.3–	1996 06 09	587	1.0–	0.8–	1998 09 29	704	0.2+	1.4+
1977 10 22	675	0.5+	2.4–	1996 06 09	587	0.5–	1.3–	1998 11 15	587	0.6+	0.3+
1977 10 22	675	0.4+	1.9–	1997 07 30	104	0.5+	0.7+	1998 11 15	587	0.4–	0.3–
1996 04 19	587	0.7+	0.9+	1997 07 30	104	0.6–	0.2+	1998 11 15	587	0.2–	0.2–
1996 04 19	587	1.0+	0.1–	1997 07 30	104	0.5–	0.3–	1998 11 16	704	0.1–	0.6–
1996 04 20	587	1.3–	0.3+	1998 08 31	704	(2.3–	0.4–)	1998 11 16	704	0.6+	0.6–
1996 04 20	587	0.0	0.1–	1998 08 31	704	(2.2–	0.2–)	1998 11 16	704	0.0	0.3+
1996 04 21	587	0.2–	0.7–	1998 08 31	704	(2.6–	0.1–)	1998 11 16	704	0.4+	0.1+
1996 04 24	587	1.0–	0.5+	1998 08 31	704	0.7–	0.1–	1998 11 16	704	0.5+	1.0+

(9797)* 1996 HR₂₁ = 1991 PS₂₅ = 1992 VS = 1997 QT₄

Discovered 1996 Apr. 18 by E. W. Elst at the European Southern Observatory.

Id. S. Nakano (*MPC* 30669)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			Nakano		
130.62776			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.17441765	ω	107.58041	+0.22589873	+0.97414937
<i>a</i>	3.1725546	Ω	175.47433	–0.90158799	+0.20971986
<i>e</i>	0.1642350	<i>i</i>	1.21087	–0.36892934	+0.08396781
<i>P</i>	5.65	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1990 03 27	675	0.6–	0.6+	1996 05 19	809	(2.9–	2.8+)	1998 11 11	120	0.0	0.0
1990 03 27	675	0.0	0.2–	1996 05 22	809	1.1+	0.2+	1998 11 11	120	1.2+	0.3+
1991 08 05	809	0.5+	0.4–	1996 05 22	809	0.2+	0.2–	1998 11 18	704	0.6+	1.4–
1991 08 05	809	0.1–	0.4–	1996 05 22	809	0.5+	0.2+	1998 11 18	704	1.1+	0.7–
1991 08 05	809	0.8–	0.7–	1996 05 23	809	1.3+	0.4–	1998 11 18	704	0.6–	0.2–
1992 10 20	675	0.9+	1.6+	1996 05 23	809	1.4+	0.4–	1998 11 18	704	0.9–	1.2–
1992 10 20	675	0.3–	0.2–	1996 05 23	809	0.6+	1.4–	1998 11 21	704	1.6+	0.1–
1992 11 02	010	(2.3+	0.2+)	1997 08 25	367	1.1–	0.3–	1998 11 21	704	(2.7+	1.2–)
1992 11 02	010	0.4+	0.2+	1997 08 25	367	1.7–	0.5+	1998 11 21	704	(1.1–	2.3–)
1992 11 02	010	0.6+	0.3–	1997 08 27	367	1.6+	0.2–	1998 11 22	691	1.9–	0.1–
1996 04 18	809	(3.7–	2.6+)	1997 08 27	367	1.9+	0.2+	1998 11 22	691	1.9–	0.1–
1996 04 18	809	(3.5–	2.8+)	1997 08 30	566	0.8–	0.8+	1998 11 22	691	2.1–	0.0
1996 04 18	809	(3.8–	2.1+)	1997 08 30	566	0.5–	0.6+	1998 11 23	691	0.5–	0.3+
1996 04 20	809	0.7–	0.5–	1997 08 30	566	0.3–	0.5+	1998 11 23	691	0.6–	0.0

1996 04 20	809	1.8−	0.1+	1998 10 23	910	1.0+	0.4+	1998 11 23	691	0.6−	0.1+
1996 04 20	809	1.7−	0.2−	1998 10 23	910	1.2+	0.6+	1998 11 24	704	0.2+	0.0
1996 04 20	809	(2.9+	1.1+)	1998 10 23	910	1.1+	0.6+	1998 11 24	704	0.2+	0.9+
1996 04 20	809	(2.6+	1.9+)	1998 10 29	704	0.6−	0.3−	1998 11 24	704	0.5+	0.2+
1996 04 20	809	1.8+	1.5+	1998 10 29	704	0.6+	0.1+	1998 11 24	704	0.4+	1.4+
1996 04 21	809	0.6+	1.6+	1998 10 29	704	0.3−	0.5+	1998 11 26	120	1.5−	0.6+
1996 04 21	809	(0.7+	2.3+)	1998 10 29	704	0.5−	0.5−	1998 11 26	120	1.0−	0.7+
1996 04 21	809	0.9+	2.1+	1998 10 29	704	0.5+	0.5−	1998 11 26	120	0.2+	1.2+
1996 05 19	809	(1.4−	3.1+)	1998 11 11	120	0.3+	0.2−				
1996 05 19	809	1.8−	1.9+	1998 11 11	120	0.3+	0.7+				

(9798)* 1996 JK = 1984 AX = 1987 SR₇

Discovered 1996 May 8 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 27319)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	69.72925		(2000.0)	P	Q		
<i>n</i>	0.18979284	ω	257.73567	+0.97807395	+0.09293181		
<i>a</i>	2.9988138	Ω	96.71632	−0.01762114	+0.92863594		
<i>e</i>	0.0995585	<i>i</i>	10.81633	−0.20751106	+0.35916427		
<i>P</i>	5.19	<i>H</i>	11.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1984 01 05	688	1.9−	1.9−	1996 04 15	691	0.2−	0.1−	1998 10 19	699	0.2+	0.5+
1984 01 05	688	1.0+	0.2+	1996 04 15	691	0.1−	0.2−	1998 10 19	699	0.0	0.5+
1984 01 08	688	0.1+	1.3−	1996 04 15	691	0.0	0.2−	1998 11 11	699	0.5−	0.2+
1984 01 08	688	0.8+	0.6−	1996 05 08	399	0.2−	0.2−	1998 11 11	699	0.3−	0.2+
1987 09 18	010	1.2−	0.9−	1996 05 08	399	1.0−	0.3+	1998 11 11	699	0.4−	0.3+
1987 09 18	010	0.8+	0.9−	1996 05 11	399	0.3+	0.6+	1998 11 23	423	0.4+	0.1+
1987 09 18	010	1.3+	0.1−	1996 05 11	399	1.2−	0.7−	1998 11 23	423	0.1+	0.2−
1987 09 18	010	1.2+	0.4−	1996 05 15	399	0.5+	1.1−	1998 11 23	423	0.1+	0.4+
1987 09 19	010	1.0−	1.4−	1996 05 15	399	1.0+	0.3−	1998 11 26	423	0.0	0.4−
1987 09 19	010	0.5+	0.3+	1998 10 19	699	0.1+	0.3+	1998 11 26	423	0.3−	0.0

(9799)* 1996 RJ = 1986 XP₅

Discovered 1996 Sept. 8 by T. B. Spahr at the University of Arizona's Catalina Station.

Id. G. V. Williams (*MPC* 30459)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	45.13385		(2000.0)	P	Q		
<i>n</i>	0.08309939	ω	115.45521	+0.84304256	−0.20045865		
<i>a</i>	5.2008081	Ω	259.55184	+0.07607779	+0.96306374		
<i>e</i>	0.0484631	<i>i</i>	30.49809	+0.53243912	+0.17979035		
<i>P</i>	11.86	<i>H</i>	9.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1986 12 01	482	0.0	1.4+	1996 10 07	693	0.7+	0.5−	1997 11 11	658	0.1−	0.5+
1986 12 01	482	0.3+	0.7+	1996 10 07	693	0.1−	0.5−	1997 11 11	658	0.1−	0.6+
1986 12 01	482	0.2+	0.1+	1996 12 15	696	0.2+	0.3+	1998 10 18	704	1.7+	1.2+
1986 12 01	482	(1.8+	2.6+)	1996 12 15	696	0.4+	0.3+	1998 10 18	704	1.3+	0.1+
1996 09 07	693	0.3−	1.9−	1996 12 15	696	0.3+	0.3+	1998 10 18	704	0.9+	0.4−
1996 09 07	693	0.4+	1.0+	1997 01 14	658	0.2+	0.4+	1998 10 18	704	0.8−	0.4−
1996 09 08	693	0.4−	0.9+	1997 01 14	658	0.2−	0.5+	1998 10 18	704	0.8−	1.0−
1996 09 08	693	0.1+	0.5+	1997 01 14	658	0.7−	0.5−	1998 11 14	704	0.7−	0.4−
1996 09 15	693	0.3+	0.5+	1997 07 12	696	0.4+	0.3+	1998 11 14	704	0.7−	0.4+
1996 09 15	693	0.9−	0.4−	1997 07 12	696	0.4+	0.3+	1998 11 14	704	0.4+	0.3+
1996 09 23	658	0.1−	0.5−	1997 09 19	658	0.1+	0.3+	1998 11 14	704	0.3−	1.4−
1996 09 23	658	0.1−	0.4−	1997 09 19	658	0.4+	0.4+	1998 11 16	704	0.6−	0.1−
1996 09 23	658	0.0	0.5−	1997 09 19	658	0.0	0.2+	1998 11 16	704	0.2−	0.8−
1996 09 25	658	0.2+	0.1−	1997 10 21	658	0.3−	0.3−	1998 11 16	704	0.8+	0.5−
1996 09 25	658	0.5+	0.0	1997 10 21	658	0.4−	0.4−	1998 11 16	704	0.1−	0.3−
1996 09 25	658	0.2+	0.1−	1997 10 21	658	0.4−	0.4−	1998 11 16	704	1.5−	0.3+

(9800)* 1997 ES₂ = 1979 HV₄

Discovered 1997 Mar. 4 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29929)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	96.24015		(2000.0)	P	Q		
<i>n</i>	0.26982627	ω	170.50567	+0.33995006	+0.93928067		
<i>a</i>	2.3718100	Ω	119.35555	−0.86632134	+0.33211400		
<i>e</i>	0.2025841	<i>i</i>	3.07482	−0.36595258	+0.08632561		
<i>P</i>	3.65	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1979 04 25	095	0.9−	0.1+	1998 09 26	704	0.1+	0.1−	1998 10 25	104	0.5+	0.2−
1979 04 30	095	0.5+	1.6−	1998 09 26	704	0.3+	0.1−	1998 10 25	104	0.8+	0.3−
1991 11 29	691	0.1−	0.6+	1998 09 27	704	0.0	0.3−	1998 10 25	104	0.8+	0.3−
1991 11 29	691	0.3−	0.1+	1998 09 27	704	0.4−	0.6+	1998 10 26	104	0.3+	0.0
1991 11 29	691	0.1+	0.3+	1998 09 27	704	0.2−	1.0+	1998 10 26	104	0.0	0.0
1997 03 04	411	0.2+	0.7+	1998 09 27	704	0.1−	0.9−	1998 10 26	104	0.3+	0.2−
1997 03 04	411	0.0	0.9−	1998 09 27	704	0.4−	0.5−	1998 10 26	104	0.3+	0.4−
1997 03 05	411	0.7−	0.7−	1998 09 29	704	0.5−	0.2−	1998 10 28	704	0.1−	0.1+
1997 03 05	411	0.6+	0.0	1998 09 29	704	1.2−	0.7+	1998 10 28	704	0.2+	0.2−
1997 03 09	411	0.2+	0.6−	1998 09 29	704	1.1−	0.3+	1998 10 28	704	0.7−	0.1−
1997 03 09	411	1.1−	0.3−	1998 09 29	704	0.8−	0.6+	1998 10 28	704	0.1+	0.1+
1997 03 12	411	0.1+	0.6−	1998 09 29	704	0.7−	1.1+	1998 10 29	704	0.7−	0.2−
1997 03 12	411	0.3−	0.7+	1998 10 11	699	0.6+	0.0	1998 10 29	704	1.3−	0.0
1997 04 10	411	0.1+	0.2−	1998 10 11	699	0.3+	0.8+	1998 10 29	704	0.5−	0.1+
1997 04 10	411	0.6+	1.0+	1998 10 11	699	0.4+	0.4+	1998 10 29	704	0.5−	0.5−
1998 09 18	699	0.1−	0.4+	1998 10 14	704	0.8+	0.2+	1998 10 29	704	1.0−	1.1−
1998 09 18	699	0.3+	0.2−	1998 10 14	704	0.5+	0.1−	1998 11 10	704	0.5+	1.1−
1998 09 18	699	0.2+	0.4−	1998 10 14	704	1.3+	0.4−	1998 11 10	704	1.4+	1.1−
1998 09 21	809	(1.1+	2.3+)	1998 10 14	704	1.4+	0.7−	1998 11 10	704	0.1−	0.8−
1998 09 21	809	(0.6+	2.3+)	1998 10 15	704	0.3−	0.1+	1998 11 10	704	0.2+	0.4−
1998 09 21	809	(0.2+	2.5+)	1998 10 15	704	0.3+	2.0+	1998 11 10	704	0.0	0.5+
1998 09 23	809	2.0+	1.9+	1998 10 15	704	0.0	1.0−	1998 11 11	704	0.2+	0.4−
1998 09 23	809	(1.4+	2.2+)	1998 10 15	704	0.7−	0.6−	1998 11 11	704	1.3−	0.9−
1998 09 23	809	(1.3+	2.7+)	1998 10 22	104	0.2−	0.1−	1998 11 11	704	0.7−	0.2+
1998 09 26	704	0.1+	0.2+	1998 10 22	104	0.0	0.1+	1998 11 11	704	0.2+	0.3−
1998 09 26	704	0.1−	0.6−	1998 10 22	104	0.3+	0.1+	1998 11 11	704	0.3−	0.8+
1998 09 26	704	0.7+	0.9−	1998 10 25	104	0.3−	0.3−				

(9801)* 1997 FX₃ = 1972 NU = 1172 T-1

Discovered 1997 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Gnädig (*MPC* 32677)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	51.30564		(2000.0)	P	Q		
<i>n</i>	0.22903592	ω	104.56282	+0.84978710	+0.52642465		
<i>a</i>	2.6456577	Ω	223.68205	−0.49751744	+0.78394705		
<i>e</i>	0.3387378	<i>i</i>	2.25572	−0.17417886	+0.32909591		
<i>P</i>	4.30	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	2.2−	0.4−	1997 04 06	704	0.6+	0.7+	1998 09 27	704	1.9−	1.5−
1971 03 25	675	1.5−	0.9−	1997 04 07	704	0.1+	1.3+	1998 10 10	699	0.3−	0.5+
1971 03 25	675	0.2+	1.2−	1997 04 07	704	1.0+	1.4+	1998 10 10	699	0.3−	0.2+
1971 03 26	675	(0.3+	2.9−)	1997 04 07	704	(0.4+	2.8+)	1998 10 10	699	0.3+	0.4+
1971 03 27	675	1.1+	2.2−	1997 04 07	704	0.9+	0.7+	1998 10 28	704	0.5+	0.0
1971 04 02	675	0.3−	1.5−	1998 09 14	699	0.0	0.3+	1998 10 28	704	0.7+	0.6+
1972 07 13	805	0.3−	0.7+	1998 09 14	699	0.1−	0.0	1998 10 28	704	0.4+	0.6+
1972 07 13	805	0.4−	0.4+	1998 09 14	699	0.0	0.2+	1998 10 28	704	0.1−	0.9+
1972 07 13	805	0.4+	0.2−	1998 09 18	809	(3.1+	2.6+)	1998 10 29	704	0.2+	1.5+
1997 03 13	809	(1.1−	3.6+)	1998 09 18	809	(2.9+	3.2+)	1998 10 29	704	0.2+	0.8+
1997 03 13	809	(1.1−	2.3+)	1998 09 18	809	(2.1+	3.3+)	1998 10 29	704	0.8+	0.5+
1997 03 13	809	(0.9−	2.6+)	1998 09 20	809	(3.3+	2.1+)	1998 10 29	704	0.1+	1.5+
1997 03 29	327	1.1−	0.7+	1998 09 20	809	(2.6+	2.0+)	1998 10 29	704	0.3+	0.9+
1997 03 29	327	0.5+	0.9+	1998 09 20	809	(2.3+	1.8+)	1998 11 10	704	0.1+	0.5−
1997 03 29	327	1.1−	0.5+	1998 09 26	704	0.7+	0.4−	1998 11 10	704	1.5+	0.0
1997 03 29	327	0.1+	0.9+	1998 09 26	704	0.2+	0.5+	1998 11 10	704	1.3−	0.4+

1997 03 31	704	0.0	0.7+	1998 09 26	704	0.1−	0.4+	1998 11 10	704	0.5−	0.1+
1997 03 31	704	1.0−	0.8+	1998 09 26	704	0.4+	0.6−	1998 11 11	704	0.0	0.8−
1997 04 03	704	0.5+	0.2+	1998 09 26	704	0.8−	0.7−	1998 11 11	704	0.8−	0.5+
1997 04 03	704	0.3+	1.2+	1998 09 27	704	0.1−	0.3−	1998 11 11	704	0.1+	0.4−
1997 04 05	704	1.3+	1.1+	1998 09 27	704	0.1−	0.5−	1998 11 11	704	0.6−	0.6+
1997 04 05	704	1.5+	0.2+	1998 09 27	704	0.3−	1.3−	1998 11 11	704	1.3−	0.1+
1997 04 06	704	1.0+	0.7+	1998 09 27	704	(1.6+	2.4−)				

(9802)* 1997 GQ₆ = 1990 TO₁₃

Discovered 1997 Apr. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 29931)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	66.51790		(2000.0)	P		Q	
<i>n</i>	0.24532032	ω	303.88345	+0.85147279		+0.52341876	
<i>a</i>	2.5272432	Ω	24.60099	−0.45212118		+0.76370135	
<i>e</i>	0.1800744	<i>i</i>	4.41480	−0.26566995		+0.37787968	
<i>P</i>	4.02	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 10 14	033	0.1+	0.3−	1998 09 14	699	1.0+	1.0+	1998 10 15	704	0.1+	0.1+
1990 10 14	033	0.1−	0.9−	1998 09 14	699	0.3+	0.4+	1998 10 15	704	0.6−	0.2+
1990 10 14	033	0.9+	1.1−	1998 09 20	809	(1.8+	2.7+)	1998 10 15	704	0.5−	0.2−
1996 05 21	704	1.1+	1.0+	1998 09 20	809	(0.7+	2.9+)	1998 10 15	704	0.1−	0.4+
1996 05 21	704	0.5+	0.1−	1998 09 20	809	(0.6+	2.9+)	1998 10 15	704	0.9−	1.8−
1996 05 21	704	0.7+	0.4−	1998 09 21	809	1.8+	1.2+	1998 10 28	704	0.3−	0.0
1996 05 21	704	1.1−	1.2+	1998 09 21	809	0.8+	1.2+	1998 10 28	704	0.3+	0.0
1997 04 02	704	0.1+	0.5+	1998 09 21	809	0.4+	1.3+	1998 10 28	704	0.3−	0.0
1997 04 02	704	0.2−	0.6+	1998 09 26	704	(3.0+	0.2+)	1998 10 28	704	0.9−	1.2+
1997 04 06	704	0.1−	1.4+	1998 09 26	704	0.6−	1.0−	1998 10 29	704	0.2−	0.1+
1997 04 06	704	0.7−	1.1+	1998 09 26	704	0.0	0.5−	1998 10 29	704	0.5−	0.0
1997 04 30	704	0.3+	0.2+	1998 09 26	704	0.1−	0.1+	1998 10 29	704	0.4+	0.3−
1997 04 30	704	0.2+	0.8−	1998 10 10	699	0.4−	0.2+	1998 10 29	704	0.1+	0.3−
1997 04 30	704	0.3−	0.2−	1998 10 10	699	0.2+	0.3−	1998 10 29	704	0.1−	0.7−
1997 04 30	704	0.1+	0.4−	1998 10 10	699	0.4+	0.9+	1998 11 10	704	1.0−	0.4−
1997 04 30	704	0.7−	0.5−	1998 10 13	327	0.3−	0.3+	1998 11 10	704	0.8+	0.2+
1997 05 01	704	0.3+	0.1+	1998 10 13	327	0.4−	0.3+	1998 11 10	704	0.0	0.1+
1997 05 01	704	0.1−	0.0	1998 10 13	327	0.6−	0.3+	1998 11 10	704	0.5−	0.3−
1997 05 01	704	0.3+	0.1+	1998 10 14	704	0.1−	0.2−	1998 11 11	704	0.1−	2.0−
1997 05 01	704	0.8+	0.1−	1998 10 14	704	0.7−	0.1+	1998 11 11	704	0.7+	0.6+
1997 05 01	704	0.6+	0.1+	1998 10 14	704	0.2−	0.1−	1998 11 11	704	0.2+	1.4+
1998 09 14	699	1.0+	1.2+	1998 10 14	704	0.7−	1.0+	1998 11 11	704	0.1+	1.0−

(9803)* 1997 GL₈ = 1990 RF₈ = 1993 BM₁₅ = 1994 TH₁₇

Discovered 1997 Apr. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 29933)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	101.83701		(2000.0)	P		Q	
<i>n</i>	0.25808383	ω	275.42982	+0.49582546		+0.86775212	
<i>a</i>	2.4432178	Ω	24.38711	−0.76046990		+0.45282032	
<i>e</i>	0.1624775	<i>i</i>	4.73839	−0.41933595		+0.20484142	
<i>P</i>	3.82	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 09 14	809	0.1−	0.7+	1997 04 30	704	0.0	0.2+	1998 10 29	704	1.1+	0.9−
1990 09 14	809	0.2+	0.5+	1997 05 01	704	0.2+	0.5+	1998 10 29	691	0.9−	0.0
1990 09 14	809	1.0+	0.3+	1997 05 01	704	0.0	0.7+	1998 10 29	704	0.7+	0.2−
1990 09 15	809	0.1−	0.2−	1997 05 01	704	0.3+	0.6+	1998 10 29	691	1.1−	0.0
1990 09 15	809	0.3+	0.7−	1997 05 01	704	0.0	0.9+	1998 10 29	704	0.8+	1.1+
1990 09 15	809	0.8+	1.0−	1997 05 01	704	0.7+	0.6+	1998 10 29	691	1.0−	0.0
1993 01 22	691	1.3−	0.2−	1997 05 05	704	0.4+	0.2+	1998 10 29	704	0.7+	0.5+
1993 01 22	691	1.5−	0.1−	1997 05 05	704	0.5+	0.4+	1998 11 10	704	0.3−	0.5+
1993 01 22	691	1.2−	0.4−	1997 05 05	704	0.2+	0.2+	1998 11 10	704	1.3+	0.0
1993 04 16	413	1.3+	1.3−	1997 05 05	704	0.1+	0.1−	1998 11 10	704	0.4+	0.1+

1994 10 08	691	1.7−	0.8−	1997 05 05	704	0.5+	0.2+	1998 11 10	704	0.8−	0.2+
1994 10 08	691	1.8−	0.9−	1997 05 07	704	0.0	0.1+	1998 11 10	704	0.7−	1.9+
1997 04 02	704	0.7+	0.6+	1997 05 07	704	0.4+	0.2−	1998 11 11	704	0.5−	1.1+
1997 04 02	704	0.9−	0.6+	1997 05 07	704	0.6+	0.6−	1998 11 11	704	0.2+	1.4+
1997 04 06	704	0.8−	0.2−	1997 05 07	704	0.3+	0.2+	1998 11 11	704	0.3+	1.2+
1997 04 06	704	0.0	0.9+	1998 10 16	691	0.9−	1.2−	1998 11 11	704	0.9−	0.7+
1997 04 08	704	0.5+	0.6+	1998 10 16	691	1.2−	0.2+	1998 11 11	704	0.4+	1.3+
1997 04 08	704	0.9−	0.2−	1998 10 16	691	1.1−	0.3−	1998 11 16	566	0.1−	0.0
1997 04 30	704	0.2+	0.6+	1998 10 19	699	1.1+	0.3+	1998 11 16	566	0.1−	0.2−
1997 04 30	704	0.1+	0.5+	1998 10 19	699	0.3+	0.6+	1998 11 16	566	0.3−	0.0
1997 04 30	704	0.1+	0.7+	1998 10 19	699	0.5+	0.8+				
1997 04 30	704	0.2+	0.6+	1998 10 29	704	0.8+	0.2+				

(9804)* 1997 NU

Discovered 1997 July 1 by E. O. Ofek at Wise Observatory, Mitzpeh Ramon.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	159.00526		(2000.0)	P		Q	
<i>n</i>	0.22543427	ω	82.39577	−0.88723753		+0.41668967	
<i>a</i>	2.6737621	Ω	122.03471	−0.45818775		−0.84584454	
<i>e</i>	0.1161962	<i>i</i>	13.50276	+0.05360558		−0.33304163	
<i>P</i>	4.37	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1984 03 29	413	0.5+	1.2+	1997 08 02	097	0.3+	0.2−	1998 09 09	097	0.3−	0.6+
1984 03 29	413	0.3−	0.9−	1997 08 08	097	0.6+	0.3+	1998 09 09	097	0.9−	0.4+
1990 10 15	675	1.1−	1.0−	1997 08 08	097	0.6+	0.2+	1998 09 10	097	0.5−	0.5−
1990 10 15	675	1.5+	0.6−	1997 08 29	097	0.3−	0.8+	1998 09 10	097	0.3−	0.2−
1997 07 01	097	0.3−	0.1−	1997 08 29	097	0.1−	0.4+	1998 09 14	097	0.0	0.7−
1997 07 01	097	0.3−	0.0	1998 05 23	097	0.5−	0.0	1998 09 14	097	0.1+	1.6−
1997 07 02	097	0.5−	0.1−	1998 05 23	097	0.3−	0.4−	1998 09 14	097	0.4−	0.9−
1997 07 02	097	0.5−	0.0	1998 05 30	097	0.4+	0.2+	1998 09 17	699	0.4+	0.5+
1997 07 02	097	0.5−	0.1−	1998 05 30	097	0.2+	0.1+	1998 09 17	699	1.1+	0.3+
1997 07 11	097	0.7−	1.7−	1998 05 30	097	0.3+	0.1+	1998 09 17	699	0.4+	0.0
1997 07 11	097	0.1−	0.9−	1998 05 31	097	0.3+	0.2+	1998 09 21	704	0.2+	1.2−
1997 07 11	097	1.4+	1.0−	1998 05 31	097	1.0+	0.1−	1998 09 21	704	0.2−	0.9−
1997 07 11	097	0.3−	1.0+	1998 07 01	097	0.4−	0.9+	1998 09 21	704	0.4−	0.7−
1997 07 18	097	0.2+	0.1+	1998 07 01	097	0.2+	0.8+	1998 09 21	704	0.1−	0.5+
1997 07 18	097	0.2+	0.4−	1998 07 01	097	0.0	0.8+	1998 09 21	704	1.5+	1.3+
1997 07 19	097	0.4−	0.3−	1998 07 02	097	0.6−	0.7+	1998 12 04	097	0.2−	0.1+
1997 07 19	097	0.1−	0.3−	1998 07 02	097	0.8−	1.1+	1998 12 04	097	0.1+	0.0
1997 08 02	097	(1.2−	2.4−)	1998 09 08	097	0.4−	0.2−				

(9805)* 1997 NZ = 1972 QB = 1972 RN₃ = 1976 OC

Discovered 1997 July 1 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. T. B. Spahr (*MPC* 30284)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	128.26083		(2000.0)	P		Q	
<i>n</i>	0.23435269	ω	7.95332	+0.38287469		+0.90141456	
<i>a</i>	2.6054901	Ω	284.74197	−0.85865877		+0.26654313	
<i>e</i>	0.1631205	<i>i</i>	12.06469	−0.34075225		+0.34118404	
<i>P</i>	4.21	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1972 08 16	095	0.7+	0.3+	1997 08 10	540	1.0−	0.1−	1998 10 23	681	0.6−	0.0
1972 09 05	095	0.2−	1.4+	1997 08 10	540	0.5−	0.7−	1998 10 24	744	0.2−	0.2+
1976 07 27	095	0.5−	1.1−	1997 08 10	540	0.1+	0.0	1998 10 24	744	0.4−	0.1−
1993 09 12	675	0.8−	1.2−	1997 08 11	540	0.0	0.5−	1998 10 24	744	0.4−	0.2+
1993 09 12	675	1.7−	0.8−	1997 08 11	540	0.0	1.0−	1998 10 24	681	0.5−	0.6+
1997 07 01	327	0.1+	0.2−	1997 08 11	540	0.3−	0.2−	1998 10 24	681	0.1−	0.5+
1997 07 01	327	0.2−	0.3+	1997 10 10	327	0.4−	0.0	1998 10 24	681	0.3−	0.5+
1997 07 01	327	0.3−	0.4+	1997 10 10	327	0.2−	0.5+	1998 10 24	681	0.2−	0.4+
1997 07 04	327	0.1+	0.3+	1997 10 10	327	0.2−	0.3+	1998 10 24	681	0.2−	0.8+
1997 07 04	327	0.0	0.2+	1997 10 10	327	0.1+	0.2+	1998 10 26	744	0.1−	0.2+
1997 07 04	327	1.3−	1.1+	1997 10 29	327	0.3+	0.6+	1998 10 26	744	0.3−	0.1+

1997 07 09	327	0.3+	0.3+	1997 10 29	327	0.3+	0.4+	1998 10 26	744	0.5-	0.2+
1997 07 09	327	0.0	0.3-	1997 10 29	327	0.5+	0.7+	1998 11 14	704	0.2+	0.2+
1997 07 09	327	0.3+	0.1-	1997 11 21	327	1.0+	0.3+	1998 11 14	704	0.9+	0.1+
1997 07 10	327	0.4+	0.1+	1997 11 21	327	1.0+	0.4+	1998 11 14	704	0.6+	1.5-
1997 07 10	327	0.2+	0.5+	1997 11 21	327	0.8+	0.2+	1998 11 14	704	1.3+	0.3-
1997 07 10	327	0.2+	0.1+	1997 11 21	327	0.7+	0.0	1998 11 14	704	(3.0- 2.5-)	
1997 07 13	367	0.3+	0.2+	1997 11 23	327	0.1+	0.4+	1998 11 16	704	0.1-	1.6-
1997 07 13	367	0.2+	0.0	1997 11 23	327	0.6+	0.2+	1998 11 16	704	0.8+	1.4+
1997 07 13	367	0.5+	0.1+	1997 11 23	327	1.1+	0.2-	1998 11 16	704	(0.0 2.2+)	
1997 07 14	355	0.5+	0.3-	1997 12 15	327	0.2-	0.3-	1998 11 16	704	0.9+	0.3-
1997 07 14	355	0.0	0.2-	1997 12 15	327	0.3-	0.1-	1998 11 25	716	0.4+	0.3-
1997 07 14	355	0.5+	0.8-	1997 12 15	327	0.3-	0.4-	1998 11 25	716	0.6-	1.0-
1997 07 18	402	0.2-	0.1-	1998 10 23	681	0.6-	0.2+	1998 11 26	716	0.3+	1.1-
1997 07 18	402	0.1-	0.0	1998 10 23	681	0.7-	0.6+	1998 11 26	716	0.5+	0.5-
1997 07 18	402	0.2-	0.2-	1998 10 23	681	0.2-	0.3+				

(9806)* 1997 NR₆ = 1992 OW₇

Discovered 1997 July 10 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 30465)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	52.15545	(2000.0)	P	Q	
<i>n</i>	0.19142923	ω	228.17617	+0.98286800	+0.09103661
<i>a</i>	2.9816996	Ω	125.98531	-0.04258119	+0.95813627
<i>e</i>	0.1149787	<i>i</i>	11.42317	-0.17932469	+0.27145391
<i>P</i>	5.15	<i>H</i>	12.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1992 07 21	809	0.4+	0.5+	1997 07 11	327	0.4-	0.3-	1998 10 16	704	0.3+	0.1+
1992 07 21	809	0.4+	0.4+	1997 07 12	327	0.1-	0.2-	1998 10 16	704	0.6+	1.3-
1992 07 21	809	0.3+	0.2+	1997 07 12	327	0.7-	0.1+	1998 10 16	704	(0.9+ 2.2-)	
1992 07 22	809	0.5-	0.2-	1997 07 12	327	0.8-	0.6-	1998 10 27	423	0.2+	0.4+
1992 07 22	809	0.3-	0.2+	1997 07 25	327	0.4+	0.4+	1998 10 27	423	0.2-	0.2+
1992 07 22	809	0.0	0.3+	1997 07 25	327	0.3+	0.1+	1998 10 27	423	0.7+	0.0
1993 12 07	675	0.5-	0.0	1997 07 25	327	0.2+	0.4-	1998 10 29	699	0.1+	1.0+
1993 12 07	675	(0.1- 2.2-)		1997 11 22	327	(2.8- 1.6-)		1998 10 29	699	0.2+	1.1+
1995 02 05	691	0.1+	0.3-	1997 11 22	327	1.3-	0.1-	1998 10 29	699	0.1+	0.6+
1995 02 05	691	0.0	0.4-	1997 11 22	327	0.2+	0.1+	1998 11 13	704	0.5-	0.1-
1995 02 05	691	0.0	0.3-	1997 11 22	327	0.1+	0.1+	1998 11 13	704	1.0+	0.2-
1997 07 10	327	0.6-	0.5-	1997 11 23	327	1.2+	0.3-	1998 11 13	704	0.2-	0.1-
1997 07 10	327	0.3-	0.1-	1997 11 23	327	1.2+	0.2-	1998 11 13	704	(2.2- 1.4-)	
1997 07 10	327	0.0	0.1-	1997 11 23	327	0.3-	0.3-	1998 11 13	704	1.7-	2.0-
1997 07 11	327	0.3+	0.5-	1997 11 23	327	0.2+	1.5+				
1997 07 11	327	0.6+	0.9-	1998 10 16	704	0.1+	0.8-				

(9807)* 1997 SJ₄ = 1988 AZ = 1996 RF₂₈

Discovered 1997 Sept. 27 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 30880)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Nakano			
<i>M</i>	359.23484	(2000.0)	P	Q	
<i>n</i>	0.08305271	ω	195.45596	+0.37421568	-0.92477969
<i>a</i>	5.2027568	Ω	232.61744	+0.85974518	+0.37382029
<i>e</i>	0.1556093	<i>i</i>	4.97330	+0.34756417	+0.07099947
<i>P</i>	11.87	<i>H</i>	11.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1988 01 11	033	0.1-	0.2+	1997 10 08	411	0.2+	0.6+	1998 11 18	704	1.1-	0.3-
1988 01 11	033	0.1+	0.3+	1997 10 08	411	0.9-	0.5-	1998 11 18	704	1.6-	0.4-
1996 08 18	010	1.1-	0.3+	1997 10 12	411	0.5+	0.5+	1998 11 18	704	1.5-	0.5-
1996 08 18	010	1.4-	0.1+	1997 10 12	411	0.3+	0.2+	1998 11 21	704	0.7-	0.7+
1996 08 18	010	1.6-	0.9+	1997 10 12	411	0.6+	0.3+	1998 11 21	704	0.4+	0.4-
1996 08 20	010	0.5+	0.2+	1997 10 25	411	0.7-	0.6+	1998 11 21	704	1.3+	1.2+
1996 08 20	010	0.0	1.1+	1997 10 25	411	0.2-	1.3-	1998 11 21	704	0.5-	0.9-
1996 08 20	010	1.4+	1.3+	1997 11 06	411	0.4-	0.8-	1998 11 21	704	1.3+	0.3-
1996 09 11	809	(2.5+ 3.2+)		1997 11 06	411	0.1+	0.3-	1998 11 24	747	0.1+	0.4+

1996 09 13	809	0.5+	0.3-	1997 11 30	411	0.9+	0.2+	1998 11 24	747	0.3+	0.4+
1996 09 13	809	0.7+	0.3-	1997 11 30	411	0.1-	0.2-	1998 11 24	704	0.9-	0.2+
1997 09 27	411	0.0	0.5-	1998 10 29	704	0.2-	0.3+	1998 11 24	747	0.0	0.4+
1997 09 27	411	0.4+	0.3-	1998 10 29	704	0.5-	0.0	1998 11 24	704	0.9+	0.3-
1997 09 28	411	(0.7+ 2.5-)		1998 10 29	704	0.5+	0.6+	1998 11 24	747	0.2-	0.5+
1997 09 28	411	0.8-	0.9-	1998 10 29	704	0.7+	0.1-	1998 11 24	704	0.7+	0.6+
1997 09 30	411	0.8+	0.9-	1998 10 29	704	0.3+	0.8-	1998 11 24	704	0.3+	0.4+
1997 09 30	411	0.0	1.1-	1998 11 14	367	0.4+	0.6+	1998 11 24	704	0.1+	1.1-
1997 10 05	411	0.1+	0.8+	1998 11 14	367	0.1-	0.2-	1998 11 25	747	0.0	0.4+
1997 10 05	411	0.3+	0.9-	1998 11 18	704	0.1-	0.6+	1998 11 25	747	0.1+	0.3+

(9808)* 1998 QS₇₀ = 1978 WE₁₅ = 1992 AX₃ = 1997 NV₁₀

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32979)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	237.37006	(2000.0)	P	Q	
<i>n</i>	0.23686225	ω	266.50203	-0.76269569	-0.62286347
<i>a</i>	2.5870540	Ω	234.88857	+0.64497414	-0.71250787
<i>e</i>	0.1020695	<i>i</i>	12.29334	+0.04799632	-0.32306910
<i>P</i>	4.16	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1978 11 30	675	0.1-	0.0	1997 07 03	688	0.1-	0.3+	1998 09 19	704	0.6-	1.7+
1978 12 01	675	0.1+	0.5+	1997 07 03	688	0.2-	0.1+	1998 09 19	704	0.3-	0.0
1992 01 13	303	0.5+	0.2-	1998 08 24	704	0.1-	1.6-	1998 09 19	704	0.3+	0.1-
1992 01 14	303	0.4-	0.5+	1998 08 24	704	0.3-	1.6-	1998 09 19	704	0.0	1.1+
1997 07 01	910	0.1+	0.4-	1998 08 24	704	0.3-	0.0	1998 09 23	704	1.3-	0.8+
1997 07 01	910	0.9+	0.1+	1998 08 24	704	0.9+	0.3-	1998 09 23	704	0.3-	0.6+
1997 07 01	910	0.1+	0.3-	1998 08 24	704	1.8+	0.4-	1998 09 23	704	0.4+	0.5+
1997 07 02	688	0.1-	0.1-	1998 08 27	704	0.1-	0.1+	1998 09 23	704	0.5-	0.2-
1997 07 02	688	0.1-	0.4+	1998 08 27	704	0.2-	0.5-	1998 10 12	557	0.3+	0.1-
1997 07 02	688	0.8-	0.7+	1998 08 27	704	0.0	0.4-	1998 10 12	557	0.2+	0.0
1997 07 02	688	0.1+	0.1+	1998 08 27	704	0.6-	0.5-	1998 10 12	557	0.1-	0.3-
1997 07 03	688	0.4+	0.0	1998 08 27	704	0.7+	0.3+	1998 10 13	557	0.0	0.2-
1997 07 03	688	0.4-	0.3+	1998 09 19	704	0.1-	1.4+	1998 10 13	557	0.0	0.2-

(9809)* 1998 RZ₅ = 1994 TJ₉ = 1997 HQ₁₀ = 9532 P-L

Discovered 1998 Sept. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPC* 32990), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	22.39956	(2000.0)	P	Q	
<i>n</i>	0.23325534	ω	323.82579	+0.99935409	-0.01380595
<i>a</i>	2.6136553	Ω	37.00759	+0.02694343	+0.89878681
<i>e</i>	0.1768590	<i>i</i>	3.15979	-0.02377935	+0.43816853
<i>P</i>	4.23	<i>H</i>	15.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1960 10 17	675	0.2-	0.0	1997 04 30	704	0.6+	0.3-	1998 09 14	704	0.0	0.2+
1960 10 22	675	(2.1-	2.9-)	1997 05 05	704	0.2+	0.2-	1998 09 14	704	0.6-	0.6+
1960 10 24	675	0.2+	0.1+	1997 05 05	704	0.1+	0.7+	1998 09 18	699	0.3-	0.7+
1960 10 26	675	0.2+	0.4-	1997 05 05	704	0.1-	0.4-	1998 09 18	699	0.4-	0.5+
1994 10 08	691	0.0	0.7+	1997 05 05	704	0.5-	0.4-	1998 09 18	704	0.3+	0.9-
1994 10 08	691	0.1-	0.6+	1997 05 05	704	0.9-	0.7+	1998 09 18	699	0.2-	0.0
1994 10 08	691	0.1+	0.5+	1998 08 30	699	0.3-	0.7-	1998 09 18	704	0.7+	0.7+
1994 10 10	691	0.3-	0.7+	1998 08 30	699	1.1+	0.1-	1998 09 18	704	0.5-	1.0-
1994 10 10	691	0.8-	0.4+	1998 08 30	699	0.9-	0.9-	1998 09 18	704	0.2-	0.9+
1994 10 10	691	0.4-	0.5+	1998 09 13	699	0.7+	0.0	1998 09 18	704	0.1-	0.3-
1997 04 30	704	0.2+	0.4+	1998 09 13	699	0.6+	0.1-	1998 10 12	699	0.3-	0.1-
1997 04 30	704	0.4+	0.8+	1998 09 13	699	0.4+	0.6-	1998 10 12	699	0.1+	0.6-
1997 04 30	704	0.6-	0.1+	1998 09 14	704	0.6+	0.7+	1998 10 12	699	0.4+	0.5-
1997 04 30	704	1.4+	1.5+	1998 09 14	704	0.7-	0.4+				

(9810)* 1998 RJ₆₅ = 1954 TT = 1954 UZ₁ = 1964 PB = 1978 YS₁
 = 1981 SA₆ = 1988 VQ = 1997 CG₂₉

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33003)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	30.10794	(2000.0)	P	Q	
<i>n</i>	0.29092306	ω 188.56969	+0.98318661	-0.18258891	
<i>a</i>	2.2557136	Ω 181.95546	+0.17130835	+0.92669533	
<i>e</i>	0.1654614	<i>i</i> 3.89946	+0.06322613	+0.32847686	
<i>P</i>	3.39	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1954 10 03	012	1.2-	1.1-	1997 02 14	327	0.1+	0.3+	1998 09 26	704	0.9-	0.2+
1954 10 25	760	2.2+	1.6-	1998 08 02	699	0.5+	0.8+	1998 09 26	704	0.8-	0.7-
1954 10 25	760	(5.3+	4.2+)	1998 08 02	699	0.8+	0.2+	1998 09 27	704	0.1+	0.3-
1964 08 09	760	(96.3-	62.1-)	X 1998 08 02	699	0.4+	0.8+	1998 09 27	704	0.9+	0.2+
1978 12 22	095	1.8+	0.1+	1998 09 14	704	0.8+	0.0	1998 09 27	704	0.8+	0.1+
1981 09 28	095	0.2-	0.8-	1998 09 14	704	0.8+	0.1+	1998 09 27	704	0.4+	0.3-
1988 11 03	897	2.3-	0.2-	1998 09 14	704	0.5+	0.3+	1998 09 27	704	0.2+	0.4-
1988 11 03	897	0.0	0.2+	1998 09 18	704	0.8+	1.2+	1998 10 14	699	0.6+	0.6+
1988 11 07	897	0.3-	0.3+	1998 09 18	704	0.9+	1.5-	1998 10 14	699	0.0	0.5+
1988 11 07	897	0.2+	0.5+	1998 09 18	704	0.0	0.9+	1998 10 14	699	0.1+	0.5+
1997 02 07	327	0.0	0.1+	1998 09 18	704	0.2-	0.1-	1998 10 15	691	1.5-	0.0
1997 02 07	327	0.4-	0.1+	1998 09 18	704	0.4-	0.3+	1998 10 15	691	1.2-	0.2-
1997 02 07	327	0.9-	0.4+	1998 09 26	704	0.8-	0.2+	1998 10 15	691	1.4-	0.1+
1997 02 14	327	0.5+	0.0	1998 09 26	704	0.3-	0.8+				
1997 02 14	327	0.4+	0.3+	1998 09 26	704	0.5-	0.4-				

(9811)* 1998 ST = 1981 UA₃ = 1991 RS₁₈ = 1994 LP₉ = 1997 GN₃₃

Discovered 1998 Sept. 16 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPC* 33013)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	68.09206	(2000.0)	P	Q	
<i>n</i>	0.28797219	ω 304.78182	+0.88461367	+0.46616131	
<i>a</i>	2.2710970	Ω 27.43888	-0.41861866	+0.80549810	
<i>e</i>	0.1572320	<i>i</i> 1.53463	-0.20546795	+0.36587764	
<i>P</i>	3.42	<i>H</i> 15.8	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1981 10 30	381	0.5+	0.5+	1998 09 16	910	0.6-	0.4-	1998 09 27	704	(2.1-	0.1-)
1981 10 30	381	0.6+	0.1+	1998 09 16	910	1.0-	0.8-	1998 10 23	731	0.2-	0.8-
1991 09 13	675	1.7-	0.7-	1998 09 18	910	0.4+	0.0	1998 10 23	731	1.2-	0.2+
1991 09 13	675	(2.6-	0.8-)	1998 09 18	910	0.4+	0.0	1998 10 23	731	0.3+	0.1+
1991 09 16	675	0.0	0.9-	1998 09 18	910	0.6+	0.1+	1998 10 28	704	1.9-	0.6+
1991 09 16	675	0.5-	1.2-	1998 09 18	809	1.2+	1.2+	1998 10 28	704	1.5+	0.3+
1994 06 08	809	0.7-	0.8+	1998 09 18	809	1.5+	1.1+	1998 10 28	704	1.6-	0.1-
1994 06 08	809	0.8+	0.5+	1998 09 18	809	1.4+	1.2+	1998 10 28	704	0.9+	0.9+
1994 06 08	809	0.0	0.2-	1998 09 20	910	0.8+	0.0	1998 10 29	704	0.0	0.5+
1994 06 09	809	(3.0+	0.1+)	1998 09 20	910	0.1-	0.0	1998 10 29	704	0.4-	1.2+
1994 06 09	809	1.7+	0.6-	1998 09 20	910	0.2-	0.0	1998 10 29	704	1.0-	0.8+
1994 06 09	809	0.8+	0.4+	1998 09 20	809	1.4+	0.1-	1998 10 29	704	0.4-	1.1+
1997 04 03	704	0.6+	0.5+	1998 09 20	809	0.9+	0.0	1998 10 29	704	0.1+	0.2-
1997 04 03	704	0.1+	1.0+	1998 09 20	809	0.8+	0.0	1998 11 10	704	0.4+	0.1+
1997 04 04	566	1.2-	0.0	1998 09 26	704	0.9+	0.2-	1998 11 10	704	0.1+	0.9-
1997 04 04	566	0.5-	0.4+	1998 09 26	704	1.2-	0.9+	1998 11 10	704	(2.2+	2.3-)
1997 04 04	566	0.1-	0.1+	1998 09 26	704	0.3-	0.4-	1998 11 10	704	0.3+	0.7-
1997 04 11	704	(1.1+	2.2-)	1998 09 26	704	0.6+	0.3-	1998 11 10	704	(1.2-	2.3-)
1997 04 11	704	1.1-	0.7-	1998 09 27	704	0.4-	0.3+	1998 11 11	704	0.1-	0.8-
1997 04 11	704	0.1+	0.7+	1998 09 27	704	0.0	0.7+	1998 11 11	704	0.8-	1.0-
1997 04 11	704	0.7+	0.2-	1998 09 27	704	0.1+	0.7+	1998 11 11	704	(0.3-	2.1-)
1998 09 16	910	0.7-	0.5-	1998 09 27	704	0.5-	0.1-	1998 11 11	704	1.1-	1.9-

(9812)* 1998 SJ₁₄₄ = 1981 UD₁₇ = 1981 UU₂₆ = 1991 RH₁₅
 = 1993 FG₄₄

Discovered 1998 Sept. 18 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 33045)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	331.21139	(2000.0)	P	Q	
<i>n</i>	0.28933202	ω 267.22402	-0.12203199	-0.99235257	
<i>a</i>	2.2639755	Ω 189.84365	+0.94831142	-0.11105551	
<i>e</i>	0.1319464	<i>i</i> 6.23330	+0.29293966	-0.05387990	
<i>P</i>	3.41	<i>H</i> 14.3	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1981 10 24	095	2.2+	0.9-	1998 09 14	699	0.2-	0.2-	1998 10 29	704	0.2-	0.5-
1981 10 28	095	1.9-	0.5+	1998 09 16	910	0.7+	0.2+	1998 10 29	704	0.1+	0.5-
1991 09 11	675	1.6+	0.2+	1998 09 16	910	0.7+	0.3+	1998 10 29	704	1.0-	0.4-
1991 09 11	675	0.3-	1.4-	1998 09 16	910	0.6+	0.2+	1998 10 29	704	1.0-	0.9-
1991 09 15	691	1.3-	0.2+	1998 09 18	809	1.6+	0.8+	1998 11 10	704	0.1-	0.0
1991 09 15	691	0.9-	0.8+	1998 09 18	809	1.5+	1.0+	1998 11 10	704	0.5-	0.2-
1991 09 15	691	0.7-	0.3+	1998 09 18	809	1.2+	0.6+	1998 11 10	704	0.2-	0.3-
1991 09 15	675	0.2-	0.6+	1998 09 20	809	(1.6+	2.1+)	1998 11 10	704	0.7-	0.3+
1991 09 15	675	1.4+	1.0-	1998 09 20	809	1.1+	1.4+	1998 11 11	704	0.1+	0.2+
1993 03 19	809	0.0	1.0+	1998 09 20	809	0.6+	1.0+	1998 11 11	704	0.5-	0.0
1993 03 20	809	0.6+	0.3+	1998 10 10	699	0.3+	0.2-	1998 11 11	704	0.2-	0.1-
1993 03 24	809	1.6+	0.9+	1998 10 10	699	0.6+	0.3-	1998 11 11	704	0.8-	0.1-
1993 03 28	691	(1.3-	2.5-)	1998 10 10	699	0.1-	0.1+	1998 11 11	704	1.3-	0.0
1993 03 28	691	(2.5-	3.3-)	1998 10 28	704	0.5-	0.4-	1998 11 15	566	0.1-	0.1-
1993 03 28	691	1.7-	0.6-	1998 10 28	704	0.4-	0.5-	1998 11 15	566	0.1-	0.2-
1998 09 14	699	0.1-	0.3+	1998 10 28	704	0.7+	0.4-	1998 11 15	566	0.3-	0.4-
1998 09 14	699	0.1-	0.6+	1998 10 29	704	0.6-	0.9+				

(9813)* 1998 TP₅ = 1981 WK₈ = 1991 RF₉ = 1993 FO₂₅

Discovered 1998 Oct. 13 by K. Korlević at Višnja.

Id. G. V. Williams (*MPC* 33047)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	1.52817	(2000.0)	P	Q	
<i>n</i>	0.28797561	ω 226.81414	+0.36196887	-0.93213021	
<i>a</i>	2.2710790	Ω 201.97139	+0.86325586	+0.33946114	
<i>e</i>	0.1259844	<i>i</i> 1.61954	+0.35180655	+0.12609288	
<i>P</i>	3.42	<i>H</i> 14.1	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1981 11 25	095	0.2+	0.5-	1998 10 13	120	0.3+	0.2-	1998 11 06	120	0.0	0.2-
1991 09 11	675	0.1-	0.3-	1998 10 13	120	0.2+	0.0	1998 11 10	704	0.0	0.1-
1991 09 11	675	0.1+	0.5-	1998 10 15	120	0.2+	0.1-	1998 11 10	704	0.0	0.7-
1991 09 14	675	0.4+	0.9-	1998 10 15	120	0.0	0.2-	1998 11 10	704	0.3-	0.6-
1991 09 14	675	0.3+	0.7-	1998 10 18	699	0.2-	0.7+	1998 11 10	704	0.7-	0.0
1993 03 21	809	1.0+	0.1-	1998 10 18	699	0.2-	0.6+	1998 11 10	704	1.3-	1.2+
1993 03 22	809	(3.4+	1.0-)	1998 10 18	699	0.1+	0.7+	1998 11 11	704	0.7+	0.0
1993 03 26	809	0.4-	1.7-	1998 10 20	120	0.0	0.1+	1998 11 11	704	0.6-	0.7+
1993 04 21	413	1.1-	0.7+	1998 10 22	327	0.4-	0.2+	1998 11 11	704	0.3+	0.2-
1998 09 29	910	1.1+	0.2+	1998 10 22	327	0.4-	0.2+	1998 11 11	704	0.5+	0.9-
1998 09 29	910	1.2+	0.3+	1998 10 22	327	0.6-	0.0	1998 11 11	704	0.1+	1.0-
1998 09 29	910	1.3+	0.3+	1998 10 23	120	0.4+	0.2-	1998 11 14	691	0.6-	0.3-
1998 10 03	327	0.2-	0.7+	1998 10 23	120	0.3+	0.2-	1998 11 14	691	0.7-	0.5-
1998 10 03	327	0.5-	1.0+	1998 10 28	120	0.4+	0.1+	1998 11 14	691	0.8-	0.5-
1998 10 03	327	0.3-	0.8+	1998 10 28	120	0.7+	0.0				
1998 10 13	120	0.1+	0.0	1998 11 06	120	0.4+	0.0				

(9814)* 1998 UU₁₈ = 1991 RH₁₁ = 1997 HJ₇ = 9088 P-L

Discovered 1998 Oct. 23 by K. Korlević at Višnja.

Id. G. V. Williams (*MPC* 33052)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	47.17483	(2000.0)	P	Q
<i>n</i>	0.28673606	ω 144.55649	+0.98738260	-0.14995181
<i>a</i>	2.2776195	Ω 224.15554	+0.12313732	+0.92913853
<i>e</i>	0.2199110	<i>i</i> 4.18962	+0.09956301	+0.33795865
<i>P</i>	3.44	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1960 10 17	675	0.0	0.5+	1997 05 01	704	0.1-	0.2+	1998 11 11	704	0.4+	0.7-
1960 10 22	675	0.1+	0.6-	1997 05 01	704	(1.0-	2.2-)	1998 11 11	704	0.1+	0.1-
1960 10 24	675	0.5-	0.4+	1998 10 20	699	0.8+	0.2-	1998 11 15	691	1.5-	0.2+
1960 10 26	675	0.2+	0.4+	1998 10 20	699	0.7+	0.1-	1998 11 15	691	1.5-	0.2+
1991 09 13	675	0.5-	0.7-	1998 10 20	699	1.0+	0.9-	1998 11 15	691	1.5-	0.1+
1991 09 13	675	0.7+	0.6-	1998 10 23	120	0.0	0.1-	1998 11 18	704	1.4+	1.0+
1991 09 15	675	0.7-	0.2+	1998 10 23	120	0.6+	0.1-	1998 11 18	704	0.2+	0.3-
1991 09 15	675	0.3+	0.4+	1998 10 28	120	0.8+	0.2+	1998 11 18	704	0.5+	0.1-
1997 04 30	704	0.1-	1.2-	1998 10 28	120	0.1+	0.3+	1998 11 18	704	1.2+	1.3-
1997 04 30	704	0.0	0.2-	1998 11 10	704	0.2+	0.0	1998 11 18	704	0.3+	0.5-
1997 04 30	704	0.5-	0.2-	1998 11 10	704	0.9+	0.1+	1998 11 21	691	1.7-	0.5+
1997 04 30	704	(2.8-	0.3+)	1998 11 10	704	0.3-	0.6+	1998 11 21	691	1.7-	0.3+
1997 05 01	704	0.7+	1.3-	1998 11 10	704	0.5+	1.3-	1998 11 21	691	2.0-	0.5+
1997 05 01	704	0.3-	0.7+	1998 11 11	704	1.2+	0.3-				

(9815)* 2079 P-L = 1953 GE₂

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. E. Bowell (*MPC* 22965)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	10.45375	(2000.0)	P	Q
<i>n</i>	0.20938189	ω 77.93029	+0.54642014	-0.83695383
<i>a</i>	2.8087298	Ω 338.86118	+0.73168116	+0.49480442
<i>e</i>	0.0697453	<i>i</i> 4.85955	+0.40751407	+0.23383086
<i>P</i>	4.71	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1953 04 15	675	0.4-	0.3+	1995 02 07	411	0.5+	1.1-	1998 10 29	704	0.7+	0.9-
1953 04 15	675	0.4-	0.7-	1995 02 07	411	0.5-	0.8-	1998 10 29	704	0.9+	0.1+
1960 09 24	675	1.0+	0.1+	1996 05 21	566	1.0+	0.4-	1998 10 29	704	0.6+	0.1+
1960 09 26	675	0.4+	0.8-	1996 05 21	566	0.8+	0.4-	1998 10 29	704	0.1+	0.1-
1960 09 28	675	0.1-	0.4+	1996 05 21	566	0.6+	1.2-	1998 11 10	704	0.0	0.9+
1960 09 29	675	0.6+	0.4-	1998 10 19	699	0.2+	0.6+	1998 11 10	704	0.8-	0.0
1960 10 22	675	0.2-	0.2+	1998 10 19	699	0.3+	0.5-	1998 11 10	704	0.3-	0.7-
1960 10 25	675	0.8+	1.2-	1998 10 19	699	0.7+	0.6+	1998 11 10	704	1.0-	2.1+
1960 10 26	675	0.5-	0.2+	1998 10 24	744	0.2+	0.2-	1998 11 10	704	0.4+	1.0+
1991 04 14	675	0.5-	0.1-	1998 10 24	744	0.2+	0.8-	1998 11 11	704	0.1+	0.5+
1991 04 14	675	1.1-	0.4+	1998 10 24	744	0.3+	0.0	1998 11 11	704	1.1-	0.7+
1991 04 16	675	1.5-	0.6-	1998 10 25	098	0.0	0.0	1998 11 11	704	0.0	0.0
1991 04 16	675	0.6+	1.1+	1998 10 25	098	0.5-	1.4-	1998 11 11	704	1.1-	1.3+
1993 10 13	675	0.2-	0.1-	1998 10 26	744	0.6-	0.7-	1998 11 11	704	0.4-	1.1+
1993 10 13	675	0.8-	0.8-	1998 10 26	744	1.1+	1.0-				
1993 10 15	675	0.5-	1.6-	1998 10 29	704	0.7+	0.8-				

(9816)* 2643 P-L = 1998 FC₁₁₅

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Gnädig (*MPC* 32503)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	182.73426	(2000.0)	P	Q
<i>n</i>	0.22362608	ω 71.71805	+0.17810737	-0.98241439
<i>a</i>	2.6881557	Ω 8.62254	+0.70089312	+0.08668830
<i>e</i>	0.0626510	<i>i</i> 21.94671	+0.69067112	+0.16536961
<i>P</i>	4.41	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1953 03 09	675	0.9-	0.6-	1976 05 29	413	0.3-	0.9-	1998 04 01	704	0.2+	0.3+
1953 03 09	675	1.0+	0.3-	1982 11 06	413	0.4+	0.4+	1998 04 01	704	0.4+	0.2+
1960 09 24	675	0.0	0.6-	1982 11 06	413	0.2+	0.0	1998 04 01	704	0.2+	0.1-
1960 09 26	675	0.6-	0.4-	1998 03 25	704	0.2+	0.3+	1998 04 01	704	0.1-	0.2+
1960 09 28	675	1.2+	0.0	1998 03 25	704	0.9+	0.2+	1998 04 01	704	0.6-	0.5+
1960 09 28	675	0.3-	0.8-	1998 03 25	704	0.5+	0.7+	1998 04 20	704	0.3-	0.3-
1960 10 17	675	0.2-	0.9+	1998 03 25	704	0.3+	0.3+	1998 04 20	704	1.3+	0.5-
1960 10 17	675	0.2-	1.1+	1998 03 31	704	0.6+	0.2+	1998 04 20	704	1.6-	0.3+
1960 10 22	675	0.0	0.7-	1998 03 31	704	0.3-	0.8-	1998 04 20	704	0.9-	0.3+
1960 10 24	675	0.5+	0.7-	1998 03 31	704	0.7+	0.3+	1998 04 20	704	0.6-	0.5+
1960 10 26	675	0.3-	0.2+	1998 03 31	704	0.1-	1.2-				
1976 05 29	413	0.5-	0.5-	1998 03 31	704	0.4-	0.6-				

(9817)* 6540 P-L = 1991 HV₂ = 1996 RB₃₃

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 29649)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	321.00914	(2000.0)	P	Q
<i>n</i>	0.08061830	ω 79.97991	-0.24427071	-0.96746542
<i>a</i>	5.3069738	Ω 24.46603	+0.81567142	-0.24174444
<i>e</i>	0.0437597	<i>i</i> 9.15545	+0.52441582	-0.07463435
<i>P</i>	12.23	<i>H</i> 11.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1960 09 24	675	0.7-	0.1-	1991 04 19	809	1.2-	0.5-	1998 11 21	704	0.4-	0.9-
1960 09 26	675	0.5-	0.7-	1991 04 19	809	0.4-	0.1-	1998 11 21	704	0.3-	0.6-
1960 09 27	675	1.2+	0.8-	1996 09 15	809	0.0	0.1-	1998 11 21	704	0.6+	0.7-
1960 09 28	675	0.1+	0.8-	1996 09 17	809	0.1+	0.1+	1998 11 21	704	(4.4-	0.7-)
1960 10 17	675	0.8-	0.0	1998 10 29	704	1.1-	1.1+	1998 11 24	704	0.3+	1.6+
1960 10 22	675	0.9+	0.2-	1998 10 29	704	0.7+	0.7-	1998 11 24	704	1.7+	1.0+
1960 10 25	675	0.2+	0.7+	1998 10 29	704	0.6-	1.8-	1998 11 24	704	(2.5+	0.5+)
1960 10 26	675	0.5+	0.7+	1998 10 29	704	(2.3-	1.3-)	1998 11 24	704	0.1+	0.8+
1991 04 19	809	0.4+	1.3-	1998 10 29	704	0.2+	1.4-	1998 11 24	704	0.8-	0.7+

(9818)* 6591 P-L = 1979 GB

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. B. G. Marsden (*MPC* 4831)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	291.51463	(2000.0)	P	Q
<i>n</i>	0.08121931	ω 107.31764	-0.58769140	-0.80799221
<i>a</i>	5.2807612	Ω 18.86153	+0.68414706	-0.52400839
<i>e</i>	0.0081512	<i>i</i> 7.47207	+0.43192779	-0.26937668
<i>P</i>	12.14	<i>H</i> 11.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1954 02 10	675	0.8-	1.0+	1979 04 01	809	0.0	0.5+	1998 10 19	699	0.5-	0.5-
1954 02 10	675	1.4+	1.9-	1979 04 02	809	0.4+	0.6-	1998 10 29	704	0.1-	1.5-
1958 07 12	675	0.1-	0.2-	1979 05 19	809	0.6-	0.2-	1998 10 29	704	0.6+	0.2-
1958 07 12	675	1.8+	0.5+	1979 05 19	809	0.2-	0.5-	1998 10 29	704	1.1-	1.2+
1960 09 24	675	0.2-	0.6+	1979 05 21	809	0.1-	0.3-	1998 10 29	704	1.3-	0.7+
1960 09 26	675	0.5+	0.8-	1979 05 23	809	0.6-	0.3-	1998 11 10	699	0.4+	0.8+
1960 09 27	675	0.7+	0.2-	1991 04 15	675	1.8-	1.4-	1998 11 10	699	0.3-	0.9+
1960 09 28	675	0.7+	2.0-	1991 04 15	675	(2.4-	1.0-)	1998 11 10	699	0.1+	1.1+
1960 10 17	675	0.4-	0.8-	1991 04 17	675	0.4-	0.9+	1998 11 18	704	0.8+	0.5-
1960 10 22	675	1.9-	0.4-	1991 04 17	675	1.0+	0.6+	1998 11 18	704	1.3+	1.5-
1960 10 24	675	0.6+	0.0	1998 10 19	699	1.4+	0.7+	1998 11 18	704	0.7+	1.3-
1960 10 26	675	0.9-	0.4+	1998 10 19	699	0.4-	0.1+				

(9819)* 2172 T-1 = 1981 JV₅ = 1997 GY₁₅

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 29649)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	114.28261	ω	244.71853	+0.52217017	+0.85208663		
<i>a</i>	2.1880312	Ω	56.80614	-0.76624053	+0.48719878		
<i>e</i>	0.1813245	<i>i</i>	2.45673	-0.37445128	+0.19127395		
<i>P</i>	3.24	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	(3.1- 1.0-)	1997 04 06	704	0.9+	0.4+	1998 10 29	704	0.3+	0.2-
1971 03 25	675	1.5- 0.6+	1997 04 06	704	0.6+	1.0+	1998 10 29	704	0.0	0.2-
1971 03 25	675	2.5- 0.5+	1997 04 07	704	0.7+	0.5+	1998 11 18	704	0.1-	0.3+
1971 03 26	675	1.7- 0.8+	1997 04 07	704	1.4+	0.0	1998 11 18	704	0.4+	0.1-
1971 03 27	675	0.7- 0.6-	1997 04 07	566	1.1-	0.3+	1998 11 18	704	1.8+	0.4-
1971 04 02	675	0.9+ 1.3-	1997 04 07	566	1.0-	0.2+	1998 11 18	704	0.0	1.6+
1971 04 16	675	1.8+ 1.8-	1997 04 07	566	1.5-	0.2+	1998 11 18	704	0.6+	1.1+
1971 04 16	675	2.0+ 1.9-	1998 08 31	704	0.3+	0.6-	1998 11 21	704	0.1+	0.1-
1981 05 08	675	(6.6- 0.2-)	1998 08 31	704	1.2-	0.4-	1998 11 21	704	0.4-	0.4+
1981 05 09	675	0.0	1998 08 31	704	0.8-	1.3-	1998 11 21	704	0.3-	0.4-
1997 04 03	704	0.0	1998 08 31	704	(2.9- 1.0-)	1998 11 21	704	(2.2- 0.3-)		
1997 04 03	704	0.4+	1998 10 29	704	0.3-	1.3-	1998 11 23	691	0.6-	0.1+
1997 04 05	704	0.8+	1998 10 29	704	0.9+	0.3+	1998 11 23	691	0.7-	0.2+
1997 04 05	704	0.1+	1998 10 29	704	0.1+	0.7-	1998 11 23	691	0.6-	0.2+

(9820)* 3064 T-1 = 1996 CS₂

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 26754)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	260.15349	ω	266.83376	-0.99842950	+0.05582819		
<i>a</i>	2.3503328	Ω	276.36659	-0.04935610	-0.91594803		
<i>e</i>	0.1435842	<i>i</i>	0.26884	-0.02650487	-0.39739454		
<i>P</i>	3.60	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	1.7+ 1.5-	1996 02 20	566	0.4+	0.4+	1998 11 11	910	0.8+	0.3+
1971 03 25	675	0.4- 0.1-	1996 02 20	566	0.8-	1.2+	1998 11 11	910	1.0+	0.4-
1971 03 26	675	0.9- 0.6-	1996 02 20	566	0.3+	0.2+	1998 11 11	910	1.1+	0.3-
1971 03 26	675	1.0+ 0.7-	1996 02 20	566	0.4-	0.6+	1998 11 11	910	1.1+	0.2-
1971 03 27	675	0.2+ 1.1-	1997 08 01	688	1.0+	0.4+	1998 11 12	910	0.9+	0.3+
1971 04 02	675	2.1- 1.0-	1997 08 01	688	0.3+	0.7+	1998 11 12	910	0.7+	0.3+
1971 04 16	675	0.3- 0.0	1997 08 05	691	0.8-	0.3+	1998 11 12	910	1.0+	0.1+
1971 04 16	675	0.5- 0.3+	1997 08 05	691	1.0-	0.4+	1998 11 17	910	0.4+	0.1+
1991 12 30	691	1.7- 0.4-	1997 08 05	691	1.4-	0.3+	1998 11 17	910	0.6+	0.0
1991 12 30	691	1.8- 0.3-	1998 10 29	704	0.2-	0.0	1998 11 18	910	0.7+	0.2-
1991 12 30	691	1.6- 0.7-	1998 10 29	704	1.0-	0.4-	1998 11 19	910	0.9+	0.1-
1996 02 15	566	0.9+ 0.7+	1998 10 29	704	0.0	0.2-	1998 11 19	910	0.9+	0.1-
1996 02 15	566	1.0+ 0.6+	1998 10 29	704	1.7-	0.2+	1998 11 19	910	0.8+	0.0
1996 02 15	566	0.9+ 0.6+	1998 10 29	704	0.6+	0.6-	1998 11 26	691	1.3-	0.2-
1996 02 20	566	0.1+ 0.4+	1998 11 10	910	0.6+	0.0	1998 11 26	691	1.6-	0.3-
1996 02 20	566	0.4- 1.0+	1998 11 11	910	0.9+	0.1+	1998 11 26	691	1.4-	0.2-

(9821)* 4033 T-1 = 1997 GU₂₁

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 29938)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	102.78312	ω	128.73696	+0.52360549	+0.85188134		
<i>a</i>	2.3812213	Ω	172.80901	-0.80767137	+0.50068687		
<i>e</i>	0.1364767	<i>i</i>	5.33519	-0.27111666	+0.15365817		
<i>P</i>	3.67	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1971 03 24	675	0.8+	0.9-	1997 04 07	809	0.8-	1.9-	1998 10 14	699	0.7+	0.8-
1971 03 26	675	1.2-	0.7+	1997 04 07	809	0.5-	1.3-	1998 10 29	704	0.4+	0.4+
1971 03 26	675	0.1-	1.5-	1997 04 07	809	0.7-	1.8-	1998 10 29	704	0.4-	0.2+
1971 03 26	675	0.8-	1.2-	1997 04 08	809	(0.7-	4.6-)	1998 10 29	704	0.2-	0.2+
1971 03 27	675	0.1+	0.8-	1997 04 08	809	(1.4-	3.5-)	1998 10 29	704	0.5+	0.4+
1971 03 27	675	1.0-	0.6-	1997 04 08	809	(0.9-	4.2-)	1998 10 29	704	0.6-	0.0
1971 04 02	675	1.1+	0.1+	1997 04 08	704	0.8+	1.8+	1998 11 10	704	0.5+	0.6+
1971 04 16	675	1.3+	1.1-	1997 04 08	704	(1.0+	2.9+)	1998 11 10	704	1.0-	0.6+
1971 04 16	675	0.1-	0.5+	1997 04 11	809	0.6+	0.7+	1998 11 10	704	0.6+	0.3-
1971 05 13	675	0.6-	1.3+	1997 04 11	809	0.1-	1.3+	1998 11 10	704	0.5-	1.5+
1971 05 14	675	0.6-	1.2+	1997 04 11	809	0.5-	0.3-	1998 11 10	704	0.4-	1.1-
1971 05 16	675	0.3+	1.7+	1997 04 12	809	1.3-	0.8-	1998 11 11	704	0.3-	0.4-
1994 09 30	675	0.5+	1.6-	1997 04 12	809	(3.4-	0.2-)	1998 11 11	704	0.7+	0.6+
1994 09 30	675	(0.0	2.5-)	1997 04 12	809	(2.2-	1.6-)	1998 11 11	704	0.0	0.9-
1997 04 06	704	1.0+	1.2+	1998 10 14	699	0.5+	1.3-	1998 11 11	704	0.4+	0.0
1997 04 06	704	1.3+	0.5+	1998 10 14	699	0.2-	0.3+	1998 11 11	704	0.7-	0.3-

(9822)* 4114 T-1 = 1976 UU₁₇ = 1978 EP₁ = 1991 XD₂

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 20517)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	210.62152		(2000.0)		P		Q				
n	0.27124307	ω	137.89269		-0.79594687		+0.60311148				
a	2.3635436	Ω	79.27437		-0.56862128		-0.71526247				
e	0.1603505	i	3.04561		-0.20769791		-0.35306676				
P	3.63	H	14.4		G	0.15	U	2			
Residuals in seconds of arc											
1971 03 24	675	1.1+	1.8-	1991 12 08	691	0.6-	0.1+	1998 10 27	691	1.1-	0.1+
1971 03 26	675	0.2+	0.9+	1991 12 08	691	0.8-	0.0	1998 10 27	691	1.1-	0.2-
1971 03 26	675	0.2-	1.1+	1992 01 01	691	0.6-	0.4-	1998 10 27	691	1.2-	0.6-
1971 03 27	675	(2.8-	1.2-)	1992 01 01	691	0.4-	0.3-	1998 10 29	704	0.2+	0.0
1971 04 02	675	(4.5+	2.8-)	1992 01 01	691	0.7-	0.4-	1998 10 29	704	0.3-	1.0-
1971 04 16	675	0.3-	1.1-	1993 05 16	894	(4.0-	1.0+)	1998 10 29	704	0.7-	0.4-
1971 04 16	675	0.5+	1.5-	1993 05 16	894	1.2-	1.1+	1998 10 29	704	1.4+	0.8+
1971 05 13	675	0.4-	0.2-	1993 05 24	801	0.3-	0.3+	1998 11 10	704	0.9+	1.2+
1971 05 14	675	0.7-	1.0-	1993 05 24	801	0.1-	1.4+	1998 11 10	704	0.1-	0.9+
1976 10 22	381	1.7-	0.3+	1993 05 26	801	0.6+	0.8-	1998 11 10	704	0.0	1.3+
1976 10 22	381	1.2-	0.1-	1993 05 26	801	0.3+	0.6-	1998 11 10	704	1.2+	0.7+
1978 03 05	095	0.2+	0.4+	1994 09 11	675	1.2+	0.0	1998 11 10	704	0.8+	0.6+
1989 03 09	675	0.4-	0.2+	1994 09 11	675	1.1-	0.5-	1998 11 11	704	0.9+	2.8-
1989 03 09	675	0.0	0.5+	1998 10 18	699	1.1+	0.6-	1998 11 11	704	0.6+	0.5+
1989 03 10	675	0.3+	0.4+	1998 10 18	699	1.7+	0.2-	1998 11 11	704	0.2+	0.1+
1991 12 08	691	1.0-	0.1-	1998 10 18	699	1.6+	0.2-	1998 11 11	704	0.8+	0.1+

(9823)* 4271 T-1 = 1997 GM₂₃

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 29650)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	107.38735	ω	258.64790	+0.45886819	+0.88536020		
<i>a</i>	2.3814108	Ω	38.94803	-0.76181899	+0.43530469		
<i>e</i>	0.1340795	<i>i</i>	6.82302	-0.45724372	+0.16323954		
<i>P</i>	3.67	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1954 11 23	675	1.6+ 0.5+	1997 05 01	704	0.3+	0.4+	1998 10 27	691	0.8-	0.2-
1971 03 24	675	(2.4+ 3.9-)	1997 05 01	704	0.9+	0.3-	1998 10 27	691	0.7-	0.2-
1971 03 26	675	0.9- 0.4+	1997 05 01	704	0.3+	0.2-	1998 10 29	704	0.6+	0.3-
1971 03 26	675	0.2- 1.0-	1997 05 01	704	0.2+	0.2+	1998 10 29	704	0.1-	0.7-
1971 03 27	675	1.6- 0.9-	1997 05 05	704	0.6+	0.3-	1998 10 29	704	0.4+	0.3-

1971 04 02	675	1.6−	1.6+	1997 05 05	704	0.1+	0.1+	1998 10 29	704	0.9+	0.3−
1971 04 16	675	1.2+	1.8−	1997 05 05	704	0.4+	0.3−	1998 10 29	704	0.4+	0.2+
1971 04 16	675	1.7+	0.3−	1997 05 05	704	0.3+	0.1+	1998 11 10	704	0.1+	0.1+
1971 05 13	675	0.3−	0.7+	1997 05 05	704	0.4+	0.1−	1998 11 10	704	0.7+	0.1+
1971 05 14	675	1.2−	0.3+	1997 05 05	704	0.4+	0.3+	1998 11 10	704	0.7+	0.3−
1971 05 16	675	0.9−	0.3+	1997 05 05	704	0.3+	0.4−	1998 11 10	704	1.0−	0.9−
1994 09 12	675	0.2−	0.1+	1997 05 05	704	0.0	0.1+	1998 11 11	704	0.1+	0.1+
1994 09 12	675	0.1+	0.1+	1997 05 05	704	0.1+	0.7−	1998 11 11	704	0.7+	1.0+
1994 09 12	675	0.2+	0.2−	1997 05 05	704	0.7+	0.6+	1998 11 11	704	0.5+	0.2−
1994 09 12	675	0.0	0.6−	1997 05 07	566	1.8−	0.5+	1998 11 11	704	0.3−	0.1−
1994 10 01	675	0.3−	1.1−	1997 05 07	566	1.3−	0.3+	1998 11 11	704	0.3−	0.2+
1994 10 01	675	0.0	0.1−	1997 05 07	566	1.3−	0.4+	1998 11 16	566	0.7+	0.1−
1997 04 06	704	0.5+	0.8−	1998 10 17	691	1.5−	0.2+	1998 11 16	566	0.8−	0.8+
1997 04 06	704	0.6+	1.4+	1998 10 17	691	0.2−	0.7+	1998 11 16	566	0.2+	0.7+
1997 04 07	704	0.1+	0.5+	1998 10 17	691	1.4−	0.3−	1998 11 19	691	1.8−	0.5+
1997 04 07	704	0.4+	0.4+	1998 10 19	699	1.2+	0.5+	1998 11 19	691	1.1−	0.2+
1997 04 08	704	0.2+	0.6+	1998 10 19	699	0.7+	0.9+	1998 11 19	691	1.2−	0.5+
1997 04 08	704	1.1+	0.3+	1998 10 19	699	0.9+	0.6+				
1997 05 01	704	0.5+	0.2+	1998 10 27	691	0.3−	0.1+				

(9824)* 3033 T-2 = 1989 YV₃

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 16243)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	93.86854		(2000.0)	P	Q	Williams
<i>n</i>	0.20245217	ω	258.25020	+0.89361486	+0.44597512	
<i>a</i>	2.8724628	Ω	75.24679	−0.38873747	+0.82536698	
<i>e</i>	0.0663285	<i>i</i>	2.99839	−0.22435612	+0.34623047	
<i>P</i>	4.87	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1973 09 19	675	0.2−	0.6−	1989 12 31	413	(2.9+	1.1−)	1996 04 18	809	(2.1−	2.3−)
1973 09 19	675	0.9+	0.0	1991 04 14	675	0.9−	1.4−	1996 05 13	566	0.1−	1.0−
1973 09 20	675	0.9+	0.6−	1991 04 14	675	1.6−	0.7−	1996 05 13	566	0.2−	1.6−
1973 09 24	675	1.2+	1.5−	1991 04 16	675	1.2−	0.3+	1996 05 13	566	0.2−	1.1−
1973 09 24	675	0.7+	1.6−	1991 04 16	675	1.1−	0.1−	1998 10 22	327	0.4−	0.7+
1973 09 25	675	0.6+	2.5−	1995 02 04	691	0.2−	1.0−	1998 10 22	327	0.3−	0.9+
1973 09 25	675	2.0+	2.4−	1995 02 04	691	0.5−	0.8−	1998 10 22	327	0.4−	0.8+
1973 09 29	675	0.4+	1.0−	1995 02 04	691	0.3−	0.9−	1998 10 27	327	0.3−	0.5+
1973 09 30	675	0.6−	0.5−	1995 02 05	691	0.1−	0.9−	1998 10 27	327	0.2−	0.5+
1973 09 30	675	0.9−	0.1+	1995 02 05	691	0.1−	1.1−	1998 10 27	327	0.1+	0.4+
1973 10 04	675	0.8−	1.0+	1995 02 05	691	0.6−	1.0−	1998 11 24	704	0.4+	0.2−
1973 10 04	675	0.2+	0.5+	1996 04 17	809	1.2+	1.0+	1998 11 24	704	0.0	0.0
1973 10 05	675	0.3−	0.2+	1996 04 17	809	1.0+	1.2+	1998 11 24	704	0.0	0.1+
1973 10 05	675	0.4+	0.5−	1996 04 17	809	1.4+	0.5+	1998 11 24	704	1.1−	0.1−
1989 12 30	413	0.8+	0.6−	1996 04 18	809	(2.1−	2.6−)	1998 11 24	704	0.2+	1.2+
1989 12 31	413	0.2−	2.5−	1996 04 18	809	(1.8−	2.0−)				

(9825)* 1214 T-3 = 1987 RD = 1990 ED₃

Discovered 1977 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. S. Nakano (*MPC* 16440)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	28.19368		(2000.0)	P	Q	Nakano
<i>n</i>	0.18967152	ω	63.52712	+0.85666259	−0.50854059	
<i>a</i>	3.0000924	Ω	326.83471	+0.39863527	+0.75922365	
<i>e</i>	0.0944341	<i>i</i>	9.11821	+0.32744333	+0.40615997	
<i>P</i>	5.20	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1977 10 16	675	0.2+	0.8−	1990 03 04	809	0.1−	1.1−	1998 10 02	704	0.6−	1.0−
1977 10 16	675	0.3−	1.3−	1990 03 04	809	0.5−	0.9−	1998 10 18	704	0.5−	0.2−
1977 10 17	675	0.7+	0.1+	1990 03 04	809	1.4−	0.9−	1998 10 18	704	0.1+	0.7−
1977 10 17	675	0.2+	1.6−	1993 10 14	801	0.1−	0.5+	1998 10 18	704	0.5+	0.3−

1977 10 22	675	(1.4+	2.3−)	1993 10 14	801	0.0	0.7+	1998 10 18	704	0.5−	0.1−
1977 10 22	675	(1.8+	3.3−)	1993 11 12	801	0.1+	1.2+	1998 10 18	704	0.1+	0.8−
1987 08 27	095	(3.2+	2.5−)	1993 11 17	801	0.7+	0.8+	1998 11 14	704	0.2−	0.1−
1987 09 01	046	1.0+	0.5−	1993 11 17	801	0.9+	1.3+	1998 11 14	704	0.3+	0.3+
1987 09 01	046	(3.9+	0.2−)	1993 12 17	801	0.1+	1.0+	1998 11 14	704	0.8+	0.7−
1987 09 02	809	0.9−	0.3−	1993 12 17	801	0.0	0.9+	1998 11 14	704	0.7+	1.6−
1987 09 02	809	0.1+	0.1−	1993 12 18	801	0.1+	1.3+	1998 11 14	704	0.9+	0.9−
1987 09 02	809	1.3+	0.2+	1993 12 18	801	0.0	1.3+	1998 11 16	704	0.2−	0.3−
1987 09 02	095	(2.4+	3.4−)	1998 10 02	704	0.0	1.2−	1998 11 16	704	0.6−	0.5+
1990 03 02	809	0.4−	1.2−	1998 10 02	704	0.2−	1.1−	1998 11 16	704	0.5−	1.2+
1990 03 02	809	1.1−	1.1−	1998 10 02	704	0.2−	0.4+	1998 11 16	704	0.5+	0.0
1990 03 02	809	1.3−	1.4−	1998 10 02	704	0.4−	1.7−	1998 11 16	704	0.2−	0.4−

(9826)* 2114 T-3 = 1993 VH₂

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. S. Nakano (*MPC* 22822)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	82.20858		(2000.0)	P	Q	Nakano
<i>n</i>	0.19067465	ω	111.25621	+0.83363468	+0.54474486	
<i>a</i>	2.9895610	Ω	215.91284	−0.54661502	+0.79007163	
<i>e</i>	0.0955336	<i>i</i>	8.93883	−0.07915331	+0.28114028	
<i>P</i>	5.17	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1977 10 07	675	0.9+	1.3−	1997 07 01	688	0.6−	0.3+	1998 10 29	704	0.1−	1.1−
1977 10 11	675	1.2−	0.3−	1997 07 29	560	0.2−	0.4+	1998 10 29	704	0.4−	0.7−
1977 10 11	675	0.3−	0.1+	1997 07 29	560	0.4−	0.8+	1998 10 29	704	0.5+	1.0−
1977 10 12	675	0.3−	1.5+	1997 07 29	560	0.4−	1.1+	1998 10 29	704	0.4+	0.8−
1977 10 12	675	0.6−	1.8+	1997 07 30	560	0.6+	0.7−	1998 11 10	704	0.3−	0.1+
1977 10 16	675	0.1−	1.3−	1997 07 30	560	0.5+	0.0	1998 11 10	704	0.1+	0.2+
1977 10 16	675	1.0+	1.6−	1997 07 30	560	0.5+	0.3−	1998 11 10	704	0.4−	0.2+
1977 10 21	675	1.2+	0.7−	1997 07 30	560	0.5+	0.5+	1998 11 10	704	0.6+	0.8+
1977 10 21	675	1.1+	0.5−	1998 10 10	699	0.1+	0.1+	1998 11 10	704	0.4−	0.5+
1977 10 22	675	0.8−	1.0−	1998 10 10	699	0.4+	0.4+	1998 11 11	704	0.1+	0.4+
1977 10 22	675	0.0	0.8−	1998 10 10	699	0.1−	0.0	1998 11 11	704	0.0	0.2+
1993 11 13	372	0.1−	0.2+	1998 10 13	691	0.8−	0.2+	1998 11 11	704	0.1+	0.4+
1993 11 13	372	1.4−	0.3+	1998 10 13	691	0.8−	0.2+	1998 11 11	704	0.2−	0.2−
1993 11 18	372	1.6+	1.5+	1998 10 13	691	0.8−	0.3+	1998 11 11	704	0.3+	0.7+
1993 11 18	372	0.2+	1.8+	1998 10 18	691	0.4−	0.4+	1998 11 11	699	0.5+	0.1+
1997 07 01	688	0.3−	0.1+	1998 10 18	691	0.4−	0.4+	1998 11 11	699	0.5+	0.5+
1997 07 01	688	0.3−	0.3+	1998 10 18	691	0.5−	0.2+	1998 11 11	699	0.8+	0.1−
1997 07 01	688	0.5−	0.3+	1998 10 29	704	0.4+	0.9−				

1967 JQ = 1985 FE₂ = 1998 VX₄

Id. G. V. Williams, T. B. Spahr

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	254.90710		(2000.0)	P	Q	Williams
<i>n</i>	0.26895784	ω	299.48435	−0.90942068	+0.39254388	
<i>a</i>	2.3769128	Ω	263.92107	−0.31744063	−0.86857184	
<i>e</i>	0.1958259	<i>i</i>	7.93910	−0.26867354	−0.30247686	
<i>P</i>	3.66	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1967 05 06	808	0.5+	1.2+	1967 06 13	808	0.0	0.4−	1998 11 12	557	0.2+	0.3−
1967 05 10	808	0.7−	0.9+	1985 03 24	688	0.1+	0.1+	1998 11 13	557	0.1−	0.6−
1967 05 31	808	0.6+	1.6−	1985 03 24	688	0.3−	0.5−				
1967 06 02	808	0.5−	1.1−	1998 11 12	557	0.0	0.6−				

1973 SX₂ = 1998 UG₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.23967100	ω	186.53950	+0.88269305	−0.46055645				
<i>a</i>	2.5668021	Ω	201.65825	+0.44183328	+0.88107387				
<i>e</i>	0.1146372	<i>i</i>	14.67394	+0.16011353	+0.10768749				
<i>P</i>	4.11	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1973 09 22	095 0.0	1.6+	1998 10 30	120 0.0	0.2−	1998 11 13	120 0.6+	0.9+	
1973 09 26	095 0.1+	0.1−	1998 10 30	120 0.2−	0.3−	1998 11 13	120 0.1−	1.4+	
1973 10 02	095 0.6+	1.5−	1998 10 30	120 0.1−	0.2−	1998 11 13	120 1.5+	0.2+	
1973 10 26	095 0.7−	0.0	1998 11 12	120 0.6−	0.0	1998 11 13	120 0.5−	0.6+	
1998 10 29	120 0.0	0.2−	1998 11 12	120 0.8−	0.1+	1998 11 28	120 0.2−	0.6−	
1998 10 29	120 0.3+	0.2+	1998 11 13	120 0.1+	1.3−	1998 11 28	120 0.0	0.4−	

**1976 SE₅ = 1976 UF₆ = 1952 FA₁ = 1965 DB = 1972 XZ₁ = 1987 HS₂
= 1998 UQ₂₄**Id. H. Oishi (d, *JAM* 1663), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.22706705	ω	291.35730	−0.76641148	−0.63628515				
<i>a</i>	2.6609291	Ω	209.34277	+0.63556220	−0.73127612				
<i>e</i>	0.1708570	<i>i</i>	10.35246	+0.09313504	−0.24571617				
<i>P</i>	4.34	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1		
Residuals in seconds of arc									
1952 03 24	711 0.1+	0.5+ Y	1998 10 20	699 0.3+	0.1+	1998 11 11	704 1.1−	0.4+	
1965 02 23	330 (5.6+ 2.3+)		1998 10 20	699 0.7+	0.5−	1998 11 11	699 0.1+	0.7+	
1972 12 01	095 (1.2+ 5.2−)		1998 10 20	699 0.7+	0.3−	1998 11 18	704 0.3+	0.3−	
1976 09 24	095 0.9−	0.9+	1998 11 10	704 0.6−	0.4+	1998 11 18	704 0.4+	0.2+	
1976 10 22	381 0.6+	0.6−	1998 11 10	704 0.4−	0.3−	1998 11 18	704 0.2+	0.6−	
1976 10 22	381 0.2+	0.5−	1998 11 10	704 0.3−	0.6−	1998 11 18	704 1.5+	1.6−	
1976 10 24	381 0.3+	0.5−	1998 11 10	704 0.2+	0.2−	1998 11 18	704 0.2−	1.3−	
1987 04 24	046 0.2+	1.7−	1998 11 10	704 0.3−	0.3−	1998 11 21	704 0.0	0.3+	
1987 04 24	046 0.6−	0.4−	1998 11 11	699 0.2−	0.7+	1998 11 21	704 0.4−	0.5+	
1998 10 18	699 0.9+	0.3−	1998 11 11	704 0.1+	0.0	1998 11 21	704 0.2−	0.8+	
1998 10 18	699 0.2+	0.1+	1998 11 11	704 0.4−	0.2−	1998 11 21	704 0.8−	1.3+	
1998 10 18	699 0.3+	0.4−	1998 11 11	699 0.3−	0.2+	1998 11 21	704 (2.5− 0.1−)		

1977 DG₃ = 1998 SK₁₄₂

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.25682937	ω	44.69864	−0.98217430	+0.17767886				
<i>a</i>	2.4511671	Ω	145.39842	−0.18796773	−0.93067723				
<i>e</i>	0.0874955	<i>i</i>	6.20214	+0.00133109	−0.31979700				
<i>P</i>	3.84	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1977 02 18	381 0.8−	0.9+	1998 09 26	704 0.6−	0.4−	1998 10 20	699 0.9−	0.8+	
1977 02 18	381 0.0	1.2+	1998 09 26	704 0.1+	0.0	1998 10 20	699 1.3−	1.2+	
1977 02 19	381 0.3+	0.5−	1998 09 26	704 0.4+	0.1+	1998 10 20	699 0.7−	1.2+	
1977 02 19	381 0.4−	0.6−	1998 09 27	704 0.1+	0.0	1998 10 28	704 1.7−	1.5−	
1977 03 12	381 0.7+	0.1−	1998 09 27	704 0.2+	0.5−	1998 10 28	704 0.9+	0.6+	
1977 03 12	381 0.3+	0.7−	1998 09 27	704 0.2−	0.5−	1998 10 28	704 1.2+	0.4−	
1977 03 15	381 0.1−	0.6−	1998 09 27	704 (1.6− 2.6−)		1998 10 28	704 0.3+	0.4+	
1977 03 15	381 0.2+	0.3+	1998 10 01	910 0.6+	0.7+	1998 10 29	704 0.2−	1.0+	
1998 09 18	699 1.6+	0.3−	1998 10 01	910 0.7+	0.3+	1998 10 29	704 0.2+	0.5−	
1998 09 18	699 0.3+	0.0	1998 10 01	910 0.8+	0.6+	1998 10 29	704 0.2−	0.0	
1998 09 18	699 0.1−	0.3+	1998 10 11	699 1.1−	0.5−	1998 10 29	704 0.2−	1.5−	
1998 09 26	704 0.8+	0.0	1998 10 11	699 0.0	0.8−	1998 10 29	704 0.5−	1.2−	
1998 09 26	704 0.5−	1.4+	1998 10 11	699 0.2+	0.4−				

1978 UX₇ = 1998 SB₁₁₈

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.24617532	ω	190.25949	+0.34128034	−0.93959394				
<i>a</i>	2.5213882	Ω	239.78995	+0.86453849	+0.32474884				
<i>e</i>	0.1435909	<i>i</i>	1.74304	+0.36891858	+0.10817312				
<i>P</i>	4.00	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1978 10 27	675 0.1+	0.1−	1998 09 26	704 0.4+	0.1−	1998 10 28	704 1.4+	0.6−	
1978 10 28	675 0.0	1.3−	1998 09 27	704 0.3+	0.2−	1998 10 28	704 0.5−	0.5+	
1978 10 29	675 0.6+	0.9−	1998 09 27	704 0.7−	0.4−	1998 10 29	704 1.1−	0.3+	
1978 11 28	675 0.1+	0.3−	1998 09 27	704 0.9−	1.6+	1998 10 29	704 0.7−	0.5+	
1978 11 29	675 0.1+	0.0	1998 09 27	704 0.8−	0.0	1998 10 29	704 1.0−	1.8+	
1998 09 26	704 0.6+	0.3−	1998 09 27	704 0.9+	0.8+	1998 10 29	704 0.2+	0.9+	
1998 09 26	704 0.9+	0.5−	1998 10 28	704 0.2+	1.5−	1998 10 29	704 0.9−	0.8+	
1998 09 26	704 0.3−	0.4−	1998 10 28	704 1.5+	0.5−				
1998 09 26	704 0.1−	0.9−	1998 10 28	704 0.5−	0.6+				

1978 VS₃ = 1998 KA₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Doppler	
<i>n</i>	0.27137296	ω	220.63921	−0.14193644	−0.98688116				
<i>a</i>	2.3627893	Ω	237.65307	+0.93015514	−0.10638075				
<i>e</i>	0.1720650	<i>i</i>	5.22523	+0.33862290	−0.12144425				
<i>P</i>	3.63	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1978 11 05	675 0.6−	0.5−	1978 11 30	675 0.5+	1.1+	1998 06 01	691 0.2−	0.0	
1978 11 06	675 0.1−	0.8−	1978 11 30	675 (2.8+ 0.7+)		1998 06 01	691 0.2−	0.2+	
1978 11 07	675 0.0	0.1+	1998 05 26	691 0.2−	0.0	1998 06 01	691 0.3−	0.4+	
1978 11 29	675 0.1−	0.4−	1998 05 26	691 0.3+	0.4−				
1978 11 29	675 (2.6− 1.7−)		1998 05 26	691 0.4+	0.7−				

1978 VO₆ = 1998 VQ₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.29222252	ω	54.95445	+0.84302473	+0.53410675				
<i>a</i>	2.2490214	Ω	272.68340	−0.51189095	+0.76039743				
<i>e</i>	0.1033101	<i>i</i>	3.64791	−0.16515737	+0.36949388				
<i>P</i>	3.37	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1978 11 05	675 0.7+	0.8+	1998 10 28	704 0.1−	0.3−	1998 11 10	704 0.6−	0.2+	
1978 11 06	675 0.4+	0.1−	1998 10 29	704 0.4+	1.0−	1998 11 11	704 0.2+	0.9+	
1978 11 07	675 0.0	0.8+	1998 10 29	704 0.5+	0.2−	1998 11 11	704 0.6−	0.5+	
1978 11 08	675 0.8−	0.5−	1998 10 29	704 0.0	0.4−	1998 11 11	704 0.5+	1.6+	
1978 11 29	675 0.6−	0.3+	1998 10 29	704 0.1−	0.2−	1998 11 11	704 0.7−	0.7−	
1978 11 30	675 0.5+	1.4−	1998 10 29	704 1.1−	0.9−	1998 11 14	327 0.0	0.3−	
1998 10 28	704 0.6+	0.0	1998 11 10	704 1.1+	0.8+	1998 11 14	327 0.2−	0.0	
1998 10 28	704 0.2−	0.3−	1998 11 10	704 0.6+	0.6+	1998 11 14	327 0.2−	0.2−	
1998 10 28	704 0.2−	0.4−	1998 11 10	704 0.1+	0.6+				

1978 VD₈ = 1987 KJ₄ = 1998 SG₁₂₈

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.29062780	ω	253.17289	+0.65994929	+0.74974558				
<i>a</i>	2.2572411	Ω	58.22410	−0.66578861	+0.61349733				
<i>e</i>	0.0546094	<i>i</i>	3.26796	−0.34812708	+0.24799716				
<i>P</i>	3.39	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1978 11 05	675	1.1+	0.3+	1998 09 26	704	0.6−	0.5+	1998 09 27	704	0.7−	0.8+
1978 11 06	675	(3.4+	0.0)	1998 09 26	704	1.8−	0.1+	1998 09 27	704	0.9+	1.1−
1978 11 07	675	0.6+	0.7+	1998 09 26	704	0.3+	0.1+	1998 10 10	699	0.5−	0.2−
1978 11 08	675	0.6−	0.1−	1998 09 26	704	1.0+	1.0−	1998 10 10	699	0.4−	0.6−
1978 11 29	675	(3.7+	0.6−)	1998 09 26	704	0.3+	0.3+	1998 10 10	699	0.4−	0.3+
1978 11 30	675	1.1−	0.7−	1998 09 27	704	0.5−	0.1−	1998 10 19	699	1.3+	0.4−
1987 05 30	413	1.4+	0.1−	1998 09 27	704	0.1+	0.2−	1998 10 19	699	0.8+	1.3+
1987 05 30	413	1.4−	0.3+	1998 09 27	704	0.2+	0.2+	1998 10 19	699	0.0	0.2−

1979 QZ = 1995 YE₁₆ = 1997 JO₁ = 1998 SS₁₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	42.87040		(2000.0)	P	Q
n	0.26250045	ω	187.35368	+0.99760035	+0.06874904
a	2.4157353	Ω	168.69442	−0.06120484	+0.93100692
e	0.2093192	i	2.39500	−0.03236528	+0.35846854
P	3.75	H	15.2	G 0.15	U 2

Residuals in seconds of arc

1979 08 22	809	0.3−	0.9+	1997 05 02	910	0.3+	0.8+	1998 10 28	704	0.0	0.0
1979 08 22	809	0.5−	1.2+	1997 05 03	910	0.2+	0.8+	1998 10 28	704	0.2+	0.3−
1979 08 22	809	0.7+	0.8+	1998 09 18	699	0.3+	0.2+	1998 10 28	704	0.5−	0.3+
1979 08 23	809	0.5−	0.0	1998 09 18	699	0.2+	0.2+	1998 10 28	704	0.5+	0.0
1979 08 23	809	2.3+	0.7−	1998 09 18	699	0.0	0.2+	1998 10 29	704	0.9−	0.1−
1979 08 26	809	2.1+	0.6−	1998 09 26	704	0.7+	0.1−	1998 10 29	704	1.0−	0.3−
1979 08 26	809	1.2−	0.2−	1998 09 26	704	0.9+	0.4−	1998 10 29	704	1.4−	0.0
1979 08 26	809	1.2−	0.3+	1998 09 26	704	0.6+	1.2−	1998 10 29	704	1.6−	0.3+
1979 08 30	809	0.7−	0.0	1998 09 26	704	0.0	1.0−	1998 10 29	704	2.0−	0.7−
1979 08 30	809	1.1−	0.3−	1998 09 26	704	0.3+	0.3−	1998 11 10	704	1.0+	0.1+
1995 12 20	691	0.2−	0.2−	1998 09 27	704	0.4+	0.3−	1998 11 10	704	1.2+	1.5+
1995 12 20	691	0.3+	0.5−	1998 09 27	704	0.2−	0.2−	1998 11 10	704	0.7+	0.7+
1995 12 26	691	0.0	0.1+	1998 09 27	704	0.5+	0.1−	1998 11 10	704	0.1+	0.9+
1995 12 26	691	0.1−	0.2+	1998 09 27	704	0.2−	0.7−	1998 11 10	704	0.2−	0.2+
1995 12 26	691	0.3+	0.5+	1998 09 27	704	0.3−	0.5−	1998 11 11	704	0.1+	0.1+
1997 05 01	910	0.0	0.5+	1998 10 11	699	0.4+	0.1+	1998 11 11	704	0.3+	0.4+
1997 05 01	910	0.2+	0.3+	1998 10 11	699	0.2+	0.6+	1998 11 11	704	0.2−	1.1+
1997 05 01	910	0.1+	0.5+	1998 10 11	699	0.2+	0.4+	1998 11 11	704	0.0	0.9+
1997 05 02	910	0.3+	0.7+	1998 10 28	704	0.2+	0.1−	1998 11 11	704	1.0−	0.8+

1981 EK₁ = 1998 SO₁₀₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	293.77432		(2000.0)	P	Q
n	0.26073866	ω	130.16856	−0.53420310	−0.84512083
a	2.4266050	Ω	352.04651	+0.72517133	−0.44600157
e	0.1089679	i	8.28794	+0.43445781	−0.29470896
P	3.78	H	14.6	G 0.15	U 5

Residuals in seconds of arc

1981 03 06	809	1.1−	0.2−	1981 03 09	809	0.1−	0.2−	1998 09 27	704	1.7−	0.5+
1981 03 06	809	0.3−	0.3−	1981 03 09	809	0.2+	0.2−	1998 09 27	704	0.1−	0.5−
1981 03 06	809	0.2+	0.1−	1981 03 09	809	0.2−	0.4−	1998 10 11	699	0.2−	0.4+
1981 03 07	809	0.9−	0.4+	1981 03 10	809	0.2+	0.2−	1998 10 11	699	0.8+	0.0
1981 03 07	809	0.3−	0.6+	1981 03 10	809	0.3+	0.1−	1998 10 11	699	1.2+	0.2+
1981 03 07	809	0.3−	0.4+	1981 03 10	809	0.3+	0.1−	1998 10 28	704	1.4+	0.5−
1981 03 08	809	0.1−	0.6+	1998 09 26	704	1.2+	0.7−	1998 10 28	704	0.2+	1.9−
1981 03 08	809	0.2+	0.5+	1998 09 26	704	1.4−	0.8−	1998 10 28	704	0.3−	0.5+
1981 03 08	809	0.7+	0.2+	1998 09 26	704	0.5−	0.3−	1998 10 28	704	0.4−	1.6−
1981 03 08	809	0.1+	0.6−	1998 09 26	704	0.2+	0.3−	1998 10 29	704	1.2+	0.3+
1981 03 08	809	0.1−	0.1−	1998 09 27	704	0.1+	0.5+	1998 10 29	704	1.8−	0.4−
1981 03 08	809	0.2+	0.1−	1998 09 27	704	0.7−	0.2+	1998 10 29	704	0.5−	3.4+
1981 03 08	809	0.9+	0.2−	1998 09 27	704	1.2+	0.9+				

1981 EZ₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

M	15.20083		(2000.0)	P	Q
n	0.26586546	ω	176.29312	+0.27897974	−0.95474053
a	2.3953084	Ω	257.48647	+0.87831558	+0.29711551
e	0.2454551	i	6.06545	+0.38824225	+0.01388845
P	3.71	H	15.9	G 0.15	U 4

Residuals in seconds of arc

1981 02 09	413	0.1+	0.1−	1981 04 09	413	(3.2+	1.5−)	1998 11 25	046	0.1−	0.3+
1981 03 06	413	1.0−	0.4−	1981 04 09	413	0.3−	1.4+	1998 11 25	046	0.0	0.1+
1981 03 08	413	0.5−	0.7+	1981 05 01	413	1.1+	0.5−	1998 11 28	046	0.1−	0.1−
1981 03 08	413	1.3+	0.2−	1981 05 03	413	0.7−	1.1−	1998 11 28	046	0.2+	0.0
1981 03 12	413	(7.2−	3.0+)	1998 11 25	046	0.1+	0.2+	1998 11 28	046	0.1+	0.5−
1981 03 12	413	(5.5−	1.4+)	1998 11 25	046	0.2−	0.2+	1998 11 28	046	0.1+	0.3−

1981 EP₉ = 1998 VL₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	37.16399		(2000.0)	P	Q
n	0.26023132	ω	153.16422	+0.87343840	−0.48126759
a	2.4297579	Ω	235.79804	+0.42912836	+0.83268040
e	0.1222981	i	5.13843	+0.23011783	+0.27390667
P	3.79	H	15.2	G 0.15	U 5

Residuals in seconds of arc

1981 02 02	413	0.9+	1.1+	1981 04 12	413	1.2−	0.0	1998 11 11	704	0.9+	0.1+
1981 02 14	413	0.9+	0.2−	1981 04 12	413	1.7−	0.3+	1998 11 11	704	0.0	0.9+
1981 03 01	413	1.5−	1.4+	1981 04 30	413	0.2−	1.1−	1998 11 11	704	0.6−	0.2+
1981 03 01	413	1.5+	1.5−	1981 05 02	413	1.0+	0.9−	1998 11 18	704	0.0	0.5+
1981 03 07	413	0.2+	0.5+	1998 11 10	704	0.1+	0.3+	1998 11 18	704	0.1+	0.3−
1981 03 11	413	1.8+	0.2+	1998 11 10	704	1.2+	1.0−	1998 11 18	704	0.2−	1.3−
1981 03 11	413	1.2+	0.9−	1998 11 10	699	0.1−	0.9+	1998 11 18	704	0.2−	1.9−
1981 03 15	413	0.8−	0.6+	1998 11 10	704	0.3−	1.8−	1998 11 18	704	1.4−	1.5−
1981 04 05	413	1.1−	1.2+	1998 11 10	704	1.3+	0.3+	1998 11 21	704	0.4−	1.2+
1981 04 05	413	(3.8−	1.2+)	1998 11 10	699	0.5+	0.4+	1998 11 21	704	0.0	0.3+
1981 04 06	413	2.2−	0.7+	1998 11 10	704	0.7−	0.1−	1998 11 21	704	0.9−	1.1+
1981 04 06	413	1.1+	1.7−	1998 11 10	699	0.6+	0.3+	1998 11 21	704	0.1+	0.7+

1981 EE₁₅ = 1998 WH₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	308.31994		(2000.0)	P	Q
n	0.21213957	ω	252.35981	−0.99429341	−0.06452998
a	2.7843357	Ω	283.87553	+0.09421490	−0.90469871
e	0.0691055	i	5.01999	−0.05004163	−0.42113670
P	4.65	H	15.4	G 0.15	U 4

Residuals in seconds of arc

1981 02 09	413	1.0−	1.2−	1981 03 12	413	0.7+	0.5+	1981 05 03	413	0.5−	1.6−
1981 02 12	413	0.0	0.0	1981 04 09	413	2.3−	1.1+	1998 11 17	691	0.9−	0.4+
1981 03 01	413	0.0	0.1−	1981 04 09	413	1.1+	0.1−	1998 11 17	691	1.1−	0.2+
1981 03 08	413	1.5−	0.9+	1981 04 09	413	0.8+	0.9+	1998 11 21	691	0.8+	0.2−
1981 03 08	413	1.0+	0.7+	1981 04 09	413	2.4+	0.3−	1998 11 21	691	0.7+	0.7−
1981 03 12	413	0.3−	0.4+	1981 05 01	413	0.7−	1.5−	1998 11 21	691	0.3+	0.0

1981 ED₁₈ = 1998 WQ₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	229.36294		(2000.0)	P	Q		
n	0.20527289	ω	10.19238	−0.91301765	+0.40777139		
a	2.8460880	Ω	193.88815	−0.37741436	−0.85467394		
e	0.0340498	i	2.62945	−0.15478102	−0.32133308		
P	4.80	H	13.8	G	0.15	U	5

Residuals in seconds of arc

1981 02 09	413	0.1−	1.5+	1981 03 29	413	0.7−	0.5−	1998 11 15	120	0.2−	0.8+
1981 02 13	413	(3.5+	0.1−)	1981 04 07	413	1.2−	0.2+	1998 11 18	704	0.4+	0.6+
1981 03 02	413	0.4+	0.7+	1981 04 07	413	0.4−	0.2−	1998 11 18	704	0.3−	0.6+
1981 03 02	413	1.0+	1.2−	1981 04 08	413	(3.0−	1.4+)	1998 11 18	704	(3.0−	0.6+)
1981 03 03	413	0.2−	0.6+	1981 04 08	413	0.9+	0.1−	1998 11 18	704	0.3−	1.1+
1981 03 03	413	1.0+	0.7−	1981 04 11	413	1.4−	0.3+	1998 11 18	704	0.6−	0.4−
1981 03 07	413	0.9−	0.1−	1981 04 11	413	1.7+	2.2−	1998 11 21	704	0.4+	1.7+
1981 03 07	413	1.8+	0.9−	1981 04 30	413	0.7−	0.6+	1998 11 21	704	1.5+	1.9−
1981 03 11	413	0.9−	0.9+	1981 05 02	413	0.6+	0.5−	1998 11 21	704	1.4+	1.5−
1981 03 11	413	1.4+	0.9−	1981 05 02	413	0.5−	0.3+	1998 11 21	704	1.8−	1.7−
1981 03 16	413	1.3−	1.2+	1981 05 03	413	0.9+	0.9+				
1981 03 29	413	1.3−	0.3+	1998 11 15	120	0.3+	0.4+				

1981 ES₂₈ = 1998 VN₂₇

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	306.50091		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26293302	ω	133.59343	−0.74297830	−0.66927025
a	2.4130850	Ω	4.41677	+0.58128429	−0.65097986
e	0.1348292	i	5.80076	+0.33180087	−0.35819347
P	3.75	H	14.7	G 0.15	U 4

Residuals in seconds of arc

1981 02 12	413	0.5+	0.2+	1981 04 06	413	0.0	0.4−	1998 11 10	704	0.8−	0.1+
1981 02 13	413	0.5−	0.7+	1981 04 07	413	1.9−	0.1+	1998 11 10	704	0.6+	0.8−
1981 03 06	413	0.1−	0.1+	1981 04 07	413	1.8+	0.2−	1998 11 10	704	1.1−	0.5−
1981 03 11	413	0.1+	1.0−	1981 04 10	413	0.8−	0.3+	1998 11 10	704	0.2−	0.2+
1981 03 11	413	1.6+	0.4−	1981 04 10	413	0.9+	0.8−	1998 11 11	704	0.5+	0.2−
1981 03 15	413	0.4+	0.4−	1981 05 01	413	0.6−	0.1+	1998 11 11	704	0.1−	0.1+
1981 03 15	413	2.0+	0.7+	1981 05 03	413	0.3−	0.5+	1998 11 11	704	0.7+	0.5+
1981 04 05	413	1.3−	0.4+	1998 10 19	699	0.0	0.3+	1998 11 11	704	0.2+	0.8+
1981 04 05	413	(3.1+	0.1+)	1998 10 19	699	1.3+	0.8−	1998 11 11	704	1.7−	0.3−
1981 04 06	413	2.3−	0.1−	1998 10 19	699	1.1+	0.2−				

1981 QD₄ = 1992 CN₁ = 1996 CG₂ = 1998 TO₃₂

Id. A. Doppler, A. Lowe

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	145.81731		(2000.0)	P	Q
n	0.23761382	ω	281.31394	−0.32547070	+0.93755638
a	2.5815959	Ω	328.81330	−0.74849857	−0.33475981
e	0.0548100	i	13.70738	−0.57777047	−0.09446640
P	4.15	H	13.0	G 0.15	U 2

Residuals in seconds of arc

1981 08 30	675	0.5+	0.2−	1996 02 10	399	1.6−	0.3−	1998 10 12	699	0.8−	0.0
1981 08 31	675	0.2+	0.8−	1996 02 12	399	0.1−	1.1−	1998 10 18	699	0.1+	0.0
1992 02 12	303	0.8+	0.9+	1996 02 12	399	0.4−	1.1−	1998 10 18	699	0.3+	0.4+
1992 02 13	303	1.0+	0.9+	1998 10 12	699	0.5−	0.3+	1998 10 18	699	0.1−	0.2+
1996 02 10	399	(1.9−	1.8−)	1998 10 12	699	0.4+	0.0				

1981 UA₂₃ = 1981 WX₂ = 1998 US₁₅Id. G. V. Williams (d, *MPC* 20484; unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	4.08897		(2000.0)	P	Q		
n	0.28999442	ω	338.49889	+0.31597539	−0.94724348		
a	2.2605266	Ω	93.04935	+0.87813670	+0.27053261		
e	0.1607048	i	3.08566	+0.35921511	+0.17187757		
P	3.40	H	15.1	G	0.15	U	5

Residuals in seconds of arc

1981 10 24	675	0.5−	0.1−	1998 10 24	120	0.1+	0.2−	1998 11 11	704	0.5−	0.7+
1981 10 24	675	0.1+	0.5+	1998 10 26	120	1.5+	0.3+	1998 11 11	704	0.9+	0.1−
1981 10 25	675	0.6−	0.6−	1998 10 26	120	0.4−	0.3+	1998 11 11	704	0.1+	0.7−

1981 10 25	675	0.3+	0.3+	1998 10 28	120	0.1−	0.1+	1998 11 16	566	1.0−	0.6−
1981 10 26	675	0.5−	0.4−	1998 10 28	120	0.4−	0.1−	1998 11 16	566	0.7−	0.8−
1981 11 24	033	0.9+	0.2+	1998 11 10	704	0.1−	0.1−	1998 11 16	566	1.0−	0.5−
1981 11 24	033	0.3+	0.0	1998 11 10	704	0.3+	0.7−	1998 11 27	120	0.4−	0.7+
1998 10 23	120	0.1+	0.3+	1998 11 10	704	0.4+	1.1−	1998 11 27	120	0.3−	0.7+
1998 10 23	120	0.0	0.6+	1998 11 10	704	1.6+	1.4+				

1981 WJ₉ = 1998 WS₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	355.21033		(2000.0)	P	Q
n	0.23295262	ω	254.24397	+0.06605968	−0.99763280
a	2.6159191	Ω	192.01686	+0.94701185	+0.06871575
e	0.1820606	i	5.26447	+0.31433210	+0.00263631
P	4.23	H	14.6	G 0.15	U 5

Residuals in seconds of arc

1981 10 24	675	0.3+	0.0	1998 11 11	699	0.2+	0.3+	1998 11 21	704	1.0+	1.6+
1981 10 25	675	0.1+	0.8−	1998 11 11	699	0.3+	0.5+	1998 11 24	704	0.4−	0.2−
1981 10 26	675	0.4−	0.1−	1998 11 11	699	0.3−	0.2+	1998 11 24	704	0.7+	0.2−
1981 11 16	323	0.5−	0.4−	1998 11 21	704	0.0	0.4−	1998 11 24	704	1.0−	0.9−
1981 11 17	323	0.2+	1.4+	1998 11 21	704	0.5+	0.1+	1998 11 24	704	0.1−	1.2−
1981 11 23	323	0.0	0.5+	1998 11 21	704	0.0	0.3+	1998 11 24	704	0.9−	0.1+
1981 12 01	323	0.4+	0.9−	1998 11 21	704	(0.2−	2.4+)				

1982 SQ₇ = 1991 EN₃ = 1998 SJ₂₂

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	67.95753		(2000.0)	P	Q
n	0.18499952	ω	304.04298	+0.45785631	+0.88864580
a	3.0503920	Ω	353.05489	−0.72822726	+0.35810460
e	0.1740508	i	12.41894	−0.50995357	+0.28647816
P	5.33	H	12.7	G 0.15	U 3

Residuals in seconds of arc

1982 09 18	095	1.4−	0.6+	1998 09 18	703	(3.1−	0.1+)	1998 09 26	704	0.4−	0.9+
1982 09 20	095	0.3−	1.6+	1998 09 18	703	(4.4−	0.6+)	1998 09 26	704	0.3−	1.2+
1982 09 26	095	0.8−	1.3+	1998 09 18	703	(4.5−	0.7+)	1998 09 27	704	1.2+	0.0
1991 03 11	809	0.4−	0.6+	1998 09 18	703	(5.4−	1.3+)	1998 09 27	704	0.6+	0.1+
1991 03 11	809	0.4−	0.9+	1998 09 18	703	(4.7−	1.2+)	1998 09 27	704	0.4+	1.7−
1991 03 11	809	0.3−	0.8+	1998 09 18	704	0.2+	0.5−	1998 09 27	704	0.5+	1.5−
1991 03 12	675	(2.3−	3.0−)	1998 09 18	704	0.2−	0.1−	1998 09 29	120	0.4+	0.3+
1991 03 12	675	0.8−	1.1−	1998 09 18	704	0.2+	0.3+	1998 09 29	120	0.0	0.3+
1991 03 13	809	0.0	1.1+	1998 09 18	704	0.1+	0.8+	1998 10 02	120	1.4+	0.5−
1991 03 13	809	0.4+	1.4+	1998 09 18	704	0.6−	0.3−	1998 10 02	120	(2.1−	1.8+)
1991 03 13	809	0.8+	1.4+	1998 09 23	120	0.9+	0.3+	1998 10 02	120	1.7−	0.1−
1991 03 15	809	1.0+	0.1+	1998 09 23	120	0.6+	0.2+	1998 10 13	120	0.1−	0.3−
1991 03 15	809	1.4+	0.0	1998 09 23	120	0.5+	0.3+	1998 10 13	120	0.1−	0.3−
1991 03 15	809	1.8+	0.1−	1998 09 24	120	0.1+	0.2+	1998 10 13	120	(2.2+	4.1+)
1998 09 14	704	0.8−	0.0	1998 09 24	120	0.2−	0.3+	1998 11 10	699	0.2−	0.3+
1998 09 14	704	0.7−	0.6+	1998 09 24	120	0.0	0.0	1998 11 10	699	0.9+	0.3−
1998 09 14	704	1.2−	0.3+	1998 09 26	704	0.0	0.3+	1998 11 10	699	0.2+	0.4−
1998 09 14	704	0.6−	0.3−	1998 09 26	704	0.7−	0.1+				
1998 09 14	704	0.2+	0.1−	1998 09 26	704	1.0−	0.4+				

1985 UA₅ = 1998 VO₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	18.53431		(2000.0)	P	Q
n	0.22614509	ω	336.78542	+0.79792578	−0.55782471
a	2.6681563	Ω	59.10671	+0.58630368	+0.63038037
e	0.2047585	i	15.43288	+0.13986579	+0.53986312
P	4.36	H	13.1	G 0.15	U 4

Residuals in seconds of arc

1985 10 22	095	0.4−	0.1+	1998 11 10	704	0.2+	0.2−	1998 11 11	704	0.1−	0.2−
1985 11 09	095	0.3+	1.0+	1998 11 10	704	0.0	0.5−	1998 11 11	704	0.1−	0.1−

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1985 11 11	095	0.9+	0.8-	1998 11 10	704	1.2+	0.1-	1998 11 15	566	0.3-	0.4+
1985 11 20	095	0.7-	0.4-	1998 11 11	704	0.3+	0.0	1998 11 15	566	0.4-	0.4+
1998 11 10	704	0.7-	0.3-	1998 11 11	704	0.3+	0.5+	1998 11 15	566	0.5-	0.4+
1998 11 10	704	0.4-	0.9-	1998 11 11	704	0.5+	0.6+				

1987 DG = 1998 VU₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>		(2000.0)		P	Q
<i>n</i>	265.66623	<i>ω</i>	351.37495	-0.98439756	-0.17595405
<i>a</i>	2.1550092	<i>Ω</i>	178.48911	+0.16417572	-0.92105076
<i>e</i>	0.1384662	<i>i</i>	2.76039	+0.06330697	-0.34742722
<i>P</i>	3.16	<i>H</i>	15.3	<i>G</i>	0.15

Residuals in seconds of arc

1987 02 23	675	0.2+	0.8-	1987 03 02	809	0.1-	0.1-	1998 08 31	910	0.2-	0.1-
1987 02 23	675	0.3+	2.3+	1987 03 02	809	0.2+	0.0	1998 08 31	910	0.1-	0.1+
1987 02 24	809	0.1-	0.2+	1987 03 02	809	0.6+	0.0	1998 09 17	910	0.4+	0.3+
1987 02 24	809	0.0	0.4+	1987 03 03	809	0.5-	0.6+	1998 09 17	910	0.2+	0.1+
1987 02 24	809	0.2+	0.0	1987 03 03	809	0.1-	0.3+	1998 09 17	910	0.7+	0.4-
1987 02 25	809	0.1-	0.3-	1987 03 03	809	0.3+	0.5+	1998 10 14	699	0.2-	0.5+
1987 02 25	809	0.2-	0.1-	1987 03 04	809	0.5+	0.5-	1998 10 14	699	0.3+	0.1-
1987 02 25	809	0.1+	0.3+	1987 03 04	809	0.3+	0.5-	1998 10 14	699	0.4+	0.2-
1987 02 26	809	0.3-	0.2+	1987 03 04	809	0.3+	0.0	1998 11 10	704	0.5+	0.4-
1987 02 26	809	0.2-	0.2-	1987 03 05	809	0.5-	0.5-	1998 11 10	704	0.4+	0.0
1987 02 26	809	0.1+	0.4-	1987 03 05	809	0.2-	0.5-	1998 11 10	704	0.5+	0.8-
1987 02 27	809	0.2+	0.1-	1987 03 05	809	0.1-	0.3-	1998 11 10	704	1.1-	0.5-
1987 02 27	809	0.2+	0.1-	1987 03 06	809	0.2+	0.5-	1998 11 10	704	(1.6-	2.2+)
1987 02 27	809	0.0	0.1-	1987 03 06	809	0.3+	0.4-	1998 11 11	704	0.6+	0.0
1987 02 27	675	1.5-	0.2+	1987 03 06	809	0.1-	0.1-	1998 11 11	704	0.9+	0.5+
1987 02 27	675	0.4+	0.3+	1987 03 07	809	0.4-	0.4-	1998 11 11	704	0.1+	0.2+
1987 02 28	809	0.3-	0.2+	1987 03 07	809	0.1+	0.4-	1998 11 11	704	0.0	0.9+
1987 02 28	809	0.0	0.2-	1987 03 07	809	0.7+	0.2-	1998 11 11	704	0.4-	0.7+
1987 02 28	809	0.4+	0.2-	1987 03 10	809	0.4-	0.1+	1998 11 15	566	1.0-	0.4-
1987 03 01	809	0.2+	0.0	1987 03 10	809	0.5-	0.3+	1998 11 15	566	0.6-	0.4-
1987 03 01	809	0.5+	0.3+	1987 03 10	809	0.8-	0.3+	1998 11 15	566	0.9-	0.4-
1987 03 01	809	0.6+	0.3+	1998 08 31	910	0.3-	0.2+				

1987 WP = 1998 VX

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>		(2000.0)		P	Q
<i>n</i>	284.10190	<i>ω</i>	293.66663	-0.92790381	-0.23208618
<i>a</i>	2.4027506	<i>Ω</i>	234.19412	+0.29108896	-0.93998471
<i>e</i>	0.2794766	<i>i</i>	21.08581	-0.23294147	-0.25012945
<i>P</i>	3.72	<i>H</i>	13.4	<i>G</i>	0.15

Residuals in seconds of arc

1987 10 23	095	0.1+	0.2+	1998 11 10	704	0.0	0.5+	1998 11 11	704	0.3+	0.5+
1987 11 20	675	0.3-	0.6-	1998 11 10	704	0.2+	0.0	1998 11 11	704	0.4+	0.7+
1987 11 20	675	0.2+	0.0	1998 11 10	704	0.8-	0.3-	1998 11 11	704	0.2+	0.0
1987 11 26	046	0.4-	0.0	1998 11 10	704	0.5-	0.8-	1998 11 11	704	0.2+	0.3+
1987 11 26	046	0.4+	0.4+	1998 11 10	704	0.0	0.6-	1998 11 11	704	0.1+	0.1-

1988 FE₃ = 1997 HH₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Doppler			
<i>M</i>		(2000.0)		P	Q
<i>n</i>	110.43555	<i>ω</i>	315.87270	-0.90863789	+0.41688565
<i>a</i>	2.7872762	<i>Ω</i>	248.77958	-0.37559201	-0.84117782
<i>e</i>	0.1027949	<i>i</i>	1.48491	-0.18250433	-0.34442158
<i>P</i>	4.65	<i>H</i>	14.0	<i>G</i>	0.15

Residuals in seconds of arc

1988 03 19	809	1.0+	0.1-	1988 03 25	809	0.8-	0.2-	1997 04 28	704	0.5-	0.8+
1988 03 19	809	0.1+	0.0	1988 03 26	809	0.4+	0.2-	1997 04 28	704	0.8+	0.3+
1988 03 20	809	0.1+	0.1-	1988 03 26	809	0.0	0.4-	1997 04 29	704	0.2+	0.1-
1988 03 20	809	0.8-	1.5+	1997 04 28	704	0.6-	1.1-	1997 04 29	704	0.2+	0.2+

1988 03 20	809	0.2-	0.1+	1997 04 28	704	0.0	0.5-	1997 04 29	704	0.6+	0.5+
1988 03 25	809	0.3+	0.5-	1997 04 28	704	0.4-	0.7-	1997 04 29	704	0.4-	0.5+

1988 PR = 1998 HT₄₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		(2000.0)		P	Q
<i>M</i>	2.27711	<i>ω</i>	110.08555	+0.18810844	+0.98195990
<i>n</i>	0.27254365	<i>Ω</i>	170.69398	-0.93969183	+0.18563815
<i>a</i>	2.3560184	<i>i</i>	6.83126	-0.28564749	+0.03596143
<i>e</i>	0.0409769	<i>H</i>	15.5	<i>G</i>	0.15
<i>P</i>	3.62	<i>H</i>	15.5	<i>G</i>	0.15

Residuals in seconds of arc

1988 08 11	413	1.0-	0.1-	1998 04 20	704	1.1+	0.2-	1998 04 21	704	0.3+	0.3+
1988 08 11	413	0.5-	0.3+	1998 04 20	704	0.4-	0.1-	1998 04 21	704	0.1+	0.0
1988 08 13	413	1.2+	0.8+	1998 04 20	704	1.0-	0.2-	1998 04 22	704	0.0	0.4-
1988 08 14	413	1.1+	1.3-	1998 04 20	704	0.1-	0.4-	1998 04 22	704	0.7+	0.2-
1988 08 19	413	0.7-	0.3+	1998 04 21	704	0.5+	0.2+	1998 04 22	704	0.8-	0.3+
1988 08 20	413	(5.3-	1.7-)	1998 04 21	704	0.3+	0.7+	1998 04 22	704	0.1-	0.0
1998 04 20	704	0.3-	0.1-	1998 04 21	704	0.6+	0.2+	1998 04 22	704	0.7-	0.4-

1988 PU = 1998 UW₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		(2000.0)		P	Q
<i>M</i>	165.75224	<i>ω</i>	21.00659	+0.03753479	+0.98083888
<i>n</i>	0.22219385	<i>Ω</i>	251.54461	-0.94317396	-0.02843591
<i>a</i>	2.6996950	<i>i</i>	11.62677	-0.33017271	+0.19273425
<i>e</i>	0.1389576	<i>H</i>	12.4	<i>G</i>	0.15
<i>P</i>	4.44	<i>H</i>	12.4	<i>G</i>	0.15

Residuals in seconds of arc

1988 08 10	675	0.6+	1.0-	1998 10 26	327	0.6+	0.5-	1998 10 30	327	0.2-	0.6-
1988 08 12	675	0.3-	0.4+	1998 10 26	327	0.7+	0.2-	1998 10 30	327	0.1-	0.3+
1988 09 05	675	0.8+	0.7+	1998 10 29	327	0.3+	0.1+	1998 10 30	327	0.6+	0.5+
1988 09 08	675	1.1-	0.1-	1998 10 29	327	1.4-	0.1+				
1998 10 26	327	0.5+	0.2-	1998 10 29	327	1.2-	0.3+				

1988 RY₁ = 1998 WQ₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		(2000.0)		P	Q
<i>M</i>	59.23113	<i>ω</i>	216.01535	+0.99762696	+0.05740788
<i>n</i>	0.30213340	<i>Ω</i>	140.64068	-0.04024801	+0.93417255
<i>a</i>	2.1995655	<i>i</i>	3.43614	-0.05586189	+0.35217323
<i>e</i>	0.1924910	<i>H</i>	16.3	<i>G</i>	0.15
<i>P</i>	3.26	<i>H</i>	16.3	<i>G</i>	0.15

Residuals in seconds of arc

1988 08 14	033	0.0	0.0	1988 09 11	675	0.5-	1.5+	1998 11 18	704	0.1+	0.2+
1988 08 14	033	0.3-	0.2+	1988 09 11	675	0.8-	0.4-	1998 11 18	704	0.1+	0.1-
1988 09 07	033	0.8+	0.2-	1988 09 12	675	1.0+	0.3-	1998 11 18	704	0.1+	1.8-
1988 09 08	033	0.6+	0.1+	1988 09 12	675	1.5+	0.3-	1998 11 21	704	1.2-	0.6+
1988 09 08	033	0.5+	0.2+	1988 09 16	675	0.9-	1.3+	1998 11 21	704	0.2+	0.2-
1988 09 10	675	0.5-	1.4-	1988 09 16	675	0.4-	1.5+	1998 11 21	704	0.9+	0.8-
1988 09 10	675	1.0-	2.2-	1998 11 18	704	0.6+	0.5+	1998 11 21	704	0.8-	1.4+

1988 RA₁₃ = 1998 WD₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		(2000.0)		P	Q
<i>M</i>	143.36570	<i>ω</i>	84.74334	+0.16337980	+0.98636595
<i>n</i>	0.30888033	<i>Ω</i>	194.70420	-0.93315234	+0.14801296
<i>a</i>	2.1674173	<i>i</i>	4.45796	-0.32020892	+0.07193315
<i>e</i>	0.1481031	<i>H</i>	14.8	<i>G</i>	0.15
<i>P</i>	3.19	<i>H</i>	14.8	<i>G</i>	0.15

Residuals in seconds of arc

1988 09 11	675	1.0-	0.3-	1988 10 07	675	0.3-	0.3+	1998 11 21	704	0.4+	0.2+
1988 09 11	675	0.0	0.2-	1988 10 07	675	0.0	1.8-	1998 11 21	704	0.6+	1.1-
1988 09 14	807	1.0+	0.4+	1988 10 09	675	0.6-	0.2-	1998 11 24	704	0.2+	0.0

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1988 09 15	807	0.5+	0.8+	1988 10 09	675	0.5−	0.5−	1988 11 24	704	0.1−	0.3+
1988 09 16	675	0.1−	0.2−	1988 11 11	699	0.5+	0.3+	1988 11 24	704	0.7−	0.0
1988 09 16	675	0.3−	0.3+	1988 11 11	699	0.1+	0.5+	1988 11 24	704	0.8−	0.7+
1988 10 05	807	0.7+	0.9+	1988 11 11	699	0.0	0.3+				
1988 10 07	807	0.8+	0.5+	1988 11 21	704	0.1−	1.0−				

1988 SL₁ = 1998 RO₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	51.05887		(2000.0)	P	Q
<i>n</i>	0.29820631	ω	126.33409	+0.95339420	+0.30171856
<i>a</i>	2.2188341	Ω	216.10522	−0.27807991	+0.87565295
<i>e</i>	0.1827340	<i>i</i>	0.22631	−0.11709429	+0.37709126
<i>P</i>	3.31	<i>H</i>	17.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1988 09 14	807	0.4+	0.4−	1988 09 15	699	0.0	0.9+	1988 09 26	704	(0.7+	2.4−)
1988 09 15	807	0.6+	0.0	1988 09 15	699	0.3−	0.3+	1988 09 26	704	(0.4+	2.3−)
1988 09 18	809	0.1−	1.1−	1988 09 17	699	0.4−	0.7+	1988 09 26	704	0.1−	1.6−
1988 09 18	809	(0.9−	3.5−)	1988 09 17	699	0.4+	1.3+	1988 09 26	704	0.5−	1.8−
1988 09 18	809	(1.9−	5.6−)	1988 09 17	699	0.2+	1.5+	1988 09 27	704	1.1+	0.1+
1988 10 06	807	0.5+	0.4−	1988 09 18	704	0.6−	1.2+	1988 09 27	704	0.4+	0.6+
1988 10 07	807	0.3+	0.9−	1988 09 18	704	0.4−	0.8+	1988 09 27	704	0.2+	0.1−
1988 09 14	704	0.1+	0.7+	1988 09 18	704	0.4−	0.5+	1988 09 27	704	0.4+	0.6−
1988 09 14	704	0.7−	0.1−	1988 09 18	704	0.3−	0.9+	1988 09 27	704	0.9+	1.4−
1988 09 14	704	0.0	0.6+	1988 09 18	704	(2.1−	2.0+)				
1988 09 15	699	0.4−	0.7+	1988 09 26	704	0.5+	1.7−				

1988 VG₁ = 1980 KU = 1985 GA₂ = 1998 TR₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	252.87532		(2000.0)	P	Q
<i>n</i>	0.18883993	ω	299.67728	−0.92444980	−0.36004121
<i>a</i>	3.0088936	Ω	219.59920	+0.38069882	−0.89005506
<i>e</i>	0.1133163	<i>i</i>	11.35974	−0.02147008	−0.27959311
<i>P</i>	5.22	<i>H</i>	11.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 05 17	095	0.0	0.3+	1988 10 12	699	0.2+	0.1+	1988 10 29	704	0.7+	0.6−
1985 04 14	688	0.1+	0.0	1988 10 12	699	0.6−	0.6+	1988 11 10	704	0.8+	0.4−
1988 11 05	372	(0.7−	48.0−)	1988 10 12	699	0.4−	0.3+	1988 11 10	704	0.5+	0.6+
1988 11 06	372	0.6−	0.2−	1988 10 17	699	0.3−	0.1+	1988 11 10	704	0.0	0.3+
1988 11 08	372	0.2+	0.5−	1988 10 17	699	0.0	0.1+	1988 11 10	699	0.2−	0.2+
1988 11 08	372	1.5+	0.4+	1988 10 17	699	0.1−	0.2+	1988 11 10	704	(1.1+	2.1−)
1988 11 10	372	1.8+	0.9−	1988 10 28	704	0.1+	0.5−	1988 11 10	699	0.4−	0.2+
1988 11 10	372	0.1+	0.7+	1988 10 28	704	0.4−	0.1−	1988 11 10	699	0.1−	0.4+
1988 11 18	372	(5.2+	0.6+)	1988 10 28	704	1.0−	0.3−	1988 11 11	704	0.4+	1.3+
1988 11 18	372	(3.2+	1.9+)	1988 10 28	704	1.0−	1.0−	1988 11 11	704	0.8+	1.3+
1988 11 28	372	1.1−	1.1+	1988 10 28	704	0.3−	0.1−	1988 11 11	704	0.1−	0.1−
1988 11 28	372	1.8−	1.0−	1988 10 29	704	0.8+	0.1−	1988 11 11	704	0.1+	0.4+
1988 09 14	699	0.3+	0.1−	1988 10 29	704	0.3+	0.2−	1988 11 11	704	0.7+	0.1−
1988 09 14	699	0.1−	0.8−	1988 10 29	704	0.0	0.5−				
1988 09 14	699	0.6−	0.5−	1988 10 29	704	0.2−	0.2−				

1989 CR₁ = 1998 WW₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	228.61821		(2000.0)	P	Q
<i>n</i>	0.27697823	ω	311.38268	−0.82321642	+0.54835790
<i>a</i>	2.3308033	Ω	262.36990	−0.46649674	−0.80095401
<i>e</i>	0.1642399	<i>i</i>	8.53104	−0.32356687	−0.24036698
<i>P</i>	3.56	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1989 02 04	809	0.9−	1.2−	1989 02 10	888	0.4−	0.6+	1988 11 21	704	1.1+	1.9−
1989 02 04	809	0.5−	1.5−	1989 02 10	888	0.4−	0.1+	1988 11 21	704	0.8−	0.2−
1989 02 04	809	0.7+	1.3−	1989 02 13	888	0.8−	1.1+	1988 11 21	704	(4.5−	0.8−)
1989 02 05	888	1.2+	1.3+	1989 02 13	888	0.2−	0.7+	1988 11 24	704	0.4−	0.2−

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1989 02 05	888	1.3+	0.4+	1989 02 26	888	0.7+	0.1+	1998 11 24	704	1.2−	1.5+
1989 02 07	809	0.5−	0.2+	1989 02 26	888	1.2−	1.1+	1998 11 24	704	1.4+	1.1−
1989 02 07	809	0.1+	0.4−	1989 03 10	888	0.1−	0.8−	1998 11 24	704	0.2−	1.6+
1989 02 07	809	1.5−	0.9−	1989 03 10	888	0.7+	0.8−	1998 11 24	704	0.7−	0.7+
1989 02 07	888	0.8+	1.1+	1998 11 21	704	0.3+	0.1+				
1989 02 07	888	1.0+	0.2+	1998 11 21	704	0.4+	0.3−				

1989 CF₃ = 1998 VB₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	230.04532		(2000.0)	P	Q
<i>n</i>	0.27583448	ω	312.28440	−0.95965528	+0.26240985
<i>a</i>	2.3372420	Ω	243.15797	−0.21295275	−0.91286534
<i>e</i>	0.0457754	<i>i</i>	6.50019	−0.18361067	−0.31275860
<i>P</i>	3.57	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1989 02 04	809	0.7−	0.4−	1989 03 02	809	0.4−	0.1−	1998 11 10	704	0.9−	0.1−
1989 02 04	809	0.9+	0.0	1989 03 02	809	1.1−	0.2−	1998 11 10	704	0.8−	0.1+
1989 02 04	809	2.0+	0.2−	1989 03 03	809	0.8+	0.6−	1998 11 10	704	(4.9−	1.0+)
1989 02 07	809	0.4−	0.1−	1989 03 03	809	0.1−	0.6+	1998 11 11	704	0.3+	0.3−
1989 02 07	809	0.7−	0.9+	1989 03 03	809	0.1+	0.0	1998 11 11	704	1.3+	0.6+
1989 02 07	809	1.1−	0.1−	1998 11 10	704	1.4−	0.3−	1998 11 11	704	1.7+	0.2−
1989 03 02	809	0.7+	0.1+	1998 11 10	704	0.1+	0.2−	1998 11 11	704	0.3−	0.5+

1989 CW₇ = 1989 AS₉ = 1998 WX₇Id. S. Nakano (d, *MPC* 22572), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	36.53196		(2000.0)	P	Q
<i>n</i>	0.29437139	ω	220.42217	+0.50829511	−0.86095292
<i>a</i>	2.2380630	Ω	199.05369	+0.80501238	+0.48322499
<i>e</i>	0.1160840	<i>i</i>	3.49544	+0.30592671	+0.15891410
<i>P</i>	3.35	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1989 01 09	033	0.0	0.2−	1989 02 02	033	0.5+	0.4+	1998 11 26	721	0.3+	0.5−
1989 01 09	033	0.1+	0.1+	1998 11 24	721	0.1+	0.1−	1998 11 26	721	0.3−	0.1−
1989 02 01	033	0.6−	0.3−	1998 11 24	721	0.1−	0.7+				

1989 DC = 1975 GO = 1987 SP₃₀ = 1998 VV₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	253.75268		(2000.0)	P	Q
<i>n</i>	0.27598182	ω	157.53804	−0.99486839	+0.08289854
<i>a</i>	2.3364100	Ω	27.41211	−0.10079695	−0.86174645
<i>e</i>	0.0742867	<i>i</i>	7.23819	+0.00876742	−0.50052062
<i>P</i>	3.57	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1975 04 15	805	0.9+	1.5+	1989 03 08	402	1.8+	1.4−	1998 11 10	704	0.3+	0.3+
1987 09 18	095	0.5−	0.7+	1989 03 08	402	2.5+	2.0−	1998 11 10	704	0.2+	0.2+
1989 02 27	402	1.4+	0.5+	1989 03 14	402	3.5+	1.6+	1998 11 10	704	0.2−	2.9+
1989 02 27	402	0.0	0.6+	1989 03 14	402	2.1+	1.6+	1998 11 11	704	0.2−	0.2−
1989 03 01	402	1.3−	1.6−	1989 03 30	402	(4.1−	0.3−)	1998 11 11	704	0.1+	0.5−
1989 03 02	402	4.1−	0.2+	1989 03 30	402	(5.0−	0.6−)	1998 11 11	704	0.7−	1.0−
1989 03 02	402	3.0−	1.3+	1998 11 10	704	0.2−	0.3−				
1989 03 02	402	2.9−	0.7−	1998 11 10	704	0.4+	0.0				

1989 GB = 1998 VT₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	220.33462		(2000.0)	P	Q
<i>n</i>	0.26658113	ω	173.03014	−0.82748440	+0.53986021
<i>a</i>	2.3910195	Ω	40.89953	−0.52586524	−0.64878363
<i>e</i>	0.0661713	<i>i</i>	13.63451	−0.19681289	−0.53631218
<i>P</i>	3.70	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 5

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Residuals in seconds of arc

1989 03 30	675	1.2−	1.6+	1989 04 12	400	0.4−	1.7+	1988 11 10	699	0.3+	0.0
1989 03 30	675	0.5−	1.0+	1989 04 28	400	(2.8+	0.7−)	1988 11 10	704	0.8+	1.4+
1989 04 02	400	1.7+	1.5−	1989 04 28	400	1.7+	1.3−	1988 11 10	699	0.3+	0.3−
1989 04 02	400	1.7−	1.7−	1989 04 28	400	1.5+	0.5+	1988 11 10	704	0.5−	0.2+
1989 04 06	400	(2.5−	3.6−)	1988 11 10	699	0.1+	0.4−	1988 11 11	704	1.0−	0.4+
1989 04 06	400	(4.3−	0.7−)	1988 11 10	704	0.3−	0.1−	1988 11 11	704	0.5−	0.1+
1989 04 06	400	(3.3−	0.6−)	1988 11 10	704	0.8+	0.0	1988 11 11	704	(2.0−	0.1+)
1989 04 12	400	1.0−	0.1−	1988 11 10	704	0.2−	1.0−				

1989 GY₁ = 1998 FU₄₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	216.38097		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21046914	ω	21.64652	+0.91825655	−0.39595741
a	2.7990486	Ω	1.70143	+0.33572562	+0.77209026
e	0.1691858	i	9.22133	+0.20998385	+0.49708586
P	4.68	H	15.0	G 0.15	U 6

Residuals in seconds of arc

1989 04 03	809	0.6+	0.5−	1988 03 20	704	1.4−	0.6−	1988 03 29	704	0.1+	0.2+
1989 04 03	809	0.6+	0.0	1988 03 20	704	0.2+	0.8−	1988 03 29	704	0.5−	0.8+
1989 04 03	809	0.4+	0.4−	1988 03 22	704	0.1+	0.8−	1988 03 29	704	0.5−	1.5+
1989 04 05	809	0.5−	0.8+	1988 03 22	704	1.3+	0.6−	1988 03 29	704	(0.2−	2.2+)
1989 04 05	809	0.5+	0.1+	1988 03 22	704	0.3+	1.5−	1988 03 29	704	0.0	1.5+
1989 04 05	809	0.4+	0.7−	1988 03 22	704	0.2−	0.6−	1988 04 01	704	0.9−	0.0
1989 04 10	809	0.8−	0.2−	1988 03 28	704	0.2+	1.1−	1988 04 01	704	1.1+	1.1−
1989 04 10	809	1.3−	0.7+	1988 03 28	704	0.7+	0.7−	1988 04 01	704	1.4−	0.3−
1989 04 10	809	(4.1−	0.0)	1988 03 28	704	0.3+	1.0+	1988 04 01	704	1.0−	0.0
1988 03 20	704	0.2−	0.1+	1988 03 28	704	0.9+	0.2+	1988 04 01	704	0.3+	1.3+
1988 03 20	704	0.4+	0.9+	1988 03 28	704	0.3+	0.8+				

1989 GM₂ = 1998 KN₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	110.81590		(2000.0)	P	Q
n	0.22220791	ω	297.40911	−0.89892554	−0.43343733
a	2.6995811	Ω	217.00406	+0.42998776	−0.84500592
e	0.1666039	i	6.08082	+0.08392498	−0.31320454
P	4.44	H	15.0	G 0.15	U 6

Residuals in seconds of arc

1989 04 03	809	0.1+	0.5−	1989 04 08	809	0.6+	0.6+	1988 05 22	704	0.1+	0.1+
1989 04 03	809	0.2+	0.2−	1989 04 10	809	0.3−	0.7−	1988 05 24	704	0.0	0.2+
1989 04 03	809	0.4+	0.9−	1989 04 10	809	0.3−	0.6−	1988 05 24	704	1.3−	0.7−
1989 04 05	809	0.8−	0.4+	1989 04 10	809	0.4−	0.5−	1988 05 24	704	0.5+	0.1−
1989 04 05	809	1.1−	0.6+	1988 05 22	704	0.1+	0.7+	1988 05 24	704	1.3+	0.5+
1989 04 05	809	0.2−	0.5+	1988 05 22	704	(0.1−	2.2+)	1988 05 24	704	0.5−	0.2−
1989 04 08	809	0.5+	0.7+	1988 05 22	704	1.1−	0.2+				
1989 04 08	809	1.1+	0.5+	1988 05 22	704	0.9+	0.7−				

1989 GH₃ = 1989 GA₅ = 1998 SH₁₆₁Id. S. Nakano (d, *MPC* 16003), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	263.28610		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26647849	ω	301.54543	−0.92462498	−0.37222132
a	2.3916334	Ω	216.77844	+0.37887766	−0.87715746
e	0.1265316	i	7.75076	+0.03899182	−0.30339097
P	3.70	H	14.5	G 0.15	U 4

Residuals in seconds of arc

1989 04 02	809	0.1+	1.2−	1988 09 26	704	2.0−	0.5−	1988 10 29	704	0.5−	0.3+
1989 04 02	809	0.1−	0.7−	1988 09 27	704	0.3−	0.3−	1988 10 29	704	1.1+	1.5+
1989 04 02	809	1.2+	1.6−	1988 09 27	704	0.1+	0.4−	1988 10 29	704	1.6−	1.6+
1989 04 08	809	1.6−	0.8+	1988 09 27	704	0.3+	0.1+	1988 10 29	704	0.4−	0.5−
1989 04 08	809	0.7−	0.7+	1988 10 17	699	0.7+	0.8+	1988 11 10	704	0.1+	0.1+
1989 04 08	809	0.4−	0.0	1988 10 17	699	0.8+	0.5+	1988 11 10	704	0.3−	1.0−

1989 04 11	809	0.3+	1.1+	1988 10 17	699	0.5+	1.0+	1988 11 10	704	0.3−	1.6−
1989 04 11	809	0.5+	1.5+	1988 10 28	704	0.7−	0.0	1988 11 10	704	1.0+	1.0−
1989 04 11	809	0.8+	0.1+	1988 10 28	704	0.5−	1.6+	1988 11 11	704	1.3+	0.6−
1988 09 26	704	0.4−	0.7−	1988 10 28	704	0.0	1.4+	1988 11 11	704	0.2+	0.1+
1988 09 26	704	0.4−	0.0	1988 10 28	704	1.0+	0.8+	1988 11 11	704	(0.7+	3.4−)
1988 09 26	704	0.6+	1.2−	1988 10 28	704	0.1+	0.1−	1988 11 11	704	(0.6+	2.6−)
1988 09 26	704	0.6−	0.7−	1988 10 29	704	0.2−	0.8−				

1989 TU₃ = 1998 SK₁₂₉

Id. G. V. Williams, E. Howell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	316.69024		(2000.0)	P	Q
n	0.21903506	ω	279.05271	−0.02343177	−0.99966000
a	2.7255885	Ω	172.26240	+0.94736815	−0.02585737
e	0.0409871	i	4.87367	+0.31928755	+0.00335947
P	4.50	H	13.9	G 0.15	U 5

Residuals in seconds of arc

1989 09 28	809	0.2−	0.3+	1988 09 26	704	0.3+	0.1−	1988 10 20	699	0.1+	0.2+
1989 09 28	809	0.3−	1.2+	1988 09 26	704	0.9+	0.4−	1988 10 20	699	0.1+	0.5+
1989 09 28	809	0.2+	0.8+	1988 09 26	704	0.7+	0.0	1988 11 10	704	0.8+	1.3−
1989 09 29	675	0.8+	0.8−	1988 09 27	704	0.7−	0.3+	1988 11 10	704	1.1−	1.0+
1989 10 07	809	0.1+	0.5−	1988 09 27	704	0.1+	0.4−	1988 11 10	704	0.6−	0.7+
1989 10 07	809	0.2+	0.0	1988 09 27	704	0.2−	0.3+	1988 11 10	704	0.5−	0.5+
1989 10 07	809	1.1−	0.3−	1988 09 27	704	0.4−	0.5+	1988 11 11	704	0.4−	0.9−
1989 10 08	809	0.6+	1.0−	1988 09 27	704	0.7−	1.7−	1988 11 11	704	0.5+	0.6−
1989 10 08	809	0.7+	0.8−	1988 10 11	699	0.6−	0.7+	1988 11 11	704	1.2+	0.2−
1989 10 08	809	0.5−	0.5−	1988 10 11	699	0.7+	0.2−	1988 11 11	704	0.4−	0.0
1988 09 26	704	0.1−	1.4+	1988 10 11	699	0.1−	0.7+	1988 11 11	704	0.8+	0.2+
1988 09 26	704	0.4−	0.4−	1988 10 20	699	0.5−	1.1+				

1989 TC₄ = 1989 SP₅ = 1998 VF₄Id. D. W. E. Green (d, *MPC* 15676), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	50.95096		(2000.0)	P	Q
n	0.22633949	ω	237.07137	+0.96414719	−0.26397865
a	2.6666284	Ω	138.21708	+0.25503350	+0.89350554
e	0.1772821	i	2.33265	+0.07333561	+0.36326729
P	4.35	H	15.4	G 0.15	U 5

Residuals in seconds of arc

1989 09 26	809	0.8−	0.6−	1988 10 03	809	2.0+	0.6+	1988 11 11	910	0.6−	0.1−
1989 09 26	809	0.3−	0.5+	1988 10 03	809	2.0+	0.3+	1988 11 11	910	0.7−	0.1−
1989 09 26	809	0.3−	0.2−	1988 10 07	809	0.0	0.7+	1988 11 13	910	0.9+	0.1+
1989 09 28	809	0.2−	0.3+	1988 10 07	809	0.2+	0.5−	1988 11 13	910	1.2+	0.2+
1989 09 28	809	0.1−	0.1+	1988 10 07	809	0.4−	0.7−	1988 11 13	910	1.3+	0.2−
1989 09 28	809	1.0−	1.1−	1988 10 08	809	1.0−	0.2+	1988 11 20	910	0.3−	0.0
1989 09 29	675	1.3+	0.1−	1988 10 08	809	0.9−	0.1+	1988 11 20	910	0.2−	0.2+
1989 09 29	675	0.2+	0.0	1988 10 08	809	0.8−	0.4+	1988 11 20	910	0.6−	0.2+
1989 10 03	809	(3.0+	0.6+)	1988 11 11	910	1.0−	0.3−				

1989 TW₄ = 1998 HD₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	226.28132		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.28396639	ω	348.37236	+0.74413033	−0.66111471
a	2.2924054	Ω	53.44377	+0.62208367	+0.63344411
e	0.1553521	i	6.85692	+0.24347887	+0.40208941
P	3.47	H	16.0	G 0.15	U 5

Residuals in seconds of arc

1989 09 29	675	0.2−	0.8+	1988 10 07	809	0.9+	0.3−	1988 04 21	691	0.7+	0.0
1989 09 29	675	0.2−	0.8−	1988 10 07	809	0.6−	0.7+	1988 04 21	691	0.3+	0.1−
1989 10 03	809	0.7−	0.5−	1988 10 08	809	0.2+	0.2+	1988 04 29	691	0.6−	0.1+
1989 10 03	809	0.6−	0.2+	1988 10 08	809	0.3−	0.0	1988 04 29	691	0.4−	0.2−

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1989 10 03	809	0.6−	0.4−	1989 10 08	809	0.6+	0.4+	1998 04 29	691	0.5−	0.2+
1989 10 07	809	0.3+	0.7−	1998 04 21	691	0.6+	0.3+				

1989 TR₇ = 1995 YA₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	229.53749		(2000.0)		P		Q
<i>n</i>	0.18014768	ω	352.71356		+0.73631959		−0.66251891
<i>a</i>	3.1049190	Ω	49.73332		+0.62953541		+0.59629357
<i>e</i>	0.1031906	<i>i</i>	10.38023		+0.24802950		+0.45332403
<i>P</i>	5.47	<i>H</i>	15.5		<i>G</i> 0.15		<i>U</i> 6

Residuals in seconds of arc

1989 10 03	809	(2.3+ 1.4+)	1989 10 07	809	0.2−	0.0	1995 12 17	327	0.5−	0.2−
1989 10 03	809	0.3+ 0.2−	1989 10 08	809	0.4−	0.1+	1995 12 17	327	0.5−	0.4−
1989 10 03	809	0.4+ 0.5+	1989 10 08	809	0.6+	0.2+	1995 12 18	327	0.2−	0.4+
1989 10 07	809	0.1+ 0.3−	1989 10 08	809	0.1−	0.3−	1995 12 18	327	1.0+	0.1+
1989 10 07	809	0.7− 0.0	1995 12 17	327	0.5+	0.1+	1995 12 18	327	0.3−	0.0

1989 TP₁₄ = 1978 TE₂ = 1997 EY₅₇

Id. A. Doppler, T. B. Spahr

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	199.34442		(2000.0)		P		Q
<i>n</i>	0.17740977	ω	64.59345		+0.22508635		−0.97284682
<i>a</i>	3.1367821	Ω	12.75324		+0.78300525		+0.14768605
<i>e</i>	0.2869382	<i>i</i>	14.13247		+0.57986112		+0.17820747
<i>P</i>	5.56	<i>H</i>	14.0		<i>G</i> 0.15		<i>U</i> 3

Residuals in seconds of arc

1978 10 03	095	1.6− 1.4+	1989 10 03	809	0.4−	0.8−	1997 03 10	809	0.3−	0.4−
1978 10 07	095	2.1+ 1.0−	1989 10 03	809	0.0	0.9−	1997 03 10	809	1.0−	0.0
1989 09 29	675	0.9+ 0.4+	1989 10 03	809	0.3+	1.0−	1997 03 11	809	0.2+	0.1+
1989 09 29	675	1.0+ 0.6+	1989 10 04	809	0.3−	0.2−	1997 03 11	809	0.1+	0.0
1989 10 02	809	0.3− 0.7+	1989 10 04	809	0.1−	0.2−	1997 03 11	809	0.1−	0.2−
1989 10 02	809	0.2− 0.7+	1989 10 04	809	0.1−	0.1−				
1989 10 02	809	0.0 0.8+	1997 03 10	809	0.9+	0.0				

1990 EF₂ = 1994 RH₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	256.26212		(2000.0)		P		Q
<i>n</i>	0.30791694	ω	301.69748		−0.96528765		+0.25375505
<i>a</i>	2.1719359	Ω	253.06470		−0.21236802		−0.90042143
<i>e</i>	0.0765212	<i>i</i>	3.70829		−0.15205126		−0.35334066
<i>P</i>	3.20	<i>H</i>	15.0		<i>G</i> 0.15		<i>U</i> 5

Residuals in seconds of arc

1990 02 24	809	0.1+ 0.7−	1990 03 02	809	1.3+	0.6+	1994 09 06	691	0.1−	0.1−
1990 02 24	809	0.6− 0.1+	1990 03 04	809	0.4−	0.2−	1994 09 06	691	0.1+	0.0
1990 02 24	809	0.4− 0.1−	1990 03 04	809	1.5−	0.2+	1994 09 09	691	0.1+	0.1+
1990 03 02	809	1.4+ 1.0+	1990 03 04	809	0.4−	0.7−	1994 09 09	691	0.1−	0.0
1990 03 02	809	(1.0+ 2.2+)	1994 09 06	691	0.3−	0.2−	1994 09 09	691	0.3+	0.1+

1990 OS₄ = 1979 YM₃ = 1989 EN₁₁ = 1998 MT₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	188.07785		(2000.0)		P		Q
<i>n</i>	0.24076832	ω	235.10323		−0.79083148		−0.56192093
<i>a</i>	2.5589973	Ω	269.51618		+0.61017183		−0.69297886
<i>e</i>	0.0547317	<i>i</i>	14.03760		+0.04770641		−0.45169146
<i>P</i>	4.09	<i>H</i>	14.0		<i>G</i> 0.15		<i>U</i> 2

Residuals in seconds of arc

1979 12 24	095	0.5− 2.4−	1990 07 28	675	1.0+	0.2−	1998 06 24	704	0.5+	0.2−
1989 03 12	808	0.2+ 0.8−	1990 07 30	675	0.6+	1.7−	1998 06 26	704	0.0	0.7−
1989 03 12	808	0.7− 0.7−	1990 07 30	675	0.7−	1.1−	1998 06 26	704	(2.0− 1.7+)	
1990 07 25	675	0.5− 0.2+	1998 06 24	704	(3.2+ 0.2−)		1998 06 26	704	0.8−	0.2+

1998 DEC. 8

1990 07 25	675	0.3+ 0.1−	1998 06 24	704	0.6+ 1.3+	1998 06 26	704	0.8+ 1.2−
1990 07 28	675	0.1+ 1.2+	1998 06 24	704	(2.1+ 1.5−)			

1990 SE₁ = 1998 RF₄₁

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	76.00854		(2000.0)		P		Q
<i>n</i>	0.24225232	ω	304.84543		+0.37046626		+0.92737476
<i>a</i>	2.5485359	Ω	346.59717		−0.76152391		+0.27103692
<i>e</i>	0.1729961	<i>i</i>	13.02902		−0.53182336		+0.25790512
<i>P</i>	4.07	<i>H</i>	14.0		<i>G</i> 0.15		<i>U</i> 5

Residuals in seconds of arc

1990 09 16	675	0.1+ 0.4+	1990 09 20	675	(2.6+ 1.4−)	1998 09 18	704	0.1−	0.1+
1990 09 16	675	0.8− 0.1−	1990 09 20	675	0.9− 0.1+	1998 09 18	704	0.5−	0.7+
1990 09 17	675	0.1+ 0.1−	1998 09 14	704	0.1+ 0.5−	1998 09 18	704	0.2−	0.9+
1990 09 17	675	1.4+ 0.0	1998 09 14	704	0.0 0.8−	1998 11 10	699	0.4−	0.3+
1990 09 18	675	(1.2− 2.4−)	1998 09 14	704	0.1+ 0.5−	1998 11 10	699	0.1−	0.2−
1990 09 18	675	0.0 0.3−	1998 09 14	704	0.6+ 0.5+	1998 11 10	699	0.1+	0.0
1990 09 18	675	(1.6− 2.7−)	1998 09 18	704	0.3− 0.4−				
1990 09 18	675	0.2+ 0.3−	1998 09 18	704	0.4+ 0.1+				

1990 SF₁ = 1976 YW = 1994 NG₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	234.73029		(2000.0)		P		Q
<i>n</i>	0.20572167	ω	146.04717		+0.62157348		−0.78084375
<i>a</i>	2.8419473	Ω	265.44106		+0.70402169		+0.59192277
<i>e</i>	0.1784051	<i>i</i>	3.60539		+0.34351111		+0.19977606
<i>P</i>	4.79	<i>H</i>	14.5		<i>G</i> 0.15		<i>U</i> 5

Residuals in seconds of arc

1976 12 16	095	1.8− 0.3−	1990 09 18	675	1.2− 1.4−	1994 07 08	809	0.2+	1.0−
1976 12 18	095	2.1+ 0.4+	1990 09 18	675	0.4+ 1.4+	1994 07 08	809	0.2+	0.2−
1990 09 16	675	0.2− 0.2+	1990 09 18	675	1.1− 1.6−	1994 07 08	809	0.1−	1.1−
1990 09 16	675	0.7+ 0.0	1990 09 18	675	0.5+ 0.6+	1994 07 09	809	0.8+	0.5+
1990 09 17	675	0.7+ 0.3+	1990 09 20	675	0.3+ 0.1−	1994 07 09	809	0.2−	0.8+
1990 09 17	675	0.7+ 0.5+	1990 09 20	675	0.7− 0.2+	1994 07 09	809	1.0−	1.0+

1990 SA₈ = 1998 VG₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	356.76849		(2000.0)		P		Q
<i>n</i>	0.25991617	ω	353.44739		−0.06510635		−0.99629433
<i>a</i>	2.4317216	Ω	100.27505		+0.91810871		−0.08187247
<i>e</i>	0.1674603	<i>i</i>	3.27446		+0.39094444		+0.02635348
<i>P</i>	3.79	<i>H</i>	14.9		<i>G</i> 0.15		<i>U</i> 6

Residuals in seconds of arc

1990 09 14	809	0.5+ 0.7−	1990 09 22	809	0.4− 0.8+	1998 11 11	910	0.2−	0.1−
1990 09 14	809	0.2− 1.4−	1990 09 25	809	0.3+ 0.9+	1998 11 11	910	0.3−	0.0
1990 09 14	809	0.1− 0.1−	1990 09 25	809	1.1+ 1.5+	1998 11 13	910	0.3+	0.1−
1990 09 22	809	0.2+ 0.3−	1990 09 25	809	0.6− 0.4−	1998 11 13	910	0.2+	0.1+
1990 09 22	809	0.8− 0.3−	1998 11 11	910	0.3− 0.0	1998 11 13	910	0.4+	0.0

1990 ST₁₄ = 1992 DV₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	316.33880		(2000.0)		P		Q
<i>n</i>	0.22661263	ω	342.40140		+0.83590240		−0.54112221
<i>a</i>	2.6644852	Ω	50.71531		+0.51679310		+0.71948411
<i>e</i>	0.2393213	<i>i</i>	6.82232		+0.18491095		+0.43534972
<i>P</i>	4.35	<i>H</i>	15.5		<i>G</i> 0.15		<i>U</i> 5

Residuals in seconds of arc

1990 09 25	809	0.8− 0.1+	1990 09 26	809	0.7+ 0.2−	1992 02 27	691	0.3−	0.4−
1990 09 25	809	0.2− 0.2+	1990 09 29	809	0.4− 0.2+	1992 02 27	691	0.5+	0.5−

1990 09 25	809	0.1−	0.2+	1990 09 29	809	0.3+	0.0	1992 03 04	809	0.4−	1.1+
1990 09 26	809	0.5−	0.2−	1990 09 29	809	1.0+	0.1−				
1990 09 26	809	0.1−	0.2−	1992 02 27	691	0.2+	0.1−				

1990 TB₁₃ = 1998 FU₈₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	265.66378		(2000.0)		P		Q
<i>n</i>	0.19039404	ω	187.04900	+0.76499572			+0.62971984
<i>a</i>	2.9924976	Ω	132.99508	−0.58151291			+0.76549483
<i>e</i>	0.0749049	<i>i</i>	10.63912	−0.27681093			+0.13217633
<i>P</i>	5.18	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 10 11	033	0.3+	0.2−	1998 03 24	704	0.5−	0.3−	1998 03 25	704	0.2−	0.2+
1990 10 12	033	0.3−	0.3+	1998 03 24	704	1.0+	0.7+	1998 03 25	704	1.1−	0.2−
1990 10 12	033	0.1+	0.6+	1998 03 24	704	0.5−	1.0−	1998 03 25	704	0.1+	0.5+
1990 10 13	033	0.1−	0.5−	1998 03 24	704	0.3−	0.1+	1998 03 25	704	0.7+	0.2−
1990 10 14	033	0.1−	0.2−	1998 03 24	704	0.1+	0.7+	1998 03 25	704	0.6+	0.5−

1990 TH₁₃ = 1994 LD₁₀ = 1998 FO₉₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	188.82273		(2000.0)		P		Q
<i>n</i>	0.18533921	ω	307.85515	+0.84172500			−0.50667053
<i>a</i>	3.0466637	Ω	83.31042	+0.53528731			+0.73806160
<i>e</i>	0.1024212	<i>i</i>	10.82344	+0.07047346			+0.44558956
<i>P</i>	5.32	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 11	033	0.4+	0.1+	1994 06 08	809	0.4+	0.7+	1998 03 24	704	0.4+	0.7+
1990 10 12	033	1.1−	1.0−	1994 06 09	809	1.2−	0.8−	1998 03 25	704	0.2+	0.4−
1990 10 12	033	1.0+	0.7+	1994 06 09	809	0.6−	0.1−	1998 03 25	704	0.2+	0.3−
1990 10 13	033	0.2−	0.5−	1994 06 09	809	0.0	1.2−	1998 03 25	704	0.9−	0.0
1990 10 14	033	0.1−	0.5+	1998 03 24	704	0.6−	0.3−	1998 03 25	704	0.4+	0.0
1994 06 08	809	0.7+	0.9+	1998 03 24	704	0.1+	0.4+	1998 03 25	704	0.1+	0.3−
1994 06 08	809	0.7+	0.4+	1998 03 24	704	0.0	0.0				

1990 UC₂

Id. T. Kobayashi (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.98127		(2000.0)		P		Q
<i>n</i>	0.25620850	ω	277.78851	+0.98711797			+0.00282556
<i>a</i>	2.4551255	Ω	82.15055	+0.06429482			+0.90855391
<i>e</i>	0.1647410	<i>i</i>	9.29294	−0.14650699			+0.41775808
<i>P</i>	3.85	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 10 12	033	0.1−	0.9−	1990 11 10	372	(4.2+	10.4+)	1998 11 15	411	0.1−	0.5+
1990 10 12	033	1.0+	0.1−	1990 11 10	372	(0.2+	9.7+)	1998 11 15	411	0.3+	0.3−
1990 10 13	033	0.6+	0.0	1998 11 12	411	0.2−	0.4+	1998 11 20	910	0.4+	0.3+
1990 10 14	033	0.4+	0.1−	1998 11 12	411	0.0	0.7+	1998 11 20	910	0.8+	0.4−
1990 10 26	372	(1.0−	3.9+)	1998 11 14	411	0.1−	0.4−	1998 11 20	910	0.8+	0.5−
1990 10 27	372	0.4−	1.4+	1998 11 14	411	1.4−	1.1−				
1990 10 27	372	1.6−	0.1−	1998 11 15	411	0.5−	0.7+				

1990 UE₄ = 1979 YM₄ = 1998 HL₁₃₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	145.66638		(2000.0)		P		Q
<i>n</i>	0.17620474	ω	303.21707	+0.25083910			−0.96471639
<i>a</i>	3.1510671	Ω	132.04160	+0.92014392			+0.21194061
<i>e</i>	0.1491983	<i>i</i>	6.18495	+0.30069072			+0.15621609
<i>P</i>	5.59	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 12 18	095	0.2−	0.1−	1990 10 24	809	0.7+	0.4+	1998 04 20	704	0.1−	0.1−
1990 10 16	809	0.3−	0.3−	1990 10 24	809	0.4+	1.3+	1998 04 20	704	0.6+	1.2+
1990 10 16	809	1.7−	0.2+	1990 10 24	809	0.9−	1.3+	1998 04 20	704	0.0	1.2+
1990 10 16	809	(2.9−	0.8−)	1998 04 19	704	0.3+	0.7−	1998 04 20	704	0.5−	0.5−
1990 10 20	809	0.5+	1.6−	1998 04 19	704	0.4+	0.2+	1998 04 20	704	1.8−	0.5+
1990 10 20	809	1.1+	0.1+	1998 04 19	704	0.5+	0.5−				
1990 10 20	809	0.4+	1.4−	1998 04 19	704	0.5+	1.3−				

1990 UO₄ = 1998 KB₅₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	341.97368		(2000.0)		P		Q
<i>n</i>	0.21349596	ω	133.76791	+0.79157425			+0.61023405
<i>a</i>	2.7725302	Ω	188.79498	−0.60335597			+0.77220616
<i>e</i>	0.1423789	<i>i</i>	12.08427	−0.09680791			+0.17695213
<i>P</i>	4.62	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 10 16	809	1.0+	0.7+	1990 10 24	809	0.3+	0.7+	1998 05 24	704	0.3−	0.0
1990 10 16	809	0.0	0.4+	1990 10 24	809	0.7−	0.6−	1998 05 24	704	0.7+	0.0
1990 10 16	809	0.9−	0.3+	1998 05 23	704	0.1+	0.2−	1998 05 24	704	0.5+	0.0
1990 10 19	809	1.1+	0.1−	1998 05 23	704	(2.0+	2.1+)	1998 05 24	704	0.8+	0.7+
1990 10 19	809	1.0−	1.4−	1998 05 23	704	0.9−	1.2+	1998 05 24	704	0.4+	0.8+
1990 10 19	809	0.1+	0.5−	1998 05 23	704	0.9−	1.5−				
1990 10 24	809	0.5+	0.7+	1998 05 23	704	0.4−	0.9−				

1990 UY₄ = 1996 LY₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	147.15497		(2000.0)		P		Q
<i>n</i>	0.28085166	ω	276.72645	+0.99018437			−0.08780426
<i>a</i>	2.3093232	Ω	88.35082	+0.12432809			+0.90879510
<i>e</i>	0.1888646	<i>i</i>	6.24553	−0.06385486			+0.40789936
<i>P</i>	3.51	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 10 16	809	0.4+	0.7+	1990 10 19	809	0.1−	0.4−	1996 06 08	809	0.5+	0.6+
1990 10 16	809	0.1−	0.3+	1990 10 24	809	0.1+	0.1−	1996 06 08	809	0.6+	0.0
1990 10 16	809	1.2−	0.6+	1990 10 24	809	0.3−	0.5+	1996 06 10	809	(2.2+	0.4−)
1990 10 19	809	0.4+	1.5−	1990 10 24	809	0.5−	0.3+	1996 06 10	809	0.1−	0.3+
1990 10 19	809	0.6−	1.2−	1996 06 08	809	1.3−	0.2−	1996 06 10	809	0.2+	0.8−

1990 UK₅ = 1998 QR₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	338.66199		(2000.0)		P		Q
<i>n</i>	0.23516008	ω	301.49188	+0.58026304			−0.80866848
<i>a</i>	2.5995229	Ω	112.73357	+0.77826970			+0.51559333
<i>e</i>	0.2296015	<i>i</i>	6.01800	+0.23998143			+0.28322926
<i>P</i>	4.19	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 10 16	809	1.1+	1.0+	1990 10 24	809	0.7+	0.1+	1998 08 17	704	0.1+	0.1+
1990 10 16	809	0.4+	0.2+	1990 10 24	809	0.1+	0.2−	1998 08 17	704	0.3+	0.4−
1990 10 16	809	0.7−	0.2+	1990 10 24	809	0.2−	0.8−	1998 08 23	704	0.4+	0.2−
1990 10 19	809	0.3−	0.3+	1998 08 17	704	0.0	0.4−	1998 08 23	704	0.9−	0.6−
1990 10 19	809	1.3−	0.6−	1998 08 17	704	0.2+	0.7+	1998 08 23	704	0.3−	0.7−
1990 10 19	809	(3.1−	0.3−)	1998 08 17	704	0.6+	1.4+	1998 08 23	704	(2.7−	1.8−)

1990 UN₅ = 1992 EP₂₂ = 1997 CP₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	185.58348		(2000.0)		P		Q
<i>n</i>	0.18349933	ω	304.32139	+0.65550724			−0.74645295
<i>a</i>	3.0669949	Ω	104.29349	+0.72588861			+0.58094972
<i>e</i>	0.2632072	<i>i</i>	6.78787	+0.20831701			+0.32450796
<i>P</i>	5.37	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 16	809	0.2+	0.1-	1990 10 24	809	0.9+	1.3+	1997 02 04	566	0.4-	0.1-
1990 10 16	809	0.1-	0.1-	1990 10 24	809	0.7+	0.2+	1997 02 04	566	0.1-	0.0
1990 10 16	809	(2.2-	0.8-)	1990 10 24	809	0.3-	0.3+	1997 02 08	566	0.5+	0.4-
1990 10 19	809	1.3-	0.5-	1992 03 01	809	0.7+	0.4-	1997 02 08	566	0.5+	0.6+
1990 10 19	809	0.1-	1.1-	1992 03 09	809	0.7-	0.5+	1997 02 08	566	0.7+	0.1+
1990 10 19	809	(2.4-	0.0)	1997 02 04	566	1.1-	0.4-				

1990 VM₃ = 1997 GR₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	9.35137		(2000.0)	P		Q
<i>n</i>	0.23499510	ω	291.47385	+0.94100551	-0.15107165	
<i>a</i>	2.6007395	Ω	78.23518	+0.27775449	+0.85594449	
<i>e</i>	0.2986378	<i>i</i>	18.01671	-0.19329014	+0.49450620	
<i>P</i>	4.19	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1990 11 15	809	0.2+	0.2-	1990 11 17	809	0.4+	1.3+	1997 04 07	691	0.1+	0.2+
1990 11 15	809	0.7-	0.3-	1990 11 17	809	0.8+	0.9+	1997 04 07	691	0.3+	0.2+
1990 11 15	809	0.2-	0.2-	1990 11 17	809	0.3-	1.1+	1997 04 15	691	0.5-	0.1-
1990 11 15	402	0.2+	0.9-	1990 11 23	809	0.7-	1.2+	1997 04 15	691	0.2+	0.3-
1990 11 15	402	(1.9-	2.0+)	1990 11 23	809	0.7+	0.8-	1997 04 15	691	0.2-	0.0
1990 11 16	402	0.4-	0.3-	1990 11 23	809	0.0	0.9-				
1990 11 16	402	0.5+	0.6-	1997 04 07	691	0.2+	0.0				

1990 VU₄ = 1990 VZ₁ = 1995 BL₁₃Id. S. Nakano (d, *MPC* 20913), A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	163.29232		(2000.0)	P		Q
<i>n</i>	0.28262261	ω	248.41185	+0.98550050	-0.14655938	
<i>a</i>	2.2996661	Ω	119.92567	+0.16744923	+0.92140112	
<i>e</i>	0.1384563	<i>i</i>	5.66117	-0.02737731	+0.35991711	
<i>P</i>	3.49	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1990 11 11	372	(5.5+	2.6+)	1990 11 17	809	0.3+	0.5-	1995 01 31	691	0.3+	0.1+
1990 11 11	372	0.3+	0.5+	1990 11 17	809	1.3+	0.1-	1995 02 05	691	0.1+	0.3-
1990 11 15	809	0.5-	1.9+	1990 11 17	809	0.1-	0.2+	1995 02 05	691	0.1+	0.2-
1990 11 15	809	0.0	0.9-	1995 01 31	691	0.3+	0.3+	1995 02 05	691	0.0	0.3-
1990 11 15	809	0.2-	0.8-	1995 01 31	691	0.1-	0.2+				

1990 VV₈ = 1978 EL₂ = 1998 MB₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	120.99523		(2000.0)	P		Q
<i>n</i>	0.20447628	ω	355.09635	-0.99651539	-0.08340721	
<i>a</i>	2.8534751	Ω	180.12358	+0.08264423	-0.98643257	
<i>e</i>	0.0760583	<i>i</i>	15.28456	+0.01127023	-0.14140022	
<i>P</i>	4.82	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1978 03 05	095	0.1+	0.2-	1990 11 16	809	0.1-	0.8-	1998 06 19	704	0.0	0.9+
1990 11 11	809	0.0	0.5+	1990 11 16	809	0.4-	0.5-	1998 06 19	704	0.1+	0.2+
1990 11 11	809	0.5+	0.6+	1990 11 16	809	0.3-	0.0	1998 06 19	704	0.0	0.6+
1990 11 11	809	0.6+	0.4-	1990 11 17	809	1.1+	1.1+	1998 06 25	704	0.3+	1.2-
1990 11 13	809	(1.3-	1.5-)	1990 11 17	809	(0.1+	2.1+)	1998 06 25	704	0.2-	0.4-
1990 11 13	809	0.4-	0.6-	1990 11 17	809	0.9-	1.2+	1998 06 25	704	0.4-	0.5-
1990 11 13	809	0.1+	1.2-	1998 06 19	704	0.5-	1.0+	1998 06 25	704	0.5+	0.6-

1990 WD = 1993 MD₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	184.11862		(2000.0)	P		Q
<i>n</i>	0.28647560	ω	227.79107	+0.76267978	+0.63459858	
<i>a</i>	2.2789998	Ω	92.42712	-0.55045342	+0.73828083	
<i>e</i>	0.2177649	<i>i</i>	7.18242	-0.33958884	+0.22853020	
<i>P</i>	3.44	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1990 11 19	413	0.2-	1.1+	1990 11 25	413	0.4+	0.6-	1993 06 20	675	0.7-	0.2-
1990 11 19	413	0.6-	0.1+	1993 06 17	675	0.5+	0.1-	1993 06 20	675	0.2-	0.1-
1990 11 21	413	0.3+	0.7-	1993 06 17	675	0.4+	0.5+				

1990 WD₁ = 1993 KH₃ = 1998 GX₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	47.51568		(2000.0)	P		Q
<i>n</i>	0.17638172	ω	103.79196	-0.95629461	+0.15300695	
<i>a</i>	3.1489590	Ω	85.44693	-0.24611231	-0.88132481	
<i>e</i>	0.1693195	<i>i</i>	14.47553	+0.15789030	-0.44705197	
<i>P</i>	5.59	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1990 11 11	809	1.7+	0.1-	1993 05 27	010	0.4+	1.3+	1998 04 02	704	0.2+	0.1-
1990 11 11	809	0.6+	0.7-	1993 05 27	010	0.9-	0.4-	1998 04 02	704	1.6-	1.0+
1990 11 11	809	1.1-	1.2-	1993 05 28	010	0.8-	1.3-	1998 04 03	704	0.0	0.1-
1990 11 18	809	0.8+	0.3-	1993 05 29	010	(1.1+	2.4+)	1998 04 03	704	0.1+	0.1+
1990 11 18	809	(0.5+	2.6+)	1993 05 29	010	1.1+	0.4-	1998 04 03	704	0.2-	0.4-
1990 11 18	809	0.7-	1.7+	1993 05 29	010	0.2+	0.9+	1998 04 03	704	0.1-	0.5+
1990 11 20	809	0.2-	0.2+	1998 04 02	704	0.1-	0.4+	1998 04 03	704	0.6+	0.4-
1990 11 20	809	0.2+	0.8+	1998 04 02	704	0.6-	0.1+				
1990 11 20	809	1.4-	0.2-	1998 04 02	704	1.3+	1.1-				

1990 XN = 1998 UK₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	11.55921		(2000.0)	P		Q
<i>n</i>	0.25456320	ω	17.43892	-0.23865766	-0.96483193	
<i>a</i>	2.4656928	Ω	86.47631	+0.87729245	-0.26286623	
<i>e</i>	0.1584081	<i>i</i>	6.33831	+0.41641383	+0.00083098	
<i>P</i>	3.87	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1990 11 14	675	0.4-	0.5+	1998 10 28	327	0.2-	0.3-	1998 11 01	327	0.6-	0.1+
1990 11 14	675	0.1-	0.4+	1998 10 28	327	0.3-	0.0	1998 11 02	327	1.2+	0.2-
1990 11 24	400	(5.0+	4.0+)	1998 10 29	327	0.1-	0.3-	1998 11 02	327	0.4-	0.2-
1990 11 24	400	1.7-	0.5+	1998 10 29	327	0.1+	0.1-	1998 11 02	327	0.8-	0.5-
1990 12 08	400	0.8+	0.5-	1998 10 29	327	(2.7+	0.1+)	1998 11 03	327	0.1+	0.2-
1990 12 08	400	1.1+	0.1+	1998 10 29	327	1.8+	0.3+	1998 11 03	327	0.0	0.0
1990 12 16	400	0.4+	0.8-	1998 10 30	327	0.1+	0.2-	1998 11 03	327	0.5-	0.0
1990 12 16	400	(0.5+	2.6+)	1998 10 30	327	0.1-	0.1-	1998 12 01	699	1.0+	0.3+
1990 12 20	400	(0.2+	4.6-)	1998 10 30	327	0.4+	0.2-	1998 12 01	699	0.7-	0.5+
1990 12 20	400	(1.6+	4.5-)	1998 11 01	327	0.4-	0.0	1998 12 01	699	0.1+	0.8+
1998 10 28	327	0.1-	0.4-	1998 11 01	327	0.4-	0.2+				

1990 XZ = 1998 UJ₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	61.16485		(2000.0)	P		Q
<i>n</i>	0.36840162	ω	323.40008	+0.92006846	-0.23294272	
<i>a</i>	1.9271774	Ω	53.14716	+0.38114791	+0.71811460	
<i>e</i>	0.0779459	<i>i</i>	23.18092	-0.09055553	+0.65578130	
<i>P</i>	2.68	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1990 11 18	675	0.0	0.4+	1998 11 01	327	0.1-	0.6-	1998 11 10	704	0.2+	0.1-
1990 11 18	675	1.9+	0.2+	1998 11 01	327	0.2-	0.6-	1998 11 14	327	0.9-	0.4+

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1990 12 15	675	1.1−	0.5−	1998 11 02	327	0.2−	0.2−	1998 11 14	327	0.8−	0.7+
1990 12 15	675	1.7−	0.0	1998 11 02	327	0.3−	0.2−	1998 11 14	327	0.8−	0.9+
1990 12 18	675	0.3−	0.5+	1998 11 02	327	(2.4−	0.3+)	1998 11 18	704	0.6−	0.3+
1990 12 18	675	0.9+	1.0−	1998 11 03	327	0.1−	0.3−	1998 11 18	704	0.0	0.2−
1991 02 13	801	0.5+	0.2+	1998 11 03	327	0.2+	0.1−	1998 11 18	704	0.8+	0.5+
1991 02 13	801	0.1+	0.1−	1998 11 03	327	0.9+	0.3+	1998 11 18	704	1.0+	0.8−
1991 02 16	801	0.1+	0.3−	1998 11 09	327	0.2−	0.4+	1998 11 18	704	0.7+	0.4−
1991 02 16	801	0.2−	0.6+	1998 11 09	327	0.2−	0.5+	1998 11 21	704	1.6+	0.8+
1998 10 30	704	1.2+	1.4+	1998 11 09	327	0.1+	0.9−	1998 11 21	704	0.5−	0.4−
1998 10 30	704	1.6−	0.9−	1998 11 10	704	1.4−	1.1+	1998 11 21	704	0.3+	1.0−
1998 10 30	704	0.1−	0.0	1998 11 10	704	0.1−	0.3+	1998 11 21	704	0.1+	0.4−
1998 10 30	704	0.7+	0.2+	1998 11 10	704	0.5+	0.2+	1998 11 21	704	0.6−	0.9−
1998 11 01	327	0.2−	0.6−	1998 11 10	704	0.7+	0.4+				

1991 DW = 1998 WH₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	238.87148		(2000.0)	P	Q		
<i>n</i>	0.23530354	ω	162.19301	−0.26943482	+0.91963685		
<i>a</i>	2.5984663	Ω	91.41585	−0.91467895	−0.15154225		
<i>e</i>	0.1029428	<i>i</i>	16.61098	−0.30127612	−0.36235758		
<i>P</i>	4.19	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 02 18	675	0.4−	0.1−	1991 03 18	675	1.9−	0.2+	1998 11 27	120	0.2+	0.2+
1991 02 18	675	0.2−	0.6−	1991 03 18	675	1.2+	0.2−	1998 11 28	120	0.3+	0.5+
1991 02 19	675	0.5+	0.1+	1998 11 27	120	0.5−	0.1+	1998 11 28	120	0.9+	0.4−
1991 02 19	675	0.8+	0.7+	1998 11 27	120	0.5−	0.3−	1998 11 28	120	0.3−	0.2−

1991 FZ = 1952 RU = 1998 WX₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	149.55342		(2000.0)	P	Q		
<i>n</i>	0.24208988	ω	346.32133	+0.98779444	+0.15443746		
<i>a</i>	2.5496758	Ω	4.93118	−0.11123880	+0.79056381		
<i>e</i>	0.0510266	<i>i</i>	13.64525	−0.10903247	+0.59258580		
<i>P</i>	4.07	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1952 09 15	675	0.2+	1.0−	1991 04 02	372	0.8+	0.1+	1998 12 01	704	2.4+	1.0−
1952 09 15	675	0.0	0.8+	1991 04 02	372	1.2+	0.6+	1998 12 01	704	2.9+	0.6+
1991 03 17	372	0.3−	1.9+	1998 11 25	704	2.3−	1.4+	1998 12 01	704	0.6−	0.5+
1991 03 17	372	0.0	0.6−	1998 11 25	704	0.6−	0.2−	1998 12 01	704	0.1+	0.1−
1991 03 19	372	0.3−	3.5−	1998 11 25	704	0.2−	0.8+	1998 12 01	704	0.2+	0.0
1991 03 20	372	1.7−	1.1+	1998 11 25	704	1.6−	1.7−				

1991 LA = 1998 VF₃₄

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	85.72683		(2000.0)	P	Q		
<i>n</i>	0.31163393	ω	242.47420	+0.82659368	+0.56255929		
<i>a</i>	2.1546309	Ω	83.28847	−0.51034722	+0.76154332		
<i>e</i>	0.2071266	<i>i</i>	0.94787	−0.23725219	+0.32183663		
<i>P</i>	3.16	<i>H</i>	17.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 06 03	691	0.3+	0.3+	1998 11 14	691	0.8−	0.4−	1998 11 19	557	0.2−	0.4−
1991 06 03	691	0.3+	0.4+	1998 11 16	691	0.0	0.2−	1998 11 19	557	1.1−	0.1−
1991 06 03	691	0.2+	0.1−	1998 11 16	691	0.4−	0.6−	1998 11 19	557	0.2+	0.3+
1991 06 04	691	0.1−	0.1+	1998 11 16	691	0.1+	0.1−	1998 11 19	910	1.2+	0.5+
1991 06 04	691	0.4+	0.2+	1998 11 17	711	0.7+	0.4+	1998 11 20	360	0.6−	0.3−
1991 06 04	691	0.1+	0.1−	1998 11 17	711	0.1+	0.3+	1998 11 20	360	0.4−	0.2−
1991 06 05	691	0.9−	0.5−	1998 11 17	711	0.2+	0.2+	1998 11 20	360	0.3−	0.4−
1991 06 05	691	0.4−	0.1−	1998 11 17	910	1.7+	0.7+	1998 11 21	684	0.5−	0.1−
1991 06 05	691	0.3+	0.1−	1998 11 17	910	1.7+	0.5+	1998 11 21	684	0.8−	0.3−
1998 11 14	691	0.7−	0.2−	1998 11 18	910	1.3+	0.9+				
1998 11 14	691	0.9−	0.2−	1998 11 19	557	0.5−	0.3−				

1991 LJ₂ = 1984 DQ₂ = 1998 QV₁₀₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Gnädig			
<i>M</i>	52.07730		(2000.0)	P	Q		
<i>n</i>	0.16906628	ω	226.88968	+0.72933220	+0.67277320		
<i>a</i>	3.2391524	Ω	90.41705	−0.58606093	+0.70809983		
<i>e</i>	0.0655334	<i>i</i>	7.14059	−0.35299735	+0.21440815		
<i>P</i>	5.83	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1984 02 26	095	0.0	0.0	1991 06 06	809	0.4−	0.6+	1998 08 25	809	0.0	1.8−
1991 05 18	809	1.1+	0.1+	1991 06 08	809	0.8−	0.2−	1998 08 26	809	0.4−	1.1+
1991 05 18	809	0.3−	0.4−	1991 06 08	809	0.0	0.2−	1998 08 26	809	0.1−	1.1+
1991 05 18	809	0.4+	0.1−	1991 06 08	809	0.3−	0.2−	1998 08 26	809	0.4−	1.0+
1991 06 06	809	0.4+	0.5+	1998 08 25	809	0.5+	0.3−				
1991 06 06	809	0.2−	0.1−	1998 08 25	809	0.3+	1.0−				

1991 PY₃ = 1998 EC₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	282.97724		(2000.0)	P	Q		
<i>n</i>	0.23544130	ω	18.20223	+0.67616387	+0.73663728		
<i>a</i>	2.5974525	Ω	294.34460	−0.67771117	+0.61498344		
<i>e</i>	0.0992314	<i>i</i>	0.81500	−0.28898096	+0.28135544		
<i>P</i>	4.19	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1991 08 03	809	0.0	0.3+	1991 08 05	809	0.7−	1.2−	1998 03 03	809	0.0	0.9−
1991 08 03	809	0.4+	0.6+	1991 08 05	675	0.9+	0.4+	1998 03 04	809	0.6+	1.5+
1991 08 03	809	0.6−	0.3+	1991 08 07	675	0.0	0.4−	1998 03 04	809	0.2−	0.5+
1991 08 05	809	0.6−	0.1−	1991 08 07	675	1.1+	0.2+	1998 03 04	809	0.2−	0.5+
1991 08 05	809	1.7−	0.6−	1998 03 03	809	1.1+	0.6−				
1991 08 05	675	0.8+	0.5+	1998 03 03	809	1.4−	1.0−				

1991 PP₈ = 1989 EB₁₀ = 1997 RK₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	116.64942		(2000.0)	P	Q		
<i>n</i>	0.17843523	ω	252.11762	+0.87344393	+0.48514731		
<i>a</i>	3.1247526	Ω	78.84253	−0.42917176	+0.80736218		
<i>e</i>	0.1662830	<i>i</i>	2.42821	−0.23001588	+0.33585472		
<i>P</i>	5.52	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 03 05	033	0.7+	0.1+	1991 08 10	675	(2.5+	0.0)	1997 09 12	327	0.1+	0.1−
1989 03 05	033	0.6−	0.3−	1991 08 10	675	(1.3+	1.4−)	1997 09 12	327	0.1−	0.3−
1991 08 05	675	0.1+	0.1−	1997 09 01	327	0.1+	0.5+	1997 09 13	327	0.2−	0.4−
1991 08 05	675	0.5+	0.6+	1997 09 01	327	0.2+	0.0	1997 09 13	327	0.1+	0.2−
1991 08 07	675	0.1−	0.1−	1997 09 01	327	0.0	0.2+	1997 09 13	327	0.1+	0.6+
1991 08 07	675	0.2+	0.3−	1997 09 12	327	0.1−	0.3−				

1991 PD₁₁ = 1998 TM₆

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	133.38719		(2000.0)	P	Q		
<i>n</i>	0.30051719	ω	135.17760	+0.12113073	+0.99026273		
<i>a</i>	2.2074447	Ω	141.62507	−0.93890528	+0.13673155		
<i>e</i>	0.1990803	<i>i</i>	6.34499	−0.32215558	−0.02615731		
<i>P</i>	3.28	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 08 05	675	0.2−	0.6−	1998 10 18	809	1.9+	1.9+	1998 11 12	557	0.4−	0.2+
1991 08 07	675	0.3+	0.4+	1998 10 18	809	1.9+	1.3+	1998 11 13	704	0.1+	1.5+
1991 08 07	675	0.4+	0.6+	1998 10 18	809	(1.5+	2.4+)	1998 11 13	704	0.6+	0.5−
1991 08 08	675	0.5+	0.4−	1998 10 19	809	(2.4+	3.4+)	1998 11 13	704	1.2+	0.1−
1991 08 08	675	0.9−	0.9−	1998 10 19	809	(3.1+	3.2+)	1998 11 13	704	1.9+	0.3−
1991 09 14	675	0.0	0.6+	1998 10 19	809	(3.3+	3.9+)	1998 11 13	704	(2.5−	0.7−)

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1991 09 14	675	0.1−	0.4+	1998 10 20	557	0.2+	0.2+	1998 11 16	566	1.6−	1.1−
1998 10 13	557	0.3−	0.4−	1998 10 20	557	0.7−	0.3−	1998 11 16	566	1.2−	1.1−
1998 10 13	557	0.4−	0.5−	1998 11 11	557	0.6−	0.4+	1998 11 16	566	1.6−	0.7−
1998 10 17	557	0.1+	0.7−	1998 11 11	557	0.3−	0.4+				
1998 10 17	557	0.3−	0.8−	1998 11 12	557	0.5−	0.1+				

1991 PJ₁₇ = 1994 NF₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	132.78731		(2000.0)	P	Q		
<i>n</i>	0.31197231	ω	63.42362	+0.75111700	+0.65929966		
<i>a</i>	2.1530726	Ω	255.30967	−0.61746803	+0.68345558		
<i>e</i>	0.1421459	<i>i</i>	2.00663	−0.23357329	+0.31338863		
<i>P</i>	3.16	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 6		

Residuals in seconds of arc

1991 08 06	033	0.7−	0.1+	1991 08 10	675	0.2+	0.0	1994 07 09	809	0.3−	0.5+
1991 08 07	033	0.0	0.4+	1991 08 10	675	0.8−	0.2−	1994 07 09	809	0.4+	0.0
1991 08 07	033	0.2−	1.2+	1994 07 08	809	0.0	0.2−	1994 07 09	809	0.6−	1.2+
1991 08 09	675	0.7+	0.8−	1994 07 08	809	0.0	0.5−				
1991 08 09	675	1.0+	0.6−	1994 07 08	809	0.7+	0.9−				

1991 RF₁ = 1998 VF₁₇

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Williams

<i>M</i>	116.93102		(2000.0)	P	Q		
<i>n</i>	0.29477819	ω	133.99133	+0.20180438	+0.97900533		
<i>a</i>	2.2360035	Ω	147.61878	−0.91324430	+0.19867522		
<i>e</i>	0.2267990	<i>i</i>	3.07170	−0.35392068	+0.04557108		
<i>P</i>	3.34	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1991 08 08	675	0.4−	0.4+	1991 09 11	675	0.6−	0.4−	1998 11 10	704	0.9+	0.9+
1991 08 08	675	0.5+	0.7−	1991 09 11	675	0.8−	1.3−	1998 11 10	704	0.4−	1.2−
1991 09 07	372	0.1−	0.2+	1991 09 15	675	0.7+	1.5−	1998 11 10	704	0.4−	1.1−
1991 09 07	372	(2.8+ 1.3+)		1991 09 15	675	0.0	0.3+	1998 11 10	704	1.2−	0.4+
1991 09 08	691	(3.1− 0.9+)		1991 09 17	675	(3.4− 0.4+)		1998 11 11	704	0.9+	0.7−
1991 09 08	691	(3.2− 1.2+)		1991 09 17	675	0.2+	0.9+	1998 11 11	704	0.2−	0.0
1991 09 08	691	(3.1− 1.1+)		1998 10 20	699	0.2+	0.7−	1998 11 11	704	0.6−	0.4+
1991 09 09	372	0.1+	0.8+	1998 10 20	699	0.3+	0.7+	1998 11 11	704	0.2+	0.3−
1991 09 09	372	0.5+	1.4+	1998 10 20	699	0.1−	0.2+	1998 11 11	704	0.5+	1.4+

1991 RT₁₄ = 1998 FS₂₂

Id. A. Doppler

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Williams

<i>M</i>	151.44077		(2000.0)	P	Q		
<i>n</i>	0.21377215	ω	260.58601	+0.32630183	−0.94415986		
<i>a</i>	2.7701416	Ω	170.00282	+0.93720117	+0.31683664		
<i>e</i>	0.1049723	<i>i</i>	15.26590	+0.12321151	+0.09042511		
<i>P</i>	4.61	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1991 09 11	675	1.7+	1.2+	1998 03 20	704	0.8+	0.2−	1998 03 26	704	0.0	0.9+
1991 09 11	675	1.2−	0.8−	1998 03 20	704	0.9+	0.2−	1998 04 18	704	0.7+	0.7−
1991 09 14	675	0.5+	1.1−	1998 03 20	704	1.4+	0.8−	1998 04 18	704	1.7−	0.2+
1991 09 14	675	0.3−	0.4−	1998 03 22	704	0.1+	0.7+	1998 04 18	704	0.2+	0.6−
1991 09 15	675	0.4−	0.5+	1998 03 22	704	0.2−	0.2−	1998 04 18	704	0.0	1.3+
1991 09 15	675	0.3+	0.5+	1998 03 22	704	1.4+	1.2−	1998 04 29	566	0.3+	0.3−
1991 09 16	675	0.1+	0.0	1998 03 22	704	2.1−	1.7+	1998 04 29	566	0.2+	0.3−
1991 09 16	675	0.6−	0.1−	1998 03 22	704	0.9−	0.4+	1998 04 29	566	0.3+	0.1+
1998 03 20	704	0.4+	0.4+	1998 03 26	704	0.2−	0.1+				
1998 03 20	704	0.3+	0.4−	1998 03 26	704	2.0−	1.1−				

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1991 RU₁₆ = 1981 UG₂ = 1998 TB₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	64.12945		(2000.0)	P	Q		
<i>n</i>	0.28905216	ω	315.63624	+0.97250843	+0.22536147		
<i>a</i>	2.2654365	Ω	31.47850	−0.16989850	+0.85889974		
<i>e</i>	0.1319943	<i>i</i>	6.44871	−0.15925406	+0.45989503		
<i>P</i>	3.41	<i>H</i>	15.8	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1981 10 30	381	0.3−	1.1−	1998 10 15	691	(2.5− 0.3−)	1998 11 09	104	0.8−	0.1−
1981 10 30	381	1.2+	1.4−	1998 10 19	699	0.2− 0.0	1998 11 10	704	0.1−	0.4−
1991 09 15	675	(1.5+ 2.1−)		1998 10 19	699	0.1− 0.3+	1998 11 10	704	0.1+	1.1+
1991 09 15	675	0.8+	0.6−	1998 10 19	699	0.2− 0.5+	1998 11 10	704	0.6−	0.3−
1991 09 17	675	0.2+	1.4−	1998 10 20	691	(2.5− 0.3−)	1998 11 10	704	0.4−	0.6−
1991 09 17	675	1.0+	0.3+	1998 10 20	691	(2.7− 0.2−)	1998 11 10	704	0.0	0.8+
1991 09 30	691	1.1−	0.2+	1998 10 20	691	(2.3− 0.1−)	1998 11 11	704	0.2−	0.4+
1991 09 30	691	0.7−	0.9+	1998 11 08	104	0.1+ 0.7+	1998 11 11	704	0.2+	0.2−
1991 09 30	691	0.1−	0.7+	1998 11 08	104	0.8+ 0.2+	1998 11 11	704	0.5−	0.4+
1998 10 10	699	1.8−	0.1−	1998 11 08	104	0.8+ 0.1−	1998 11 11	704	0.0	0.3+
1998 10 10	699	1.1+	0.8−	1998 11 08	104	1.6+ 0.4−	1998 11 16	566	0.3−	0.4+
1998 10 10	699	0.2−	0.8+	1998 11 08	104	1.0+ 0.4−	1998 11 16	566	0.1−	0.2+
1998 10 15	691	(2.9− 0.1−)		1998 11 09	104	0.6− 0.0	1998 11 16	566	0.4−	0.1−
1998 10 15	691	(2.7− 0.1−)		1998 11 09	104	0.5− 0.0				

1991 RZ₁₆ = 1991 UD₅ = 1986 EF₃ = 1998 VC₃₁Id. G. V. Williams (d, *MPC* 25514), M. Tichý, B. G. Marsden

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Marsden

<i>M</i>	25.95841		(2000.0)	P	Q		
<i>n</i>	0.29319639	ω	355.27469	+0.51051061	−0.85895403		
<i>a</i>	2.2440385	Ω	64.02265	+0.79035705	+0.45054839		
<i>e</i>	0.2050398	<i>i</i>	2.53176	+0.33869551	+0.24331898		
<i>P</i>	3.36	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1986 03 12	809	0.4−	0.9−	1991 10 30	033	0.6−	0.1−	1998 11 16	046	0.1+	0.7+
1991 09 15	675	1.2+	0.8−	1991 10 30	033	0.7−	0.2−	1998 11 25	046	0.0	0.1−
1991 09 15	675	0.8−	0.7+	1998 11 13	046	0.3−	0.1+	1998 11 25	046	0.0	0.1−
1991 09 17	675	0.9−	1.2−	1998 11 13	046	0.1−	0.1+	1998 11 25	046	0.0	0.0
1991 09 17	675	0.6−	0.4−	1998 11 13	046	0.0	0.0	1998 11 25	046	0.0	0.2−
1991 10 02	675	0.2−	0.8+	1998 11 13	046	0.1+	0.2−	1998 11 25	046	0.1+	0.3−
1991 10 02	675	1.1+	0.2+	1998 11 13	046	0.0	0.0	1998 11 25	046	0.3+	0.3−
1991 10 03	675	1.3+	0.9+	1998 11 13	046	0.1−	0.1+	1998 11 28	046	0.1+	0.0
1991 10 03	675	0.5+	0.1+	1998 11 16	046	0.1+	0.0	1998 11 28	046	0.5−	0.1+
1991 10 07	675	1.4+	0.2+	1998 11 16	046	0.1+	0.0	1998 11 28	046	0.3−	0.0
1991 10 07	675	0.3−	0.2+	1998 11 16	046	0.2+	0.0	1998 11 28	046	0.0	0.2+
1991 10 08	675	1.2−	1.3−	1998 11 16	046	0.2+	0.0				

1991 RK₁₇ = 1993 BO₁₄ = 1997 AX₇ = 1998 KL₃₈

Id. A. Doppler

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Williams

<i>M</i>	221.03496		(2000.0)	P	Q		
<i>n</i>	0.24395789	ω	205.88041	+0.19377711	−0.98097134		
<i>a</i>	2.5366437	Ω	232.94862	+0.90269700	+0.18310562		
<i>e</i>	0.1012916	<i>i</i>	0.86648	+0.38417256	+0.06455664		
<i>P</i>	4.04	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 2		

Residuals in seconds of arc

1991 09 11	675	1.6+	1.2+	1997 01 02	691	0.5−	0.4−	1998 05 22	704	0.3+	0.2+
1991 09 11	675	1.1−	0.6+	1997 01 02	691	0.6−	0.4−	1998 05 24	704	0.0	0.9−
1991 09 13	675	0.3+	1.1−	1997 01 02	691	0.3−	0.3−	1998 05 24	704	0.1+	0.2+
1991 09 13	675	1.2−	0.4−	1997 01 10	691	0.1+	0.5−	1998 05 24	704	(0.2+ 2.5−)	
1991 09 16	675	0.2+	1.1−	1997 01 10	691	0.2+	0.4−	1998 05 24	704	0.8−	1.2−
1991 09 16	675	0.8+	0.9−	1997 01 10	691	0.2+	0.7−	1998 05 24	704	(2.8− 0.1+)	
1993 01 23	809	1.0+	0.7+	1998 05 22	704	0.1+	0.0	1998 06 27	699	0.2−	0.0

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1993 01 28 809 0.2+ 0.5+ 1998 05 22 704 1.3- 0.2+ 1998 06 27 699 0.5- 0.0
 1993 01 28 809 0.9- 0.6- 1998 05 22 704 1.9+ 1.1+ 1998 06 27 699 0.2+ 1.7-

1991 TM₁₄ = 1972 TL₁₀ = 1997 FF₂ = 1998 MG₃₅

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	123.53556		(2000.0)		P		Q
<i>n</i>	0.25745457	ω	87.84278	-0.88215886			+0.46760344
<i>a</i>	2.4471973	Ω	120.03163	-0.45373128			-0.81196407
<i>e</i>	0.1195376	<i>i</i>	3.71271	-0.12618904			-0.34937284
<i>P</i>	3.83	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1972 10 09	033	0.0	0.8+	1997 03 31	704	0.7+	1.8+	1998 06 26	704	0.9-	0.4+
1972 10 09	033	0.6+	0.3+	1997 03 31	704	0.6+	0.1+	1998 06 26	704	0.2-	1.0-
1972 10 09	033	0.3-	0.4-	1997 04 01	704	1.1-	1.7+	1998 06 26	704	0.7-	0.6-
1972 10 09	033	0.4-	0.3-	1997 04 01	704	0.8+	1.3+	1998 06 28	809	0.6+	0.1+
1991 10 02	691	1.1-	0.7+	1998 06 24	704	0.8-	1.0-	1998 06 28	809	0.8+	0.1+
1991 10 02	691	0.9-	0.7+	1998 06 24	704	2.5-	0.2-	1998 06 28	809	0.6+	0.1+
1991 10 02	691	0.7-	0.6+	1998 06 24	704	0.2-	0.6+	1998 07 01	809	0.6+	0.7+
1991 10 07	675	1.3+	1.0+	1998 06 24	704	1.9-	2.1+	1998 07 01	809	1.8+	1.0+
1991 10 07	675	0.5+	0.7-	1998 06 24	704	0.3-	0.5+	1998 07 01	809	2.7+	1.1+
1991 10 08	675	0.0	0.1-	1998 06 26	704	0.4-	1.4-				

1991 UQ₁ = 1984 SC₄ = 1998 VG₃₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	17.30051		(2000.0)		P		Q
<i>n</i>	0.28445672	ω	22.66373	+0.47979378			-0.87243851
<i>a</i>	2.2897703	Ω	38.83867	+0.78054317			+0.37602615
<i>e</i>	0.1809814	<i>i</i>	8.52810	+0.40068726			+0.31217846
<i>P</i>	3.46	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1984 09 28	033	0.1-	0.3-	1991 11 26	400	0.5+	0.6-	1998 11 21	704	0.1+	0.3-
1984 09 28	033	0.5+	0.3-	1991 12 04	399	0.6-	0.1-	1998 11 21	704	0.1+	0.4+
1991 10 17	675	0.8-	0.5-	1991 12 04	399	0.3-	0.6-	1998 11 21	704	0.0	0.6+
1991 10 29	400	0.1+	0.2+	1991 12 07	399	0.3-	0.8+	1998 11 24	704	(2.2+	0.1+)
1991 10 29	400	(2.6-	0.8+)	1991 12 07	399	(2.5-	1.0+)	1998 11 24	704	0.9+	0.4-
1991 10 31	400	0.2+	0.1+	1998 11 15	894	1.8-	1.0+	1998 11 24	704	0.6+	1.3-
1991 10 31	400	0.5-	0.3+	1998 11 15	894	(3.4-	1.3+)	1998 11 24	704	0.2-	1.0-
1991 11 02	400	0.2-	0.2-	1998 11 19	894	(3.1-	0.5+)	1998 11 24	704	0.3+	1.2-
1991 11 02	400	0.8+	0.0	1998 11 19	894	0.9-	1.1+	1998 11 25	894	(2.7-	2.1+)
1991 11 05	095	0.4+	1.1+	1998 11 21	704	0.6+	0.1+	1998 11 25	894	(1.8-	2.3+)
1991 11 26	400	0.1-	0.6+	1998 11 21	704	0.5+	0.3+				

1991 UV₁ = 1984 UH₁ = 1998 VS₃₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	0.76308		(2000.0)		P		Q
<i>n</i>	0.28275356	ω	41.16291	+0.28841501			-0.95534568
<i>a</i>	2.2989560	Ω	32.22707	+0.84391653			+0.22191356
<i>e</i>	0.1721872	<i>i</i>	6.92272	+0.45235126			+0.19511278
<i>P</i>	3.49	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1984 10 28	046	2.2-	1.4+	1991 10 31	399	1.5-	2.5-	1998 11 10	704	0.0	0.3-
1984 10 28	046	0.9+	1.2+	1991 10 31	399	0.7-	0.9+	1998 11 11	704	1.4-	1.2-
1991 10 18	399	1.1+	0.6+	1991 11 09	399	1.4+	0.7+	1998 11 11	704	0.4-	0.2-
1991 10 18	399	1.7+	1.4-	1991 11 09	399	0.8-	0.6+	1998 11 11	704	0.1-	0.5+
1991 10 19	399	1.3+	0.3-	1998 11 10	704	0.8+	0.4-	1998 11 11	704	0.4+	0.4+
1991 10 19	399	1.8+	0.0	1998 11 10	704	0.4+	0.1+	1998 11 11	704	0.1-	0.5+
1991 10 29	399	2.9-	1.2-	1998 11 10	704	0.3+	0.3-				
1991 10 29	399	0.3-	0.6+	1998 11 10	704	0.4+	0.3+				

1991 UV₃ = 1998 KV₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	172.38050		(2000.0)		P		Q
<i>n</i>	0.21907908	ω	223.36604	-0.18862438			-0.97340307
<i>a</i>	2.7252234	Ω	237.90888	+0.93773017			-0.13919904
<i>e</i>	0.1700188	<i>i</i>	8.82860	+0.29168985			-0.18196179
<i>P</i>	4.50	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1991 10 31	399	1.1-	0.1-	1991 11 09	399	0.2+	0.6-	1998 05 24	704	0.4+	0.8-
1991 10 31	399	0.1-	0.1-	1998 05 22	704	0.3-	0.7+	1998 05 24	704	0.4-	0.3-
1991 11 05	399	1.2+	0.8+	1998 05 22	704	0.4-	0.4-	1998 05 24	704	0.6+	0.2-
1991 11 05	399	0.1-	1.2-	1998 05 22	704	0.9+	1.0+	1998 05 24	704	0.9-	0.9+
1991 11 09	399	0.0	1.3+	1998 05 22	704	0.2+	0.9-				

1991 VP₃ = 1978 EQ₃ = 1998 SR₂₃

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	273.97683		(2000.0)		P		Q
<i>n</i>	0.27054807	ω	80.74022	-0.64195111			-0.75958175
<i>a</i>	2.3675896	Ω	49.73028	+0.63863950			-0.60516996
<i>e</i>	0.0899605	<i>i</i>	7.87694	+0.42430928			-0.23833775
<i>P</i>	3.64	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 03 06	095	0.1-	0.5-	1991 11 09	399	1.8-	1.2-	1998 09 18	704	1.1+	0.5+
1991 10 17	675	0.3-	0.7+	1991 11 09	399	1.8+	0.7+	1998 09 18	704	0.7+	0.6+
1991 10 31	399	(6.8+	5.7-)	1998 09 14	704	1.4+	0.4-	1998 09 18	704	0.7-	0.1-
1991 10 31	399	(3.8+	4.2-)	1998 09 14	704	0.6+	0.5-	1998 09 18	704	0.6+	0.6+
1991 11 04	691	0.4-	0.2+	1998 09 14	704	0.4-	0.7-	1998 09 24	699	0.3-	0.6-
1991 11 04	691	0.4-	0.3+	1998 09 17	699	0.6-	0.0	1998 09 24	699	0.4-	0.2-
1991 11 04	691	0.4-	0.6+	1998 09 17	699	0.2-	0.7+	1998 09 24	699	0.5-	0.1+
1991 11 04	399	0.4-	1.3-	1998 09 17	699	0.0	0.2-				
1991 11 04	399	1.5+	0.5+	1998 09 18	704	0.8-	0.4-				

1991 VA₉ = 1998 SM₁₂₇

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	244.93051		(2000.0)		P		Q
<i>n</i>	0.27333431	ω	104.89804	-0.95714663			-0.26596564
<i>a</i>	2.3514727	Ω	59.79420	+0.18730653			-0.87032242
<i>e</i>	0.0598723	<i>i</i>	7.61996	+0.22087687			-0.41448904
<i>P</i>	3.61	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 10 17	675	0.4-	1.8-	1991 11 08	691	0.1-	0.1-	1998 09 27	704	0.3-	0.3-
1991 11 04	691	0.7+	0.9+	1991 11 08	691	0.1+	0.4-	1998 10 28	704	0.3+	0.0
1991 11 04	691	0.0	0.5+	1998 09 26	704	0.8-	0.6+	1998 10 28	704	0.7-	0.9-
1991 11 04	691	0.1-	0.4+	1998 09 26	704	0.7+	0.7-	1998 10 28	704	0.2+	0.0
1991 11 06	691	0.3-	0.8+	1998 09 26	704	0.4+	0.9-	1998 10 28	704	1.4+	1.3+
1991 11 06	691	0.1-	0.4+	1998 09 26	704	0.1+	0.0	1998 10 29	704	1.7+	0.4+
1991 11 06	691	0.2-	0.2+	1998 09 26	704	0.3-	1.1+	1998 10 29	704	0.3+	1.4-
1991 11 08	691	0.1+	0.2-	1998 09 27	704	0.7-	0.0	1998 10 29	704	0.6+	0.2+
1991 11 08	691	0.0	0.5-	1998 09 27	704	0.3-	0.1-	1998 10 29	704	0.8+	0.5+
1991 11 08	691	0.1+	0.4+	1998 09 27	704	1.1-	0.5+	1998 10 29	704	1.1-	0.4-
1991 11 08	691	0.1+	0.4-	1998 09 27	704	1.0-	0.2-				

1992 DL₆ = 1998 HP₁₀₀

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	40.73201		(2000.0)			P		Q		
<i>n</i>	0.18192099	ω	110.79573			-0.63478726		+0.77174424		
<i>a</i>	3.0847088	Ω	119.74189			-0.72426560		-0.57707519		
<i>e</i>	0.0953792	<i>i</i>	2.51874			-0.26922940		-0.26719853		
<i>P</i>	5.42	<i>H</i>	14.6		<i>G</i>	0.15		<i>U</i>	6	
Residuals in seconds of arc										
1992 02 29	809	0.6-	0.3+	1998 04 21	704	0.0	1.6+	1998 05 01	704	0.7+ 0.0
1992 03 03	809	0.1-	0.2-	1998 04 22	704	0.3+	1.3-	1998 05 01	704	0.3+ 0.5+
1992 03 07	809	0.7+	0.0	1998 04 22	704	0.1+	0.7-	1998 05 24	704	0.4- 0.8+
1998 04 21	704	1.0-	0.8+	1998 04 22	704	0.2-	0.0	1998 05 24	704	1.6+ 1.4-
1998 04 21	704	0.2-	1.1+	1998 04 22	704	1.0-	2.9-	1998 05 24	704	1.3- 0.9+
1998 04 21	704	0.6-	1.0+	1998 05 01	704	0.7+	2.0-	1998 05 24	704	0.4+ 0.9+
1998 04 21	704	0.9+	1.4+	1998 05 01	704	0.3-	0.7-			

1992 DM₇ = 1998 MC₂₀

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	161.02039		(2000.0)	P		Q					
<i>n</i>	0.19566986	ω	2.03397	-0.68758695		-0.72505374					
<i>a</i>	2.9384621	Ω	131.40827	+0.66544927		-0.65073382					
<i>e</i>	0.0442726	<i>i</i>	2.98091	+0.29051927		-0.22548297					
<i>P</i>	5.04	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1992 02 29	809	0.2+	0.2+	1998 05 24	704	1.5+	0.8-	1998 06 24	704	0.3+	0.9+
1992 03 03	809	0.3-	0.0	1998 05 24	704	1.4-	1.4+	1998 06 24	704	0.2+	0.8+
1992 03 07	809	0.1+	0.2-	1998 05 24	704	2.0-	1.0-	1998 06 26	704	1.0-	0.6+
1998 05 24	704	0.7+	0.0	1998 06 24	704	0.1-	1.0-	1998 06 26	704	0.7+	0.6-
1998 05 24	704	1.2+	0.3+	1998 06 24	704	0.3-	1.4-	1998 06 26	704	0.3+	0.7+

1992 DW₇ = 1998 UP₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	336.46594			(2000.0)			P		Q		
<i>n</i>	0.25881655		ω	37.53116			-0.33280708		-0.94197576		
<i>a</i>	2.4386044		Ω	71.94550			+0.85362594		-0.32069149		
<i>e</i>	0.1011816		<i>i</i>	2.64230			+0.40070213		-0.09918995		
<i>P</i>	3.81		<i>H</i>	14.1			<i>G</i>	0.15	<i>U</i>	7	
Residuals in seconds of arc											
1992 02 29	809	0.2+	0.2-	1998 10 22	327	0.3-	1.7+	1998 10 23	327	0.1-	0.5-
1992 03 03	809	0.1+	0.2+	1998 10 22	327	0.5+	0.8+	1998 10 23	327	0.1+	0.7-
1992 03 07	809	0.3-	0.0	1998 10 22	327	0.4-	0.7-	1998 10 23	327	0.2+	0.6-

1992 DX₇ = 1998 HR₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	100.73257		(2000.0)			P		Q			
<i>n</i>	0.17295791	ω	109.16503			-0.66148841		-0.74932722			
<i>a</i>	3.1903801	Ω	22.33807			+0.65416483		-0.59652541			
<i>e</i>	0.1350538	<i>i</i>	4.63137			+0.36674441		-0.28751721			
<i>P</i>	5.70	<i>H</i>	15.0			<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc											
1992 02 29	809	0.2-	0.0	1998 04 20	704	0.0	0.8+	1998 04 22	704	0.1+	1.1-
1992 03 03	809	0.1-	0.6+	1998 04 20	704	(0.9-	2.4-)	1998 04 22	704	0.5+	0.6+
1992 03 07	809	0.3+	0.6-	1998 04 20	704	1.2-	1.1-	1998 04 22	704	(1.4-	2.4+)
1998 04 20	704	0.6+	0.6-	1998 04 22	704	0.1+	1.4+				

1992 DX₈ = 1998 WB₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	356.04424		(2000.0)		P		Q		
<i>n</i>	0.25693820	ω	10.90417		+0.09911154		-0.99353412		
<i>a</i>	2.4504750	Ω	73.42526		+0.90856187		+0.06765719		
<i>e</i>	0.0901809	<i>i</i>	3.31240		+0.40582290		+0.09117267		
<i>P</i>	3.84	<i>H</i>	14.3		<i>G</i>	0.15	<i>U</i>	7	
Residuals in seconds of arc									
1992 02 29	809	1.1-	1.3-	1998 11 21	704	1.5+	0.4-	1998 11 24	704 0.4- 0.3+
1992 03 03	809	0.2+	0.6+	1998 11 21	704	1.0+	0.5-	1998 11 24	704 0.6- 0.3+
1992 03 07	809	0.9+	0.7+	1998 11 21	704	0.8+	2.0-	1998 11 24	704 0.3- 1.3+
1998 11 21	704	0.3-	0.4+	1998 11 24	704	0.5-	0.0		
1998 11 21	704	0.1-	0.3+	1998 11 24	704	1.1-	0.1+		

1992 EV₈ = 1998 QU₁₀₅

Id. B. G. Marsden, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	303.50609		(2000.0)		P		Q				
<i>n</i>	0.23635737	ω	316.90644		+0.06581707		-0.99058442				
<i>a</i>	2.5907368	Ω	128.95404		+0.95231564		+0.02643807				
<i>e</i>	0.0496641	<i>i</i>	8.88013		+0.29793126		+0.13432621				
<i>P</i>	4.17	<i>H</i>	15.5		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1992 03 02	809	0.0	0.1-	1998 08 25	809	(1.0+	1.7+)	1998 08 26	809	0.1-	0.3+
1992 03 05	809	0.0	0.1+	1998 08 25	809	0.2-	0.6+	1998 08 26	809	0.7-	0.3-
1992 03 07	809	0.1+	0.1-	1998 08 25	809	0.0	0.8-	1998 08 26	809	1.0+	0.1+

1992 EY₈ = 1998 KL₅₇

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	109.31165		(2000.0)			P		Q			
<i>n</i>	0.18342711	ω	38.47458			-0.86200824		-0.49459172			
<i>a</i>	3.0677999	Ω	111.53897			+0.43051786		-0.82994857			
<i>e</i>	0.1100791	<i>i</i>	6.85358			+0.26757461		-0.25800079			
<i>P</i>	5.37	<i>H</i>	14.5			<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc											
1992 03 02	809	0.4+	0.3-	1998 05 22	704	0.9+	0.4+	1998 05 24	704	1.4-	0.2-
1992 03 05	809	0.2-	0.0	1998 05 22	704	0.4-	0.5+	1998 05 24	704	1.2+	0.8-
1992 03 07	809	0.2-	0.3+	1998 05 22	704	1.1+	0.3+	1998 05 24	704	0.5-	0.7+
1998 05 22	704	1.2-	1.0-	1998 05 24	704	0.3+	0.0	1998 05 24	704	(2.4-	1.0-)

1992 EN₁₂ = 1998 SB₆₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	277.39251		(2000.0)		P			Q			
<i>n</i>	0.24110758	ω	28.45761		-0.59255819			-0.80376186			
<i>a</i>	2.5565962	Ω	97.92981		+0.72848087			-0.56295008			
<i>e</i>	0.0728533	<i>i</i>	3.08526		+0.34378833			-0.19249436			
<i>P</i>	4.09	<i>H</i>	14.1		<i>G</i>	0.15		<i>U</i>	4		
Residuals in seconds of arc											
1992 02 29	809	1.1+	2.6+	1998 09 18	704	0.2-	1.4+	1998 09 27	704	0.6-	0.8-
1992 03 06	809	2.3-	1.5-	1998 09 18	704	0.1+	1.4+	1998 09 27	704	0.3-	0.2+
1992 03 08	809	0.0	1.3-	1998 09 18	704	0.0	1.5+	1998 09 27	704	1.1-	1.0-
1992 03 09	809	0.3+	0.7-	1998 09 25	699	0.7+	0.7-	1998 10 28	704	0.5+	1.6+
1992 04 06	809	1.0+	1.0+	1998 09 25	699	0.7+	0.4-	1998 10 28	704	0.2-	1.0-
1998 09 14	704	0.7+	1.0-	1998 09 25	699	0.3+	0.6+	1998 10 28	704	0.2+	0.2-
1998 09 14	704	0.6-	0.2+	1998 09 26	704	0.4+	1.5-	1998 10 28	704	0.0	0.1+
1998 09 14	704	0.4-	0.2-	1998 09 26	704	0.2-	0.4-	1998 10 28	704	1.3-	1.5-
1998 09 17	699	0.9+	0.2+	1998 09 26	704	1.0-	2.3-	1998 10 29	704	1.4+	1.5+
1998 09 17	699	0.8+	0.8+	1998 09 26	704	1.0-	1.2-	1998 10 29	704	1.0-	0.1-
1998 09 17	699	0.9+	0.9+	1998 09 26	704	0.4+	0.9-	1998 10 29	704	0.6+	2.4+

1998 DEC. 8

M.P.C. 33231

1998 09 18	704	0.6−	0.6−	1998 09 27	704	1.0+	0.5+	1998 10 29	704	0.2+	0.9−
1998 09 18	704	0.7−	1.3+	1998 09 27	704	0.2−	0.2+	1998 10 29	704	0.4−	0.1+

1992 ER₁₃ = 1998 MH₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	87.05693		(2000.0)	P	Q
<i>n</i>	0.18287359	ω	346.14563	−0.99962859	+0.01445950
<i>a</i>	3.0739872	Ω	194.74132	−0.00643270	−0.94887505
<i>e</i>	0.1730120	<i>i</i>	5.20853	−0.02648195	−0.31532057
<i>P</i>	5.39	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 03 02	809	0.3−	0.5+	1998 06 16	691	0.1−	0.1+	1998 06 21	691	0.2−	0.2−
1992 03 05	809	0.2−	0.4+	1998 06 16	691	0.5+	0.4+	1998 06 21	691	0.1+	0.2−
1992 03 09	809	0.5+	0.9−	1998 06 16	691	0.3−	0.2+	1998 06 21	691	0.1−	0.3−

1992 ED₁₄ = 1994 WX₃ = 1998 VZ₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	64.07916		(2000.0)	P	Q
<i>n</i>	0.24187648	ω	170.63209	+0.96882777	+0.24742347
<i>a</i>	2.5511753	Ω	174.99096	−0.23551070	+0.93542191
<i>e</i>	0.2075262	<i>i</i>	8.18111	−0.07686001	+0.25252222
<i>P</i>	4.07	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 03 02	809	0.6+	1.0+	1994 11 29	399	0.8+	0.2+	1998 11 18	399	0.8+	0.0
1992 03 05	809	0.1+	0.1−	1994 11 29	399	1.8−	0.0	1998 11 18	399	0.5−	0.8−
1992 03 09	809	0.1−	0.7−	1998 10 28	399	0.3+	1.4−	1998 11 19	399	0.6−	0.8+
1992 04 07	809	0.8−	0.8−	1998 10 28	399	0.8+	0.8−	1998 11 19	399	1.4−	0.8+
1994 11 28	399	1.0+	0.5+	1998 11 12	399	1.2+	0.2+	1998 11 22	399	1.0−	0.4−
1994 11 28	399	0.1−	0.0	1998 11 12	399	0.2−	0.1+	1998 11 22	399	0.7+	0.5+

1992 EW₁₆ = 1998 VW₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	113.75585		(2000.0)	P	Q
<i>n</i>	0.23753692	ω	333.19122	+0.50728406	+0.86092477
<i>a</i>	2.5821530	Ω	327.25105	−0.77740065	+0.43795239
<i>e</i>	0.1220399	<i>i</i>	4.06623	−0.37190203	+0.25885564
<i>P</i>	4.15	<i>H</i>	12.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 03 01	809	0.0	0.3+	1992 04 07	809	0.1+	0.1−	1998 11 11	888	0.2−	0.0
1992 03 03	809	1.0−	0.0	1998 11 11	888	0.2+	0.2+	1998 11 12	888	0.0	0.2−
1992 03 06	809	0.9+	0.2−	1998 11 11	888	0.0	0.1−	1998 11 12	888	0.1−	0.2+

1992 GC₈ = 1998 VH₃₀

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	123.05241		(2000.0)	P	Q
<i>n</i>	0.23207397	ω	205.25434	+0.52050866	+0.84786433
<i>a</i>	2.6225177	Ω	96.25937	−0.76514850	+0.51564823
<i>e</i>	0.0501131	<i>i</i>	5.83044	−0.37897034	+0.12342194
<i>P</i>	4.25	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 04 02	033	0.6+	0.4+	1998 10 19	699	0.0	0.7+	1998 11 21	704	0.5−	0.5−
1992 04 04	033	0.3+	0.1−	1998 10 19	699	0.4+	0.7−	1998 11 21	704	0.5−	0.6−
1992 04 04	033	0.9−	1.1−	1998 11 10	704	0.3−	0.9+	1998 11 21	704	0.8+	1.3−
1992 04 29	033	0.3−	0.0	1998 11 10	704	0.4+	0.2−	1998 11 21	704	1.4−	0.2+
1992 04 29	033	0.2+	0.0	1998 11 10	704	0.8−	1.4+	1998 11 21	704	1.2−	1.2+
1992 04 30	033	0.3+	0.9+	1998 11 10	704	0.6+	0.8+	1998 11 24	704	0.1−	0.5−
1992 05 03	033	0.0	0.3+	1998 11 11	704	0.3+	0.6−	1998 11 24	704	0.4+	0.3+
1992 05 04	033	0.5−	0.1+	1998 11 11	704	0.7+	0.5−	1998 11 24	704	0.1−	0.1+

1992 05 05	033	0.3+	0.3−	1998 11 11	704	0.7+	0.8−	1998 11 24	704	0.4+	0.4+
1998 10 19	699	0.1+	0.3−	1998 11 11	704	(1.2+	3.7−)				

1992 OJ₉ = 1997 SS₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	47.78616		(2000.0)	P	Q
<i>n</i>	0.22522139	ω	92.96158	−0.06875224	−0.99763264
<i>a</i>	2.6754466	Ω	0.98449	+0.87721586	−0.06116815
<i>e</i>	0.2937778	<i>i</i>	4.99792	+0.47514784	−0.03142561
<i>P</i>	4.38	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 7

Residuals in seconds of arc

1992 07 27	809	0.8−	1.3+	1992 07 28	809	1.0+	0.3−	1997 09 23	684	0.9−	0.3−
1992 07 27	809	0.7−	1.0+	1992 07 30	809	0.1−	1.0−	1997 09 23	684	0.7−	0.1−
1992 07 27	809	0.4−	1.4+	1992 07 30	809	0.1−	1.0−	1997 09 24	684	0.2+	0.2−
1992 07 28	809	0.3+	0.0	1992 07 30	809	0.3+	1.2−	1997 09 24	684	0.6+	0.3+
1992 07 28	809	0.5+	0.1−	1997 09 23	684	0.2+	0.6+	1997 09 24	684	0.5+	0.2−

1992 PU = 1994 BD₃ = 1998 FR₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	259.10398		(2000.0)	P	Q
<i>n</i>	0.27300387	ω	129.41226	+0.98082024	+0.19269838
<i>a</i>	2.3533698	Ω	219.50248	−0.18998271	+0.91152255
<i>e</i>	0.1091927	<i>i</i>	2.64082	−0.04356874	+0.36330975
<i>P</i>	3.61	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 08 04	675	0.8+	0.7−	1992 08 09	010	1.0−	1.0−	1998 03 20	704	(2.1−	1.0−)
1992 08 05	675	1.5+	0.3−	1992 08 09	010	(2.2−	0.5−)	1998 03 20	704	0.5+	1.2+
1992 08 05	675	1.0+	0.4+	1994 01 16	010	0.8−	0.5+	1998 03 20	704	0.2−	0.8+
1992 08 07	675	(3.2+	0.2−)	1994 01 16	010	1.0−	0.6−	1998 03 22	704	0.3+	0.4+
1992 08 07	675	0.5+	0.0	1994 01 17	010	0.7+	0.3+	1998 03 22	704	0.0	0.8−
1992 08 08	010	0.8−	0.6+	1994 01 17	010	0.8+	0.2+	1998 03 22	704	1.1+	0.5+
1992 08 08	010	1.0−	0.3+	1994 01 17	010	0.4+	0.3−	1998 03 22	704	0.5−	1.2−
1992 08 08	010	1.3−	0.6+	1998 03 20	704	1.6−	0.6−				
1992 08 09	010	0.4+	0.2+	1998 03 20	704	0.5+	0.0				

1992 PV₂ = 1987 SP₂₃ = 1998 VD₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	81.04272		(2000.0)	P	Q
<i>n</i>	0.18922196	ω	57.62216	+0.85733661	+0.49057664
<i>a</i>	3.0048423	Ω	272.56741	−0.50896411	+0.76256241
<i>e</i>	0.1238157	<i>i</i>	8.97877	−0.07700311	+0.42170265
<i>P</i>	5.21	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1987 09 23	095	0.3−	0.7+	1992 08 07	675	0.5+	1.8−	1998 11 10	704	0.3−	1.5+
1992 08 02	675	(2.8−	0.7−)	1992 08 07	675	1.3−	0.0	1998 11 10	704	0.1−	0.5+
1992 08 02	675	1.2−	1.5−	1992 08 23	675	0.3+	0.9+	1998 11 10	704	0.1+	0.5+
1992 08 06	675	0.3+	0.4−	1992 08 23	675	1.0+	0.2+	1998 11 11	704	1.2+	0.3+
1992 08 06	675	0.5+	0.0	1992 08 28	675	0.2+	0.1+	1998 11 11	704	0.3−	0.0
1992 08 06	675	0.1+	0.3+	1992 08 28	675	0.8+	1.0−	1998 11 11	704	0.6+	0.4+
1992 08 06	675	0.8+	0.9−	1998 10 03	699	0.5+	1.3−	1998 11 11	704	0.5−	0.3+
1992 08 06	675	0.0	1.7+	1998 10 03	699	0.3−	1.0−	1998 11 11	704	0.3+	0.9−
1992 08 06	675	0.7−	0.6+	1998 10 03	699	0.6−	0.1−	1998 11 11	704	0.6−	0.5+
1992 08 07	675	0.1+	0.3+	1998 11 10	704	0.3−	0.7−	1998 11 11	704	1.1+	1.1−
1992 08 07	675	1.4−	0.9+	1998 11 10	704	0.9−	0.5+				

1992 PP₆ = 1985 PY = 1995 KO₅ = 1998 FL₈₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	267.86403		(2000.0)	P	Q	Doppler	
<i>n</i>	0.27788978	ω	218.41553	+0.97800810	+0.17235674		
<i>a</i>	2.3257035	Ω	131.23876	-0.13077711	+0.94542768		
<i>e</i>	0.0649185	<i>i</i>	8.98542	-0.16247311	+0.27651339		
<i>P</i>	3.55	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 2		

Residuals in seconds of arc

1985 08 14	688	2.7-	0.4-	1992 08 07	809	1.5-	1.1-	1998 03 24	704	0.2-	0.0
1985 08 14	688	2.3+	2.0+	1992 08 07	809	0.9-	1.2-	1998 03 24	704	0.3-	0.1-
1992 08 05	809	1.1-	0.3+	1992 08 08	809	1.0+	0.0	1998 03 24	704	0.5-	0.4+
1992 08 05	809	0.9-	0.2+	1992 08 08	809	1.1+	0.1+	1998 03 24	704	0.2+	0.9+
1992 08 05	809	0.6-	0.1+	1992 08 08	809	1.3+	0.2+	1998 03 25	704	0.1+	0.2-
1992 08 06	809	1.0+	0.3+	1995 05 24	693	0.3+	0.6-	1998 03 25	704	0.3+	0.1+
1992 08 06	809	1.1+	0.2+	1995 05 24	693	0.1+	0.5+	1998 03 25	704	0.4+	0.3-
1992 08 06	809	1.3+	0.0	1995 05 25	693	0.2+	0.0	1998 03 25	704	0.3+	0.6-
1992 08 07	809	1.5-	0.9-	1995 05 25	693	0.5-	0.6+	1998 03 25	704	0.3-	0.4-

1992 SM₂ = 1996 TU₃₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	323.13462		(2000.0)	P	Q	Doppler	
<i>n</i>	0.24455562	ω	218.87020	-0.58493546	+0.80891140		
<i>a</i>	2.5325087	Ω	15.62354	-0.67834699	-0.44784399		
<i>e</i>	0.1129019	<i>i</i>	12.71337	-0.44463003	-0.38091745		
<i>P</i>	4.03	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 6		

Residuals in seconds of arc

1992 09 21	033	1.4+	0.9-	1992 09 25	691	1.7-	0.3+	1996 10 08	809	0.4-	0.1-
1992 09 22	033	1.0+	0.3+	1992 09 25	691	1.5-	0.5+	1996 10 08	809	1.0-	0.9-
1992 09 23	033	0.7+	0.8-	1992 09 26	033	1.7+	0.3-	1996 10 08	809	0.7+	0.7-
1992 09 24	691	0.6+	0.6+	1992 09 27	033	1.0+	0.6-	1996 10 10	809	0.0	0.4+
1992 09 24	691	1.2-	0.6+	1992 09 28	033	0.8+	1.0-	1996 10 10	809	1.0-	0.1+
1992 09 24	691	1.5-	0.6+	1996 10 07	809	0.4+	0.5+	1996 10 10	809	0.6-	0.2+
1992 09 24	033	(2.2+	0.5-)	1996 10 07	809	1.2+	0.1-				
1992 09 25	691	1.1-	0.7+	1996 10 07	809	0.5+	0.5+				

1992 SY₉ = 1998 EG₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	115.60795		(2000.0)	P	Q	Doppler	
<i>n</i>	0.25253279	ω	313.65495	-0.47794831	-0.87837913		
<i>a</i>	2.4788916	Ω	164.89513	+0.81019248	-0.44256955		
<i>e</i>	0.0652455	<i>i</i>	0.86600	+0.33934284	-0.18050565		
<i>P</i>	3.90	<i>H</i>	18.0	<i>G</i> 0.15	<i>U</i> 7		

Residuals in seconds of arc

1992 09 27	691	0.5-	0.4-	1992 09 28	691	0.4-	0.5-	1998 03 03	809	0.3+	0.1-
1992 09 27	691	0.6-	0.2-	1992 09 29	691	(2.4+	1.1+)	1998 03 03	809	0.1-	0.2+
1992 09 27	691	0.7+	0.2-	1992 09 29	691	0.0	0.6+	1998 03 04	809	0.1-	0.6+
1992 09 28	691	0.8+	0.2-	1992 09 29	691	0.6-	0.9+	1998 03 04	809	0.2-	0.1-
1992 09 28	691	0.7+	0.0	1998 03 03	809	0.0	0.0	1998 03 04	809	0.0	0.6-

1992 SB₁₀ = 1981 EV₃₉ = 1995 JL

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	99.59165		(2000.0)	P	Q	Doppler	
<i>n</i>	0.21787762	ω	232.32579	+0.60568501	-0.79570422		
<i>a</i>	2.7352328	Ω	180.39795	+0.75731800	+0.57672659		
<i>e</i>	0.0545656	<i>i</i>	5.59947	+0.24416206	+0.18504388		
<i>P</i>	4.52	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1981 02 13	413	0.2+	0.4+	1992 09 27	691	(2.3+	0.0)	1992 09 29	691	0.2-	0.0
1981 03 02	413	0.7-	0.8+	1992 09 28	691	1.0+	0.2-	1992 09 29	691	0.5-	0.1+
1981 03 03	413	0.1-	0.2-	1992 09 28	691	0.1-	0.3+	1995 05 01	691	0.4+	0.2+

1981 03 03	413	(5.1-	4.2+)	1992 09 28	691	0.1+	0.0	1995 05 01	691	0.0	0.6+
1981 03 07	413	0.9+	0.1-	1992 09 28	691	0.6-	0.2-	1995 05 08	691	0.3-	0.4-
1981 03 07	413	(3.5-	2.4+)	1992 09 28	691	0.2-	0.2+	1995 05 08	691	0.0	0.4+
1992 09 27	691	0.1-	0.2+	1992 09 28	691	0.4+	0.1-	1995 05 08	691	0.0	0.3-
1992 09 27	691	0.2-	0.3+	1992 09 29	691	0.0	0.3+				

1992 ST₁₇ = 1998 HG₅₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	154.86281		(2000.0)	P	Q	Doppler	
<i>n</i>	0.27046916	ω	300.43117	-0.48591823	-0.87400044		
<i>a</i>	2.3680501	Ω	178.63351	+0.83452392	-0.46484720		
<i>e</i>	0.0665247	<i>i</i>	6.23656	+0.25971773	-0.14156384		
<i>P</i>	3.64	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 6		

Residuals in seconds of arc

1992 09 21	033	0.7+	1.0+	1992 09 28	033	0.1-	0.3+	1998 04 21	910	0.5+	0.2-
1992 09 21	033	0.7-	1.1-	1998 04 21	704	0.3+	0.3+	1998 04 21	910	0.7+	0.3-
1992 09 22	033	0.2-	0.4-	1998 04 21	704	0.2+	0.7+	1998 04 22	704	0.5-	0.6+
1992 09 24	033	0.2-	0.6+	1998 04 21	704	0.6+	0.1-	1998 04 22	704	0.3-	0.1+
1992 09 24	033	0.0	0.4-	1998 04 21	704	0.0	0.8-	1998 04 22	704	1.2-	0.1+
1992 09 26	033	0.2+	0.1+	1998 04 21	704	0.4+	0.4-	1998 04 22	704	0.2-	0.2-
1992 09 27	033	0.4+	0.2-	1998 04 21	910	0.6+	0.3-	1998 04 22	704	1.2-	0.5+

1992 WK₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	49.29229		(2000.0)	P	Q	Williams	
<i>n</i>	0.17605616	ω	324.53270	+0.72753008	-0.61542327		
<i>a</i>	3.1528398	Ω	76.38230	+0.67916533	+0.58346043		
<i>e</i>	0.2072499	<i>i</i>	18.18044	+0.09713099	+0.52993219		
<i>P</i>	5.60	<i>H</i>	12.1	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1990 05 25	675	0.4-	0.8-	1992 11 18	400	0.9-	0.2+	1998 11 29	825	0.3-	0.2+
1990 05 25	675	1.0+	2.0+	1992 11 27	400	1.6+	0.2+	1998 11 29	825	0.0	0.0
1992 11 17	691	0.5-	0.3+	1992 11 27	400	1.1+	0.7-	1998 11 29	825	0.2-	0.1+
1992 11 17	691	0.1-	0.3+	1992 12 17	399	1.2-	1.1+	1998 12 02	825	0.4+	0.9-
1992 11 17	691	0.1-	0.2+	1992 12 17	399	0.6-	0.3+	1998 12 02	825	0.1-	0.3-
1992 11 17	400	0.4-	0.2-	1998 11 19	825	0.1-	0.1+	1998 12 02	825	0.4+	0.3-
1992 11 17	400	0.1-	0.2+	1998 11 19	825	0.1-	0.5+				
1992 11 18	400	0.4+	0.6-	1998 11 19	825	0.1+	0.4+				

1993 DN = 1998 WK₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	294.24512		(2000.0)	P	Q	Urata	
<i>n</i>	0.29971850	ω	213.64209	-0.83626778	-0.54287621		
<i>a</i>	2.2113646	Ω	293.29403	+0.51975718	-0.74005066		
<i>e</i>	0.0780884	<i>i</i>	4.81407	+0.17466732	-0.39700181		
<i>P</i>	3.29	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1993 02 15	399	0.2+	0.9-	1993 02 25	399	0.5+	1.4+	1998 11 22	385	0.4+	0.2-
1993 02 15	399	0.3-	1.6-	1993 03 24	675	0.8+	1.5-	1998 11 22	385	0.5-	0.4+
1993 02 21	399	0.3-	0.8+	1993 03 24	675	0.8-	0.7+	1998 11 22	385	0.4+	0.2+
1993 02 21	399	0.0	1.0+	1998 11 19	905	0.2+	0.7-	1998 11 22	888	0.6-	0.2+
1993 02 25	399	(0.9-	2.7+)	1998 11 19	905	0.2+	0.4-	1998 11 22	888	0.0	0.4+

1993 FQ₁ = 1998 SK₂₅

Id. A. Doppler

1998 DEC. 8

M.P.C. 33233

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	138.33238	(2000.0)	P		Q	
<i>n</i>	0.26604452	ω	123.26078	-0.13790478	+0.98729949	
<i>a</i>	2.3942335	Ω	138.58424	-0.94376073	-0.10682471	
<i>e</i>	0.1009318	<i>i</i>	6.84825	-0.30049617	-0.11759333	
<i>P</i>	3.70	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 23	675	0.2+	0.8-	1993 03 29	399	0.2+	0.7+	1998 09 24	699	0.3+	0.6-
1993 03 23	675	0.4+	0.7+	1993 03 29	399	0.5+	0.0	1998 09 24	699	0.5+	0.1+
1993 03 25	399	1.3-	0.0	1998 09 22	699	1.0-	0.5+	1998 10 17	699	0.5-	0.1-
1993 03 25	399	0.2-	0.8+	1998 09 22	699	0.0	0.6+	1998 10 17	699	0.4+	0.4+
1993 03 26	399	0.0	0.6-	1998 09 22	699	0.3+	0.4-	1998 10 17	699	0.2+	0.0
1993 03 26	399	0.2+	0.8-	1998 09 24	699	0.2-	0.5-				

1993 FM₅ = 1997 CU₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	259.79269	(2000.0)	P		Q	
<i>n</i>	0.22774958	ω	296.84943	+0.75400118	-0.65582459	
<i>a</i>	2.6556102	Ω	104.15712	+0.61543354	+0.68556416	
<i>e</i>	0.1136733	<i>i</i>	2.19273	+0.22961659	+0.31606310	
<i>P</i>	4.33	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1993 03 17	809	0.2-	1.2+	1993 03 23	691	0.7-	1.3-	1997 02 07	691	0.1+	0.1+
1993 03 18	809	1.0+	0.3-	1993 03 23	691	0.4-	1.1-	1997 02 11	691	0.2-	0.0
1993 03 23	809	1.0+	0.1+	1997 02 07	691	0.2-	0.2+	1997 02 11	691	0.1-	0.3-
1993 03 23	691	0.6-	1.5+	1997 02 07	691	0.3+	0.4+	1997 02 11	691	0.0	0.4-

1993 FH₁₁ = 1998 SL₇₉

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	27.54282	(2000.0)	P		Q	
<i>n</i>	0.26523202	ω	342.61128	+0.99597889	-0.05976452	
<i>a</i>	2.3991206	Ω	21.15603	+0.08667600	+0.83122052	
<i>e</i>	0.1513023	<i>i</i>	10.65660	-0.02265640	+0.55272113	
<i>P</i>	3.72	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 17	809	1.2+	0.3-	1998 09 24	699	0.6+	0.4+	1998 09 27	704	1.2+	0.9-
1993 03 18	809	0.1+	0.6+	1998 09 24	699	0.5+	0.2+	1998 09 27	704	0.8-	0.3+
1993 03 23	809	0.2+	0.4+	1998 09 26	704	0.4-	0.5+	1998 09 27	704	0.3-	0.1+
1993 03 23	691	0.6-	0.3-	1998 09 26	704	0.8-	0.1-	1998 09 27	704	0.8-	0.8-
1993 03 23	691	0.6-	0.5-	1998 09 26	704	0.7-	0.2-	1998 10 12	699	0.0	0.2-
1993 03 23	691	0.5-	0.4-	1998 09 26	704	0.0	0.3-	1998 10 12	699	0.3+	0.0
1993 04 16	413	(7.3-	2.1+)	1998 09 26	704	(2.3-	0.9+)	1998 10 12	699	0.4+	0.3-
1998 09 24	699	0.8+	0.4+	1998 09 27	704	0.1+	0.5+				

1993 FX₁₁ = 1998 VN₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	187.77423	(2000.0)	P		Q	
<i>n</i>	0.27775574	ω	200.48401	-0.51586220	+0.85449428	
<i>a</i>	2.3264516	Ω	38.53102	-0.77171137	-0.43258477	
<i>e</i>	0.1128487	<i>i</i>	5.62315	-0.37195127	-0.28759335	
<i>P</i>	3.55	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 17	809	0.4-	0.2-	1998 11 10	910	0.0	0.1+	1998 11 13	910	0.3-	0.0
1993 03 18	809	0.4-	0.1-	1998 11 10	910	0.0	0.0	1998 11 13	910	0.0	0.4-
1993 03 23	809	0.2+	0.2+	1998 11 10	910	0.1+	0.1+				
1993 04 16	413	0.6+	0.1+	1998 11 13	910	0.2+	0.3+				

1993 FK₁₃ = 1998 WE₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	105.66310	(2000.0)	P		Q	
<i>n</i>	0.27470835	ω	272.22906	+0.70917069	+0.69998178	
<i>a</i>	2.3436251	Ω	43.36159	-0.58820765	+0.65331597	
<i>e</i>	0.1279603	<i>i</i>	7.05048	-0.38870128	+0.28845060	
<i>P</i>	3.59	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 17	809	0.7-	0.3+	1998 11 21	704	0.8-	0.5-	1998 11 24	704	0.5-	0.9+
1993 03 18	809	0.0	0.6+	1998 11 21	704	0.2+	0.0	1998 11 24	704	0.1+	0.3-
1993 03 23	809	0.5+	0.9-	1998 11 21	704	0.3+	0.1-	1998 11 24	704	0.3+	0.1+
1993 04 16	413	0.2+	0.1-	1998 11 21	704	0.2+	0.5+	1998 11 24	704	0.2+	0.6-

1993 FV₁₆ = 1979 SA₁₅ = 1997 JD₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	89.46039	(2000.0)	P		Q	
<i>n</i>	0.26321959	ω	211.89580	+0.69874184	+0.71417966	
<i>a</i>	2.4113333	Ω	102.46737	-0.64712808	+0.65564759	
<i>e</i>	0.1721189	<i>i</i>	2.42530	-0.30493455	+0.24509927	
<i>P</i>	3.74	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1979 09 20	675	0.1+	0.3+	1993 03 24	691	1.1-	0.2+	1997 05 01	910	0.5+	0.0
1979 09 21	675	0.2-	0.3-	1993 03 24	691	0.8-	0.1-	1997 05 02	910	0.7-	0.0
1993 03 19	809	1.2+	0.0	1993 03 24	691	0.8-	0.1-	1997 05 02	910	0.6-	0.1-
1993 03 20	809	0.7+	0.3-	1997 05 01	910	0.4+	0.2+	1997 05 03	910	0.4-	0.1-
1993 03 23	809	0.9+	0.3+	1997 05 01	910	0.8+	0.0				

1993 FO₂₀ = 1998 UH₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	186.83407	(2000.0)	P		Q	
<i>n</i>	0.27241040	ω	105.14584	-0.67899482	+0.73255766	
<i>a</i>	2.3567866	Ω	121.98558	-0.69350781	-0.61847718	
<i>e</i>	0.0782184	<i>i</i>	3.25918	-0.24085878	-0.28433299	
<i>P</i>	3.62	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 19	809	0.5-	0.1-	1993 03 24	691	0.1+	0.3+	1998 10 23	910	0.2+	0.2+
1993 03 20	809	0.6+	0.1-	1993 03 24	691	0.3-	0.0	1998 10 23	910	0.1+	0.2+
1993 03 23	809	(1.7+	1.9+)	1998 10 22	910	0.1-	0.1-	1998 10 23	910	0.2+	0.2+
1993 03 24	809	0.2+	0.1-	1998 10 22	910	0.1-	0.3-				
1993 03 24	691	0.3-	0.1+	1998 10 22	910	0.1-	0.1-				

1993 FQ₂₁ = 1997 CB₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	336.61620	(2000.0)	P		Q	
<i>n</i>	0.21881933	ω	333.08736	+0.85397952	+0.52029920	
<i>a</i>	2.7273797	Ω	355.55733	-0.47067666	+0.77023312	
<i>e</i>	0.0850411	<i>i</i>	2.05701	-0.22177120	+0.36882202	
<i>P</i>	4.50	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1993 03 21	809	0.7-	0.3+	1997 02 01	691	0.0	0.1+	1997 02 06	691	0.4-	0.0
1993 03 22	809	0.4+	0.6+	1997 02 01	691	0.2+	0.3-	1997 02 06	691	0.1+	0.1+
1993 03 26	809	0.5+	1.2-	1997 02 01	691	0.3+	0.1+				
1993 03 27	809	0.2-	0.3+	1997 02 06	691	0.1-	0.1-				

1993 FX₂₁ = 1998 OV

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	62.03168		(2000.0)	P		Q					
<i>n</i>	0.23825554	ω	82.07800	+0.21683865		+0.97602819					
<i>a</i>	2.5769582	Ω	200.47453	−0.91540406		+0.19663797					
<i>e</i>	0.0390829	<i>i</i>	3.06574	−0.33914069		+0.09328706					
<i>P</i>	4.14	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1993 03 21	809	0.2−	0.2−	1998 07 20	910	0.3−	0.1−	1998 07 21	910	0.5+	0.0
1993 03 22	809	0.3+	0.0	1998 07 20	910	0.5−	0.2−	1998 07 21	910	0.2+	0.1+
1993 03 26	809	0.2−	0.7−	1998 07 20	910	0.5−	0.0				
1993 03 27	809	0.0	0.9+	1998 07 21	910	0.6+	0.2+				

1993 FU₂₅ = 1998 HE₇₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	216.96521		(2000.0)	P		Q					
<i>n</i>	0.20925556	ω	147.88147	+0.64782700	−0.76075046						
<i>a</i>	2.8098602	Ω	261.70864	+0.69015947	+0.60819685						
<i>e</i>	0.0845325	<i>i</i>	2.30135	+0.32249045	+0.22661716						
<i>P</i>	4.71	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	8				
Residuals in seconds of arc											
1993 03 21	809	1.3+	0.0	1998 04 21	704	0.0	0.9−	1998 04 22	704	0.7+	0.2+
1993 03 22	809	1.7−	0.1−	1998 04 21	704	0.3−	0.0	1998 04 22	704	0.2+	0.4+
1993 03 22	809	0.2+	0.2+	1998 04 21	704	1.3+	0.3−	1998 04 22	704	0.5−	0.5+
1993 03 26	809	0.3+	0.1−	1998 04 21	704	1.5−	0.5+	1998 04 22	704	0.6−	0.1+
1998 04 21	704	0.3+	0.4+	1998 04 22	704	0.5+	0.7−				

1993 FA₂₈ = 1998 VL₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	43.55502		(2000.0)	P		Q					
<i>n</i>	0.28882610	ω	51.38084	+0.83731335		−0.54612405					
<i>a</i>	2.2666185	Ω	341.67615	+0.47290605		+0.74695540					
<i>e</i>	0.0897441	<i>i</i>	4.66892	+0.27434690		+0.37921782					
<i>P</i>	3.41	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1993 03 21	809	(3.0−	0.9+)	1998 11 16	758	2.0−	0.1−	1998 11 18	758	1.5+	0.4−
1993 03 22	809	0.2+	0.3−	1998 11 16	758	0.5+	0.1−	1998 11 19	758	0.3+	0.2−
1993 03 26	809	1.1+	0.1−	1998 11 16	758	0.1−	0.4+	1998 11 19	758	0.6−	0.2−
1993 04 17	413	1.4−	0.4+	1998 11 17	758	0.3+	0.7+	1998 11 19	758	0.3−	0.4−
1998 11 15	758	0.8+	0.3+	1998 11 17	758	0.1−	1.2−	1998 11 20	758	0.2−	0.1+
1998 11 15	758	0.2−	1.0+	1998 11 17	758	0.1+	0.4+	1998 11 20	758	0.4−	0.3−
1998 11 15	758	0.6+	0.1−	1998 11 18	758	0.3−	0.0				

1993 FT₃₉ = 1997 HJ₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	230.24336		(2000.0)	P		Q					
<i>n</i>	0.26023140	ω	125.12566	−0.78121834		−0.62385303					
<i>a</i>	2.4297574	Ω	16.31428	+0.54355452		−0.69749042					
<i>e</i>	0.1249902	<i>i</i>	4.58984	+0.30699574		−0.35258263					
<i>P</i>	3.79	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1993 03 19	809	0.3−	0.1−	1997 04 30	704	0.1−	0.1−	1997 05 01	704	0.4+	0.4+
1993 03 20	809	0.4+	0.2+	1997 04 30	704	0.7+	0.9−	1997 05 01	704	0.1−	0.2−
1993 03 24	809	1.0−	0.1−	1997 04 30	704	0.4+	0.6+	1997 05 01	704	0.4+	0.0
1993 03 24	809	0.9+	0.1+	1997 04 30	704	0.8−	0.3−				
1997 04 30	704	0.2−	0.6+	1997 05 01	704	0.6−	0.0				

1993 FJ₄₀ = 1993 HJ₈ = 1998 VE₃₅Id. S. Nakano (d, *MPC* 29577), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	307.59748		(2000.0)	P		Q					
<i>n</i>	0.28667214	<i>ω</i>	314.72413	−0.57208814	−0.82001504						
<i>a</i>	2.2779581	<i>Ω</i>	170.12969	+0.77781577	−0.54900634						
<i>e</i>	0.0501365	<i>i</i>	5.70626	+0.26022643	−0.16176331						
<i>P</i>	3.44	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1993 03 19	809	0.5−	0.4+	1998 11 15	120	0.1+	0.0	1998 11 26	120	1.1−	0.1−
1993 03 20	809	0.0	0.2+	1998 11 15	120	0.6+	0.3+	1998 11 27	120	0.1+	0.2−
1993 03 24	809	0.6−	0.6+	1998 11 26	120	0.5+	0.7+	1998 11 27	120	0.2+	0.7−
1993 04 16	413	1.1+	1.2−	1998 11 26	120	0.4−	0.2−				

1993 FV₄₈ = 1989 CZ₆ = 1998 SC₁₄₇

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	154.22840		(2000.0)	P		Q					
<i>n</i>	0.27002640	ω	71.62146	−0.27656768		+0.96098240					
<i>a</i>	2.3706379	Ω	182.33919	−0.92020278		−0.26626814					
<i>e</i>	0.0857200	<i>i</i>	6.77051	−0.27701472		−0.07492738					
<i>P</i>	3.65	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1989 02 04	809	0.5−	0.2−	1998 09 21	809	0.4−	0.6−	1998 10 29	704	0.3−	0.1−
1989 02 04	809	0.2−	0.3+	1998 09 21	809	0.4−	1.3−	1998 10 29	704	1.3−	0.7−
1989 02 04	809	0.9+	0.5+	1998 09 21	809	0.8−	0.1−	1998 11 10	704	0.1+	2.0+
1993 03 19	809	0.1−	1.0−	1998 10 28	704	0.5+	0.0	1998 11 10	704	0.0	0.5−
1993 03 20	809	0.2−	0.8−	1998 10 28	704	1.1+	1.0−	1998 11 10	704	0.1−	0.8+
1993 03 24	809	0.3−	0.3−	1998 10 28	704	0.1+	0.5+	1998 11 11	704	1.3+	1.1+
1993 04 16	413	(0.8−	3.7−)	1998 10 28	704	0.4+	0.5−	1998 11 11	704	(1.1+	2.8+)
1998 09 20	809	0.1+	0.1−	1998 10 29	704	0.2−	0.3−	1998 11 11	704	1.8+	1.2+
1998 09 20	809	0.2+	0.4−	1998 10 29	704	0.5−	0.5−	1998 11 11	704	1.0+	0.4−
1998 09 20	809	0.6−	0.5−	1998 10 29	704	1.6−	0.6−	1998 11 11	704	(2.4+	1.5+)

1993 FV₈₂ = 1991 RY₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	82.72475		(2000.0)	P			Q				
n	0.30440497	ω	303.10947	+0.90392173			−0.42483581				
a	2.1886092	Ω	82.07342	+0.40714612			+0.81935661				
e	0.2020412	i	2.85872	+0.13098684			+0.38492762				
P	3.24	H	15.5	G	0.15		U	5			
Residuals in seconds of arc											
1991 09 12	675	0.5+	0.2+	1991 09 14	675	0.7−	0.2+	1993 03 24	691	0.2−	0.0
1991 09 12	675	0.0	0.1+	1993 03 19	809	0.6−	0.3−	1993 03 24	691	0.2−	0.0
1991 09 14	675	0.3+	0.5−	1993 03 23	809	1.2+	0.3+	1993 03 24	691	0.1−	0.1−

1993 GN = 1998 VF₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	232.61723		(2000.0)	P		Q					
n	0.28003444	ω	155.11385	−0.92853871	+0.36095992						
a	2.3138139	Ω	46.33647	−0.35751221	−0.80652028						
e	0.1462259	i	6.88660	−0.10000447	−0.46822321						
P	3.52	H	14.5	G	0.15	U	5				
Residuals in seconds of arc											
1993 04 14	894	0.1−	1.0+	1993 04 25	361	0.0	1.3−	1998 11 10	704	1.9−	0.1−
1993 04 14	894	0.5−	1.9+	1993 04 25	361	1.8+	0.0	1998 11 10	704	1.7−	0.2+
1993 04 15	675	0.2+	0.4−	1993 04 25	361	1.2+	2.6−	1998 11 11	704	0.2+	0.6+
1993 04 15	675	0.1−	0.3−	1993 04 26	894	0.5−	1.0−	1998 11 11	704	0.0	0.3−
1993 04 16	675	0.0	0.3−	1993 04 26	894	0.3−	1.8+	1998 11 11	704	0.6+	1.4−
1993 04 16	675	0.1+	0.2−	1993 04 27	894	0.2−	0.1−	1998 11 11	704	0.1−	0.3+
1993 04 16	894	0.5−	0.3+	1993 04 27	894	0.4−	1.0+	1998 11 11	699	0.6+	0.2−
1993 04 16	894	1.0−	0.9−	1993 05 15	361	1.7+	1.5+	1998 11 11	704	0.1+	0.5+

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1993 04 17	894	0.4−	0.1−	1993 05 15	361	1.0+	0.5+	1998 11 11	699	1.1+	0.1−
1993 04 17	894	1.2−	0.5+	1993 05 15	361	0.2−	0.5+	1998 11 11	699	0.6+	0.9+
1993 04 19	675	0.4−	0.3−	1998 11 10	704	0.3+	0.6+				
1993 04 19	675	0.7+	0.0	1998 11 10	704	0.5−	0.7+				

1993 GF₁ = 1998 HD₁₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	332.92497		(2000.0)	P	Q						
<i>n</i>	0.18632396	ω	235.55989	+0.04510810	+0.99079321						
<i>a</i>	3.0359195	Ω	37.66339	−0.83428036	+0.10764704						
<i>e</i>	0.0735783	<i>i</i>	12.05846	−0.54949207	−0.08210312						
<i>P</i>	5.29	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	6				

Residuals in seconds of arc

1993 04 15	675	0.5+	0.2+	1998 04 19	704	0.4+	0.9−	1998 04 20	704	0.3+	0.3−
1993 04 15	675	0.7+	0.4−	1998 04 19	704	0.1−	0.1−	1998 04 20	704	0.9+	0.1−
1993 04 16	675	0.4−	0.0	1998 04 19	704	0.9+	1.2+	1998 04 20	704	0.3−	0.6+
1993 04 16	675	1.2−	0.1+	1998 04 19	704	0.2+	0.3−	1998 04 20	704	1.2−	0.2+
1993 04 19	675	0.2+	0.1−	1998 04 19	704	1.6−	0.3+				
1993 04 19	675	0.2+	0.2+	1998 04 20	704	0.5+	0.6−				

1993 HJ₄ = 1998 FK₈₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	143.91163		(2000.0)	P	Q						
<i>n</i>	0.17731345	ω	15.24297	+0.50599062	−0.85019431						
<i>a</i>	3.1379181	Ω	44.62524	+0.76813965	+0.36748160						
<i>e</i>	0.1073243	<i>i</i>	11.94628	+0.39234547	+0.37699723						
<i>P</i>	5.56	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	7				

Residuals in seconds of arc

1993 04 20	691	1.0−	0.1−	1993 04 22	691	1.1+	0.3+	1998 03 24	704	0.3+	1.7+
1993 04 20	691	0.3−	0.1+	1993 04 22	691	1.7+	0.4+	1998 03 24	704	0.8+	1.6−
1993 04 21	691	0.4−	0.1+	1993 04 22	691	0.2−	0.4+	1998 03 25	704	1.8−	0.4−
1993 04 21	691	0.4−	0.0	1993 04 24	691	0.8−	0.1+	1998 03 25	704	1.0−	0.2+
1993 04 21	691	0.4−	0.2+	1993 04 24	691	0.3+	0.2−	1998 03 25	704	(2.0−	0.7−)
1993 04 22	691	0.4+	0.3−	1993 04 24	691	0.2−	0.7−	1998 03 25	704	0.1−	0.2−
1993 04 22	691	0.2+	0.0	1998 03 24	704	1.8+	0.2+				
1993 04 22	691	0.1−	0.3−	1998 03 24	704	(2.5+	0.8+)				

1993 JW = 1978 WJ₁₈ = 1998 GR₃

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	7.07680		(2000.0)	P	Q						
<i>n</i>	0.17053521	ω	159.22651	−0.65915167	+0.72373019						
<i>a</i>	3.2205251	Ω	68.92366	−0.71715526	−0.52321660						
<i>e</i>	0.0729614	<i>i</i>	12.64646	−0.22629054	−0.44995445						
<i>P</i>	5.78	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1978 11 30	675	0.6−	0.1+	1993 05 15	809	0.5−	0.4+	1998 04 02	704	0.2+	0.0
1978 12 01	675	0.5+	0.1+	1993 05 23	809	0.0	0.5+	1998 04 02	704	0.5−	0.1+
1993 05 14	809	0.0	0.1+	1993 05 23	809	0.1+	0.0	1998 04 03	704	0.7+	0.6−
1993 05 14	809	0.2−	0.2+	1993 05 23	809	1.0+	0.4−	1998 04 03	704	0.1+	0.4+
1993 05 14	809	0.7−	0.9+	1998 04 02	704	0.5+	0.4−	1998 04 03	704	0.4−	0.3+
1993 05 15	809	0.5+	1.1−	1998 04 02	704	0.8−	0.4+	1998 04 03	704	0.7+	0.5+
1993 05 15	809	0.1−	0.3−	1998 04 02	704	0.0	0.9−	1998 04 03	704	0.4−	0.1+

1993 KF = 1998 HE₁₄₅

Id. A. Doppler

M.P.C. 33235

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	211.43295		(2000.0)	P	Q						
<i>n</i>	0.18883611	ω	331.40499	+0.57693819	−0.79440904						
<i>a</i>	3.0089342	Ω	82.74130	+0.78110202	+0.46864838						
<i>e</i>	0.0706723	<i>i</i>	11.03566	+0.23879273	+0.38637154						
<i>P</i>	5.22	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1993 05 16	894	0.5+	0.4−	1993 05 25	894	0.3−	0.5−	1998 04 23	704	0.3−	0.3+
1993 05 16	894	0.0	0.4−	1993 05 25	894	0.9+	0.4−	1998 04 23	704	0.9+	1.3+
1993 05 20	894	1.0+	0.7−	1998 04 21	704	0.3+	0.6−	1998 04 23	704	0.1+	1.9+
1993 05 20	894	1.0−	0.5+	1998 04 21	704	1.0−	1.2−	1998 05 01	699	0.5+	0.5−
1993 05 23	691	0.4−	0.8+	1998 04 21	704	0.2−	0.8−	1998 05 01	699	0.6+	1.3−
1993 05 23	691	0.3−	0.1+	1998 04 21	704	0.4−	0.4+	1998 05 01	699	0.2+	1.1−
1993 05 23	691	0.7−	0.2+	1998 04 21	704	0.6+	0.4+	1998 06 02	699	0.6+	0.1−
1993 05 23	894	0.2−	0.3−	1998 04 23	704	0.5−	0.9+	1998 06 02	699	0.4−	0.0
1993 05 23	894	0.5+	1.2+	1998 04 23	704	0.6−	0.3+	1998 06 02	699	0.3−	0.1+

1993 OP₃ = 1986 WR₁₀ = 1998 VL₅

Id. T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	343.01766		(2000.0)	P	Q						
<i>n</i>	0.24491531	ω	137.32565	−0.03911762	−0.99797027						
<i>a</i>	2.5300286	Ω	314.84690	+0.89660954	−0.01285651						
<i>e</i>	0.1061344	<i>i</i>	4.06432	+0.44109086	−0.06237027						
<i>P</i>	4.02	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1986 11 30	381	0.0	0.5+	1993 07 24	809	0.9−	0.1−	1998 11 11	704	0.1+	0.5−
1986 11 30	381	0.5−	0.3−	1993 07 24	809	(2.8+	1.8−)	1998 11 11	704	0.1−	0.4+
1986 12 01	381	0.7+	0.8+	1998 11 08	905	0.5−	0.2+	1998 11 11	704	0.7+	0.1+
1986 12 01	381	0.2−	0.7−	1998 11 08	905	0.6+	0.6+	1998 11 11	704	1.0−	0.2+
1993 07 13	809	1.7+	0.3+	1998 11 09	905	(1.0−	2.3+)	1998 11 11	888	0.0	0.1−
1993 07 13	809	0.1−	0.4−	1998 11 09	905	0.4−	0.4+	1998 11 11	888	0.1+	0.2−
1993 07 13	809	0.5+	0.1−	1998 11 10	704	0.0	0.4−	1998 11 11	886	1.5+	1.6−
1993 07 20	809	0.2−	1.1+	1998 11 10	704	0.9−	0.1−	1998 11 11	886	0.7−	0.5+
1993 07 20	809	0.3−	1.4+	1998 11 10	704	0.8+	0.0	1998 11 13	385	1.0−	0.0
1993 07 20	809	1.8−	0.6+	1998 11 10	704	0.4+	0.3+	1998 11 13	385	0.3+	0.2+
1993 07 20	809	1.1+	0.6−	1998 11 10	704	0.1−	0.2+	1998 11 19	886	0.1−	0.0
1993 07 20	809	0.0	1.1−	1998 11 10	888	0.1−	0.1+	1998 11 19	886	0.0	0.3−
1993 07 20	809	0.1−	0.9−	1998 11 11	704	0.6+	0.3−				

1993 PV₅ = 1988 SG₄ = 1998 MB₄₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	337.71512		(2000.0)	P	Q						
<i>n</i>	0.18341435	ω	48.56908	+0.98662444	−0.11703521						
<i>a</i>	3.0679423	Ω	317.78369	+0.04384018	+0.86094204						
<i>e</i>	0.1236947	<i>i</i>	9.72203	+0.15700398	+0.49505713						
<i>P</i>	5.37	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1988 09 16	095	0.6−	0.4+	1993 08 16	010	1.0+	0.1−	1998 06 24	704	1.0−	0.3+
1988 09 16	095	0.4+	0.0	1993 08 19	010	0.1−	0.1+	1998 06 24	704	0.7−	0.7−
1993 08 15	010	0.2+	0.4+	1993 08 19	010	1.1−	0.3+	1998 06 26	704	0.7+	0.6+
1993 08 15	010	0.5−	0.2−	1993 08 20	010	0.1−	0.0	1998 06 26	704	0.7+	1.6+
1993 08 16	010	0.4+	0.7−	1998 06 24	704	0.1−	0.9−	1998 06 26	704	0.2+	0.4−
1993 08 16	010	0.7+	0.6−	1998 06 24	704	(2.3−	1.3+)				

1993 QN = 1998 VT₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	95.89697		(2000.0)	P	Q
<i>n</i>	0.23145629	ω	47.92357	+0.92164263	-0.10507680
<i>a</i>	2.6271814	Ω	314.07551	-0.19057718	+0.71597153
<i>e</i>	0.2902710	<i>i</i>	31.32869	+0.33801656	+0.69017652
<i>P</i>	4.26	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 08 20	675	0.2+	2.1+	1993 11 08	658	0.4-	0.7-	1993 11 23	658	0.7+	0.0
1993 08 20	675	0.9-	0.3-	1993 11 08	658	0.3-	0.7-	1998 11 15	703	0.1-	0.5+
1993 08 23	675	3.5-	2.3-	1993 11 08	658	0.6-	0.5-	1998 11 15	703	0.5+	0.1+
1993 08 23	675	1.3-	2.2-	1993 11 08	658	0.5-	0.5-	1998 11 15	703	0.3-	0.9+
1993 09 12	675	2.1+	1.2+	1993 11 11	801	0.6+	0.6-	1998 11 16	703	1.5+	0.7-
1993 09 12	675	2.9+	2.5+	1993 11 11	801	0.8-	0.1-	1998 11 16	703	0.1-	0.1+
1993 09 15	675	0.4+	1.5+	1993 11 23	658	0.5+	0.1-				
1993 09 15	675	0.2-	0.9+	1993 11 23	658	1.4+	0.2-				

1993 QN₃ = 1998 UT₂₀

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	122.85307		(2000.0)	P	Q
<i>n</i>	0.22222998	ω	134.33792	+0.41118627	+0.91109197
<i>a</i>	2.6994023	Ω	159.88664	-0.85844672	+0.39771287
<i>e</i>	0.0572882	<i>i</i>	4.82687	-0.30658617	+0.10833233
<i>P</i>	4.44	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 08 18	010	0.5-	0.6-	1993 08 24	809	0.4-	0.9+	1998 10 29	120	0.4+	0.4-
1993 08 19	010	0.7-	1.2-	1993 08 24	809	0.6-	0.4+	1998 10 30	120	(3.9+	2.2-)
1993 08 19	010	0.6-	1.4-	1993 09 19	010	1.1+	0.1-	1998 10 30	120	1.5+	0.9-
1993 08 19	010	0.0	0.9-	1993 09 19	010	0.9+	0.1-	1998 11 15	120	0.2+	0.2+
1993 08 20	809	(2.2+	1.3+)	1993 09 20	010	(0.9-	2.8-)	1998 11 15	120	0.2-	0.4+
1993 08 20	809	1.0+	1.1+	1993 09 20	010	0.9-	0.2-	1998 11 27	120	0.8-	0.1+
1993 08 20	809	1.7+	1.1+	1993 09 20	010	0.6-	0.5+	1998 11 27	120	0.6-	0.5+
1993 08 24	809	0.5-	0.7+	1998 10 29	120	0.5-	0.1-				

1993 QQ₅ = 1998 VN₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	60.80664		(2000.0)	P	Q
<i>n</i>	0.21656932	ω	155.51291	+0.97717774	+0.21170786
<i>a</i>	2.7462375	Ω	192.30268	-0.20587805	+0.92367855
<i>e</i>	0.1261269	<i>i</i>	4.68943	-0.05232499	+0.31937082
<i>P</i>	4.55	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 08 17	010	0.5+	0.5+	1993 09 18	010	0.3+	0.2+	1998 11 11	704	0.4+	0.4-
1993 08 19	010	0.0	0.2-	1998 11 10	704	1.2+	1.0-	1998 11 11	704	0.4-	0.2+
1993 08 19	010	0.2-	0.1-	1998 11 10	704	2.0-	0.2-	1998 11 11	704	0.1-	0.3+
1993 08 19	010	0.3-	0.2-	1998 11 10	704	1.1+	0.3+	1998 11 11	704	0.6+	0.4-
1993 09 18	010	0.9-	0.7-	1998 11 10	704	1.1-	0.1+				
1993 09 18	010	0.6+	0.5+	1998 11 11	704	0.3+	1.1+				

1993 RZ₃ = 1992 FG₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	295.74439		(2000.0)	P	Q
<i>n</i>	0.28270482	ω	258.79282	-0.46303288	+0.88615284
<i>a</i>	2.2992203	Ω	343.58670	-0.78589297	-0.42000053
<i>e</i>	0.1427631	<i>i</i>	3.70663	-0.40984484	-0.19578736
<i>P</i>	3.49	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 03 26	691	0.3-	0.7-	1993 09 15	809	0.9-	0.9-	1993 09 17	809	0.4+	0.4-
1992 03 26	691	0.2-	0.2-	1993 09 15	809	0.7-	0.7-	1993 09 18	675	1.1+	0.7+

1992 03 26	691	0.1-	0.1-	1993 09 16	809	(3.9-	1.4-)	1993 09 22	675	0.7+	0.7+
1992 04 07	691	0.2+	0.2+	1993 09 16	809	(3.0-	1.6-)	1993 09 22	675	0.8-	0.4+
1992 04 07	691	0.0	0.3+	1993 09 16	809	(3.1-	2.5-)	1993 09 23	809	(2.3+	3.4+)
1992 04 07	691	0.1+	0.0	1993 09 17	809	(2.4+	1.1-)	1993 09 23	809	0.1+	1.0+
1993 09 15	809	0.4+	0.0	1993 09 17	809	0.5+	1.3-	1993 09 23	809	0.6-	0.0

1993 RK₅ = 1992 JG₁ = 1996 QB

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	84.32989		(2000.0)	P	Q
<i>n</i>	0.30540092	ω	298.98525	-0.89955456	-0.43627585
<i>a</i>	2.1838484	Ω	215.16071	+0.41266465	-0.83261214
<i>e</i>	0.0070674	<i>i</i>	2.14594	+0.14321134	-0.34120434
<i>P</i>	3.23	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 05 07	691	0.3+	0.2+	1993 09 16	809	(3.0-	3.0-)	1996 08 16	566	0.0	0.3-
1992 05 07	691	0.0	1.1+	1993 09 16	809	1.1-	2.0-	1996 08 16	566	0.6-	0.8+
1992 05 07	691	0.1+	0.3-	1993 09 17	809	1.1+	0.4+	1996 08 16	566	0.1+	0.9+
1992 05 08	691	0.2+	0.6-	1993 09 17	809	0.5-	0.2+	1996 08 17	566	0.2+	0.2-
1992 05 08	691	0.5-	0.0	1993 09 17	809	0.4-	0.4-	1996 08 17	566	0.5+	0.0
1992 05 08	691	0.0	0.3-	1993 09 18	809	1.3+	1.4+	1996 08 17	566	0.5+	0.2-
1993 09 15	809	(2.9+	1.5+)	1993 09 18	809	0.7+	0.9+	1996 08 20	566	0.1-	0.1+
1993 09 15	809	0.4-	1.3+	1993 09 18	809	0.6+	0.0	1996 08 20	566	0.1+	0.7-
1993 09 15	809	(0.9+	2.1+)	1993 09 22	675	1.4-	1.7-	1996 08 20	566	0.6-	0.5-
1993 09 16	809	(0.8-	2.5-)	1993 09 22	675	(0.5-	3.0-)				

1993 SM₁ = 1995 FM₁₄ = 1998 BZ₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	148.52660		(2000.0)	P	Q
<i>n</i>	0.28290578	ω	272.95935	+0.47332261	-0.87996236
<i>a</i>	2.2981313	Ω	148.68827	+0.83593479	+0.43423192
<i>e</i>	0.1596331	<i>i</i>	4.45828	+0.27781060	+0.19263668
<i>P</i>	3.48	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1993 09 16	400	0.8+	1.1+	1995 03 27	691	0.3+	0.8+	1998 01 18	910	0.3-	0.2+
1993 09 16	400	0.4-	0.6-	1995 04 01	691	0.5+	0.0	1998 01 23	910	0.3+	0.2-
1993 09 18	400	0.7-	0.3+	1995 04 01	691	0.3-	0.0	1998 01 23	910	0.3+	0.2-
1993 09 18	400	0.3+	0.9-	1995 04 01	691	0.1-	0.4-	1998 01 23	910	0.2+	0.2-
1995 03 27	691	0.3-	0.3-	1998 01 18	910	0.2-	0.1+				
1995 03 27	691	0.2-	0.1-	1998 01 18	910	0.3-	0.1+				

1993 SQ₆ = 1978 UX = 1997 YH₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	192.83098		(2000.0)	P	Q
<i>n</i>	0.25906670	ω	289.96149	+0.48117847	+0.87658019
<i>a</i>	2.4370344	Ω	8.81584	-0.78177036	+0.43354630
<i>e</i>	0.1876324	<i>i</i>	3.22733	-0.39661364	+0.20891331
<i>P</i>	3.80	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1978 10 28	801	0.7+	1.8-	1993 09 18	809	0.3-	0.5-	1993 09 24	809	0.4-	0.2+
1993 09 17	809	0.8+	0.2+	1993 09 22	809	0.4+	0.2-	1993 09 24	809	0.8-	0.2-
1993 09 17	809	0.5-	0.3+	1993 09 22	809	0.5-	0.5+	1993 09 24	809	1.3-	0.3-
1993 09 17	809	0.1-	0.8+	1993 09 22	809	0.9+	0.5-	1997 12 30	557	0.3+	0.8+
1993 09 18	809	0.9+	0.8-	1993 09 22	675	0.0	1.3+	1997 12 30	557	1.1-	0.9+
1993 09 18	809	0.7+	0.2-	1993 09 22	675	(2.1+	0.6-)				

1993 SO₇ = 1992 HP₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	208.87606		(2000.0)	P		Q	
<i>n</i>	0.31008860	ω	270.31331	+0.66889171	−0.74318310		
<i>a</i>	2.1617834	Ω	137.69006	+0.69124010	+0.61382394		
<i>e</i>	0.1046399	<i>i</i>	1.37987	+0.27344286	+0.26626877		
<i>P</i>	3.18	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 04 27	691	0.2−	0.8+	1992 05 07	691	0.5−	0.3−	1993 09 18	809	1.0−	0.5+
1992 04 27	691	0.1+	0.3+	1993 09 17	809	0.2+	0.5+	1993 09 18	809	0.4+	0.4+
1992 04 27	691	0.3+	0.2+	1993 09 17	809	0.3−	0.3−	1993 09 22	809	1.6+	0.1−
1992 05 07	691	0.2+	0.4−	1993 09 17	809	0.1−	0.3+	1993 09 22	809	0.0	0.5−
1992 05 07	691	0.0	0.7−	1993 09 18	809	0.4+	0.0	1993 09 22	809	1.2−	0.8−

1993 TD₁₈ = 1998 SL₁₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	4.09718		(2000.0)	P		Q	
<i>n</i>	0.19725317	ω	9.50955	+0.77871940	−0.62307311		
<i>a</i>	2.9227167	Ω	29.42991	+0.56535186	+0.64626223		
<i>e</i>	0.0929596	<i>i</i>	8.58181	+0.27198047	+0.44059622		
<i>P</i>	5.00	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1993 10 09	809	0.9−	1.8−	1993 10 20	809	0.1−	0.2−	1998 09 26	704	0.9−	0.6−
1993 10 09	809	0.8−	1.1−	1993 10 20	809	0.3+	0.5+	1998 09 26	704	0.4+	1.1+
1993 10 09	809	0.9−	1.0−	1993 10 20	809	0.7+	0.9+	1998 09 27	704	0.2+	1.2−
1993 10 11	809	0.6+	0.8+	1998 09 26	704	0.6+	0.6−	1998 09 27	704	0.1−	0.5+
1993 10 11	809	1.2+	1.1+	1998 09 26	704	1.5−	0.4+	1998 09 27	704	(2.3−	2.7+)
1993 10 11	809	0.3+	0.2+	1998 09 26	704	0.9+	1.1+				

1993 TC₂₀ = 1998 VY₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	112.79494		(2000.0)	P		Q	
<i>n</i>	0.21219658	ω	267.64441	+0.60009343	+0.79854468		
<i>a</i>	2.7838369	Ω	39.35739	−0.70127107	+0.55347113		
<i>e</i>	0.0848738	<i>i</i>	4.25542	−0.38484642	+0.23663498		
<i>P</i>	4.64	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 10 09	809	0.6−	0.1+	1998 11 10	704	0.4+	0.6−	1998 11 18	704	0.0	0.1+
1993 10 09	809	1.1−	0.1+	1998 11 10	704	(2.1−	2.8−)	1998 11 18	704	0.6+	1.6−
1993 10 09	809	0.4−	0.1−	1998 11 10	699	(0.4+	2.1+)	1998 11 18	704	0.4−	0.8−
1993 10 11	809	1.4+	0.2+	1998 11 10	704	(3.0−	2.2−)	1998 11 18	704	(1.6−	2.2−)
1993 10 11	809	0.9+	0.4+	1998 11 10	699	0.9+	1.0+	1998 11 21	704	0.6−	0.9+
1993 10 11	809	0.5+	0.8+	1998 11 11	704	1.0+	0.6−	1998 11 21	704	1.1−	0.4+
1993 10 20	809	0.8−	0.7−	1998 11 11	704	1.0+	0.7+	1998 11 21	704	(2.3−	1.7+)
1993 10 20	809	0.1−	0.6−	1998 11 11	704	1.5−	1.2−	1998 11 21	704	0.7−	0.5+
1993 10 20	809	0.3+	0.3−	1998 11 14	376	0.4+	1.1+				
1998 11 10	699	(1.8+	2.7+)	1998 11 14	376	0.1+	0.0				

1993 TH₂₄ = 1998 UZ₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	56.41597		(2000.0)	P		Q	
<i>n</i>	0.20342970	ω	289.29210	+0.99138871	+0.12116374		
<i>a</i>	2.8632535	Ω	63.77488	−0.08937036	+0.90329024		
<i>e</i>	0.0764497	<i>i</i>	3.17449	−0.09571501	+0.41156542		
<i>P</i>	4.85	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 10 09	809	0.6+	1.4−	1993 10 11	809	1.0−	1.8+	1998 10 17	691	0.1+	0.5−
1993 10 09	809	1.3+	0.7−	1993 10 20	809	1.1+	0.6−	1998 10 17	691	0.1−	0.5−
1993 10 09	809	0.0	0.5−	1993 10 20	809	1.3−	0.6−	1998 10 23	691	0.0	0.5+

1993 10 11	809	0.2−	1.1+	1993 10 20	809	0.0	0.3−	1998 10 23	691	0.2−	0.4+
1993 10 11	809	0.6−	1.1+	1998 10 17	691	0.4+	0.5−	1998 10 23	691	0.3−	0.5+

1993 TM₂₄ = 1998 TL₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	13.34495		(2000.0)	P		Q	
<i>n</i>	0.20212124	ω	348.25013	+0.70470104	−0.70628444		
<i>a</i>	2.8755974	Ω	56.89963	+0.65731205	+0.61407547		
<i>e</i>	0.1827212	<i>i</i>	4.62296	+0.26709047	+0.35224084		
<i>P</i>	4.88	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 10 09	809	0.3+	1.5−	1998 10 14	699	0.8−	0.1−	1998 10 28	120	0.4+	0.5+
1993 10 09	809	0.1+	0.9−	1998 10 15	120	0.3−	0.3+	1998 10 28	120	0.9+	0.4+
1993 10 09	809	0.4−	1.1−	1998 10 15	120	0.2+	0.3+	1998 10 29	691	0.7−	0.2−
1993 10 11	809	0.0	0.0	1998 10 16	120	0.7+	0.2−	1998 10 29	691	0.3−	0.2−
1993 10 11	809	0.3+	0.5−	1998 10 16	120	3.5+	1.3−	1998 11 10	704	0.2+	0.7−
1993 10 11	809	0.3+	0.1−	1998 10 20	120	0.1+	0.5+	1998 11 10	704	0.0	0.8−
1993 10 20	809	0.3−	0.4+	1998 10 20	120	0.6+	0.3+	1998 11 10	704	0.8+	0.6−
1993 10 20	809	0.3−	1.1+	1998 10 23	691	0.2−	0.4+	1998 11 10	704	0.6+	0.4−
1993 10 20	809	0.6+	1.4+	1998 10 23	691	0.2−	0.9+	1998 11 10	704	0.5+	1.1−
1998 10 13	120	1.0−	0.2+	1998 10 23	691	0.3−	0.1+	1998 11 11	704	0.3+	0.4−
1998 10 13	120	3.1−	1.9+	1998 10 24	691	0.3−	0.0	1998 11 11	704	0.0	0.4−
1998 10 13	120	0.6−	0.1+	1998 10 24	691	0.4−	0.1+	1998 11 11	704	0.3+	0.1+
1998 10 14	699	0.5−	0.2+	1998 10 24	691	0.2−	0.1+	1998 11 11	704	0.4−	0.8−
1998 10 14	699	1.5−	0.4+	1998 10 27	120	0.8+	0.8+	1998 11 11	704	0.1+	1.1+

1993 TK₂₅ = 1997 OG = 1998 WL₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	102.66619		(2000.0)	P		Q	
<i>n</i>	0.21234117	ω	139.87499	+0.75763960	+0.65267286		
<i>a</i>	2.7825731	Ω	179.38054	−0.61260242	+0.71145306		
<i>e</i>	0.0960066	<i>i</i>	3.29949	−0.22516776	+0.26048548		
<i>P</i>	4.64	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 09 19	691	0.2−	0.9+	1993 10 20	809	(5.6+	4.4+)	1998 11 23	046	0.1+	0.2−
1993 09 19	691	0.6+	0.8+	1993 10 20	809	(5.7+	4.4+)	1998 11 23	046	0.5+	0.6−
1993 09 19	691	0.2+	0.5+	1997 07 25	910	0.3−	0.1−	1998 11 23	046	0.1−	0.8+
1993 10 09	809	0.0	0.4−	1997 07 25	910	0.1+	0.7−	1998 11 24	046	0.1−	0.0
1993 10 09	809	0.3+	0.2+	1997 07 25	910	0.1+	0.9−	1998 11 24	046	0.2+	0.6−
1993 10 09	809	0.9+	0.2−	1997 07 26	910	0.2+	0.5+	1998 11 24	046	0.8−	0.4+
1993 10 11	809	0.4−	0.5−	1997 07 26	910	0.0	0.6+	1998 11 24	046	0.0	0.1+
1993 10 11	809	0.3−	0.0	1997 07 26	910	0.0	0.2+	1998 11 24	046	0.1−	0.6−
1993 10 11	809	1.2−	0.9−	1998 11 23	046	0.1−	0.1+				
1993 10 20	809	(5.6+	3.9+)	1998 11 23	046	0.5+	0.1+				

1993 TZ₂₉ = 1998 VF₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	259.20734		(2000.0)	P		Q	
<i>n</i>	0.19809927	ω	66.48904	−0.84652886	−0.52940400		
<i>a</i>	2.9143886	Ω	81.50323	+0.46549691	−0.78705190		
<i>e</i>	0.0112224	<i>i</i>	3.23776	+0.25826637	−0.31667130		
<i>P</i>	4.98	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 10 09	809	0.9+	0.1−	1998 10 11	699	0.3+	0.8+	1998 10 29	704	(2.3+	1.1+)
1993 10 09	809	1.0+	0.1+	1998 10 11	699	1.2−	1.2−	1998 10 29	704	0.1+	1.1+
1993 10 09	809	0.0	0.1+	1998 10 11	699	0.7−	1.7−	1998 11 10	704	1.1+	1.1−
1993 10 11	809	1.3+	0.9+	1998 10 28	704	0.5+	0.8+	1998 11 10	704	1.5−	0.5+
1993 10 11	809	1.0+	1.5+	1998 10 28	704	1.2−	0.1−	1998 11 10	704	0.2−	1.0−
1993 10 11	809	0.4−	0.5+	1998 10 28	704	1.6+	1.1−	1998 11 11	704	0.8+	0.1+
1993 10 21	809	1.8−	1.3−	1998 10 28	704	0.6+	1.1+	1998 11 11	704	(2.1+	1.1−)
1993 10 21	809	0.0	1.3−	1998 10 29	704	0.4−	1.1+	1998 11 11	704	(1.7−	2.2+)
1993 10 21	809	1.7−	0.9−	1998 10 29	704	0.2+	1.1+				

1993 TQ₃₆ = 1998 VJ₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21059901	ω	328.12590	+0.81638229	−0.55282985		
<i>a</i>	2.7978977	Ω	66.33701	+0.56074373	+0.68961182		
<i>e</i>	0.1375563	<i>i</i>	10.50743	+0.13815362	+0.46777632		
<i>P</i>	4.68	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 09 18	675	0.7−	0.9+	1993 10 10	675	0.2−	1.0+	1998 11 11	699	0.5+	0.2−
1993 09 18	675	0.3−	0.2+	1993 10 13	675	(2.2+	1.7−)	1998 11 11	704	0.1+	0.0
1993 09 20	675	1.2+	1.7−	1993 10 13	675	1.5+	1.4−	1998 11 11	699	0.4+	0.1−
1993 09 20	675	0.5−	0.5−	1993 10 15	675	0.1−	0.3+	1998 11 11	704	0.6−	0.7+
1993 09 21	675	0.6−	0.5+	1993 10 15	675	0.5+	1.2−	1998 11 11	699	0.8+	0.0
1993 09 21	675	0.1+	0.3+	1998 11 10	704	0.2−	0.6−	1998 11 11	704	0.2−	0.0
1993 09 22	675	1.0−	0.1−	1998 11 10	704	0.2−	0.5−	1998 11 11	704	0.3−	0.0
1993 09 22	675	0.5−	0.5+	1998 11 10	704	0.5−	0.3−				
1993 10 10	675	0.6+	1.1+	1998 11 10	704	0.2+	1.3+				

1993 UK = 1979 YK₅ = 1998 VP₂₈

Id. G. V. Williams, T. B. Spahr, E. Howell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20449469	ω	254.99362	+0.90980954	+0.41105933		
<i>a</i>	2.8533038	Ω	80.70794	−0.35500723	+0.84224522		
<i>e</i>	0.0669866	<i>i</i>	3.32530	−0.21498017	+0.34878820		
<i>P</i>	4.82	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1979 12 18	095	(36.6+	9.2+)	1998 10 18	699	0.0	0.1−	1998 11 11	699	0.1+	0.6+
1993 10 14	675	0.3−	0.7+	1998 10 18	699	0.6+	0.2−	1998 11 11	704	1.6−	1.2−
1993 10 14	675	0.9−	0.7+	1998 10 18	699	0.1−	0.2−	1998 11 18	704	0.2−	0.0
1993 10 16	400	0.6+	0.9+	1998 11 10	704	0.0	0.1+	1998 11 18	704	0.1−	0.4+
1993 10 16	400	0.9+	0.5−	1998 11 10	704	0.3+	0.4−	1998 11 18	704	0.5+	0.3+
1993 10 19	403	1.1−	0.0	1998 11 10	704	0.5+	0.4−	1998 11 18	704	1.0+	1.1+
1993 10 19	403	0.2+	0.4−	1998 11 10	704	0.2+	1.9−	1998 11 18	704	1.9+	1.1+
1993 10 20	400	1.5+	0.6+	1998 11 10	704	(0.5−	2.4−)	1998 11 21	704	1.0−	0.6+
1993 10 20	400	0.1−	1.3−	1998 11 11	699	0.0	0.8+	1998 11 21	704	0.3−	0.5+
1993 11 09	399	0.3+	0.8+	1998 11 11	704	0.7−	0.4+	1998 11 21	704	0.3+	0.1+
1993 11 09	399	0.7−	0.7−	1998 11 11	699	0.1−	0.3+	1998 11 21	704	1.3+	0.1+
1993 11 11	400	0.5−	0.1−	1998 11 11	704	0.7−	0.5−	1998 11 21	704	1.0−	1.3−
1993 11 11	400	0.0	0.6−	1998 11 11	704	0.6−	0.5−				

1993 UT = 1984 UR₃

Id. S. Nakano (unpublished), T. Urata (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21985014	ω	244.23876	+0.48678879	+0.73086861		
<i>a</i>	2.7188477	Ω	63.47036	−0.47709822	+0.68122158		
<i>e</i>	0.3367070	<i>i</i>	32.32382	−0.73171987	+0.04205030		
<i>P</i>	4.48	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1984 10 27	511	0.2−	0.7−	1993 10 27	385	1.2+	0.7+	1993 12 12	385	0.6+	0.5−
1984 10 28	511	0.6−	1.4+	1993 10 27	385	1.0+	0.6−	1993 12 18	385	0.3+	1.0+
1993 10 22	385	0.4−	0.4−	1993 11 03	385	0.2+	0.4+	1993 12 18	385	0.2−	0.1−
1993 10 22	385	0.4−	0.3−	1993 11 03	385	0.8+	0.5+	1993 12 18	385	0.3−	0.9+
1993 10 22	385	0.6−	0.2+	1993 11 03	385	0.1−	0.2+	1998 11 22	385	0.8−	0.9+
1993 10 23	385	0.1+	0.3+	1993 11 15	385	1.0−	0.1−	1998 11 22	385	0.5+	0.5−
1993 10 23	385	0.9+	0.2−	1993 11 15	385	0.9−	0.2−	1998 11 22	385	0.2−	0.9+
1993 10 23	385	0.1−	0.4−	1993 11 15	385	1.0−	0.1−	1998 11 22	385	0.2−	0.1+
1993 10 24	385	0.1−	0.2+	1993 12 05	385	1.0+	0.2−	1998 11 23	385	1.0+	0.8−
1993 10 24	385	0.2−	0.3−	1993 12 05	385	0.0	1.0−	1998 11 23	385	0.4−	0.5−
1993 10 24	385	0.5−	0.1−	1993 12 05	385	0.3+	0.0				
1993 10 27	385	0.2+	0.3−	1993 12 12	385	0.2+	0.1−				

1993 UL₇ = 1998 SX₉₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18512642	ω	235.93184	+0.65213568	−0.75783671		
<i>a</i>	3.0489978	Ω	173.25713	+0.73962037	+0.63020582		
<i>e</i>	0.0524079	<i>i</i>	9.83937	+0.16637537	+0.16889093		
<i>P</i>	5.32	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 10	809	1.4+	0.9+	1993 10 21	809	0.1−	1.0−	1998 09 27	704	0.7−	0.8+
1993 10 10	809	0.7−	0.0	1993 10 21	809	0.8+	0.4−	1998 09 27	704	0.5−	0.1−
1993 10 10	809	0.1−	0.8−	1993 10 21	809	1.1−	0.9−	1998 09 27	704	1.8+	1.9+
1993 10 20	809	0.5+	0.4+	1998 09 26	704	1.1−	0.3+	1998 09 27	704	0.8−	1.1−
1993 10 20	809	0.5−	1.2+	1998 09 26	704	0.8−	0.7−	1998 09 27	704	1.4+	0.6+
1993 10 20	809	0.1−	0.6+	1998 09 26	704	0.7+	1.8−				

1993 VU₁ = 1976 JA₁₁ = 1998 VX₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19344086	ω	113.93042	+0.98574200	+0.05352399		
<i>a</i>	2.9609920	Ω	243.33542	−0.10262371	+0.94255735		
<i>e</i>	0.1626632	<i>i</i>	10.28290	+0.13334574	+0.32972842		
<i>P</i>	5.10	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1976 05 02	809	0.0	0.3+	1993 11 22	399	0.1+	0.1+	1998 11 10	704	0.7+	0.3+
1993 11 11	399	1.0+	0.4+	1993 11 22	399	0.4−	0.7+	1998 11 11	704	0.1+	0.4−
1993 11 11	399	0.2−	0.8−	1998 11 10	704	0.3−	0.4+	1998 11 11	704	0.7−	0.2−
1993 11 16	399	0.6−	0.3+	1998 11 10	704	0.1+	0.0	1998 11 11	704	0.0	0.6−
1993 11 16	399	0.1+	0.8−	1998 11 10	704	0.0	0.1−	1998 11 11	704	0.1−	0.9+

1993 VA₃ = 1996 GY₁ = 1998 SK₆₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18796409	ω	283.47267	+0.91156061	+0.38431315		
<i>a</i>	3.0182332	Ω	54.11827	−0.27140263	+0.82942681		
<i>e</i>	0.1261464	<i>i</i>	10.39217	−0.30886546	+0.40540666		
<i>P</i>	5.24	<i>H</i>	11.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 11 11	399	1.7−	0.1−	1998 09 20	809	0.4−	1.7+	1998 10 29	704	0.4−	0.0
1993 11 11	399	0.9−	0.6+	1998 09 21	809	1.1+	1.2−	1998 11 10	704	0.4−	0.6+
1993 11 16	399	1.2+	0.1+	1998 09 21	809	0.4+	1.0−	1998 11 10	704	0.9−	0.6+
1993 11 16	399	3.6+	1.0−	1998 09 21	809	0.0	1.4−	1998 11 10	704	0.7−	0.6+
1993 11 22	399	1.3−	1.6+	1998 10 28	704	0.4−	0.1−	1998 11 10	704	1.4−	0.3+
1993 11 22	399	1.7−	0.6+	1998 10 28	704	1.2−	1.0−	1998 11 11	704	0.2−	0.7−
1996 04 13	399	1.4+	0.3+	1998 10 28	704	0.4−	0.5−	1998 11 11	704	1.8+	1.1−
1996 04 13	399	1.6+	0.3−	1998 10 28	704	0.8−	0.1+	1998 11 11	704	2.2+	1.9−
1996 04 14	399	2.1−	0.8−	1998 10 29	704	0.7−	0.3+	1998 11 11	704	2.1+	1.3−
1996 04 14	399	1.9−	0.9−	1998 10 29	704	0.9−	0.7+	1998 11 11	704	2.1+	1.4−
1998 09 20	809	1.6+	1.8+	1998 10 29	704	0.8−	0.1−				
1998 09 20	809	0.3+	1.9+	1998 10 29	704	0.3+	0.1−				

1993 VH₅ = 1993 UL₉ = 1998 WZ₈

Id. Y. Ikari, S. Nakano (d)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20665908	ω	228.91445	+0.99184614	+0.11386466		
<i>a</i>	2.8333467	Ω	124.47200	−0.08579697	+0.92870274		
<i>e</i>	0.2127918	<i>i</i>	3.98116	−0.09423440	+0.35291083		
<i>P</i>	4.77	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 09	809	1.3+	0.1+	1993 10 17	033	1.2+	0.4+	1993 11 11	033	0.6-	0.7+
1993 10 09	809	0.4-	1.1-	1993 10 18	033	0.9+	0.4+	1993 11 12	033	0.0	0.4+
1993 10 09	809	(2.7-	1.0-)	1993 10 21	809	0.3+	0.7-	1998 11 28	900	0.7+	0.3-
1993 10 11	809	0.2-	0.5+	1993 10 21	809	0.1-	0.6-	1998 11 28	900	0.5-	0.1+
1993 10 11	809	0.9-	0.1+	1993 10 21	809	0.1+	0.9-	1998 11 29	900	0.0	0.3-
1993 10 11	809	1.3-	0.4+	1993 11 11	033	0.5-	0.5+	1998 11 29	900	0.2-	0.2+

1993 XJ₁ = 1998 WF₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	57.44689	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.21570820	ω	333.62418	+0.57192953	-0.81146470		
<i>a</i>	2.7535414	Ω	81.26339	+0.77245285	+0.48349606		
<i>e</i>	0.1072167	<i>i</i>	6.97868	+0.27606739	+0.32826301		
<i>P</i>	4.57	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 12 04	408	0.1-	0.9+	1993 12 11	408	1.7-	0.3-	1998 11 27	120	0.2+	0.4-
1993 12 05	408	0.6+	2.0-	1993 12 11	408	0.0	1.1+	1998 11 27	120	0.1-	0.2+
1993 12 05	408	0.5-	0.0	1993 12 18	408	0.6+	0.8+	1998 11 28	120	0.6-	0.7+
1993 12 09	408	0.3+	0.2+	1993 12 18	408	0.3-	1.4-	1998 11 28	120	0.7+	0.2-
1993 12 09	408	1.2+	0.8+	1998 11 27	120	0.2-	0.3-				

1994 AB₁

Id. R. H. McNaught (1995 observations), P. Pravec (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	32.40964	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.20499114	ω	342.35496	+0.64901957	-0.75729501		
<i>a</i>	2.8486952	Ω	67.11180	+0.70715797	+0.56531067		
<i>e</i>	0.5901231	<i>i</i>	4.52291	+0.28053735	+0.32699864		
<i>P</i>	4.81	<i>H</i>	16.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 12 22	372	(2.4-	1.5+)	1994 01 30	360	0.3-	0.2-	1994 03 04	360	0.7+	0.3+
1993 12 22	372	(3.3-	2.3+)	1994 01 30	360	0.0	0.1-	1994 03 04	360	0.6+	0.8+
1993 12 25	372	1.0-	0.5-	1994 01 30	587	0.3-	0.6+	1994 03 05	658	0.2+	0.3+
1993 12 25	372	0.8+	1.5+	1994 01 30	587	0.6-	0.6-	1994 03 05	658	0.0	0.0
1994 01 04	896	1.0-	1.5-	1994 01 30	587	1.0-	1.0-	1994 03 05	658	0.3+	0.1+
1994 01 04	896	0.4+	0.1-	1994 02 03	360	0.1-	0.2-	1994 03 05	658	0.3+	0.1+
1994 01 07	896	1.0+	1.1+	Y 1994 02 03	360	0.4-	0.4-	1994 03 06	658	0.6+	0.0
1994 01 07	896	0.4+	0.7+	Y 1994 02 07	801	0.3+	0.0	1994 03 06	658	0.2+	0.4+
1994 01 14	896	1.7+	0.1-	1994 02 07	801	0.7-	0.7-	1994 03 06	658	0.1-	0.6+
1994 01 14	896	0.3+	0.1+	1994 02 09	104	0.2-	1.0-	1995 03 28	413	0.0	0.0
1994 01 19	896	0.6-	0.4+	1994 02 09	104	0.2-	0.4-	1995 03 28	413	0.1+	0.1+
1994 01 19	896	0.5+	0.1-	1994 02 09	104	0.2-	0.3+	1998 11 24	557	0.3+	0.2+
1994 01 29	385	0.2-	0.3-	1994 02 09	104	0.1-	0.4+	1998 11 24	557	0.4-	0.1-
1994 01 29	385	0.0	0.1-	1994 02 09	104	0.1-	0.4+	1998 11 24	557	0.1+	0.1-
1994 01 29	385	0.2-	0.6-	1994 02 10	587	0.5-	0.5+				
1994 01 30	360	0.3-	0.4-	1994 02 10	587	0.1-	0.3+				

1994 AX₆ = 1998 FR₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler				Williams			
<i>M</i>	328.07372	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.26939485	ω	139.34737	+0.24807858	+0.96872100		
<i>a</i>	2.3743416	Ω	145.01524	-0.89151497	+0.23074284		
<i>e</i>	0.2108041	<i>i</i>	0.60491	-0.37902252	+0.09130916		
<i>P</i>	3.66	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 01 07	691	0.1+	0.3-	1994 01 11	691	0.1-	0.2+	1998 03 20	691	0.0	0.1-
1994 01 07	691	0.4-	0.4-	1994 01 12	691	0.4-	0.2-	1998 03 20	691	0.1+	0.0
1994 01 07	691	0.3-	0.1-	1994 01 12	691	0.9-	0.1+	1998 03 25	691	0.1+	0.1+
1994 01 11	691	1.4+	0.5+	1994 01 12	691	0.3-	0.1-	1998 03 25	691	0.2-	0.2-
1994 01 11	691	0.8+	0.3+	1998 03 20	691	0.0	0.2+	1998 03 25	691	0.0	0.0

1994 AG₁₀ = 1998 HD₉₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler				Williams			
<i>M</i>	88.37065	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.27722511	ω	195.71202	-0.94508645	+0.32681036		
<i>a</i>	2.3294193	Ω	3.36655	-0.29494499	-0.84949964		
<i>e</i>	0.1460345	<i>i</i>	2.50607	-0.14078018	-0.41418033		
<i>P</i>	3.56	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 01 08	691	0.0	0.0	1994 01 16	691	0.7+	0.1+	1998 04 21	704	0.1+	1.3+
1994 01 08	691	0.1-	0.1-	1994 01 16	691	0.5-	0.1-	1998 04 22	704	0.4-	0.0
1994 01 08	691	0.2-	0.2-	1994 01 16	691	0.3-	0.0	1998 04 22	704	0.0	0.3+
1994 01 11	691	0.3-	0.0	1998 04 21	704	0.4+	0.6-	1998 04 22	704	0.9-	1.5-
1994 01 11	691	0.7+	0.2+	1998 04 21	704	0.1+	0.4-	1998 04 22	704	0.1+	0.1-
1994 01 11	691	0.1-	0.1+	1998 04 21	704	0.6+	1.0+				

1994 CW = 1992 QE₁

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler				Williams			
<i>M</i>	152.89278	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.23642520	ω	218.50516	+0.94839851	-0.30388488		
<i>a</i>	2.5902412	Ω	158.64868	+0.31546783	+0.93306462		
<i>e</i>	0.1844091	<i>i</i>	14.39637	-0.03194227	+0.19246922		
<i>P</i>	4.17	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 08 29	675	0.8-	0.8+	1994 02 07	595	0.9-	0.3-	1994 02 11	595	0.2+	0.3+
1992 08 29	675	0.6-	0.7+	1994 02 07	595	0.3-	0.1-	1994 02 11	595	0.1-	0.0
1992 09 01	675	1.1+	0.9-	1994 02 09	595	0.3-	0.2-	1994 02 16	595	0.8+	0.6+
1992 09 01	675	0.3+	0.5-	1994 02 09	595	0.1-	0.3-	1994 02 16	595	0.8+	0.3+

1994 CG₁ = 1998 KZ₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler				Williams			
<i>M</i>	26.79686	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.29146390	ω	286.48534	+0.46384000	+0.88575679		
<i>a</i>	2.2529223	Ω	11.19583	-0.77587601	+0.41538685		
<i>e</i>	0.1979116	<i>i</i>	5.00874	-0.42763170	+0.20709582		
<i>P</i>	3.38	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 02 07	411	0.0	0.1+	1994 02 14	411	0.8-	1.0-	1998 05 22	704	0.2-	0.2-
1994 02 07	411	0.0	0.4+	1994 02 16	411	0.2+	1.4+	1998 05 22	704	0.1-	0.2-
1994 02 10	411	0.4-	0.1+	1994 02 16	411	0.8+	0.3-	1998 05 24	704	0.9-	0.1-
1994 02 10	411	1.3+	0.8-	1994 02 16	411	1.3-	0.5+	1998 05 24	704	0.4-	0.1-
1994 02 10	411	0.1+	0.3+	1998 05 22	704	0.2+	0.4+	1998 05 24	704	1.1+	0.1+
1994 02 14	411	0.8-	0.4-	1998 05 22	704	0.1-	0.1+	1998 05 24	704	0.4+	0.4+
1994 02 14	411	0.9+	0.3-	1998 05 22	704	0.0	0.1-	1998 05 24	704	0.0	0.4-

1994 CA₅ = 1996 TS₅₉

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler				Williams			
<i>M</i>	202.45656	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.23536651	ω	29.06365	+0.99752600	+0.06016052		
<i>a</i>	2.5980027	Ω	327.42563	-0.07009265	+0.89073103		
<i>e</i>	0.2102165	<i>i</i>	3.87317	+0.00537590	+0.45053184		
<i>P</i>	4.19	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 02 11	691	0.4-	0.5-	1994 02 16	691	0.1-	0.1+	1996 10 04	809	0.2+	0.1+
1994 02 11	691	0.3-	1.0-	1994 02 16	691	0.0	0.1+	1996 10 04	809	0.3+	0.0
1994 02 11	691	0.6-	0.7-	1994 02 19	691	0.2+	0.1+	1996 10 04	809	0.5-	1.2-
1994 02 12	691	0.1-	0.4-	1994 02 19	691	0.2+	0.1-	1998 03 02	910	0.1+	0.9+
1994 02 12	691	0.1-	0.6-	1994 02 19	691	0.0	0.3+	1998 03 02	910	0.5+	1.0+
1994 02 12	691	0.0	0.4-	1996 10 03	809	0.6+	0.0	1998 03 02	910	0.3+	0.6+

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1994 02 14	675	0.1−	0.5+	1996 10 03	809	0.2−	0.3+
1994 02 16	691	0.1−	0.0	1996 10 03	809	0.2−	0.4+

1994 CD₇ = 1996 TU₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	356.97161		(2000.0)	P	Q		
<i>n</i>	0.21725000	ω	66.17540	−0.88539348	+0.45881622		
<i>a</i>	2.7404982	Ω	141.01976	−0.45786188	−0.83308207		
<i>e</i>	0.2579934	<i>i</i>	6.81135	−0.08025516	−0.30896915		
<i>P</i>	4.54	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 02 15	691	0.1+	0.8−	1994 02 16	691	1.1−	1.5+	1996 10 07	691	0.3+	0.2−
1994 02 15	691	0.2+	0.3−	1994 02 19	691	0.8+	0.8−	1996 10 07	691	0.3+	0.0
1994 02 15	691	0.6+	0.3−	1994 02 19	691	0.8+	0.6−	1996 10 08	691	0.6−	0.0
1994 02 16	691	1.3−	0.8+	1994 02 19	691	0.9+	0.3−	1996 10 08	691	0.5−	0.2−
1994 02 16	691	1.2−	0.8+	1996 10 07	691	0.6+	0.4+				

1994 CU₁₀ = 1998 KA₂₇

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	209.26918		(2000.0)	P	Q		
<i>n</i>	0.28351576	ω	324.37171	−0.04010292	−0.99540812		
<i>a</i>	2.2948339	Ω	127.76655	+0.94033558	−0.06701179		
<i>e</i>	0.0304755	<i>i</i>	6.31239	+0.33787683	+0.06835273		
<i>P</i>	3.48	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 02 07	809	0.0	0.1+	1994 02 12	809	0.3−	0.6−	1998 05 24	704	1.3−	1.0+
1994 02 07	809	1.5−	0.2−	1998 05 05	699	0.3+	0.2−	1998 05 24	704	0.7−	0.1−
1994 02 07	809	0.9−	0.1+	1998 05 05	699	0.2−	0.1−	1998 05 24	704	1.1+	1.2−
1994 02 09	809	1.1+	1.0+	1998 05 05	699	0.4+	0.1+	1998 05 24	704	0.5+	0.9+
1994 02 09	809	0.2+	0.7+	1998 05 22	704	0.4+	0.2−	1998 05 24	704	1.3−	0.2+
1994 02 09	809	0.4+	0.2+	1998 05 22	704	0.1−	0.4+	1998 05 25	699	1.2+	0.6+
1994 02 12	809	0.6+	0.7−	1998 05 22	704	0.0	0.0	1998 05 25	699	0.6+	1.0−
1994 02 12	809	0.2+	0.6−	1998 05 22	704	0.2+	0.5−	1998 05 25	699	1.1−	0.3+

1994 CX₁₀ = 1997 WO₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	250.67218		(2000.0)	P	Q		
<i>n</i>	0.17625427	ω	132.67488	−0.52452675	+0.85032006		
<i>a</i>	3.1504768	Ω	105.64175	−0.79354730	−0.47007993		
<i>e</i>	0.1373684	<i>i</i>	2.54437	−0.30847103	−0.23660231		
<i>P</i>	5.59	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 02 07	809	0.5+	0.9+	1994 02 09	809	0.5−	1.2−	1997 11 23	691	0.1+	0.2−
1994 02 07	809	0.6−	0.7+	1994 02 12	809	0.6+	0.1+	1997 11 23	691	0.1+	0.0
1994 02 07	809	1.1−	0.4−	1994 02 12	809	0.3−	0.6−	1997 11 30	691	1.1−	0.4+
1994 02 09	809	0.5+	1.0+	1994 02 12	809	0.5−	0.9+	1997 11 30	691	0.2+	0.2+
1994 02 09	809	1.5+	1.3−	1997 11 23	691	0.1−	0.1−	1997 11 30	691	0.7+	0.3−

1994 CD₁₄ = 1998 DP₃₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	45.97712		(2000.0)	P	Q		
<i>n</i>	0.23763155	ω	89.58120	−0.97591735	+0.20272181		
<i>a</i>	2.5814674	Ω	102.11354	−0.21808879	−0.89867118		
<i>e</i>	0.1779980	<i>i</i>	4.72596	−0.00475525	−0.38896526		
<i>P</i>	4.15	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 02 08	809	0.2+	1.9+	1994 02 10	809	1.1−	1.3−	1998 02 21	327	0.2−	0.2+
1994 02 08	809	0.1−	1.8+	1994 02 13	809	0.8+	0.7−	1998 02 21	327	0.2−	0.3+
1994 02 08	809	0.4+	1.3+	1994 02 13	809	0.4−	0.6−	1998 03 02	327	0.1+	0.3+

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1994 02 10	809	0.6+	1.2−	1994 02 13	809	0.5−	0.3−	1998 03 02	327	0.0	0.3+
1994 02 10	809	0.1+	0.7−	1998 02 21	327	0.0	1.4−	1998 03 02	327	0.2+	0.2+

1994 CG₁₄ = 1969 UJ₁ = 1998 HJ₁₃₂

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	267.95474		(2000.0)	P	Q		
<i>n</i>	0.25848761	ω	313.65476	+0.99350470	+0.08122020		
<i>a</i>	2.4406728	Ω	41.87598	−0.03359755	+0.87853483		
<i>e</i>	0.0915111	<i>i</i>	6.85709	−0.10871802	+0.47072267		
<i>P</i>	3.81	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1999 10 16	095	1.4+	2.7−	1998 04 04	699	0.3−	1.0−	1998 04 20	704	0.9−	0.1+
1994 02 08	809	0.1−	0.1−	1998 04 04	699	0.5+	0.8−	1998 04 20	704	0.1−	0.5+
1994 02 08	809	0.7−	0.2+	1998 04 04	699	0.6+	2.3−	1998 04 20	704	0.0	0.2+
1994 02 08	809	0.5−	0.7−	1998 04 18	327	0.4−	0.2−	1998 04 20	704	0.3−	0.4−
1994 02 10	809	0.7+	0.5+	1998 04 18	327	0.4−	0.1−	1998 04 20	704	0.3+	0.5−
1994 02 10	809	0.7+	0.3−	1998 04 18	327	0.2−	0.5−	1998 04 20	327	0.5−	0.1−
1994 02 10	809	0.5+	0.4−	1998 04 19	704	0.1−	0.1−	1998 04 20	327	0.4−	0.1+
1994 02 13	809	0.5+	1.3+	1998 04 19	704	0.7+	0.0	1998 04 20	327	0.4−	0.0
1994 02 13	809	0.1+	1.4+	1998 04 19	704	0.1−	0.4+				
1994 02 13	809	0.2−	0.7+	1998 04 19	704	0.5−	0.4−				

1994 CJ₁₆ = 1991 LZ₃ = 1998 KO₆₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	110.76139		(2000.0)	P	Q		
<i>n</i>	0.28392282	ω	82.75015	−0.90581823	+0.41724506		
<i>a</i>	2.2926399	Ω	121.88528	−0.41479174	−0.83808627		
<i>e</i>	0.0882509	<i>i</i>	4.96474	−0.08626210	−0.35145124		
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 06 06	809	1.1+	0.1+	1994 02 08	809	0.7−	0.7+	1998 05 22	704	0.1+	0.7−
1991 06 06	809	1.2+	0.5+	1994 02 10	809	1.4+	0.0	1998 05 22	704	0.7+	0.5−
1991 06 06	809	0.4+	0.7+	1994 02 10	809	1.2+	0.5+	1998 05 22	704	1.0−	0.4−
1991 06 08	809	0.3−	0.3−	1994 02 10	809	0.6+	0.4−	1998 05 24	704	1.0−	1.6−
1991 06 08	809	0.6−	0.3+	1994 02 13	809	0.3−	1.0−	1998 05 24	704	0.9−	0.0
1991 06 08	809	1.5−	0.3+	1994 02 13	809	1.1−	0.5−	1998 05 24	704	0.2+	1.8+
1994 02 08	809	0.7+	0.7+	1994 02 13	809	1.7−	0.3−	1998 05 24	704	1.5+	0.1+
1994 02 08	809	0.1−	0.2+	1998 05 22	704	0.2+	0.2−				

1994 CO₁₆ = 1998 HC₁₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	189.26068		(2000.0)	P	Q		
<i>n</i>	0.27236408	ω	320.10597	+0.00353755	−0.99581731		
<i>a</i>	2.3570538	Ω	129.49219	+0.94501386	−0.02652684		
<i>e</i>	0.0852388	<i>i</i>	6.79436	+0.32701116	+0.08743121		
<i>P</i>	3.62	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 02 08	809	0.4+	0.1−	1994 02 13	809	0.1−	0.3−	1998 04 24	704	0.8+	0.1−
1994 02 08	809	0.5−	0.6−	1994 02 13	809	0.6−	0.0	1998 04 24	704	(0.1+ 2.9+)	
1994 02 08	809	0.6−	0.5+	1998 04 23	704	1.1+	0.6−	1998 04 24	704	0.3−	0.5+
1994 02 10	809	0.7+	0.4+	1998 04 23	704	0.2+	0.5+	1998 04 24	704	0.3−	0.5+
1994 02 10	809	0.5+	0.2+	1998 04 23	704	0.2+	0.0	1998 04 24	704	0.5−	0.0
1994 02 10	809	0.0	0.2−	1998 04 23	704	0.6−	0.0				
1994 02 13	809	0.3+	0.1+	1998 04 23	704	0.5−	0.9−				

1994 CA₁₈ = 1998 HK₇₁

Id. S. Nakano, A. Doppler

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Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	123.96705		(2000.0)	P	Q
<i>n</i>	0.26496134	ω	69.14427	-0.85613610	-0.51333118
<i>a</i>	2.4007542	Ω	79.92719	+0.44887870	-0.79566430
<i>e</i>	0.1097405	<i>i</i>	3.45567	+0.25600566	-0.32157335
<i>P</i>	3.72	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1994 02 08	809	0.5-	0.2+	1994 02 13	809	0.4-	0.2+	1998 04 22	704	1.3+	0.3+
1994 02 08	809	0.6-	0.0	1994 02 13	809	0.6-	0.3+	1998 04 22	704	0.5+	0.9-
1994 02 08	809	0.0	1.0-	1998 04 21	704	0.2+	0.9+	1998 04 22	704	0.0	0.5-
1994 02 10	809	1.1+	0.6+	1998 04 21	704	0.6-	0.8+	1998 04 22	704	1.8+	0.1-
1994 02 10	809	0.6+	0.4-	1998 04 21	704	0.6-	0.4-	1998 04 22	704	1.8-	0.2+
1994 02 10	809	0.0	0.5-	1998 04 21	704	0.4-	0.6-				
1994 02 13	809	0.3+	0.6+	1998 04 21	704	0.3-	0.5+				

1994 GU₉ = 1990 BL₃ = 1998 MS₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	79.09532		(2000.0)	P	Q
<i>n</i>	0.28239591	ω	124.20543	-0.29346538	+0.90653698
<i>a</i>	2.3008966	Ω	125.78574	-0.95294510	-0.25218121
<i>e</i>	0.1212739	<i>i</i>	21.96527	-0.07598492	-0.33851935
<i>P</i>	3.49	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1990 01 24	033	0.1+	0.3+	1994 04 08	675	0.1-	0.0	1998 06 25	704	0.4+	0.6-
1990 01 24	033	0.1-	0.3-	1998 06 19	704	0.1-	0.3-	1998 06 25	704	0.4+	0.5-
1994 04 06	675	0.1+	0.3+	1998 06 19	704	0.9-	0.5+	1998 06 25	704	0.1-	0.2-
1994 04 06	675	0.1+	0.5-	1998 06 19	704	0.4+	0.0	1998 06 25	704	0.4+	0.6-
1994 04 07	675	0.3-	0.3+	1998 06 19	704	0.2-	0.3+	1998 06 25	704	0.1+	0.3+
1994 04 07	675	0.2+	0.2-	1998 06 19	704	0.5-	1.0+				

1994 NQ = 1998 WM₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	62.07522		(2000.0)	P	Q
<i>n</i>	0.27209973	ω	238.03402	+0.88089133	+0.25990344
<i>a</i>	2.3585802	Ω	104.23298	-0.15839161	+0.94943371
<i>e</i>	0.2774588	<i>i</i>	24.08576	-0.44602977	+0.17614150
<i>P</i>	3.62	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 07 06	675	1.3-	0.5-	1994 07 11	675	1.7+	1.1+	1998 11 17	703	0.0	0.7+
1994 07 06	675	2.7-	1.2-	1994 07 12	675	0.8+	0.8+	1998 11 21	703	0.1+	0.1+
1994 07 08	675	0.2+	0.8+	1994 07 12	675	1.1+	0.6-	1998 11 21	703	0.3-	0.5-
1994 07 08	675	0.1+	0.5-	1998 11 17	703	0.5+	0.0	1998 11 23	703	0.2-	0.3-
1994 07 11	675	(4.5+	5.6+)	1998 11 17	703	0.3+	0.4+	1998 11 23	703	0.3-	0.5-

1994 PG = 1998 RW₇₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	229.77412		(2000.0)	P	Q
<i>n</i>	0.26627877	ω	14.30265	-0.98808846	-0.13033978
<i>a</i>	2.3928291	Ω	157.70795	+0.11126277	-0.97234723
<i>e</i>	0.0921885	<i>i</i>	12.45476	+0.10630984	-0.19378441
<i>P</i>	3.70	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 08 06	104	0.9-	0.3+	1994 08 10	104	1.3+	0.5-	1994 08 14	104	0.2-	0.0
1994 08 06	104	0.9+	0.2+	1994 08 10	104	0.2-	0.2-	1994 08 14	104	0.4-	0.2+
1994 08 06	104	0.9+	0.2-	1994 08 11	104	0.0	0.6+	1994 08 14	104	0.8-	0.4-
1994 08 06	104	1.0+	0.0	1994 08 11	809	(1.0+	3.0+)	1998 09 14	704	0.7-	0.5+
1994 08 07	104	0.0	0.5+	1994 08 11	809	(0.1+	2.9+)	1998 09 14	704	1.6-	0.1-
1994 08 07	104	0.2+	0.3-	1994 08 11	809	(0.3-	2.7+)	1998 09 14	704	(3.3-	1.0+)
1994 08 07	104	0.4+	0.3-	1994 08 11	104	0.5-	0.8-	1998 09 18	704	1.1+	0.7+
1994 08 10	809	(1.2+	3.1+)	1994 08 11	104	0.3-	1.0-	1998 09 18	704	(3.4-	0.1-)

1994 08 10	809	(1.0+	3.2+)	1994 08 11	104	0.1-	0.6-	1998 09 18	704	0.6+	0.2+
1994 08 10	809	(0.6+	3.0+)	1994 08 11	104	0.4+	2.0+	1998 09 18	704	0.6+	1.2-
1994 08 10	104	0.5+	1.3+	1994 08 14	104	0.6-	0.8-	1998 09 18	704	0.0	0.1-

1994 PH = 1998 VT₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	79.16266		(2000.0)	P	Q
<i>n</i>	0.27404496	ω	335.00957	+0.84572377	+0.53352216
<i>a</i>	2.3474058	Ω	352.72110	-0.47496123	+0.74384578
<i>e</i>	0.1957021	<i>i</i>	4.64808	-0.24323474	+0.40255131
<i>P</i>	3.60	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 08 02	905	1.3-	0.3+	1998 11 10	704	0.6-	0.5+	1998 11 11	704	1.0-	0.3-
1994 08 02	905	0.2+	0.3-	1998 11 10	704	0.6+	0.2-	1998 11 11	704	1.7-	0.7-
1994 08 04	905	0.9+	0.7+	1998 11 10	704	0.5+	1.1+	1998 11 11	704	0.6+	0.2-
1994 08 04	905	0.4+	0.2-	1998 11 10	704	0.9+	0.5-	1998 11 11	704	0.2-	0.8+
1994 08 29	905	1.4-	1.9-	1998 11 10	704	0.7+	0.8-				
1994 09 03	905	1.2+	1.4+	1998 11 11	704	0.0	0.3+				

1994 PF₂ = 1994 RT₁₆ = 1998 VJ₁₁Id. S. Nakano (d, *MPC* 27429), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.35562		(2000.0)	P	Q
<i>n</i>	0.26192114	ω	171.28572	+0.83928329	+0.54358366
<i>a</i>	2.4192961	Ω	155.77646	-0.50042738	+0.78022433
<i>e</i>	0.2462648	<i>i</i>	1.53217	-0.21254645	+0.30946210
<i>P</i>	3.76	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 09	675	(2.9+	2.5-)	1994 09 03	809	1.1+	0.7-	1998 11 10	704	0.5+	0.2+
1994 08 09	675	(0.4-	3.6-)	1994 09 03	809	0.9+	0.8-	1998 11 10	704	1.8+	0.1+
1994 08 10	809	0.5-	0.2-	1994 09 03	809	0.7+	1.2-	1998 11 10	704	1.8-	1.4-
1994 08 10	809	1.0-	0.7-	1994 09 04	809	0.6-	0.5+	1998 11 11	704	0.1+	0.4-
1994 08 10	809	1.8-	0.1-	1994 09 04	809	0.9-	0.6+	1998 11 11	704	0.8+	0.2-
1994 08 11	809	1.7+	0.3+	1994 09 04	809	1.0-	0.2+	1998 11 11	704	0.0	0.8+
1994 08 11	809	1.5+	0.9+	1998 10 14	699	0.1-	0.1-	1998 11 11	704	1.3-	0.7+
1994 08 11	809	0.1-	1.0+	1998 10 14	699	0.0	0.1+	1998 11 11	704	0.2-	0.2+
1994 08 11	675	(2.8-	4.0-)	1998 10 14	699	0.1-	0.1-				
1994 08 11	675	(1.6-	4.0-)	1998 11 10	704	0.3+	0.3+				

1994 PF₅ = 1998 UX₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	102.64264		(2000.0)	P	Q
<i>n</i>	0.27720262	ω	161.46386	+0.66771820	+0.74232403
<i>a</i>	2.3295453	Ω	150.35029	-0.69644476	+0.64938336
<i>e</i>	0.1268186	<i>i</i>	6.47006	-0.26290132	+0.16509475
<i>P</i>	3.56	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 08 10	809	(1.6+	2.5+)	1994 09 03	809	(2.5-	3.7-)	1994 09 06	809	0.7+	1.1+
1994 08 10	809	0.8+	1.3+	1994 09 04	809	1.2-	1.2-	1994 09 06	809	1.0+	1.1+
1994 08 10	809	1.0+	1.8+	1994 09 04	809	1.7-	1.4-	1998 10 18	809	0.9+	0.2-
1994 08 11	809	(1.9-	2.3-)	1994 09 04	809	(2.3-	2.7-)	1998 10 18	809	0.8+	0.0
1994 08 11	809	1.2-	1.9-	1994 09 05	809	0.5+	0.6+	1998 10 18	809	0.1-	0.3-
1994 08 11	809	0.6-	1.4-	1994 09 05	809	0.5+	0.1+	1998 10 19	809	0.9-	0.1+
1994 09 03	809	1.7-	2.5-	1994 09 05	809	1.5+	0.5+	1998 10 19	809	0.1-	0.2-
1994 09 03	809	(1.6-	3.1-)	1994 09 06	809	0.5+	2.0+	1998 10 19	809	0.6-	0.5+

1994 PF₁₁ = 1998 UJ₃₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27552316	ω	261.78561	−0.81236750	+0.58240458		
<i>a</i>	2.3390023	Ω	313.82820	−0.51770464	−0.74348562		
<i>e</i>	0.0563118	<i>i</i>	2.33506	−0.26840444	−0.32868531		
<i>P</i>	3.58	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	1.0+	1.3+	1994 09 03	809	1.1−	0.8−	1998 10 28	704	0.2−	0.6−
1994 08 10	809	0.5+	0.5+	1994 09 03	809	0.2+	0.9−	1998 10 28	704	0.3−	0.3+
1994 08 10	809	1.0−	1.1+	1994 09 04	809	0.2−	0.7+	1998 10 29	704	1.2+	0.8−
1994 08 11	809	0.3−	0.9−	1994 09 04	809	0.4−	0.0	1998 10 29	704	1.8+	0.2−
1994 08 11	809	0.1−	0.4−	1994 09 04	809	0.9+	0.3+	1998 10 29	704	1.1+	0.3+
1994 08 11	809	0.1−	1.5−	1998 10 28	704	0.4−	0.7−	1998 10 29	704	0.1+	0.2+
1994 09 03	809	0.7+	0.7+	1998 10 28	704	3.3−	1.5+				

**1994 PK₁₁ = 1958 UO = 1987 SZ₁₄ = 1990 RV₁₇ = 1992 AE₃
= 1994 PY₂₉**Id. S. Nakano (d, *MPC* 27543), A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27173146	ω	115.21500	+0.56932967	−0.81948805		
<i>a</i>	2.3607107	Ω	299.92460	+0.72441118	+0.53779874		
<i>e</i>	0.2235386	<i>i</i>	4.34077	+0.38870578	+0.19801981		
<i>P</i>	3.63	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1958 10 21	760	2.5−	0.2+	1992 01 12	303	0.1−	1.5−	1994 08 12	809	0.2+	0.2−
1958 10 21	760	2.5−	0.8−	1994 08 10	809	1.7+	0.6−	1994 08 12	809	0.4−	0.0
1987 09 23	095	(1.1+ 2.7−)		1994 08 10	809	1.4+	0.3−	1994 08 12	809	1.2−	0.1−
1990 09 09	413	(3.3− 1.9−)		1994 08 10	809	1.0+	0.6−	1994 08 13	809	(2.1+ 2.0+)	
1990 09 10	413	(4.1+ 2.8+)		1994 08 11	809	0.7+	0.5+	1994 08 13	809	1.4+	1.4+
1990 09 11	413	0.2+	0.3+	1994 08 11	809	0.9+	0.1+	1994 08 13	809	0.8+	1.2+
1992 01 11	303	(2.1+ 1.8−)		1994 08 11	809	0.4+	0.0				

1994 PM₁₄ = 1998 TZ₃₄

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26190895	ω	165.13478	+0.86456887	+0.50243332		
<i>a</i>	2.4193711	Ω	164.69422	−0.46446606	+0.80583265		
<i>e</i>	0.2250584	<i>i</i>	1.95896	−0.19181225	+0.31336003		
<i>P</i>	3.76	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 10	809	1.2+	0.2−	1994 09 04	809	0.4−	0.1−	1998 11 10	704	0.0	0.0
1994 08 10	809	0.2−	0.6−	1994 09 04	809	0.9−	0.6−	1998 11 10	704	0.4+	0.7−
1994 08 10	809	0.7−	0.0	1994 09 04	809	2.2−	0.6−	1998 11 10	704	0.2+	0.2−
1994 08 11	809	0.7+	0.1+	1998 10 14	699	0.4+	0.5+	1998 11 10	704	1.1−	1.6−
1994 08 11	809	0.2+	0.3−	1998 10 14	699	0.0	0.5+	1998 11 11	704	1.0−	1.4+
1994 08 11	809	1.1−	0.8−	1998 10 14	699	0.1+	0.2+	1998 11 11	704	0.7+	1.7−
1994 09 03	809	1.7+	0.9+	1998 10 20	699	0.3+	0.1−	1998 11 11	704	0.0	0.1+
1994 09 03	809	1.1+	0.8+	1998 10 20	699	1.0−	0.3+	1998 11 11	704	0.9+	0.1+
1994 09 03	809	0.7+	1.1+	1998 10 20	699	0.0	1.0+				

1994 PQ₁₅ = 1992 AM₄ = 1998 VH₃₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26550048	ω	5.87360	+0.74407550	+0.66694727		
<i>a</i>	2.3975031	Ω	312.21524	−0.61509753	+0.66099743		
<i>e</i>	0.2273871	<i>i</i>	3.03037	−0.26078092	+0.34389495		
<i>P</i>	3.71	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 01 02	033	0.3−	0.6−	1994 09 03	809	0.3−	0.2+	1998 11 10	704	0.1−	0.4+
1992 01 03	033	0.3+	0.9−	1994 09 04	809	0.4+	0.2−	1998 11 10	704	0.8+	0.1+
1994 08 10	809	1.3+	1.2−	1994 09 04	809	0.4−	0.3−	1998 11 10	704	0.1+	0.3−
1994 08 10	809	0.2+	1.3−	1994 09 04	809	0.7−	0.2−	1998 11 10	704	0.2−	0.3−
1994 08 10	809	0.1−	1.0−	1994 09 05	809	0.4+	0.3−	1998 11 10	704	0.2−	1.4−
1994 08 11	809	1.3+	0.2−	1994 09 05	809	0.6+	0.1+	1998 11 11	704	0.4+	1.1+
1994 08 11	809	0.4+	0.1+	1994 09 05	809	0.2−	0.3+	1998 11 11	704	0.3+	0.8+
1994 08 11	809	0.9+	0.6+	1994 09 06	809	0.6+	0.6+	1998 11 11	704	0.9−	0.6−
1994 09 03	809	2.8−	0.2+	1994 09 06	809	0.1−	0.7+	1998 11 11	704	0.5−	0.0
1994 09 03	809	1.2−	0.4+	1994 09 06	809	0.2+	0.9+	1998 11 11	704	0.1+	0.3+

1994 PC₁₆ = 1994 RR₁₇ = 1998 SG₁₂₃Id. G. V. Williams (d, *MPC* 24886), A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26388443	ω	84.22312	+0.28659904	+0.95788490		
<i>a</i>	2.4072815	Ω	202.45608	−0.89642397	+0.26155423		
<i>e</i>	0.1541883	<i>i</i>	2.67377	−0.33806074	+0.11851542		
<i>P</i>	3.74	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	0.8−	0.9−	1994 09 03	809	0.6+	1.1−	1998 09 26	704	1.5+	0.3+
1994 08 10	809	0.6−	0.4−	1994 09 03	809	0.9−	0.3−	1998 09 26	704	0.0	1.7−
1994 08 10	809	0.2−	0.0	1994 09 03	809	1.0−	0.2−	1998 09 26	704	1.1+	1.5−
1994 08 11	809	0.8+	0.5+	1994 09 04	809	0.2+	0.7−	1998 09 26	704	1.0+	0.1−
1994 08 11	809	0.8+	0.2−	1994 09 04	809	0.2+	0.1−	1998 09 26	704	1.0−	1.3+
1994 08 11	809	0.2+	0.8+	1994 09 04	809	0.1+	0.1+	1998 09 27	704	0.3−	0.0
1994 08 12	809	(5.0+ 1.8+)		1994 09 05	809	0.5+	1.5+	1998 09 27	704	0.7−	0.5−
1994 08 12	809	(3.0+ 1.6+)		1994 09 05	809	0.1+	1.8+	1998 09 27	704	2.3−	1.2+
1994 08 12	809	(3.3+ 1.1+)		1994 09 05	809	0.2−	1.3+	1998 09 27	704	1.3+	0.6+
1994 08 13	809	(4.9+ 0.8+)		1994 09 06	809	0.9+	0.3−	1998 09 27	704	0.5−	0.2+
1994 08 13	809	(3.8+ 1.2+)		1994 09 06	809	0.4−	1.2−				
1994 08 13	809	(3.7+ 0.8+)		1994 09 06	809	0.1−	0.5−				

1994 PP₁₆ = 4859 P-L

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28851217	ω	136.11031	−0.03337922	+0.99934542		
<i>a</i>	2.2682624	Ω	131.97164	−0.92206681	−0.02540773		
<i>e</i>	0.1250669	<i>i</i>	1.07498	−0.38558867	−0.02575218		
<i>P</i>	3.42	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.6+	0.5+	1994 08 10	809	0.4+	0.9+	1994 09 04	809	0.5−	1.1+
1960 09 26	675	0.4+	1.5−	1994 08 11	809	0.3−	1.3−	1994 09 04	809	1.7−	0.1+
1960 09 27	675	1.1+	1.3−	1994 08 11	809	0.0	2.0−	1994 09 04	809	1.8−	0.5+
1960 09 28	675	0.4−	1.7−	1994 08 11	809	(0.9− 2.5−)		1998 11 23	691	0.2−	0.7+
1960 10 17	675	(9.9− 6.2+)		1994 09 03	809	0.4+	0.6+	1998 11 23	691	0.2−	0.5+
1994 08 10	809	1.2+	0.5+	1994 09 03	809	0.4+	1.2+	1998 11 23	691	0.0	0.6+
1994 08 10	809	0.6+	0.2+	1994 09 03	809	0.1+	1.3+				

1994 PE₁₈ = 1998 WD₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28367363	ω	338.58795	+0.42801773	+0.90373736		
<i>a</i>	2.2939823	Ω	316.75286	−0.82754811	+0.38847157		
<i>e</i>	0.1525067	<i>i</i>	0.64565	−0.36326980	+0.17985723		
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 08 10	809	0.3+	0.2+	1994 08 12	809	0.0	0.4−	1998 11 21	704	1.8+	1.0−
1994 08 10	809	0.7−	0.4+	1994 09 03	809	0.4−	0.4−	1998 11 21	704	1.1−	0.8+
1994 08 10	809	1.1−	0.1+	1994 09 03	809	0.9−	0.6−	1998 11 21	704	0.4−	1.5+

1994 08 11	809	0.7+	0.5+	1994 09 03	809	0.5−	0.1−	1998 11 21	704	0.0	0.2−
1994 08 11	809	0.1−	0.6−	1994 09 04	809	1.2+	0.2−	1998 11 24	704	0.1+	1.1+
1994 08 11	809	0.7−	0.6+	1994 09 04	809	0.6+	0.2+	1998 11 24	704	1.0−	0.2−
1994 08 12	809	1.1+	0.3+	1994 09 04	809	0.1+	0.5+	1998 11 24	704	0.6−	0.0
1994 08 12	809	0.4+	0.5−	1998 11 21	704	0.8+	0.5+	1998 11 24	704	0.3+	2.4−

1994 PL₂₀ = 1995 YV₉ = 1998 SW₉₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	276.44461		(2000.0)	P	Q
<i>n</i>	0.26385275	ω	328.40714	−0.70462653	−0.70950386
<i>a</i>	2.4074742	Ω	166.38274	+0.65978796	−0.66044720
<i>e</i>	0.1125308	<i>i</i>	2.50312	+0.26111550	−0.24579212
<i>P</i>	3.74	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 12	809	0.7+	0.5+	1994 09 06	809	2.5−	0.2−	1998 09 26	704	0.5+	0.3+
1994 08 12	809	0.8−	0.2+	1994 09 06	809	(3.9−	0.1+)	1998 09 26	704	0.3+	2.0−
1994 08 12	809	0.1−	1.0+	1994 09 06	809	(4.3−	0.3+)	1998 09 26	704	0.0	0.1+
1994 08 13	809	0.5+	0.2+	1995 12 18	691	0.7−	0.5+	1998 09 26	704	0.2−	2.0−
1994 08 13	809	1.4+	1.4+	1995 12 18	691	0.6−	0.5+	1998 09 26	704	0.4−	0.0
1994 08 13	809	0.2−	0.3+	1995 12 18	691	0.6−	0.5+	1998 09 27	704	0.8−	0.3−
1994 09 05	809	(5.5−	3.8−)	1995 12 29	691	0.8+	0.2+	1998 09 27	704	0.1−	1.6+
1994 09 05	809	(4.8−	3.6−)	1995 12 29	691	0.3+	0.0	1998 09 27	704	0.5+	0.7+
1994 09 05	809	(4.8−	2.4−)	1995 12 29	691	1.0+	0.0	1998 09 27	704	1.1+	0.9−

1994 PZ₂₂ = 1994 RA₂₂ = 1996 DY₃ = 1998 US₁₂Id. S. Nakano (d, *MPC* 27543), A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	358.59654		(2000.0)	P	Q
<i>n</i>	0.26827381	ω	225.65190	+0.44991626	−0.89306769
<i>a</i>	2.3809514	Ω	197.61020	+0.82155774	+0.41491354
<i>e</i>	0.0770919	<i>i</i>	0.44254	+0.35016886	+0.17400247
<i>P</i>	3.67	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1994 08 12	809	0.4+	0.7−	1994 09 06	809	(3.0+	1.2+)	1996 02 17	010	(1.9+	3.7+)
1994 08 12	809	1.3−	1.5−	1994 09 06	809	1.2+	1.6+	1998 08 31	910	0.7+	0.0
1994 08 12	809	0.9−	1.5−	1996 02 16	010	(0.1+	2.4+)	1998 08 31	910	0.8+	0.1−
1994 08 13	809	0.1+	0.4−	1996 02 16	010	(0.9−	2.8+)	1998 08 31	910	0.9+	0.3−
1994 08 13	809	0.2+	0.9−	1996 02 16	010	(0.4−	3.0+)	1998 10 18	691	0.6−	0.0
1994 08 13	809	1.3−	0.0	1996 02 16	691	0.0	0.4−	1998 10 18	691	0.4−	0.1−
1994 09 05	809	0.0	0.2+	1996 02 16	691	0.3−	0.5−	1998 10 23	691	0.4−	0.2+
1994 09 05	809	0.2+	0.3+	1996 02 16	691	0.1−	0.4−	1998 10 23	691	0.1−	0.2+
1994 09 05	809	0.0	0.1+	1996 02 17	010	(2.2+	4.5+)	1998 10 23	691	0.1−	0.0
1994 09 06	809	1.4+	1.5+	1996 02 17	010	(3.0+	3.2+)				

1994 PL₂₆ = 1998 TV₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	149.72704		(2000.0)	P	Q
<i>n</i>	0.28065980	ω	162.27594	−0.01034408	+0.99943821
<i>a</i>	2.3103755	Ω	107.12210	−0.92142512	+0.00285671
<i>e</i>	0.0513904	<i>i</i>	1.91159	−0.38841827	−0.03339316
<i>P</i>	3.51	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 08 12	809	0.6−	0.7−	1998 10 13	120	0.3+	1.1−	1998 11 10	704	0.2+	0.1+
1994 08 12	809	0.6−	1.0−	1998 10 14	120	0.1+	0.5+	1998 11 10	704	0.7−	0.4−
1994 08 12	809	0.7−	0.6−	1998 10 14	699	0.5−	0.2+	1998 11 10	704	0.2+	0.6−
1994 08 13	809	0.5+	0.2−	1998 10 14	699	1.2+	0.1−	1998 11 11	704	0.9−	0.1−
1994 08 13	809	0.6+	0.2+	1998 10 14	699	0.1+	1.6−	1998 11 11	704	0.3−	1.8+
1994 08 13	809	1.2+	1.0+	1998 10 15	120	0.5+	0.2−	1998 11 11	704	0.0	0.4−
1994 09 05	809	0.1+	0.3+	1998 10 15	120	0.6+	0.2−	1998 11 11	704	1.2−	0.5+
1994 09 05	809	0.5−	0.5+	1998 10 16	120	1.6+	0.8−	1998 11 11	120	0.4+	1.0+
1994 09 05	809	0.1−	1.2+	1998 10 16	120	1.6−	0.5−	1998 11 11	120	0.3−	1.0+
1994 09 06	809	0.8+	0.2−	1998 10 20	120	0.0	0.1−	1998 11 11	120	0.1−	0.5+

1994 09 06	809	0.6−	0.0	1998 10 20	120	0.1+	0.2−
1994 09 06	809	0.2−	0.0	1998 11 10	704	0.4+	0.1+

1994 PS₂₈ = 1982 DF₂ = 1998 SU₁₁₂

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	160.08566		(2000.0)	P	Q
<i>n</i>	0.26778475	ω	90.39392	−0.69945318	+0.71080439
<i>a</i>	2.3838494	Ω	134.90867	−0.69033605	−0.64506017
<i>e</i>	0.1733669	<i>i</i>	6.02295	−0.18493616	−0.28045409
<i>P</i>	3.68	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1982 02 20	046	1.1+	1.0+	1994 09 05	809	0.7+	0.4−	1998 09 26	704	0.8−	1.2−
1982 02 20	046	(6.8+	3.3−)	1994 09 05	809	0.8+	0.8+	1998 09 26	704	0.0	0.3−
1982 02 21	046	2.2−	1.2+	1994 09 05	809	0.2−	0.4+	1998 09 26	704	0.1−	0.1+
1982 02 21	046	1.5+	0.7−	1994 09 06	809	0.2−	0.5−	1998 09 26	704	0.5−	1.5−
1994 08 12	809	(3.9−	1.5−)	1994 09 06	809	0.8−	1.3−	1998 09 27	704	0.8+	0.0
1994 08 12	809	(3.1−	0.6−)	1994 09 06	809	1.0+	0.7−	1998 09 27	704	0.0	0.2+
1994 08 12	809	(4.0−	1.1−)	1998 09 21	699	0.2+	0.4+	1998 09 27	704	(0.3+	2.2+)
1994 08 13	809	0.5−	1.4+	1998 09 21	699	0.1−	1.6+	1998 09 27	704	(2.6−	0.1+)
1994 08 13	809	0.7−	0.8+	1998 09 21	699	0.8+	1.1+				
1994 08 13	809	0.6−	0.6+	1998 09 26	704	0.5−	0.2+				

1994 PC₃₀ = 1998 SE₁₁₈ = 1998 UQ₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	5.93527		(2000.0)	P	Q
<i>n</i>	0.26097534	ω	199.08283	+0.64811389	−0.76022308
<i>a</i>	2.4251377	Ω	210.56629	+0.70966496	+0.62426841
<i>e</i>	0.1752739	<i>i</i>	5.05688	+0.27626802	+0.17986057
<i>P</i>	3.78	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 12	809	0.5+	0.4−	1994 09 06	809	0.8+	1.7+	1998 09 27	704	0.6+	0.2−
1994 08 12	809	(3.2−	1.4−)	1994 09 06	809	1.1+	0.8+	1998 09 27	704	1.1+	0.5+
1994 08 12	809	1.1−	0.2−	1998 09 26	704	0.2−	0.5−	1998 10 28	704	0.5−	0.8−
1994 08 13	809	0.4+	0.1+	1998 09 26	704	1.0−	0.2+	1998 10 28	704	(2.6+	1.9−)
1994 08 13	809	0.3+	0.3−	1998 09 26	704	0.3−	0.8−	1998 10 28	704	0.2+	0.3+
1994 08 13	809	0.2−	0.6−	1998 09 26	704	0.1−	0.5−	1998 10 28	704	(3.3−	0.7−)
1994 09 05	809	0.1−	0.1+	1998 09 26	704	0.4−	1.0+	1998 10 29	704	(1.3−	5.8−)
1994 09 05	809	1.0+	0.3−	1998 09 27	704	0.8−	0.4−	1998 10 29	704	(0.4+	4.5−)
1994 09 05	809	1.9−	1.2−	1998 09 27	704	1.5+	0.8+	1998 10 29	704	(0.2+	6.1−)
1994 09 06	809	0.8−	0.4+	1998 09 27	704	0.1−	0.1+	1998 10 29	704	(1.1+	7.0−)

1994 PS₃₁ = 1998 SL₁₅₈

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	76.86833		(2000.0)	P	Q
<i>n</i>	0.25868875	ω	115.24112	+0.59652632	+0.80239599
<i>a</i>	2.4394075	Ω	191.43216	−0.76490287	+0.56165432
<i>e</i>	0.1996844	<i>i</i>	5.15390	−0.24306368	+0.20175504
<i>P</i>	3.81	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 12	809	0.3+	1.1+	1994 09 06	809	1.7−	1.6−	1998 09 27	704	1.3−	0.9+
1994 08 12	809	0.3+	1.0+	1994 09 06	809	1.3−	0.9−	1998 09 27	704	0.3+	1.3+
1994 08 12	809	0.0	1.4+	1998 09 15	699	0.7−	0.3+	1998 09 27	704	0.5−	0.0
1994 08 13	809	0.1−	0.2+	1998 09 15	699	0.6−	0.4−	1998 10 10	699	0.1−	0.4+
1994 08 13	809	0.2−	0.6+	1998 09 15	699	0.7−	0.9−	1998 10 10	699	0.1+	0.4+
1994 08 13	809	0.3−	0.0	1998 09 26	704	0.4+	0.7−	1998 10 10	699	1.2+	0.6+
1994 09 05	809	1.9+	0.3+	1998 09 26	704	0.3−	0.3−	1998 10 19	699	0.3+	0.4+
1994 09 05	809	1.0+	0.8−	1998 09 26	704	1.0+	0.9−	1998 10 19	699	0.1+	1.2+
1994 09 05	809	0.6+	0.1−	1998 09 26	704	0.4+	0.8−	1998 10 19	699	0.2+	0.2+
1994 09 06	809	0.3−	1.6−	1998 09 27	704	0.1−	0.8−				

1994 PY₃₇ = 1998 SW₄₉

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	117.33823	(2000.0)	P	Q	
<i>n</i>	0.27213790	ω 333.50861	+0.09389516	+0.99528646	
<i>a</i>	2.3583596	Ω 301.87022	-0.90828518	+0.07565826	
<i>e</i>	0.1888532	<i>i</i> 1.63698	-0.40767846	+0.06066865	
<i>P</i>	3.62	<i>H</i> 16.4	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1994 08 10	809	1.3-	1.3-	1994 09 02	691	1.5-	0.8+	1998 09 24	691	0.1+	0.2+
1994 08 10	809	0.3+	1.5-	1994 09 03	809	1.5+	0.1-	1998 10 01	691	0.9-	0.6-
1994 08 10	809	0.1+	1.7-	1994 09 03	809	0.3+	1.3-	1998 10 01	691	0.9-	0.5-
1994 08 11	809	1.3+	0.3-	1994 09 03	809	0.5-	0.8-	1998 10 01	691	1.0-	0.7-
1994 08 11	809	1.3+	0.1-	1994 09 04	809	0.0	1.6+	1998 10 20	910	0.9+	0.0
1994 08 11	809	1.2+	0.2+	1994 09 04	809	0.4+	2.0+	1998 10 20	910	0.9+	0.1-
1994 09 02	691	1.0-	0.8+	1994 09 04	809	1.0-	2.6+	1998 10 20	910	0.7+	0.1+
1994 09 02	691	1.4-	0.1-	1998 09 24	691	0.6+	0.5+				

1994 RP₅ = 1998 TE₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Doppler		
<i>M</i>	103.42596	(2000.0)	P	Q	
<i>n</i>	0.26116733	ω 67.06496	+0.37636279	+0.92612597	
<i>a</i>	2.4239490	Ω 225.06943	-0.86259215	+0.34030431	
<i>e</i>	0.1785497	<i>i</i> 2.05062	-0.33806186	+0.16273806	
<i>P</i>	3.77	<i>H</i> 17.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1994 09 12	691	0.4+	0.4+	1994 09 13	691	0.0	0.2+	1998 10 13	691	0.1+	0.4+
1994 09 12	691	0.2-	0.1-	1994 09 14	691	0.5-	0.1-	1998 10 13	691	0.3-	0.2+
1994 09 12	691	0.2+	0.3+	1994 09 14	691	0.1+	0.3+	1998 10 19	691	0.2+	0.2-
1994 09 13	691	0.5+	0.2-	1994 09 14	691	0.3+	0.4-	1998 10 19	691	0.0	0.1-
1994 09 13	691	0.7-	0.4-	1998 10 13	691	0.1-	0.1-	1998 10 19	691	0.0	0.2-

1994 RP₁₁ = 1998 WO₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	60.88176	(2000.0)	P	Q	
<i>n</i>	0.26726217	ω 107.99342	+0.99547653	+0.00470738	
<i>a</i>	2.3869559	Ω 251.82095	-0.03939676	+0.92930757	
<i>e</i>	0.1464542	<i>i</i> 5.73205	+0.08645447	+0.36927670	
<i>P</i>	3.69	<i>H</i> 15.3	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1994 09 02	033	0.3+	0.2+	1998 11 18	704	0.2-	0.1+	1998 11 21	704	1.1+	0.2+
1994 09 02	033	0.1+	1.0-	1998 11 18	704	0.8-	0.5-	1998 11 21	704	0.3-	0.4-
1994 09 04	033	0.1-	0.2+	1998 11 18	704	0.1-	0.7-	1998 11 21	704	0.0	2.6+
1994 09 06	033	0.3-	0.6+	1998 11 18	704	0.5-	1.3-				
1998 11 18	704	0.1-	0.1+	1998 11 21	704	0.9+	0.1-				

1994 RR₁₁ = 1985 TH = 1998 MY₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Doppler		
<i>M</i>	316.12674	(2000.0)	P	Q	
<i>n</i>	0.21759809	ω 157.80809	+0.79966277	-0.58962999	
<i>a</i>	2.7375748	Ω 238.82071	+0.52905388	+0.78125935	
<i>e</i>	0.1664683	<i>i</i> 7.62162	+0.28397437	+0.20486657	
<i>P</i>	4.53	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1985 10 15	688	1.4-	0.4-	1994 09 06	033	0.4+	0.1+	1998 06 24	704	(4.9-	0.4+)
1985 10 15	688	1.4+	0.5+	1998 06 24	704	1.1+	0.8-	1998 06 26	704	0.6-	1.1-
1994 09 02	033	0.2+	0.2+	1998 06 24	704	1.1+	0.9+	1998 06 26	704	0.5+	0.7+
1994 09 02	033	0.1+	0.1-	1998 06 24	704	1.8-	1.0+	1998 06 26	704	0.1-	0.5-
1994 09 04	033	0.7-	0.4-	1998 06 24	704	0.3-	0.2+	1998 06 26	704	0.1+	0.3-

1994 RW₁₁ = 1997 HQ₁₄ = 1998 WU₁₄

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	105.37869	(2000.0)	P	Q	
<i>n</i>	0.27115705	ω 94.88933	+0.58975364	+0.80650589	
<i>a</i>	2.3640434	Ω 211.36855	-0.76906495	+0.54511908	
<i>e</i>	0.2118037	<i>i</i> 4.59484	-0.24643406	+0.22889614	
<i>P</i>	3.63	<i>H</i> 14.6	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1994 09 04	675	0.2+	1.3-	1997 05 08	691	0.4+	0.3+	1998 11 21	704	1.1-	0.9+
1994 09 04	675	0.3+	0.9+	1997 05 08	691	0.2+	0.2+	1998 11 24	704	0.5+	0.4+
1994 09 06	675	0.1+	0.2+	1998 11 15	120	0.5-	1.0+	1998 11 24	704	0.9+	1.9-
1994 09 06	675	0.4-	0.2-	1998 11 15	120	0.2-	0.5+	1998 11 24	704	0.1+	1.3-
1997 04 28	691	0.2-	0.5-	1998 11 21	704	0.5+	0.2+	1998 11 24	704	(0.4-	2.2-)
1997 04 28	691	0.3-	0.4-	1998 11 21	704	0.0	1.0+	1998 11 24	704	0.3-	1.2-
1997 04 28	691	0.7-	0.3-	1998 11 21	704	0.3+	0.1-				
1997 05 08	691	0.4+	0.0	1998 11 21	704	(0.5-	2.5+)				

1994 SF₅ = 1993 HC₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Doppler		
<i>M</i>	54.15281	(2000.0)	P	Q	
<i>n</i>	0.23378287	ω 127.92663	+0.67538283	+0.73717724	
<i>a</i>	2.6097221	Ω 184.71937	-0.73057033	+0.66497679	
<i>e</i>	0.1059502	<i>i</i> 14.55889	-0.10062318	+0.11989821	
<i>P</i>	4.22	<i>H</i> 16.0	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1993 04 18	691	0.4+	0.1+	1994 09 28	691	0.2+	0.0	1994 09 29	691	0.3-	0.1-
1993 04 18	691	0.0	0.3+	1994 09 28	691	0.4+	0.3+	1994 10 06	691	0.5-	0.1-
1993 04 19	691	0.4-	0.7-	1994 09 28	691	0.1-	0.0	1994 10 06	691	0.5+	0.3+
1993 04 19	691	0.1+	0.1+	1994 09 29	691	0.3-	0.2-	1994 10 06	691	0.0	0.1-
1993 04 19	691	0.0	0.2+	1994 09 29	691	0.0	0.0				

1994 SE₇ = 1992 KY = 1997 EC₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Doppler		
<i>M</i>	82.30127	(2000.0)	P	Q	
<i>n</i>	0.17174345	ω 149.86443	-0.97179319	+0.23505383	
<i>a</i>	3.2054027	Ω 43.74392	-0.22153490	-0.88196456	
<i>e</i>	0.1458430	<i>i</i> 1.58915	-0.08087198	-0.40851953	
<i>P</i>	5.74	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1992 05 29	474	0.5+	0.1-	1994 09 29	691	0.4-	0.2+	1994 10 06	691	0.9+	0.1-
1992 05 29	474	0.5-	0.0	1994 09 29	691	0.2-	0.1+	1997 03 05	704	0.0	0.1+
1994 09 28	691	0.3-	0.2+	1994 09 29	691	0.5-	0.0	1997 03 05	704	0.8+	0.0
1994 09 28	691	0.4-	0.0	1994 10 06	691	1.0+	0.1-	1997 03 06	704	0.8-	0.7-
1994 09 28	691	0.4-	0.1-	1994 10 06	691	0.5+	0.3-	1997 03 06	704	0.0	0.6+

1994 TJ = 1998 SP₁₃₂

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	57.64419	(2000.0)	P	Q	
<i>n</i>	0.25237259	ω 0.88248	+0.97249023	+0.23168226	
<i>a</i>	2.4799405	Ω 345.65157	-0.21431567	+0.84915398	
<i>e</i>	0.0936412	<i>i</i> 5.60615	-0.09127733	+0.47461653	
<i>P</i>	3.91	<i>H</i> 14.9	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1994 10 05	595	0.1+	0.3-	1998 09 26	704	0.2+	0.5-	1998 10 28	704	0.9-	0.1+
1994 10 06	595	0.6-	0.4-	1998 09 26	704	0.2+	0.8-	1998 10 28	704	0.8+	1.2+
1994 10 07	595	0.3-	0.0	1998 09 26	704	0.2+	0.0	1998 10 28	704	0.8+	0.5+
1994 10 07	595	0.3+	0.5-	1998 09 26	704	0.2+	1.1-	1998 10 28	704	0.4-	0.2+
1994 10 11	595	0.4+	0.0	1998 09 26	704	0.8-	1.7-	1998 10 29	704	0.6-	0.9-

1994 10 12	595	0.1−	0.4+	1998 09 27	704	0.7−	1.2+	1998 10 29	704	0.4+	0.1−
1994 10 12	595	0.7−	0.2+	1998 09 27	704	1.7+	1.3+	1998 10 29	704	0.2−	0.0
1994 10 13	595	0.0	0.1+	1998 09 27	704	0.7−	0.6+	1998 10 29	704	0.8+	0.9−
1994 10 13	595	0.5+	0.1−	1998 09 27	704	0.4−	1.4+	1998 10 29	704	0.5−	0.5−
1994 10 13	595	0.5+	0.2+	1998 09 27	704	0.2−	0.1+				

1994 TF₁ = 1989 UP₆ = 1998 KV₃₅

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				P	Q		
<i>M</i>	305.66935		(2000.0)				
<i>n</i>	0.18267218	ω	298.90325	+0.98886912	+0.08794584		
<i>a</i>	3.0762463	Ω	56.29320	−0.02192871	+0.88394859		
<i>e</i>	0.1302986	<i>i</i>	8.29485	−0.14716319	+0.45923896		
<i>P</i>	5.40	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 10 26	033	0.3+	0.2+	1994 10 03	400	1.5−	0.6+	1998 05 22	704	0.2−	0.0
1989 10 26	033	0.6+	0.0	1994 10 07	400	2.3+	0.9+	1998 05 24	704	0.3+	0.6−
1989 10 28	033	0.8−	0.6−	1994 10 07	400	2.9+	1.0−	1998 05 24	704	1.2−	0.9+
1994 10 02	400	2.2−	0.0	1998 05 22	704	0.1−	0.5−	1998 05 24	704	0.2+	0.7−
1994 10 02	400	0.7−	0.1+	1998 05 22	704	0.3−	1.2−	1998 05 24	704	1.0+	1.0+
1994 10 03	400	0.7−	0.7−	1998 05 22	704	0.0	0.7+				

1994 TJ₁₁ = 1997 LM₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
				P	Q		
<i>M</i>	284.47857		(2000.0)				
<i>n</i>	0.21022036	ω	233.17104	+0.22292132	−0.97352699		
<i>a</i>	2.8012564	Ω	204.09581	+0.92915951	+0.22786535		
<i>e</i>	0.2123686	<i>i</i>	7.10683	+0.29490454	+0.01796059		
<i>P</i>	4.69	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 10 10	691	0.9−	0.1+	1994 10 11	691	0.2−	0.2−	1994 10 13	691	1.3+	0.2+
1994 10 10	691	1.0−	0.0	1994 10 11	691	0.1−	0.5−	1997 06 05	691	1.0+	1.2−
1994 10 10	691	0.8−	0.4+	1994 10 12	691	0.6+	0.2+	1997 06 05	691	0.7−	0.8−
1994 10 10	691	(2.3+	2.1+)	1994 10 12	691	0.3+	0.3−	1997 06 05	691	1.6−	0.7−
1994 10 10	691	0.7−	0.1+	1994 10 12	691	0.4+	0.2−	1997 06 10	691	0.6+	1.2+
1994 10 10	691	1.0−	0.6−	1994 10 13	691	0.9+	1.1+	1997 06 10	691	0.4+	0.8+
1994 10 11	691	0.3−	0.2−	1994 10 13	691	1.5+	0.3−	1997 06 10	691	0.3+	0.7+

1994 TX₁₁ = 1998 VG₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				P	Q		
<i>M</i>	330.17084		(2000.0)				
<i>n</i>	0.25050939	ω	288.05265	−0.50718151	−0.86176320		
<i>a</i>	2.4922219	Ω	192.44287	+0.80946049	−0.47175402		
<i>e</i>	0.2735565	<i>i</i>	3.04631	+0.29587266	−0.18658065		
<i>P</i>	3.93	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1994 10 10	691	1.5+	0.1+	1994 10 12	691	0.3+	0.0	1998 11 10	704	0.6+	1.5+
1994 10 10	691	1.6+	0.2+	1994 10 12	691	1.6−	0.2−	1998 11 10	704	1.3−	0.5+
1994 10 10	691	0.6+	1.0+	1994 10 12	691	1.8−	0.4−	1998 11 10	704	1.1−	0.8+
1994 10 11	691	0.9−	0.4+	1994 10 12	691	1.7−	0.1+	1998 11 11	704	0.5−	0.7−
1994 10 11	691	1.1−	0.1+	1994 10 13	691	1.6+	0.3−	1998 11 11	704	0.2+	1.3−
1994 10 11	691	1.4−	0.1+	1994 10 13	691	1.0+	0.6−	1998 11 11	704	0.6+	1.5−
1994 10 12	691	0.7+	0.0	1994 10 13	691	0.8+	0.3−	1998 11 11	704	1.7+	0.9−
1994 10 12	691	0.4+	0.1−	1998 11 10	704	1.2−	2.5+	1998 11 11	704	0.9+	0.9−

1994 TS₁₆ = 1990 SC₁₆ = 1992 BN₂

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				P	Q		
<i>M</i>	93.71535		(2000.0)				
<i>n</i>	0.26653248	ω	147.12423	+0.91812702	+0.39590693		
<i>a</i>	2.3913104	Ω	189.60055	−0.38232395	+0.87342232		
<i>e</i>	0.1361550	<i>i</i>	5.96588	−0.10426492	+0.28353333		
<i>P</i>	3.70	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 09 17	675	0.7+	0.4+	1992 01 30	809	1.2+	0.1+	1994 10 06	033	0.0	0.6−
1990 09 17	675	0.0	0.4−	1992 01 30	809	0.2+	0.2+	1994 10 07	033	0.0	0.7+
1990 09 20	675	0.2+	0.3+	1992 01 30	809	1.4−	0.2−	1994 10 10	033	0.2+	0.2−
1990 09 20	675	1.1−	0.1−	1994 10 05	033	0.2−	0.0				

1994 TT₁₆ = 1996 FS₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
				P	Q		
<i>M</i>	86.15035		(2000.0)				
<i>n</i>	0.27410607	ω	323.55995	+0.99793898	+0.05824399		
<i>a</i>	2.3470569	Ω	33.13169	−0.04075014	+0.89943281		
<i>e</i>	0.2149593	<i>i</i>	2.82459	−0.04957036	+0.43316077		
<i>P</i>	3.60	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 10 05	033	0.2−	0.6−	1994 10 10	033	0.3+	0.3−	1996 03 23	691	0.6−	0.6−
1994 10 06	033	0.5−	0.5+	1996 03 17	691	0.5+	0.6+	1996 03 23	691	0.1−	0.4+
1994 10 07	033	0.4+	0.4+	1996 03 17	691	0.1+	0.1+	1996 03 23	691	0.1+	0.5−

1994 UF

Id. F. B. Zoltowski (1998 observations), M. W. Buie (1997 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				P	Q		
<i>M</i>	51.04339		(2000.0)				
<i>n</i>	0.26054949	ω	176.28992	+0.99113470	−0.12542192		
<i>a</i>	2.4277795	Ω	191.20395	+0.11535284	+0.97604147		
<i>e</i>	0.2882521	<i>i</i>	13.03773	+0.06592209	+0.17779871		
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1994 10 01	675	0.4+	1.1+	1994 11 04	675	0.7+	0.1−	1995 02 20	413	0.0	0.4+
1994 10 01	675	1.0+	0.3+	1994 11 11	413	0.3−	0.4−	1997 05 13	688	0.1+	0.0
1994 10 11	691	1.0−	0.2−	1994 11 11	413	0.4−	0.3−	1997 05 13	688	0.1+	0.0
1994 10 11	691	1.0−	0.1−	1994 11 12	413	0.2−	0.4−	1997 05 13	688	0.2−	0.1+
1994 10 11	691	0.7−	0.1+	1994 11 12	413	0.3−	0.3−	1997 05 13	688	0.0	0.0
1994 10 24	413	1.0+	0.1+	1994 12 19	413	0.4−	0.2−	1998 11 24	426	0.3−	0.1+
1994 10 24	413	(0.8+	2.3+)	1994 12 19	413	0.3−	0.1−	1998 11 24	426	0.5−	0.3+
1994 10 30	413	1.3+	1.4−	1994 12 20	413	0.3−	0.0	1998 11 25	426	0.1+	0.0
1994 10 30	413	(0.5−	2.1+)	1994 12 20	413	0.0	0.1+	1998 11 25	426	0.3+	0.2+
1994 11 04	675	0.0	1.2+	1995 02 20	413	0.4+	0.1−	1998 11 25	426	0.3+	0.1−

1994 UT = 1998 VD₃₃

Id. T. Kagawa

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
				P	Q		
<i>M</i>	69.71298		(2000.0)				
<i>n</i>	0.27744709	ω	123.32854	+0.85375995	−0.51442498		
<i>a</i>	2.3281767	Ω	267.74944	+0.44697030	+0.80330853		
<i>e</i>	0.1372228	<i>i</i>	4.61396	+0.26704214	+0.30010389		
<i>P</i>	3.55	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1994 10 01	675	0.8−	0.2−	1994 11 25	385	1.0+	0.0	1998 11 14	888	0.3−	0.4−
1994 10 01	675	0.0	0.1+	1994 11 25	385	0.6+	0.0	1998 11 14	888	0.0	0.8−
1994 10 31	905	0.5+	0.2+	1994 11 25	385	1.5+	0.0	1998 11 15	888	0.5−	0.3+
1994 10 31	905	0.3−	0.0	1994 11 29	675	(1.0−	2.2−)	1998 11 15	888	0.3+	1.0+
1994 11 03	905	0.4+	0.7−	1994 11 29	675	1.1−	0.4−	1998 11 15	888	0.5+	1.0+
1994 11 03	905	0.7+	0.0	1994 12 23	385	0.4−	0.5+	1998 11 15	888	0.3+	0.5+
1994 11 09	905	1.0−	0.0	1994 12 23	385	0.3−	0.6+	1998 11 24	691	0.2−	0.6−

1994 11 09	905	0.3−	0.3+	1994 12 29	887	0.1+	0.1−	1998 11 24	691	0.2−	0.5−
1994 11 11	385	0.4−	0.6+	1994 12 29	887	0.2+	0.5−	1998 11 24	691	0.3−	0.4−
1994 11 11	385	0.0	0.2−	1994 12 29	887	0.4−	0.3−				
1994 11 11	385	0.4−	0.0	1998 11 14	888	0.4+	0.1−				

1994 UP₁ = 1976 JQ₄ = 1986 XQ₃ = 1998 SH₆₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	338.27981		(2000.0)		P		Q
<i>n</i>	0.24165434	ω	50.25601		+0.10881704		−0.98498753
<i>a</i>	2.5527384	Ω	34.21446		+0.82350973		+0.01381828
<i>e</i>	0.1360057	<i>i</i>	13.78778		+0.55676798		+0.17207157
<i>P</i>	4.08	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 05 03	809	0.3+	0.6+	1998 09 18	699	0.3+	0.4+	1998 10 29	704	1.5+	0.4+
1986 12 04	010	0.6+	1.1−	1998 09 20	809	0.2−	0.4+	1998 10 29	704	1.0+	0.0
1986 12 04	010	1.4+	1.0+	1998 09 20	809	0.7−	0.1+	1998 10 29	704	0.9+	0.1−
1986 12 04	010	1.8−	0.5+	1998 09 20	809	0.6−	0.6+	1998 10 29	704	1.1+	0.7−
1994 10 25	399	0.6+	0.2−	1998 09 21	809	0.2−	0.1−	1998 10 29	704	0.7+	0.6−
1994 10 25	399	0.7+	0.6+	1998 09 21	809	0.6−	1.0+	1998 11 10	704	0.1−	0.5+
1994 10 26	399	1.9−	1.5−	1998 09 21	809	0.7−	0.6+	1998 11 10	704	0.7−	0.1−
1994 10 26	399	(3.7−	2.2−)	1998 10 10	699	0.7+	0.6−	1998 11 10	704	1.3−	0.4−
1994 11 07	399	(3.4−	1.3+)	1998 10 10	699	1.0+	0.2−	1998 11 10	704	1.3−	0.5−
1994 11 07	399	0.2+	0.7+	1998 10 10	699	0.6+	0.7−	1998 11 11	704	0.7−	0.8−
1994 11 10	399	(3.1−	1.7+)	1998 10 28	704	0.3+	0.0	1998 11 11	704	1.4−	0.8+
1994 11 10	399	1.4−	1.4+	1998 10 28	704	0.5−	0.5−	1998 11 11	704	0.5+	0.9−
1998 09 18	699	0.1+	0.0	1998 10 28	704	0.7+	0.0	1998 11 11	704	0.6+	0.4+
1998 09 18	699	0.7+	0.5+	1998 10 28	704	0.6−	0.0	1998 11 11	704	0.3−	0.2−

1994 VA = 1981 JW₃ = 1998 VO₉

Id. G. V. Williams, S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	67.04369		(2000.0)		P		Q
<i>n</i>	0.24342243	ω	90.18751		+0.77658350		+0.60820782
<i>a</i>	2.5403623	Ω	232.35653		−0.62831632		+0.72854681
<i>e</i>	0.2531499	<i>i</i>	11.97713		−0.04622411		+0.31512346
<i>P</i>	4.05	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 05 08	675	3.1−	0.2−	1994 11 08	411	0.4+	0.4+	1998 11 10	704	0.1−	0.3−
1981 05 09	675	2.8+	2.6−	1994 11 08	411	0.3+	0.7−	1998 11 10	704	0.7−	0.0
1994 10 26	399	0.5−	1.8+	1994 11 23	411	0.3+	1.3+	1998 11 10	704	0.2+	0.1+
1994 10 26	399	0.5−	0.9+	1994 11 23	411	0.0	0.8+	1998 11 10	704	0.3−	0.2−
1994 11 01	411	0.6−	1.4−	1994 11 28	675	0.2−	1.7−	1998 11 10	704	0.1+	0.1−
1994 11 01	411	0.4+	0.4−	1994 11 28	675	0.1+	1.5−	1998 11 11	704	0.5−	0.4−
1994 11 02	411	0.0	1.0−	1994 11 30	675	0.2−	0.6−	1998 11 11	704	0.2+	0.1+
1994 11 02	411	0.5+	0.6−	1994 11 30	675	1.5+	0.0	1998 11 11	704	0.3+	0.1+
1994 11 06	675	0.2+	0.2−	1994 12 03	675	0.3−	0.6+	1998 11 11	704	0.6+	0.7+
1994 11 06	675	0.8+	0.3+	1994 12 03	675	1.9−	0.0	1998 11 11	704	0.4+	0.8−

1994 VF = 1982 VX₇ = 1998 VJ₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	48.70666		(2000.0)		P		Q
<i>n</i>	0.24626170	ω	68.83309		+0.99921238		−0.02725328
<i>a</i>	2.5207985	Ω	292.71927		+0.01309461		+0.91259160
<i>e</i>	0.1798100	<i>i</i>	1.79185		+0.03745876		+0.40796302
<i>P</i>	4.00	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1982 11 09	095	0.6−	2.2+	1994 11 07	675	0.2−	0.4+	1998 11 10	704	0.5−	0.2−
1994 11 01	411	0.3−	0.1+	1994 11 08	411	0.7−	0.6+	1998 11 10	704	1.0−	1.6−
1994 11 01	411	1.1−	0.4−	1994 11 08	411	0.0	0.6−	1998 11 10	704	0.8+	0.3−
1994 11 02	411	1.2+	0.7+	1994 11 23	411	0.7−	0.6+	1998 11 10	704	1.5+	1.9−
1994 11 02	411	0.7+	0.5+	1994 11 23	411	0.6+	0.3−	1998 11 11	704	0.2+	0.5+
1994 11 04	675	(0.4+	2.7−)	1994 11 24	411	0.2−	0.4−	1998 11 11	704	0.1+	0.6−

1994 11 04	675	(0.4−	3.5−)	1994 11 24	411	0.2+	0.2−	1998 11 11	704	0.3−	0.1+
1994 11 06	675	0.2+	1.6−	1994 11 24	411	0.0	0.0	1998 11 11	704	0.8+	0.1+
1994 11 06	675	0.2+	1.3−	1994 11 30	675	0.1+	0.2−	1998 11 11	704	0.7+	0.2−
1994 11 06	675	1.6−	0.6+	1994 12 02	675	0.0	1.0−	1998 11 25	691	0.4−	0.1+
1994 11 06	675	0.3−	1.6+	1994 12 02	675	0.6+	1.0+	1998 11 25	691	0.5−	0.1−
1994 11 07	675	0.7+	1.5+	1998 11 10	704	0.3+	0.2+	1998 11 25	691	0.4−	0.1+

1994 VU = 1998 UA₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	25.21285		(2000.0)		P		Q
<i>n</i>	0.24553884	ω	352.13105		+0.65143151		−0.73371773
<i>a</i>	2.5257435	Ω	56.98587		+0.70804127		+0.49644906
<i>e</i>	0.1139635	<i>i</i>	13.31508		+0.27260694		+0.46389290
<i>P</i>	4.01	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 11 03	411	0.6−	0.2−	1994 11 15	411	0.2+	0.7+	1998 10 27	327	0.1+	0.1−
1994 11 03	411	0.1+	1.4−	1994 11 30	411	0.6−	0.0	1998 11 01	327	0.1+	0.2−
1994 11 04	411	0.6+	0.8+	1994 11 30	411	0.7+	0.4−	1998 11 01	327	0.1−	0.0
1994 11 04	411	0.7−	0.8+	1998 10 27	327	0.2+	0.1+	1998 11 01	327	0.2−	0.0
1994 11 15	411	0.2+	0.0	1998 10 27	327	0.1+	0.0				

1994 VP₁ = 1998 VM₃₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	11.52288		(2000.0)		P		Q
<i>n</i>	0.23952503	ω	160.06145		+0.60154623		−0.79040343
<i>a</i>	2.5678449	Ω	252.78538		+0.71549633		+0.59755306
<i>e</i>	0.1747974	<i>i</i>	6.96181		+0.35525644		+0.13488056
<i>P</i>	4.11	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 11 03	411	0.3+	0.1+	1994 11 30	411	0.1−	0.2−	1998 11 11	704	1.4+	1.5+
1994 11 03	411	0.0	0.8−	1994 11 30	411	0.1+	0.4−	1998 11 11	704	1.7+	0.6−
1994 11 08	411	0.3+	0.4−	1998 11 10	704	0.6−	0.3+	1998 11 11	704	0.4−	0.4−
1994 11 08	411	0.6−	0.1+	1998 11 10	704	1.2−	0.2+	1998 11 11	704	0.5+	0.1+
1994 11 15	411	0.2+	1.4+	1998 11 10	704	0.2−	0.1+	1998 11 11	704	1.3−	0.3+
1994 11 15	411	0.1−	0.0	1998 11 10	704	0.2+	1.5−				

1994 VQ₁ = 1998 VP₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	2.24707		(2000.0)		P		Q
<i>n</i>	0.24193307	ω	185.34684		+0.29416074		−0.95287271
<i>a</i>	2.5507774	Ω	247.56259		+0.87983702		+0.30029360
<i>e</i>	0.2270241	<i>i</i>	4.60342		+0.37330454		+0.04309702
<i>P</i>	4.07	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 11 03	411	0.5+	0.7−	1994 11 30	411	0.1−	0.0	1998 11 10	704	1.0−	1.4−
1994 11 03	411	0.2+	0.2+	1994 11 30	411	0.2+	0.5−	1998 11 11	704	0.2+	0.5+
1994 11 08	411	0.6−	0.4−	1998 11 10	704	0.1+	0.1+	1998 11 11	704	0.3−	0.4+
1994 11 08	411	0.0	0.2−	1998 11 10	704	1.0+	0.2+	1998 11 11	704	0.1−	0.1+
1994 11 10	411	0.0	0.1+	1998 11 10	704	0.1+	0.3−	1998 11 11	704	0.3+	0.3+
1994 11 10	411	0.1−	1.7+	1998 11 10	704	0.2−	0.8−	1998 11 11	704	0.0	0.7+

1994 VB₂ = 1998 WQ₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	54.86800		(2000.0)		P		Q
<i>n</i>	0.26849055	ω	204.16197		+0.73959978		−0.67257741
<i>a</i>	2.3796699	Ω	198.17602		+0.62988607		+0.70484649
<i>e</i>	0.2761400	<i>i</i>	4.62179		+0.23714067		+0.22545743
<i>P</i>	3.67	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 11 03	896	0.3+	0.3−	1994 11 24	896	0.2−	0.4+	1998 11 23	704	0.6+	0.8−
1994 11 03	896	0.8+	0.1−	1994 12 22	896	0.4+	0.4+	1998 11 23	704	0.3+	2.0−
1994 11 08	896	0.5−	0.1−	1994 12 22	896	1.1+	0.9+	1998 11 25	704	0.4−	0.5+
1994 11 08	896	0.6+	0.7−	1994 12 22	896	1.3−	0.4+	1998 11 25	704	0.2−	0.9−
1994 11 12	896	0.4−	0.1+	1998 11 23	704	0.6+	1.4+	1998 11 25	704	1.7+	0.5−
1994 11 12	896	0.5−	0.1+	1998 11 23	704	1.0−	1.6+	1998 11 25	704	0.5+	0.9−
1994 11 24	896	0.3−	0.4−	1998 11 23	704	2.4−	0.6+				

1994 VH₂ = 1998 VO₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	315.64727		(2000.0)	P	Q
<i>n</i>	0.23648169	ω	62.34320	−0.34173917	−0.91661722
<i>a</i>	2.5898287	Ω	49.21204	+0.73647813	−0.39831052
<i>e</i>	0.0580821	<i>i</i>	15.90052	+0.58379303	−0.03408232
<i>P</i>	4.17	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 11 04	411	0.9+	0.4−	1994 11 29	411	0.2−	0.6−	1998 11 11	704	0.5+	0.2+
1994 11 04	411	0.3+	0.1−	1994 11 29	411	0.2−	1.0−	1998 11 11	704	(2.6+	0.7+)
1994 11 09	411	0.1−	0.6+	1998 11 10	704	1.0+	0.1+	1998 11 11	704	0.4−	0.0
1994 11 09	411	0.1−	0.6+	1998 11 10	704	0.9+	0.1+	1998 11 11	704	0.0	0.5−
1994 11 15	411	0.2−	0.8+	1998 11 10	704	0.1−	0.2−	1998 11 25	691	1.3−	0.6+
1994 11 15	411	0.5−	0.2−	1998 11 10	704	0.4+	0.3+	1998 11 25	691	0.8−	0.2−
1994 11 27	675	0.1−	0.0	1998 11 10	704	0.1+	0.6−	1998 11 25	691	0.9−	0.2−
1994 11 27	675	0.4+	0.2+	1998 11 11	704	0.4+	0.4+				

1994 VE₄ = 1998 UZ₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	354.34772		(2000.0)	P	Q
<i>n</i>	0.24407223	ω	189.71176	+0.43046158	−0.89664807
<i>a</i>	2.5358514	Ω	234.86187	+0.83639324	+0.43938370
<i>e</i>	0.1444945	<i>i</i>	7.27547	+0.33933637	+0.05444447
<i>P</i>	4.04	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1994 11 05	691	0.2−	0.2+	1994 11 10	691	0.1−	0.1+	1998 10 28	704	1.2−	0.0
1994 11 05	691	0.0	0.0	1994 11 10	691	0.0	0.1+	1998 10 29	704	1.2+	0.4+
1994 11 05	691	0.1+	0.0	1994 11 10	691	0.2−	0.0	1998 10 29	704	0.6−	0.3−
1994 11 06	691	0.2+	0.1+	1998 10 28	704	1.8−	0.6+	1998 10 29	704	0.4+	1.1−
1994 11 06	691	0.2+	0.2−	1998 10 28	704	0.2+	0.4+	1998 10 29	704	0.1+	0.3−
1994 11 06	691	0.0	0.2−	1998 10 28	704	1.6+	0.2+				

1994 WH₁

Id. T. Kobayashi (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	236.17582		(2000.0)	P	Q
<i>n</i>	0.24331921	ω	319.23288	−0.83046974	+0.51734787
<i>a</i>	2.5410806	Ω	253.07307	−0.43836917	−0.83573946
<i>e</i>	0.1117468	<i>i</i>	12.46978	−0.34373315	−0.18409437
<i>P</i>	4.05	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 11 27	411	0.6−	0.1+	1994 12 04	098	1.5+	0.1+	1998 11 08	411	0.5−	0.6−
1994 11 27	411	0.8−	0.4−	1994 12 06	411	0.1+	0.4+	1998 11 08	411	0.5−	0.7+
1994 11 28	411	0.3+	0.6+	1994 12 06	411	0.0	0.4+	1998 11 09	411	0.2+	0.0
1994 11 28	411	0.0	0.4−	1994 12 14	411	0.3−	0.2+	1998 11 09	411	0.4−	0.2−
1994 11 28	411	0.1+	0.2−	1994 12 14	411	0.7−	0.1−	1998 11 23	411	0.1+	0.3−
1994 12 04	098	0.3+	1.0−	1994 12 22	411	0.3+	0.1−	1998 11 23	411	1.1+	0.5+
1994 12 04	098	0.5−	0.5+	1994 12 22	411	0.2+	0.0				

1994 WR₃ = 1998 VT₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	12.23448		(2000.0)	P	Q
<i>n</i>	0.23735526	ω	338.81965	+0.52516321	−0.81298487
<i>a</i>	2.5834703	Ω	78.69967	+0.81299745	+0.39196171
<i>e</i>	0.1584736	<i>i</i>	14.86167	+0.25147315	+0.43060610
<i>P</i>	4.15	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 11 27	365	1.1+	0.2−	1998 10 29	699	0.6+	0.3−	1998 11 13	704	0.7−	0.9−
1994 11 27	365	(5.2+	0.1−)	1998 10 29	699	0.4+	0.2−	1998 11 13	704	1.0−	0.2−
1994 11 28	896	1.0−	0.6+	1998 10 29	699	0.2+	0.3−	1998 11 13	704	1.5−	0.8−
1994 11 29	365	2.9+	0.1+	1998 11 12	399	1.2−	0.7+	1998 11 16	825	0.4+	0.9+
1994 11 29	365	0.9+	0.5−	1998 11 12	399	0.2+	0.9+	1998 11 16	825	0.4+	1.2+
1994 12 06	365	0.0	1.6−	1998 11 13	825	0.4+	0.6+	1998 11 18	399	0.5+	1.5−
1994 12 06	365	1.9−	0.5+	1998 11 13	825	0.3+	0.8+	1998 11 18	399	0.3+	0.5−
1995 01 02	365	1.1−	0.7+	1998 11 13	704	0.1+	1.0−	1998 11 19	825	0.1+	0.1+
1995 01 02	365	0.7−	0.2−	1998 11 13	704	0.3+	0.9+	1998 11 19	825	0.1+	0.0

1994 WJ₁₂ = 1998 VB₃₁

Id. G. V. Williams, T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	35.80510		(2000.0)	P	Q
<i>n</i>	0.24413990	ω	121.79237	+0.82488201	−0.54296514
<i>a</i>	2.5353828	Ω	271.54243	+0.45070443	+0.79968121
<i>e</i>	0.2265081	<i>i</i>	9.05633	+0.34122601	+0.25631783
<i>P</i>	4.04	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1994 11 27	010	0.9−	0.2−	1998 11 10	704	0.2+	0.8+	1998 11 11	704	0.0	0.7−
1994 11 27	010	1.0−	0.5−	1998 11 10	704	0.2−	0.4+	1998 11 11	704	0.7−	0.2+
1994 11 28	010	0.4−	0.2+	1998 11 10	704	0.7−	0.0	1998 11 13	888	0.3−	0.2−
1994 11 28	010	0.6+	0.2+	1998 11 10	704	1.3−	0.3+	1998 11 13	888	0.1−	0.2−
1994 11 28	010	1.1+	0.1−	1998 11 10	905	0.0	0.9+	1998 11 13	888	0.1−	0.2−
1994 11 29	010	0.9+	0.6−	1998 11 10	704	1.3−	1.4−	1998 11 13	886	1.8+	0.8+
1994 12 22	399	0.6+	0.5−	1998 11 10	905	0.2+	0.7+	1998 11 13	886	2.0+	0.0
1994 12 22	399	0.0	0.1+	1998 11 10	905	0.0	0.1+	1998 11 13	385	0.1+	0.5−
1994 12 25	399	0.4−	1.0+	1998 11 11	704	0.1−	0.3+	1998 11 13	385	0.3+	0.7−
1994 12 25	399	0.6−	0.0	1998 11 11	704	0.1−	0.1+	1998 11 13	385	0.2+	0.4−

1994 XV

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	26.80640		(2000.0)	P	Q
<i>n</i>	0.25987463	ω	218.65349	+0.02286300	−0.95841156
<i>a</i>	2.4319807	Ω	231.93995	+0.98333455	+0.07289310
<i>e</i>	0.3713329	<i>i</i>	21.17985	+0.18036196	−0.27592369
<i>P</i>	3.79	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1994 12 06	413	0.6−	0.2−	1994 12 19	413	0.3+	0.2+	1995 03 21	413	0.1−	0.2−
1994 12 06	413	(0.1+	3.3+)	1994 12 19	413	0.4+	0.4+	1998 11 20	561	0.5−	0.4+
1994 12 07	413	0.3−	1.7−	1994 12 22	413	0.1+	0.3+	1998 11 20	561	0.1−	0.3+
1994 12 09	657	0.0	1.6+	1994 12 22	413	0.1+	0.2+	1998 11 20	561	0.5−	0.2−
1994 12 09	657	0.2−	0.2−	1995 01 13	413	0.2−	0.2−	1998 11 22	561	0.0	0.3−
1994 12 09	657	0.2−	0.1+	1995 01 13	413	0.1−	0.1−	1998 11 22	561	0.4+	0.2+
1994 12 09	657	0.2−	0.7−	1995 02 01	413	0.4+	0.0	1998 11 22	561	0.6+	0.8−
1994 12 18	413	0.2+	0.2+	1995 02 01	413	0.4+	0.1+				
1994 12 18	413	0.3+	0.4+	1995 03 21	413	0.1−	0.1−				

1995 AE₄ = 1969 VJ₂

Id. T. Kobayashi (1998 observations), S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	42.85860		(2000.0)	P	Q
<i>n</i>	0.23906699	ω	297.08789	+0.86240054	-0.49634250
<i>a</i>	2.5711237	Ω	92.82000	+0.49255939	+0.77734891
<i>e</i>	0.2256273	<i>i</i>	5.71999	+0.11683561	+0.38648778
<i>P</i>	4.12	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1969 11 15	095	0.5+	1.4-	1995 01 04	010	0.8+	1.0-	1998 11 18	411	0.4-	0.4+
1995 01 02	010	0.1-	0.9-	1995 01 30	033	0.5+	0.2+	1998 11 18	411	0.3-	0.4+
1995 01 02	010	0.2-	0.1-	1995 01 30	033	0.7+	0.5+	1998 11 19	411	0.5+	0.9+
1995 01 03	010	0.6-	0.5-	1995 02 02	033	1.1-	0.6+	1998 11 19	411	0.2-	1.1+

1995 BF

Id. F. B. Zoltowski (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	294.08141		(2000.0)	P	Q
<i>n</i>	0.22503319	ω	24.20478	-0.96118757	-0.27236877
<i>a</i>	2.6769381	Ω	139.90830	+0.24068701	-0.90571655
<i>e</i>	0.1633521	<i>i</i>	3.91527	+0.13486373	-0.32479651
<i>P</i>	4.38	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 01 23	411	0.6+	0.3+	1995 01 29	411	0.2-	1.5+	1995 02 20	411	0.1+	0.1+
1995 01 23	411	0.9+	1.1+	1995 02 06	411	1.3+	0.8-	1998 11 27	426	0.1+	0.6+
1995 01 24	411	0.1-	0.7-	1995 02 06	411	0.3-	1.0-	1998 11 27	426	1.1-	0.0
1995 01 24	411	0.3+	0.2-	1995 02 18	411	1.6-	1.2+	1998 11 27	426	0.5-	0.8-
1995 01 25	411	0.0	0.5+	1995 02 18	411	0.4+	0.2+	1998 11 29	426	0.1+	0.2-
1995 01 25	411	1.6-	2.0-	1995 02 19	411	0.1+	0.2+	1998 11 29	426	1.5+	0.4+
1995 01 29	411	0.5-	0.5+	1995 02 20	411	0.7+	1.0-				

1995 BZ = 1998 WT₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	251.35509		(2000.0)	P	Q
<i>n</i>	0.21762094	ω	99.87618	-0.80189085	+0.57521552
<i>a</i>	2.7373832	Ω	115.41371	-0.59387780	-0.73777133
<i>e</i>	0.1654266	<i>i</i>	10.30318	-0.06542338	-0.35329955
<i>P</i>	4.53	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 12 28	691	0.4-	0.7+	1995 01 30	411	0.2+	0.2+	1995 02 17	411	0.1-	0.1+
1994 12 28	691	1.0-	0.4+	1995 01 31	411	0.2+	0.1+	1995 02 17	411	0.8-	0.0
1994 12 28	691	0.7-	0.3+	1995 01 31	411	0.3+	1.1-	1998 11 23	557	0.3+	0.2-
1995 01 25	411	0.5+	0.2+	1995 02 06	411	0.5+	0.4-	1998 11 23	557	0.0	0.4-
1995 01 25	411	0.2+	0.5-	1995 02 06	411	0.7-	0.1+	1998 11 24	557	0.7-	0.1+
1995 01 26	411	0.4+	0.1-	1995 02 10	411	1.0+	0.1+	1998 11 29	557	0.2+	0.1+
1995 01 26	411	0.1+	0.7+	1995 02 10	411	0.1+	0.4-	1998 11 29	557	0.3+	0.1+

1995 BU₈ = 1998 SO₄₄

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	286.80856		(2000.0)	P	Q
<i>n</i>	0.18838682	ω	63.26117	-0.45045132	-0.89237322
<i>a</i>	3.0137163	Ω	53.53870	+0.80643896	-0.41996430
<i>e</i>	0.1106072	<i>i</i>	1.96905	+0.38307938	-0.16522716
<i>P</i>	5.23	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1995 01 29	691	0.5-	0.2-	1995 02 05	691	0.4+	0.3-	1998 09 27	704	(2.7+	0.7+)
1995 01 29	691	0.5-	0.1-	1998 09 24	691	0.8-	0.2+	1998 09 27	704	0.5+	0.6-
1995 01 29	691	0.5-	0.2-	1998 09 24	691	0.6-	0.2+	1998 09 27	704	(3.4+	2.0+)
1995 02 04	691	0.2+	0.4+	1998 09 24	691	0.3-	0.0	1998 09 30	691	1.0-	0.0
1995 02 04	691	0.5+	0.3+	1998 09 26	704	0.4+	1.2-	1998 09 30	691	0.8-	0.4+
1995 02 04	691	0.2+	0.0	1998 09 26	704	0.7+	1.2+	1998 09 30	691	0.8-	0.3+

1995 02 05	691	0.2+	0.2+	1998 09 26	704	1.6+	0.5+
1995 02 05	691	0.1+	0.2-	1998 09 26	704	0.9+	0.9-

1995 DR₂ = 1998 UH₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	193.27574		(2000.0)	P	Q
<i>n</i>	0.17331535	ω	149.33833	-0.72134538	+0.67633724
<i>a</i>	3.1859922	Ω	74.00302	-0.66273056	-0.61156262
<i>e</i>	0.0860849	<i>i</i>	8.92255	-0.20111948	-0.41055950
<i>P</i>	5.69	<i>H</i>	12.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 02 20	358	(2.9-	0.2-)	1998 10 14	699	0.7-	0.4-	1998 11 10	704	0.1+	0.5+
1995 02 21	358	(2.0-	3.0+)	1998 10 14	699	0.1-	0.0	1998 11 10	704	0.1+	0.6+
1995 02 22	358	(6.8-	2.6+)	1998 10 18	809	(2.9-	2.6-)	1998 11 10	704	1.0-	0.4+
1995 02 27	358	0.3+	0.6+	1998 10 18	809	(3.2-	2.5-)	1998 11 10	704	(4.3-	0.9-)
1995 03 07	896	0.1-	0.9-	1998 10 18	809	(3.5-	1.7-)	1998 11 11	704	0.4+	0.2-
1995 03 07	896	0.2-	0.4-	1998 10 19	809	0.7+	0.5+	1998 11 11	704	(0.2-	2.2-)
1995 03 08	358	0.0	0.6+	1998 10 19	809	0.2+	0.5-	1998 11 11	704	0.3+	0.3-
1995 03 08	358	(2.3-	4.2-)	1998 10 19	809	0.6+	0.6+				
1998 10 14	699	0.4-	0.1+	1998 11 10	704	0.0	1.2-				

1995 FA₈ = 1998 UQ₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	358.60030		(2000.0)	P	Q
<i>n</i>	0.17522890	ω	288.00007	+0.42597945	-0.90014494
<i>a</i>	3.1627550	Ω	136.42336	+0.87198549	+0.38166332
<i>e</i>	0.0765116	<i>i</i>	7.58576	+0.24121115	+0.20993377
<i>P</i>	5.62	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 03 25	691	0.1+	0.3-	1995 04 01	691	0.2+	0.0	1998 10 18	809	0.1+	0.0
1995 03 25	691	0.3-	0.1-	1995 04 06	691	0.3+	0.1+	1998 10 18	809	0.2-	0.5+
1995 03 25	691	0.1-	0.3+	1995 04 06	691	0.8-	0.0	1998 10 19	809	0.1+	0.4-
1995 04 01	691	0.3+	0.1+	1995 04 06	691	0.1+	0.2-	1998 10 19	809	0.3+	0.2-
1995 04 01	691	0.1+	0.0	1998 10 18	809	0.2-	0.5-	1998 10 19	809	0.0	0.6+

1995 GO₂ = 1997 LC₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	277.86429		(2000.0)	P	Q
<i>n</i>	0.08898088	ω	281.43021	+0.85357475	-0.51511625
<i>a</i>	4.9690296	Ω	109.61775	+0.50439848	+0.77973123
<i>e</i>	0.2279264	<i>i</i>	4.74263	+0.13035461	+0.35591356
<i>P</i>	11.08	<i>H</i>	11.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1995 04 02	691	0.3-	0.3+	1995 04 06	691	0.5+	0.4+	1997 06 08	809	0.4+	0.3-
1995 04 02	691	0.2+	0.2+	1995 04 09	691	0.3-	0.5-	1997 06 08	809	0.5-	0.6-
1995 04 02	691	0.3-	0.3+	1995 04 09	691	0.7-	1.2-	1997 06 09	809	0.1+	0.7+
1995 04 06	691	0.7+	0.3+	1995 04 09	691	0.6-	0.1-	1997 06 09	809	0.3-	0.8+
1995 04 06	691	0.7+	0.3+	1997 06 08	809	0.0	0.3-	1997 06 09	809	0.4+	0.3-

1995 GQ₂ = 1997 WY₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	128.62373		(2000.0)	P	Q
<i>n</i>	0.23038069	ω	279.03834	+0.90648383	-0.41768329
<i>a</i>	2.6353522	Ω	105.66979	+0.40824053	+0.82955070
<i>e</i>	0.0474115	<i>i</i>	3.68419	+0.10782737	+0.37065660
<i>P</i>	4.28	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 04 02	691	0.1-	0.1+	1995 04 06	691	0.5+	0.2-	1997 11 28	691	0.3+	0.0
1995 04 02	691	0.1-	0.0	1995 04 08	691	0.5+	0.0	1997 12 05	691	0.0	0.1-
1995 04 02	691	0.2-	0.8+	1995 04 08	691	0.2+	0.1-	1997 12 05	691	0.3-	0.0

1995 04 06 691 0.5− 0.3− 1995 04 08 691 0.6− 0.0 1997 12 05 691 0.3− 0.0
 1995 04 06 691 0.3+ 0.2− 1997 11 28 691 0.3+ 0.1+

1995 GW₂ = 1998 UU₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	267.46962		(2000.0)	P	Q
<i>n</i>	0.18130136	ω	138.81274	−0.96834425	−0.21907729
<i>a</i>	3.0917332	Ω	29.19018	+0.11033260	−0.80558754
<i>e</i>	0.2184624	<i>i</i>	14.20055	+0.22391099	−0.55048511
<i>P</i>	5.44	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 04 02	691	0.2−	0.2+	1995 04 06	691	0.0	0.1−	1998 10 16	691	0.2+	0.0
1995 04 02	691	0.0	0.2+	1995 04 09	691	0.1+	0.1−	1998 10 16	691	0.1−	0.1+
1995 04 02	691	0.1−	0.1−	1995 04 09	691	0.0	0.4+	1998 10 24	691	0.0	0.1+
1995 04 06	691	0.0	0.0	1995 04 09	691	0.1+	0.2−	1998 10 24	691	0.0	0.1+
1995 04 06	691	0.1−	0.1−	1998 10 16	691	0.0	0.0	1998 10 24	691	0.1−	0.1−

1995 GC₃ = 1996 VU₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	303.40823		(2000.0)	P	Q
<i>n</i>	0.30518094	ω	276.93803	+0.88196005	+0.46366322
<i>a</i>	2.1848977	Ω	55.47227	−0.38162424	+0.80788381
<i>e</i>	0.1952674	<i>i</i>	5.89637	−0.27660336	+0.36378587
<i>P</i>	3.23	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1995 04 02	691	0.5+	0.6−	1995 04 06	691	0.4+	0.4+	1996 11 08	691	0.9−	0.0
1995 04 02	691	0.1−	0.4−	1995 04 08	691	0.3−	0.1−	1996 11 08	691	0.9−	0.0
1995 04 02	691	0.5−	0.6−	1995 04 08	691	0.1−	0.1+	1996 11 09	691	0.8+	0.3−
1995 04 06	691	0.1+	0.6+	1995 04 08	691	0.3−	0.0	1996 11 09	691	1.1+	0.0
1995 04 06	691	0.5+	0.7+	1996 11 08	691	1.2−	0.0	1996 11 09	691	1.1+	0.3+

1995 GL₇ = 1998 VS₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	64.40189		(2000.0)	P	Q
<i>n</i>	0.18675687	ω	295.01940	+0.99141493	−0.08345699
<i>a</i>	3.0312261	Ω	69.89946	+0.11894974	+0.89530347
<i>e</i>	0.1202857	<i>i</i>	6.15296	−0.05428998	+0.43756900
<i>P</i>	5.28	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1995 03 27	675	0.8+	0.0	1995 04 03	327	0.5−	0.1−	1995 04 05	327	0.4−	0.6+
1995 03 31	327	0.4−	0.4−	1995 04 03	327	0.8−	0.4−	1998 11 15	684	0.1+	0.1+
1995 03 31	327	0.1−	0.4−	1995 04 03	327	0.5−	0.2+	1998 11 15	684	0.1−	0.1+
1995 03 31	327	0.2−	0.4−	1995 04 04	327	0.2−	0.5+	1998 11 16	684	0.1+	0.1−
1995 03 31	327	0.7+	0.5−	1995 04 04	327	0.0	0.5+	1998 11 16	684	0.1−	0.2+
1995 04 03	327	0.5−	0.3−	1995 04 04	327	0.1+	0.3+	1998 11 16	684	0.1−	0.0
1995 04 03	327	1.4−	0.5+	1995 04 04	327	0.5−	0.1−	1998 11 17	684	0.3−	0.2−
1995 04 03	327	1.3+	0.4−	1995 04 05	327	1.5+	0.3−	1998 11 17	684	0.5+	0.0
1995 04 03	327	0.8+	0.2−	1995 04 05	327	0.1+	0.9+				

1995 GA₈ = 1997 TM₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	330.58342		(2000.0)	P	Q
<i>n</i>	0.22875514	ω	160.41242	−0.99462318	−0.10213149
<i>a</i>	2.6478221	Ω	13.75923	+0.08277996	−0.88354320
<i>e</i>	0.2255457	<i>i</i>	4.13341	+0.06222714	−0.45707829
<i>P</i>	4.31	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 04 06	695	0.3+	0.0	1995 04 09	695	0.4+	0.1+	1997 10 03	910	0.1+	0.3−
1995 04 06	695	0.3−	0.4+	1995 04 09	695	0.2−	0.2+	1997 10 03	910	0.4+	0.1−
1995 04 06	695	0.2−	0.4+	1995 04 09	695	1.1+	0.1−	1997 10 03	910	0.1+	0.3−

1995 04 08	695	0.0	0.4−	1995 04 09	695	0.1−	0.2−	1997 10 04	910	0.0	0.5+
1995 04 08	695	0.1−	0.4−	1995 04 09	695	0.1+	0.3−	1997 10 04	910	0.3−	0.1+
1995 04 08	695	0.1−	0.3−	1995 04 10	695	0.0	0.1+	1997 10 04	910	0.3−	0.2+
1995 04 08	695	0.1−	0.5−	1995 04 10	695	0.1−	0.3+				
1995 04 09	695	0.9−	0.3+	1995 04 10	695	0.0	0.3+				

1995 KJ₃ = 1996 VG₁₇ = 1998 FT₅₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	41.03375		(2000.0)	P	Q
<i>n</i>	0.30999347	ω	171.09388	−0.35458549	+0.93485005
<i>a</i>	2.1622257	Ω	78.13651	−0.85899697	−0.31808402
<i>e</i>	0.1286591	<i>i</i>	1.05473	−0.36931469	−0.15772744
<i>P</i>	3.18	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 05 25	691	0.2−	0.3−	1996 11 06	691	0.2+	0.6−	1998 03 20	704	1.0+	0.4−
1995 05 25	691	0.0	0.3−	1996 11 06	691	0.4+	0.6−	1998 03 20	704	(3.5−	0.7−)
1995 05 25	691	0.2−	0.5−	1996 11 06	691	0.2−	0.7−	1998 03 22	704	0.3−	0.0
1995 05 26	691	1.1−	0.1−	1996 11 13	691	0.1+	0.3−	1998 03 22	704	0.9−	0.2−
1995 05 26	691	1.0−	0.7−	1996 11 13	691	0.3+	0.3−	1998 03 22	704	0.2+	0.2−
1995 05 26	691	(2.0−	0.5+)	1996 11 13	691	0.1+	0.4−	1998 03 22	704	0.1+	0.1−
1995 05 31	691	0.7+	0.2−	1998 03 20	704	0.6+	0.0	1998 03 22	704	0.7−	1.6+
1995 05 31	691	0.7+	0.2−	1998 03 20	704	0.4+	0.3−				
1995 05 31	691	0.4+	0.1+	1998 03 20	704	0.3−	0.6−				

1995 NE = 1998 DK₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	8.71762		(2000.0)	P	Q
<i>n</i>	0.27598153	ω	57.70378	−0.49773395	+0.86732032
<i>a</i>	2.3364117	Ω	182.45672	−0.82413312	−0.47439400
<i>e</i>	0.2396645	<i>i</i>	5.41843	−0.27030632	−0.15068445
<i>P</i>	3.57	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 07 01	691	0.1+	0.3−	1995 07 02	691	0.1+	0.1+	1998 02 24	691	0.6−	0.3+
1995 07 01	691	0.1−	0.1−	1995 07 06	691	0.2+	0.2+	1998 02 24	691	0.4−	0.3−
1995 07 01	691	0.0	0.1+	1995 07 06	691	0.0	0.2+	1998 02 28	691	0.4−	0.7−
1995 07 02	691	0.0	0.1−	1995 07 06	691	0.1+	0.0	1998 02 28	691	0.3−	1.0+
1995 07 02	691	0.3−	0.1−	1998 02 24	691	0.7+	0.2−	1998 02 28	691	0.9+	0.1−

1995 QN₂ = 1997 EH₃₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	283.80111		(2000.0)	P	Q
<i>n</i>	0.27764908	ω	254.25457	+0.70491685	−0.70692201
<i>a</i>	2.3270474	Ω	150.65504	+0.68758063	+0.66101519
<i>e</i>	0.1003849	<i>i</i>	6.78630	+0.17414108	+0.25163504
<i>P</i>	3.55	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 08 22	596	0.4+	0.4−	1995 08 25	596	0.4−	0.0	1995 08 31	596	0.6+	0.5−
1995 08 22	596	1.0+	0.1−	1995 08 28	596	0.7+	0.0	1997 03 05	704	0.3+	0.0
1995 08 23	596	1.2−	0.2−	1995 08 28	596	0.8−	0.2+	1997 03 05	704	0.2+	0.2−
1995 08 23	596	0.6−	0.1+	1995 08 31	596	0.6−	0.0	1997 03 06	704	0.0	0.2+
1995 08 23	596	0.3+	0.0	1995 08 31	596	0.2−	0.4+	1997 03 06	704	0.5−	0.1−
1995 08 25	596	0.4+	0.3+	1995 08 31	596	0.2+	0.1−				

1995 SH₁ = 1997 EZ₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	355.37614		(2000.0)	P	Q
<i>n</i>	0.28437929	ω	33.90783	+0.91857488	+0.38615590
<i>a</i>	2.2901859	Ω	303.15720	−0.38129288	+0.80960056
<i>e</i>	0.1376706	<i>i</i>	5.77816	−0.10409579	+0.44207528
<i>P</i>	3.47	<i>H</i>	17.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 09 22	557	0.7+	0.2+	1995 09 24	691	1.0-	0.1-	1997 03 02	691	0.2-	0.0
1995 09 22	557	0.6+	0.2-	1995 09 24	557	0.7+	0.0	1997 03 09	691	0.1+	0.1+
1995 09 22	557	0.5+	0.2-	1995 09 24	557	0.8+	0.0	1997 03 09	691	0.1+	0.2+
1995 09 24	691	1.3-	0.2+	1997 03 02	691	0.0	0.1-	1997 03 09	691	0.1-	0.1+
1995 09 24	691	1.1-	0.2+	1997 03 02	691	0.1+	0.3-				

1995 SE₁₇ = 1998 HA₇₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	135.55163		(2000.0)	P		Q	
<i>n</i>	0.17635242	ω	57.06349	-0.16648819		-0.98603569	
<i>a</i>	3.1493078	Ω	42.52076	+0.90273453		-0.15401620	
<i>e</i>	0.2162084	<i>i</i>	0.33152	+0.39667625		-0.06334526	
<i>P</i>	5.59	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 09 18	691	0.0	0.1+	1995 09 23	691	0.1-	0.1-	1998 04 21	704	0.5+	0.0
1995 09 18	691	0.1-	0.1+	1995 09 27	691	0.3+	0.4+	1998 04 21	704	0.2+	1.0+
1995 09 18	691	0.1+	0.0	1995 09 27	691	0.2-	0.4-	1998 04 22	704	1.1-	0.2+
1995 09 19	809	(2.3+	0.2-)	1998 04 21	704	1.0-	1.1-	1998 04 22	704	1.1+	0.5+
1995 09 23	691	0.1+	0.2-	1998 04 21	704	0.4-	1.4-	1998 04 22	704	(3.4-	0.7-)
1995 09 23	691	0.1-	0.0	1998 04 21	704	0.1-	0.9-	1998 04 22	704	0.7+	1.5+

1995 SX₄₈ = 1998 WR₂₃

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	240.95552		(2000.0)	P		Q	
<i>n</i>	0.39361677	ω	308.47493	-0.32635739		+0.88721082	
<i>a</i>	1.8439692	Ω	299.44116	-0.70786785		-0.45803111	
<i>e</i>	0.0227673	<i>i</i>	21.99148	-0.62642953		+0.05535768	
<i>P</i>	2.50	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 09 29	693	0.1-	0.7+	1995 11 10	608	0.9-	0.3-	1998 11 24	704	1.1-	2.0-
1995 09 30	693	0.4+	0.3+	1995 11 13	608	0.2-	0.2-	1998 11 25	704	0.4+	0.2-
1995 09 30	693	0.8-	0.3-	1995 11 13	608	0.3-	0.2-	1998 11 25	704	0.8+	0.1-
1995 10 12	695	1.7+	1.4-	1995 12 12	608	0.5+	0.7-	1998 11 25	704	1.5-	0.6+
1995 10 12	695	0.8+	1.0+	1995 12 12	608	0.7+	0.8-	1998 11 25	704	1.9+	2.7+
1995 10 12	695	0.7-	1.1+	1998 11 24	704	1.7-	0.2-	1998 11 25	704	0.9+	1.0+
1995 11 10	608	1.0-	0.4+	1998 11 24	704	0.6+	1.4-				

1995 VR₁ = 1989 YD₂

Id. A. Gnädig, S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	37.83820		(2000.0)	P		Q	
<i>n</i>	0.31014046	ω	257.72477	+0.99256651		-0.08901412	
<i>a</i>	2.1615424	Ω	107.33792	+0.11374629		+0.92103565	
<i>e</i>	0.1838941	<i>i</i>	4.98792	-0.04328389		+0.37916991	
<i>P</i>	3.18	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1954 12 22	675	0.5-	0.1+	1995 11 16	400	(1.2+	2.3-)	1995 12 14	691	0.2-	0.3+
1954 12 22	675	0.7+	0.0	1995 11 16	400	1.1-	0.1+	1995 12 18	400	0.8+	0.0
1982 08 21	413	0.5-	0.7-	1995 11 22	400	0.8+	0.8+	1995 12 18	400	0.9+	0.9+
1982 08 21	413	0.4+	0.5+	1995 11 25	400	0.6+	0.2+	1998 09 21	699	0.1+	0.4-
1989 12 30	413	(3.7-	0.4+)	1995 11 25	400	0.4+	0.5+	1998 09 21	699	0.0	0.3-
1989 12 30	413	1.0+	0.2-	1995 11 29	691	0.3-	0.1+	1998 09 21	699	0.2+	0.0
1989 12 31	413	1.3-	1.7-	1995 11 29	691	0.7-	1.0-	1998 10 18	699	0.0	0.1+
1989 12 31	413	(2.9+	1.2-)	1995 11 29	691	0.0	0.9-	1998 10 18	699	0.2+	0.3-
1995 11 15	400	1.6-	0.4+	1995 12 14	691	0.0	0.0	1998 10 18	699	0.4+	0.1-
1995 11 15	400	(2.7+	0.4-)	1995 12 14	691	0.4-	0.3+				

1995 WU₅ = 1998 RF₇₃

Id. A. Doppler, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	122.30409		(2000.0)	P		Q	
<i>n</i>	0.28907734	ω	317.59236	+0.14952409		+0.98858553	
<i>a</i>	2.2653050	Ω	320.99640	-0.89911275		+0.12817112	
<i>e</i>	0.0179259	<i>i</i>	1.68183	-0.41138644		+0.07918849	
<i>P</i>	3.41	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 11 23	595	0.1+	0.0	1995 12 02	595	0.7+	0.4-	1998 09 18	704	0.8-	0.5-
1995 11 23	595	0.1-	0.3+	1995 12 02	595	0.1+	0.1+	1998 09 18	704	1.0+	1.6+
1995 11 24	595	0.0	0.2+	1998 09 14	704	0.9+	0.4-	1998 09 18	704	0.0	0.6+
1995 11 24	595	0.1-	0.3+	1998 09 14	704	0.7-	0.4+	1998 09 18	704	1.2-	0.5-
1995 12 02	595	0.5-	0.1-	1998 09 14	704	0.3+	0.5-				
1995 12 02	595	0.0	0.3-	1998 09 18	704	0.6+	0.8-				

1995 WT₈ = 1978 UT₄ = 1998 SV₉₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	106.57940		(2000.0)	P		Q	
<i>n</i>	0.29510243	ω	31.21853	+0.16349628		+0.98359506	
<i>a</i>	2.2343654	Ω	248.28565	-0.92120998		+0.12456364	
<i>e</i>	0.1629079	<i>i</i>	4.70603	-0.35304553		+0.13047856	
<i>P</i>	3.34	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 10 27	675	0.8+	0.2+	1995 11 27	887	0.7-	1.2+	1998 09 26	704	0.5-	1.6-
1978 10 28	675	0.6-	0.1-	1995 11 27	887	0.1-	0.7-	1998 09 26	704	0.5-	0.7+
1978 10 29	675	0.2-	0.0	1995 11 28	691	0.8-	0.2+	1998 09 27	704	0.8+	0.4+
1995 11 24	887	0.2+	0.2-	1995 11 28	691	0.8-	0.2+	1998 09 27	704	0.3-	0.2+
1995 11 24	887	0.2-	1.0-	1995 11 28	691	0.7-	0.1+	1998 09 27	704	0.3+	0.5+
1995 11 24	887	1.3+	0.5+	1998 09 26	704	0.1+	0.0	1998 09 27	704	0.5-	1.1+
1995 11 24	887	0.6+	0.8-	1998 09 26	704	0.7+	0.9-	1998 09 27	704	0.1-	0.3-
1995 11 27	887	1.3+	0.3+	1998 09 26	704	0.1-	0.2-				

1995 WP₁₇ = 1997 CZ₂₄

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	317.39208		(2000.0)	P		Q	
<i>n</i>	0.23901450	ω	317.41891	+0.90935266		+0.41546957	
<i>a</i>	2.5715001	Ω	18.06684	-0.36059004		+0.81291499	
<i>e</i>	0.2978775	<i>i</i>	3.97754	-0.20749110		+0.40811058	
<i>P</i>	4.12	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 10 17	691	0.2+	0.3-	1995 11 17	691	0.0	0.2+	1997 02 03	691	0.4+	0.0
1995 10 17	691	0.1+	0.3-	1995 11 30	691	0.4-	0.4+	1997 02 03	691	0.7-	0.2+
1995 10 17	691	0.1-	0.1+	1995 11 30	691	0.5-	0.4+	1997 02 15	691	0.3+	0.1-
1995 11 17	691	0.7+	0.7-	1995 11 30	691	0.6-	0.3+	1997 02 15	691	0.4+	0.4-
1995 11 17	691	0.4+	0.2-	1997 02 03	691	0.5-	0.2+	1997 02 15	691	0.1+	0.3-

1995 WO₄₁ = 1998 VJ₆

Id. T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	115.96765		(2000.0)	P		Q	
<i>n</i>	0.24043700	ω	1.79649	+0.31669184		+0.94376208	
<i>a</i>	2.5613476	Ω	286.67542	-0.87148948		+0.24998227	
<i>e</i>	0.1933003	<i>i</i>	5.68964	-0.37444941		+0.21638391	
<i>P</i>	4.10	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 18	691	0.4+	0.5-	1995 12 20	691	0.1-	0.0	1998 11 11	704	0.8+	0.2+
1995 11 18	691	0.4+	0.3-	1995 12 26	691	0.5+	0.1+	1998 11 11	704	0.9-	1.1+
1995 11 28	691	0.3-	0.2+	1995 12 26	691	0.3+	0.0	1998 11 11	704	0.3-	0.6-
1995 11 28	691	0.2-	0.1+	1995 12 26	691	0.5+	0.1+	1998 11 11	905	0.7+	1.2+
1995 11 28	691	0.3-	0.1-	1998 11 10	704	0.5+	0.4-	1998 11 11	905	0.3-	0.0

1998 DEC. 8

1995 11 29	691	0.2−	0.1−	1998 11 10	704	0.0	0.9−	1998 11 12	905	0.1−	1.0+
1995 11 29	691	0.4−	0.1+	1998 11 10	704	0.5+	1.0−	1998 11 12	905	1.1+	0.7−
1995 11 29	691	0.2−	0.2+	1998 11 10	704	1.6−	0.6+	1998 11 16	566	0.6−	0.5−
1995 12 20	691	0.3−	0.1+	1998 11 11	704	0.6+	0.7+	1998 11 16	566	0.8−	0.4−
1995 12 20	691	0.2−	0.0	1998 11 11	704	0.9+	0.0	1998 11 16	566	0.6−	0.3−

1995 YY = 1998 VD₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	129.00680		(2000.0)	P	Q						
<i>n</i>	0.28804462	ω	172.01471	+0.19381282	+0.97653066						
<i>a</i>	2.2707163	Ω	109.12269	−0.90549014	+0.21491379						
<i>e</i>	0.0662095	<i>i</i>	5.70606	−0.37752377	−0.01413993						
<i>P</i>	3.42	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1995 12 17	411	0.8+	0.0	1995 12 26	411	1.4−	0.3+	1998 11 10	704	0.6+	0.6−
1995 12 17	411	0.2−	0.1−	1995 12 30	411	1.6−	1.8+	1998 11 10	704	0.4−	1.8+
1995 12 19	411	0.2+	0.4+	1995 12 30	411	0.3+	0.7+	1998 11 10	704	0.6+	0.2−
1995 12 19	411	0.7+	0.0	1996 01 09	411	0.3+	1.4−	1998 11 11	704	0.1+	0.1+
1995 12 21	411	0.3+	0.2+	1996 01 09	411	0.5+	0.1+	1998 11 11	704	1.1−	0.8−
1995 12 21	411	0.3+	0.2+	1998 10 12	699	0.3+	0.2+	1998 11 11	704	0.3−	0.5−
1995 12 24	411	0.4−	0.2−	1998 10 12	699	0.1+	0.2+	1998 11 11	704	0.5+	0.2−
1995 12 24	411	0.8+	0.8−	1998 10 12	699	0.2+	0.2+	1998 11 11	704	0.3−	0.1−
1995 12 26	411	0.6−	1.2−	1998 11 10	704	0.3−	0.1−				

1995 YK₂₀ = 1998 RP₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	92.65307		(2000.0)	P	Q						
<i>n</i>	0.22089996	ω	352.30357	+0.09812155	+0.99069614						
<i>a</i>	2.7102268	Ω	283.29213	−0.90781497	+0.05028077						
<i>e</i>	0.0715379	<i>i</i>	5.56071	−0.40773047	+0.12646345						
<i>P</i>	4.46	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1995 12 23	691	0.1+	0.3+	1998 09 14	704	0.4+	0.8−	1998 09 18	704	0.1+	0.8−
1995 12 23	691	0.3+	0.1+	1998 09 14	704	0.4−	0.4+	1998 09 18	704	0.2+	0.6+
1995 12 23	691	0.2+	0.0	1998 09 14	704	1.0−	0.3+	1998 09 18	704	0.5+	0.1−
1995 12 29	691	0.3−	0.1−	1998 09 14	704	0.3+	1.0+	1998 09 18	704	0.6+	0.8−
1995 12 29	691	0.1−	0.3−	1998 09 14	704	0.6−	0.2+				
1995 12 29	691	0.2−	0.1−	1998 09 18	704	0.2−	0.0				

1996 AF₁₁ = 1992 DH₁₀

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	224.44970		(2000.0)	P	Q						
<i>n</i>	0.23727925	ω	276.50315	−0.99611565	−0.07710622						
<i>a</i>	2.5840220	Ω	259.08060	+0.08760174	−0.91669060						
<i>e</i>	0.1885803	<i>i</i>	2.48211	−0.00891886	−0.39208796						
<i>P</i>	4.15	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1984 03 05	413	0.0	1.0+	1992 03 03	809	0.4+	1.9−	1996 01 21	691	0.4−	0.4+
1984 03 05	413	0.5+	0.7−	1996 01 13	691	0.4+	0.1+	1996 01 21	691	0.1−	0.2+
1984 05 31	413	0.3+	0.3+	1996 01 13	691	0.3+	0.0	1996 01 27	691	0.1+	0.3+
1984 05 31	413	0.3−	0.8+	1996 01 13	691	0.1+	0.0	1996 01 27	691	0.1+	0.3+
1992 02 29	809	1.4−	0.1−	1996 01 21	691	0.2−	0.4+	1996 01 27	691	0.4+	0.2+

M.P.C. 33251

1996 AA₁₄ = 1998 VV₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.30599		(2000.0)	P	Q						
<i>n</i>	0.26775836	ω	8.34226	+0.97054248	−0.24067177						
<i>a</i>	2.3840061	Ω	5.62114	+0.21395728	+0.83968053						
<i>e</i>	0.1558820	<i>i</i>	6.53825	+0.11076812	+0.48684054						
<i>P</i>	3.68	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1996 01 15	691	0.2+	0.1−	1996 01 27	691	0.1−	0.0	1998 11 10	704	0.4+	0.2−
1996 01 15	691	0.1−	0.1+	1996 01 27	691	0.3−	0.2−	1998 11 10	704	0.1+	1.3−
1996 01 15	691	0.0	0.0	1998 10 19	699	0.2+	0.0	1998 11 11	704	0.2−	0.1+
1996 01 24	691	0.2−	0.0	1998 10 19	699	1.2+	0.4−	1998 11 11	704	0.1−	0.7+
1996 01 24	691	0.1+	0.2+	1998 10 19	699	1.4−	0.5+	1998 11 11	704	0.2+	0.4+
1996 01 24	691	0.5+	0.0	1998 11 10	704	0.0	0.4−	1998 11 11	704	0.7−	0.3+
1996 01 27	691	0.1−	0.1−	1998 11 10	704	0.1+	0.3+				

1996 BC₁ = 1998 VW₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	64.92020		(2000.0)	P	Q						
<i>n</i>	0.28426455	ω	37.17483	+0.99505378	+0.09219944						
<i>a</i>	2.2908021	Ω	317.48859	−0.09909597	+0.89535465						
<i>e</i>	0.1720051	<i>i</i>	3.13677	−0.00692525	+0.43570553						
<i>P</i>	3.47	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1996 01 10	411	0.5+	0.4−	1996 02 12	411	(3.5+	0.8−)	1998 11 11	704	0.4−	0.1+
1996 01 10	411	0.3+	1.3+	1996 02 14	566	0.8+	0.7+	1998 11 11	704	0.4−	0.4+
1996 01 13	411	0.2+	1.9−	1996 02 14	566	0.3+	0.2+	1998 11 11	704	0.5+	1.1+
1996 01 13	411	0.8−	0.8−	1996 02 14	566	0.6+	0.3+	1998 11 21	704	0.8−	0.1+
1996 01 16	411	0.2−	0.9−	1996 02 16	566	0.3+	0.6−	1998 11 21	704	1.3−	0.9+
1996 01 16	411	0.3+	0.9+	1996 02 16	566	0.0	0.5−	1998 11 21	704	(2.5−	1.3+)
1996 01 23	411	1.0+	0.1+	1996 02 16	566	0.0	0.5−	1998 11 21	704	(1.8−	2.6+)
1996 01 23	411	0.7−	0.7+	1998 11 10	704	0.2+	0.0	1998 11 21	704	(2.4−	2.5+)
1996 01 23	411	1.0−	0.1+	1998 11 10	704	0.5−	0.4−	1998 11 24	704	0.2+	0.9+
1996 01 27	411	1.1−	1.1+	1998 11 10	704	0.2+	0.4−	1998 11 24	704	0.6+	0.4−
1996 01 27	411	0.5−	0.3+	1998 11 10	704	0.3−	0.8−	1998 11 24	704	1.0+	0.4−
1996 02 12	411	(3.3+	2.0−)	1998 11 11	704	0.2+	0.3−	1998 11 24	704	0.9+	0.8−

1996 BR₁

Id. F. B. Zoltowski (1998 observations), M. W. Buie (1997 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	244.93777		(2000.0)	P	Q						
<i>n</i>	0.29984015	ω	126.27377	−0.63320967	+0.76811453						
<i>a</i>	2.2107664	Ω	104.15929	−0.73785257	−0.56197305						
<i>e</i>	0.1099953	<i>i</i>	5.62909	−0.23370729	−0.30689796						
<i>P</i>	3.29	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1996 01 23	411	0.1+	0.2−	1996 01 30	411	0.5−	0.6+	1997 12 29	688	0.2−	0.5+
1996 01 23	411	0.5+	0.4−	1996 02 12	411	0.3+	0.5−	1997 12 29	688	0.2−	0.5+
1996 01 24	411	0.3+	1.3+	1996 02 12	411	0.5+	0.6−	1998 11 29	426	0.7+	0.9−
1996 01 24	411	0.1+	0.9+	1996 02 13	411	0.8+	0.5−	1998 11 29	426	0.2−	0.3−
1996 01 27	411	0.1+	0.4+	1996 02 13	411	0.0	0.1−	1998 11 30	426	0.5+	0.2+
1996 01 27	411	0.1−	0.4−	1996 02 20	411	0.8−	0.5−	1998 11 30	426	1.1−	0.2−
1996 01 30	411	0.4−	1.1+	1996 02 20	411	0.7−	0.1−	1998 11 30	426	0.0	0.1+

1996 BM₆ = 1998 TY₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	56.38324		(2000.0)		P		Q				
<i>n</i>	0.27322903	ω	317.54304		+0.97109848		+0.23732873				
<i>a</i>	2.3520767	Ω	28.75711		−0.20238720		+0.87508885				
<i>e</i>	0.2526824	<i>i</i>	3.02088		−0.12651939		+0.42177550				
<i>P</i>	3.61	<i>H</i>	17.0	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1996 01 18	691	0.2+	0.3−	1996 01 25	691	0.3−	0.1−	1998 10 14	691	0.1−	0.1+
1996 01 18	691	0.1+	0.6+	1996 01 25	691	0.2+	0.5−	1998 10 19	691	0.1−	0.2−
1996 01 18	691	0.1−	0.2+	1998 10 14	691	0.0	0.0	1998 10 19	691	0.2−	0.2−
1996 01 25	691	0.1−	0.1+	1998 10 14	691	0.2+	0.0	1998 10 19	691	0.3+	0.3+

1996 BS₉ = 1998 SH₉₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	60.79600		(2000.0)		P		Q				
<i>n</i>	0.23514860	ω	140.50403		+0.74012724		+0.67246273				
<i>a</i>	2.5996075	Ω	177.23511		-0.62866762		+0.69315988				
<i>e</i>	0.2089583	<i>i</i>	2.79783		-0.23872304		+0.25946725				
<i>P</i>	4.19	<i>H</i>	17.0		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1996 01 13	691	0.1-	0.2-	1996 01 27	691	0.0	0.0	1998 09 26	704	1.1-	0.6-
1996 01 13	691	0.0	0.3-	1996 01 27	691	0.1+	0.0	1998 09 27	704	0.4+	0.4+
1996 01 13	691	0.0	0.4-	1996 01 27	691	0.3+	0.3+	1998 09 27	704	0.8+	0.7-
1996 01 21	691	0.1+	0.2-	1998 09 26	704	1.2-	0.3+	1998 09 27	704	0.9+	1.1+
1996 01 21	691	0.3-	0.7+	1998 09 26	704	0.1-	0.5+	1998 09 27	704	1.4-	0.3+
1996 01 21	691	0.1-	0.0	1998 09 26	704	1.0+	1.3-	1998 09 27	704	0.8+	0.1-

1996 CY = 1998 UQ₃₀

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	306.94588		(2000.0)	P	Q					
<i>n</i>	0.28487638	ω	6.88440	-0.67149647	-0.73568618					
<i>a</i>	2.2875210	Ω	125.34306	+0.67457457	-0.65641360					
<i>e</i>	0.0914921	<i>i</i>	6.23899	+0.30666208	-0.16699409					
<i>P</i>	3.46	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 4					

Residuals in seconds of arc

1996 01 14	327	1.2+	0.5+	1996 02 10	596	0.3+	0.4+	1996 02 22	596	0.9-	1.1+
1996 01 14	327	0.6-	0.1+	1996 02 10	596	0.2-	0.8+	1998 10 18	809	0.1+	0.2-
1996 01 14	327	0.5+	0.2-	1996 02 12	596	0.1-	0.3+	1998 10 18	809	0.2+	0.2+
1996 01 18	327	0.4-	0.6-	1996 02 12	596	0.1+	0.2+	1998 10 18	809	0.5-	0.5+
1996 01 18	327	0.2+	0.1+	1996 02 12	596	0.1+	0.2+	1998 10 19	809	0.1+	0.4+
1996 01 18	327	0.0	0.1-	1996 02 16	596	0.2+	0.2+	1998 10 19	809	0.4+	0.0
1996 02 09	596	0.7-	1.1-	1996 02 16	596	1.5+	0.1-	1998 10 19	809	0.5-	0.2+
1996 02 09	596	1.1-	0.6-	1996 02 16	596	0.8+	0.3+	1998 11 15	596	(4.5-	1.6-)
1996 02 09	596	1.3-	0.0	1996 02 22	596	0.2-	1.1-	1998 11 15	596	1.3-	0.6-
1996 02 10	596	1.0+	0.1-	1996 02 22	596	0.5-	0.2-	1998 11 15	596	1.3+	0.5-

1996 CE₁ = 1998 VU₃₄

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	350.03061		(2000.0)	P	Q					
<i>n</i>	0.27953844	ω	92.99588	+0.07763338	-0.99689796					
<i>a</i>	2.3165501	Ω	352.51459	+0.87070755	+0.07411840					
<i>e</i>	0.1506201	<i>i</i>	5.70172	+0.48563507	+0.02647483					
<i>P</i>	3.53	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 4					

Residuals in seconds of arc

1996 01 17	098	1.2+	0.1+	1996 02 23	411	0.1-	0.7+	1998 11 10	704	0.5-	0.1+
1996 01 18	098	0.1+	0.4+	1996 02 24	098	0.7-	0.2-	1998 11 10	704	0.0	0.7+
1996 01 20	098	0.0	0.5-	1996 02 24	098	0.8+	0.5-	1998 11 10	704	0.8-	1.5+

1996 02 11	411	0.2-	1.5+	1996 02 24	411	0.3+	0.4-	1998 11 10	704	1.0-	1.7+
1996 02 11	411	0.6-	0.6+	1996 02 24	411	0.2-	1.6-	1998 11 12	399	0.3+	0.3-
1996 02 12	411	0.0	1.1-	1996 02 27	411	0.8+	0.6+	1998 11 12	399	0.0	1.3-
1996 02 12	411	0.4+	0.5-	1996 02 27	411	0.3+	1.2+	1998 11 16	704	0.3+	1.0-
1996 02 14	098	(2.9-	2.6-)	1996 03 12	411	0.1+	0.7-	1998 11 16	704	0.7+	0.7-
1996 02 14	098	(3.0-	2.6-)	1996 03 12	411	1.1+	1.0-	1998 11 16	704	0.8+	0.4-
1996 02 15	098	0.9-	0.2-	1996 03 14	098	0.5-	0.9+	1998 11 16	704	0.4+	0.6+
1996 02 15	098	0.4-	0.6-	1996 03 14	098	0.5+	0.5+	1998 11 16	704	0.7-	0.5+
1996 02 18	411	0.5-	0.3+	1996 03 20	098	0.8-	0.6-	1998 11 18	399	0.8+	0.3-
1996 02 18	411	0.4+	1.5+	1996 03 20	098	0.8-	0.5-	1998 11 18	399	0.2+	0.9-
1996 02 23	411	0.2-	0.0	1998 11 10	704	0.2-	0.3-				

1996 CL₇

Id. G. Forti (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	350.85051		(2000.0)	P	Q					
<i>n</i>	0.28959429	ω	117.53002	-0.11604458	-0.99151668					
<i>a</i>	2.2626084	Ω	338.88884	+0.84429233	-0.06741979					
<i>e</i>	0.1489887	<i>i</i>	9.35574	+0.52316739	-0.11112718					
<i>P</i>	3.40	<i>H</i>	14.9	<i>G</i> 0.15	<i>U</i> 5					

Residuals in seconds of arc

1996 01 17	098	1.3+	0.2-	1996 02 15	098	1.3+	0.7+	1996 03 19	566	0.6-	0.1-
1996 01 17	098	0.4+	0.2-	1996 02 24	098	(2.5-	1.4-)	1996 03 19	566	0.6-	0.3-
1996 01 18	098	0.7-	0.1+	1996 02 24	098	0.2+	0.8-	1996 03 19	566	0.2-	0.2-
1996 01 18	098	0.2+	0.3-	1996 03 11	327	0.5+	0.8-	1998 11 15	104	0.8-	0.7+
1996 01 20	098	0.2-	1.0+	1996 03 11	327	0.8+	0.2+	1998 11 15	104	0.3+	0.3+
1996 01 20	098	0.1-	1.2-	1996 03 11	327	0.2+	0.2+	1998 11 15	104	0.2-	0.1+
1996 02 14	098	1.4-	0.5+	1996 03 14	327	0.2+	0.0	1998 11 17	108	1.2-	0.8-
1996 02 14	098	0.8-	0.5+	1996 03 14	327	0.8+	0.1-	1998 11 17	108	1.9+	0.0
1996 02 15	098	0.5-	0.7+	1996 03 14	327	0.4-	0.0	1998 11 17	108	0.0	0.4-

1996 CR₈ = 1977 DZ₆ = 1998 VJ₁₃

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	263.24973		(2000.0)	P	Q					
<i>n</i>	0.25982709	ω	132.83135	-0.97822452	-0.20580903					
<i>a</i>	2.4322774	Ω	35.31657	+0.17431169	-0.88482710					
<i>e</i>	0.1291116	<i>i</i>	2.65935	+0.11265976	-0.41799958					
<i>P</i>	3.79	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4					

Residuals in seconds of arc

1977 02 19	381	0.3+	0.7+	1996 03 14	098	0.5-	0.1+	1998 11 10	704	0.0	0.4-
1977 02 19	381	0.2+	0.4+	1996 03 14	098	1.4-	0.1+	1998 11 10	704	0.1+	0.8+
1996 02 14	098	0.2-	0.2-	1998 08 24	910	0.5-	0.6+	1998 11 10	704	0.2-	0.1+
1996 02 14	098	1.2+	0.1+	1998 08 24	910	0.2-	0.7+	1998 11 10	704	0.1+	2.0-
1996 02 15	098	(2.3-	0.3-)	1998 08 24	910	0.1-	0.8+	1998 11 11	704	0.3-	0.8-
1996 02 15	098	0.2-	1.0-	1998 10 19	699	0.4+	0.6-	1998 11 11	704	0.1-	1.2+
1996 02 24	098	0.3+	0.3-	1998 10 19	699	0.8+	0.0	1998 11 11	704	0.4-	0.0
1996 02 24	098	0.4+	0.3+	1998 10 19	699	0.6+	0.0	1998 11 11	704	0.4-	0.1+

1996 EJ₁ = 1998 VB₂₃

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	304.64091		(2000.0)	P	Q					
<i>n</i>	0.26512015	ω	105.44941	-0.71895578	-0.69470723					
<i>a</i>	2.3997954	Ω	30.55681	+0.61995198	-0.65526572					
<i>e</i>	0.1282390	<i>i</i>	2.48132	+0.31426443	-0.29666259					
<i>P</i>	3.72	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5					

Residuals in seconds of arc

1996 03 10	400	1.2+	0.4+	1996 03 23	566	0.0	0.0	1998 11 10	699	0.3+	0.3+
1996 03 10	400	1.7+	1.1-	1996 04 12	400	0.6-	0.7-	1998 11 10	699	0.6+	0.5+
1996 03 13	400	0.8+	1.5+	1996 04 12	400	0.7-	0.9-	1998 11 10	699	0.7+	0.7+

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1996 03 13	400	0.1−	0.0	1998 10 18	699	0.6−	0.7+	1998 11 11	704	0.5+	0.0
1996 03 20	400	0.9−	0.3+	1998 10 18	699	0.9−	0.7+	1998 11 11	704	0.7+	0.4−
1996 03 20	400	0.0	0.0	1998 10 18	699	0.4−	0.2+	1998 11 11	704	0.8+	0.2−
1996 03 22	566	0.5−	0.1−	1998 11 10	704	0.4−	0.3+	1998 11 11	704	0.1+	0.6+
1996 03 22	566	0.3−	0.2+	1998 11 10	704	0.0	0.1+	1998 11 11	704	0.3−	0.6+
1996 03 22	566	0.5−	0.0	1998 11 10	704	0.5−	1.2−	1998 11 24	691	0.1−	0.5−
1996 03 23	566	0.2−	0.0	1998 11 10	704	0.6−	0.0	1998 11 24	691	0.3−	0.5−
1996 03 23	566	0.0	0.2+	1998 11 10	704	0.6+	1.7−	1998 11 24	691	0.2−	0.3−

1996 FD₄ = 1998 VL₆

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	324.90282		(2000.0)	P	Q		
<i>n</i>	0.27170115	ω	138.52750	−0.58106781	−0.81366601		
<i>a</i>	2.3608863	Ω	346.96632	+0.72470541	−0.50748711		
<i>e</i>	0.2050649	<i>i</i>	4.46197	+0.37035425	−0.28355682		
<i>P</i>	3.63	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 22	608	1.0−	0.5−	1998 11 10	704	0.9+	0.0	1998 11 11	704	0.6−	0.1+
1996 03 22	608	1.0−	0.3−	1998 11 10	704	1.0+	0.3+	1998 11 11	704	1.8−	0.8−
1996 03 23	608	0.4+	0.2+	1998 11 10	704	1.9−	1.8+	1998 11 11	905	0.6+	1.0−
1996 03 23	608	0.5+	0.2+	1998 11 10	704	0.4−	0.9+	1998 11 11	905	0.7+	0.9−
1996 03 24	608	0.9+	0.3+	1998 11 10	704	0.1−	0.1−	1998 11 14	385	0.1+	0.1−
1996 03 24	608	0.8+	0.2+	1998 11 11	704	0.3+	0.6−	1998 11 14	385	0.4+	0.1−
1996 04 10	608	0.2−	0.1−	1998 11 11	704	1.3+	0.2+				
1996 04 10	608	0.3−	0.1−	1998 11 11	704	0.5−	0.5+				

1996 FT₆ = 1990 OK₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	155.18669		(2000.0)	P	Q		
<i>n</i>	0.28793948	ω	156.96925	+0.85615892	+0.51655052		
<i>a</i>	2.2712690	Ω	171.89295	−0.48720925	+0.81536220		
<i>e</i>	0.2250470	<i>i</i>	5.26509	−0.17210187	+0.26145755		
<i>P</i>	3.42	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 07 25	675	0.4+	0.3+	1990 07 28	675	1.2−	0.2+	1996 03 19	566	1.0+	0.2+
1990 07 25	675	0.1−	0.3+	1990 07 29	675	0.1+	0.8−	1996 03 19	566	0.3+	0.0
1990 07 25	675	0.7+	0.6+	1990 07 29	675	(1.3−	1.8−)	1996 03 26	691	0.1−	0.4−
1990 07 25	675	0.3−	0.1+	1996 03 18	691	0.1−	0.1+	1996 03 26	691	0.8−	0.3−
1990 07 27	675	0.8+	0.1+	1996 03 18	691	0.2−	0.2+	1996 03 26	691	0.5−	0.4−
1990 07 27	675	0.9+	0.3−	1996 03 18	691	0.3+	0.2+				
1990 07 28	675	1.0−	0.3−	1996 03 19	566	0.5+	0.1+				

1996 GD₁₇ = 1998 VQ₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	291.93650		(2000.0)	P	Q		
<i>n</i>	0.28232965	ω	1.74950	−0.98074302	−0.17061979		
<i>a</i>	2.3012566	Ω	167.18127	+0.17358261	−0.98453236		
<i>e</i>	0.1881414	<i>i</i>	25.36290	+0.08951091	+0.03981108		
<i>P</i>	3.49	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 13	327	0.2−	0.1+	1996 04 18	327	0.2−	0.4+	1998 11 15	703	0.1−	0.5−
1996 04 13	327	0.2−	0.1−	1996 04 18	327	0.3+	0.2−	1998 11 15	703	1.0+	0.1+
1996 04 13	327	0.1+	0.2−	1996 04 20	327	0.3−	0.6−	1998 11 15	703	0.5−	0.6+
1996 04 13	327	0.1+	0.1+	1996 04 20	327	0.2+	0.3+	1998 11 16	703	1.0−	1.0+
1996 04 18	327	0.3+	0.0	1996 04 20	327	0.2−	0.1+	1998 11 16	703	0.5+	1.1−

1996 GV₁₇ = 1998 WS₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	132.28873		(2000.0)	P	Q		
<i>n</i>	0.19127230	ω	74.02216	+0.23420815	+0.96617702		
<i>a</i>	2.9833302	Ω	210.18774	−0.95372079	+0.20680479		
<i>e</i>	0.1040025	<i>i</i>	12.39438	−0.18858207	+0.15405763		
<i>P</i>	5.15	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 22	809	1.8+	0.2+	1996 03 27	809	2.1−	0.6−	1998 11 18	704	0.2+	1.4+
1996 03 22	809	1.5+	0.3−	1996 04 15	809	0.4−	0.9+	1998 11 18	704	0.0	0.8−
1996 03 22	809	1.4+	0.2+	1996 04 15	809	0.3−	0.7+	1998 11 18	704	1.5−	0.8−
1996 03 26	809	0.5+	0.1+	1996 04 15	809	0.3−	0.4+	1998 11 18	704	3.5−	0.5−
1996 03 26	809	0.5+	0.5−	1996 04 17	809	0.2+	0.2+	1998 11 21	704	1.2+	0.3−
1996 03 26	809	0.4+	0.1+	1996 04 17	809	0.8+	0.0	1998 11 21	704	0.1+	0.7+
1996 03 27	809	2.1−	0.3+	1996 04 17	809	0.5+	1.2−	1998 11 21	704	1.1+	1.1+
1996 03 27	809	2.1−	0.5−	1998 11 18	704	0.7−	0.8−				

1996 GG₁₈ = 1998 VU₃₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	267.95293		(2000.0)	P	Q		
<i>n</i>	0.21488364	ω	306.75802	−0.94137517	−0.33440364		
<i>a</i>	2.7605809	Ω	213.77082	+0.32941436	−0.88262979		
<i>e</i>	0.0123138	<i>i</i>	4.59952	+0.07279399	−0.33036171		
<i>P</i>	4.59	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 24	809	0.2−	1.3−	1996 04 15	809	0.6+	0.0	1998 11 14	691	0.1−	0.1−
1996 03 24	809	0.5−	0.4−	1996 04 15	809	0.1−	0.3−	1998 11 14	691	0.0	0.1−
1996 03 24	809	1.1−	1.5−	1996 04 15	809	0.5−	0.6−	1998 11 14	691	0.0	0.1+
1996 03 27	809	0.3−	1.3+	1996 04 17	809	0.0	0.5+	1998 11 16	691	0.0	0.1−
1996 03 27	809	1.4+	1.3+	1996 04 17	809	0.2−	0.1+	1998 11 16	691	0.0	0.0
1996 03 27	809	0.8+	1.1+	1996 04 17	809	0.1−	0.4−	1998 11 16	691	0.1+	0.2+

1996 GO₂₀ = 1981 WC₃ = 1998 UU₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	329.55150		(2000.0)	P	Q		
<i>n</i>	0.23199004	ω	267.82800	−0.27089166	−0.96248721		
<i>a</i>	2.6231502	Ω	197.91217	+0.90184654	−0.24817850		
<i>e</i>	0.1180056	<i>i</i>	2.86356	+0.33658657	−0.10966221		
<i>P</i>	4.25	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 11 24	033	0.5+	0.3+	1996 04 17	809	0.1−	1.1−	1998 11 10	704	0.6+	0.9−
1981 11 24	033	0.9−	1.4+	1998 10 18	699	0.0	0.3−	1998 11 11	704	0.4−	0.2+
1996 03 24	809	0.0	0.0	1998 10 18	699	0.2+	0.2−	1998 11 11	704	0.3−	0.2−
1996 03 24	809	0.0	0.9−	1998 10 18	699	0.5+	0.1−	1998 11 11	704	0.2−	0.0
1996 03 24	809	0.4−	0.8−	1998 10 24	120	0.9+	0.6−	1998 11 11	704	0.5−	0.1−
1996 03 27	809	1.4+	0.3+	1998 10 24	120	0.6+	0.2−	1998 11 11	699	0.0	0.4−
1996 03 27	809	0.8+	0.3+	1998 10 26	120	0.1+	0.4−	1998 11 11	704	1.3−	0.3−
1996 03 27	809	0.2+	0.9+	1998 10 26	120	0.2+	0.1+	1998 11 11	699	0.0	0.0
1996 04 15	809	0.3+	1.9+	1998 10 27	120	0.6+	0.8+	1998 11 11	699	0.1−	0.7−
1996 04 15	809	0.9−	0.8+	1998 10 27	120	0.5−	0.3+	1998 11 16	566	0.4−	0.2+
1996 04 15	809	1.0−	0.4+	1998 10 28	120	0.5+	0.2+	1998 11 16	566	0.4−	0.3+
1996 04 17	809	0.7−	1.9−	1998 11 10	704	0.7+	0.1+	1998 11 16	566	0.5−	0.1+
1996 04 17	809	0.2+	1.3−	1998 11 10	704	0.6+	0.8−				

1996 HY = 1998 WF₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.22981683	ω	122.78103	−0.97722787	+0.09003278				
<i>a</i>	2.6396610	Ω	63.03760	−0.17333326	−0.86103049				
<i>e</i>	0.1295739	<i>i</i>	12.44942	+0.12239799	−0.50052032				
<i>P</i>	4.29	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1996 04 20	411	0.7−	0.6−	1996 05 13	691	1.5−	0.0	1998 11 21	704	0.2+	0.4−
1996 04 20	411	0.7+	0.5−	1996 05 13	691	1.3−	0.2−	1998 11 21	704	0.1−	0.7−
1996 04 22	411	0.8−	1.1+	1996 05 21	691	0.0	2.0−	1998 11 21	704	0.5+	0.5−
1996 04 22	411	0.2−	0.1−	1996 05 21	691	0.5+	0.2−	1998 11 21	704	0.4+	0.3−
1996 04 22	411	0.0	1.2+	1996 05 21	691	0.3+	0.0	1998 11 21	704	0.3−	2.1−
1996 04 24	411	1.1+	1.1−	1996 05 21	566	0.6+	1.7+	1998 11 24	704	0.5+	0.1−
1996 04 24	411	0.9+	0.4−	1996 05 21	566	0.1−	1.0+	1998 11 24	704	0.1−	0.6+
1996 05 09	411	0.5+	0.5+	1996 05 21	566	0.2+	1.6+	1998 11 24	704	0.7−	0.5+
1996 05 09	411	0.1+	1.4−	1996 06 15	566	0.6+	0.2−	1998 11 24	704	0.2−	1.2+
1996 05 09	411	0.1−	0.1−	1996 06 15	566	0.5+	0.1−	1998 11 24	704	0.4−	2.4+
1996 05 13	691	1.0−	0.5+	1996 06 15	566	0.4+	0.5−				

1996 HA₂ = 1998 VK₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.17677699	ω	48.62139	−0.64880904	+0.76094754				
<i>a</i>	3.1442633	Ω	180.93660	−0.73440647	−0.62699263				
<i>e</i>	0.2378109	<i>i</i>	8.37858	−0.19923345	−0.16685049				
<i>P</i>	5.58	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1996 04 21	413	0.4−	1.0+	1996 04 26	355	0.4−	1.1−	1996 05 17	691	0.6−	0.4−
1996 04 21	413	1.0+	0.1−	1996 04 27	367	0.2+	0.1+	1996 05 23	691	0.1+	0.2+
1996 04 24	367	0.1−	0.6+	1996 04 27	367	0.4+	0.4+	1996 05 23	691	0.4−	0.1+
1996 04 24	367	0.0	0.4+	1996 04 27	367	0.2+	0.5+	1996 05 23	691	0.0	0.2+
1996 04 24	900	0.5+	0.9+	1996 05 09	900	0.9+	0.3−	1996 05 24	367	1.0+	0.3−
1996 04 24	355	0.6−	0.5+	1996 05 09	900	0.8+	0.3−	1996 05 24	367	1.0+	0.4−
1996 04 24	355	0.4+	0.8−	1996 05 09	897	0.2−	0.6−	1996 06 05	367	0.5+	0.9+
1996 04 24	355	0.1−	0.9+	1996 05 09	897	0.4+	0.3−	1996 06 05	367	0.1+	0.5+
1996 04 24	900	0.6−	0.2+	1996 05 12	691	1.3−	0.3−	1998 11 10	704	0.7+	0.2+
1996 04 24	867	0.1−	0.9+	1996 05 12	691	1.2−	0.4−	1998 11 10	704	1.2−	2.9+
1996 04 24	867	0.3+	0.8+	1996 05 12	691	1.4−	0.6−	1998 11 10	704	0.3−	1.0+
1996 04 24	867	0.4+	0.5+	1996 05 15	691	0.3−	0.2−	1998 11 10	704	3.1−	0.3−
1996 04 26	367	0.2+	0.0	1996 05 15	691	0.5−	0.0	1998 11 11	704	1.4+	0.5−
1996 04 26	367	0.0	0.2−	1996 05 15	691	0.4−	0.2−	1998 11 11	704	1.6+	0.5+
1996 04 26	355	0.4+	0.8+	1996 05 17	691	0.7−	0.5−	1998 11 11	704	0.5+	2.2−
1996 04 26	355	1.6+	1.8−	1996 05 17	691	0.6−	0.3−				

1996 HM₂ = 1998 UK₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.22465673	ω	99.80513	−0.85355404	−0.51980558				
<i>a</i>	2.6799278	Ω	48.88512	+0.45775203	−0.78058059				
<i>e</i>	0.1414296	<i>i</i>	2.68725	+0.24881433	−0.34712548				
<i>P</i>	4.39	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1996 04 12	691	0.4−	0.0	1996 04 21	413	0.1+	0.7−	1998 10 28	704	0.0	1.2+
1996 04 12	691	0.5−	0.1+	1996 04 21	413	1.0+	0.6−	1998 10 28	704	0.6−	1.6+
1996 04 12	691	0.4−	0.0	1996 04 24	691	1.0−	0.1+	1998 10 29	704	1.2−	1.0+
1996 04 18	413	1.1+	0.1+	1996 04 24	691	0.8−	0.4+	1998 10 29	704	0.3+	0.9+
1996 04 18	413	0.5+	0.0	1996 04 24	691	0.5−	0.5+	1998 10 29	704	0.3+	0.9−
1996 04 19	691	0.2+	0.3−	1998 10 28	704	0.6+	0.4−	1998 10 29	704	0.5−	0.6−
1996 04 19	691	0.3+	0.2+	1998 10 28	704	2.0+	1.0−				
1996 04 19	691	0.3+	0.4+	1998 10 28	704	1.0−	1.6−				

1996 HF₁₄ = 1996 KS₆ = 1998 SG₁₆₂Id. S. Nakano (d. *MPC* 31437), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.19472517	ω	37.70807	+0.26487019	−0.96393831				
<i>a</i>	2.9479582	Ω	36.95285	+0.87393497	+0.22865026				
<i>e</i>	0.0714636	<i>i</i>	2.46171	+0.40753092	+0.13616897				
<i>P</i>	5.06	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1996 04 17	809	1.2+	1.0+	1996 05 22	809	1.6−	1.0−	1998 10 17	699	0.4−	0.3+
1996 04 17	809	0.1−	1.0+	1998 09 26	704	0.5−	0.8+	1998 10 17	699	0.1+	0.8−
1996 04 17	809	0.9−	1.0−	1998 09 26	704	0.5−	1.1−	1998 11 10	704	0.3+	0.0
1996 04 18	809	(2.4+	0.8−)	1998 09 26	704	0.3−	0.5−	1998 11 10	704	(2.2−	1.3−)
1996 04 18	809	1.6+	0.4+	1998 09 26	704	0.3−	0.1−	1998 11 10	704	0.5−	1.7+
1996 04 18	809	(2.7+	0.2−)	1998 09 26	704	0.2−	0.9−	1998 11 10	704	0.8+	0.4+
1996 05 19	809	(2.5−	0.6+)	1998 09 27	704	0.5−	0.8+	1998 11 11	704	0.6+	1.0−
1996 05 19	809	0.1+	1.9+	1998 09 27	704	0.3+	0.9+	1998 11 11	704	0.5−	1.1+
1996 05 19	809	1.2+	0.2+	1998 09 27	704	1.0+	0.5−	1998 11 11	704	(2.3+	0.5+)
1996 05 22	809	0.1+	0.0	1998 09 27	704	(1.6+	2.4+)				
1996 05 22	809	1.3−	1.4−	1998 10 17	699	0.1+	0.2−				

1996 JK₃

Id. T. Kobayashi (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Nakano	
<i>n</i>	0.26910460	ω	93.31681	−0.87760001	−0.44604460				
<i>a</i>	2.3760485	Ω	60.25949	+0.31854082	−0.81642966				
<i>e</i>	0.1878853	<i>i</i>	11.67310	+0.35825964	−0.36672445				
<i>P</i>	3.66	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1996 05 09	691	0.9−	0.6+	1996 05 20	566	0.8+	0.2−	1996 06 13	566	0.9−	0.2−
1996 05 09	691	0.4−	0.5+	1996 05 20	566	0.6+	0.7−	1998 11 14	411	0.7−	0.9−
1996 05 09	691	0.7−	0.2+	1996 05 22	691	0.0	0.5−	1998 11 14	411	0.6+	0.9+
1996 05 15	691	0.4+	0.0	1996 05 22	691	0.2+	0.3−	1998 11 15	411	0.2+	0.2−
1996 05 15	691	0.4+	0.1+	1996 05 22	691	0.1+	0.1−	1998 11 15	411	0.0	0.1−
1996 05 15	691	0.2+	0.2+	1996 06 13	566	0.2−	0.0				
1996 05 20	566	0.8+	0.1−	1996 06 13	566	0.5−	0.1+				

1996 JT₇ = 1982 XH₃ = 1998 WF₁₆

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.18498891	ω	305.83080	+0.91526398	−0.38013184				
<i>a</i>	3.0505086	Ω	76.84430	+0.39946563	+0.81351697				
<i>e</i>	0.1535816	<i>i</i>	7.87314	+0.05214452	+0.44010216				
<i>P</i>	5.33	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1982 12 13	381	0.5+	0.5−	1996 05 18	691	0.0	0.1+	1998 11 21	704	0.9+	0.8+
1982 12 14	381	0.9−	0.1+	1996 05 18	691	0.6−	0.2+	1998 11 21	704	0.2+	0.8−
1982 12 14	381	0.4+	0.2+	1996 05 24	691	0.6−	0.4−	1998 11 21	704	0.9−	0.9−
1996 05 12	691	0.6+	0.3+	1996 05 24	691	0.6−	0.1−	1998 11 24	704	0.2+	1.2+
1996 05 12	691	0.5+	0.0	1996 05 24	691	0.3+	0.0	1998 11 24	704	0.4+	0.4+
1996 05 12	691	0.3+	0.1−	1998 11 21	704	1.3+	0.4−	1998 11 24	704	0.9−	0.2+
1996 05 18	691	0.1−	0.2−	1998 11 21	704	1.2−	0.5−				

1996 KN = 1998 WF₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	22.66661	(2000.0)	P		Q	
<i>n</i>	0.17647994	ω	4.63178	+0.72839244	-0.68485097	
<i>a</i>	3.1477905	Ω	38.61871	+0.62755818	+0.65479904	
<i>e</i>	0.1684678	<i>i</i>	1.88972	+0.27498213	+0.31971450	
<i>P</i>	5.58	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1996 05 21	684	1.0+	1.7+	1996 06 08	684	0.4+	0.1-	1998 11 21	704	0.1-	1.0+
1996 05 21	684	0.7+	2.6+	1996 06 08	684	0.7+	0.1-	1998 11 21	704	1.2+	1.4+
1996 05 22	684	0.7-	1.0+	1996 06 09	684	0.4+	0.1+	1998 11 24	704	0.4-	0.0
1996 05 22	684	1.6+	0.4-	1996 06 11	684	0.4-	0.4-	1998 11 24	704	0.1+	0.4-
1996 05 22	684	0.5+	2.2+	1996 06 11	684	0.3-	0.2-	1998 11 24	704	0.4-	0.2-
1996 05 22	684	1.2+	2.0+	1996 06 11	684	0.1-	0.0	1998 11 24	704	0.1+	0.8-
1996 05 23	684	3.0-	1.6-	1998 11 21	704	0.3+	0.2-	1998 11 24	704	1.4-	1.0-
1996 05 23	684	2.2-	2.8-	1998 11 21	704	0.4+	0.1-				
1996 05 23	684	0.3+	3.5-	1998 11 21	704	0.2+	0.6+				

1996 LK₁ = 1993 SN₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	227.10629	(2000.0)	P		Q	
<i>n</i>	0.28646655	ω	244.63847	+0.76217165	+0.63265373	
<i>a</i>	2.2790478	Ω	75.80513	-0.53134353	+0.73247272	
<i>e</i>	0.1434209	<i>i</i>	8.14018	-0.36982214	+0.25146167	
<i>P</i>	3.44	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1993 09 19	675	0.0	0.5+	1996 06 12	046	0.2+	0.0	1996 06 15	046	0.2-	0.6-
1993 09 19	675	0.1-	0.3+	1996 06 12	046	0.8+	0.1+	1996 06 17	046	0.9+	0.1+
1993 09 23	675	0.4-	0.2-	1996 06 12	046	0.5+	0.1+	1996 06 17	046	0.4+	0.1+
1993 09 23	675	0.0	0.6-	1996 06 12	046	0.7-	0.5-	1996 06 17	046	0.2+	0.2-
1996 06 11	046	0.0	0.2-	1996 06 15	046	0.8-	0.4+	1996 06 19	046	0.1+	0.2-
1996 06 11	046	0.2-	0.2+	1996 06 15	046	0.2-	0.5+	1996 06 19	046	0.5-	0.2-
1996 06 12	046	0.9+	0.7+	1996 06 15	046	0.2+	0.5+	1996 06 19	046	0.6-	0.2+
1996 06 12	046	0.2+	0.2-	1996 06 15	046	0.1-	0.2-				
1996 06 12	046	0.7-	0.0	1996 06 15	046	0.7-	0.5-				

1996 RE₁₁ = 1998 WL₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	263.27777	(2000.0)	P		Q	
<i>n</i>	0.08378944	ω	143.35293	-0.89258289	-0.45074911	
<i>a</i>	5.1722144	Ω	9.87351	+0.39695050	-0.79715318	
<i>e</i>	0.0386196	<i>i</i>	3.67836	+0.21383657	-0.40171139	
<i>P</i>	11.76	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1996 09 08	691	0.2-	0.1+	1996 09 17	691	0.0	0.2+	1998 11 18	695	0.2-	0.3-
1996 09 08	691	0.1-	0.0	1996 09 21	691	0.3-	0.2+	1998 11 25	688	0.1-	0.2+
1996 09 08	691	0.0	0.0	1996 09 21	691	0.4-	0.1-	1998 11 25	688	0.1+	0.2+
1996 09 17	691	0.5+	0.3-	1998 11 18	695	0.0	0.3-				
1996 09 17	691	0.4+	0.1-	1998 11 18	695	0.2+	0.2+				

1996 TF₁₀ = 1992 OL₉ = 1998 FG₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	221.11900	(2000.0)	P		Q	
<i>n</i>	0.27244234	ω	36.04432	+0.92818743	-0.37159575	
<i>a</i>	2.3566024	Ω	345.73075	+0.32006861	+0.82414410	
<i>e</i>	0.0990493	<i>i</i>	4.56410	+0.18980035	+0.42743783	
<i>P</i>	3.62	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1992 07 27	809	0.9-	1.0-	1996 10 10	399	0.7+	0.0	1998 03 20	704	0.3-	0.4-
1992 07 27	809	0.4-	0.8-	1996 10 10	399	1.3+	0.9+	1998 03 22	704	0.8-	0.4-

1992 07 27	809	0.3+	0.7-	1996 10 16	399	0.8-	0.4-	1998 03 22	704	0.5+	0.4-
1992 07 28	809	0.6-	0.9+	1996 10 16	399	0.2-	0.8+	1998 03 22	704	0.2+	0.3+
1992 07 28	809	0.3+	0.9+	1998 03 20	704	0.1+	1.3+	1998 03 22	704	0.3+	0.1-
1992 07 28	809	1.0+	0.9+	1998 03 20	704	0.6+	0.1-	1998 03 22	704	0.3-	0.6-
1996 10 09	399	0.8-	0.8-	1998 03 20	704	0.5+	0.1-				
1996 10 09	399	0.1-	0.4-	1998 03 20	704	0.7-	0.7+				

1996 TX₃₈ = 1973 VU = 1997 XS₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	242.09027	(2000.0)	P		Q	
<i>n</i>	0.21202304	ω	218.10007	-0.07930177	+0.99570393	
<i>a</i>	2.7853558	Ω	47.40659	-0.89791668	-0.05052226	
<i>e</i>	0.2885901	<i>i</i>	3.72290	-0.43296289	-0.07759627	
<i>P</i>	4.65	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1973 11 02	033	0.1-	0.2+	1996 10 10	809	0.8+	0.0	1997 12 04	704	0.8+	0.9-
1996 10 07	809	0.3+	0.3-	1996 10 10	809	0.0	0.2+	1997 12 05	704	(3.2-	1.2+)
1996 10 07	809	0.3-	0.8+	1996 10 10	809	0.5+	0.7-	1997 12 05	704	0.8-	0.6+
1996 10 07	809	1.1-	0.6-	1997 12 04	704	1.8+	0.5-	1997 12 05	704	0.7+	0.9+
1996 10 08	809	0.8-	0.1+	1997 12 04	704	(4.0+	1.2-)	1997 12 05	704	1.6-	1.1+
1996 10 08	809	0.1+	0.2-	1997 12 04	704	0.1-	1.1-	1997 12 05	704	0.9-	0.2-
1996 10 08	809	0.7+	0.7+	1997 12 04	704	0.1+	0.1+				

1996 UO₂ = 1998 DX₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	117.38730	(2000.0)	P		Q	
<i>n</i>	0.18859682	ω	218.26391	+0.16582576	-0.98460895	
<i>a</i>	3.0114788	Ω	222.27250	+0.92379241	+0.17468508	
<i>e</i>	0.0428806	<i>i</i>	4.70712	+0.34512231	+0.00550755	
<i>P</i>	5.23	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1996 10 17	691	0.5-	0.6-	1996 10 21	691	0.6+	0.1+	1998 02 22	691	0.2+	0.1+
1996 10 17	691	0.5-	0.3-	1996 10 21	691	0.2+	0.0	1998 02 28	691	0.6-	0.3-
1996 10 17	691	0.5-	0.2+	1998 02 22	691	1.1+	0.2+	1998 02 28	691	0.6-	0.0
1996 10 21	691	0.6+	0.5+	1998 02 22	691	0.1+	0.0	1998 02 28	691	0.2-	0.1-

1996 VO₂₇ = 1990 QA₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	196.00424	(2000.0)	P		Q	
<i>n</i>	0.18020939	ω	182.72610	+0.94299842	+0.33267922	
<i>a</i>	3.1042101	Ω	157.83611	-0.30488937	+0.87428716	
<i>e</i>	0.1782871	<i>i</i>	1.34592	-0.13340335	+0.35347771	
<i>P</i>	5.47	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1990 08 16	809	0.5-	0.2+	1990 08 20	809	0.1+	0.2+	1996 11 13	691	0.6+	0.1+
1990 08 16	809	0.4+	0.3+	1996 11 11	691	0.3-	0.0	1996 11 13	691	0.6+	0.2+
1990 08 16	809	0.3+	1.3-	1996 11 11	691	0.5-	0.2+	1996 11 18	691	0.2-	0.2-
1990 08 20	809	0.1-	0.3+	1996 11 11	691	0.2-	0.0	1996 11 18	691	0.3-	0.1-
1990 08 20	809	0.4-	0.2+	1996 11 13	691	0.7+	0.1+	1996 11 18	691	0.4-	0.2-

1997 AJ₁₀ = 1981 UT₁₆ = 1998 SE₁₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	79.53589	(2000.0)	P		Q	
<i>n</i>	0.16777457	ω	116.77436	-0.55477501	+0.82832005	
<i>a</i>	3.2557568	Ω	119.31428	-0.79164256	-0.49662250	
<i>e</i>	0.6179879	<i>i</i>	5.14348	-0.25598191	-0.25932987	
<i>P</i>	5.87	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1981 10 24	095	0.0	0.1-	1997 01 10	691	0.1+	0.3-	1998 09 26	704	0.4+	1.4-
1997 01 09	691	0.8-	0.2-	1997 01 11	691	1.0+	0.0	1998 09 26	704	0.7-	1.0-

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1997 01 09	691	0.8−	0.6+	1997 01 11	691	1.6+	0.6−	1998 09 27	704	0.9−	0.7+
1997 01 09	691	0.7−	1.1+	1997 01 11	691	0.5+	1.1−	1998 09 27	704	0.4−	0.6+
1997 01 10	691	0.5−	0.3+	1998 09 26	704	0.9+	0.1+	1998 09 27	704	(3.6−	2.2+)
1997 01 10	691	0.4−	0.3+	1998 09 26	704	0.7+	1.1+				

1997 AS₁₉ = 1969 RB₁ = 1998 MM₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler							
<i>M</i>	137.49580	(2000.0)	P	Q			
<i>n</i>	0.26811254	<i>ω</i>	292.56675	−0.93651040	+0.34870027		
<i>a</i>	2.3819061	<i>Ω</i>	267.85702	−0.30664918	−0.86542369		
<i>e</i>	0.1207901	<i>i</i>	2.11212	−0.17004282	−0.35979154		
<i>P</i>	3.68	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1969 09 13	095	0.0	0.3+	1997 01 17	691	0.1−	0.2+	1998 06 20	691	0.1+	0.8+
1997 01 10	691	0.4−	0.4+	1997 01 17	691	0.0	0.2+	1998 06 25	691	0.4−	0.5−
1997 01 10	691	0.5−	0.3+	1998 06 20	691	0.0	0.3+	1998 06 25	691	0.2−	0.2−
1997 01 17	691	0.2+	0.2+	1998 06 20	691	0.0	0.3+	1998 06 25	691	0.7−	0.2−

1997 BQ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	284.51921	(2000.0)	P	Q			
<i>n</i>	0.42745295	<i>ω</i>	147.30616	−0.94548155	+0.29065918		
<i>a</i>	1.7453285	<i>Ω</i>	50.30592	−0.32444694	−0.80149315		
<i>e</i>	0.4793530	<i>i</i>	11.00658	−0.02826346	−0.52261455		
<i>P</i>	2.31	<i>H</i>	18.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1997 01 16	381	0.3+	1.0−	1997 01 30	670	0.5−	0.7−	1997 02 22	360	0.7−	0.5−
1997 01 16	381	1.1+	1.6+	1997 01 30	670	0.4−	1.1+	1997 02 22	360	0.5−	0.5−
1997 01 16	381	0.3−	0.0	1997 01 30	670	0.2+	0.3−	1997 02 23	658	0.4−	0.0
1997 01 16	381	0.1−	0.9+	1997 01 30	670	1.7+	0.2+	1997 02 23	658	0.3−	0.2+
1997 01 16	381	0.1−	0.5+	1997 01 30	897	0.4+	0.6−	1997 02 23	658	0.4−	0.0
1997 01 16	381	0.4−	0.1+	1997 01 30	897	0.2−	0.2+	1997 02 23	658	0.2−	0.3+
1997 01 16	381	0.2+	1.8+	1997 01 30	897	0.3+	0.1+	1997 02 23	658	0.5−	0.1−
1997 01 16	381	1.9+	1.6+	1997 01 30	355	0.6−	0.9−	1997 02 24	658	0.2−	0.3+
1997 01 16	381	1.5−	1.5−	1997 01 30	355	0.2−	0.8−	1997 02 24	658	0.0	0.1−
1997 01 16	381	0.0	0.9+	1997 01 30	355	0.4−	0.6−	1997 02 24	658	0.3−	0.3−
1997 01 20	327	0.6+	0.3+	1997 01 31	670	0.6+	0.3+	1997 02 24	658	0.9−	0.4+
1997 01 20	327	1.5+	0.5+	1997 01 31	670	0.4−	0.1+	1997 02 24	658	0.8−	0.2+
1997 01 20	327	0.7+	0.2+	1997 02 01	540	1.4−	0.5+	1997 03 01	118	0.9+	0.2−
1997 01 20	327	0.8+	0.5+	1997 02 01	540	1.1−	0.1−	1997 03 01	118	0.8+	0.1−
1997 01 21	046	0.6+	0.1+	1997 02 01	540	(2.2−	0.3+)	1997 03 01	118	0.5+	0.2−
1997 01 21	046	0.4−	0.4−	1997 02 01	540	0.1+	0.1+	1997 03 01	557	0.4+	0.1−
1997 01 21	046	0.0	0.0	1997 02 02	540	0.6+	0.4−	1997 03 01	557	0.3+	0.0
1997 01 21	046	0.3−	0.4+	1997 02 02	540	0.4+	0.2+	1997 03 05	557	0.3+	1.1−
1997 01 21	046	0.2−	0.4−	1997 02 02	540	0.3+	0.2+	1997 03 05	557	0.2+	1.2−
1997 01 22	817	0.7−	0.0	1997 02 03	557	0.1+	0.5+	1997 03 05	557	0.3+	1.1−
1997 01 24	817	0.5−	0.5−	1997 02 03	557	0.2+	0.6+	1997 03 09	557	0.2+	0.1+
1997 01 24	817	0.6+	0.3−	1997 02 03	557	0.0	0.7+	1997 03 09	557	0.2+	0.5+
1997 01 24	817	0.3−	0.8−	1997 02 03	557	0.1+	0.6+	1997 03 10	557	0.5+	0.2−
1997 01 24	658	0.7−	1.3−	1997 02 05	402	0.1−	0.3+	1997 03 10	557	0.7+	0.3+
1997 01 24	658	0.8−	1.2−	1997 02 05	402	0.5−	0.1+	1997 03 10	557	0.7+	0.1−
1997 01 24	658	1.1−	1.5−	1997 02 05	402	0.3−	0.5+	1997 03 12	557	0.5+	0.2+
1997 01 25	355	0.8+	1.0+	1997 02 05	402	0.4−	0.2+	1997 03 12	557	0.2+	0.4+
1997 01 25	355	0.1−	0.6+	1997 02 06	657	0.7+	0.1−	1997 03 12	557	0.3+	0.2+
1997 01 25	355	0.3+	0.8+	1997 02 06	657	1.3+	0.8+	1997 03 12	557	0.8+	0.7+
1997 01 25	355	1.5+	0.9+	1997 02 06	657	0.2+	0.5−	1997 06 19	422	1.8−	0.2+
1997 01 25	355	0.5+	0.0	1997 02 06	657	0.2+	0.3+	1997 06 27	422	0.8−	0.2−
1997 01 25	557	0.2−	0.4−	1997 02 06	657	0.1−	0.4−	1997 06 27	422	0.1+	0.3−
1997 01 25	557	0.1−	0.5−	1997 02 06	557	0.2−	0.2+	1997 06 27	422	0.7+	0.1+
1997 01 25	557	0.4−	0.7−	1997 02 06	557	0.3−	0.2+	1997 06 29	360	0.1−	0.3+
1997 01 26	355	1.1+	1.4+	1997 02 06	557	0.1−	0.3+	1997 06 29	360	0.2+	0.3+
1997 01 26	355	(2.7+	2.4+)	1997 02 06	540	0.3+	0.3+	1997 06 29	360	0.0	0.6+
1997 01 26	046	0.0	0.2−	1997 02 06	540	0.2−	0.3+	1998 11 11	709	0.6+	0.1−
1997 01 26	046	0.4+	0.1+	1997 02 06	540	0.3+	0.6+	1998 11 11	709	0.6+	0.1+

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1997 01 26	046	0.4+	0.1−	1997 02 08	566	0.4+	0.2+	1998 11 11	709	0.8+	0.2+
1997 01 26	046	0.4+	0.2+	1997 02 08	566	0.3+	0.2+	1998 11 11	709	1.3+	0.0
1997 01 27	557	0.2+	0.1+	1997 02 08	566	0.3+	0.1+	1998 11 11	709	0.7+	0.5+
1997 01 27	557	0.1+	0.1−	1997 02 09	360	0.5−	0.3+	1998 11 11	658	0.3−	0.0
1997 01 27	557	0.2+	0.1−	1997 02 09	360	0.5−	0.3+	1998 11 11	658	0.9+	0.5−
1997 01 27	557	0.2+	0.0	1997 02 09	360	0.5−	0.2+	1998 11 11	658	0.3+	0.2+
1997 01 28	402	0.1−	0.2−	1997 02 10	046	0.8−	0.0	1998 11 14	709	0.7+	1.3−
1997 01 28	587	0.2+	0.1+	1997 02 10	046	0.6−	0.1−	1998 11 14	709	0.2+	1.1−
1997 01 28	587	0.3−	0.2+	1997 02 19	360	0.6−	0.1+	1998 11 14	709	0.6−	1.7−
1997 01 28	587	0.5+	0.6−	1997 02 19	360	0.7−	0.1+	1998 11 19	691	0.6−	0.4+
1997 01 29	900	0.5−	0.0	1997 02 19	360	0.6−	0.2+	1998 11 19	691	0.5−	0.1−
1997 01 29	900	0.2−	1.1−	1997 02 21	118	0.6−	0.2+	1998 11 19	691	1.7−	0.3+
1997 01 29	355	0.3−	0.3−	1997 02 21	118	0.1−	0.3−	1998 11 26	691	0.6−	0.3+
1997 01 29	355	0.4−	0.2−	1997 02 21	118	0.3−	0.2+	1998 11 26	691	0.4−	0.2+
1997 01 29	355	0.8−	0.0	1997 02 22	360	0.6−	0.7−	1998 11 26	691	0.1−	0.1−

1997 CX₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden							
<i>M</i>	335.08917	(2000.0)	P	Q			
<i>n</i>	0.45047547	<i>ω</i>	162.22080	−0.43709742	−0.86629493		
<i>a</i>	1.6853442	<i>Ω</i>	312.90186	+0.77989973	−0.23113585		
<i>e</i>	0.1204224	<i>i</i>	19.27643	+0.44799805	−0.44284232		
<i>P</i>	2.19	<i>H</i>	18.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 02 06	691	0.8−	0.1+	1997 02 14	557	0.7+	0.3−	1997 03 12	658	0.0	1.1−
1997 02 06	691	0.7−	0.2+	1997 02 14	557	0.6+	0.9+	1997 03 12	658	0.3−	0.0
1997 02 06	691	0.9−	0.0	1997 02 14	557	0.8+	0.3+	1997 03 12	658	0.1+	0.8−
1997 02 07	691	0.2−	0.4−	1997 02 14	557	0.7+	0.3−	1997 03 14	691	0.7−	0.7−
1997 02 07	691	0.4−	0.4−	1997 02 23	658	1.0+	1.2+	1997 03 14	691	0.9−	0.8−
1997 02 09	691	0.1−	0.4−	1997 02 23	658	1.8+	1.2+	1998 11 24	561	0.8−	0.3−
1997 02 09	691	0.1−	0.4−	1997 02 23	658	1.2+	1.0+	1998 11 24	561	0.3−	0.3−
1997 02 09	691	0.3−	0.3−	1997 03 02	587	0.1+	0.4+	1998 11 24	561	0.1+	0.5+
1997 02 13	691	0.4−	0.1−	1997 03 02	587	0.7+	0.4+	1998 12 01	709	0.6+	1.4+
1997 02 13	691	0.4−	0.2−	1997 03 03	691	0.7−	0.2−	1998 12 01	709	0.3+	0.8−
1997 02 13	691	0.5−	0.3−	1997 03 03	691	0.5−	0.8+	1998 12 01	709	0.0	0.5−

1997 EQ₃₂ = 1991 PT₂₀ = 1998 VF₃₇

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	84.32590	(2000.0)	P	Q			
<i>n</i>	0.29237292	<i>ω</i>	311.42600	+0.72381235	+0.68991390		
<i>a</i>	2.2482501	<i>Ω</i>	4.98532	−0.59064228	+0.62753091		
<i>e</i>	0.2194785	<i>i</i>	7.07284	−0.35670349	+0.36086530		
<i>P</i>	3.37	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 07	675	0.0	1.3−	1997 04 08	691	0.0	0.3−	1998 11 10	704
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1998 DEC. 8

M.P.C. 33257

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	63.67466		(2000.0)	P		Q		Williams			
<i>n</i>	0.27123615	ω	57.38703	+0.44276151	+0.89629722						
<i>a</i>	2.3635838	Ω	238.91246	−0.83203802	+0.40040861						
<i>e</i>	0.2143002	<i>i</i>	1.65744	−0.33417807	+0.19058920						
<i>P</i>	3.63	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1997 03 10	704	0.0	0.7+	1998 07 26	699	0.1−	0.9+	1998 08 23	704	0.4−	0.2+
1997 03 10	704	0.1+	0.9−	1998 08 17	704	0.1+	0.6−	1998 08 23	704	0.4−	0.3+
1997 03 12	704	0.1+	0.4−	1998 08 17	704	0.4+	0.4−	1998 08 23	704	0.5−	1.4+
1997 03 12	704	0.2−	0.4+	1998 08 17	704	0.3+	0.7−	1998 08 23	704	0.6+	1.1+
1998 07 26	699	0.2+	0.1+	1998 08 17	704	0.5+	1.0−	1998 08 23	704	0.4−	0.7−
1998 07 26	699	0.6−	0.3−	1998 08 17	704	0.3+	0.6−				

1997 EU₄₆ = 1998 RT₆₁

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	121.60610		(2000.0)	P		Q		Williams			
<i>n</i>	0.25406106	ω	9.31490	−0.23566358	+0.97152205						
<i>a</i>	2.4689406	Ω	247.05751	−0.89335540	−0.22654846						
<i>e</i>	0.1468883	<i>i</i>	1.53381	−0.38259483	−0.06943133						
<i>P</i>	3.88	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1997 03 11	809	(3.3−	4.7+)	1997 04 03	704	0.3+	1.0−	1998 09 26	704	1.0−	0.9+
1997 03 11	809	(4.9−	4.0+)	1997 04 11	704	0.1+	1.0−	1998 09 26	704	0.7−	0.2−
1997 03 11	809	(5.4−	3.7+)	1997 04 11	704	0.6−	0.6+	1998 09 26	704	0.0	1.5−
1997 03 12	809	0.6+	0.8−	1997 04 11	704	0.8+	1.8−	1998 09 26	704	0.5−	1.2−
1997 03 12	809	0.2−	0.8+	1997 04 11	704	0.7−	1.1+	1998 09 26	704	0.4−	0.0
1997 03 12	809	0.6−	0.3+	1998 09 14	704	0.1+	0.1−	1998 09 27	704	0.2+	0.8−
1997 03 13	809	(4.2−	3.5+)	1998 09 14	704	1.2+	0.1+	1998 09 27	704	0.8−	1.3+
1997 03 13	809	(3.9−	3.4+)	1998 09 14	704	0.1−	0.9−	1998 09 27	704	0.5+	0.3+
1997 03 13	809	(4.1−	2.2+)	1998 09 18	704	0.0	0.4+	1998 09 27	704	0.8+	1.2−
1997 03 13	809	0.2+	1.7+	1998 09 18	704	1.1+	0.7+	1998 09 27	704	0.1−	0.6+
1997 03 13	809	0.8+	0.2+	1998 09 18	704	(3.3+	1.0+)	1998 10 14	699	0.7+	0.7−
1997 03 13	809	0.8−	0.3+	1998 09 18	704	0.7−	1.7+	1998 10 14	699	0.2+	0.1−
1997 04 03	704	0.1+	0.3+	1998 09 18	704	0.5−	1.7+	1998 10 14	699	0.2−	0.7−

1997 FW₁ = 1989 TC₇

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.82069		(2000.0)	P		Q		Williams			
<i>n</i>	0.19819969	ω	229.80576	−0.04220865	+0.99070688						
<i>a</i>	2.9134041	Ω	38.37144	−0.84167737	+0.03447098						
<i>e</i>	0.1216284	<i>i</i>	12.02233	−0.53832855	−0.13157363						
<i>P</i>	4.97	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1955 10 23	675	1.0−	1.0+	1989 10 08	809	1.5+	0.2−	1997 04 13	327	0.4−	0.0
1955 10 23	675	0.8+	0.3−	1997 03 28	327	0.1+	0.2+	1997 04 13	327	0.3−	0.3−
1989 10 07	809	0.8−	0.6−	1997 03 28	327	0.7−	0.0	1997 04 13	327	0.0	0.2−
1989 10 07	809	1.3−	0.7−	1997 03 28	327	0.2+	0.3+	1997 04 25	327	0.5+	0.5−
1989 10 07	809	1.6−	0.6−	1997 04 02	327	0.4−	0.2+	1997 04 25	327	0.4+	0.8−
1989 10 08	809	1.6+	0.0	1997 04 02	327	0.7−	0.2+	1997 04 25	327	0.1+	0.9−
1989 10 08	809	1.5+	0.6+	1997 04 02	327	0.6+	0.3+				

1997 GD

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	264.59855		(2000.0)	P		Q		Williams			
<i>n</i>	0.41349687	ω	165.21995	−0.94670881	+0.30827965						
<i>a</i>	1.7843823	Ω	33.20261	−0.31009966	−0.79407267						
<i>e</i>	0.1634176	<i>i</i>	9.81056	−0.08706680	−0.52384372						
<i>P</i>	2.38	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1997 04 02	610	0.0	0.0	1997 04 10	610	0.4−	0.6−	1997 05 02	610	0.6−	0.8+
1997 04 02	610	0.3+	0.1+	1997 04 10	610	0.5−	0.8−	1997 05 02	610	0.1−	1.4+
1997 04 02	610	0.6+	0.3+	1997 04 10	610	0.7−	0.9−	1997 05 02	610	0.5+	1.5+
1997 04 02	610	0.8+	0.5+	1997 04 12	610	0.3−	1.2−	1997 05 08	610	1.7−	0.9+
1997 04 02	610	1.1+	0.6+	1997 04 12	610	0.1−	0.9−	1997 05 08	610	1.7−	0.3+
1997 04 03	610	0.3+	0.1−	1997 04 12	610	0.2+	0.7−	1997 05 08	610	1.1−	0.4+
1997 04 03	610	0.1+	0.0	1997 04 14	610	0.2+	0.8−	1997 05 10	610	0.7+	0.9−
1997 04 03	610	0.0	0.2+	1997 04 14	610	0.1+	1.2−	1997 05 10	610	1.4+	1.2−
1997 04 03	610	0.2−	0.3+	1997 04 14	610	0.0	1.6−	1997 05 10	610	1.2+	1.5−
1997 04 03	610	0.3−	0.5+	1997 04 15	691	(3.4−	2.6−)	1998 11 20	561	0.6−	0.0
1997 04 07	610	0.2+	0.9+	1997 04 15	691	(3.7−	2.8−)	1998 11 20	561	0.1−	0.0
1997 04 07	610	0.1−	1.2+	1997 04 15	691	(3.2−	2.8−)	1998 11 20	561	0.5−	0.1+
1997 04 07	610	0.4−	1.6+	1997 04 24	610	1.5+	0.2+	1998 11 22	561	0.2−	0.4−
1997 04 08	610	0.8+	0.0	1997 04 24	610	0.9+	0.2+	1998 11 22	561	0.1+	0.5−
1997 04 08	610	0.2+	0.0	1997 04 24	610	0.6−	0.0	1998 11 22	561	0.2−	1.4+
1997 04 08	610	0.3−	0.1−	1997 04 29	610	0.4+	0.3+	1998 11 23	561	0.5+	0.0
1997 04 08	610	0.9−	0.2−	1997 04 29	610	0.0	0.3+	1998 11 23	561	0.1+	0.3−
1997 04 08	610	1.6−	0.3−	1997 04 29	610	0.0	0.5+	1998 11 23	561	0.8+	0.5−

1997 GF₆ = 1998 SS₇₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	65.21291		(2000.0)	P		Q		Doppler			
<i>n</i>	0.17741570	ω	81.24405	+0.27219096	+0.94194256						
<i>a</i>	3.1367123	Ω	207.18571	−0.96110009	+0.27608881						
<i>e</i>	0.2180492	<i>i</i>	25.48914	+0.04689032	+0.19109994						
<i>P</i>	5.56	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1997 04 02	704	0.7+	0.0	1997 04 07	704	1.3+	0.5−	1998 09 19	704	1.6−	0.0
1997 04 02	704	0.6+	0.2−	1997 04 08	704	0.6−	0.3+	1998 09 23	704	0.0	1.2+
1997 04 06	704	1.5−	0.3−	1997 04 08	704	0.1+	0.9+	1998 09 23	704	0.3−	0.1−
1997 04 06	704	1.0−	0.4−	1998 09 19	704	0.9−	0.4+	1998 09 23	704	0.8+	1.1−
1997 04 07	704	0.4+	0.1+	1998 09 19	704	0.9+	0.6−	1998 09 23	704	1.1+	0.2+

1997 GG₇ = 1998 WL₁₁

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	63.78704		(2000.0)	P		Q		Williams			
<i>n</i>	0.27955375	ω	169.23386	+0.98692758	+0.16115209						
<i>a</i>	2.3164655	Ω	181.49669	−0.15294815	+0.93265075						
<i>e</i>	0.2004696	<i>i</i>	4.36875	−0.05080176	+0.32278874						
<i>P</i>	3.53	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1997 04 02	704	0.6+	1.1−	1997 05 02	910	0.2+	0.2−	1998 11 21	704	1.0−	0.3+
1997 04 02	704	0.2+	0.2−	1997 05 02	910	0.3+	0.0	1998 11 21	704	0.8−	0.7+
1997 04 07	704	0.1−	0.9+	1997 05 03	910	0.3+	0.2+	1998 11 24	704	0.1−	0.0
1997 04 07	704	0.0	0.4−	1998 11 11	699	0.7+	0.3−	1998 11 24	704	0.1−	0.2+
1997 04 08	704	0.6−	0.4−	1998 11 11	699	0.3−	0.0	1998 11 24	704	1.3+	0.5+
1997 04 08	704	0.3−	0.8+	1998 11 11	699	0.7+	0.2−	1998 11 24	704	0.5+	0.2+
1997 05 01	910	0.0	0.0	1998 11 21	704	0.1−	1.1−	1998 11 24	704	0.8+	1.6+
1997 05 01	910	0.2−	0.1+	1998 11 21	704	0.9−	0.8−				
1997 05 01	910	0.3−	0.1+	1998 11 21	704	0.8−	1.2−				

1997 GC₈ = 1998 VM₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29247779	ω	331.45802	+0.99048061	-0.10751796		
<i>a</i>	2.2477126	Ω	35.04189	+0.13635663	+0.85183858		
<i>e</i>	0.1403114	<i>i</i>	8.60951	-0.01884203	+0.51265088		
<i>P</i>	3.37	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 02	704	0.1-	1.0+	1997 04 30	704	0.2+	0.0	1998 11 10	704	0.1+	0.5+
1997 04 02	704	0.2-	0.9+	1997 04 30	704	0.3-	0.7+	1998 11 10	704	1.7+	0.2+
1997 04 06	704	0.5-	0.0	1997 04 30	704	0.3+	1.5+	1998 11 10	704	1.2-	0.9-
1997 04 06	704	0.1-	0.6-	1997 05 01	704	0.1+	0.0	1998 11 11	704	0.4+	0.6-
1997 04 08	704	0.0	0.7-	1997 05 01	704	0.1-	1.0+	1998 11 11	704	0.5-	0.1-
1997 04 08	704	0.7+	0.0	1997 05 01	704	0.5+	0.4-	1998 11 11	704	0.3-	0.2-
1997 04 30	704	1.1-	0.0	1997 05 01	704	0.5+	0.3-	1998 11 11	704	0.6-	0.5+
1997 04 30	704	0.5+	0.8-	1997 05 01	704	0.9+	1.9-	1998 11 11	704	0.0	0.2-
1997 04 30	704	0.2-	0.4+	1998 10 19	699	0.1-	0.3+	1998 11 16	566	0.0	0.5+
1997 04 30	704	0.1+	0.3+	1998 10 19	699	0.2+	0.3+	1998 11 16	566	0.2+	0.4+
1997 04 30	704	0.1-	0.4+	1998 10 19	699	0.4-	0.5+	1998 11 16	566	0.1+	0.6+
1997 04 30	704	0.1-	0.2-	1998 11 10	704	0.4-	0.0				
1997 04 30	704	0.1+	0.6+	1998 11 10	704	0.3-	0.1-				

1997 GT₁₁ = 1998 SC₁₃₃

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30656574	ω	108.09184	+0.96023667	+0.27760413		
<i>a</i>	2.1783131	Ω	235.80077	-0.26780199	+0.88579580		
<i>e</i>	0.1257365	<i>i</i>	2.05718	-0.07891534	+0.37188944		
<i>P</i>	3.21	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	0.8+	0.8+	1998 09 26	704	0.1-	0.1-	1998 10 28	704	0.6-	1.8-
1997 03 11	809	0.2-	0.8+	1998 09 26	704	0.2+	0.4+	1998 10 28	704	0.6+	0.2-
1997 03 11	809	0.8-	0.6+	1998 09 27	704	0.5-	0.6+	1998 10 28	704	0.5-	0.1+
1997 04 03	704	0.8+	0.2-	1998 09 27	704	0.4+	0.1-	1998 10 28	704	1.1-	0.4-
1997 04 03	704	0.7+	0.8+	1998 09 27	704	0.2-	0.4+	1998 10 28	704	0.7+	1.4+
1997 04 05	704	0.9-	0.3+	1998 09 27	704	1.0+	0.7+	1998 10 29	704	0.1-	0.6-
1997 04 05	704	0.9+	0.1+	1998 09 27	704	0.3+	1.6+	1998 10 29	704	0.6+	0.9-
1997 04 07	704	0.5+	0.6-	1998 10 17	699	0.8-	0.8+	1998 10 29	704	(2.1+	2.4-)
1997 04 07	704	0.9-	0.0	1998 10 17	699	0.7-	0.5+	1998 10 29	704	0.2-	0.5-
1998 09 26	704	0.5+	0.3-	1998 10 17	699	0.0	0.4+				

1997 GP₁₂ = 1991 UF₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26754498	ω	318.49621	+0.98893023	-0.14223247		
<i>a</i>	2.3852735	Ω	49.73165	+0.14650781	+0.89085225		
<i>e</i>	0.2141228	<i>i</i>	3.17585	+0.02350465	+0.43145358		
<i>P</i>	3.68	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 10 29	399	0.3-	0.5-	1991 11 09	399	0.2+	0.1-	1997 04 06	704	0.1-	0.5+
1991 10 29	399	0.4+	0.5+	1991 11 09	399	0.2-	0.1+	1997 04 06	704	0.2+	0.0
1991 10 31	399	(0.7-	2.0-)	1997 04 03	704	0.5-	0.5+	1997 04 07	704	0.6+	0.0
1991 10 31	399	0.1+	0.1+	1997 04 03	704	0.2-	1.3-	1997 04 07	704	0.0	0.3+

1997 GK₁₃ = 1983 TP₂ = 1998 VZ₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26493397	ω	311.89264	+0.81985973	+0.57176005		
<i>a</i>	2.4009196	Ω	13.32777	-0.47859936	+0.71343303		
<i>e</i>	0.2513733	<i>i</i>	7.56274	-0.31428122	+0.40509721		
<i>P</i>	3.72	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1983 10 04	688	1.1+	1.6-	1997 04 05	704	0.1-	1.2+	1998 11 10	704	0.0	0.0
1983 10 04	688	0.1-	0.2-	1997 04 05	704	0.9-	0.9-	1998 11 10	704	0.4-	0.9+
1997 03 11	809	0.5-	0.9-	1997 04 06	704	0.2-	0.1+	1998 11 10	704	0.6-	0.7+
1997 03 11	809	1.1-	0.7-	1997 04 06	704	0.1-	0.6+	1998 11 11	704	0.5-	0.5+
1997 03 11	809	0.3-	1.2-	1997 04 07	704	0.7+	0.1-	1998 11 11	704	0.3-	0.7-
1997 03 13	809	0.3+	0.4-	1997 04 07	704	0.5+	0.5-	1998 11 11	704	0.4+	0.7-
1997 03 13	809	0.3+	0.0	1998 10 10	699	0.1-	0.7+	1998 11 11	704	0.8+	0.8-
1997 03 13	809	1.0+	0.8+	1998 10 10	699	0.2+	0.6+	1998 11 11	704	0.4+	1.1-
1997 04 03	704	0.1-	0.1+	1998 10 10	699	0.3-	0.4+				
1997 04 03	704	0.4-	0.2+	1998 11 10	704	0.2+	0.2+				

1997 GT₁₄ = 1998 ST₁₀₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28123481	ω	56.54975	+0.02835966	+0.99691709		
<i>a</i>	2.3072253	Ω	215.29775	-0.95399765	+0.00514040		
<i>e</i>	0.1009836	<i>i</i>	7.27366	-0.29846977	+0.07829367		
<i>P</i>	3.50	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1997 04 03	704	0.2-	0.4-	1997 04 07	704	0.1-	0.5+	1998 09 26	704	0.3-	0.0
1997 04 03	704	0.4+	0.0	1997 04 07	704	0.2-	0.9-	1998 09 27	704	0.4+	0.1+
1997 04 05	704	1.1-	0.1-	1998 09 26	704	0.6-	0.1-	1998 09 27	704	0.1+	0.3+
1997 04 05	704	0.7+	0.7-	1998 09 26	704	0.6+	0.4-	1998 09 27	704	0.6+	0.1-
1997 04 06	704	0.0	0.4+	1998 09 26	704	0.6-	1.9-	1998 09 27	704	0.3+	0.3+
1997 04 06	704	0.6+	1.1+	1998 09 26	704	0.5+	0.2-	1998 09 27	704	0.9-	1.9+

1997 GX₁₅ = 1998 QD₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25512936	ω	153.40354	+0.82015697	+0.57205618		
<i>a</i>	2.4620437	Ω	171.68235	-0.53615495	+0.77438723		
<i>e</i>	0.0526209	<i>i</i>	3.84838	-0.19970080	+0.27032599		
<i>P</i>	3.86	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	0.6-	1.1-	1997 04 07	704	0.4-	0.6-	1998 08 23	704	0.4+	0.1+
1997 04 03	704	0.7-	0.7-	1998 08 17	704	1.5-	0.8+	1998 08 23	704	0.2-	0.7-
1997 04 05	704	0.6+	0.6+	1998 08 17	704	0.1-	0.3+	1998 08 23	704	1.3+	0.5+
1997 04 05	704	0.6+	1.6+	1998 08 17	704	0.5+	0.2-	1998 08 31	327	0.7-	0.4-
1997 04 06	704	0.6-	0.2+	1998 08 17	704	0.2+	0.7-	1998 08 31	327	0.3-	0.2+
1997 04 06	704	0.1-	0.4-	1998 08 17	704	(2.9-	1.1-)	1998 08 31	327	0.2+	0.2+
1997 04 07	704	1.1+	0.3+	1998 08 23	704	(2.7+	1.9-)	1998 08 31	327	0.1+	0.2-

1997 GZ₁₆ = 1998 QW₉₁

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30867454	ω	144.93485	+0.98456834	+0.16595640		
<i>a</i>	2.1683806	Ω	205.68220	-0.17494556	+0.94134607		
<i>e</i>	0.1723722	<i>i</i>	7.36180	+0.00438678	+0.29381294		
<i>P</i>	3.19	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	1.1–	0.8+	1997 04 04	566	0.8–	0.2–	1998 10 10	699	0.5+	0.4+
1997 03 11	809	1.9–	1.3+	1997 04 05	704	0.0	0.7–	1998 10 10	699	0.6+	0.2+
1997 03 11	809	(2.5–	1.2+)	1997 04 05	704	(12.9–	8.9+)	1998 10 14	699	0.5+	0.8+
1997 03 12	809	0.6+	1.2+	1997 04 07	704	1.4+	0.5–	1998 10 14	699	0.5+	0.9+
1997 03 12	809	0.3+	0.2–	1997 04 07	704	1.7+	0.8–	1998 10 14	699	0.7+	1.0+
1997 03 12	809	0.3+	1.0+	1998 08 28	704	0.1+	0.0	1998 11 10	704	0.1–	0.3–
1997 03 13	809	0.6–	0.4–	1998 08 28	704	1.1–	0.1–	1998 11 10	704	1.0+	0.2–
1997 03 13	809	0.8–	0.8–	1998 08 28	704	0.2–	1.2+	1998 11 10	704	0.4–	0.0
1997 03 13	809	0.9–	1.6–	1998 08 28	704	0.4–	0.1+	1998 11 10	704	1.1–	0.9+
1997 03 13	809	(0.7+	2.4+)	1998 08 28	704	1.6–	1.0+	1998 11 10	704	1.7–	1.5+
1997 03 13	809	(2.9+	0.6+)	1998 08 31	704	0.0	0.1+	1998 11 11	704	0.3+	0.2–
1997 03 13	809	0.8+	1.9+	1998 08 31	704	(2.7+	1.6–)	1998 11 11	704	0.5–	1.3–
1997 04 03	704	0.2+	1.5–	1998 08 31	704	0.6+	1.7–	1998 11 11	704	0.1+	0.9–
1997 04 03	704	0.5+	0.3+	1998 08 31	704	0.2+	1.8–	1998 11 11	704	0.2–	1.5–
1997 04 04	566	0.6–	0.3–	1998 08 31	704	1.5+	1.7–	1998 11 11	704	0.1+	1.1–
1997 04 04	566	0.1+	0.9–	1998 10 10	699	0.5+	0.3+				

1997 GC₂₂ = 9541 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	333.35926		(2000.0)	P	Q
<i>n</i>	0.20506810	ω	217.51821	+0.93249036	−0.36105590
<i>a</i>	2.8479824	Ω	163.63816	+0.33940899	+0.86642161
<i>e</i>	0.1025029	<i>i</i>	2.03812	+0.12354464	+0.34489452
<i>P</i>	4.81	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1960 10 17	675	0.6+	0.8+	1997 04 08	704	0.7–	0.4+	1997 05 01	704	0.8+	0.1+
1960 10 22	675	1.9–	0.6–	1997 04 08	704	0.2+	0.4–	1997 05 01	704	0.5+	0.3–
1960 10 24	675	1.5+	0.3+	1997 04 30	704	1.2+	0.1–	1997 05 01	704	0.7+	1.1+
1960 10 26	675	0.2–	0.7–	1997 04 30	704	0.2+	0.6–	1997 05 01	704	0.0	1.0+
1997 04 06	704	1.7–	0.5–	1997 04 30	704	0.2–	0.3–	1997 05 01	704	1.4–	0.4–
1997 04 06	704	0.3+	0.2–	1997 04 30	704	(3.1–	1.3+)				

1997 GX₂₃ = 1998 VE₅

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	87.90301		(2000.0)	P	Q
<i>n</i>	0.25642292	ω	259.86426	+0.75774057	+0.63638491
<i>a</i>	2.4537566	Ω	60.45510	−0.51466263	+0.71882905
<i>e</i>	0.2187295	<i>i</i>	9.55251	−0.40118774	+0.27981966
<i>P</i>	3.84	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 04 06	704	0.2–	0.2–	1997 04 30	704	0.2–	0.1+	1998 11 12	120	0.8+	0.5–
1997 04 06	704	0.2–	0.1+	1997 05 01	704	0.0	0.3–	1998 11 12	120	0.5–	0.9–
1997 04 07	809	0.5+	0.1+	1997 05 01	704	0.5+	0.1+	1998 11 18	704	0.3+	0.1–
1997 04 07	809	0.2+	0.6+	1997 05 01	704	0.1+	0.4+	1998 11 18	704	0.1–	0.4+
1997 04 07	809	0.4+	0.0	1997 05 01	704	0.3+	0.2+	1998 11 18	704	0.5–	1.9+
1997 04 07	704	1.0–	0.9+	1997 05 01	704	0.2+	0.1+	1998 11 18	704	(0.4–	2.2+)
1997 04 07	704	0.7–	0.6+	1998 11 10	704	0.4+	0.0	1998 11 18	704	(1.8+	2.1+)
1997 04 08	809	0.1+	0.0	1998 11 10	704	0.5+	0.5–	1998 11 21	704	0.8+	0.6–
1997 04 08	809	0.6+	1.4–	1998 11 10	704	0.3–	1.1+	1998 11 21	704	1.0+	0.9–
1997 04 08	809	1.2+	1.0–	1998 11 10	704	1.8–	0.3+	1998 11 21	704	0.8+	1.4–
1997 04 11	704	0.8+	0.3+	1998 11 11	704	0.4+	0.1+	1998 11 21	704	0.2–	0.1+
1997 04 11	704	0.6–	0.6–	1998 11 11	704	1.0+	0.0	1998 11 21	704	0.2–	0.8–
1997 04 11	704	0.2–	0.1+	1998 11 11	704	0.0	0.2+	1998 11 23	691	1.7–	0.4+
1997 04 11	704	0.7–	0.2–	1998 11 11	704	0.1–	0.5–	1998 11 23	691	1.3–	0.1–
1997 04 30	704	0.2–	0.1–	1998 11 11	120	0.1+	0.3+	1998 11 23	691	1.3–	0.2–
1997 04 30	704	0.3–	0.2–	1998 11 11	120	0.1+	0.3+	1998 11 26	120	0.9+	0.6+
1997 04 30	704	0.4–	0.2+	1998 11 11	120	0.1+	0.3+	1998 11 26	120	0.2+	0.3+
1997 04 30	704	0.1–	0.4+	1998 11 11	120	0.1+	0.3+	1998 11 26	120	0.5+	0.2+

1997 GD₃₈ = 1998 UE₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	51.54766		(2000.0)	P	Q
<i>n</i>	0.28430785	ω	301.33667	+0.99309871	+0.00944347
<i>a</i>	2.2905695	Ω	58.36254	+0.04572688	+0.88669420
<i>e</i>	0.1261488	<i>i</i>	7.89202	−0.10799998	+0.46225990
<i>P</i>	3.47	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 04 06	704	0.7–	1.4+	1998 10 12	699	0.5–	0.9–	1998 11 10	704	0.1+	0.2+
1997 04 06	704	1.4–	1.4–	1998 10 12	699	0.6–	0.8–	1998 11 10	704	0.6–	0.2–
1997 04 11	704	0.4+	0.9–	1998 10 22	910	0.3+	0.2+	1998 11 10	704	0.4+	0.5–
1997 04 11	704	0.6–	0.1–	1998 10 22	910	0.3+	0.1+	1998 11 10	704	1.7–	1.2+
1997 04 11	704	0.1–	0.5–	1998 10 22	910	0.3+	0.2+	1998 11 10	704	3.0–	0.1–
1997 04 11	704	0.6+	0.3+	1998 10 23	910	0.7+	0.5+	1998 11 11	704	0.1+	0.2–
1997 04 30	704	0.5+	0.4+	1998 10 23	910	0.6+	0.5+	1998 11 11	704	0.6–	0.0
1997 04 30	704	0.9+	0.8+	1998 10 23	910	0.7+	0.4+	1998 11 11	704	1.0+	0.2–
1997 04 30	704	0.8+	0.1+	1998 10 26	910	0.9+	0.2+	1998 11 11	704	0.4+	0.8–
1997 04 30	704	0.3–	0.1+	1998 10 26	910	0.9+	0.2+	1998 11 11	704	0.1–	0.1+
1998 10 12	699	0.9–	0.1–	1998 10 27	910	1.0+	0.3+				

1997 HH₃ = 1998 UW₂₀

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	308.02348		(2000.0)	P	Q
<i>n</i>	0.35937330	ω	87.49531	−0.62992462	−0.72996535
<i>a</i>	1.9593206	Ω	45.43327	+0.47760377	−0.63337830
<i>e</i>	0.0573189	<i>i</i>	21.85652	+0.61244560	−0.25687062
<i>P</i>	2.74	<i>H</i>	16.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 04 30	704	0.3–	0.1+	1997 05 07	704	0.2–	0.0	1998 10 29	704	1.5+	0.4+
1997 04 30	704	0.1+	0.1–	1997 05 07	704	0.1–	0.6+	1998 10 29	704	0.0	0.6+
1997 04 30	704	0.2+	0.0	1997 05 07	566	0.3–	0.4–	1998 10 29	120	0.1–	0.3–
1997 04 30	704	0.0	0.2–	1997 05 07	566	0.3–	0.2–	1998 10 29	120	0.3–	0.5–
1997 05 05	704	0.5+	0.1+	1997 05 07	566	0.5+	0.6–	1998 10 30	120	0.1+	0.5+
1997 05 05	704	0.6+	0.2+	1997 05 08	327	0.8–	0.1+	1998 10 30	120	0.0	0.0
1997 05 05	704	0.1–	0.1–	1997 05 08	327	0.4+	0.2+	1998 11 11	704	0.1+	0.1+
1997 05 05	704	0.0	0.0	1997 05 08	327	0.5–	0.2–	1998 11 11	704	0.1+	0.3+
1997 05 05	704	0.1+	0.0	1998 10 29	704	0.6–	0.6–	1998 11 11	704	0.3–	2.0–
1997 05 07	704	0.0	0.4+	1998 10 29	704	0.6–	0.0	1998 11 11	704	0.1+	0.5+
1997 05 07	704	0.3+	0.1+	1998 10 29	704	(1.4+	2.7–)	1998 11 11	704	0.0	1.0+

1997 HG₁₀ = 1998 SK₇₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	70.75724		(2000.0)	P	Q
<i>n</i>	0.27597083	ω	278.57969	+0.89349848	+0.44579181
<i>a</i>	2.3364721	Ω	54.96340	−0.38161827	+0.81729882
<i>e</i>	0.0864951	<i>i</i>	3.79064	−0.23670226	+0.36509220
<i>P</i>	3.57	<i>H</i>	16.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 04 30	704	0.7+	1.4–	1997 05 04	327	1.0–	0.6+	1998 09 23	809	0.6+	0.3+
1997 04 30	704	0.6–	0.2–	1997 05 05	704	0.8+	0.5+	1998 09 23	809	0.5–	0.3+
1997 04 30	704	0.4+	0.2+	1997 05 05	704	0.4+	0.4+	1998 09 23	809	0.2+	1.1+
1997 04 30	704	0.2–	0.9+	1997 05 05	704	1.2+	0.3–	1998 09 26	704	1.7–	0.3–
1997 04 30	704	0.7–	0.3+	1997 05 05	704	0.5+	0.1+	1998 09 26	704	0.5–	0.1+
1997 05 01	704	0.2–	0.4+	1997 05 05	704	0.6–	0.3+	1998 09 26	704	0.5–	0.8–
1997 05 01	704	0.2–	0.6+	1997 05 05	704	1.0+	0.3+	1998 09 26	704	1.0+	1.0–
1997 05 01	704	0.2+	0.6–	1997 05 05	704	0.2+	1.6–	1998 09 27	704	0.6–	0.9–
1997 05 01	704	1.1+	0.2+	1997 05 05	704	1.2–	1.1+	1998 09 27	704	1.7+	1.1+
1997 05 01	704	0.1–	0.5–	1998 09 21	809	(2.8–	1.1+)	1998 09 27	704	0.6–	0.6+
1997 05 04	327	0.7–	0.1+	1998 09 21	809	(3.5–	0.7+)	1998 09 27	704	1.7+	0.4–
1997 05 04	327	0.9–	1.4–	1998 09 21	809	(3.4–	0.6+)	1998 09 27	704	0.6–	0.2–

1997 JJ₁₅ = 1998 WG₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	126.92452		(2000.0)		P		Q				
<i>n</i>	0.28665631	ω	84.12500		+0.43277465		+0.90010241				
<i>a</i>	2.2780419	Ω	211.67104		−0.86033810		+0.39573195				
<i>e</i>	0.1369590	<i>i</i>	5.48838		−0.26930365		+0.18224126				
<i>P</i>	3.44	<i>H</i>	14.3		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1997 05 03	809	0.8+	0.1−	1997 06 08	809	1.9+	1.6+	1998 11 21	704	1.5+	0.8−
1997 05 03	809	1.1+	0.5+	1997 06 08	809	(2.6+	1.0+)	1998 11 21	704	0.7+	0.7−
1997 05 03	809	0.3+	0.3+	1997 06 08	809	(2.6+	1.4+)	1998 11 24	704	0.0	0.1+
1997 05 04	809	1.3−	0.0	1998 11 11	699	0.6−	0.4+	1998 11 24	704	1.1−	0.4+
1997 05 04	809	0.7−	0.6−	1998 11 11	699	0.1+	0.8−	1998 11 24	704	0.9−	0.2−
1997 05 04	809	0.2−	0.4−	1998 11 11	699	0.1+	0.3−	1998 11 24	704	0.5−	0.5+
1997 06 07	809	0.9−	0.8−	1998 11 21	704	0.1−	0.4+	1998 11 24	704	0.3+	1.2+
1997 06 07	809	1.0−	0.7−	1998 11 21	704	0.1+	0.3−				
1997 06 07	809	(2.2−	0.9−)	1998 11 21	704	0.4+	0.2−				

1997 KU₂ = 1998 SY₆₉

Id. A. Gnädig, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	215.00329		(2000.0)		P		Q				
<i>n</i>	0.23502234	ω	26.85628		−0.91410183		−0.36284575				
<i>a</i>	2.6005385	Ω	130.66174		+0.31576216		−0.91702354				
<i>e</i>	0.1107219	<i>i</i>	13.80430		+0.25438574		−0.16556205				
<i>P</i>	4.19	<i>H</i>	13.9		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1997 05 10	691	0.9−	0.2−	1997 06 12	599	0.4+	0.0	1998 09 21	704	0.3−	0.0
1997 05 10	691	1.0−	0.4+	1997 06 14	658	0.5+	0.1−	1998 09 21	704	0.5−	0.3−
1997 05 10	691	0.9−	0.3+	1997 06 14	658	0.3+	0.4−	1998 09 21	704	0.2−	0.2−
1997 05 30	691	0.2−	0.1+	1997 06 14	658	0.5+	0.3−	1998 09 22	699	0.2−	0.9+
1997 05 30	691	0.6+	0.4+	1997 06 14	104	0.9+	0.8−	1998 09 22	699	0.4−	0.3−
1997 05 30	691	0.2−	0.0	1997 06 14	104	0.8+	1.0−	1998 09 22	699	0.2+	1.1−
1997 06 05	691	0.7−	0.8+	1998 08 19	699	1.1+	0.5+	1998 09 24	704	0.6+	0.2−
1997 06 05	691	0.6−	0.6+	1998 08 19	699	1.2+	1.3+	1998 09 24	704	0.5−	1.2−
1997 06 05	691	0.5−	0.7+	1998 08 19	699	(2.8+	0.4+)	1998 09 24	704	1.6−	0.2+
1997 06 12	599	0.7+	0.2−	1998 09 21	704	(0.3+	2.8+)	1998 09 24	704	(0.1+	2.1−)
1997 06 12	599	0.5+	0.4−	1998 09 21	704	0.2−	0.2+	1998 09 24	704	0.6+	0.1+

1997 LC₄

Id. T. Kobayashi (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	355.35868		(2000.0)			P		Q			
n	0.36960496	ω	34.48632			−0.34108058		−0.85360941			
a	1.9229922	Ω	78.33540			+0.74625106		−0.50057131			
e	0.0776943	i	23.70465			+0.57164097		+0.14415040			
P	2.67	H	14.6			G	0.15	U	4		
Residuals in seconds of arc											
1997 06 09	816	0.6+	0.0	1997 06 11	696	0.8−	0.3+	1997 06 28	816	0.3−	0.2+
1997 06 09	816	0.5+	0.1−	1997 06 11	696	0.8−	0.4+	1997 06 28	816	0.1+	0.3−
1997 06 09	816	0.3+	0.2−	1997 06 11	696	0.7−	0.4+	1997 06 28	816	0.3−	0.6−
1997 06 10	684	0.1+	0.4−	1997 06 13	684	0.3+	0.0	1997 06 29	816	0.4+	0.1+
1997 06 10	684	0.0	0.5−	1997 06 13	684	0.3+	0.2+	1997 06 29	816	0.3+	0.2+
1997 06 10	684	0.6−	0.1−	1997 06 15	816	0.6+	2.0+	1997 06 29	816	0.1−	0.2−
1997 06 11	816	0.8+	0.5−	1997 06 15	816	0.3−	1.4+	1997 06 29	816	0.3+	0.2+
1997 06 11	816	0.1−	0.9−	1997 06 15	816	0.2−	0.8+	1998 11 19	411	0.0	0.1−
1997 06 11	816	0.3+	0.2+	1997 06 24	816	0.3−	0.2−	1998 11 19	411	0.2+	0.2−
1997 06 11	816	0.9−	0.6−	1997 06 24	816	0.3+	0.4−	1998 11 20	411	0.1+	0.4+
1997 06 11	684	0.3+	0.1−	1997 06 24	816	0.1−	0.4−	1998 11 20	411	0.3−	0.1−
1997 06 11	684	0.2+	0.7−	1997 06 28	816	0.3−	0.2−				

1997 LA₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	96.24331		(2000.0)			P		Q			
n	0.24044412	ω	233.98021			+0.93012286		+0.26312128			
a	2.5612970	Ω	109.52124			−0.18243982		+0.93650302			
e	0.1502487	i	15.77293			−0.31872745		+0.23179579			
P	4.10	H	15.4	G	0.15	U	3				
Residuals in seconds of arc											
1997 06 11	684	0.1−	0.4+	1997 06 14	684	0.1−	0.2−	1997 08 01	684	0.2+	0.8+
1997 06 11	684	0.0	0.3+	1997 06 29	684	0.7+	0.1+	1997 08 10	684	0.2−	0.5−
1997 06 12	684	0.0	0.1+	1997 06 29	684	0.4−	0.4−	1997 08 10	684	0.0	1.0−
1997 06 12	684	0.3−	0.0	1997 07 09	684	0.1+	0.4−	1998 11 26	684	0.1−	0.0
1997 06 12	684	0.1−	0.1+	1997 07 09	684	0.1+	0.2−	1998 11 26	684	0.3−	0.1−
1997 06 13	684	0.0	0.2−	1997 07 09	684	0.1−	0.0	1998 11 26	684	0.2+	0.1−
1997 06 13	684	0.1+	0.3−	1997 07 11	684	0.3−	0.4+	1998 11 27	684	0.1+	0.3+
1997 06 13	684	0.2−	0.1−	1997 07 11	684	0.3+	0.6+	1998 11 27	684	0.0	0.1−
1997 06 14	684	0.3+	0.1−	1997 08 01	684	0.2−	0.3+				
1997 06 14	684	0.3+	0.1−	1997 08 01	684	0.1−	0.4+				

1997 MQ₁ = 1998 WD₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	219.36174		(2000.0)		P		Q				
n	0.29129656	ω	15.26704		−0.74504331		+0.66544650				
a	2.2537850	Ω	206.62303		−0.62216775		−0.71802934				
e	0.0897951	i	5.85744		−0.24045326		−0.20399708				
P	3.38	H	14.7		G	0.15	U	5			
Residuals in seconds of arc											
1997 06 28	595	0.2−	1.6−	1997 07 24	595	1.2+	0.0	1998 11 21	704	1.1+	1.3−
1997 06 28	595	0.1−	1.6−	1998 11 11	699	0.5+	0.5+	1998 11 21	704	1.1−	1.9−
1997 06 30	595	0.7−	0.1+	1998 11 11	699	1.1+	1.4+	1998 11 24	704	0.2−	0.3+
1997 07 01	595	0.7−	0.1−	1998 11 11	699	0.9+	0.7+	1998 11 24	704	1.3−	1.2−
1997 07 03	595	0.1−	1.0+	1998 11 21	704	0.7+	0.8+	1998 11 24	704	0.5−	0.7−
1997 07 03	595	0.2+	1.0+	1998 11 21	704	0.7+	0.0	1998 11 24	704	1.5−	0.1−
1997 07 24	595	0.6+	0.8+	1998 11 21	704	1.0+	0.4−	1998 11 24	704	1.2−	1.6+

1997 MC₃ = 1998 UU₃₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	178.71352		(2000.0)			P		Q			
n	0.23999034	ω	252.58021			−0.63881607		+0.76888450			
a	2.5645247	Ω	337.64781			−0.67614982		−0.57783778			
e	0.0938314	i	4.07584			−0.36706328		−0.27371539			
P	4.11	H	13.4			G	0.15	U	6		
Residuals in seconds of arc											
1997 06 28	704	0.5−	0.2+	1997 07 02	704	0.2−	0.3−	1998 10 28	704	0.5+	0.4+
1997 06 28	704	0.1+	0.0	1997 07 02	704	0.1−	0.3−	1998 10 28	704	0.9−	0.3−
1997 06 28	704	0.1+	0.3+	1997 07 02	704	0.3−	0.1−	1998 10 29	704	1.0+	0.6−
1997 06 29	704	0.5−	0.0	1997 07 02	704	0.2+	0.2+	1998 10 29	704	0.6−	0.7+
1997 06 29	704	0.4−	0.2+	1997 07 02	704	0.3−	0.3+	1998 10 29	704	0.1−	0.1+
1997 06 29	704	0.1−	1.1−	1997 07 02	704	0.4+	0.1+	1998 10 29	704	0.7+	0.8+
1997 06 29	704	1.3+	0.5+	1997 07 02	704	0.3−	0.4+	1998 10 29	704	0.9−	0.6−
1997 06 29	704	0.2+	0.3−	1998 10 28	704	0.1+	0.3−				
1997 07 02	704	0.3+	0.1−	1998 10 28	704	0.1+	0.3−				

1997 MA₄ = 1993 RU₁₂ = 1998 SD₉₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	274.68310		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.20418426	ω	134.32740	−0.51459799	−0.85741325
a	2.8561951	Ω	346.63994	+0.77961404	−0.46516352
e	0.0135429	i	1.39006	+0.35691855	−0.22014862
P	4.83	H	15.5	G 0.15	U 5

Residuals in seconds of arc

1993 09 14	809	(2.2+ 0.8+)	1997 06 29	704	0.3- 0.3-	1998 09 26	704	0.2+ 0.5-
1993 09 14	809	0.5+ 0.7+	1997 06 29	704	0.3+ 0.5-	1998 09 26	704	1.4- 0.2-
1993 09 14	809	0.4- 0.7+	1997 06 29	704	1.0+ 0.2-	1998 09 26	704	(0.2- 2.4-)
1993 09 19	809	0.7+ 0.1-	1997 06 29	704	1.0+ 0.9-	1998 09 27	704	0.1- 0.4-
1993 09 19	809	0.8- 0.5-	1997 07 02	704	0.6- 0.2+	1998 09 27	704	0.6- 0.1+
1993 09 19	809	0.1+ 1.3-	1997 07 02	704	0.2- 0.5+	1998 09 27	704	1.1+ 0.4+
1997 06 28	704	0.2- 1.0+	1997 07 02	704	0.4- 0.4-	1998 09 27	704	(2.3+ 0.5+)
1997 06 28	704	0.1- 0.3+	1997 07 02	704	0.6- 0.2-	1998 09 27	704	0.4- 0.9+
1997 06 28	704	0.3+ 0.3+	1997 07 02	704	0.1- 0.4+			
1997 06 29	704	0.3- 0.0	1998 09 26	704	1.0+ 0.2+			

1997 MY₅ = 1998 WB₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Williams			
<i>M</i>	243.28172		(2000.0)		P		Q	
<i>n</i>	0.24065530	ω	317.36475		-0.98645257		+0.09707822	
<i>a</i>	2.5597984	Ω	228.70317		-0.05596500		-0.95689512	
<i>e</i>	0.1232311	<i>i</i>	10.13764		-0.15420520		-0.27372896	
<i>P</i>	4.10	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1997 06 26	691	0.0 0.1+	1997 07 08	691	0.1- 0.0	1998 11 23	691	0.1+ 0.2-
1997 06 26	691	0.0 0.0	1997 07 08	691	0.1+ 0.1-	1998 11 23	691	0.2- 0.2-
1997 06 26	691	0.2+ 0.2+	1997 07 08	691	0.3+ 0.0	1998 11 23	691	0.0 0.1-
1997 07 03	691	0.1+ 0.1-	1997 07 13	691	0.8- 0.6+	1998 11 26	691	0.2+ 0.2+
1997 07 03	691	0.4- 0.0	1997 07 13	691	0.5+ 0.5-	1998 11 26	691	0.1- 0.0
1997 07 03	691	0.1- 0.1-	1997 07 13	691	0.1+ 0.1-	1998 11 26	691	0.1+ 0.3+

1997 NQ

Id. V. S. Casulli (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Williams			
<i>M</i>	88.69197		(2000.0)		P		Q	
<i>n</i>	0.22348149	ω	136.10950		+0.97203815		+0.20527152	
<i>a</i>	2.6893150	Ω	212.56024		-0.22651404		+0.94769046	
<i>e</i>	0.1933530	<i>i</i>	12.23369		+0.06191300		+0.24443076	
<i>P</i>	4.41	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1997 07 01	596	1.6+ 0.8-	1997 07 08	596	0.6- 0.4+	1997 08 12	596	0.2- 0.4-
1997 07 01	596	0.9+ 0.3-	1997 07 08	596	0.3- 0.1+	1997 08 31	589	0.2- 0.3-
1997 07 01	596	0.7+ 1.2-	1997 07 08	596	0.7- 0.4-	1997 08 31	589	(1.2- 6.7+)
1997 07 01	596	0.8+ 0.3-	1997 07 15	596	(7.1- 1.3-)	1997 09 28	589	0.4- 0.5+
1997 07 02	596	0.7- 0.3+	1997 07 15	596	(6.9- 0.6-)	1997 09 28	589	1.0+ 0.6+
1997 07 02	596	0.0 0.9+	1997 07 15	596	(6.8- 1.9-)	1998 11 15	596	1.0+ 1.0-
1997 07 02	596	(1.9- 2.0+)	1997 07 26	596	0.6+ 0.4-	1998 11 16	596	0.4- 0.2+
1997 07 04	596	1.6- 0.7+	1997 07 26	596	0.2+ 0.0	1998 11 17	596	0.4- 0.7+
1997 07 04	596	0.1+ 0.2+	1997 07 26	596	0.5- 0.3+	1998 11 18	596	0.2- 0.4-
1997 07 04	596	0.3- 0.2+	1997 08 12	596	0.3- 0.1-			

1997 NK₁ = 1998 VB₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Williams			
<i>M</i>	45.25520		(2000.0)		P		Q	
<i>n</i>	0.17736735	ω	127.95729		+0.97076227		-0.23764941	
<i>a</i>	3.1372823	Ω	245.81331		+0.20697081		+0.90002066	
<i>e</i>	0.0939921	<i>i</i>	2.12431		+0.12158822		+0.36535678	
<i>P</i>	5.56	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1997 07 02	691	0.3- 0.1+	1998 10 19	699	0.1- 0.7+	1998 11 10	704	0.3+ 0.6-
1997 07 02	691	0.3- 0.1+	1998 10 19	699	1.0- 1.1+	1998 11 11	704	0.6+ 0.2+
1997 07 02	691	0.4- 0.2+	1998 10 19	699	0.1- 0.7+	1998 11 11	704	0.0 0.6-
1997 07 07	691	0.5+ 0.4-	1998 10 29	120	1.0+ 0.4-	1998 11 11	704	0.5- 0.5-
1997 07 07	691	0.9- 0.3-	1998 10 30	120	0.9+ 0.3-	1998 11 11	704	1.2- 0.0
1997 07 07	691	0.2- 0.2-	1998 10 30	120	0.8+ 0.1-	1998 11 23	691	0.1+ 0.2+
1997 07 12	691	0.6+ 0.2+	1998 11 10	704	0.3- 0.1-	1998 11 23	691	0.0 0.2+

1997 07 12	691	0.5+ 0.0	1998 11 10	704	0.4- 0.2-	1998 11 23	691	0.1+ 0.2+
1997 07 12	691	0.4+ 0.1+	1998 11 10	704	0.1- 0.5-			

1997 NA₃ = 1998 SO₁₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Gnädig			
<i>M</i>	105.93199		(2000.0)		P		Q	
<i>n</i>	0.18409004	ω	16.18479		+0.25716075		+0.96552220	
<i>a</i>	3.0604305	Ω	268.73039		-0.89105020		+0.22071399	
<i>e</i>	0.0878585	<i>i</i>	2.31813		-0.37402925		+0.13802976	
<i>P</i>	5.35	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1997 07 04	327	0.4- 0.2+	1997 07 25	327	0.1- 0.1-	1998 09 27	704	0.3+ 0.2+
1997 07 04	327	0.2- 0.4+	1997 07 25	327	0.2- 0.1+	1998 09 27	704	1.9+ 0.3-
1997 07 04	327	(3.5- 0.6+)	1997 07 25	327	0.0 0.5+	1998 09 27	704	1.3- 1.0-
1997 07 09	327	0.1+ 0.4-	1998 09 26	704	0.5- 0.2+	1998 09 27	704	(0.0 2.9+)
1997 07 09	327	0.3- 0.6-	1998 09 26	704	0.3+ 0.2-	1998 09 27	704	1.2- 2.0+
1997 07 09	327	0.7+ 0.2+	1998 09 26	704	0.3+ 0.1-			
1997 07 13	327	0.3+ 0.3-	1998 09 26	704	0.1+ 1.0-			

1997 PF = 1998 TD₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Gnädig			
<i>M</i>	95.17120		(2000.0)		P		Q	
<i>n</i>	0.17133206	ω	70.05853		+0.52823566		+0.84476184	
<i>a</i>	3.2105317	Ω	232.12425		-0.81398156		+0.47507734	
<i>e</i>	0.1285268	<i>i</i>	6.23297		-0.24166319		+0.24633099	
<i>P</i>	5.75	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1997 08 01	566	0.1- 0.0	1997 08 03	566	0.3+ 0.9+	1997 08 12	658	0.3- 0.3+
1997 08 01	566	0.1+ 0.5+	1997 08 03	566	0.2+ 0.8+	1998 10 10	699	0.3+ 1.1-
1997 08 01	566	0.4- 0.3+	1997 08 03	566	0.0 0.8+	1998 10 10	699	0.1- 1.3+
1997 08 02	566	0.5- 0.8+	1997 08 03	566	0.2+ 0.6+	1998 10 10	699	0.5- 0.7-
1997 08 02	566	0.6- 1.4+	1997 08 03	566	0.3+ 0.8+	1998 10 19	699	0.1+ 0.5-
1997 08 02	566	0.0 1.0+	1997 08 03	566	0.3+ 0.8+	1998 10 19	699	0.9- 0.3-
1997 08 02	861	1.5+ 2.3-	1997 08 11	861	0.0 0.7-	1998 10 19	699	0.3+ 0.1+
1997 08 02	861	0.7- 1.0-	1997 08 11	861	0.1+ 1.1-	1998 10 19	699	0.1+ 0.4+
1997 08 03	861	0.6+ 1.3-	1997 08 11	861	0.1+ 1.0-	1998 10 19	699	0.6+ 0.7+
1997 08 03	861	0.1- 0.6-	1997 08 12	658	0.0 0.2+	1998 10 19	699	0.1+ 0.1+
1997 08 03	861	1.3- 1.5-	1997 08 12	658	0.1+ 0.3+			

1997 PY₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Marsden			
<i>M</i>	163.16706		(2000.0)		P		Q	
<i>n</i>	0.19096226	ω	285.45253		+0.01065230		+0.99889795	
<i>a</i>	2.9865584	Ω	344.93411		-0.83673098		-0.01612530	
<i>e</i>	0.0697541	<i>i</i>	10.12845		-0.54751054		+0.04407787	
<i>P</i>	5.16	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1997 08 07	046	0.1+ 0.3+	1997 08 14	046	0.1+ 0.2-	1997 09 22	046	0.6- 0.4+
1997 08 07	046	0.4- 0.0	1997 08 14	046	0.1+ 0.3+	1997 09 22	046	0.3- 0.2+
1997 08 07	046	0.1+ 0.1+	1997 08 14	046	0.7- 0.2-	1997 09 22	046	0.5- 0.1+
1997 08 07	046	0.5+ 0.5-	1997 08 25	046	0.1- 0.6+	1997 09 23	691	0.5- 0.3+
1997 08 07	046	0.3+ 0.8-	1997 08 25	046	0.3- 0.2+	1997 09 23	691	0.7- 0.0
1997 08 08	046	0.0 0.3+	1997 08 25	046	0.2+ 0.2+	1997 09 23	691	1.0- 0.2+
1997 08 08	046	0.2- 0.1+	1997 08 26	046	0.5+ 0.5+	1997 09 23	046	0.5+ 0.0
1997 08 08	046	0.5- 0.1-	1997 08 26	046	0.3- 0.2+	1997 09 23	046	0.2- 0.3-
1997 08 09	046	0.1- 0.6+	1997 08 26	046	0.4- 0.1+	1997 09 23	046	0.7+ 0.4+
1997 08 09	046	0.2+ 0.0	1997 08 31	046	0.1+ 0.3-	1997 10 06	046	0.7- 0.1-
1997 08 09	046	0.2- 0.1-	1997 08 31	046	0.3- 0.3-	1997 10 06	046	0.4+ 0.1-
1997 08 10	046	0.6+ 1.0-	1997 09 01	046	0.3- 0.6-	1997 10 06	046	0.2+ 0.0
1997 08 10	046	0.5+ 0.5-	1997 09 01	046	0.3- 0.4-	1998 11 24	046	0.0 0.1+
1997 08 11	046	0.5+ 0.1+	1997 09 03	046	0.4+ 0.4-	1998 11 24	046	0.0 0.1-
1997 08 11	046	0.5- 0.3+	1997 09 03	046	0.4+ 0.3-	1998 11 24	046	0.2+ 0.3+

M.P.C. 33262

1997 08 11	046	0.2+	0.6+	1997 09 03	046	0.0	0.4−	1998 11 25	046	0.2+	0.1−
1997 08 13	046	0.1−	0.5+	1997 09 11	046	0.7+	0.4−	1998 11 25	046	0.1−	0.2−
1997 08 13	046	0.3−	0.4+	1997 09 11	046	0.7+	0.1−	1998 11 25	046	0.3−	0.1−
1997 08 13	046	0.1−	0.1+	1997 09 11	046	0.2+	0.2−				

1997 PE₃

Id. M. Tichý (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	221.77512		(2000.0)		P		Q
<i>n</i>	0.22381187	ω	240.43894	−0.75443448			+0.65400071
<i>a</i>	2.6866678	Ω	340.23213	−0.53058452			−0.65767547
<i>e</i>	0.1954637	<i>i</i>	9.49343	−0.38640481			−0.37382623
<i>P</i>	4.40	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 08 13	046	0.1−	0.0	1997 08 25	046	0.7−	0.5−	1997 09 22	046	0.3+	0.2−
1997 08 13	046	0.7+	0.2+	1997 08 25	046	0.3−	0.6−	1997 09 22	046	0.2+	0.3−
1997 08 13	046	0.3+	0.5+	1997 08 25	046	0.3−	0.1−	1997 09 22	046	0.5−	0.1−
1997 08 13	046	0.3+	0.6+	1997 08 25	046	0.2−	0.1−	1997 09 25	046	0.3−	0.2−
1997 08 13	046	0.5+	0.4−	1997 08 25	046	0.1+	0.4−	1997 09 25	046	0.7+	0.1−
1997 08 14	046	0.4+	0.2−	1997 08 27	046	1.1−	0.2−	1997 09 25	046	0.7−	0.1+
1997 08 14	046	0.0	0.0	1997 08 27	046	1.1−	0.1+	1997 10 06	046	0.5−	0.1+
1997 08 14	046	0.4+	0.3+	1997 08 27	046	1.0−	0.2+	1997 10 06	046	0.4−	0.0
1997 08 14	046	0.1−	0.1+	1997 08 28	046	0.2+	0.1+	1997 10 06	046	0.0	0.2+
1997 08 14	046	0.0	0.2+	1997 08 28	046	0.1+	0.3−	1998 11 12	046	0.1−	0.2+
1997 08 15	046	0.2−	0.0	1997 08 28	046	0.5+	0.3−	1998 11 12	046	0.3−	0.1+
1997 08 15	046	0.2−	0.1−	1997 09 08	910	1.3+	0.5+	1998 11 12	046	0.2−	0.1−
1997 08 15	046	0.3−	0.2−	1997 09 08	910	1.1+	0.5+	1998 11 23	046	0.0	0.2+
1997 08 23	046	0.1−	0.1+	1997 09 08	910	1.1+	0.5+	1998 11 24	046	0.3+	0.3−
1997 08 23	046	0.3−	0.2−	1997 09 11	046	0.2+	0.4+	1998 11 24	046	0.3+	0.0
1997 08 23	046	0.2+	0.9−	1997 09 11	046	0.1+	0.3+				
1997 08 25	046	0.3−	0.4+	1997 09 11	046	0.1−	0.2+				

1997 PV₃ = 1987 VY₁ = 1998 WN₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	119.40991		(2000.0)		P		Q
<i>n</i>	0.18431804	ω	47.57752	+0.51103304			+0.84806755
<i>a</i>	3.0579061	Ω	253.66239	−0.82527685			+0.43851767
<i>e</i>	0.0821505	<i>i</i>	8.39462	−0.24034008			+0.29746207
<i>P</i>	5.35	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 11 15	327	0.3+	0.7+	1997 08 09	327	0.1−	0.0	1998 11 21	704	0.2+	0.1+
1987 11 15	327	0.4−	0.5−	1997 08 09	327	0.0	0.0	1998 11 21	704	0.5+	1.5−
1997 08 08	327	0.1+	0.0	1997 08 10	327	0.1+	0.1+	1998 11 21	704	0.5+	0.5−
1997 08 08	327	0.1+	0.1+	1997 08 10	327	0.2−	0.2−	1998 11 24	704	0.6−	0.4+
1997 08 08	327	0.1−	0.0	1997 08 10	327	0.0	0.0	1998 11 24	704	0.3+	0.9+
1997 08 08	327	0.0	0.0	1998 11 21	704	0.2−	0.0	1998 11 24	704	0.0	0.1−
1997 08 09	327	0.0	0.0	1998 11 21	704	0.4−	0.1−	1998 11 24	704	0.1−	0.7+

1997 PL₅ = 1975 TT = 1981 WO₅ = 1998 UD₂₃

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	6.05566		(2000.0)		P		Q
<i>n</i>	0.17544852	ω	94.47074	+0.52554437			−0.84806763
<i>a</i>	3.1601152	Ω	323.56402	+0.72835698			+0.48962918
<i>e</i>	0.0123126	<i>i</i>	6.54604	+0.43965808			+0.20259457
<i>P</i>	5.62	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1975 10 03	095	0.4−	0.1+	1997 08 30	358	0.4+	0.3+	1997 10 06	327	0.4−	0.3+
1981 11 24	095	0.4+	0.1−	1997 09 27	327	0.0	0.1+	1997 10 06	327	0.0	0.2+
1997 08 10	358	0.0	1.2−	1997 09 27	327	0.3−	0.4+	1997 10 06	327	0.5−	0.4+
1997 08 10	358	1.6+	1.6−	1997 09 27	327	0.3−	0.7+	1998 10 03	699	(1.4+	4.8−)
1997 08 10	358	1.3−	0.1+	1997 09 29	327	0.1+	0.5+	1998 10 03	699	(1.0+	2.6−)

1998 DEC. 8

1997 08 13	358	0.8+	0.2−	1997 09 29	327	0.3−	0.1+	1998 10 03	699	0.2−	1.7−
1997 08 13	358	1.0+	0.7+	1997 09 29	327	0.4−	1.1+	1998 10 25	098	0.7−	1.3+
1997 08 24	358	0.2−	1.0−	1997 09 29	327	0.0	0.3+	1998 10 25	098	1.4−	1.0+
1997 08 24	358	(2.8+	1.0−)	1997 09 29	327	0.4+	0.7+	1998 10 31	112	0.7+	1.4−
1997 08 30	358	0.9−	1.7−	1997 09 29	327	0.3+	0.2+	1998 10 31	112	1.4+	0.0

1997 QF

Id. M. Tichý (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	159.63206		(2000.0)		P		Q
<i>n</i>	0.20262639	ω	137.85133	+0.13644580			+0.97781563
<i>a</i>	2.8708161	Ω	139.22950	−0.96142909			+0.16938273
<i>e</i>	0.0677492	<i>i</i>	14.08581	−0.23882348			−0.12323182
<i>P</i>	4.86	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 08 23	046	0.2+	0.0	1997 08 28	046	0.3+	0.0	1997 09 21	046	0.0	0.0
1997 08 23	046	0.2−	0.1+	1997 08 28	046	0.1−	0.0	1997 10 06	046	0.6+	0.3+
1997 08 23	046	0.2−	0.2+	1997 08 30	566	0.2+	0.0	1997 10 06	046	0.5+	0.2+
1997 08 23	046	0.3−	0.3−	1997 08 30	566	0.4+	0.3+	1997 10 06	046	0.2+	0.2+
1997 08 23	046	0.1−	0.1+	1997 08 30	566	0.4−	0.3+	1997 10 07	046	0.2−	0.3+
1997 08 24	046	0.1+	0.2−	1997 08 31	046	0.2+	0.2−	1997 10 07	046	0.3+	0.2−
1997 08 24	046	0.2+	0.0	1997 08 31	046	0.1+	0.3−	1998 11 12	046	0.3−	0.3−
1997 08 24	046	0.1+	0.3−	1997 08 31	046	0.3+	0.3−	1998 11 13	046	0.0	0.3−
1997 08 24	046	0.2−	0.0	1997 09 10	046	0.5−	0.1+	1998 11 13	046	0.1−	0.6−
1997 08 26	046	0.3+	0.1+	1997 09 10	046	0.5−	0.3+	1998 11 24	046	0.2−	0.1+
1997 08 26	046	0.0	0.0	1997 09 10	046	0.2−	0.1−	1998 11 24	046	0.1+	0.3+
1997 08 26	046	0.1−	0.1+	1997 09 20	046	0.8−	0.1−	1998 11 24	046	0.5+	0.3+
1997 08 26	046	0.3+	0.1+	1997 09 20	046	0.3−	0.1−	1998 11 25	046	0.1−	0.1+
1997 08 27	046	0.3+	0.0	1997 09 20	046	0.5−	0.0	1998 11 25	046	0.1+	0.2+
1997 08 27	046	0.2+	0.1+	1997 09 21	046	0.2−	0.4−	1998 11 25	046	0.0	0.1+
1997 08 28	046	0.0	0.1−	1997 09 21	046	0.2+	0.0				

1997 QK

Id. M. Tichý (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	90.65138		(2000.0)		P		Q
<i>n</i>	0.18712127	ω	38.30471	+0.89885124			+0.41458209
<i>a</i>	3.0272895	Ω	296.63950	−0.43098926			+0.77742013
<i>e</i>	0.1419162	<i>i</i>	9.14649	−0.07946513			+0.47301123
<i>P</i>	5.27	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 08 24	372	1.2+	0.5+	1997 08 26	046	0.3−	0.0	1997 09 10	046	0.0	0.2−
1997 08 24	402	0.3−	0.0	1997 08 26	046	0.1−	0.0	1997 09 16	046	0.8+	0.1−
1997 08 24	402	0.2−	0.2−	1997 08 26	861	0.1+	0.1+	1997 09 16	046	0.5+	0.0
1997 08 24	402	0.0	0.1−	1997 08 27	861	0.3−	0.1+	1997 09 16	046	0.5+	0.1−
1997 08 24	046	0.1+	0.1−	1997 08 27	861	0.4−	0.0	1997 09 17	046	0.5+	0.2−
1997 08 24	046	0.0	0.1−	1997 08 27	372	0.4+	1.0+	1997 09 17	046	0.4−	0.0
1997 08 24	046	0.0	0.2−	1997 08 27	046	0.0	0.0	1997 09 17	046	0.5−	0.2−
1997 08 24	046	0.1+	0.2−	1997 08 27	046	0.1+	0.1+	1997 09 20	046	0.0	0.4−
1997 08 24	046	0.3+	0.1−	1997 08 27	046	0.0	0.1+	1997 09 20	046	0.1−	0.5−
1997 08 25	372	0.4−	0.6+	1997 08 28	372	0.3−	1.0+	1997 09 20	046	0.1−	0.2−
1997 08 25	402	0.2−	0.1+	1997 08 30	046	0.3−	0.1−	1997 10 20	046	0.4+	0.6+
1997 08 25	372	0.2+	0.7+	1997 08 30	046	0.4−	0.0	1997 10 20	046	0.2−	0.0
1997 08 25	402	0.0	0.2+	1997 08 30	046	0.4−	0.0	1997 10 20	046	0.1+	0.5+
1997 08 25	402	0.0	0.1+	1997 08 31	046	0.3−	0.1−	1997 10 21	046	0.4−	0.3+
1997 08 25	372	0.7+	0.7+	1997 08 31	046	0.3−	0.1−	1997 10 21	046	0.1+	0.1−
1997 08 25	046	0.1+	0.2−	1997 08 31	046	0.4−	0.1−	1997 10 21	046	0.4−	0.1−
1997 08 25	046	0.1−	0.1+	1997 09 01	566	0.0	0.1−	1997 10 22	046	0.1−	0.2+
1997 08 25	046	0.4−	0.0	1997 09 01	566	0.0	0.2−	1997 10 22	046	0.1−	0.1+
1997 08 26	861	0.1−	0.7−	1997 09 01	566	0.1−	0.0	1997 10 22	046	0.1+	0.2+
1997 08 26	861	0.1+	0.4−	1997 09 08	046	0.0	0.1−	1998 11 12	046	0.1+	0.3−
1997 08 26	861	1.6+	1.7−	1997 09 08	046	0.1+	0.4−	1998 11 12	046	0.1−	0.5−
1997 08 26	402	0.2−	0.1+	1997 09 08	046	0.2+	0.2−	1998 11 12	046	0.4−	0.2−
1997 08 26	402	0.2−	0.1+	1997 09 09	046	0.1−	0.1+	1998 11 18	046	0.0	0.1+

1997 08 26	402	0.0	0.1−	1997 09 10	046	0.1−	0.2+	1998 11 18	046	0.3+	0.4+
1997 08 26	046	0.1−	0.1+	1997 09 10	046	0.1−	0.1−	1998 11 18	046	0.0	0.3+

1997 QS₄ = 1992 UX₇Id. S. Nakano (*MPC* 30680); 1997 QS₄ = 1976 YP₅ (*ibid.*) is invalid

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Nakano

<i>M</i>	78.00189		(2000.0)		P		Q
<i>n</i>	0.18033030	ω	153.11859		+0.99457847		+0.10369717
<i>a</i>	3.1028224	Ω	200.93366		−0.09889631		+0.92008937
<i>e</i>	0.1907163	<i>i</i>	1.24803		−0.03214313		+0.37773331
<i>P</i>	5.47	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 10 20	675	1.0+	1.2+	1992 11 02	010	2.0−	0.5−	1997 09 04	358	0.2−	0.8+
1992 10 20	675	0.7+	0.3−	1992 11 03	010	1.4+	1.9+	1997 09 09	358	1.6−	0.2+
1992 10 22	675	0.9+	1.4+	1992 11 03	010	0.7−	0.1+	1997 09 09	358	0.2+	0.6+
1992 10 22	675	0.9+	0.3−	1992 11 03	010	1.0−	1.6−	1998 11 12	369	1.0+	0.3−
1992 10 23	010	1.4+	0.1−	1997 08 30	358	0.2−	0.2−	1998 11 12	369	0.0	0.2−
1992 10 23	010	0.4−	0.1+	1997 08 30	358	0.6+	1.2−	1998 11 12	369	1.0−	0.5−
1992 11 02	010	1.0−	0.3+	1997 09 04	358	1.3+	1.2−	1998 11 15	369	0.8+	0.9−
1992 11 02	010	2.0−	0.1−	1997 09 04	358	0.6+	0.6−	1998 11 15	369	0.8−	0.6−

1997 RA₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	87.47482		(2000.0)		P		Q
<i>n</i>	0.18405413	ω	10.41106		+0.99482887		−0.10078444
<i>a</i>	3.0608285	Ω	355.31813		+0.07854797		+0.84191995
<i>e</i>	0.0305003	<i>i</i>	8.85894		+0.06438732		+0.53010687
<i>P</i>	5.35	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 09 02	557	0.1−	0.1+	1997 09 21	557	0.7−	0.1+	1997 10 29	566	0.4+	0.2−
1997 09 02	557	0.5+	0.1+	1997 09 21	557	0.4−	0.2+	1997 10 29	566	0.1−	0.2+
1997 09 02	557	0.0	0.3−	1997 09 28	557	0.2−	0.2−	1997 10 29	566	0.0	0.3−
1997 09 02	557	0.3+	0.6+	1997 09 28	557	0.1−	0.1−	1997 11 01	557	0.5+	0.2−
1997 09 02	557	0.1−	1.1+	1997 09 30	327	0.3−	0.6−	1997 11 01	557	0.1+	0.1−
1997 09 04	557	0.2−	0.3−	1997 09 30	327	0.2+	0.5−	1997 11 19	557	0.9−	0.8+
1997 09 04	557	0.2−	0.7−	1997 09 30	327	0.3+	0.4−	1997 11 19	557	0.5+	0.1+
1997 09 06	557	0.6+	0.3−	1997 10 05	557	0.4+	0.2−	1998 10 21	557	0.1−	0.1+
1997 09 06	557	0.0	0.0	1997 10 05	557	0.2+	0.1−	1998 10 21	557	0.0	0.2−
1997 09 08	557	0.2−	0.0	1997 10 09	327	0.1−	0.2+	1998 11 12	557	0.1−	0.2−
1997 09 08	557	0.0	0.0	1997 10 09	327	0.0	0.2−	1998 11 12	557	0.1+	0.7−
1997 09 13	557	0.2−	0.5+	1997 10 09	327	0.3−	0.0	1998 11 12	557	0.1+	0.9+
1997 09 13	557	0.1−	0.0	1997 10 17	557	0.5+	0.3−				
1997 09 13	557	0.2+	0.5+	1997 10 17	557	0.5−	0.5+				

1997 RQ₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	229.15984		(2000.0)		P		Q
<i>n</i>	0.17839048	ω	39.54908		−0.64407364		+0.76496136
<i>a</i>	3.1252752	Ω	190.35510		−0.70436171		−0.59396869
<i>e</i>	0.0952793	<i>i</i>	0.57595		−0.29840197		−0.24906889
<i>P</i>	5.53	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 09 08	684	0.0	0.1−	1997 09 29	684	0.0	0.2−	1997 10 29	684	0.6−	0.3+
1997 09 08	684	0.2+	0.2−	1997 09 29	684	0.3−	0.2−	1997 11 23	684	0.3−	0.1+
1997 09 09	684	0.1−	0.3−	1997 10 20	684	0.1+	0.8+	1997 11 23	684	0.2−	0.0
1997 09 09	684	0.0	0.3−	1997 10 20	684	0.1+	0.4+	1997 11 23	684	0.1−	0.3+
1997 09 09	684	0.0	0.2−	1997 10 20	684	0.1−	0.4−	1997 11 24	684	0.1+	0.3+
1997 09 23	684	0.3−	0.0	1997 10 21	684	0.1+	0.4+	1997 11 24	684	0.1+	0.4+
1997 09 23	684	0.0	0.2+	1997 10 21	684	0.8+	0.3−	1997 11 24	684	0.1+	0.2+
1997 09 24	684	0.0	0.0	1997 10 21	684	0.4+	0.3+	1998 11 15	684	0.4+	0.3+
1997 09 24	684	0.2+	0.1−	1997 10 28	684	0.2−	0.2−	1998 11 15	684	0.8+	1.1−
1997 09 28	684	0.4+	0.2−	1997 10 28	684	0.1−	0.2−	1998 11 16	684	0.9−	0.5+

1997 09 28	684	0.7+	0.1−	1997 10 29	684	0.7−	0.1+	1998 11 16	684	0.4−	0.0
1997 09 29	684	0.0	0.6−	1997 10 29	684	0.5−	0.2+				

1997 RZ₇ = 1982 BQ₁₁ = 1934 PH

Id. S. Nakano, T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Urata

<i>M</i>	97.89749		(2000.0)		P		Q
<i>n</i>	0.23546019	ω	42.31570		+0.91927154		−0.38349947
<i>a</i>	2.5973136	Ω	339.70677		+0.25627305		+0.75415090
<i>e</i>	0.1767471	<i>i</i>	14.81825		+0.29877076		+0.53308966
<i>P</i>	4.19	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1934 08 04	078(23.6−	42.7−)X	1997 09 29	888	0.1+	0.2−	1998 01 26	385	0.1+	0.1−	
1982 01 20	095	0.0	0.1+	1997 09 29	888	0.7+	0.1+	1998 01 26	385	0.5−	0.3−
1997 09 04	888	0.4−	1.0−	1997 10 27	888	0.1−	0.9+	1998 02 06	888	0.1−	0.5−
1997 09 04	888	1.4−	0.4−	1997 10 27	888	0.8+	1.0+	1998 02 06	888	0.7+	0.1+
1997 09 10	888	0.0	0.1−	1997 12 05	385	0.5+	0.2+	1998 02 06	888	1.0+	0.3+
1997 09 10	888	1.1−	0.6+	1997 12 05	385	0.4+	0.3+	1998 11 07	888	0.0	0.5+
1997 09 11	888	0.2+	0.2−	1997 12 05	385	0.4+	0.3+	1998 11 07	888	0.2+	0.3+
1997 09 11	888	0.2+	0.1+	1997 12 27	888	1.2−	1.0−	1998 11 07	888	0.2+	0.0
1997 09 28	888	0.2+	0.1+	1997 12 27	888	0.4+	0.7−	1998 11 13	385	0.5+	0.5−
1997 09 28	888	0.4+	0.1+	1998 01 26	385	1.1−	0.1+	1998 11 13	385	0.4−	0.3+

1997 RF₈ = 1980 TG₆

Id. S. Nakano (unpublished), T. Urata (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	155.40585		(2000.0)		P		Q
<i>n</i>	0.23090655	ω	286.10922		+0.29069373		+0.95681081
<i>a</i>	2.6313496	Ω	0.81133		−0.76863980		+0.23551299
<i>e</i>	0.2484409	<i>i</i>	13.05694		−0.56981577		+0.17043095
<i>P</i>	4.27	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 10 08	095	0.2+	0.2−	1997 10 06	888	1.2−	0.6−	1997 11 19	385	0.9+	1.0−
1997 09 04	888	1.4+	0.7−	1997 10 06	888	1.4−	0.1+	1998 11 22	385	0.7−	0.6−
1997 09 04	888	0.8+	0.6−	1997 10 08	691	0.7−	1.0+	1998 11 22	385	0.5−	1.1+
1997 09 11	888	0.1−	0.5+	1997 10 08	691	0.6−	0.3+	1998 11 23	888	0.4+	0.6+
1997 09 11	888	1.4+	0.3+	1997 10 25	888	0.2−	0.6−	1998 11 23	888	0.8+	1.1−
1997 10 01	888	0.1+	0.7+	1997 10 25	888	1.6−	1.4−				
1997 10 01	888	0.4+	1.8+	1997 11 19	385	0.7+	0.3−				

1997 SR

Id. F. B. Zoltowski (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	122.87182		(2000.0)		P		Q
<i>n</i>	0.22018276	ω	353.40397		+0.74144560		+0.66011267
<i>a</i>	2.7161089	Ω	324.32753		−0.60581919		+0.58134875
<i>e</i>	0.1742854	<i>i</i>	11.92089		−0.28851609		+0.47569412
<i>P</i>	4.48	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 08 30	566	0.1−	0.2+	1997 09 28	426	0.2−	0.2−	1997 11 01	426	1.1−	0.1+
1997 08 30	566	0.1+	0.0	1997 09 28	426	0.2−	0.0	1997 11 27	426	0.6+	0.9+
1997 08 30	566	0.1−	0.2+	1997 09 30	426	0.2+	0.1+	1997 11 27	426	0.0	0.1+
1997 09 20	426	0.4−	0.1−	1997 09 30	426	0.0	0.5−	1998 10 20	426	0.8−	0.0
1997 09 20	426	0.1−	0.3−	1997 09 30	426	0.1+	0.2+	1998 10 20	426	0.2−	1.0+
1997 09 20	426	0.4+	0.3+	1997 10 07	426	0.0	0.2−	1998 10 20	426	0.3−	0.3+
1997 09 21	426	0.2+	0.0	1997 10 07	426	0.1−	0.1−	1998 11 14	426	1.1+	0.4−
1997 09 21	426	0.3+	0.4+	1997 10 07	426	0.0	0.4−	1998 11 14	426	0.6−	0.6−
1997 09 21	426	0.1+	0.0	1997 10 29	426	0.7−	0.0	1998 11 14	426	0.3+	0.5−
1997 09 25	426	0.1−	0.0	1997 10 29	426	0.2+	0.0	1998 11 17	426	0.1−	0.7+
1997 09 25	426	0.1−	0.2+	1997 10 29	426	0.6−	0.2−	1998 11 17	426	0.3+	0.4−

M.P.C. 33264

1997 09 25 426 0.2− 0.1+ 1997 11 01 426 0.4+ 0.2+
 1997 09 28 426 0.1+ 0.2− 1997 11 01 426 1.3+ 0.8−

1997 SN₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	183.44516		(2000.0)		P		Q
<i>n</i>	0.22381074	ω	299.42951	+0.11341235		+0.98996551	
<i>a</i>	2.6866769	Ω	336.62771	−0.82199028		+0.04583237	
<i>e</i>	0.1681943	<i>i</i>	12.26847	−0.55809463		+0.13367008	
<i>P</i>	4.40	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 09 21	557	0.1−	0.1+	1997 09 28	557	0.1+	0.3+	1997 11 05	557	0.1−	0.1+
1997 09 21	557	0.1−	0.2+	1997 10 04	557	0.3−	0.3−	1997 11 05	557	0.3−	0.3+
1997 09 21	557	0.0	0.0	1997 10 05	557	0.1−	0.3−	1997 11 05	557	0.6+	0.2+
1997 09 22	557	0.3+	0.0	1997 10 10	557	0.4+	0.0	1998 11 13	557	0.4−	0.1+
1997 09 22	557	0.1+	0.2−	1997 10 10	557	0.2+	0.1+	1998 11 13	557	0.3−	0.3−
1997 09 25	557	0.1+	0.1−	1997 10 22	557	0.0	0.0	1998 11 23	557	0.2+	0.3−
1997 09 25	557	0.1+	0.0	1997 10 22	557	0.6−	0.1+	1998 11 23	557	0.5+	0.4+
1997 09 28	557	0.1−	0.0	1997 11 04	557	0.1−	0.0				
1997 09 28	557	0.3−	0.1+	1997 11 04	557	0.1+	0.5−				

1997 SG₇ = 1998 VO₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	242.16105		(2000.0)		P		Q
<i>n</i>	0.17656560	ω	169.83384	−0.98562279		+0.16880706	
<i>a</i>	3.1467723	Ω	19.88899	−0.15646716		−0.89582241	
<i>e</i>	0.1159172	<i>i</i>	1.21334	−0.06376318		−0.41110386	
<i>P</i>	5.58	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 09 23	691	0.1+	0.0	1997 10 05	691	0.2+	0.1+	1998 11 12	910	0.2+	0.2−
1997 09 23	691	0.2+	0.1−	1997 10 05	691	0.2+	0.0	1998 11 19	910	0.7+	0.5+
1997 09 23	691	0.1+	0.0	1998 11 11	910	0.5−	0.1−	1998 11 19	910	0.6+	0.4+
1997 09 29	691	0.3−	0.1−	1998 11 11	910	0.6−	0.0	1998 11 19	910	0.8+	0.3−
1997 09 29	691	0.3−	0.0	1998 11 11	910	0.4−	0.0	1998 11 26	691	0.4−	0.3−
1997 09 29	691	0.4−	0.1+	1998 11 12	910	0.7+	0.0	1998 11 26	691	0.4−	0.3−
1997 10 05	691	0.3+	0.0	1998 11 12	910	0.3−	0.6+	1998 11 26	691	0.4−	0.3−

1997 SF₁₁ = 1998 VS₃₆

Id. A. Miyamoto

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	351.11268		(2000.0)		P		Q
<i>n</i>	0.18059109	ω	264.61881	−0.49061748		−0.86191234	
<i>a</i>	3.0998345	Ω	215.69810	+0.86084482		−0.45664509	
<i>e</i>	0.0563503	<i>i</i>	12.67839	+0.13505808		−0.22041410	
<i>P</i>	5.46	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 09 28	691	1.3−	0.2+	1997 09 30	867	0.1+	0.7+	1997 11 19	867	0.2+	0.0
1997 09 28	691	1.1−	0.1+	1997 09 30	867	0.1−	0.5+	1997 12 05	867	0.3+	0.3+
1997 09 28	691	1.1−	0.1+	1997 10 01	867	0.6+	0.3+	1997 12 05	867	0.2−	0.2+
1997 09 28	867	0.3−	0.3+	1997 10 01	867	0.5+	0.2+	1997 12 05	867	0.5+	0.1+
1997 09 28	867	0.1−	0.4+	1997 10 08	867	0.1+	2.1−	1998 01 02	867	0.1−	0.4+
1997 09 28	867	0.2−	0.3+	1997 10 08	867	0.5+	1.9−	1998 01 02	867	0.3−	0.2+
1997 09 28	867	0.4+	0.3+	1997 10 08	867	0.9+	1.9−	1998 01 02	867	0.4−	0.3+
1997 09 29	867	0.8+	0.2+	1997 10 29	867	0.0	0.2+	1998 11 14	867	0.5−	0.0
1997 09 29	867	1.4+	0.3+	1997 10 29	867	0.2−	0.1+	1998 11 14	867	0.3−	0.2+
1997 09 29	867	0.9+	0.6+	1997 10 29	867	0.4−	0.1+	1998 11 14	867	0.5−	0.0
1997 09 30	691	0.5−	0.1+	1997 11 05	867	0.6+	0.1−	1998 11 15	867	0.4+	0.5−
1997 09 30	691	0.5−	0.0	1997 11 05	867	0.5+	0.1−	1998 11 15	867	0.7+	0.3−
1997 09 30	691	0.6−	0.1−	1997 11 05	867	0.1−	0.5−	1998 11 26	867	0.1+	0.1+
1997 09 30	867	0.1−	0.8+	1997 11 19	867	0.8+	0.4−	1998 11 26	867	0.1+	0.3+
1997 09 30	867	0.2−	0.6+	1997 11 19	867	1.3−	0.5−	1998 11 26	867	0.0	0.2+

1998 DEC. 8

1997 SS₃₁

Id. F. B. Zoltowski (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	8.74227		(2000.0)		P		Q
<i>n</i>	0.17356300	ω	192.25439	+0.32998721		−0.94179719	
<i>a</i>	3.1829607	Ω	238.50882	+0.87232570		+0.33023755	
<i>e</i>	0.1653415	<i>i</i>	4.32034	+0.36077182		+0.06293820	
<i>P</i>	5.68	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 09 28	426	0.5−	0.2−	1997 10 07	426	0.4+	0.7−	1998 10 03	327	0.0	0.2+
1997 09 28	426	0.2+	0.4+	1997 10 29	426	0.3−	0.6+	1998 11 16	426	0.1−	0.4−
1997 09 28	426	0.1+	0.5−	1997 10 29	426	1.1+	0.1−	1998 11 16	426	0.1+	0.3−
1997 09 30	426	0.4−	0.0	1997 11 01	426	1.1−	0.2+	1998 11 16	426	0.0	0.1+
1997 09 30	426	0.7−	0.6−	1997 11 01	426	0.2+	1.0+	1998 11 20	426	0.2+	0.1−
1997 09 30	426	0.3+	0.3+	1997 11 01	426	0.4−	0.0	1998 11 20	426	0.1−	0.3−
1997 10 07	426	0.1+	0.1−	1998 10 03	327	0.0	0.1+	1998 11 20	426	0.3−	0.1−
1997 10 07	426	1.1+	0.3−	1998 10 03	327	0.2+	0.9+				

1997 TC

Id. F. Manca (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	155.93808		(2000.0)		P		Q
<i>n</i>	0.19586629	ω	263.31108	+0.25418229		+0.96706080	
<i>a</i>	2.9364972	Ω	21.42894	−0.87200185		+0.23523090	
<i>e</i>	0.0760289	<i>i</i>	2.13222	−0.41833497		+0.09726164	
<i>P</i>	5.03	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 08 10	327	0.4+	0.9−	1997 10 06	691	0.6+	0.9+	1997 10 24	587	0.3+	0.1−
1997 08 10	327	0.2+	1.3−	1997 10 06	691	1.1−	0.0	1997 10 25	587	(0.2+	2.1−)
1997 08 10	327	0.3+	1.0−	1997 10 06	691	1.2−	0.1+	1997 10 25	587	0.5+	0.9−
1997 10 01	587	0.2+	1.6+	1997 10 08	587	0.1+	0.2+	1997 11 18	587	1.2+	0.2+
1997 10 01	587	0.1−	0.6+	1997 10 08	587	0.3+	0.6−	1997 11 23	587	0.4+	0.1−
1997 10 01	587	0.1+	0.0	1997 10 10	587	1.0+	0.7−	1997 11 23	587	1.0−	0.2−
1997 10 02	587	0.4+	0.2+	1997 10 10	587	0.5−	0.2+	1997 11 23	587	0.5−	0.6+
1997 10 02	587	0.5+	0.1−	1997 10 21	691	0.9−	0.0	1998 11 15	587	0.0	0.5−
1997 10 04	587	0.4−	0.3+	1997 10 21	691	0.8−	0.2−	1998 11 15	587	0.1−	0.3+
1997 10 04	587	0.6+	1.0+	1997 10 21	691	0.3+	0.2−	1998 11 18	587	0.1+	0.4−
1997 10 04	587	0.0	0.6+	1997 10 24	587	0.9−	0.5−	1998 11 18	587	0.0	0.0

1997 TK₁ = 1993 RQ₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	327.84121		(2000.0)		P		Q
<i>n</i>	0.22898987	ω	152.57832	−0.53544065		−0.84383361	
<i>a</i>	2.6460123	Ω	329.75673	+0.76146391		−0.46423381	
<i>e</i>	0.0960650	<i>i</i>	4.02220	+0.36534371		−0.26913158	
<i>P</i>	4.30	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 09 14	809	(1.2+	1.8+)	1993 09 19	809	0.3−	0.9−	1997 10 03	910	0.0	0.0
1993 09 14	809	0.4+	0.9+	1997 10 01	910	0.2−	0.2+	1997 10 03	910	0.0	0.0
1993 09 14	809	0.0	0.6+	1997 10 01	910	0.1−	0.2+	1997 10 04	910	0.3+	0.2−
1993 09 19	809	0.1−	0.7−	1997 10 01	910	0.3−	0.2+	1997 10 04	910	0.0	0.1−
1993 09 19	809	0.6−	0.1−	1997 10 03	910	0.1+	0.2−	1997 10 04	910	0.3+	0.1−

1997 TV₂₆ = 1995 BA₁₇

Id. A. Gnädig, S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	6.15233	(2000.0)	P	Q
<i>n</i>	0.25572596	ω 80.13057	−0.89175268	−0.45135841
<i>a</i>	2.4582130	Ω 73.03250	+0.40075407	−0.82100394
<i>e</i>	0.1483453	<i>i</i> 1.94399	+0.21017451	−0.34961138
<i>P</i>	3.85	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1989 11 01	413	0.7−	0.7+	1997 10 08	376	0.0	0.8+	1997 10 30	704	0.5−	0.2−
1989 11 01	413	0.2+	0.5+	1997 10 10	376	0.4−	0.3−	1997 10 30	704	0.4−	0.8−
1995 01 28	399	(2.9+	3.9−)	1997 10 10	376	0.1−	0.8−	1997 10 30	704	0.1+	0.2+
1995 01 28	399	(0.5+	3.9−)	1997 10 27	376	0.3+	0.4+	1997 12 06	910	0.2+	0.1+
1995 02 03	399	0.5+	0.6+	1997 10 27	376	0.4−	0.4+	1997 12 06	910	0.1+	0.0
1995 02 03	399	0.3−	0.1−	1997 10 30	704	1.1+	0.1+	1997 12 06	910	0.1+	0.0
1997 10 08	376	0.4+	0.9+	1997 10 30	704	0.1−	1.6−				

1997 UH

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	253.98107	(2000.0)	P	Q
<i>n</i>	0.23128920	ω 78.32954	−0.55336466	+0.82745506
<i>a</i>	2.6284466	Ω 157.26249	−0.82747758	−0.53301914
<i>e</i>	0.1138455	<i>i</i> 14.29328	−0.09522821	−0.17665989
<i>P</i>	4.26	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 10 19	557	0.1−	0.2−	1997 10 28	557	0.1+	0.1−	1998 01 11	557	1.6−	0.0
1997 10 19	557	0.4−	0.1−	1997 11 08	557	0.6+	0.1−	1998 01 11	557	0.7−	0.0
1997 10 21	557	0.3−	0.0	1997 11 09	557	0.5+	0.2+	1998 10 21	557	0.5+	1.0−
1997 10 21	557	0.1−	0.7−	1997 12 30	557	0.3+	0.9+	1998 10 21	557	0.5+	0.6−
1997 10 23	557	0.0	0.2−	1997 12 30	557	0.4+	0.2−	1998 11 12	557	0.8−	0.8+
1997 10 23	557	0.1+	0.4−	1997 12 30	557	1.6+	0.2+				
1997 10 27	557	0.1+	0.2−	1998 01 11	557	0.9−	1.7+				

1997 UJ

Id. L. Šarounová (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	18.21799	(2000.0)	P	Q
<i>n</i>	0.08530827	ω 204.48284	+0.36991086	−0.91932382
<i>a</i>	5.1106402	Ω 224.14024	+0.88101388	+0.39295273
<i>e</i>	0.0635299	<i>i</i> 11.11044	+0.29492455	−0.02078139
<i>P</i>	11.55	<i>H</i> 12.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 10 20	557	0.2+	0.9−	1997 10 28	557	0.2−	0.0	1997 12 06	910	0.3+	0.0
1997 10 20	557	0.1+	0.5−	1997 10 31	704	1.2−	0.4−	1997 12 06	910	0.3+	0.0
1997 10 20	557	0.8+	0.6−	1997 10 31	704	(0.4+	2.6+)	1997 12 06	910	0.2+	0.1−
1997 10 21	557	0.1+	0.5−	1997 10 31	704	(0.3+	2.3+)	1998 11 23	557	0.0	0.2−
1997 10 21	557	0.7+	0.3−	1997 10 31	704	1.1−	1.7+	1998 11 24	557	0.1+	0.5−
1997 10 22	557	0.4+	0.0	1997 10 31	704	1.2−	1.6+	1998 11 24	557	0.2−	0.1−
1997 10 22	557	0.3+	0.0	1997 11 01	557	0.4−	0.1+	1998 11 29	557	0.3+	0.4+
1997 10 23	557	0.4+	0.5−	1997 11 01	557	0.3−	0.0	1998 11 29	557	0.2−	0.4+
1997 10 23	557	0.5+	0.6+	1997 11 10	557	0.3+	0.1+				
1997 10 28	557	0.4+	0.6+	1997 11 10	557	0.2−	0.7−				

1997 UU₇ = 1972 LL

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	192.93904	(2000.0)	P	Q
<i>n</i>	0.28108327	ω 122.58766	+0.26324242	+0.96411588
<i>a</i>	2.3080544	Ω 162.57565	−0.91916604	+0.26148188
<i>e</i>	0.1443376	<i>i</i> 6.59843	−0.29297992	+0.04591075
<i>P</i>	3.51	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1972 06 06	095	0.0	0.3−	1997 10 30	557	0.1+	0.1−	1998 01 10	557	0.6+	0.0
1997 10 27	557	0.1+	0.3+	1997 11 03	557	0.3−	0.2+	1998 01 10	557	0.7−	0.5+
1997 10 27	557	0.0	0.1+	1997 11 03	557	0.2−	0.5+	1998 11 13	557	0.3+	0.3−
1997 10 28	557	0.0	0.3−	1997 11 20	557	0.3+	0.6−	1998 11 13	557	0.7−	0.3−
1997 10 28	557	0.1−	0.0	1997 11 20	557	0.1−	0.5−	1998 11 23	557	0.1+	0.2+
1997 10 30	557	0.1+	0.1+	1998 01 10	557	0.3+	0.5−	1998 11 24	557	0.3+	0.1+

1997 VV

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	69.04545	(2000.0)	P	Q
<i>n</i>	0.17443783	ω 162.94733	+0.70597609	−0.68169213
<i>a</i>	3.1723099	Ω 241.63859	+0.62167249	+0.72639052
<i>e</i>	0.0674749	<i>i</i> 12.60786	+0.33929496	+0.08747947
<i>P</i>	5.65	<i>H</i> 11.7	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 10 29	566	0.1−	0.1−	1997 11 21	138	0.1+	1.1−	1997 12 29	958	0.2+	0.6−
1997 10 29	566	0.3−	0.1+	1997 11 21	138	0.5+	1.6−	1998 01 22	958	(3.4+	0.8+)
1997 10 29	566	0.0	0.3−	1997 12 02	124	0.2+	0.9+	1998 01 22	958	(2.9+	0.9+)
1997 11 01	138	0.2+	1.1−	1997 12 02	124	0.2−	0.8+	1998 02 13	958	0.7−	0.1+
1997 11 01	138	0.1−	0.1+	1997 12 02	124	0.3+	0.6+	1998 02 13	958	0.8+	0.7+
1997 11 01	138	0.2−	0.1−	1997 12 02	958	0.2+	0.6+	1998 11 20	132	0.0	1.0+
1997 11 02	138	0.0	0.5+	1997 12 03	958	0.1−	0.3+	1998 11 20	132	(0.3−	3.0−)
1997 11 02	138	0.3−	1.5+	1997 12 14	949	0.9−	0.5+	1998 11 22	138	0.2−	0.4−
1997 11 02	138	0.5−	1.3+	1997 12 14	949	0.5−	0.5−	1998 11 22	138	0.0	0.4−
1997 11 18	138	0.7+	0.7−	1997 12 26	132	0.3+	0.1−	1998 11 22	138	0.1−	0.1+
1997 11 18	138	0.2−	1.0−	1997 12 26	132	0.2−	0.1−	1998 11 22	138	0.3+	0.3−
1997 11 18	138	0.8+	0.4−	1997 12 26	132	0.5−	0.2−				
1997 11 21	138	0.3+	0.5+	1997 12 29	958	0.0	0.2−				

1997 VR₇ = 1998 VU₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	191.23158	(2000.0)	P	Q
<i>n</i>	0.18461772	ω 257.09360	+0.53943362	+0.83219653
<i>a</i>	3.0545961	Ω 46.31566	−0.68728943	+0.52318803
<i>e</i>	0.0845362	<i>i</i> 10.21915	−0.48646131	+0.18363883
<i>P</i>	5.34	<i>H</i> 12.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 11 02	327	0.4+	0.2−	1997 11 19	327	0.4−	0.2+	1997 12 04	704	2.1+	0.9−
1997 11 02	327	0.2−	0.1−	1997 11 20	327	0.4−	0.2+	1997 12 04	704	0.6−	1.2−
1997 11 02	327	0.0	0.3−	1997 11 20	327	0.1−	0.6+	1997 12 04	704	2.2−	0.5−
1997 11 06	327	0.0	0.2−	1997 11 20	327	0.6−	0.2+	1998 11 15	703	0.8+	0.3+
1997 11 06	327	0.1+	0.2−	1997 11 26	704	0.6+	1.4+	1998 11 15	703	0.2+	0.3−
1997 11 06	327	0.1−	0.0	1997 11 26	704	0.3+	0.3−	1998 11 15	703	1.2+	0.2−
1997 11 19	327	0.0	0.4+	1997 11 26	704	0.1+	0.7+	1998 11 16	703	0.4−	0.1−
1997 11 19	327	0.1−	0.5+	1997 12 04	704	0.9+	0.1−	1998 11 16	703	1.7−	0.3+

1997 WO₇ = 1998 WC₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	46.90739	(2000.0)	P	Q
<i>n</i>	0.18338983	ω 34.23243	−0.04954607	−0.98606817
<i>a</i>	3.0682157	Ω 59.08598	+0.86994590	−0.12070961
<i>e</i>	0.0721102	<i>i</i> 10.66608	+0.49065193	+0.11444983
<i>P</i>	5.37	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 11 19	905	1.1+	1.2−	1997 11 30	566	0.2−	0.7+	1997 12 24	905	0.0	0.1+
1997 11 19	905	0.3−	0.4+	1997 12 02	886	1.8−	0.2+	1998 01 19	385	0.3−	0.2−
1997 11 23	905	0.4−	0.3−	1997 12 02	886	0.8−	2.8−	1998 01 19	385	0.2+	0.4−
1997 11 23	905	0.2−	1.8−	1997 12 04	704	0.0	0.1−	1998 11 28	327	0.1+	0.1−
1997 11 29	704	0.1+	0.7−	1997 12 04	704	0.7+	0.6+	1998 11 28	327	0.1+	0.4−
1997 11 29	704	0.0	0.7−	1997 12 04	704	0.3+	1.1+	1998 11 28	327	0.0	0.2−
1997 11 29	704	0.6+	0.5+	1997 12 04	704	1.0+	0.7+	1998 11 28	327	0.2−	0.4−

1997 11 29	704	0.6+	0.1+	1997 12 04	704	0.4+	0.1−	1998 12 01	327	0.2−	0.4+
1997 11 29	704	0.9−	1.8+	1997 12 18	905	0.6−	0.2−	1998 12 01	327	0.1−	0.4+
1997 11 30	566	0.4−	0.9+	1997 12 18	905	1.7+	0.8+	1998 12 01	327	0.2+	0.2+
1997 11 30	566	0.1−	0.8+	1997 12 24	905	0.7−	0.2−				

1997 WQ₉ = 1982 UB₄ = 1993 RB₉

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	102.58595		(2000.0)	P	Q
<i>n</i>	0.26758864	ω	254.94398	+0.29770762	−0.95465581
<i>a</i>	2.3850140	Ω	177.73424	+0.89041303	+0.27708043
<i>e</i>	0.1774481	<i>i</i>	2.27346	+0.34428884	+0.10889777
<i>P</i>	3.68	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1982 10 19	033	(5.1+	6.4−)	1997 10 30	566	0.9+	0.0	1997 11 29	704	0.7+	0.5+
1982 10 19	033	0.3+	0.7−	1997 10 30	566	0.3+	0.2−	1997 11 29	704	1.0+	0.9+
1984 03 29	413	0.7−	0.7+	1997 11 21	691	1.1−	0.1−	1997 12 04	704	(2.3+	0.8−)
1984 03 29	413	0.5+	1.4−	1997 11 21	691	0.8−	0.2−	1997 12 04	704	(2.3+	0.2−)
1993 09 14	809	(1.1+	4.9+)	1997 11 21	691	0.8−	0.1+	1997 12 04	704	(2.7+	0.7+)
1993 09 14	809	(0.0	5.1+)	1997 11 28	691	0.4−	0.0	1997 12 04	704	1.8+	0.6−
1993 09 14	809	(0.8+	4.1+)	1997 11 28	691	0.5−	0.3−	1997 12 04	704	(2.0+	0.1−)
1993 09 19	809	0.6+	0.2−	1997 11 28	691	0.4−	0.1−	1998 01 26	691	1.1−	0.6−
1993 09 19	809	0.6−	0.3−	1997 11 29	704	0.2+	0.3−	1998 01 26	691	1.1−	0.2−
1993 09 19	809	0.4−	0.3+	1997 11 29	704	0.3+	1.3+	1998 01 26	691	1.0−	0.6−
1997 10 30	566	0.0	0.3−	1997 11 29	704	1.1+	0.4+				

1997 WU₃₅ = 1984 BF₇ = 1991 PL₇ = 1996 PZ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	298.91767		(2000.0)	P	Q
<i>n</i>	0.20125040	ω	213.20950	−0.85217858	+0.52325042
<i>a</i>	2.8838868	Ω	358.34039	−0.47371252	−0.77216179
<i>e</i>	0.0119294	<i>i</i>	1.61793	−0.22223437	−0.36052070
<i>P</i>	4.90	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1984 01 25	675	0.1+	0.4+	1996 08 14	566	0.2+	0.2−	1997 11 29	704	0.3−	0.6−
1984 01 26	675	0.0	0.1−	1996 08 14	566	0.3+	0.4−	1997 11 29	704	0.0	1.1+
1991 08 06	809	0.6−	0.4+	1996 08 15	566	0.4+	0.2−	1997 11 29	704	0.7+	0.7−
1991 08 06	809	1.3−	1.3+	1996 08 15	566	0.1+	0.9−	1997 11 29	704	0.3−	1.3−
1991 08 06	809	0.9−	1.5+	1996 08 15	566	0.1−	0.4−	1997 12 04	704	1.5−	1.2−
1991 08 14	809	0.6+	0.6−	1997 11 26	704	(3.1−	0.9+)	1997 12 04	704	0.5+	1.3+
1991 08 14	809	0.3−	0.0	1997 11 26	704	0.5−	0.6+	1997 12 04	704	0.4+	0.1−
1991 08 14	809	1.4+	0.2+	1997 11 26	704	(2.9−	0.8−)	1997 12 04	704	0.2−	0.8+
1996 08 14	566	0.3+	0.5−	1997 11 29	704	0.8+	0.4−	1997 12 04	704	0.6+	1.1+

1997 WR₃₈ = 1993 OG₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	210.76539		(2000.0)	P	Q
<i>n</i>	0.29034277	ω	21.88820	+0.73626538	+0.67393712
<i>a</i>	2.2587181	Ω	295.59129	−0.63045336	+0.65040676
<i>e</i>	0.1794543	<i>i</i>	3.87871	−0.24584923	+0.35039950
<i>P</i>	3.39	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 07 13	809	0.0	0.1+	1997 11 26	704	1.4−	1.1−	1997 11 30	566	1.2+	0.3+
1993 07 13	809	0.0	0.0	1997 11 26	704	1.3−	0.4−	1997 11 30	566	1.1+	0.7+
1993 07 13	809	0.5−	0.4−	1997 11 26	704	(2.7−	0.3−)	1997 11 30	566	0.6+	0.5+
1993 07 20	809	0.4+	0.4+	1997 11 29	704	1.0−	0.1−	1997 12 04	704	(3.0+	0.6+)
1993 07 20	809	0.2−	0.1+	1997 11 29	704	0.4+	0.2−	1997 12 04	704	(0.5+	2.5−)
1993 07 20	809	0.1+	0.1+	1997 11 29	704	1.2+	0.3+	1997 12 04	704	1.5−	0.4−
1993 07 24	809	0.3−	0.4−	1997 11 29	704	0.3−	0.4+	1997 12 04	704	0.9+	0.0

1998 BK₉ = 1993 FH₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	26.27813		(2000.0)	P	Q
<i>n</i>	0.18619519	ω	343.89601	−0.97180076	+0.23490196
<i>a</i>	3.0373190	Ω	209.71409	−0.21150128	−0.90694001
<i>e</i>	0.1766056	<i>i</i>	2.38186	−0.10426164	−0.34968685
<i>P</i>	5.29	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 7

Residuals in seconds of arc

1993 03 24	691	0.3−	0.6−	1993 03 25	691	0.1+	0.5+	1998 01 25	566	0.1−	0.5−
1993 03 24	691	0.2+	0.1−	1998 01 24	566	0.3−	0.5+	1998 01 25	566	0.3+	0.8−
1993 03 24	691	0.1+	0.0	1998 01 24	566	0.2−	0.2+	1998 01 29	566	0.0	0.6+
1993 03 25	691	0.2−	0.3+	1998 01 24	566	0.4−	0.2+	1998 01 29	566	0.0	0.3+
1993 03 25	691	0.0	0.1−	1998 01 25	566	0.1+	0.9−	1998 01 29	566	0.2+	0.5+

1998 DE₉ = 9543 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	58.22756		(2000.0)	P	Q
<i>n</i>	0.17091151	ω	155.71961	−0.97750710	−0.20317061
<i>a</i>	3.2157961	Ω	12.94513	+0.12709518	−0.78157432
<i>e</i>	0.0116023	<i>i</i>	14.63024	+0.16830534	−0.58979937
<i>P</i>	5.77	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1960 10 17	675	0.2+	1.1+	1998 02 23	566	0.2+	0.2−	1998 03 25	704	0.1+	0.3+
1960 10 22	675	1.8−	0.2+	1998 02 23	566	0.0	0.3−	1998 03 25	704	0.5+	0.3+
1960 10 24	675	0.7+	0.9−	1998 02 23	566	0.4−	0.1+	1998 03 25	704	0.5−	0.3−
1960 10 26	675	0.6+	0.2−	1998 03 24	704	0.1−	0.3−	1998 03 25	704	0.4+	0.9+
1998 02 22	566	0.2+	0.1+	1998 03 24	704	0.4+	0.7+	1998 03 25	704	0.7+	1.0+
1998 02 22	566	0.1+	0.1−	1998 03 24	704	0.2−	1.1−				
1998 02 22	566	0.3−	0.3+	1998 03 24	704	1.0−	1.1−				

1998 DD₃₆ = 1983 HA₁ = 1987 HU₂ = 1992 UB₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	24.32047		(2000.0)	P	Q
<i>n</i>	0.25815225	ω	188.58593	−0.66948737	+0.73973580
<i>a</i>	2.4427861	Ω	39.42816	−0.67504468	−0.56785995
<i>e</i>	0.1878557	<i>i</i>	6.11530	−0.31000216	−0.36100696
<i>P</i>	3.82	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1983 04 09	095	(1.1+	4.8+)	1998 02 26	566	0.1+	1.0−	1998 03 03	704	0.5−	0.3+
1983 04 18	688	1.2−	2.2−	1998 02 26	566	0.3−	0.7−	1998 03 03	372	0.5−	2.0+
1983 04 18	688	0.9+	0.6−	1998 02 26	566	0.3+	1.1−	1998 03 04	704	0.5−	0.2−
1987 04 21	675	0.3+	0.7+	1998 02 28	372	(0.5−	2.4+)	1998 03 04	704	0.0	0.7+
1987 04 21	675	0.7+	1.0+	1998 02 28	372	1.4−	1.3+	1998 03 04	704	0.6−	0.5+
1992 10 20	691	0.4+	0.5+	1998 03 02	372	0.1+	0.4−	1998 03 04	704	0.4+	1.0+
1992 10 20	691	0.1+	0.3+	1998 03 03	704	0.1+	0.6+	1998 03 04	704	0.6+	0.3+
1992 10 20	691	0.1+	0.4+	1998 03 03	704	0.0	0.0	1998 03 05	372	0.2−	1.2−
1992 10 23	010	0.5+	0.7−	1998 03 03	704	0.1+	0.0				
1992 10 23	010	1.3−	0.5−	1998 03 03	704	0.1−	0.1+				

1998 EU₈ = 1996 TU₂₃

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	100.74870		(2000.0)	P	Q
<i>n</i>	0.26737234	ω	176.37258	−0.88558550	−0.46442100
<i>a</i>	2.3863001	Ω	335.95059	+0.42570458	−0.80538858
<i>e</i>	0.1127636	<i>i</i>	1.00849	+0.18577923	−0.36832372
<i>P</i>	3.69	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 10 06	691	0.4+	0.1+	1998 03 05	327	0.4−	0.1−	1998 03 29	704	1.5+	0.2−
1996 10 06	691	0.0	0.1−	1998 03 05	327	0.4−	0.1+	1998 03 29	704	0.1+	2.0−

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1996 10 06	691	0.3+	0.2-	1998 03 08	327	0.0	0.4+	1998 03 29	704	1.7-	1.9-
1996 10 16	691	0.3-	0.2+	1998 03 08	327	0.0	0.3-	1998 04 01	704	0.3+	0.0
1996 10 16	691	0.4-	0.1+	1998 03 08	327	0.3+	0.5-	1998 04 01	704	1.9-	1.9+
1998 03 05	327	0.1+	0.3+	1998 03 29	704	0.5+	1.3+	1998 04 01	704	1.7+	1.0+

1998 FS₁₃ = 1993 VE₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	138.49821		(2000.0)	$\mathbf{P}$		$\mathbf{Q}$	
n	0.28562882	ω	43.03896	-0.23062228		-0.96794592	
a	2.2835018	Ω	60.52398	+0.85885936		-0.25054116	
e	0.1313110	i	6.56084	+0.45735540		-0.01760181	
P	3.45	H	15.5	G	0.15	U	5

Residuals in seconds of arc

1993 11 11	399	0.0	0.0	1998 03 24	704	0.3-	0.4-	1998 03 25	704	0.5-	0.5+
1993 11 11	399	0.4+	0.2-	1998 03 24	704	0.8+	0.3+	1998 03 26	566	0.5+	0.0
1993 11 16	399	(3.5-	1.7+)	1998 03 24	704	0.4-	1.2-	1998 03 26	566	0.5+	0.1-
1993 11 16	399	(3.2-	1.7+)	1998 03 25	704	0.3-	0.3-	1998 03 26	566	0.5+	0.2+
1993 11 22	399	0.7-	0.4+	1998 03 25	704	0.4-	0.1+	1998 03 27	566	0.2-	0.3+
1993 11 22	399	0.2+	0.3-	1998 03 25	704	0.7-	0.4+	1998 03 27	566	0.2+	0.1-
1998 03 24	704	0.3-	0.2-	1998 03 25	704	0.5+	0.6+	1998 03 27	566	0.1-	0.0

1998 FB₁₄ = 1990 OY₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	332.36107		(2000.0)	$\mathbf{P}$		$\mathbf{Q}$	
n	0.22087398	ω	127.75612	+0.43434489		+0.89962603	
a	2.7104393	Ω	167.74599	-0.87859096		+0.43412619	
e	0.2068495	i	12.21765	-0.19855085		+0.04698357	
P	4.46	H	14.5	G	0.15	U	4

Residuals in seconds of arc

1990 07 25	675	0.7-	1.1+	1998 03 24	704	0.2+	0.7-	1998 03 28	704	1.7+	0.9-
1990 07 25	675	0.6-	0.7-	1998 03 24	704	0.2-	0.1+	1998 03 28	704	0.9+	0.1+
1990 07 28	675	0.3+	0.2+	1998 03 24	704	0.3-	0.1-	1998 03 28	704	1.3+	0.7+
1990 07 28	675	1.3+	0.4-	1998 03 24	704	0.2-	0.0	1998 03 28	704	0.9+	0.7+
1990 07 30	675	0.4-	0.1-	1998 03 24	704	0.7-	0.5+	1998 03 29	704	(2.3+	0.8-)
1990 07 30	675	0.2-	0.1-	1998 03 24	704	0.4+	0.6-	1998 03 29	704	1.3-	0.9+
1998 03 20	704	0.5-	0.1+	1998 03 24	704	0.1-	1.4-	1998 03 29	704	0.3+	0.2+
1998 03 20	704	0.1-	0.7+	1998 03 24	704	0.3+	0.2+	1998 03 29	704	0.3+	0.7-
1998 03 20	704	1.3-	1.3+	1998 03 24	704	0.9-	0.7-	1998 03 29	704	0.3+	1.0-
1998 03 20	704	1.3-	1.0+	1998 03 25	566	0.2+	1.3-	1998 04 19	704	0.0	0.5+
1998 03 20	704	1.1-	0.3+	1998 03 25	566	0.2-	1.0-	1998 04 19	704	0.1+	0.3+
1998 03 22	704	0.3-	0.2+	1998 03 25	566	0.3+	0.9-	1998 04 19	704	(1.9-	2.0+)
1998 03 22	704	1.2+	0.3+	1998 03 26	566	(1.9-	2.7-)	1998 04 19	704	0.3-	0.0
1998 03 22	704	1.0+	0.1+	1998 03 26	566	(0.1-	4.0-)	1998 04 19	704	0.6-	0.3+
1998 03 22	704	(2.6+	0.7-)	1998 03 26	566	(1.4-	4.8-)				
1998 03 24	704	0.1+	0.1-	1998 03 28	704	0.0	1.0+				

1998 FK₇₄ = 1993 RC₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	209.76785		(2000.0)	$\mathbf{P}$		$\mathbf{Q}$	
n	0.30782231	ω	24.06127	+0.80564043		-0.59238129	
a	2.1723810	Ω	12.26917	+0.53941039		+0.72985564	
e	0.1259053	i	1.42421	+0.24490799		+0.34116733	
P	3.20	H	17.0	G	0.15	U	5

Residuals in seconds of arc

1993 09 15	809	1.4+	0.2-	1998 03 21	621	0.1-	0.3-	1998 03 23	621	0.6-	0.5+
1993 09 15	809	0.5-	1.4-	1998 03 21	621	0.1+	0.2+	1998 03 24	621	1.5+	0.7+
1993 09 15	809	0.3-	0.9+	1998 03 23	621	1.2+	0.4-	1998 03 24	621	0.8-	0.4-
1993 09 22	809	0.3+	0.5+	1998 03 23	621	0.1-	0.3+	1998 03 24	621	0.7+	0.2-
1993 09 22	809	(3.2-	0.0)	1998 03 23	621	1.2-	0.0	1998 03 25	621	0.4+	0.1-
1993 09 22	809	0.8-	0.0	1998 03 23	621	0.5+	0.3+	1998 03 25	621	0.6+	0.3+
1998 03 21	621	0.0	0.3-	1998 03 23	621	0.9-	0.8-	1998 03 25	621	0.9-	0.1-

1998 FU₁₁₆ = 1990 TX₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	205.01880		(2000.0)	P	Q
n	0.18519376	ω	165.59808	+0.70640769	-0.69410512
a	3.0482587	Ω	239.23158	+0.63239736	+0.70687260
e	0.1098119	i	9.28175	+0.31790212	+0.13619548
P	5.32	H	13.5	G 0.15	U 6

Residuals in seconds of arc

1990 10 14	033	0.1-	0.5-	1998 03 25	699	1.1+	0.5+	1998 04 01	704	0.2-	0.4+
1990 10 15	033	0.3-	0.1-	1998 03 25	699	0.7+	0.1-	1998 04 01	704	0.2+	0.4+
1990 10 15	033	0.0	0.1+	1998 03 31	704	0.3-	0.7-	1998 04 01	704	0.3+	0.0
1990 10 18	033	1.1+	0.5+	1998 03 31	704	1.1+	1.3-	1998 04 01	704	0.8-	0.1-
1990 10 18	033	0.7-	0.1-	1998 03 31	704	0.9-	0.6+	1998 04 01	704	0.8-	0.5-
1998 03 25	699	0.9+	0.1+	1998 03 31	704	1.4-	0.8+				

1998 HX₃₈ = 1993 FT₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	116.98559		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.20351636	ω	117.89351	-0.58043398	-0.81429199
a	2.8624407	Ω	7.59343	+0.73319524	-0.52527651
e	0.1700267	i	2.16615	+0.35428963	-0.24700837
P	4.84	H	15.0	G	0.15
				U	7

Residuals in seconds of arc

1993 03 19	809	0.0	0.0	1998 04 20	704	1.4-	0.6+	1998 04 21	704	0.6-	0.1-
1993 03 20	809	0.4+	0.2+	1998 04 20	704	0.1+	0.1-	1998 04 22	704	0.4+	0.0
1993 03 24	809	0.3-	0.2-	1998 04 21	704	0.7+	0.4+	1998 04 22	704	0.0	0.2+
1998 04 20	704	0.8-	0.2+	1998 04 21	704	(1.5-	2.8+)	1998 04 22	704	0.8+	0.4+
1998 04 20	704	0.0	1.2-	1998 04 21	704	0.7+	0.2+	1998 04 22	704	0.0	0.5+
1998 04 20	704	(1.6+	3.0+)	1998 04 21	704	0.1+	0.6-				

1998 HT₅₀ = 2681 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	126.04524		(2000.0)	P	Q
n	0.22262704	ω	110.67553	-0.62868093	-0.77415010
a	2.6961917	Ω	18.86863	+0.60107819	-0.54397357
e	0.1292863	i	13.19791	+0.49342203	-0.32370415
P	4.43	H	14.5	G	0.15
				U	4

Residuals in seconds of arc

1960 09 24	675	0.1-	0.4-	1998 03 25	704	0.0	1.0-	1998 04 21	704	0.5-	0.6+
1960 09 26	675	0.7-	0.9-	1998 03 25	704	0.5+	0.4+	1998 04 21	704	0.7+	0.0
1960 09 28	675	0.7-	0.4-	1998 03 25	704	0.4-	1.4+	1998 04 21	704	0.5+	0.0
1960 09 29	675	0.2+	0.6-	1998 03 29	704	0.6+	0.7-	1998 04 21	704	0.5-	0.7-
1960 10 17	675	0.4+	0.7+	1998 03 29	704	0.2-	0.5-	1998 04 21	704	0.5-	0.8-
1960 10 22	675	0.6+	1.2+	1998 03 29	704	0.2+	1.8-	1998 04 22	704	0.2+	0.0
1960 10 25	675	0.2-	0.3+	1998 03 29	704	0.4+	0.4-	1998 04 22	704	0.3-	0.5-
1960 10 26	675	0.2+	0.4+	1998 03 29	704	0.3+	0.8+	1998 04 22	704	0.8-	0.1+
1998 02 27	910	(11.2+	9.9+)	1998 04 01	704	0.3+	0.1+	1998 04 22	704	0.4-	0.5+
1998 02 27	910	0.2-	0.8+	1998 04 01	704	0.8+	0.4-	1998 04 22	704	0.2-	0.1-
1998 02 27	910	(10.2-	10.1-)	1998 04 01	704	1.8-	1.0-	1998 04 25	699	0.9-	0.2+
1998 02 28	910	0.0	0.4+	1998 04 01	704	1.2+	1.3-	1998 04 25	699	0.1-	0.7+
1998 02 28	910	0.4-	0.7+	1998 04 01	704	0.0	0.9-	1998 04 25	699	0.8-	0.6+
1998 02 28	910	0.3-	0.7+	1998 04 04	699	0.5+	0.4-	1998 04 30	699	0.7+	0.2+
1998 03 25	704	0.5-	0.2-	1998 04 04	699	1.1+	0.9+	1998 04 30	699	0.2+	1.8+
1998 03 25	704	0.4+	0.5-	1998 04 04	699	0.4+	0.1-	1998 04 30	699	0.1-	1.0+

1998 QV₁₇ = 1977 RH₁₄ = 1997 GO₂₆

Id. S. Nakano, A. Doppler

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Nakano

<i>M</i>	68.98330		(2000.0)		P		Q
<i>n</i>	0.27916774	ω	108.27046		+0.45522256		+0.89032023
<i>a</i>	2.3186004	Ω	188.82919		−0.83977684		+0.42554916
<i>e</i>	0.1016864	<i>i</i>	3.77841		−0.29588390		+0.16198086
<i>P</i>	3.53	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 09 09	675	0.7−	1.4−	1997 04 13	691	0.1+	0.0	1998 08 23	704	0.2−	1.0+
1977 09 10	675	1.0+	0.6+	1998 08 17	704	0.2−	0.9−	1998 08 23	704	0.6+	0.3−
1997 04 07	691	0.4−	0.1+	1998 08 17	704	1.4−	1.1+	1998 08 23	704	0.2−	0.1+
1997 04 07	691	0.2−	0.4−	1998 08 17	704	0.9+	0.1−	1998 08 31	327	0.4+	0.4−
1997 04 07	691	0.6−	0.2−	1998 08 17	704	0.1+	0.4−	1998 08 31	327	0.1+	0.1+
1997 04 13	691	0.4+	0.3−	1998 08 17	704	1.1−	0.5−	1998 08 31	327	0.5+	0.3+
1997 04 13	691	0.3+	0.2−	1998 08 23	704	0.6+	0.0				

1998 QN₅₅ = 1977 UP₅ = 1994 LG

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Williams

M	79.37934		(2000.0)		P		Q
n	0.28197933	ω	120.94665		+0.62797870		+0.77815361
a	2.3031623	Ω	187.98177		-0.73819725		+0.59116439
e	0.2754101	i	4.51945		-0.24638907		+0.21213588
P	3.50	H	15.4	G	0.15	U	2

Residuals in seconds of arc

1977 10 18	675	0.1-	0.8+	1994 06 07	560	1.4-	1.4+	1998 11 10	704	0.3+	1.0+
1977 10 19	675	0.3-	0.8+	1998 08 26	910	0.1-	0.2-	1998 11 10	704	1.2-	0.4-
1994 06 05	560	0.1-	0.9+	1998 08 26	910	0.1+	0.4-	1998 11 10	704	1.4+	1.0-
1994 06 05	560	0.5-	0.6-	1998 08 26	910	0.5+	0.5-	1998 11 10	704	0.2-	0.3+
1994 06 05	560	(1.4+	2.5-)	1998 08 31	910	0.4-	0.8-	1998 11 11	704	0.6-	0.9+
1994 06 06	560	0.4+	0.7-	1998 08 31	910	0.3-	0.8-	1998 11 11	704	1.2+	0.5-
1994 06 06	560	0.2+	0.4-	1998 08 31	910	0.3-	0.9-	1998 11 11	704	0.0	0.9-
1994 06 06	560	0.7+	1.5-	1998 10 14	699	0.0	0.9+	1998 11 11	704	0.3-	1.0-
1994 06 07	560	0.4+	1.1+	1998 10 14	699	0.4-	0.7+				
1994 06 07	560	0.4+	0.6+	1998 10 14	699	0.3+	1.8+				

1998 QS₅₅ = 1993 SX₇

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Williams

<i>M</i>	44.17052		(2000.0)		P		Q
<i>n</i>	0.20720848	ω	181.56652	+0.99179730		−0.12775545	
<i>a</i>	2.8283362	Ω	185.77817	+0.11770971		+0.92532753	
<i>e</i>	0.0693500	<i>i</i>	2.32399	+0.04982516		+0.35699791	
<i>P</i>	4.76	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1983 10 08	413	0.4−	0.7+	1993 09 24	809	0.4−	0.6+	1998 10 20	699	0.2−	0.1−
1983 10 08	413	0.0	0.4+	1993 09 24	809	(2.6−	1.6+)	1998 10 20	699	0.3−	1.1+
1993 09 17	809	1.6+	0.6+	1998 08 26	910	0.4+	0.6−	1998 11 10	704	0.5−	0.6−
1993 09 17	809	1.2+	0.5+	1998 08 26	910	0.4+	0.7−	1998 11 10	704	0.2−	0.2−
1993 09 17	809	0.4−	1.0+	1998 08 26	910	0.2+	0.6−	1998 11 10	704	0.5+	0.2−
1993 09 18	809	0.7+	0.5−	1998 08 31	910	0.5−	0.3+	1998 11 10	704	1.5+	0.2+
1993 09 18	809	0.1+	0.1+	1998 08 31	910	0.4−	0.1+	1998 11 11	704	0.2−	0.2+
1993 09 18	809	0.5−	0.7−	1998 08 31	910	0.5−	0.2+	1998 11 11	704	0.4+	0.4+
1993 09 22	809	(0.5+	2.3−)	1998 10 14	699	0.5−	0.2−	1998 11 11	704	0.4+	0.2−
1993 09 22	809	1.2−	1.4−	1998 10 14	699	0.2−	0.7+	1998 11 11	704	0.1−	0.0
1993 09 22	809	1.9−	1.5−	1998 10 14	699	0.4−	0.4+	1998 11 11	704	0.5−	0.6+
1993 09 24	809	1.3+	0.1+	1998 10 20	699	0.1+	0.1−				

1998 QT₅₅ = 1994 LK₃ = 1997 GR₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	116.85757		(2000.0)			P		Q			
n	0.29693204	ω	245.26822			+0.28054623		+0.95954274			
a	2.2251776	Ω	41.04819			−0.86696095		+0.26400923			
e	0.1656908	i	2.08631			−0.41191325		+0.09786139			
P	3.32	H	15.5			G	0.15	U	2		

Residuals in seconds of arc

1994 06 03	809	0.4−	0.3+	1997 04 16	691	0.5+	0.4+	1998 10 20	327	0.4−	0.4+
1994 06 03	809	0.1+	0.1+	1997 04 16	691	0.3+	0.3+	1998 11 10	704	0.8−	0.9+
1994 06 03	809	0.8−	0.1+	1998 08 26	910	0.8+	0.6−	1998 11 10	704	0.8−	0.6+
1994 06 04	809	0.8+	0.9+	1998 08 26	910	1.1+	0.6−	1998 11 10	704	0.1−	1.6+
1994 06 04	809	0.3+	0.8+	1998 08 26	910	0.7+	0.6−	1998 11 10	704	(1.9+	2.3+)
1994 06 04	809	0.6+	1.1+	1998 08 31	910	0.4−	0.3−	1998 11 11	704	1.6−	1.3+
1997 04 13	691	0.1+	0.4+	1998 08 31	910	0.2−	0.0	1998 11 11	704	0.3+	1.7+
1997 04 13	691	0.0	0.6+	1998 08 31	910	0.5−	0.1−	1998 11 11	704	0.4+	0.8+
1997 04 13	691	0.2−	0.5+	1998 10 20	327	0.2−	0.0	1998 11 11	704	(2.8−	0.3+)
1997 04 16	691	0.5+	0.3+	1998 10 20	327	0.0	0.1−				

1998 QW₈₅ = 1987 QP₄ = 1987 SO₂₆

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	48.29233		(2000.0)		P		Q
<i>n</i>	0.26633473	ω	100.30146		+0.86597283		+0.49220237
<i>a</i>	2.3924940	Ω	230.27318		−0.49194058		+0.80661047
<i>e</i>	0.1406330	<i>i</i>	6.60579		−0.08991957		+0.32728638
<i>P</i>	3.70	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 08 31	010	0.1+	0.9−	1998 08 27	704	0.3+	0.1−	1998 09 19	704	0.4−	0.6−
1987 08 31	010	0.2+	1.0−	1998 08 27	704	0.3−	0.4+	1998 09 19	704	0.2−	0.6−
1987 08 31	010	0.1−	1.1−	1998 08 27	704	0.5−	0.5−	1998 09 19	704	0.0	0.7−
1987 09 26	095	0.4−	3.3+	1998 08 27	704	0.6+	0.1+	1998 09 19	704	0.1−	0.1+
1998 08 24	704	0.1+	0.1−	1998 08 27	704	0.2+	0.2−	1998 09 23	704	0.1+	0.3−
1998 08 24	704	0.1−	0.4+	1998 08 30	699	0.4+	0.5+	1998 09 23	704	0.1+	0.4−
1998 08 24	704	0.6−	0.8+	1998 08 30	699	0.4+	0.3+	1998 09 23	704	0.5+	0.4+
1998 08 24	704	0.1−	0.8+	1998 08 30	699	0.5+	0.1+	1998 09 23	704	0.2−	0.8−
1998 08 24	704	0.5−	1.3+	1998 09 19	704	0.4−	1.0−	1998 09 23	704	0.4+	0.2−

1998 QV₉₁ = 1998 TX₃₂ = 1976 UW₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	19.49693		(2000.0)		P		Q
n	0.26910395	ω	224.32763		+0.77116938		−0.63662147
a	2.3760523	Ω	175.20925		+0.59452523		+0.71830395
e	0.2091941	i	2.26349		+0.22767856		+0.28062881
P	3.66	H	15.3	G	0.15	U	3

Residuals in seconds of arc

1976 10 22	381	0.3−	0.6+	1998 08 31	704	1.4−	1.5+	1998 11 10	704	0.3+	0.0
1976 10 22	381	0.4−	0.4+	1998 09 14	699	1.2−	0.3−	1998 11 10	704	0.4+	0.0
1976 10 24	381	0.0	1.0+	1998 09 14	699	0.4−	0.1+	1998 11 10	704	0.1+	0.2−
1998 08 28	704	0.1+	1.7−	1998 09 14	699	0.1+	0.9+	1998 11 10	704	(2.4−	0.2−)
1998 08 28	704	1.1+	0.6−	1998 10 14	699	0.2+	0.4−	1998 11 11	704	0.4+	0.1−
1998 08 28	704	1.9+	1.3−	1998 10 14	699	0.4+	0.1−	1998 11 11	704	1.7+	0.1−
1998 08 28	704	(1.0+	2.6−)	1998 10 14	699	1.0−	0.4−	1998 11 11	704	0.5+	0.7−
1998 08 31	704	1.6−	1.0+	1998 10 20	699	1.1−	0.4+	1998 11 11	704	0.9+	0.5−
1998 08 31	704	0.7+	1.0−	1998 10 20	699	1.4−	0.4+	1998 11 11	704	0.2+	0.2−
1998 08 31	704	1.7+	0.1+	1998 10 20	699	1.1−	0.7+				

1998 QL₉₂ = 1954 UY = 1976 UR₂ = 1985 DD₃ = 1987 UV₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	20.73897		(2000.0)		P		Q
<i>n</i>	0.26947944	ω	226.28806	+0.71895460			-0.69505565
<i>a</i>	2.3738447	Ω	177.74225	+0.64739071			+0.66892237
<i>e</i>	0.2127697	<i>i</i>	2.01613	+0.25296155			+0.26351567
<i>P</i>	3.66	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1954 10 22	760	1.4+	1.7-	1998 08 26	910	0.3+	0.8-	1998 11 10	704	0.7-	0.3+
1954 10 22	760	1.5-	1.4+	1998 08 28	704	0.5+	0.3+	1998 11 10	704	0.0	0.1+
1976 10 26	095	2.4+	0.3-	1998 08 28	704	0.1+	0.6+	1998 11 10	704	0.4-	0.5+
1985 02 24	675	(1.2- 3.8-)		1998 08 28	704	0.8-	0.2-	1998 11 10	704	0.5+	0.5-
1985 02 24	675	(1.5+ 4.8-)		1998 08 28	704	1.4+	0.7-	1998 11 11	704	0.2+	0.1+
1985 02 27	675	(10.6+ 1.9-)		1998 08 31	704	1.0-	1.1+	1998 11 11	704	0.4+	0.6+
1985 02 27	675	(14.3+ 3.2-)		1998 08 31	704	0.1-	0.8+	1998 11 11	704	0.3+	0.0
1987 10 22	095	3.1-	2.6-	1998 08 31	704	0.2+	0.6+	1998 11 11	704	0.0	0.3+
1987 10 27	095	(1.6+ 3.7-)		1998 08 31	704	0.3-	1.9+	1998 11 11	704	0.2-	0.4-
1998 08 26	910	0.1+	0.8-	1998 08 31	704	0.3+	0.4+				
1998 08 26	910	0.2+	0.9-	1998 11 10	704	0.3+	0.8+				

1998 QM₉₂ = 1981 NF₁ = 1994 WW₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	32.80176		(2000.0)		P		Q
<i>n</i>	0.23897795	ω	101.32996	+0.92498253			-0.37489905
<i>a</i>	2.5717623	Ω	280.71198	+0.31932768			+0.85542979
<i>e</i>	0.2522712	<i>i</i>	3.62434	+0.20600277			+0.35733819
<i>P</i>	4.12	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 07 02	805	(0.6+ 3.8+)		1998 08 28	704	0.5-	1.5-	1998 11 10	704	0.2-	1.0+
1981 07 02	805	0.2-	0.7+	1998 08 28	704	0.3+	1.0-	1998 11 10	704	0.5-	1.6+
1994 11 27	010	0.1+	1.0+	1998 08 31	704	0.5-	0.1-	1998 11 10	699	0.5-	0.1-
1994 11 27	010	0.1-	0.6+	1998 08 31	704	0.3+	0.7+	1998 11 10	704	0.5+	1.0+
1994 11 28	010	0.0	0.9+	1998 08 31	704	0.1+	0.9+	1998 11 10	699	0.1-	0.1+
1994 11 28	010	(1.4+ 3.7+)		1998 08 31	704	0.5-	2.0+	1998 11 11	704	0.3+	0.8-
1994 11 28	010	(0.7+ 2.9+)		1998 08 31	704	0.6+	1.1+	1998 11 11	704	0.0	0.8-
1994 11 29	010	(1.2+ 3.2+)		1998 11 10	704	0.3-	0.4+	1998 11 11	704	0.4+	1.7-
1998 08 28	704	0.1-	0.3+	1998 11 10	699	0.3-	0.0	1998 11 11	704	0.6+	1.6-
1998 08 28	704	0.1+	1.4-	1998 11 10	704	0.3-	0.1+	1998 11 11	704	1.0+	1.7-

1998 QO₉₂ = 1996 CC₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	9.29483		(2000.0)		P		Q
<i>n</i>	0.28004658	ω	263.36325	+0.51927154			-0.85442757
<i>a</i>	2.3137470	Ω	155.32856	+0.79982597			+0.47861662
<i>e</i>	0.1183278	<i>i</i>	2.41979	+0.30105729			+0.20218719
<i>P</i>	3.52	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 02 10	327	0.1-	0.3+	1998 08 28	704	0.1+	0.9-	1998 11 10	704	0.0	0.1-
1996 02 10	327	0.1-	0.2+	1998 08 28	704	0.2-	0.0	1998 11 10	704	0.0	1.0-
1996 02 10	327	0.1+	0.4+	1998 08 31	704	0.2-	0.3+	1998 11 11	704	0.3-	0.0
1996 02 10	327	0.3+	0.3+	1998 08 31	704	2.0-	0.5+	1998 11 11	704	0.0	0.8+
1996 02 12	327	0.2-	0.6-	1998 08 31	704	0.4+	0.5-	1998 11 11	704	0.7+	0.6+
1996 02 12	327	0.0	0.5-	1998 08 31	704	0.9+	2.3-	1998 11 11	704	0.6-	0.3+
1996 02 12	327	0.0	0.4-	1998 11 10	704	0.2-	0.1+	1998 11 11	704	0.0	0.1+
1998 08 28	704	0.7+	1.6+	1998 11 10	704	0.5+	0.0				
1998 08 28	704	0.4+	0.4+	1998 11 10	704	0.0	0.3-				

1998 QU₉₂ = 1976 YW₅ = 1987 WT₃ = 1992 AD₆ = 1996 MU₁

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	39.27583		(2000.0)		P		Q
<i>n</i>	0.26591815	ω	305.79062	+0.95474061			-0.27585684
<i>a</i>	2.3949920	Ω	70.45226	+0.29645609			+0.85214587
<i>e</i>	0.1617778	<i>i</i>	6.77895	+0.02416933			+0.44469137
<i>P</i>	3.71	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1976 12 16	095	1.1+	0.9-	1998 08 28	704	0.5-	0.4+	1998 10 19	809	(2.3+ 3.3+)
1976 12 18	095	0.5-	0.3-	1998 08 28	704	0.8-	0.9+	1998 10 19	809	(2.4+ 3.4+)
1976 12 20	095	0.4-	0.5+	1998 08 28	704	0.9+	0.3-	1998 11 10	704	0.0 0.2+
1987 11 24	688	(2.2- 3.7-)		1998 08 28	704	1.6-	1.0+	1998 11 10	704	0.3+ 0.2-
1987 11 24	688	(3.0+ 0.9-)		1998 08 31	704	0.0	0.4-	1998 11 10	704	(2.3- 0.0)
1992 01 02	399	0.2+ 0.4+		1998 08 31	704	1.9-	0.1-	1998 11 10	704	0.6+ 0.8-
1992 01 02	399	0.7- 0.2+		1998 08 31	704	0.6+	1.7-	1998 11 10	704	(2.8+ 1.5-)
1996 06 19	704	0.0 1.0+		1998 08 31	704	1.4-	0.4+	1998 11 11	704	0.6- 0.5+
1996 06 19	704	0.4+ 0.6+		1998 08 31	704	1.3+	0.1-	1998 11 11	704	0.1+ 0.9+
1996 06 20	704	0.4- 0.0		1998 10 18	809	(3.1+ 3.2+)		1998 11 11	704	0.6+ 0.2-
1996 06 20	704	1.0+ 0.4+		1998 10 18	809	(3.5+ 3.4+)		1998 11 11	704	0.8+ 0.0
1996 06 20	704	(0.6+ 2.2-)		1998 10 18	809	(3.6+ 4.5+)		1998 11 11	704	0.2+ 0.2+
1998 08 28	704	0.1- 0.7+		1998 10 19	809	(3.4+ 3.0+)				

1998 QA₉₃ = 1951 CK₂ = 1953 UH = 1976 JK₄ = 1982 BG = 1984 UKId. G. V. Williams; 1998 AL₇ = 1976 JK₄ (*MPC* 31260) is invalid and 1998 AL₇ = 1994 BP₅ (*ibid.*) is therefore unsupported

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	17.24366		(2000.0)		P		Q
<i>n</i>	0.28499469	ω	11.75106	+0.61923767			-0.78395612
<i>a</i>	2.2868879	Ω	40.01110	+0.71472066			+0.53942435
<i>e</i>	0.1365867	<i>i</i>	3.94593	+0.32514470			+0.30730144
<i>P</i>	3.46	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1951 02 04	675	1.4+	1.0-	1998 08 28	704	1.7-	1.2-	1998 11 10	704	0.2+	0.6+
1951 02 04	675	1.4-	0.9-	1998 08 28	704	0.1-	0.3+	1998 11 11	704	0.1-	0.2-
1953 10 17	760	1.0-	0.6+	1998 08 31	704	0.0	0.8+	1998 11 11	704	0.1+	0.0
1953 10 17	760	(0.0 3.5-)		1998 08 31	704	0.9-	1.3+	1998 11 11	704	0.8-	1.2+
1976 05 03	809	0.3-	0.3+	1998 08 31	704	0.5+	0.5+	1998 11 11	704	0.7-	0.5+
1982 01 16	688	(0.9+ 4.5-)		1998 08 31	704	0.7-	1.2+	1998 11 11	704	0.3-	1.0+
1982 01 16	688	(1.3+ 3.6-)		1998 08 31	704	1.4+	0.7-	1998 11 16	566	0.7+	0.7-
1984 10 23	688	1.5+	0.9-	1998 10 18	699	0.2+	0.4+	1998 11 16	566	0.5+	0.5-
1984 10 23	688	0.1-	1.0-	1998 10 18	699	0.2+	0.3+	1998 11 16	566	0.8+	0.8-
1984 10 29	688	1.3+	1.5-	1998 10 18	699	0.2+	0.2+	1998 11 25	691	0.9-	0.3-
1984 10 29	688	1.3+	1.7-	1998 11 10	704	0.3+	0.1+	1998 11 25	691	0.9-	0.2-
1998 08 28	704	0.5-	0.3-	1998 11 10	704	0.1+	0.2+	1998 11 25	691	0.9-	0.1-
1998 08 28	704	0.9-	0.1-	1998 11 10	704	0.1+	0.7+				
1998 08 28	704	0.4+	0.0	1998 11 10	704	0.5+	0.4+				

1998 QR₉₃ = 1989 TY₁₁

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	31.19707		(2000.0)		P		Q
<i>n</i>	0.22433392	ω	332.95795	+0.84571600			-0.49293407
<i>a</i>	2.6824981	Ω	58.05217	+0.52274117			+0.68827391
<i>e</i>	0.1655819	<i>i</i>	13.93909	+0.10726655			+0.53225467
<i>P</i>	4.39	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 10 02	807	0.9-	0.4+	1998 10 20	699	0.5-	0.4-	1998 11 11	704	0.6+	0.7+
1989 10 04	807	0.3-	1.4+	1998 10 20	699	0.6-	0.5-	1998 11 11	704	(3.1+ 1.3-)	
1998 08 28	704	1.9+	1.1-	1998 10 20	699	0.2-	0.4-	1998 11 18	704	0.5-	0.9+
1998 08 28	704	0.3+	0.8+	1998 11 10	704	0.5+	0.9+	1998 11 18	704	0.0	0.2+
1998 08 28	704	0.7+	0.6-	1998 11 10	704	0.5+	0.6+	1998 11 18	704	0.3+	0.8-
1998 08 28	704	1.1+	1.0+	1998 11 10	704	0.4+	0.3+	1998 11 18	704	0.9-	1.6-
1998 08 31	704	0.3-	1.0-	1998 11 10	704	1.5+	1.1+	1998 11 18	704	1.2-	1.6-

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1998 08 31	704	1.2−	0.2−	1998 11 10	704	1.0+	1.1+	1998 11 21	704	0.0	0.5−
1998 08 31	704	0.7+	1.3−	1998 11 11	699	0.5+	0.3+	1998 11 21	704	0.9−	0.6−
1998 08 31	704	0.1−	0.9−	1998 11 11	704	0.0	0.2−	1998 11 21	704	0.7−	0.1−
1998 08 31	704	0.4−	0.0	1998 11 11	699	0.6+	0.4+	1998 11 21	704	1.8−	0.7+
1998 10 18	699	0.3−	0.4−	1998 11 11	704	0.1+	0.0	1998 11 21	704	(2.9−	0.8+)
1998 10 18	699	0.4−	0.4−	1998 11 11	699	0.3+	0.5+	1998 11 28	120	0.1−	0.2+
1998 10 18	699	0.4+	0.0	1998 11 11	704	0.5+	0.5+	1998 11 28	120	0.2+	0.1−

1998 QQ₁₀₄ = 1996 HE₄

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig				Williams			
P				Q			
<i>M</i>	174.65917	(2000.0)					
<i>n</i>	0.18130402	<i>ω</i>	137.50268	−0.88545436	+0.45522398		
<i>a</i>	3.0917030	<i>Ω</i>	69.79841	−0.44865457	−0.78490150		
<i>e</i>	0.0271482	<i>i</i>	5.71762	−0.12115965	−0.42035789		
<i>P</i>	5.44	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 18	691	1.0−	0.1+	1998 08 27	809	0.4+	0.8+	1998 09 26	704	0.0	0.4+
1996 04 18	691	1.0−	0.2+	1998 08 27	809	0.3+	0.2+	1998 09 26	704	0.5−	0.6−
1996 04 18	691	1.1−	0.0	1998 09 14	704	1.3−	0.7+	1998 09 26	704	0.1+	0.3−
1996 04 23	691	1.0+	0.2−	1998 09 14	704	0.7−	1.1+	1998 09 27	704	0.0	0.1−
1996 04 23	691	1.0+	0.0	1998 09 18	704	(2.3−	1.2−)	1998 09 27	704	0.5+	0.4+
1996 04 23	691	1.1+	0.2−	1998 09 18	704	(3.3−	0.1+)	1998 09 27	704	0.2−	0.9+
1998 08 26	809	0.1−	1.1−	1998 09 18	704	(3.4−	0.8+)	1998 09 27	704	0.5−	0.5−
1998 08 26	809	0.1−	1.1−	1998 09 18	704	(5.5−	0.1+)	1998 09 27	704	0.4+	1.1−
1998 08 26	809	0.2+	0.5+	1998 09 26	704	(1.4−	2.5+)				
1998 08 27	809	0.8+	0.4+	1998 09 26	704	0.9+	0.8−				

1998 QW₁₀₄ = 1992 PE₁

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Gnädig			
P				Q			
<i>M</i>	100.12068	(2000.0)					
<i>n</i>	0.17849088	<i>ω</i>	123.66656	+0.02017131	+0.99538229		
<i>a</i>	3.1241031	<i>Ω</i>	147.09967	−0.96495694	+0.04394576		
<i>e</i>	0.1150869	<i>i</i>	9.94910	−0.26163186	−0.08533977		
<i>P</i>	5.52	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 08 08	010	1.5+	0.3+	1998 08 27	809	1.3+	0.6+	1998 09 26	704	0.9+	0.6−
1992 08 08	010	0.1−	1.4+	1998 08 27	809	1.1+	0.5−	1998 09 26	704	0.3−	0.1+
1992 08 08	010	0.5−	0.4−	1998 08 27	809	0.6+	0.7−	1998 09 27	704	0.3−	1.1+
1992 08 09	010	0.7−	0.5−	1998 09 17	699	0.0	0.7+	1998 09 27	704	0.4+	0.2−
1992 08 09	010	0.1−	0.0	1998 09 17	699	0.8+	1.2+	1998 09 27	704	0.6−	0.3+
1992 08 09	010	0.1−	0.8−	1998 09 17	699	0.1−	1.6+	1998 09 27	704	0.7+	0.1+
1998 08 26	809	0.1−	0.7+	1998 09 26	704	0.6+	0.5−	1998 09 27	704	0.7−	1.0−
1998 08 26	809	1.1−	1.4−	1998 09 26	704	0.7−	1.6−				
1998 08 26	809	1.7−	0.3+	1998 09 26	704	0.7−	0.2−				

1998 RQ₅ = 1991 PL₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler				Williams			
P				Q			
<i>M</i>	76.38729	(2000.0)					
<i>n</i>	0.29274682	<i>ω</i>	308.60092	+0.78748535	+0.61632460		
<i>a</i>	2.2463354	<i>Ω</i>	13.35191	−0.56095739	+0.71893125		
<i>e</i>	0.0383315	<i>i</i>	0.81565	−0.25533043	+0.32137493		
<i>P</i>	3.37	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 08 06	809	0.6−	0.0	1998 09 15	699	0.9−	0.2+	1998 09 26	704	0.2−	1.1−
1991 08 06	809	0.7−	0.2+	1998 09 15	699	0.1−	0.3+	1998 09 26	704	0.4+	1.6−
1991 08 06	809	0.5+	1.1+	1998 09 17	699	0.3+	0.9+	1998 09 26	704	0.6+	1.6−
1991 08 14	809	0.7+	0.5−	1998 09 17	699	0.9+	0.9+	1998 09 26	704	(1.2+	2.6−)
1991 08 14	809	0.2+	0.4−	1998 09 17	699	0.1−	1.0+	1998 09 26	704	(0.5−	2.3−)
1991 08 14	809	0.2+	0.8−	1998 09 18	704	0.8−	0.9+	1998 09 27	704	0.5+	0.2−
1998 09 14	704	0.3−	0.0	1998 09 18	704	0.0	0.9+	1998 09 27	704	0.3−	0.3+

1998 DEC. 8

1998 09 14	704	0.3−	1.1−	1998 09 18	704	(0.6+	2.2+)	1998 09 27	704	0.2−	0.1+
1998 09 14	704	0.7−	0.1+	1998 09 18	704	(1.8+	1.6+)	1998 09 27	704	0.3+	0.3+
1998 09 15	699	0.0	1.3+	1998 09 18	704	(0.9−	3.5+)	1998 09 27	704	0.7+	1.4−

1998 RK₆ = 1997 LD₆

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig				Williams			
P				Q			
<i>M</i>	49.71164	(2000.0)					
<i>n</i>	0.17316468	<i>ω</i>	156.37474	+0.61251535	+0.78865680		
<i>a</i>	3.1878399	<i>Ω</i>	151.31056	−0.74179292	+0.59680718		
<i>e</i>	0.1423793	<i>i</i>	6.37962	−0.27307179	+0.14778917		
<i>P</i>	5.69	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 10	327	0.1+	0.0	1998 09 14	704	0.6−	0.2+	1998 09 18	699	0.8+	0.1+
1997 06 10	327	0.1−	0.2−	1998 09 14	704	0.6−	1.3+	1998 09 18	704	0.7−	0.8−
1997 06 10	327	0.2+	0.1+	1998 09 14	704	0.7−	0.7+	1998 09 18	699	0.3+	0.1+
1997 06 14	327	0.6+	0.1+	1998 09 14	704	0.6+	0.7+	1998 09 18	704	1.1−	0.6+
1997 06 14	327	0.7−	0.2+	1998 09 14	699	0.3−	0.1+	1998 09 18	699	0.4+	0.0
1997 06 14	327	0.2−	0.1−	1998 09 14	699	1.1−	0.2+	1998 10 14	699	0.6+	0.1−
1998 08 30	699	0.6+	0.5−	1998 09 14	699	0.1−	0.1−	1998 10 14	699	0.2+	0.8+
1998 08 30	699	0.7+	0.1−	1998 09 18	704	0.3+	0.3−	1998 10 14	699	0.0	0.1+
1998 08 30	699	0.6+	0.1−	1998 09 18	704	0.3−	1.3−				
1998 09 14	704	0.2+	0.1−	1998 09 18	704	0.2+	1.3−				

1998 RP₂₈ = 1991 GE₁₁ = 1997 JG₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Gnädig			
P				Q			
<i>M</i>	81.45693	(2000.0)					
<i>n</i>	0.17560426	<i>ω</i>	122.16674	+0.06561074	+0.99754504		
<i>a</i>	3.1582464	<i>Ω</i>	151.56458	−0.93194312	+0.07002583		
<i>e</i>	0.1412545	<i>i</i>	2.94656	−0.35661919	+0.00053159		
<i>P</i>	5.61	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 04 11	033	0.3+	0.3−	1997 05 04	809	0.4−	1.0−	1998 09 18	704	0.2−	0.6+
1991 04 11	033	0.2+	0.3−	1998 08 30	699	0.6−	0.2−	1998 09 18	704	0.5+	1.2+
1991 04 12	033	0.3−	1.2+	1998 08 30	699	0.4−	0.7+	1998 09 18	704	1.1+	0.8+
1997 05 03	809	0.1+	1.0+	1998 08 30	699	0.4+	0.3+	1998 09 18	704	2.0+	0.3+
1997 05 03	809	0.1−	0.0	1998 09 14	704	0.2+	0.4−	1998 09 26	327	0.2+	0.1−
1997 05 03	809	0.0	0.8+	1998 09 14	704	1.5−	0.3+	1998 09 26	327	0.1−	0.4−
1997 05 04	809	0.2+	0.5−	1998 09 14	704	1.2−	1.1−	1998 09 26	327	1.0−	0.7−
1997 05 04	809	0.1+	0.6−	1998 09 14	704	0.4+	1.1−				

1998 RO₄₅ = 1997 EH₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler				Williams			
P				Q			
<i>M</i>	84.11279	(2000.0)					
<i>n</i>	0.27131490	<i>ω</i>	112.54108	+0.44238935	+0.89679742		
<i>a</i>	2.3631264	<i>Ω</i>	183.73625	−0.85632946	+0.42015455		
<i>e</i>	0.0993772	<i>i</i>	5.97687	−0.26644234	+0.13865255		
<i>P</i>	3.63	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 08	809	0.9+	1.1−	1998 09 14	704	0.5−	0.2−	1998 09 26	704	1.3+	0.5−
1997 03 08	809	0.6+	0.6−	1998 09 14	704	0.2+	0.1−	1998 09 26	704	0.2+	0.1−
1997 03 08	809	0.1−	0.5−	1998 09 14	704	0.6−	1.6−	1998 09 26	704	0.9−	0.0
1997 03 09	809	0.3−	0.7+	1998 09 14	704	0.1+	0.2−	1998 09 26	704	1.1−	0.1−
1997 03 09	809	0.3−	0.7+	1998 09 18	704	1.8+	0.3+	1998 09 27	704	1.1+	0.6−
1997 03 09	809	0.8−	0.8+	1998 09 18	704	0.4−	0.5+	1998 09 27	704	0.2+	0.6+
1997 03 11	809	(3.3−	0.9+)	1998 09 18	704	0.1+	0.9+	1998 09 27	704	0.8−	0.4−
1997 03 11	809	(3.6−	0.6+)	1998 09 18	704	0.4−	1.1+	1998 09 27	704	0.4+	0.2−
1997 03 11	809	(4.1−	0.6+)	1998 09 26	704	0.3−	0.1+	1998 09 27	704	0.3−	0.6+

1998 RG₄₉ = 1985 SF₄ = 1997 EY₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	86.85208		(2000.0)	P		Q		Doppler	
<i>n</i>	0.30350772	ω	108.64183	+0.38989733	+0.92084976				
<i>a</i>	2.1929205	Ω	184.31248	-0.86354453	+0.36412778				
<i>e</i>	0.1462132	<i>i</i>	3.03021	-0.31979825	+0.13945138				
<i>P</i>	3.25	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1985 09 20	095	0.8-	2.2+	1998 09 14	704	0.7+	0.4+	1998 09 26	704	0.2+	0.5-
1997 03 03	691	0.1+	0.2-	1998 09 14	704	0.2-	0.3+	1998 09 26	704	0.2-	0.8-
1997 03 03	691	0.3+	0.2-	1998 09 14	704	0.3+	0.6+	1998 09 26	704	1.0-	1.4-
1997 03 03	691	0.2+	0.1-	1998 09 18	704	0.3+	0.2+	1998 09 26	704	0.7-	0.9-
1997 03 11	691	0.1+	0.4+	1998 09 18	704	0.5-	0.0	1998 09 27	704	0.3+	0.2+
1997 03 11	691	0.2-	0.4+	1998 09 18	704	0.1-	0.1-	1998 09 27	704	1.1+	0.8+
1997 03 11	691	0.3-	0.3+	1998 09 18	704	0.7+	0.5-	1998 09 27	704	0.1-	0.1-
1998 09 14	704	0.1+	0.0	1998 09 18	704	0.4-	0.3+	1998 09 27	704	0.1+	0.1-
1998 09 14	704	0.3+	0.2-	1998 09 26	704	0.0	0.2-	1998 09 27	704	0.4-	0.3+

**1998 RK₄₉ = 1951 YT₂ = 1971 TH₃ = 1981 RF₄ = 1988 VT₁₂
= 1991 PY₉**

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	345.53980		(2000.0)	P		Q		Doppler	
<i>n</i>	0.29098413	ω	254.28858	+0.43922108	-0.89822091				
<i>a</i>	2.2553979	Ω	169.60877	+0.85588400	+0.41267002				
<i>e</i>	0.1709606	<i>i</i>	5.36146	+0.27303375	+0.15133621				
<i>P</i>	3.39	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1951 12 28	711	0.0	0.6+	Y	1998 09 14	704	0.9-	1.3-	1998 09 26	704	0.8-	0.5+
1971 10 11	095	(4.6-	4.8-)		1998 09 14	704	0.0	1.2-	1998 09 26	704	0.5-	0.5+
1981 09 05	095	(0.5+	12.9-)		1998 09 14	704	0.4-	0.6+	1998 09 26	704	0.5-	0.0
1988 11 04	327	1.4-	1.5-		1998 09 14	704	0.2+	0.2+	1998 09 26	704	0.7-	0.6+
1988 11 04	327	1.2+	0.2+		1998 09 14	704	0.1-	0.4+	1998 09 27	704	1.3+	0.0
1991 08 06	809	(1.7-	4.0+)		1998 09 18	704	0.0	0.5-	1998 09 27	704	1.9+	0.1-
1991 08 06	809	(1.8-	2.6+)		1998 09 18	704	0.5-	0.0	1998 09 27	704	0.8+	1.0+
1991 08 06	809	(2.2-	2.2+)		1998 09 18	704	0.9-	0.3-	1998 09 27	704	0.5+	0.6+
1991 08 11	809	0.5-	0.3+		1998 09 18	704	0.1-	1.0-	1998 09 27	704	1.1+	1.0+
1991 08 11	809	0.1+	0.2+		1998 09 18	704	0.7-	0.3+				
1991 08 11	809	0.1+	0.6-		1998 09 26	704	0.5+	0.1+				

1998 RO₄₉ = 1994 AF₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	346.66059		(2000.0)	P		Q		Doppler	
<i>n</i>	0.16703944	ω	301.83665	+0.60844627	-0.79323085				
<i>a</i>	3.2653021	Ω	110.66716	+0.73651664	+0.55314439				
<i>e</i>	0.2566089	<i>i</i>	1.47232	+0.29552727	+0.25459005				
<i>P</i>	5.90	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1994 01 07	691	0.2+	0.1-	1998 09 14	704	0.1-	0.0	1998 09 26	704	0.2+	1.0+
1994 01 07	691	0.7-	0.7-	1998 09 14	704	(0.6+	2.2-)	1998 09 26	704	(1.6-	1.5+)
1994 01 07	691	0.1+	0.1+	1998 09 18	704	0.4+	0.9+	1998 09 26	704	(0.9+	2.0+)
1994 01 12	691	0.6+	0.3+	1998 09 18	704	0.1+	1.0+	1998 09 27	704	0.5+	0.9-
1994 01 12	691	0.5+	0.1+	1998 09 18	704	0.1+	0.6+	1998 09 27	704	0.8-	0.3-
1994 01 12	691	0.7-	0.4+	1998 09 18	704	0.0	0.2+	1998 09 27	704	1.4+	0.6-
1998 09 14	704	(1.1+	2.7-)	1998 09 18	704	0.4-	0.2-	1998 09 27	704	0.3+	1.2-
1998 09 14	704	0.3-	0.3-	1998 09 26	704	1.4+	0.0	1998 09 27	704	1.4-	0.2+
1998 09 14	704	0.3-	0.8-	1998 09 26	704	0.9-	0.5+				

1998 RJ₅₀ = 1973 AD₃ = 1996 HO₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	347.71074		(2000.0)	P		Q		Doppler	
<i>n</i>	0.18409251	ω	283.07368	+0.64926934	-0.76012490				
<i>a</i>	3.0604031	Ω	126.40970	+0.70957947	+0.59325084				
<i>e</i>	0.2111856	<i>i</i>	1.82855	+0.27376321	+0.26507278				
<i>P</i>	5.35	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1973 01 02	095	0.0	0.5-	1998 09 14	704	0.6-	0.5-	1998 09 26	704	1.7+	0.9-
1996 04 17	809	1.5+	0.4-	1998 09 14	704	0.5+	0.5+	1998 09 26	704	0.7-	1.7+
1996 04 17	809	0.5+	0.3-	1998 09 14	704	0.1-	0.0	1998 09 26	704	0.1-	1.0+
1996 04 17	809	0.3+	0.3-	1998 09 18	704	0.0	1.0-	1998 09 27	704	0.1+	1.0+
1996 04 18	809	0.4-	0.2-	1998 09 18	704	0.7-	0.9-	1998 09 27	704	0.4+	0.7+
1996 04 18	809	1.1-	0.5-	1998 09 18	704	0.8-	0.9-	1998 09 27	704	1.2+	1.0+
1996 04 18	809	1.0-	1.1+	1998 09 18	704	0.3-	0.9-	1998 09 27	704	1.2-	0.0
1998 09 14	704	0.1+	1.2-	1998 09 18	704	1.1-	0.2-	1998 09 27	704	0.4+	0.4+
1998 09 14	704	0.6+	0.1+	1998 09 26	704	0.8+	0.3-				

1998 RP₅₀ = 1997 GC₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	22.62457		(2000.0)	P		Q		Doppler	
<i>n</i>	0.31045952	ω	0.56026	+0.95298676	-0.30279252				
<i>a</i>	2.1600612	Ω	17.07875	+0.27785510	+0.85805582				
<i>e</i>	0.1334815	<i>i</i>	2.24978	+0.12088331	+0.41479741				
<i>P</i>	3.17	<i>H</i>	17.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1997 04 03	704	0.7-	0.1-	1998 09 14	704	0.8+	0.3+	1998 09 26	704	0.5-	0.7+
1997 04 03	704	1.0+	1.3+	1998 09 14	704	0.8-	0.8+	1998 09 26	704	0.1-	0.3+
1997 04 07	704	0.6-	0.1+	1998 09 18	704	1.0-	1.0-	1998 09 27	704	1.0+	0.2-
1997 04 07	704	1.0-	0.9+	1998 09 18	704	(1.4-	2.1-)	1998 09 27	704	0.4+	0.5+
1997 04 07	704	0.6+	0.7-	1998 09 18	704	0.1-	1.4-	1998 09 27	704	(2.3+	0.1-)
1997 04 07	704	0.9+	1.0-	1998 09 18	704	1.3-	0.1+	1998 09 27	704	0.8+	0.7-
1998 09 14	704	0.9+	1.4-	1998 09 18	704	0.7-	0.6-	1998 09 27	704	0.1-	0.0
1998 09 14	704	1.0+	0.1-	1998 09 26	704	1.2-	0.7+				
1998 09 14	704	0.9+	1.3+	1998 09 26	704	0.2-	1.0+				

1998 RT₅₀ = 1971 BU = 1975 EW₂ = 1982 BW₇ = 1986 EJ₂

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	131.26691		(2000.0)	P		Q		Doppler	
<i>n</i>	0.26852612	ω	251.30554	-0.47839233	+0.87780470				
<i>a</i>	2.3794598	Ω	350.00662	-0.74312299	-0.41953562				
<i>e</i>	0.1673249	<i>i</i>	8.11247	-0.46787713	-0.23118990				
<i>P</i>	3.67	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1971 01 25	095	0.9-	2.0-	1998 09 16	699	0.5+	0.1-	1998 09 26	704	0.8+	0.1+
1975 03 08	095	0.2+	0.2+	1998 09 16	699	0.2+	0.0	1998 09 27	704	0.1+	0.2+
1982 01 28	381	(5.3+	3.5+)	1998 09 16	699	0.3+	0.4-	1998 09 27	704	0.4+	0.1+
1982 01 28	381	0.9+	2.0+	1998 09 18	704	0.9+	0.3-	1998 09 27	704	1.8-	0.2+
1986 03 14	071	1.2-	0.8-	1998 09 18	704	0.4+	0.3+	1998 09 27	704	0.2-	0.1-
1986 03 14	071	0.1-	1.2-	1998 09 18	704	0.7-	0.1-	1998 09 27	704	0.6-	0.4+
1998 09 14	704	0.1+	0.2-	1998 09 18	704	0.4-	1.2+	1998 10 14	699	0.6-	0.2+
1998 09 14	704	0.9+	0.0	1998 09 26	704	0.1+	0.7-	1998 10 14	699	0.0	0.0
1998 09 14	704	0.1-	0.3-	1998 09 26	704	0.1-	1.0-	1998 10 14	699	0.2-	0.0
1998 09 14	704	0.3-	0.3+	1998 09 26	704	0.6+	0.9-				
1998 09 14	704	0.9+	0.2-	1998 09 26	704	0.1+	0.5-				

1998 RZ₅₀ = 1993 UO₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	109.75592		(2000.0)	P	Q	Doppler		
<i>n</i>	0.17816333	ω	60.52065	-0.32061177	+0.94560172			
<i>a</i>	3.1279310	Ω	191.20039	-0.93728154	-0.32512577			
<i>e</i>	0.1772786	<i>i</i>	16.50565	-0.13678967	+0.01142877			
<i>P</i>	5.53	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1993 10 20	809	0.7+	0.4+	1998 09 14	704	0.3-	0.2+	1998 09 26	704	1.1-	0.3-
1993 10 20	809	0.5+	1.0-	1998 09 14	704	0.5-	0.8+	1998 09 26	704	0.1-	0.2-
1993 10 20	809	0.3+	0.6+	1998 09 18	704	1.3+	0.8+	1998 09 26	704	0.9+	0.1+
1993 10 21	809	0.7-	0.4+	1998 09 18	704	0.2+	1.4-	1998 09 27	704	1.1+	0.5-
1993 10 21	809	0.6-	0.3-	1998 09 18	704	0.7-	1.0+	1998 09 27	704	1.0-	0.1-
1993 10 21	809	0.3-	0.0	1998 09 18	704	0.9-	1.0-	1998 09 27	704	0.0	0.8+
1998 09 14	704	0.2+	1.2-	1998 09 18	704	1.1+	1.3+	1998 09 27	704	1.5-	0.2+
1998 09 14	704	0.0	1.0+	1998 09 26	704	1.4+	0.2-				
1998 09 14	704	0.1-	1.2-	1998 09 26	704	(2.3+	2.0-)				

1998 RQ₅₂ = 1992 CQ₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	164.88782		(2000.0)	P	Q	Doppler		
<i>n</i>	0.22449239	ω	59.89443	-0.86722216	+0.49070844			
<i>a</i>	2.6812355	Ω	149.26131	-0.49446189	-0.82876417			
<i>e</i>	0.1771734	<i>i</i>	9.50969	-0.05859320	-0.26898918			
<i>P</i>	4.39	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1992 02 08	364	0.2-	0.4-	1998 09 18	704	1.0-	0.3-	1998 09 26	704	0.8+	1.4+
1992 02 08	364	0.7-	1.0+	1998 09 18	704	1.0+	1.0+	1998 09 26	704	0.5-	0.6-
1992 02 12	303	0.3+	0.9-	1998 09 18	704	0.4-	1.1+	1998 09 27	704	0.5+	0.1+
1992 02 13	303	0.5+	0.3+	1998 09 18	704	0.0	0.4-	1998 09 27	704	0.6+	1.6-
1998 09 14	704	0.8+	0.1+	1998 09 18	704	0.1+	1.0+	1998 09 27	704	0.6+	1.3+
1998 09 14	704	0.8-	0.5-	1998 09 26	704	0.0	0.7+	1998 09 27	704	0.5-	0.8-
1998 09 14	704	0.6+	1.2-	1998 09 26	704	1.7-	1.2-				

1998 RL₅₃ = 1996 HX₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	322.86005		(2000.0)	P	Q	Doppler		
<i>n</i>	0.18306477	ω	81.03996	+0.37367815	-0.92677425			
<i>a</i>	3.0718467	Ω	346.82130	+0.77168955	+0.33343177			
<i>e</i>	0.0824139	<i>i</i>	9.62846	+0.51464539	+0.17295302			
<i>P</i>	5.38	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1996 04 24	684	0.3+	0.5+	1998 09 14	704	0.4+	0.3+	1998 09 18	704	(2.5+	2.1-)
1996 04 24	684	0.2+	0.3+	1998 09 14	704	0.4+	1.1-	1998 09 18	704	0.7+	0.2+
1996 04 24	684	0.2+	0.5+	1998 09 14	704	0.1+	0.0	1998 09 26	704	1.1+	1.4+
1996 04 25	684	0.5-	0.5-	1998 09 14	704	0.3-	0.3-	1998 09 26	704	0.3+	0.3+
1996 04 25	684	0.1+	1.6-	1998 09 14	704	(2.6-	0.2+)	1998 09 26	704	0.6-	1.3-
1996 04 25	684	0.2-	0.6-	1998 09 14	704	0.1-	1.1-	1998 09 26	704	0.9-	0.0
1996 04 26	684	0.5+	0.7+	1998 09 14	704	0.7-	2.0+	1998 09 26	704	0.1+	0.2-
1996 04 26	684	0.5+	0.0	1998 09 14	704	0.8-	0.2+	1998 09 27	704	0.5+	0.9-
1996 05 06	684	0.1-	0.2+	1998 09 18	704	0.2-	0.6-	1998 09 27	704	0.4+	0.0
1996 05 06	684	0.2-	0.3+	1998 09 18	704	0.4-	1.2-	1998 09 27	704	0.3+	1.5+
1996 05 06	684	0.7-	0.4+	1998 09 18	704	0.0	0.5+	1998 09 27	704	0.3-	0.2+

1998 RN₅₃ = 1997 GT₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	80.59395		(2000.0)	P	Q	Doppler		
<i>n</i>	0.23531263	ω	71.43835	+0.49832941	+0.86607988			
<i>a</i>	2.5983993	Ω	228.51704	-0.81407773	+0.45168919			
<i>e</i>	0.0832253	<i>i</i>	3.03516	-0.29823691	+0.21420208			
<i>P</i>	4.19	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1997 04 06	704	0.0	0.1-	1998 09 14	704	0.1+	1.3+	1998 09 26	704	0.3-	1.3-
1997 04 06	704	0.4-	0.3+	1998 09 14	704	0.0	0.4-	1998 09 26	704	1.1+	0.7-
1997 04 11	704	0.1+	0.4-	1998 09 14	704	0.2+	1.1+	1998 09 26	704	(1.2+	1.8-)
1997 04 11	704	0.2+	0.2-	1998 09 14	704	1.2+	0.1-	1998 09 27	704	0.8-	1.5-
1998 09 14	704	0.7+	0.6+	1998 09 18	704	1.1-	1.2-	1998 09 27	704	1.2+	0.9+
1998 09 14	704	0.7-	0.1-	1998 09 18	704	0.2-	0.8-	1998 09 27	704	(1.1-	1.6+)
1998 09 14	704	0.4+	1.0+	1998 09 18	704	1.0+	0.3-	1998 09 27	704	0.4+	0.8-
1998 09 14	704	0.7-	0.7+	1998 09 18	704	1.5-	0.2+	1998 09 27	704	0.7+	0.4+
1998 09 14	704	0.3-	0.0	1998 09 18	704	1.5-	0.7+				

1998 RA₅₈ = 1995 WN₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	340.96469		(2000.0)	P	Q	Doppler		
<i>n</i>	0.27179223	ω	275.68133	+0.34530309	-0.93829689			
<i>a</i>	2.3603588	Ω	154.09300	+0.87742535	+0.31554747			
<i>e</i>	0.1782874	<i>i</i>	2.50525	+0.33300229	+0.14152293			
<i>P</i>	3.63	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1995 11 18	691	0.8+	0.7-	1998 09 14	704	0.4+	1.8+	1998 09 26	704	1.0-	0.7-
1995 11 18	691	0.2-	0.2-	1998 09 18	704	0.9+	1.4-	1998 09 26	704	0.7-	0.4+
1995 11 18	691	0.0	0.2-	1998 09 18	704	0.2-	0.3-	1998 09 26	704	1.2-	1.3+
1995 11 28	691	0.0	0.2+	1998 09 18	704	1.5+	1.0+	1998 09 27	704	0.4-	1.1-
1995 11 28	691	0.3-	0.7+	1998 09 18	704	1.3-	0.2-	1998 09 27	704	1.0+	0.2+
1995 11 28	691	0.2-	0.3+	1998 09 18	704	1.5+	0.7-	1998 09 27	704	0.8-	0.6-
1998 09 14	704	0.5-	1.9+	1998 09 26	704	0.6-	0.5+	1998 09 27	704	1.0-	1.7-
1998 09 14	704	1.9+	0.9+	1998 09 26	704	0.4+	1.1-				

1998 RH₅₈ = 1996 BM₁₄

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	21.55259		(2000.0)	P	Q	Williams		
<i>n</i>	0.23393217	ω	10.28699	+0.98907411	-0.14734734			
<i>a</i>	2.6086115	Ω	358.16728	+0.12296451	+0.84181573			
<i>e</i>	0.1135194	<i>i</i>	8.27202	+0.08131508	+0.51926394			
<i>P</i>	4.21	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1996 01 16	691	0.5+	0.0	1998 09 18	704	0.2+	0.9-	1998 09 26	704	0.5+	1.3-
1996 01 16	691	0.2+	0.3+	1998 09 18	704	0.8+	0.2+	1998 09 26	704	0.4+	0.4-
1996 01 16	691	0.2-	0.3-	1998 09 18	704	0.7-	0.9+	1998 09 27	704	0.4-	0.0
1996 01 24	691	0.5+	0.2+	1998 09 25	699	0.1+	0.3+	1998 09 27	704	0.5-	0.8+
1996 01 24	691	0.4+	0.5+	1998 09 25	699	0.1+	0.7+	1998 09 27	704	0.7-	0.6-
1996 01 24	691	1.3-	0.7-	1998 09 25	699	0.1-	0.9+	1998 09 27	704	0.8-	0.2-
1998 09 14	704	0.2-	0.8+	1998 09 25	327	0.9+	0.4+	1998 09 27	704	0.3-	0.5+
1998 09 14	704	0.4-	0.1-	1998 09 25	327	0.8+	0.6+	1998 10 27	327	0.1+	0.0
1998 09 14	704	0.2+	0.1-	1998 09 25	327	0.6+	0.3-	1998 10 27	327	0.0	0.0
1998 09 18	704	0.7+	0.0	1998 09 26	704	0.3-	0.3-	1998 10 27	327	0.2+	0.1+
1998 09 18	704	0.6-	0.7-	1998 09 26	704	0.6-	1.0-				

1998 DEC. 8

M.P.C. 33273

1998 RR₅₉ = 1997 GR₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	101.67112		(2000.0)	P	Q
<i>n</i>	0.28150661	ω	335.65581	+0.29552278	+0.95419423
<i>a</i>	2.3057399	Ω	311.49707	-0.86596550	+0.24691896
<i>e</i>	0.0742968	<i>i</i>	3.57373	-0.40344768	+0.16895086
<i>P</i>	3.50	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 03	704	0.2+	0.1-	1998 09 18	704	(0.6-	2.8-)	1998 09 26	704	0.1+	0.4+
1997 04 03	704	0.3-	0.7-	1998 09 18	704	1.4+	0.6+	1998 09 26	704	0.6-	0.1-
1997 04 05	704	0.9+	0.1+	1998 09 18	704	0.1+	0.5-	1998 09 27	704	0.5-	0.2-
1997 04 05	704	0.8+	0.7+	1998 09 18	704	0.3+	1.2-	1998 09 27	704	0.4-	0.9+
1998 09 14	704	1.1+	0.1-	1998 09 18	704	0.2+	1.4-	1998 09 27	704	0.2-	0.4+
1998 09 14	704	2.2-	0.9+	1998 09 26	704	1.3+	0.5-	1998 09 27	704	0.2-	0.2+
1998 09 14	704	0.6-	0.9+	1998 09 26	704	0.2+	1.2-	1998 09 27	704	0.1-	0.8+

1998 RW₆₁ = 1996 FD₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	330.61571		(2000.0)	P	Q
<i>n</i>	0.18541478	ω	158.81106	+0.45858986	-0.88838076
<i>a</i>	3.0458358	Ω	263.88722	+0.81213495	+0.42893445
<i>e</i>	0.0623525	<i>i</i>	1.25592	+0.36073835	+0.16369136
<i>P</i>	5.32	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1996 03 22	809	0.1-	0.4-	1998 09 14	704	(0.2-	3.0-)	1998 09 26	704	0.5-	0.1+
1996 03 22	809	0.2+	1.0-	1998 09 18	704	0.8+	0.4+	1998 09 26	704	0.1+	0.6+
1996 03 22	809	0.8+	0.7-	1998 09 18	704	0.5+	0.7+	1998 09 27	704	0.6+	0.5-
1996 03 26	809	0.2+	0.9+	1998 09 18	704	(2.7-	1.8+)	1998 09 27	704	0.2+	0.5-
1996 03 26	809	0.7-	1.3+	1998 09 18	704	1.7-	0.5-	1998 09 27	704	0.3-	0.1-
1996 03 26	809	0.4-	0.1-	1998 09 26	704	0.5+	0.4+	1998 09 27	704	0.2-	0.6+
1998 09 14	704	0.4-	0.6-	1998 09 26	704	0.5+	0.6-	1998 09 27	704	0.7-	0.4-
1998 09 14	704	0.2-	0.5+	1998 09 26	704	0.6+	0.3-				

1998 RC₆₂ = 1997 GM₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	55.74693		(2000.0)	P	Q
<i>n</i>	0.27669719	ω	149.19776	+0.89336806	+0.44924272
<i>a</i>	2.3323813	Ω	184.13568	-0.43277278	+0.85513264
<i>e</i>	0.1348145	<i>i</i>	6.87334	-0.12083556	+0.25870666
<i>P</i>	3.56	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 03	704	0.6+	0.2-	1998 09 18	704	(1.2+	2.1+)	1998 09 26	704	1.3-	0.7-
1997 04 03	704	1.2-	0.3-	1998 09 18	704	0.5+	1.0+	1998 09 26	704	0.6+	0.9-
1997 04 07	704	0.6+	0.3+	1998 09 18	704	0.7+	0.1+	1998 09 27	704	0.4+	0.4+
1997 04 07	704	0.0	0.2+	1998 09 18	704	0.6+	0.4-	1998 09 27	704	0.2+	0.1+
1998 09 14	704	0.8-	0.6+	1998 09 18	704	0.0	1.0-	1998 09 27	704	0.3-	0.5+
1998 09 14	704	1.2-	0.6-	1998 09 26	704	0.5+	0.2-	1998 09 27	704	0.0	0.9+
1998 09 14	704	0.7+	0.4+	1998 09 26	704	0.7+	0.1+	1998 09 27	704	1.2-	0.3-

1998 RB₆₅ = 1990 FN₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	134.88080		(2000.0)	P	Q
<i>n</i>	0.16985875	ω	157.12938	-0.51527005	+0.85702652
<i>a</i>	3.2290698	Ω	81.85508	-0.78654576	-0.47218647
<i>e</i>	0.1168939	<i>i</i>	0.08830	-0.34035649	-0.20626557
<i>P</i>	5.80	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1990 03 17	033	0.0	0.7-	1998 09 26	704	0.7+	0.1-	1998 10 14	699	0.3+	0.4+
1990 03 18	033	0.4-	0.2-	1998 09 26	704	1.3-	0.4-	1998 10 14	699	0.2+	0.4-
1998 09 14	704	0.5+	1.0-	1998 09 26	704	0.0	0.3-	1998 10 16	691	0.4-	0.5+

1998 09 14	704	0.6+	0.6-	1998 09 26	704	1.0-	0.7-	1998 10 16	691	0.7-	0.1+
1998 09 14	704	1.4+	0.1+	1998 09 27	704	0.5+	0.3+	1998 10 16	691	0.9-	0.3-
1998 09 18	704	1.2+	1.0+	1998 09 27	704	1.4+	0.7+	1998 10 24	691	0.0	0.1+
1998 09 18	704	0.3-	0.0	1998 09 27	704	0.2-	0.9+	1998 10 24	691	0.1+	0.1+
1998 09 18	704	0.9-	0.9-	1998 09 27	704	1.2+	0.3+	1998 10 24	691	0.1-	0.2+
1998 09 18	704	1.7-	1.7-	1998 09 27	704	0.5-	0.1-				
1998 09 26	704	0.6-	0.1-	1998 10 14	699	0.8+	0.7+				

1998 RC₆₆ = 1974 HR₁ = 1997 EO₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	171.11646		(2000.0)	P	Q
<i>n</i>	0.29903061	ω	18.63043	-0.74362384	+0.66810168
<i>a</i>	2.2147547	Ω	203.35148	-0.62139042	-0.70482745
<i>e</i>	0.1172576	<i>i</i>	3.72666	-0.24677425	-0.23845000
<i>P</i>	3.30	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1974 04 24	805	1.7-	1.0-	1998 09 14	704	1.7-	0.0	1998 09 26	704	0.8-	1.4-
1974 04 25	805	1.7+	1.0+	1998 09 14	704	0.1+	0.2-	1998 09 26	704	1.0-	0.0
1997 03 08	809	0.4-	0.1-	1998 09 18	704	0.1+	0.1-	1998 09 27	704	1.2+	0.5+
1997 03 08	809	0.2-	0.4+	1998 09 18	704	0.0	0.6-	1998 09 27	704	0.0	0.5+
1997 03 08	809	0.5-	0.0	1998 09 18	704	0.1-	0.7+	1998 09 27	704	0.8+	0.9+
1997 03 09	809	0.4+	0.2-	1998 09 18	704	0.9+	0.1-	1998 09 27	704	1.4-	0.5-
1997 03 09	809	0.1+	0.2+	1998 09 18	704	(2.9+	0.9-)	1998 09 27	704	0.7+	0.6+
1997 03 09	809	0.7+	0.3-	1998 09 26	704	0.4+	0.4+				
1998 09 14	704	0.2-	0.0	1998 09 26	704	1.0+	0.4-				

1998 RJ₆₆ = 1996 CD₅

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	42.81328		(2000.0)	P	Q
<i>n</i>	0.23914665	ω	124.24318	+0.93305930	+0.35895175
<i>a</i>	2.5705527	Ω	214.73778	-0.34213118	+0.86531748
<i>e</i>	0.2894445	<i>i</i>	2.36732	-0.11111525	+0.34982753
<i>P</i>	4.12	<i>H</i>	15.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 02 10	691	0.2-	0.1+	1998 09 15	699	0.6+	0.1-	1998 09 26	704	0.2-	0.1-
1996 02 10	691	0.0	0.1-	1998 09 15	699	0.3+	0.6+	1998 09 26	704	0.5-	0.0
1996 02 10	691	0.1+	0.3-	1998 09 18	704	0.9+	0.2+	1998 09 27	704	0.4-	0.4-
1996 02 16	691	0.0	0.1+	1998 09 18	704	0.9+	0.3+	1998 09 27	704	0.1+	0.4+
1996 02 16	691	0.0	0.0	1998 09 18	704	0.9+	0.4+	1998 09 27	704	0.5-	1.3+
1996 02 16	691	0.1+	0.1-	1998 09 18	704	1.2+	0.4-	1998 09 27	704	1.0-	0.4+
1998 09 14	704	0.4-	0.7-	1998 09 18	704	0.1+	0.4-	1998 11 11	699	0.3+	0.2-
1998 09 14	704	1.4-	0.4-	1998 09 26	704	0.7-	0.3-	1998 11 11	699	0.3-	0.5+
1998 09 14	704	0.2-	0.9-	1998 09 26	704	0.2+	0.6-	1998 11 11	699	0.4+	0.1-
1998 09 15	699	0.4+	0.1+	1998 09 26	704	0.4-	0.4+				

1998 RZ₆₇ = 1985 DN₂ = 1996 HG₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	328.23771		(2000.0)	P	Q
<i>n</i>	0.19212160	ω	218.08116	+0.25651485	-0.96585318
<i>a</i>	2.9745316	Ω	217.09576	+0.90094601	+0.25258800
<i>e</i>	0.1202523	<i>i</i>	3.46355	+0.34999489	+0.05767951
<i>P</i>	5.13	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1985 02 24	675	0.4-	0.5+	1996 04 18	809	0.1-	1.0-	1998 09 18	704	0.7-	1.3-
1985 02 24	675	(2.9+	2.6-)	1998 09 14	704	0.4+	0.0	1998 09 26	704	0.3-	0.0
1985 02 26	675	(2.8-	0.8+)	1998 09 14	704	0.8-	1.5+	1998 09 26	704	0.6+	1.8-
1985 02 26	675	0.4+	0.5-	1998 09 14	704	1.0-	1.6-	1998 09 26	704	0.4-	1.2-
1985 02 27	675	(2.5-	1.4+)	1998 09 15	699	(2.8+	0.2-)	1998 09 26	704	0.5+	0.3+
1985 02 27	675	(3.0+	0.6-)	1998 09 15	699	1.4-	0.7+	1998 09 26	704	0.4+	0.3+
1996 04 17	809	(3.1+	2.2+)	1998 09 15	699	0.1-	1.0+	1998 09 27	704	0.8+	0.1-
1996 04 17	809	(2.5+	2.8+)	1998 09 18	704	1.2+	0.6+	1998 09 27	704	0.4+	0.7+

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1996 04 17	809	1.1+	1.4+	1998 09 18	704	1.0+	0.0	1998 09 27	704	0.4-	0.9+
1996 04 18	809	0.9-	0.4-	1998 09 18	704	0.9+	0.5-	1998 09 27	704	0.6-	0.9+
1996 04 18	809	0.0	0.0	1998 09 18	704	0.3+	0.9-	1998 09 27	704	0.8-	0.4+

1998 RK₆₈ = 1550 T-2 = 1990 VG₇ = 1994 TO₁₆

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Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	298.81861		(2000.0)		P		Q
<i>n</i>	0.23718281	ω	271.48702		-0.28803279		-0.95737698
<i>a</i>	2.5847224	Ω	195.30613		+0.90792248		-0.26584413
<i>e</i>	0.0854557	<i>i</i>	4.69288		+0.30448956		-0.11294345
<i>P</i>	4.16	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 19	675	0.7+	0.2-	1998 09 14	704	1.1+	0.8-	1998 09 27	704	0.0	0.6+
1973 09 19	675	0.5+	1.2-	1998 09 15	699	0.4+	0.1-	1998 09 27	704	1.2-	0.7+
1973 09 20	675	0.3+	1.7-	1998 09 15	699	0.5+	1.3+	1998 10 28	704	0.2-	0.5-
1973 09 24	675	0.5+	1.3-	1998 09 15	699	0.6+	1.5+	1998 10 28	704	1.6-	0.1+
1973 09 24	675	1.0+	0.8-	1998 09 18	704	0.3-	0.3-	1998 10 28	704	1.0-	0.8+
1973 09 25	675	0.7-	2.3-	1998 09 18	704	0.8-	1.3+	1998 10 28	704	0.3+	0.7+
1973 09 25	675	0.3+	0.1-	1998 09 18	704	0.9-	0.2-	1998 10 28	704	0.9-	0.1-
1990 11 10	046(10.7+	0.6-)		1998 09 18	704	0.2-	0.9+	1998 10 29	704	0.1+	0.0
1990 11 10	046(9.0+	1.9-)		1998 09 18	704	1.3-	0.8+	1998 10 29	704	1.2+	0.1+
1990 11 13	046	1.1-	0.6-	1998 09 26	704	0.4+	0.0	1998 10 29	704	0.8-	1.0+
1990 11 13	046	0.9+	0.6-	1998 09 26	704	0.4+	0.4-	1998 10 29	704	0.6+	0.7+
1994 10 05	033	0.7+	0.9-	1998 09 26	704	0.4+	0.9+	1998 10 29	704	0.4-	0.6+
1994 10 06	033	0.6+	0.6-	1998 09 26	704	0.1-	0.0	1998 11 11	699	1.1-	0.1+
1994 10 07	033	0.2-	0.2-	1998 09 26	704	0.4-	0.2+	1998 11 11	699	0.4+	0.4+
1994 10 10	033	0.6+	0.5-	1998 09 27	704	0.6-	0.0	1998 11 11	699	0.3-	0.6-
1998 09 14	704	0.6+	0.0	1998 09 27	704	0.1-	0.6+				
1998 09 14	704	0.8+	0.3-	1998 09 27	704	0.1+	1.0+				

1998 RD₆₉ = 1995 TF₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	153.73178		(2000.0)		P		Q
n	0.29272889	ω	165.37520		-0.58269815		+0.81254296
a	2.2464271	Ω	68.98200		-0.74727317		-0.52825622
e	0.1269147	i	0.94458		-0.31944588		-0.24641288
P	3.37	H	16.0	G	0.15	U	6

Residuals in seconds of arc

1995 10 14	327	0.4+	0.6-	1998 09 14	704	(2.2+	2.1+)	1998 09 26	704	1.4-	0.5-
1995 10 14	327	0.1+	0.5+	1998 09 18	704	(1.4-	1.8-)	1998 09 26	704	0.2+	0.1-
1995 10 14	327	0.2-	0.3+	1998 09 18	704	0.8+	0.4+	1998 09 26	704	0.2+	0.4+
1995 10 15	327	0.1-	0.4-	1998 09 18	704	1.2-	1.2-	1998 09 27	704	0.2-	0.4-
1995 10 15	327	0.3+	0.3-	1998 09 18	704	0.1+	0.8-	1998 09 27	704	0.2+	0.2-
1995 10 15	327	0.4-	0.1+	1998 09 18	704	0.5-	0.3-	1998 09 27	704	0.2+	1.2+
1998 09 14	704	1.2+	0.2+	1998 09 26	704	0.4-	0.1+	1998 09 27	704	0.0	1.1+
1998 09 14	704	0.0	1.0-	1998 09 26	704	0.9+	0.6+	1998 09 27	704	0.2-	0.6+

1998 RP₇₀ = 1996 LZ₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	196.29134		(2000.0)		P		Q
n	0.15694356	ω	125.08977		-0.99128522		+0.06656989
a	3.4038759	Ω	58.97725		-0.11166477		-0.88243728
e	0.1090897	i	7.62269		+0.06988979		-0.46569614
P	6.28	H	13.5	G	0.15	U	5

Residuals in seconds of arc

1996 06 12	566	0.2+	0.1-	1998 09 14	704	0.2+	0.2-	1998 09 26	704	0.2-	0.1+
1996 06 12	566	0.4-	0.0	1998 09 18	704	1.3-	0.6+	1998 09 26	704	1.4+	1.2-
1996 06 12	566	0.3-	0.4-	1998 09 18	704	0.8-	0.8-	1998 09 27	704	1.3+	0.7-
1996 06 22	566	0.0	0.0	1998 09 18	704	(1.4+	2.3+)	1998 09 27	704	0.7-	0.3+
1996 06 22	566	0.5+	0.3+	1998 09 18	704	0.2+	1.2+	1998 09 27	704	0.2-	0.5+
1996 06 22	566	0.0	0.1+	1998 09 18	704	1.0-	0.3-	1998 09 27	704	1.1-	0.4-

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1998 09 14	704	0.6+	1.5+	1998 09 26	704	1.5+	1.0+	1998 09 27	704	0.3-	0.9-
1998 09 14	704	0.8+	1.0-	1998 09 26	704	0.6-	0.4+				

1998 RP₇₂ = 1996 LL₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	25.85372		(2000.0)		P		Q
n	0.12486565	ω	172.61412		+0.98943623		+0.14494487
a	3.9643689	Ω	179.03985		-0.13974277		+0.95844262
e	0.1890623	i	9.03894		-0.03857335		+0.24572083
P	7.89	H	14.5	G	0.15	U	5

Residuals in seconds of arc

1996 06 11	691	0.2+	0.1-	1998 09 17	699	1.2+	0.6+	1998 09 26	704	1.4+	0.0
1996 06 11	691	0.6+	0.0	1998 09 17	699	1.4+	0.0	1998 09 26	704	(1.2+	2.5-)
1996 06 11	691	0.3+	0.4+	1998 09 18	704	0.4+	0.9-	1998 09 26	704	1.0+	0.5-
1996 06 17	691	0.3-	0.4-	1998 09 18	704	0.6-	0.3-	1998 09 26	704	0.6+	1.5+
1996 06 17	691	0.4-	0.1+	1998 09 18	704	1.3+	0.0	1998 09 27	704	0.7-	0.6-
1996 06 17	691	0.5-	0.1-	1998 09 18	704	1.1-	0.6+	1998 09 27	704	0.5-	0.1+
1998 09 14	704	0.2+	0.6-	1998 09 25	699	0.7-	0.2+	1998 09 27	704	1.4-	0.4-
1998 09 14	704	(2.3+	1.7-)	1998 09 25	699	0.1+	0.4+	1998 09 27	704	0.1-	0.6+
1998 09 14	704	1.4-	0.2-	1998 09 25	699	0.5+	1.0-	1998 09 27	704	(3.5-	1.8-)
1998 09 17	699	1.6-	0.7+	1998 09 26	704	0.1+	0.2-				

1998 RU₇₃ = 1993 FH₇₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	45.34377		(2000.0)		P		Q
n	0.26177067	ω	135.51821		+0.98229365		+0.17538983
a	2.4202231	Ω	214.53978		-0.18719546		+0.93302070
e	0.1298460	i	6.67056		+0.00755269		+0.31418272
P	3.77	H	15.4	G	0.15	U	5

Residuals in seconds of arc

1993 03 21	809	0.6-	1.1-	1998 09 18	704	2.6+	0.9-	1998 10 28	704	0.6-	0.4+
1993 03 22	809	0.6+	1.1+	1998 09 18	704	1.6+	0.5+	1998 10 28	704	1.1+	1.0-
1998 09 14	704	0.3-	0.5-	1998 09 18	704	3.3-	1.3+	1998 10 29	704	0.3+	2.3+
1998 09 14	704	1.3-	0.9-	1998 09 18	704	0.2+	1.2-	1998 10 29	704	1.2-	1.1+
1998 09 14	704	1.3+	1.4+	1998 10 28	704	0.2+	1.2-	1998 10 29	704	0.3+	0.1+
1998 09 18	704	0.7-	0.4+	1998 10 28	704	0.4+	1.2-	1998 10 29	704	0.4-	0.5-

1998 RO₇₄ = 1980 FQ₆ = 1993 BG₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	325.74554		(2000.0)		P		Q
n	0.29845011	ω	134.65678		-0.04158189		-0.99824878
a	2.2176256	Ω	317.67270		+0.89810085		-0.01889067
e	0.1141833	i	3.58246		+0.43781938		-0.05605816
P	3.30	H	16.0	G	0.15	U	3

Residuals in seconds of arc

1980 03 23	809	0.1-	0.1-	1993 02 23	010	0.4+	0.4+	1998 09 25	699	0.7+	1.1+
1993 01 27	010	1.1+	0.6+	1998 09 14	704	0.9+	0.6+	1998 09 26	704	0.4-	0.7-
1993 01 27	010	0.1-	0.9+	1998 09 14	704	1.3-	0.9-	1998 09 26	704	0.4+	1.0-
1993 01 27	010	0.4+	0.1-	1998 09 14	704	1.5-	0.5-	1998 09 26	704	0.4+	1.7-
1993 01 28	010	0.1-	0.0	1998 09 18	704	0.2-	0.2+	1998 09 26	704	0.2+	0.4-
1993 01 28	010	0.6-	0.0	1998 09 18	704	0.5+	1.0+	1998 09 26	704	0.2+	0.0
1993 01 28	010	0.9-	1.1-	1998 09 18	704	0.8+	0.8-	1998 09 27	704	0.8-	0.3-
1993 02 20	010	0.6-	0.0	1998 09 18	704	1.5+	0.5+	1998 09 27	704	0.8-	0.1+
1993 02 20	010	0.1-	0.5-	1998 09 18	704	0.9-	1.7-	1998 09 27	704	0.1+	1.3+
1993 02 20	010	0.4+	0.1-	1998 09 25	699	0.7+	0.6+	1998 09 27	704	0.5-	1.1+
1993 02 22	010	(2.1-	1.4-)	1998 09 25	699	0.3+	0.9+	1998 09 27	704	0.2-	0.3+

1998 RV₇₄ = 1997 HX₁₂

Id. A. Doppler

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M.P.C. 33275

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	40.40869		(2000.0)	P	Q
<i>n</i>	0.23595926	ω	29.53546	+0.98664978	+0.16193631
<i>a</i>	2.5936499	Ω	321.13321	-0.15429934	+0.89557122
<i>e</i>	0.1909953	<i>i</i>	1.57860	-0.05209528	+0.41440177
<i>P</i>	4.18	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 30	704	1.1+	0.7+	1998 09 15	699	0.0	0.4-	1998 09 27	704	0.2+	0.0
1997 04 30	704	1.0-	0.4+	1998 09 15	699	0.4+	0.4-	1998 09 27	704	0.1+	0.4+
1997 04 30	704	0.6+	0.0	1998 09 18	704	0.8-	0.8+	1998 09 27	704	0.2+	0.5+
1997 04 30	704	0.8-	1.3-	1998 09 18	704	0.2-	1.6+	1998 09 27	704	0.6+	0.1-
1997 05 01	704	0.4-	0.4-	1998 09 18	704	0.9-	1.1+	1998 10 28	704	0.5-	1.3-
1997 05 01	704	0.0	0.3+	1998 09 18	704	(2.4+	3.5+)	1998 10 28	704	0.6+	0.3-
1997 05 01	704	0.4+	0.0	1998 09 18	704	0.0	1.5+	1998 10 28	704	0.9-	0.6+
1997 05 01	704	0.1+	0.2-	1998 09 26	704	1.0+	0.0	1998 10 28	704	(2.5-	0.5-)
1997 05 01	704	0.1-	0.2+	1998 09 26	704	0.6+	0.7-	1998 10 28	704	0.1+	0.6-
1998 09 14	704	1.0+	0.1-	1998 09 26	704	0.1-	0.8-	1998 10 29	704	0.4+	1.0-
1998 09 14	704	0.0	1.3-	1998 09 26	704	0.1+	0.1-	1998 10 29	704	0.9-	1.7+
1998 09 14	704	1.4-	0.6-	1998 09 26	704	0.4-	0.9-	1998 10 29	704	0.9+	0.3+
1998 09 15	699	0.6-	0.2+	1998 09 27	704	0.7+	0.3-				

1998 RB₇₇ = 1980 TP₁₄ = 1989 TO₁₃

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	346.10128		(2000.0)	P	Q
<i>n</i>	0.21536869	ω	282.38933	+0.60528883	-0.79353728
<i>a</i>	2.7564345	Ω	130.17998	+0.75847018	+0.55107698
<i>e</i>	0.0921423	<i>i</i>	4.70295	+0.24155416	+0.25809447
<i>P</i>	4.58	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1980 10 13	095	(5.8-	7.1-)	1998 09 17	699	0.9+	0.1+	1998 09 27	704	0.5-	0.3-
1989 10 03	809	0.9+	0.7-	1998 09 18	704	0.5+	0.5+	1998 09 27	704	1.4-	0.0
1989 10 03	809	0.6+	0.8-	1998 09 18	704	0.6+	0.2+	1998 09 27	704	0.0	0.0
1989 10 03	809	0.5-	1.1-	1998 09 18	704	0.2+	0.2+	1998 09 27	704	0.1-	1.1-
1993 09 07	413	0.0	0.5-	1998 09 18	704	0.8-	0.3+	1998 09 27	704	1.0-	0.8-
1993 09 07	413	0.4+	1.0-	1998 09 18	704	0.1-	0.2-	1998 10 17	699	0.9+	0.1-
1998 09 14	704	0.6+	0.4+	1998 09 26	704	0.7-	0.1-	1998 10 17	699	0.6+	0.2+
1998 09 14	704	0.0	0.2+	1998 09 26	704	1.9-	0.1-	1998 10 17	699	0.9+	0.6-
1998 09 14	704	0.5-	1.2+	1998 09 26	704	0.3-	1.4+	1998 10 17	699	0.1-	0.0
1998 09 17	699	0.4+	0.6+	1998 09 26	704	0.4-	0.9+	1998 10 17	699	0.7+	0.4-
1998 09 17	699	1.7+	0.5+	1998 09 26	704	1.6-	0.2-	1998 10 17	699	0.4+	0.7+

1998 RV₇₇ = 1993 TQ₁₁

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	48.37637		(2000.0)	P	Q
<i>n</i>	0.19075350	ω	313.60715	+0.90045024	+0.42916161
<i>a</i>	2.9887370	Ω	21.28295	-0.32129167	+0.76595918
<i>e</i>	0.1102136	<i>i</i>	11.24459	-0.29319112	+0.47867196
<i>P</i>	5.17	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 10 13	675	0.2-	1.1-	1998 09 25	699	0.6+	1.2+	1998 09 27	704	0.8-	0.9+
1993 10 13	675	0.2+	0.5+	1998 09 25	699	0.5+	0.9+	1998 09 27	704	0.4+	1.6-
1993 10 15	675	0.2+	0.4+	1998 09 25	699	0.0	0.3+	1998 10 28	704	0.7-	0.4+
1998 09 14	704	0.5-	0.9+	1998 09 26	704	0.4+	0.4-	1998 10 28	704	0.3+	0.2-
1998 09 14	704	0.7+	0.3+	1998 09 26	704	0.4+	1.1-	1998 10 28	704	0.2+	0.4-
1998 09 14	704	0.2+	0.4+	1998 09 26	704	0.3-	0.2+	1998 10 28	704	0.6-	0.3-
1998 09 18	704	0.4+	0.4+	1998 09 26	704	0.6+	1.1-	1998 10 28	704	0.1+	0.8-
1998 09 18	704	0.5+	0.2+	1998 09 26	704	0.6+	0.6-	1998 10 29	704	0.3-	0.3+
1998 09 18	704	0.5+	0.2-	1998 09 27	704	0.0	0.8+	1998 10 29	704	1.3-	0.6+
1998 09 18	704	0.8-	1.1-	1998 09 27	704	1.0-	0.6+	1998 10 29	704	0.4+	0.5-
1998 09 18	704	0.7-	1.0-	1998 09 27	704	0.6-	0.6+	1998 10 29	704	0.4+	0.6+

1998 RM₇₈ = 1985 GC

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	238.45378		(2000.0)	P	Q
<i>n</i>	0.25456378	ω	121.51989	-0.94733025	-0.30986827
<i>a</i>	2.4656891	Ω	40.58787	+0.23509380	-0.84441862
<i>e</i>	0.0811068	<i>i</i>	7.14411	+0.21747712	-0.43696551
<i>P</i>	3.87	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1985 04 14	688	0.2-	0.6+	1998 09 18	704	0.6+	0.8+	1998 10 28	704	0.7+	0.0
1985 04 14	688	0.9-	0.8+	1998 09 26	704	0.5-	0.2+	1998 10 28	704	(1.1+	2.8-)
1985 04 23	688	0.3+	0.1+	1998 09 26	704	0.2+	0.7-	1998 10 28	704	0.1-	1.4-
1985 04 23	688	1.1+	0.9-	1998 09 26	704	0.5-	0.2-	1998 10 28	704	0.4-	1.5-
1998 09 14	704	0.1+	0.2-	1998 09 26	704	0.4-	0.1+	1998 10 28	704	1.3+	0.6+
1998 09 14	704	0.3-	0.5+	1998 09 26	704	0.4-	1.1-	1998 10 29	704	0.3-	0.3+
1998 09 14	704	0.5+	0.2+	1998 09 27	704	0.5+	0.4-	1998 10 29	704	0.7-	0.4+
1998 09 18	704	0.0	0.1-	1998 09 27	704	0.5+	0.3+	1998 10 29	704	0.9-	1.1+
1998 09 18	704	0.1+	0.4+	1998 09 27	704	0.0	0.4+	1998 10 29	704	0.7+	1.3+
1998 09 18	704	0.3-	0.3-	1998 09 27	704	0.7+	0.1+	1998 10 29	704	1.2-	0.7+
1998 09 18	704	0.3+	0.3-	1998 09 27	704	0.3-	0.5-				

1998 RO₇₉ = 1996 GF₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	12.38743		(2000.0)	P	Q
<i>n</i>	0.18415590	ω	340.40248	+0.92662864	-0.36870400
<i>a</i>	3.0597008	Ω	41.47164	+0.35808079	+0.80577006
<i>e</i>	0.1502433	<i>i</i>	6.38068	+0.11461897	+0.46345654
<i>P</i>	5.35	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1996 04 13	691	0.6-	0.3-	1998 09 14	704	0.4-	0.6-	1998 09 26	704	(0.0	2.1+)
1996 04 13	691	0.4-	0.7-	1998 09 18	704	1.5+	0.6+	1998 09 26	704	(0.2+	2.8+)
1996 04 13	691	0.3-	0.6-	1998 09 18	704	0.3+	0.8+	1998 09 26	704	0.9-	0.0
1996 04 20	691	0.4+	0.7+	1998 09 18	704	0.2-	1.4-	1998 09 26	704	0.8-	1.4+
1996 04 20	691	0.8+	0.3+	1998 09 18	704	1.7-	0.8+	1998 09 27	704	0.6+	1.1-
1996 04 20	691	0.0	0.4+	1998 09 25	699	1.1+	0.6-	1998 09 27	704	0.3+	0.6-
1998 09 14	704	0.4+	1.4+	1998 09 25	699	0.2+	0.3-	1998 09 27	704	0.5-	0.1+
1998 09 14	704	0.7+	0.3+	1998 09 25	699	1.2-	0.3+	1998 09 27	704	0.8+	1.3-

1998 RS₇₉ = 4371 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	37.04463		(2000.0)	P	Q
<i>n</i>	0.23440662	ω	190.10477	+0.98886773	+0.14510351
<i>a</i>	2.6050904	Ω	161.45439	-0.12826697	+0.94350364
<i>e</i>	0.2678712	<i>i</i>	5.94599	-0.07542007	+0.29790243
<i>P</i>	4.20	<i>H</i>	17.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1977 10 16	675	0.1-	0.4-	1998 09 14	704	2.6+	0.9-	1998 09 26	704	0.1-	0.6-
1977 10 16	675	0.1+	0.1-	1998 09 14	704	3.2-	0.4-	1998 09 26	704	0.3+	0.1+
1977 10 17	675	0.5+	0.7-	1998 09 18	704	0.2-	0.1-	1998 09 26	704	0.8+	0.7+
1977 10 17	675	0.1-	0.2+	1998 09 18	704	0.4-	0.6-	1998 09 26	704	1.2+	0.6-
1977 10 21	675	1.0+	0.8-	1998 09 18	704	1.1+	0.7-	1998 09 27	704	0.5-	0.9-
1977 10 21	675	1.2-	1.7+	1998 09 18	704	1.9-	2.2+	1998 09 27	704	0.7+	0.7-
1977 10 22	675	(1.4+	4.9+)	1998 09 18	704	0.8+	1.8+	1998 09 27	704	0.3-	0.5-
1998 09 14	704	0.8+	0.3-	1998 09 26	704	0.4-	1.0+	1998 09 27	704	1.4-	0.7+

1998 RV₇₉ = 1971 KU = 1993 NT₁ = 1997 LH₁₆

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	135.60488		(2000.0)	P		Q	
<i>n</i>	0.22836901	ω	138.21389	-0.41448905	+0.90820139		
<i>a</i>	2.6508060	Ω	107.22489	-0.85023896	-0.36371592		
<i>e</i>	0.1592971	<i>i</i>	3.48396	-0.32448813	-0.20707719		
<i>P</i>	4.32	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 05 25	095	0.2+	0.5+	1997 06 08	809	0.6-	0.1-	1998 09 26	704	1.5+	0.3-
1993 07 12	809	0.5-	0.2-	1997 06 09	809	0.3+	1.5-	1998 09 26	704	0.8+	0.2+
1993 07 12	809	0.2-	0.4-	1997 06 09	809	0.2-	1.4-	1998 09 27	704	0.2-	0.1+
1993 07 12	809	1.2-	0.4-	1997 06 09	809	0.4-	1.4-	1998 09 27	704	(2.4+	0.6+)
1993 07 19	809	0.4-	0.6-	1998 09 14	704	0.1-	0.2+	1998 09 27	704	0.4-	0.0
1993 07 19	809	0.4-	0.6-	1998 09 14	704	0.2-	0.1-	1998 09 27	704	0.0	0.9+
1993 07 19	809	0.2-	0.8-	1998 09 14	704	0.3-	0.3+	1998 09 27	704	0.1+	0.7+
1993 07 23	809	1.2+	1.0+	1998 09 17	699	0.4+	0.9+	1998 10 28	704	0.5+	0.7-
1993 07 23	809	1.7+	1.2+	1998 09 17	699	1.0+	0.1+	1998 10 28	704	1.8+	0.5-
1993 07 23	809	1.1+	1.3+	1998 09 17	699	1.0+	0.3+	1998 10 28	704	0.2-	0.1-
1993 07 26	809	0.1-	0.6+	1998 09 18	704	0.4+	0.8-	1998 10 28	704	1.0-	0.6-
1993 07 26	809	0.4-	1.1+	1998 09 18	704	0.3-	1.0-	1998 10 28	704	1.8-	0.5-
1993 07 26	809	0.5-	1.2+	1998 09 18	704	0.7+	0.5-	1998 10 29	704	0.7-	0.1+
1993 07 26	809	(0.1+	3.9+)	1998 09 18	704	0.5+	0.5-	1998 10 29	704	1.6-	0.7-
1993 07 26	809	(1.1-	4.5+)	1998 09 18	704	0.3-	0.1+	1998 10 29	704	0.3+	0.1+
1993 07 26	809	(0.6-	3.7+)	1998 09 26	704	1.0+	0.1+	1998 10 29	704	1.9-	1.1-
1997 06 08	809	0.0	0.2+	1998 09 26	704	0.3+	0.5-				
1997 06 08	809	0.3-	0.2-	1998 09 26	704	0.1-	0.1+				

1998 RW₇₉ = 1977 ET₇ = 1992 BV₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	316.03409		(2000.0)	P		Q	
<i>n</i>	0.25867353	ω	282.49179	-0.28338075	-0.95898492		
<i>a</i>	2.4395032	Ω	183.98848	+0.91251163	-0.26752536		
<i>e</i>	0.1915912	<i>i</i>	5.42651	+0.29498794	-0.09369149		
<i>P</i>	3.81	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 03 12	381	1.2-	1.3+	1992 01 31	675	0.2+	0.0	1998 09 18	704	1.3+	1.7-
1977 03 12	381	0.1-	0.6+	1992 01 31	675	0.4+	0.8+	1998 09 18	704	0.4+	0.6-
1977 03 14	381	0.6+	0.0	1998 09 14	704	0.3-	0.9-	1998 10 14	699	1.1-	0.1-
1977 03 14	381	1.4+	1.0-	1998 09 14	704	1.8-	1.3+	1998 10 14	699	0.1-	0.5-
1977 03 15	381	0.2+	0.9-	1998 09 14	704	0.5+	1.1+	1998 10 14	699	0.7+	0.8-
1977 03 15	381	1.9-	1.8-	1998 09 18	704	0.3+	0.8-	1998 10 19	699	0.2-	0.1+
1992 01 29	675	0.0	0.6+	1998 09 18	704	0.8-	0.1+	1998 10 19	699	0.6-	0.1+
1992 01 29	675	0.4-	0.8-	1998 09 18	704	2.0+	1.4+	1998 10 19	699	0.1+	0.1-

1998 RB₈₀ = 1989 TJ₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	167.19056		(2000.0)	P		Q	
<i>n</i>	0.21742315	ω	125.63054	-0.74333517	+0.66056829		
<i>a</i>	2.7390430	Ω	95.96201	-0.64286689	-0.66193360		
<i>e</i>	0.1027575	<i>i</i>	6.08137	-0.18486479	-0.35425054		
<i>P</i>	4.53	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1989 10 07	809	1.6-	0.3-	1998 09 18	704	0.2+	0.3+	1998 09 27	704	1.3-	1.2-
1989 10 07	809	1.5-	0.2+	1998 09 21	699	0.7+	0.6+	1998 10 18	699	0.4+	0.2+
1989 10 07	809	1.9-	0.2+	1998 09 21	699	0.9+	0.5+	1998 10 18	699	0.3-	1.0+
1989 10 08	809	1.7+	0.7-	1998 09 21	699	0.9+	0.1-	1998 10 18	699	0.6+	0.8+
1989 10 08	809	1.6+	0.5+	1998 09 26	704	0.8-	0.1+	1998 10 28	704	1.8+	1.3-
1989 10 08	809	1.7+	0.0	1998 09 26	704	0.2-	0.7-	1998 10 28	704	1.5-	0.6+
1998 09 14	704	0.5-	0.9-	1998 09 26	704	0.4-	1.1-	1998 10 28	704	0.6-	0.9-
1998 09 14	704	1.4+	0.9+	1998 09 26	704	0.1+	0.9-	1998 10 28	704	0.7-	0.1-
1998 09 14	704	2.3-	0.0	1998 09 26	704	0.5-	0.9-	1998 10 29	704	0.5+	0.4-
1998 09 18	704	0.6+	0.6+	1998 09 27	704	0.1-	0.4+	1998 10 29	704	0.1-	1.5+
1998 09 18	704	0.9+	0.4+	1998 09 27	704	0.1-	0.2+	1998 10 29	704	1.6+	0.7-

1998 09 18	704	0.4-	0.4+	1998 09 27	704	0.3-	0.5-	1998 10 29	704	0.4-	1.5+
1998 09 18	704	0.7-	0.5+	1998 09 27	704	0.6+	0.5-				

1998 SB₁ = 1975 SA₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	63.86530		(2000.0)	P		Q	
<i>n</i>	0.17214295	ω	302.98563	+0.89799796	+0.43656552		
<i>a</i>	3.2004414	Ω	31.23031	-0.36008446	+0.80082277		
<i>e</i>	0.0762447	<i>i</i>	6.07440	-0.25286132	+0.40999199		
<i>P</i>	5.73	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1975 09 30	675	0.3+	1.0+	1998 09 18	910	0.1-	0.0	1998 10 15	327	0.2+	0.3-
1975 10 01	675	0.0	0.5+	1998 09 18	910	0.1+	0.0	1998 10 15	327	0.1+	0.4-
1975 10 02	675	0.7-	1.0+	1998 09 20	910	0.2+	0.3-	1998 10 17	327	0.3-	0.2-
1975 10 15	675	0.3+	2.4-	1998 09 20	910	0.2-	0.2-	1998 10 17	327	0.7-	0.1+
1975 10 16	675	0.3+	0.1-	1998 09 20	910	0.3-	0.0	1998 10 17	327	0.1-	0.1+
1998 09 16	910	0.0	0.2+	1998 10 14	327	0.8+	0.1-	1998 10 18	327	0.3-	0.4+
1998 09 16	910	0.1+	0.0	1998 10 14	327	0.1-	0.2+	1998 10 18	327	0.4-	0.5+
1998 09 16	910	0.2+	0.6-	1998 10 14	327	0.7+	0.0	1998 10 18	327	0.1-	0.6+
1998 09 18	910	0.4+	0.1-	1998 10 15	327	0.0	0.0				

1998 SF₁ = 1994 TO₇ = 1997 JB₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	117.50124		(2000.0)	P		Q	
<i>n</i>	0.25685250	ω	93.09837	+0.24515032	+0.96927635		
<i>a</i>	2.4510200	Ω	191.15425	-0.92567258	+0.22785386		
<i>e</i>	0.0933280	<i>i</i>	5.96893	-0.28815204	+0.09266057		
<i>P</i>	3.84	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1994 10 06	691	0.0	0.9-	1998 09 16	910	0.3-	0.7+	1998 10 29	704	0.9-	0.5-
1994 10 06	691	0.2+	0.6-	1998 09 16	910	0.1-	0.9+	1998 10 29	704	0.6+	0.7-
1994 10 06	691	0.1+	0.7-	1998 09 18	910	0.2-	0.5+	1998 10 29	704	0.8-	0.1+
1994 10 11	691	0.3+	0.7-	1998 09 18	910	0.0	0.5+	1998 10 29	704	1.2-	0.4-
1994 10 11	691	0.5+	0.4-	1998 09 18	910	0.1-	0.3+	1998 11 10	704	0.8-	1.3+
1994 10 11	691	0.1+	0.5-	1998 09 20	910	0.4+	0.7+	1998 11 10	704	0.5+	0.9+
1997 05 03	809	0.3+	1.4+	1998 09 20	910	0.1-	0.9+	1998 11 10	704	0.4-	0.4+
1997 05 03	809	1.1+	0.7+	1998 09 20	910	0.1-	0.9+	1998 11 11	704	0.7+	0.6+
1997 05 03	809	0.2+	0.3+	1998 10 28	704	0.6+	1.0-	1998 11 11	704	1.0+	0.1-
1997 05 04	809	0.6-	0.7-	1998 10 28	704	0.4-	0.9+	1998 11 11	704	0.1+	0.7+
1997 05 04	809	0.3-	0.1-	1998 10 28	704	0.4-	1.2-	1998 11 11	704	0.1-	1.0-
1997 05 04	809	0.5-	0.2-	1998 10 28	704	(2.3-	1.1+)				
1998 09 16	910	0.1-	0.8+	1998 10 29	704	0.8+	0.3-				

1998 SN₂ = 1997 NL₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	28.02378		(2000.0)	P		Q	
<i>n</i>	0.18181552	ω	269.63590	+0.87181594	-0.48982158		
<i>a</i>	3.0859017	Ω	119.69295	+0.45097098	+0.79989168		
<i>e</i>	0.1814504	<i>i</i>	0.22644	+0.19121229	+0.34676811		
<i>P</i>	5.42	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 07 09	684	0.2+	0.2-	1998 09 18	910	0.2-	0.3-	1998 11 16	691	0.1+	0.1-
1997 07 09	684	0.2-	0.1-	1998 09 18	910	0.3-	0.4-	1998 11 16	691	0.1+	0.1+
1997 07 09	684	0.4-	0.1-	1998 09 18	910	0.2-	0.1-	1998 11 16	691	0.0	0.0
1997 07 11	684	0.0	0.0	1998 09 19	910	0.5+	0.0	1998 11 19	691	0.2-	0.5+
1997 07 11	684	0.2+	0.0	1998 09 19	910	0.4+	0.2+	1998 11 19	691	0.2-	0.2+
1997 07 11	684	0.3+	0.6+	1998 09 19	910	0.1-	0.2-				

1998 DEC. 8

M.P.C. 33277

1998 SX₇ = 1990 DT₇ = 1991 MB

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	177.03918		(2000.0)	P		Q		Gnädig	
<i>n</i>	0.17868872	ω	153.22809	-0.95923933		+0.28244296			
<i>a</i>	3.1217967	Ω	43.18132	-0.26164180		-0.87524671			
<i>e</i>	0.1263651	<i>i</i>	0.77593	-0.10678706		-0.39264382			
<i>P</i>	5.52	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1990 02 18	399	1.5+	1.6+	1991 07 05	809	0.7+	0.3+	1998 09 26	704	1.1-	0.5+
1990 02 18	399	0.8+	1.7+	1998 09 17	699	0.9+	0.2-	1998 09 26	704	0.6-	1.2+
1990 02 18	399	1.6-	0.8-	1998 09 17	699	1.1+	0.8-	1998 09 26	704	0.5-	0.9+
1991 06 29	809	0.4+	1.5-	1998 09 17	699	0.3+	0.6-	1998 09 27	704	0.6+	0.2-
1991 06 29	809	1.3+	1.4-	1998 09 20	691	0.6-	0.0	1998 09 27	704	0.1-	1.0+
1991 06 30	809	2.1+	1.4-	1998 09 20	691	0.8-	0.1+	1998 09 27	704	0.6+	0.2-
1991 07 01	809	0.7-	0.5+	1998 09 21	691	0.6-	0.0	1998 09 27	704	1.4+	0.8-
1991 07 01	809	0.8-	0.8+	1998 09 21	691	0.8-	0.0	1998 09 27	704	0.6+	0.7-
1991 07 02	809	0.7-	1.0+	1998 09 21	691	0.8-	0.2+	1998 09 30	691	0.4-	0.4-
1991 07 04	809	0.8-	0.9+	1998 09 23	691	0.9-	0.2+	1998 09 30	691	0.2-	0.1+
1991 07 04	809	0.8-	1.1+	1998 09 23	691	1.3-	0.4+	1998 09 30	691	0.2-	0.2-
1991 07 04	809	0.8-	1.2+	1998 09 23	691	1.1-	0.1-	1998 10 12	910	1.4+	0.5+
1991 07 05	809	0.0	0.1+	1998 09 26	704	0.1+	0.0	1998 10 12	910	1.3+	0.6+
1991 07 05	809	0.6+	0.3+	1998 09 26	704	1.0-	0.2+	1998 10 12	910	1.5+	0.6+

1998 SC₁₂ = 1987 SF₈ = 1991 GT₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	79.55380		(2000.0)	P		Q		Williams	
<i>n</i>	0.18998096	ω	111.43385	+0.71420448		+0.69576203			
<i>a</i>	2.9968338	Ω	204.68293	-0.69059898		+0.68271722			
<i>e</i>	0.1504785	<i>i</i>	10.53278	-0.11395176		+0.22318692			
<i>P</i>	5.19	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1987 09 18	010	1.1-	1.9-	1998 09 22	910	0.0	0.0	1998 11 10	704	0.1-	0.5-
1987 09 18	010	0.7+	0.6+	1998 09 22	910	0.0	0.2-	1998 11 10	704	(1.6- 2.2+)	
1987 09 18	010	0.7+	0.4+	1998 09 23	910	0.4-	0.0	1998 11 11	704	0.2-	0.2-
1991 04 08	809	0.3+	0.0	1998 09 23	910	0.4-	0.1-	1998 11 11	704	0.1-	0.6-
1991 04 08	809	0.7-	0.0	1998 09 23	910	0.3-	0.0	1998 11 11	704	0.2+	0.2-
1991 04 08	809	2.0-	0.8+	1998 10 20	699	0.0	0.2+	1998 11 11	704	0.4+	0.1+
1991 04 10	809	0.6+	1.2-	1998 10 20	699	1.2+	0.1-	1998 11 11	704	0.1+	0.5+
1991 04 10	809	0.2+	0.9-	1998 10 20	699	0.4+	0.2-	1998 11 15	566	0.1-	0.2-
1991 04 10	809	1.0+	1.6-	1998 11 10	704	0.3-	0.2+	1998 11 15	566	0.1+	0.4-
1998 09 22	910	0.1-	0.3-	1998 11 10	704	0.5-	0.4+	1998 11 15	566	0.1+	0.9-

1998 SW₁₂ = 1997 JS₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	39.39076		(2000.0)	P		Q		Williams	
<i>n</i>	0.23412397	ω	303.21336	+0.89349269		+0.18029260			
<i>a</i>	2.6071867	Ω	50.18898	+0.14915685		+0.74473369			
<i>e</i>	0.3064211	<i>i</i>	32.37318	-0.42358359		+0.64254673			
<i>P</i>	4.21	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 05 02	691	0.3-	0.3+	1998 09 24	703	0.5-	0.5-	1998 10 16	704	0.2+	1.6+
1997 05 02	691	0.1+	0.7-	1998 09 24	703	0.6-	0.2-	1998 10 16	704	0.5+	0.7+
1997 05 02	691	0.1-	0.7+	1998 09 25	703	0.4+	0.2-	1998 11 13	704	0.3-	0.3-
1997 05 09	691	0.1-	0.2-	1998 09 25	703	0.1-	0.3-	1998 11 13	704	0.1+	0.0
1997 05 09	691	0.0	0.5-	1998 10 15	703	0.2+	0.4+	1998 11 13	704	0.0	0.2+
1997 05 09	691	0.0	0.1-	1998 10 15	703	0.5-	0.3+	1998 11 13	704	0.2-	0.7-
1998 09 23	703	0.2-	0.3-	1998 10 16	704	0.9+	0.6-	1998 11 13	704	0.7-	1.2-
1998 09 23	703	0.3-	0.5-	1998 10 16	704	1.1+	0.6+				
1998 09 23	703	0.5-	0.4-	1998 10 16	704	0.6+	0.6+				

1998 SR₁₄ = 9573 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	9.70455		(2000.0)	P		Q		Williams	
<i>n</i>	0.25999587	ω	344.28747	+0.77909351		-0.62208578			
<i>a</i>	2.4312246	Ω	54.44296	+0.58496395		+0.67685695			
<i>e</i>	0.1479210	<i>i</i>	5.47391	+0.22545615		+0.39354028			
<i>P</i>	3.79	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1960 10 22	675	1.6-	1.4+	1998 09 26	704	0.4+	0.4-	1998 10 19	699	0.5-	0.2+
1960 10 24	675	0.3+	0.5+	1998 09 26	704	0.2+	0.4-	1998 10 19	699	0.0	0.5+
1960 10 26	675	0.1+	0.8+	1998 09 26	704	0.4+	1.0-	1998 10 19	699	0.0	0.2+
1998 09 17	699	0.3+	0.8+	1998 09 26	327	1.7-	0.2-	1998 10 28	704	0.0	1.3-
1998 09 17	699	0.7+	1.1+	1998 09 26	327	1.6-	0.2-	1998 10 28	704	1.0+	0.5-
1998 09 17	699	1.1+	0.7+	1998 09 26	327	1.3-	0.3-	1998 10 28	704	0.8-	0.8-
1998 09 20	327	1.5+	0.1+	1998 09 27	704	0.3-	0.2-	1998 10 28	704	0.9-	0.2-
1998 09 20	327	0.6-	0.4+	1998 09 27	704	0.9+	0.3+	1998 10 29	704	0.6+	0.7+
1998 09 20	327	0.1-	0.1-	1998 09 27	704	0.3-	0.4-	1998 10 29	704	1.0-	0.6+
1998 09 22	699	0.3-	0.3+	1998 09 27	704	1.1+	0.5+	1998 10 29	704	0.6+	0.5+
1998 09 22	699	1.4-	1.0+	1998 09 27	704	1.9-	1.8-	1998 10 29	704	0.8-	0.3+
1998 09 22	699	0.1-	0.1-	1998 09 30	327	0.8+	1.4-	1998 10 29	704	1.0-	0.1+
1998 09 25	327	1.4+	0.2-	1998 09 30	327	(0.2- 2.4-)		1998 11 06	699	0.5+	0.2-
1998 09 25	327	1.4+	0.1-	1998 09 30	327	0.7+	1.5-	1998 11 06	699	0.6-	0.6+
1998 09 25	327	1.2+	0.1+	1998 10 17	699	0.1-	0.3+	1998 11 06	699	1.0+	0.5-
1998 09 26	704	0.3-	0.2+	1998 10 17	699	0.4+	0.5+				
1998 09 26	704	1.1+	0.3-	1998 10 17	699	0.5-	0.0				

1998 SP₂₁ = 1987 SV₂₄ = 1996 BQ₁₅

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	49.06096		(2000.0)	P		Q		Williams	
<i>n</i>	0.27061727	ω	112.43594	+0.98436337		+0.17390517			
<i>a</i>	2.3671860	Ω	237.55944	-0.17135269		+0.90846931			
<i>e</i>	0.2344223	<i>i</i>	1.90339	-0.04082907		+0.38005329			
<i>P</i>	3.64	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1987 09 23	095	0.2+	0.4-	1998 09 26	704	0.8+	1.0+	1998 10 11	699	0.4+	0.2+
1996 01 19	691	0.1-	0.3+	1998 09 26	704	0.8+	0.6+	1998 10 11	699	0.9+	0.0
1996 01 19	691	0.0	0.1+	1998 09 26	704	0.1+	1.2+	1998 10 28	704	0.2+	0.4-
1996 01 19	691	0.1-	0.2+	1998 09 26	704	0.5+	1.6+	1998 10 28	704	0.2+	0.4-
1996 01 26	691	0.0	0.3-	1998 09 27	704	0.3+	0.2+	1998 10 28	704	0.3+	0.8-
1996 01 26	691	0.1+	0.2-	1998 09 27	704	0.3+	0.1-	1998 10 28	704	0.3-	0.2-
1996 01 26	691	0.1+	0.1+	1998 09 27	704	0.3+	1.0-	1998 10 29	704	0.4-	0.7-
1998 09 21	691	0.1-	0.3-	1998 09 27	704	0.2-	0.2+	1998 10 29	704	0.2-	0.4+
1998 09 21	691	0.1-	0.3-	1998 09 27	704	0.8-	0.2-	1998 10 29	704	0.2-	0.3+
1998 09 21	691	0.1+	0.5-	1998 09 27	691	1.3-	0.4-	1998 10 29	704	0.0	0.7+
1998 09 24	691	0.5-	0.1+	1998 09 27	691	1.1-	0.4-	1998 10 29	704	0.8-	0.2-
1998 09 24	691	0.7-	0.2-	1998 09 27	691	(3.8- 1.0-)					
1998 09 26	704	0.5+	0.1+	1998 10 11	699	0.9+	0.3-				

1998 SV₂₃ = 1987 SE₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	345.50592		(2000.0)	P		Q		Doppler	
<i>n</i>	0.17798808	ω	27.92631	+0.68649609		-0.71961463			
<i>a</i>	3.1299840	Ω	19.33909	+0.59458935		+0.47298994			
<i>e</i>	0.1265131	<i>i</i>	18.35760	+0.41855301		+0.50836533			
<i>P</i>	5.54	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1987 09 29	033	0.8-	0.2-	1998 09 24	699	0.4-	0.4+	1998 09 27	704	0.2+	0.1+
1987 09 29	033	1.0+	0.0	1998 09 24	699	0.1-	0.5+	1998 09 27	704	0.6-	0.6+
1987 09 30	033	0.6+	0.3-	1998 09 24	699	0.4-	1.2+	1998 09 27	704	0.7+	0.1+
1987 09 30	033	0.8-	0.5+	1998 09 26	704	0.2-	0.1-	1998 09 27	704	0.4+	0.8-
1998 09 17	699	0.2+	0.5-	1998 09 26	704	0.2-	0.1-	1998 09 27	704	0.0	1.1-

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1998 09 17	699	0.1+	0.6−	1998 09 26	704	0.1+	0.4−
1998 09 17	699	0.0	0.6+	1998 09 26	704	0.2+	0.2+

1998 SW₂₃ = 1993 HQ₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	260.95232		(2000.0)	P	Q	Doppler	
<i>n</i>	0.26766929	ω	92.56809	−0.72297328	−0.68448954		
<i>a</i>	2.3845349	Ω	44.25869	+0.56843683	−0.66644898		
<i>e</i>	0.0395192	<i>i</i>	7.71761	+0.39266933	−0.29549929		
<i>P</i>	3.68	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 04 20	691	0.0	0.0	1998 09 17	699	0.2−	0.8−	1998 09 26	704	0.4−	0.2+
1993 04 20	691	0.3+	0.1−	1998 09 24	699	0.5−	0.7+	1998 09 27	704	0.4+	0.5−
1993 04 20	691	0.0	0.1+	1998 09 24	699	0.8+	0.3+	1998 09 27	704	0.0	0.7−
1993 04 24	691	0.1−	0.2+	1998 09 24	699	0.9−	0.3+	1998 09 27	704	0.4+	0.1+
1993 04 24	691	0.1−	0.2−	1998 09 26	704	1.2+	0.4+	1998 09 27	704	0.5−	1.0−
1993 04 24	691	0.1−	0.0	1998 09 26	704	0.6−	1.4+	1998 09 27	704	0.2−	2.3−
1998 09 17	699	0.6−	0.1+	1998 09 26	704	0.2+	0.4+				
1998 09 17	699	0.5+	0.2+	1998 09 26	704	0.4+	1.2+				

1998 SG₂₅ = 1979 HK₄ = 1981 UP₅

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	222.43421		(2000.0)	P	Q	Williams	
<i>n</i>	0.22736578	ω	140.18541	−0.98055526	+0.09718326		
<i>a</i>	2.6585979	Ω	46.29404	−0.17505431	−0.82582575		
<i>e</i>	0.1146710	<i>i</i>	13.64133	+0.08869818	−0.55548829		
<i>P</i>	4.33	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 04 24	095	0.2−	1.0−	1998 09 26	704	0.6−	0.5−	1998 10 28	704	0.7−	0.4+
1980 07 11	413	0.3+	0.4−	1998 09 26	704	0.0	0.9+	1998 10 29	704	0.3+	0.2−
1980 07 11	413	0.2−	0.4−	1998 09 26	704	0.5−	0.5−	1998 10 29	704	0.4+	0.3+
1981 10 30	381	0.6−	0.0	1998 09 27	704	0.8−	0.2−	1998 10 29	704	1.1+	0.2+
1981 10 30	381	1.0+	1.0−	1998 09 27	704	0.2−	0.2−	1998 10 29	704	0.3−	0.1−
1981 10 30	381	0.2−	0.3+	1998 09 27	704	1.2−	0.3+	1998 10 29	704	0.1+	1.0−
1981 10 30	381	0.2−	0.2+	1998 09 27	704	0.5−	0.6+	1998 11 10	704	0.2+	0.3−
1992 05 30	413	0.3+	0.8+	1998 09 27	704	0.4−	0.4+	1998 11 10	704	0.0	1.1+
1992 05 30	413	0.6−	0.6−	1998 10 17	699	0.7+	1.0+	1998 11 10	704	0.2+	0.4+
1998 09 22	699	0.5−	0.4−	1998 10 17	699	0.1+	0.4+	1998 11 10	704	0.2−	0.5+
1998 09 22	699	0.7−	0.1+	1998 10 17	699	0.7+	1.2+	1998 11 10	704	0.8−	0.7+
1998 09 22	699	0.3−	0.0	1998 10 20	699	0.1+	0.1+	1998 11 11	704	0.5+	0.7−
1998 09 24	699	0.8−	0.3+	1998 10 20	699	0.5+	0.5+	1998 11 11	704	(0.1−	2.2−)
1998 09 24	699	0.4−	0.0	1998 10 20	699	0.6+	0.0	1998 11 11	704	0.7+	1.2−
1998 09 24	699	0.3−	0.0	1998 10 28	704	0.9+	0.5−	1998 11 11	704	1.8+	1.7−
1998 09 26	704	0.3+	0.5−	1998 10 28	704	0.2+	0.9−	1998 11 11	704	(1.1+	2.1−)
1998 09 26	704	(0.5−	2.5−)	1998 10 28	704	0.4+	0.5−				

1998 SY₂₅ = 1976 UO₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	25.10711		(2000.0)	P	Q	Williams	
<i>n</i>	0.22329794	ω	341.05328	+0.96762642	−0.24562052		
<i>a</i>	2.6907885	Ω	33.33716	+0.24305463	+0.84490051		
<i>e</i>	0.0972075	<i>i</i>	6.06328	+0.06799668	+0.47519858		
<i>P</i>	4.41	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 10 22	381	0.3+	0.3−	1998 09 26	704	0.3−	0.6−	1998 10 28	704	0.8−	0.5+
1976 10 22	381	0.2+	0.2−	1998 09 26	704	0.3−	0.5−	1998 10 28	704	0.6−	0.9+
1976 10 24	381	0.0	0.5−	1998 09 26	704	0.2+	0.0	1998 10 29	704	0.0	0.2+
1998 09 22	699	0.1−	0.3+	1998 09 26	704	0.0	0.5+	1998 10 29	704	1.4−	0.3−
1998 09 22	699	0.5−	0.3+	1998 09 27	704	0.1+	0.9−	1998 10 29	704	0.0	0.4−
1998 09 22	699	0.0	0.2−	1998 09 27	704	0.4+	0.4−	1998 10 29	704	0.9−	0.6−
1998 09 24	699	0.3+	0.8+	1998 09 27	704	0.4+	0.3−	1998 10 29	704	0.7+	0.5−

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1998 09 24	699	0.7+	0.2+	1998 09 27	704	0.8+	0.3+	1998 11 11	699	0.1+	0.7+
1998 09 24	699	0.6+	0.8+	1998 10 28	704	0.3+	0.6−	1998 11 11	699	0.3+	0.2+
1998 09 26	704	0.1−	0.1+	1998 10 28	704	0.4−	0.1+	1998 11 11	699	0.1−	0.2+

1998 SZ₃₆ = 2730 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	201.95264		(2000.0)	P	Q	Williams	
<i>n</i>	0.25952978	ω	159.35955	−0.94369617	+0.33052830		
<i>a</i>	2.4341346	Ω	39.94963	−0.30643529	−0.85776040		
<i>e</i>	0.0995887	<i>i</i>	1.22543	−0.12463927	−0.39369803		
<i>P</i>	3.80	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.1−	0.5−	1998 09 20	327	0.4−	0.4−	1998 09 27	691	0.6+	0.0
1960 09 24	675	0.4−	1.0−	1998 09 20	327	0.3+	0.6+	1998 09 27	691	0.5+	0.2+
1960 09 26	675	0.6−	0.4+	1998 09 20	327	0.8−	0.4+	1998 10 15	327	0.5−	0.4−
1960 09 26	675	0.6+	1.3−	1998 09 21	691	0.0	0.3−	1998 10 15	327	0.1−	0.0
1960 09 28	675	0.8+	1.3+	1998 09 21	691	0.3+	0.1−	1998 10 15	327	0.4−	0.4−
1960 09 28	675	0.0	0.4+	1998 09 21	691	0.1+	0.1−				
1998 09 20	327	0.4−	1.0+	1998 09 27	691	0.3+	0.2+				

1998 SU₃₇ = 1975 GW

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	273.35602		(2000.0)	P	Q	Williams	
<i>n</i>	0.27391721	ω	295.93759	−0.83865915	−0.54103366		
<i>a</i>	2.3481356	Ω	211.42114	+0.53278918	−0.79102231		
<i>e</i>	0.0536117	<i>i</i>	6.90958	+0.11307746	−0.28559812		
<i>P</i>	3.60	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1975 04 15	805	0.3+	0.6+	1998 10 10	699	1.4+	0.1−	1998 10 29	704	0.2+	0.6−
1975 04 20	805	0.0	0.5+	1998 10 10	699	0.4+	0.4+	1998 10 29	704	0.5+	0.5−
1998 09 21	691	0.2−	0.6+	1998 10 28	704	0.6+	0.8−	1998 11 10	704	0.3−	0.1+
1998 09 21	691	0.1−	0.6+	1998 10 28	704	0.5−	1.4−	1998 11 10	704	0.5−	0.0
1998 09 21	691	0.2−	0.4+	1998 10 28	704	0.3−	0.1−	1998 11 10	704	0.4−	0.4−
1998 09 27	691	0.2−	0.1−	1998 10 28	704	0.8−	0.1−	1998 11 10	704	1.2−	0.0
1998 09 27	691	0.1−	0.2+	1998 10 29	704	0.5+	0.3+	1998 11 11	704	0.0	1.4+
1998 09 27	691	0.0	0.1+	1998 10 29	704	0.0	0.3−	1998 11 11	704	0.2+	0.5+
1998 10 10	699	0.5+	0.1−	1998 10 29	704	0.1+	0.0	1998 11 11	704	0.0	1.3+

1998 SL₄₅ = 1994 SJ₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	262.10233		(2000.0)	P	Q	Doppler	
<i>n</i>	0.24797652	ω	124.63642	−0.78546223	−0.61820031		
<i>a</i>	2.5091637	Ω	17.24021	+0.53009316	−0.69667773		
<i>e</i>	0.0795266	<i>i</i>	5.73610	+0.31945317	−0.36396224		
<i>P</i>	3.97	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1994 09 29	691	0.9−	0.7−	1998 09 25	691	0.3−	0.1+	1998 09 27	704	1.8+	0.6+
1994 09 29	691	1.0−	0.7−	1998 09 25	691	0.4−	0.0	1998 09 27	704	1.3−	0.0
1994 09 29	691	0.6−	0.6−	1998 09 26	704	2.1+	0.5−	1998 09 27	704	0.2+	0.3−
1994 09 30	691	0.8+	0.7+	1998 09 26	704	(0.3−	2.6−)	1998 09 30	691	0.6−	0.7−
1994 09 30	691	0.6+	0.5+	1998 09 26	704	0.3+	0.3−	1998 09 30	691	0.6−	0.2−
1994 09 30	691	1.1+	0.9+	1998 09 27	704	1.3−	1.4+	1998 09 30	691	0.2−	0.5−
1998 09 25	691	0.2+	0.0	1998 09 27	704	0.2+	0.4+				

1998 SO₄₅ = 1991 SZ₂ = 1993 FC₄₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	239.02785		(2000.0)	P	Q	Doppler	
<i>n</i>	0.27446788	ω	63.00048	−0.97654563	−0.21427863		
<i>a</i>	2.3449938	Ω	104.62021	+0.18902903	−0.90005489		
<i>e</i>	0.1226474	<i>i</i>	1.24682	+0.10308571	−0.37945469		
<i>P</i>	3.59	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	4

1998 DEC. 8

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Residuals in seconds of arc

1991 09 29	691	0.8−	0.1−	1993 03 24	809	0.2+	0.2−	1998 09 27	704	0.6+	1.5+
1991 09 29	691	0.3−	0.8+	1998 09 25	691	0.6−	0.3−	1998 09 27	704	0.2+	0.3−
1991 09 29	691	0.7−	0.9+	1998 09 25	691	0.4−	0.4+	1998 09 27	704	1.6+	1.5−
1991 10 13	691	0.6+	0.4−	1998 09 25	691	0.9−	0.1+	1998 09 27	704	(2.5−	0.6+)
1991 10 13	691	0.5+	0.8−	1998 09 26	704	0.5−	0.9+	1998 09 30	691	0.5−	0.3+
1991 10 13	691	0.6+	0.1−	1998 09 26	704	0.2+	0.2−	1998 09 30	691	0.1−	0.6+
1993 03 19	809	0.3−	0.4+	1998 09 26	704	(2.8+	1.1−)	1998 09 30	691	0.3−	0.2+
1993 03 20	809	0.1+	0.1−	1998 09 26	704	0.7+	1.8−				

1998 SU₄₅ = 1997 GZ₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	94.12671		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27233258	<i>ω</i>	124.07910	+0.40568663	+0.91392603
<i>a</i>	2.3572356	<i>Ω</i>	169.83186	−0.86027405	+0.38643852
<i>e</i>	0.1215390	<i>i</i>	4.07751	−0.30878296	+0.12411483
<i>P</i>	3.62	<i>H</i>	16.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	0.0	0.2+	1998 09 25	691	0.0	0.2+	1998 09 27	704	0.1−	1.2+
1997 04 03	704	0.8+	0.7−	1998 09 25	691	0.1+	0.2+	1998 09 27	704	0.5+	0.5+
1997 04 05	704	1.8−	0.9+	1998 09 26	704	0.5−	0.8−	1998 09 27	704	1.1+	0.1−
1997 04 05	704	0.2−	0.8−	1998 09 26	704	1.2−	0.9−	1998 09 27	704	1.8+	1.1+
1997 04 07	704	0.2+	0.3−	1998 09 26	704	0.9−	0.0	1998 09 30	691	0.1−	0.3−
1997 04 07	704	1.0+	0.7+	1998 09 26	704	0.6+	1.1−	1998 09 30	691	0.6−	0.2−
1998 09 25	691	0.3−	0.1+	1998 09 27	704	(2.2+	1.2+)	1998 09 30	691	0.3−	0.0

1998 SC₄₆ = 1982 XS₃ = 1996 FK₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	29.29324		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.18158376	<i>ω</i>	154.60668	+0.97223890	−0.23212262
<i>a</i>	3.0885269	<i>Ω</i>	218.85234	+0.20585966	+0.90847255
<i>e</i>	0.1136478	<i>i</i>	2.69593	+0.11123541	+0.34755823
<i>P</i>	5.43	<i>H</i>	13.4	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1982 12 13	381	0.5+	0.1−	1998 09 20	809	(0.5−	2.8−)	1998 10 29	704	0.3−	0.7−
1982 12 14	381	0.5−	0.2+	1998 09 20	809	(0.1−	3.3−)	1998 10 29	704	0.5+	0.2−
1982 12 14	381	(8.8+	4.8−)	1998 09 25	691	0.4−	0.4−	1998 10 29	704	0.2+	0.3+
1996 03 24	809	(1.7+	2.8−)	1998 09 25	691	0.2−	0.4−	1998 10 29	704	0.7+	0.3−
1996 03 24	809	(1.1+	2.4−)	1998 09 25	691	0.3−	0.5−	1998 11 10	704	0.1+	0.8+
1996 03 24	809	(2.7+	2.6−)	1998 09 30	691	1.6−	0.1−	1998 11 10	704	0.6+	0.3−
1996 03 27	809	0.6−	1.6−	1998 09 30	691	1.4−	0.1−	1998 11 10	704	0.0	0.4−
1996 03 27	809	0.0	0.6−	1998 09 30	691	1.4−	0.4−	1998 11 10	704	0.7+	0.4−
1996 03 27	809	(1.4−	2.4−)	1998 10 28	704	0.5+	0.3−	1998 11 11	704	0.2+	0.5+
1998 09 14	699	0.7+	0.0	1998 10 28	704	0.5+	0.0	1998 11 11	704	0.1−	0.6+
1998 09 14	699	0.6+	0.3+	1998 10 28	704	0.9+	0.3−	1998 11 11	704	0.5+	0.2+
1998 09 14	699	0.3−	0.9+	1998 10 28	704	0.4−	0.0	1998 11 11	704	1.0+	0.2−
1998 09 20	809	(0.6−	4.1−)	1998 10 29	704	1.1−	0.8−	1998 11 11	704	0.7+	0.6+

1998 SN₄₈ = 1994 WL₁₁

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	341.18627		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23212676	<i>ω</i>	82.18984	+0.02542268	−0.99967178
<i>a</i>	2.6221201	<i>Ω</i>	6.35596	+0.90555031	+0.02168764
<i>e</i>	0.1886368	<i>i</i>	1.63831	+0.42347648	+0.01363731
<i>P</i>	4.25	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1994 11 27	010	0.5+	0.7+	1998 09 30	691	1.2−	0.6+	1998 10 29	704	0.7−	0.2+
1994 11 27	010	0.6+	0.4+	1998 09 30	691	0.5−	0.1−	1998 10 29	704	0.1+	0.2+
1994 11 28	010	1.2−	0.8+	1998 09 30	691	0.9−	1.1−	1998 10 29	704	0.2−	0.1+
1994 11 28	010	0.1+	0.2−	1998 10 11	699	0.2+	0.2−	1998 10 29	704	0.8−	0.4+
1994 11 28	010	0.1−	0.2−	1998 10 11	699	0.6−	0.1−	1998 10 29	704	0.2+	0.6+

1994 11 29	010	0.1+	1.2−	1998 10 11	699	0.2+	0.4+	1998 11 10	704	0.1−	0.1−
1998 09 27	691	0.3+	0.1+	1998 10 19	699	0.7+	0.3−	1998 11 10	704	0.4+	0.3−
1998 09 27	691	0.2+	0.3+	1998 10 19	699	0.6+	0.2+	1998 11 10	704	0.6+	0.3+
1998 09 27	691	0.0	0.6+	1998 10 19	699	0.6+	0.5−	1998 11 10	704	0.4−	0.1+
1998 09 29	704	(4.0+	1.4−)	1998 10 28	704	0.0	0.5+	1998 11 11	704	0.1+	1.1−
1998 09 29	704	0.2+	0.5−	1998 10 28	704	0.3+	0.0	1998 11 11	704	0.5−	0.8−
1998 09 29	704	1.1+	0.4+	1998 10 28	704	0.4−	0.4−	1998 11 11	704	0.3+	0.2−
1998 09 29	704	(4.0−	0.1+)	1998 10 28	704	0.4−	0.1+	1998 11 11	704	0.8+	0.3+

1998 SM₄₉ = 1995 EJ₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	18.55458		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.17678153	<i>ω</i>	309.05623	+0.92333312	−0.38393148
<i>a</i>	3.1442094	<i>Ω</i>	73.52226	+0.35460745	+0.84526130
<i>e</i>	0.2437172	<i>i</i>	0.43324	+0.14734148	+0.37165838
<i>P</i>	5.58	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1995 03 02	691	0.2−	0.6−	1998 09 24	621	0.0	0.3+	1998 10 29	704	0.1+	0.9−
1995 03 02	691	0.4+	0.3−	1998 09 24	621	0.5−	0.0	1998 10 29	704	0.8−	0.7−
1995 03 02	691	0.7−	0.1+	1998 09 26	621	0.3−	0.2+	1998 10 29	704	0.4−	0.1−
1995 03 08	691	0.2−	0.1−	1998 09 26	621	0.1+	0.6+	1998 10 29	704	1.0−	0.3−
1995 03 08	691	0.3+	0.1−	1998 09 26	621	0.8+	0.3+	1998 10 29	704	0.9−	0.7−
1995 03 08	691	0.1−	0.4−	1998 09 26	704	0.5+	0.5+	1998 11 10	704	0.0	1.3+
1998 09 16	411	0.1−	1.1−	1998 09 26	704	0.1+	0.4−	1998 11 10	704	0.6+	0.3−
1998 09 16	411	0.2+	0.4−	1998 09 26	704	0.5−	1.7−	1998 11 10	704	0.4+	0.6−
1998 09 18	809	(0.6+	3.1−)	1998 09 26	704	0.6+	0.3−	1998 11 10	704	0.1+	0.5+
1998 09 18	809	(0.4−	3.1−)	1998 09 26	704	0.3−	1.0+	1998 11 10	704	0.2−	0.1−
1998 09 18	809	(1.2−	3.2−)	1998 09 27	704	0.2+	0.6+	1998 11 11	704	1.0−	0.2+
1998 09 20	809	1.0+	0.2+	1998 09 27	704	0.9−	0.7+	1998 11 11	704	0.4−	1.2+
1998 09 20	809	0.3−	0.4+	1998 09 27	704	0.0	0.5+	1998 11 11	704	0.3−	0.1−
1998 09 20	809	0.2+	0.8+	1998 09 27	704	(1.1+	2.9+)	1998 11 11	704	0.5+	1.2−
1998 09 22	621	0.6+	0.2−	1998 10 10	699	0.5+	0.4+	1998 11 19	621	0.2+	0.2+
1998 09 22	621	0.1+	0.4−	1998 10 10	699	0.9+	0.5+	1998 11 19	621	0.1+	0.4+
1998 09 23	621	0.5+	0.4−	1998 10 10	699	(2.4+	1.7+)	1998 11 19	621	0.2+	0.3+
1998 09 23	621	0.1+	0.7−	1998 10 17	699	0.2+	0.7−	1998 11 19	621	0.1+	0.2+
1998 09 23	621	0.2+	0.2−	1998 10 17	699	0.2+	0.4−	1998 11 20	621	0.3+	0.6+
1998 09 23	621	0.3+	0.2−	1998 10 17	699	0.2+	0.2+	1998 11 20	621	0.2+	0.4+
1998 09 23	621	0.5+	0.3−	1998 10 28	704	0.9−	0.2+	1998 11 20	621	0.3+	0.4+
1998 09 23	621	0.5+	0.1−	1998 10 28	704	0.4−	0.3−	1998 11 20	621	0.2+	0.5+
1998 09 23	621	0.4+	0.1−	1998 10 28	704	1.6−	0.9−	1998 11 20	621	0.3+	0.3+
1998 09 24	621	0.0	0.1−	1998 10 28	704	1.3−	0.5−				

1998 SO₅₀ = 1989 GK₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	276.90371		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26847854	<i>ω</i>	142.48541	−0.89467800	−0.44641649
<i>a</i>	2.3797409	<i>Ω</i>	11.03561	+0.38655562	−0.79190126
<i>e</i>	0.1700381	<i>i</i>	4.86552	+0.22388843	−0.41665900
<i>P</i>	3.67	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1989 04 08	809	0.3+	0.4+	1998 09 26	691	0.3−	0.1−	1998 10 28	704	1.9+	0.5−
1989 04 08	809	0.4+	0.4+	1998 09 26	691	0.4−	0.1−	1998 10 28	704	1.7−	1.9+
1989 04 08	809	1.6−	0.1−	1998 10 01	691	0.4+	0.3+	1998 10 29	704	0.7−	0.0
1989 04 10	809	0.5+	0.7−	1998 10 01	691	0.5+	0.1+	1998 10 29	704	0.5−	0.2+
1989 04 10	809	0.2+	0.0	1998 10 01	691	0.4+	0.1−	1998 10 29	704	0.2−	1.1−
1989 04 10	809	0.1+	0.1−	1998 10 28	704	0.2−	0.6−	1998 10 29	704	1.2+	0.2−
1998 09 26	691	0.6−	0.1−	1998 10 28	704	0.1−	0.2+	1998 10 29	704	0.2+	0.1+

1998 SB₅₁ = 1994 NU₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.52692		(2000.0)		P		Q				
<i>n</i>	0.27243379	ω	104.37396		+0.83101349		+0.55605727				
<i>a</i>	2.3566517	Ω	221.84525		-0.51848062		+0.76472308				
<i>e</i>	0.2334563	<i>i</i>	1.26496		-0.20148058		+0.32557477				
<i>P</i>	3.62	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1994 07 08	809	0.4-	0.9+	1998 10 01	691	0.1-	0.2-	1998 10 29	704	0.2+	0.2-
1994 07 08	809	0.1-	0.7+	1998 10 10	699	0.3+	0.3-	1998 10 29	704	0.0	0.1+
1994 07 08	809	1.1+	0.1+	1998 10 10	699	1.0+	0.5+	1998 11 10	704	0.1+	0.2-
1994 07 09	809	0.9-	0.4-	1998 10 10	699	1.1+	0.3+	1998 11 10	704	0.2+	0.5-
1994 07 09	809	0.2+	0.2-	1998 10 28	704	0.6-	0.2+	1998 11 10	704	0.6+	0.2-
1994 07 09	809	0.1+	0.6-	1998 10 28	704	0.1-	0.1-	1998 11 10	704	0.9+	0.4+
1998 09 26	691	0.1-	0.5-	1998 10 28	704	0.3-	0.1+	1998 11 11	704	0.1-	0.7+
1998 09 26	691	0.1+	0.3-	1998 10 28	704	0.7-	0.1-	1998 11 11	704	0.6+	0.7+
1998 09 26	691	0.1+	0.3-	1998 10 29	704	0.4-	0.7+	1998 11 11	704	0.6+	0.8-
1998 10 01	691	0.4-	0.4-	1998 10 29	704	0.1+	0.2-	1998 11 11	704	1.6-	0.2+
1998 10 01	691	0.2-	0.4-	1998 10 29	704	0.7-	0.0	1998 11 11	704	0.5-	1.1+

1998 SR₅₇ = 1991 GJ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	74.77515		(2000.0)		P			Q			
<i>n</i>	0.30980357	ω	257.59940		+0.57195277			+0.81936940			
<i>a</i>	2.1631092	Ω	47.35692		-0.73063314			+0.53036187			
<i>e</i>	0.2094373	<i>i</i>	3.02195		-0.37288772			+0.21760073			
<i>P</i>	3.18	<i>H</i>	17.5	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1991 04 08	691	0.8+	1.0-	1998 09 17	699	0.1+	0.0	1998 09 26	704	1.4-	1.5-
1991 04 08	691	0.3+	0.2-	1998 09 17	699	0.3-	0.8-	1998 09 26	704	0.2+	1.4-
1991 04 09	691	0.5-	0.1+	1998 09 17	699	0.1-	0.2-	1998 09 26	704	1.4-	0.6-
1991 04 09	691	0.0	0.5+	1998 09 18	704	0.9+	1.1-	1998 09 26	704	0.3-	1.0+
1991 04 09	691	0.5-	1.0+	1998 09 18	704	0.5-	0.2-	1998 09 26	704	0.0	0.3+
1991 04 17	691	0.2-	0.1+	1998 09 18	704	1.0+	0.2+	1998 09 27	704	0.4+	0.3+
1991 04 17	691	0.4+	0.4-	1998 09 18	704	0.5-	0.4+	1998 09 27	704	0.4-	0.3-
1991 04 17	691	0.2-	0.1-	1998 09 18	704	0.2+	0.3-	1998 09 27	704	0.0	1.6+
1998 09 14	704	0.8-	0.6+	1998 09 25	699	0.7+	0.3+	1998 09 27	704	1.0+	0.8+
1998 09 14	704	0.1+	1.1+	1998 09 25	699	1.3+	0.2-	1998 09 27	704	0.3-	0.3+
1998 09 14	704	(2.4-	1.9-)	1998 09 25	699	0.2+	0.1-				

1998 SQ₅₈ = 1996 GA₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	73.93552		(2000.0)		P		Q				
<i>n</i>	0.17132983	ω	127.35270		+0.58788718		+0.80891915				
<i>a</i>	3.2105595	Ω	178.60915		-0.79921228		+0.58198421				
<i>e</i>	0.0724209	<i>i</i>	14.80592		-0.12509359		+0.08333176				
<i>P</i>	5.75	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1996 04 15	691	1.9+	0.5-	1998 09 17	699	1.0-	0.9-	1998 09 26	704	0.8-	0.2-
1996 04 15	691	0.0	0.1+	1998 09 25	699	0.9+	0.3+	1998 09 27	704	0.4+	0.2+
1996 04 15	691	0.1-	0.4+	1998 09 25	699	0.9+	0.8+	1998 09 27	704	0.0	0.3+
1996 04 21	691	0.9-	0.2+	1998 09 25	699	0.2-	0.3+	1998 09 27	704	0.1-	0.4-
1996 04 21	691	0.6-	0.1+	1998 09 26	704	0.6+	0.2+	1998 09 27	704	1.1+	0.1-
1996 04 21	691	0.3-	0.2-	1998 09 26	704	0.1-	0.1+	1998 09 27	704	0.1-	1.3-
1998 09 17	699	1.0-	0.6+	1998 09 26	704	0.3-	0.4+				
1998 09 17	699	0.8+	0.2-	1998 09 26	704	1.2-	0.1-				

1998 SY₅₈ = 1997 GO₃₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	51.03498		(2000.0)		P		Q				
n	0.27807986	ω	314.04734		+0.94753160		+0.31872095				
a	2.3246435	Ω	27.39452		-0.27594136		+0.85423695				
e	0.1645782	i	3.05376		-0.16136987		+0.41072642				
P	3.54	H	16.0	G	0.15	U	5				
Residuals in seconds of arc											
1997 04 03	704	0.1+	1.3+	1998 09 17	699	0.4-	0.0	1998 09 25	699	0.1+	0.6-
1997 04 03	704	0.3-	0.5-	1998 09 17	699	0.2+	0.0	1998 09 25	699	0.4+	0.6-
1997 04 11	704	0.3-	0.5-	1998 09 18	704	0.1+	0.1-	1998 10 17	699	0.1-	0.0
1997 04 11	704	0.6+	0.1-	1998 09 18	704	0.6-	0.3-	1998 10 17	699	0.4+	0.9-
1998 09 14	704	0.7-	0.3+	1998 09 18	704	0.7+	0.4+	1998 10 17	699	0.1-	0.9+
1998 09 14	704	0.5+	0.7-	1998 09 18	704	0.3-	0.9+	1998 10 19	699	0.3+	0.2+
1998 09 14	704	0.1-	0.3-	1998 09 18	704	0.0	1.0+	1998 10 19	699	0.3-	0.2-
1998 09 17	699	0.2-	0.1+	1998 09 25	699	0.5+	0.3-	1998 10 19	699	0.6-	0.3+

1998 SH₅₉ = 1981 UK₂₁ = 1983 CK₂ = 1989 EZ₁ = 1992 RO₆

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	301.07379		(2000.0)		P		Q		
<i>n</i>	0.16951109	ω	8.30916		-0.24375470		-0.96881274		
<i>a</i>	3.2334835	Ω	95.80762		+0.88721349		-0.24130977		
<i>e</i>	0.1266385	<i>i</i>	2.56708		+0.39170892		-0.05631575		
<i>P</i>	5.81	<i>H</i>	12.9		<i>G</i>	0.15	<i>U</i>	1	
Residuals in seconds of arc									
1981 10 24	675	0.1-	0.4-	1998 09 17	699	0.4-	0.6-	1998 09 27	704 0.6+ 0.1+
1981 10 25	675	0.5-	0.1+	1998 09 17	699	0.4-	0.8+	1998 09 27	704 0.7+ 0.6-
1981 10 26	675	0.3-	0.6-	1998 09 17	699	0.4+	0.0	1998 09 27	704 0.6+ 1.1-
1983 02 15	688 (4.4+	2.0-)		1998 09 25	699	1.2+	0.1-	1998 10 28	704 0.9+ 0.1+
1983 02 15	688	1.6+	2.1-	1998 09 25	699	0.5+	1.0+	1998 10 28	704 0.3+ 0.6+
1989 03 05	046	1.5-	1.1+	1998 09 25	699	0.6+	0.1+	1998 10 28	704 0.2+ 0.9-
1989 03 05	046	0.4+	0.4+	1998 09 26	704	0.8-	0.9+	1998 10 28	704 0.9- 0.9-
1989 03 06	046	0.7-	0.7-	1998 09 26	704	1.3-	0.5+	1998 10 28	704 0.3- 0.8+
1989 03 06	046 (4.0-	1.7-)		1998 09 26	704	1.4-	0.2+	1998 10 29	704 0.5- 1.1+
1992 09 02	809	1.3+	1.2-	1998 09 26	704	0.4-	1.0+	1998 10 29	704 1.0+ 0.2+
1992 09 02	809	1.1+	0.7-	1998 09 26	704	1.6-	1.3+	1998 10 29	704 1.6- 0.0
1992 09 02	809	0.8+	0.8-	1998 09 27	704	1.0+	0.4-	1998 10 29	704 0.5- 0.4-
1992 09 03	809	1.7-	1.2-	1998 09 27	704	0.7+	0.2-	1998 10 29	704 0.9+ 0.2-

1998 SL₆₁ = 1977 PH₁ = 1987 KM₂

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	93.57410		(2000.0)			P		Q			
n	0.28458308	ω	25.78328			+0.37668022		+0.92272696			
a	2.2890925	Ω	266.43523			-0.86345021		+0.31776289			
e	0.1832664	i	4.69965			-0.33550819		+0.21817816			
P	3.46	H	14.6			G	0.15	U	3		
Residuals in seconds of arc											
1977 08 14	095	0.1+	0.2-	1998 09 26	704	0.4-	0.4-	1998 10 28	704	0.3-	0.0
1987 05 30	413	0.4+	0.2+	1998 09 26	704	0.3-	0.9-	1998 10 28	704	0.0	0.4+
1987 05 30	413	0.5-	0.4-	1998 09 27	704	0.1+	1.2-	1998 10 29	704	1.8-	0.5+
1998 09 17	699	0.4+	1.6+	1998 09 27	704	1.4-	0.3+	1998 10 29	704	(4.3-	2.0+)
1998 09 17	699	0.7-	0.9+	1998 09 27	704	1.6-	0.7+	1998 10 29	704	(1.4-	2.6+)
1998 09 17	699	0.0	0.4+	1998 09 27	704	0.7-	0.2+	1998 10 29	704	(5.0-	0.7+)
1998 09 25	699	1.2+	0.4+	1998 09 27	704	1.1-	1.2-	1998 10 29	704	(2.5-	0.5+)
1998 09 25	699	1.2+	1.2+	1998 10 11	699	1.1+	0.5-	1998 11 10	699	0.4-	0.3+
1998 09 25	699	1.3+	1.0+	1998 10 11	699	0.7+	0.0	1998 11 10	699	0.0	0.9-
1998 09 26	704	0.1+	0.0	1998 10 11	699	0.3+	0.0	1998 11 10	699	0.2+	0.1+
1998 09 26	704	0.2+	1.5-	1998 10 28	704	1.2+	0.5-				
1998 09 26	704	0.5-	0.2-	1998 10 28	704	1.2+	0.5-				

1998 DEC. 8

M.P.C. 33281

1998 SQ₆₃ = 1997 HQ₁₂

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	49.21985		(2000.0)	P	Q
<i>n</i>	0.27596642	ω	296.74880	+0.99217248	+0.11806514
<i>a</i>	2.3364970	Ω	56.49652	−0.09004767	−0.90210942
<i>e</i>	0.0737994	<i>i</i>	2.79593	−0.08651701	+0.41504122
<i>P</i>	3.57	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 30	704	0.8−	0.6+	1998 09 27	704	0.5+	0.4+	1998 10 19	699	0.1+	0.3+
1997 04 30	704	0.8−	0.7+	1998 09 27	704	0.8+	0.1+	1998 10 19	699	0.1−	0.2+
1997 04 30	704	0.3−	0.2−	1998 09 27	704	0.4+	0.7+	1998 10 28	704	0.7+	0.3−
1997 04 30	704	0.2−	0.1−	1998 09 27	704	0.2−	0.1−	1998 10 28	704	(2.8+ 0.7−)	
1997 05 05	704	0.3+	0.2−	1998 09 29	327	0.1−	0.5+	1998 10 28	704	1.0−	0.1+
1997 05 05	704	0.1+	0.2−	1998 09 29	327	0.6−	0.1+	1998 10 28	704	1.1−	0.0
1997 05 05	704	0.5+	0.2−	1998 09 29	327	0.7−	0.6+	1998 10 29	704	0.3−	0.6−
1997 05 05	704	0.4+	0.3−	1998 10 01	327	0.4−	1.2−	1998 10 29	704	0.7−	0.0
1997 05 05	704	0.6+	0.2−	1998 10 01	327	(0.9+ 2.1−)		1998 10 29	704	0.1−	0.4+
1998 09 26	704	(0.5+ 2.2−)		1998 10 01	327	0.2+	1.3−	1998 10 29	704	1.0−	0.5−
1998 09 26	704	0.1−	0.2−	1998 10 10	699	0.3+	0.3+	1998 11 11	699	1.6+	0.4−
1998 09 26	704	0.7+	0.3−	1998 10 10	699	0.1+	0.0	1998 11 11	699	0.8+	0.3−
1998 09 26	704	0.1−	0.2+	1998 10 10	699	0.1−	0.2−	1998 11 11	699	0.1−	0.1+
1998 09 27	704	0.2+	0.3+	1998 10 19	699	0.3+	0.8+				

1998 SN₆₄ = 1997 GZ₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	70.25921		(2000.0)	P	Q
<i>n</i>	0.24117224	ω	132.94368	+0.76517008	+0.64328829
<i>a</i>	2.5561392	Ω	187.16242	−0.63494325	+0.74719904
<i>e</i>	0.2022102	<i>i</i>	12.20601	−0.10659179	+0.16695440
<i>P</i>	4.09	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 07	809	(0.7− 3.9−)		1998 09 21	809	0.7+	1.8+	1998 10 29	704	(3.4− 1.0−)	
1997 04 07	809	(0.6− 4.0−)		1998 09 21	809	0.8+	1.4+	1998 10 29	704	0.0	1.2−
1997 04 07	809	(1.0− 3.9−)		1998 09 21	809	1.5+	1.2+	1998 11 10	704	0.1−	1.0+
1997 04 08	809	1.5−	0.3+	1998 10 11	699	0.5+	0.7−	1998 11 10	704	0.6+	0.8−
1997 04 08	809	1.5−	0.5−	1998 10 11	699	0.4+	0.8−	1998 11 10	704	0.1−	0.2+
1997 04 08	809	1.3−	1.0−	1998 10 11	699	0.4+	0.9−	1998 11 10	704	0.1+	0.7+
1997 04 09	809	0.2+	0.9−	1998 10 20	699	0.9−	0.7−	1998 11 10	704	0.4−	0.8+
1997 04 09	809	0.6+	0.4+	1998 10 20	699	1.0−	0.0	1998 11 11	704	0.2+	0.4+
1997 04 09	809	0.2+	0.8−	1998 10 20	699	1.4−	0.5−	1998 11 11	704	0.2+	0.4+
1997 04 10	809	1.7+	1.0+	1998 10 28	704	1.1−	0.1+	1998 11 11	704	0.6+	0.0
1997 04 10	809	(2.1+ 0.7+)		1998 10 28	704	1.0−	0.8−	1998 11 11	704	0.3+	0.0
1997 04 10	809	1.6+	0.8+	1998 10 28	704	1.1−	0.8−	1998 11 11	704	0.4−	0.1+
1998 09 20	809	0.5+	0.1−	1998 10 28	704	0.7−	0.4+	1998 11 16	566	0.4+	0.2+
1998 09 20	809	0.2−	0.9−	1998 10 29	704	0.1+	0.5−	1998 11 16	566	0.1+	0.5+
1998 09 20	809	0.4−	0.4−	1998 10 29	704	1.2+	0.5−	1998 11 16	566	0.6+	0.0

1998 SO₆₄ = 2107 T-2 = 1997 JG

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	75.70247		(2000.0)	P	Q
<i>n</i>	0.23791418	ω	125.22937	+0.69456859	+0.71861954
<i>a</i>	2.5794225	Ω	189.00798	−0.71029718	+0.67746616
<i>e</i>	0.1940280	<i>i</i>	12.56624	−0.11424706	+0.15692532
<i>P</i>	4.14	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1973 09 19	675	0.2+	1.7+	1997 05 02	691	0.4+	0.7−	1998 09 21	809	0.4−	1.8−
1973 09 19	675	0.6+	1.5+	1997 05 02	691	1.0+	0.9−	1998 10 11	699	0.6+	0.7+
1973 09 20	675	(1.5− 3.4−)		1997 05 03	691	0.7−	0.0	1998 10 11	699	1.4+	0.2−
1973 09 24	675	0.3−	1.1+	1997 05 03	691	0.7−	0.3+	1998 10 11	699	0.3+	0.5+
1973 09 24	675	0.1+	0.0	1997 05 03	691	0.7−	0.1+	1998 10 20	699	1.8−	0.6+

1973 09 25	675	2.1−	0.1+	1998 09 20	809	(2.2+ 2.8+)		1998 10 20	699	0.8−	0.4−
1973 09 25	675	2.0−	0.4−	1998 09 20	809	(1.6+ 2.2+)		1998 10 20	699	1.4−	0.3+
1973 09 29	675	0.6+	0.1+	1998 09 20	809	(1.7+ 2.5+)		1998 10 28	704	1.8−	0.3+
1973 09 29	675	0.3−	0.9−	1998 09 20	809	0.2+	0.9−	1998 10 28	704	0.8+	0.5+
1973 09 30	675	0.1−	0.2−	1998 09 20	809	0.8+	0.7−	1998 10 28	704	0.9+	0.7+
1973 09 30	675	0.8+	0.5+	1998 09 20	809	0.3+	0.9−	1998 10 28	704	0.4+	0.8+
1973 10 04	675	2.1+	0.6−	1998 09 21	809	(3.6+ 3.7+)		1998 10 29	704	1.0+	0.7−
1973 10 04	675	0.2+	0.4−	1998 09 21	809	(2.6+ 3.0+)		1998 10 29	704	(2.6+ 1.6+)	
1973 10 05	675	0.5+	0.0	1998 09 21	809	(2.8+ 3.4+)		1998 10 29	704	0.6−	0.3−
1973 10 05	675	0.5−	0.5−	1998 09 21	809	0.0	0.5−	1998 10 29	704	0.3+	0.7−
1997 05 02	691	0.5+	0.1−	1998 09 21	809	0.1−	0.8−	1998 10 29	704	0.5+	0.1−

1998 SZ₆₄ = 1991 SX₄ = 1997 GY₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	164.75130		(2000.0)	P	Q
<i>n</i>	0.29044717	ω	114.58043	−0.45229000	+0.88995664
<i>a</i>	2.2581769	Ω	128.40148	−0.84286748	−0.40511437
<i>e</i>	0.0934948	<i>i</i>	4.27390	−0.29156160	−0.20942664
<i>P</i>	3.39	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1991 09 17	675	0.3+	0.5−	1998 09 20	809	(0.1+ 3.1+)		1998 10 29	704	0.2+	0.5−
1991 09 17	675	0.2+	0.7−	1998 09 21	809	(0.4+ 2.7+)		1998 10 29	704	0.3+	0.6−
1997 04 11	809	0.5+	0.3−	1998 09 21	809	(0.0 2.5+)		1998 10 29	704	0.1+	0.3+
1997 04 11	809	0.2−	0.1−	1998 09 21	809	(0.4− 2.8+)		1998 11 10	704	(2.5+ 1.6+)	
1997 04 11	809	0.2−	0.5−	1998 10 11	699	0.7−	0.8−	1998 11 10	704	0.6+	0.3−
1997 04 12	809	0.2+	1.1+	1998 10 11	699	0.7−	0.3−	1998 11 10	704	1.7+	1.2+
1997 04 12	809	0.2−	0.3+	1998 10 11	699	0.0	0.7−	1998 11 11	704	0.7−	0.5+
1997 04 12	809	0.1−	0.0	1998 10 28	704	1.2−	0.6−	1998 11 11	704	0.6+	0.8+
1998 09 18	699	1.7−	0.5+	1998 10 28	704	0.5−	0.2−	1998 11 11	704	0.5+	0.1+
1998 09 18	699	0.2−	1.0+	1998 10 28	704	0.1−	0.2+	1998 11 11	704	0.2−	0.4−
1998 09 18	699	0.4−	1.1+	1998 10 28	704	0.3+	0.6+	1998 11 11	704	0.4+	0.4−
1998 09 20	809	1.3+	1.7+	1998 10 29	704	0.6+	0.1+				
1998 09 20	809	(0.0 2.3+)		1998 10 29	704	0.8−	1.4−				

1998 SG₆₅ = 1993 FN₅₂ = 1993 HR₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	49.19091		(2000.0)	P	Q
<i>n</i>	0.27438443	ω	219.45443	+0.99945268	+0.00800481
<i>a</i>	2.3454692	Ω	140.05140	+0.00416408	+0.93212233
<i>e</i>	0.1008719	<i>i</i>	2.86535	−0.03281783	+0.36205509
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 03 17	809	1.1+	0.4−	1998 09 21	809	(2.1+ 2.4+)		1998 10 29	704	0.3+	1.7−
1993 03 18	809	0.2−	0.0	1998 10 11	699	0.1+	0.2−	1998 11 10	704	0.2+	0.1−
1993 03 23	809	0.6+	0.1+	1998 10 11	699	0.9+	0.7−	1998 11 10	704	0.1−	0.2+
1993 04 16	413	1.6−	0.2+	1998 10 11	699	0.2+	0.9−	1998 11 10	704	0.2−	0.5+
1998 09 18	699	1.2−	1.0−	1998 10 28	704	0.7−	0.2+	1998 11 10	704	0.0	0.8+
1998 09 18	699	0.9−	1.2−	1998 10 28	704	1.7−	0.5−	1998 11 11	704	0.2+	1.0+
1998 09 18	699	0.2−	1.0−	1998 10 28	704	0.5+	0.3−	1998 11 11	704	0.1+	0.7+
1998 09 20	809	1.3+	1.4+	1998 10 28	704	0.8−	0.2+	1998 11 11	704	1.0+	0.2+
1998 09 20	809	0.3+	1.9+	1998 10 29	704	0.1+	0.3−	1998 11 11	704	0.4+	0.5+
1998 09 20	809	0.8+	2.0+	1998 10 29	704	0.4+	0.7−	1998 11 16	566	0.7−	0.2−
1998 09 21	809	(2.9+ 2.8+)		1998 10 29	704	0.3+	0.6+	1998 11 16	566	0.7−	0.3−
1998 09 21	809	(2.2+ 2.9+)		1998 10 29	704	0.8+	0.9−	1998 11 16	566	0.6−	0.1−

1998 SN₆₅ = 1997 JD₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	60.93366		(2000.0)	P	Q
n	0.21384967	ω	267.62131	+0.81331473	+0.56934394
a	2.7694721	Ω	57.64948	-0.46133701	+0.75658452
e	0.2269478	i	8.15679	-0.35452406	+0.32160121
P	4.61	H	14.4	G 0.15	U 4

Residuals in seconds of arc

1997 05 03	809	1.7+	0.5+	1998 09 20	809	1.5+	0.1-	1998 10 29	704	0.2-	0.2+
1997 05 03	809	0.4-	1.0+	1998 09 20	809	0.1-	0.6+	1998 10 29	704	0.3+	0.9+
1997 05 03	809	0.4+	0.7+	1998 09 20	809	1.1-	0.4+	1998 10 29	704	1.0+	0.3+
1997 05 04	809	0.4-	1.0-	1998 09 21	809	1.0+	0.7+	1998 10 29	704	0.5+	0.4-
1997 05 04	809	0.8-	1.0-	1998 09 21	809	0.2-	0.9+	1998 10 29	704	0.2-	0.4+
1997 05 04	809	0.0	1.6+	1998 09 21	809	0.9-	1.1+	1998 11 10	704	(1.6+	2.1+)
1997 05 07	704	0.4-	1.1-	1998 10 11	699	0.6+	0.0	1998 11 10	704	0.3-	0.7+
1997 05 07	704	0.3-	0.1-	1998 10 11	699	0.6+	0.5-	1998 11 10	704	0.4-	0.4+
1997 05 07	704	0.0	1.1-	1998 10 11	699	0.1+	0.3-	1998 11 11	704	0.1+	0.1+
1997 05 07	704	(2.6-	0.7-)	1998 10 28	704	0.7+	1.1-	1998 11 11	704	0.3+	1.4-
1998 09 18	699	0.3-	1.6-	1998 10 28	704	0.6-	1.0-	1998 11 11	704	(0.6+	2.2-)
1998 09 18	699	0.7-	0.7-	1998 10 28	704	0.3-	0.2-				
1998 09 18	699	0.5-	0.1-	1998 10 28	704	0.8-	0.5+				

1998 SV₆₅ = 1985 FJ₁ = 1994 TA₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	199.15237	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.25894465	ω	25.40352	-0.84358482	+0.53631558	
<i>a</i>	2.4378001	Ω	187.21034	-0.52208160	-0.83089392	
<i>e</i>	0.1303498	<i>i</i>	12.43331	-0.12567998	-0.14825953	
<i>P</i>	3.81	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1985 03 22	688	0.1-	0.9-	1998 09 21	809	(0.9+	4.2+)	1998 10 29	704	0.7-	0.4-
1985 03 22	688	0.1-	0.2-	1998 09 21	809	(1.0+	4.1+)	1998 11 10	704	0.5-	0.8+
1994 10 06	691	0.4+	0.6-	1998 09 21	809	(1.2+	4.1+)	1998 11 10	704	0.2-	0.3+
1994 10 06	691	0.1+	0.5-	1998 10 11	699	0.5+	0.1-	1998 11 10	704	0.1+	0.4+
1994 10 06	691	0.3+	0.5-	1998 10 11	699	0.5+	0.2-	1998 11 10	704	0.5-	0.6+
1994 10 11	691	0.0	0.4-	1998 10 11	699	0.4+	0.0	1998 11 10	704	0.4-	0.2+
1994 10 11	691	0.2-	0.6-	1998 10 28	704	0.0	0.2-	1998 11 11	704	0.8-	0.8+
1994 10 11	691	0.1-	0.3-	1998 10 28	704	0.2+	1.1-	1998 11 11	704	1.2+	0.0
1998 09 18	699	0.2+	0.1+	1998 10 28	704	0.6-	0.1-	1998 11 11	704	0.9+	0.2-
1998 09 18	699	0.0	0.7+	1998 10 28	704	0.2+	0.4+	1998 11 11	704	1.1+	0.1+
1998 09 18	699	1.2+	0.8+	1998 10 29	704	0.6-	0.2+	1998 11 11	704	1.0+	0.3-
1998 09 20	809	(2.2+	5.4+)	1998 10 29	704	0.9-	0.0	1998 11 16	566	0.1+	0.5-
1998 09 20	809	(2.4+	4.9+)	1998 10 29	704	0.9-	0.0	1998 11 16	566	0.8-	0.1-
1998 09 20	809	(2.1+	4.7+)	1998 10 29	704	0.3-	0.2+	1998 11 16	566	0.4-	0.8-

1998 SP₆₆ = 1995 YT₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	129.78726	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.30442901	ω	199.99697	-0.03758186	+0.99395514	
<i>a</i>	2.1884940	Ω	67.96212	-0.90103092	+0.01093306	
<i>e</i>	0.1723898	<i>i</i>	6.38940	-0.43212369	-0.10924121	
<i>P</i>	3.24	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1995 12 22	566	(2.2+	2.9-)	1998 09 21	809	1.3+	0.7-	1998 10 29	704	0.1+	1.4-
1995 12 22	566	(3.4+	2.8-)	1998 09 21	809	0.2+	0.7-	1998 10 29	704	1.3+	1.7+
1995 12 22	566	(2.9+	2.8-)	1998 10 11	699	0.2-	0.8-	1998 10 29	704	0.5+	0.6+
1995 12 24	566	0.7+	0.6-	1998 10 11	699	1.2+	0.4+	1998 10 29	704	(2.4-	0.3-)
1995 12 24	566	0.3+	0.4-	1998 10 11	699	0.1+	1.3+	1998 11 10	704	0.7+	0.9+
1995 12 24	566	0.6-	0.2-	1998 10 20	699	1.3-	0.6-	1998 11 10	704	1.0-	0.4-
1995 12 25	566	0.2+	0.4+	1998 10 20	699	0.6-	0.9+	1998 11 10	704	1.0-	0.3-
1995 12 25	566	0.6+	0.3+	1998 10 20	699	0.3-	0.4-	1998 11 11	704	1.2+	0.6-
1995 12 25	566	0.7-	0.4+	1998 10 28	704	0.1+	0.4+	1998 11 11	704	1.3-	1.3+
1998 09 20	809	0.6+	0.9+	1998 10 28	704	0.0	0.2+	1998 11 11	704	1.7+	0.7-
1998 09 20	809	0.7-	0.0	1998 10 28	704	1.5-	1.6-	1998 11 11	704	0.1+	1.2-
1998 09 20	809	1.7-	0.5+	1998 10 28	704	0.0	1.1+				
1998 09 21	809	0.4+	1.0-	1998 10 29	704	0.1+	0.1+				

1998 SX₆₆ = 1989 BA₂ = 1993 TA₃₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	31.81904	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19760730	ω	263.65020	+0.97017538	-0.23662794	
<i>a</i>	2.9192238	Ω	110.02780	+0.23859647	+0.89387087	
<i>e</i>	0.1017863	<i>i</i>	3.20953	+0.04279551	+0.38079140	
<i>P</i>	4.99	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1989 01 18	675	1.9-	0.6+	1993 10 11	809	1.7+	0.3-	1998 10 28	704	0.2-	1.0+
1989 01 18	675	0.5+	0.6+	1998 09 20	809	0.4+	0.8+	1998 10 28	704	0.6-	0.5+
1989 01 18	675	0.6+	0.5+	1998 09 20	809	0.1-	1.2+	1998 10 28	704	0.9-	0.1+
1993 10 09	809	1.4-	2.9-	1998 09 20	809	1.3-	2.1+	1998 10 29	704	0.6+	0.1-
1993 10 09	809	0.7-	1.8-	1998 09 21	809	0.7+	1.4+	1998 10 29	704	0.5+	0.9-
1993 10 09	809	0.5-	2.7-	1998 09 21	809	0.0	1.4+	1998 10 29	704	0.7-	0.7-
1993 10 11	809	2.1+	0.0	1998 09 21	809	0.8-	1.3+	1998 10 29	704	0.3+	0.3-
1993 10 11	809	1.7+	0.3+	1998 10 28	704	0.3-	0.4-	1998 10 29	704	0.1-	0.5-

1998 SF₆₇ = 1993 QC₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	105.08579	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.22061427	ω	200.85048	+0.29849366	+0.95096312	
<i>a</i>	2.7125660	Ω	86.58712	-0.86375701	+0.30529336	
<i>e</i>	0.1551610	<i>i</i>	4.65776	-0.40598689	+0.04964984	
<i>P</i>	4.47	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 08 19	675	0.5+	0.2+	1998 09 21	809	0.2-	0.4-	1998 10 29	704	0.3-	0.0
1993 08 19	675	0.1+	1.5-	1998 09 21	809	0.5-	0.1+	1998 10 29	704	1.2-	0.3-
1993 08 22	675	1.5-	0.7-	1998 09 21	809	1.1-	0.6+	1998 10 29	704	0.6+	0.5-
1993 08 22	675	0.9+	2.0+	1998 10 28	704	0.8+	0.1+	1998 10 29	704	1.1+	0.3-
1998 09 20	809	1.4+	1.2-	1998 10 28	704	0.1+	0.9-	1998 10 29	704	0.3+	1.0-
1998 09 20	809	0.2+	0.3-	1998 10 28	704	0.2-	2.1+				
1998 09 20	809	0.5+	0.7+	1998 10 28	704	1.3-	1.4+				

1998 SN₆₇ = 1996 HC₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	318.06554	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.22853600	ω	70.33719	-0.33543716	-0.92555076	
<i>a</i>	2.6495145	Ω	40.64924	+0.73137699	-0.37334540	
<i>e</i>	0.1669974	<i>i</i>	15.63883	+0.59377572	-0.06300002	
<i>P</i>	4.31	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 04 17	809	0.8-	0.5+	1998 09 20	809	1.7+	1.0-	1998 11 10	704	0.0	0.0
1996 04 17	809	1.0-	0.4+	1998 09 20	809	0.6+	0.8-	1998 11 10	704	0.2+	0.9-
1996 04 17	809	1.1-	0.7+	1998 09 20	809	0.4+	0.6-	1998 11 10	704	0.4-	0.4-
1996 04 18	809	0.9+	0.0	1998 09 21	809	1.0+	1.0-	1998 11 10	704	1.2-	0.2+
1996 04 18	809	1.3+	0.6-	1998 09 21	809	0.6+	1.1-	1998 11 11	704	0.2+	1.2+
1996 04 18	809	0.9+	0.7-	1998 09 21	809	0.6+	0.6-	1998 11 11	704	0.1-	0.6-
1998 09 18	699	1.0-	1.6+	1998 10 11	699	0.2-	1.1+	1998 11 11	704	1.3+	0.4+
1998 09 18	699	1.4-	0.9+	1998 10 11	699	0.4-	0.7+	1998 11 11	704	0.9+	1.3-
1998 09 18	699	1.5-	1.0+	1998 10 11	699	0.6-	0.5+	1998 11 11	704	0.8-	1.0+

1998 SQ₇₀ = 1978 WT₄ = 1988 VQ₁₂

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	26.10139	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19364329	ω	239.19117	+0.96662246	-0.25460842	
<i>a</i>	2.9589281	Ω	135.54154	+0.24678758	+0.89534591	
<i>e</i>	0.1177140	<i>i</i>	2.33686	+0.06882522	+0.36541792	
<i>P</i>	5.09	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i> 4

1998 DEC. 8

M.P.C. 33283

Residuals in seconds of arc

1978 11 29	675	0.1−	0.4−	1998 10 28	704	0.5+	0.1+	1998 11 10	704	0.9+	0.5−
1978 11 30	675	0.3+	0.2−	1998 10 28	704	0.2−	0.0	1998 11 10	704	0.4−	1.1−
1988 11 04	327	0.9−	0.6+	1998 10 28	704	0.4+	0.1−	1998 11 10	704	1.5+	0.8−
1988 11 04	327	0.2+	1.4+	1998 10 28	704	0.7−	0.8−	1998 11 10	704	0.9+	0.2−
1998 09 21	809	(1.2+	3.7+)	1998 10 28	704	(1.0−	2.8+)	1998 11 10	704	0.4−	0.3−
1998 09 21	809	(0.9+	2.6+)	1998 10 29	704	0.3−	0.6+	1998 11 11	704	1.0+	0.1+
1998 09 21	809	(1.1+	3.5+)	1998 10 29	704	0.2−	1.2+	1998 11 11	704	0.5−	0.9−
1998 09 23	809	(16.0−	1.0−)	1998 10 29	704	0.8+	1.1+	1998 11 11	704	0.2−	0.9−
1998 09 23	809	(17.2−	0.0)	1998 10 29	704	0.7−	0.7+	1998 11 11	704	1.1−	0.4+
1998 09 23	809	(16.9−	0.2−)	1998 10 29	704	0.0	0.1−	1998 11 11	704	0.5−	0.2−

1998 SR₇₀ = 1987 SH₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	30.70020		(2000.0)	P	Q
<i>n</i>	0.18164934	ω	338.12266	+0.98704543	−0.13786786
<i>a</i>	3.0877834	Ω	30.16412	+0.16040868	+0.83773768
<i>e</i>	0.0945145	<i>i</i>	9.39904	+0.00322011	+0.52838247
<i>P</i>	5.43	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1987 09 29	033	0.9+	0.7+	1998 09 23	809	(4.6+	1.9+)	1998 10 28	704	(2.2+	0.4−)
1987 09 29	033	0.5+	1.2+	1998 09 26	704	0.2+	1.1+	1998 10 28	704	0.1+	0.3−
1987 09 30	033	0.8−	2.2−	1998 09 26	704	0.4−	0.1+	1998 10 28	704	0.0	0.0
1987 09 30	033	0.5−	0.0	1998 09 26	704	1.0+	0.5−	1998 10 28	704	(2.2−	1.4+)
1998 09 18	699	1.3−	0.6+	1998 09 26	704	0.4+	0.5+	1998 10 29	704	0.8−	0.4+
1998 09 18	699	0.1+	1.3+	1998 09 26	704	0.0	0.4−	1998 10 29	704	0.5−	1.7+
1998 09 18	699	0.6−	0.5+	1998 09 27	704	0.2−	0.4+	1998 10 29	704	0.0	0.6+
1998 09 21	809	(2.0+	2.6+)	1998 09 27	704	1.1+	1.4−	1998 10 29	704	0.3−	0.5−
1998 09 21	809	(1.6+	3.0+)	1998 09 27	704	0.2+	0.9−	1998 10 29	704	0.3+	1.1−
1998 09 21	809	(2.0+	2.6+)	1998 09 27	704	0.6+	0.5−	1998 11 10	699	0.3+	0.0
1998 09 23	809	(4.4+	2.3+)	1998 09 27	704	0.8−	1.4−	1998 11 10	699	0.4+	0.1+
1998 09 23	809	(4.3+	2.1+)	1998 10 28	704	0.6−	0.1+	1998 11 10	699	0.8+	0.2−

1998 SL₇₁ = 1996 JR₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	351.50458		(2000.0)	P	Q
<i>n</i>	0.18797869	ω	265.00295	+0.48692576	−0.87328210
<i>a</i>	3.0180770	Ω	155.83583	+0.81673865	+0.44841950
<i>e</i>	0.1464804	<i>i</i>	2.34976	+0.30958243	+0.19052121
<i>P</i>	5.24	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 05 13	691	0.7+	0.2+	1998 09 21	809	1.2−	2.5+	1998 09 27	704	0.2+	1.1−
1996 05 13	691	1.0+	0.3+	1998 09 23	809	2.8+	2.2+	1998 09 27	704	1.7−	1.3−
1996 05 13	691	0.3+	0.2−	1998 09 23	809	3.3+	2.5+	1998 10 28	704	0.3+	0.5−
1996 05 21	691	0.6−	0.1−	1998 09 23	809	2.6+	2.8+	1998 10 28	704	0.6−	1.2+
1996 05 21	691	0.8−	0.1−	1998 09 26	704	1.2−	0.5+	1998 10 28	704	0.6+	0.1−
1996 05 21	691	0.7−	0.1−	1998 09 26	704	1.1+	2.0−	1998 10 28	704	1.3−	1.1+
1998 09 18	809	0.8+	0.5−	1998 09 26	704	0.2+	1.4−	1998 10 29	704	0.3+	1.3−
1998 09 18	809	0.4−	1.3−	1998 09 26	704	0.8−	2.3−	1998 10 29	704	0.8+	0.0
1998 09 18	809	2.1−	2.0−	1998 09 27	704	0.4−	1.0−	1998 10 29	704	0.1+	1.0+
1998 09 21	809	0.1+	2.3+	1998 09 27	704	2.5−	1.0−	1998 10 29	704	0.9+	0.1+
1998 09 21	809	1.6−	1.5+	1998 09 27	704	0.1−	1.0−	1998 10 29	704	0.5−	0.7−

1998 SY₇₂ = 1990 EX₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	204.58752		(2000.0)	P	Q
<i>n</i>	0.29585886	ω	33.10305	−0.86901755	+0.49473590
<i>a</i>	2.2305553	Ω	176.52876	−0.47459356	−0.82965550
<i>e</i>	0.0558855	<i>i</i>	6.35321	−0.13989086	−0.25866608
<i>P</i>	3.33	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1990 03 02	809	0.5+	0.2−	1998 09 23	809	(0.2+	2.5−)	1998 10 29	704	0.1+	0.1−
1990 03 02	809	0.6+	0.1−	1998 09 23	809	0.7+	1.3−	1998 10 29	704	1.0−	0.2−
1990 03 02	809	0.2+	0.2−	1998 09 23	809	0.5−	1.2−	1998 10 29	704	0.8−	0.5−
1990 03 04	809	0.7−	0.1−	1998 10 11	699	0.1+	0.3+	1998 11 10	704	0.9−	0.4+
1990 03 04	809	0.5−	0.5+	1998 10 11	699	0.3−	0.7+	1998 11 10	704	0.0	0.2+
1990 03 04	809	0.1−	0.1−	1998 10 11	699	0.5+	0.5+	1998 11 10	704	0.6+	1.7+
1998 09 18	699	0.0	0.5+	1998 10 28	704	0.0	0.1−	1998 11 10	704	0.6−	1.3−
1998 09 18	699	0.2−	0.6+	1998 10 28	704	(0.0	2.3+)	1998 11 11	704	1.0+	0.4+
1998 09 18	699	0.2−	0.2+	1998 10 28	704	0.1−	0.4+	1998 11 11	704	1.1+	0.0
1998 09 21	809	(0.8−	2.1−)	1998 10 28	704	1.5+	1.1+	1998 11 11	704	(1.0−	2.5−)
1998 09 21	809	(1.0−	2.9−)	1998 10 29	704	0.4−	0.7−	1998 11 11	704	1.1−	0.3−
1998 09 21	809	(1.5−	2.2−)	1998 10 29	704	0.6+	1.3−				

1998 SZ₇₂ = 1981 RT₆ = 1997 PJ₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	68.58099		(2000.0)	P	Q
<i>n</i>	0.17904694	ω	213.61771	+0.77772224	+0.62702719
<i>a</i>	3.1176315	Ω	107.48736	−0.56596090	+0.72929788
<i>e</i>	0.1467207	<i>i</i>	2.67740	−0.27356237	+0.27379098
<i>P</i>	5.50	<i>H</i>	13.2	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1981 09 03	675	0.3−	0.1+	1998 09 23	809	0.2−	1.3−	1998 10 29	704	0.7−	0.7+
1981 09 04	675	0.6+	0.7−	1998 09 23	809	0.4−	1.5−	1998 11 10	704	0.6−	0.4−
1997 08 07	608	0.0	0.4+	1998 10 11	699	0.2+	0.6+	1998 11 10	704	0.2−	0.6−
1997 08 07	608	0.0	0.3+	1998 10 11	699	0.3+	0.7+	1998 11 10	704	0.4+	2.0−
1997 08 08	608	(3.2+	2.8−)	1998 10 11	699	0.3−	0.8+	1998 11 10	704	1.1−	0.4−
1998 09 18	699	0.0	1.0+	1998 10 28	704	0.8+	0.1+	1998 11 11	704	0.4+	0.2+
1998 09 18	699	0.2−	0.6+	1998 10 28	704	0.1−	0.4+	1998 11 11	704	0.1+	1.2−
1998 09 18	699	0.3+	0.0	1998 10 28	704	0.1+	1.1+	1998 11 11	704	1.0+	1.6+
1998 09 21	809	(0.2−	2.3−)	1998 10 28	704	0.1−	0.2+	1998 11 11	704	0.1−	0.5+
1998 09 21	809	(0.9−	2.8−)	1998 10 29	704	(4.1−	0.5−)	1998 11 11	704	0.4−	0.6−
1998 09 21	809	(0.8−	2.5−)	1998 10 29	704	0.5+	0.6+				
1998 09 23	809	0.2+	1.9−	1998 10 29	704	0.3−	1.1+				

1998 SG₇₃ = 4862 P-L = 1987 DN₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	328.11092		(2000.0)	P	Q
<i>n</i>	0.23413486	ω	300.51990	−0.19446917	−0.98056023
<i>a</i>	2.6071059	Ω	160.64187	+0.92482929	−0.19216802
<i>e</i>	0.2152444	<i>i</i>	4.52333	+0.32691364	−0.03966223
<i>P</i>	4.21	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.2+	0.4+	1998 09 23	809	(0.2+	2.3+)	1998 10 29	704	0.2+	1.5−
1960 09 24	675	0.6+	0.5−	1998 09 23	809	0.9−	1.3+	1998 10 29	704	0.3+	1.0+
1960 09 26	675	0.5+	0.9−	1998 09 23	809	0.8−	0.9+	1998 10 29	704	0.6−	0.4−
1960 09 27	675	0.8−	1.2−	1998 10 11	699	1.4+	0.0	1998 10 29	704	1.1+	1.9−
1960 09 27	675	0.0	0.0	1998 10 11	699	0.2+	0.1+	1998 10 29	704	0.5−	0.9+
1960 09 28	675	0.1−	0.4+	1998 10 11	699	1.4+	0.5+	1998 11 10	704	0.0	0.5+
1960 09 28	675	0.3+	0.3−	1998 10 20	699	0.6+	0.5+	1998 11 10	704	0.9−	0.7−
1987 02 23	010	1.7−	0.3−	1998 10 20	699	1.1+	0.7−	1998 11 10	704	0.4−	0.5+
1987 02 23	010	0.4+	0.6−	1998 10 20	699	1.1+	1.8−	1998 11 10	704	1.8−	0.5+
1987 02 23	010	1.2+	0.6+	1998 10 28	704	0.2−	1.9+	1998 11 11	704	0.2+	1.2−
1998 09 21	809	(0.2−	2.2+)	1998 10 28	704	1.2−	1.0−	1998 11 11	704	0.3−	0.3−
1998 09 21	809	0.8−	0.5+	1998 10 28	704	1.3+	0.2+	1998 11 11	704	(2.4−	0.1+)
1998 09 21	809	1.4−	0.6+	1998 10 28	704	0.1−	1.6+				

1998 ST₇₄ = 1991 TY₉ = 1994 LQ₈

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	104.51471		(2000.0)	P	Q
<i>n</i>	0.28300920	ω	191.14560	+0.15198949	+0.98680575
<i>a</i>	2.2975714	Ω	87.61411	-0.90247452	+0.16157880
<i>e</i>	0.2462760	<i>i</i>	3.20153	-0.40303715	+0.01032995
<i>P</i>	3.48	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 10 06	691	0.7-	0.8+	1998 09 18	699	1.6-	0.0	1998 09 26	704	0.2+	1.4-
1991 10 06	691	0.8-	0.5+	1998 09 18	699	0.5+	0.2-	1998 09 26	704	0.2+	1.1-
1991 10 06	691	0.6-	0.4+	1998 09 18	699	1.5-	0.9+	1998 09 27	704	1.4-	0.9-
1991 10 07	691	0.4-	0.4+	1998 09 21	809	1.7+	0.2+	1998 09 27	704	1.4-	0.0
1991 10 07	691	1.6+	0.3-	1998 09 21	809	1.6+	0.7-	1998 09 27	704	0.4-	0.8+
1991 10 07	691	0.1-	0.4+	1998 09 21	809	1.0+	0.8+	1998 09 27	704	(2.8-	1.7-)
1994 06 08	809	1.1-	1.0-	1998 09 23	809	1.4+	0.8-	1998 10 11	699	0.3-	0.2-
1994 06 08	809	0.1-	0.9+	1998 09 23	809	0.9+	1.0-	1998 10 11	699	0.9-	0.1+
1994 06 08	809	0.3-	0.5+	1998 09 23	809	0.8+	0.3-	1998 10 11	699	0.2-	0.2+
1994 06 09	809	0.5+	0.7+	1998 09 26	704	0.1-	0.1+	1998 10 20	699	0.7+	1.1+
1994 06 09	809	0.5-	0.4-	1998 09 26	704	0.4-	1.1-	1998 10 20	699	0.5+	1.5+
1994 06 09	809	1.5+	0.6-	1998 09 26	704	(1.5-	2.2-)	1998 10 20	699	(0.3+	2.1+)

1998 SY₇₄ = 4315 T-1 = 1981 WT₂

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	78.40946		(2000.0)	P	Q
<i>n</i>	0.22945153	ω	221.85698	+0.56873261	+0.81919703
<i>a</i>	2.6424620	Ω	82.93305	-0.73350983	+0.54577997
<i>e</i>	0.2191680	<i>i</i>	4.26983	-0.37216467	+0.17618301
<i>P</i>	4.30	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1971 03 24	675	1.5+	1.0-	1998 09 26	704	0.7+	0.2+	1998 10 28	704	0.3-	0.7-
1971 03 26	675	1.2-	0.0	1998 09 26	704	0.1+	0.9-	1998 10 28	704	0.8-	0.4-
1971 03 26	675	0.1-	0.9-	1998 09 26	704	0.0	0.3-	1998 10 29	704	0.4+	0.1+
1971 03 27	675	0.2-	2.3-	1998 09 26	704	0.4-	0.0	1998 10 29	704	0.8+	0.7-
1971 04 02	675	0.7-	2.4+	1998 09 27	704	0.4+	0.3+	1998 10 29	704	0.7+	0.3-
1981 11 24	033	0.9+	0.4+	1998 09 27	704	0.7+	0.9+	1998 10 29	704	0.2+	1.0-
1981 11 24	033	1.6-	1.2+	1998 09 27	704	0.4+	0.3+	1998 10 29	704	1.3+	0.1-
1998 09 18	699	0.2+	1.1+	1998 09 27	704	0.7-	0.4-	1998 11 10	704	0.5-	0.8-
1998 09 18	699	1.6+	0.2+	1998 09 27	704	0.2-	0.4-	1998 11 10	704	0.6+	0.4+
1998 09 18	699	1.2+	0.5+	1998 10 11	699	0.3+	0.4+	1998 11 10	704	0.8-	0.1-
1998 09 21	809	(2.7+	0.3+)	1998 10 11	699	0.2+	0.4+	1998 11 10	704	0.6-	0.7-
1998 09 21	809	(2.5+	0.8+)	1998 10 11	699	0.6+	0.1+	1998 11 11	704	0.3-	0.8+
1998 09 21	809	(2.3+	0.4-)	1998 10 20	699	0.2+	0.1-	1998 11 11	704	0.2+	0.1+
1998 09 23	809	(2.6+	2.2-)	1998 10 20	699	0.1-	0.4+	1998 11 11	704	0.7-	0.6-
1998 09 23	809	(2.3+	2.7-)	1998 10 20	699	0.2+	0.2+	1998 11 11	704	1.4-	0.6+
1998 09 23	809	(1.9+	2.4-)	1998 10 28	704	0.9-	0.5-	1998 11 11	704	1.1-	0.0
1998 09 26	704	0.5-	0.6-	1998 10 28	704	0.4-	1.6-				

1998 SK₇₅ = 1996 CB₁

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	223.04115		(2000.0)	P	Q
<i>n</i>	0.25575031	ω	57.51244	-0.98395076	+0.16644403
<i>a</i>	2.4580569	Ω	131.98169	-0.17842670	-0.92216561
<i>e</i>	0.0733465	<i>i</i>	4.96393	+0.00219455	-0.34915180
<i>P</i>	3.85	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1996 02 05	608	0.0	0.4-	1998 09 21	809	1.1-	0.5-	1998 09 27	704	0.2+	1.8+
1996 02 05	608	0.3-	0.5-	1998 09 21	809	1.2-	0.5-	1998 09 27	704	1.2-	0.0
1996 02 06	608	0.2+	0.2+	1998 09 23	809	0.2-	0.7-	1998 09 27	704	0.0	0.4+
1996 02 06	608	0.4+	0.4+	1998 09 23	809	1.2-	0.5-	1998 09 27	704	1.1+	0.4-
1996 02 10	608	0.3-	0.1+	1998 09 23	809	1.7-	0.7-	1998 09 27	704	0.5-	0.3-
1996 02 10	608	0.0	0.1+	1998 09 26	704	0.2+	0.7-	1998 10 11	699	0.0	0.1+

1998 09 18	699	1.2+	0.6+	1998 09 26	704	0.6+	0.3+	1998 10 11	699	0.3+	0.4-
1998 09 18	699	0.2+	0.7+	1998 09 26	704	1.1+	0.0	1998 10 11	699	0.6-	1.2+
1998 09 18	699	0.4+	1.0+	1998 09 26	704	1.3+	0.3-				
1998 09 21	809	1.0-	0.1-	1998 09 26	704	1.8+	0.9-				

1998 SL₇₅ = 1997 GJ₂₄

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.28471		(2000.0)	P	Q
<i>n</i>	0.22702611	ω	222.86666	+0.77982928	+0.62287748
<i>a</i>	2.6612490	Ω	98.50103	-0.55592133	+0.73489575
<i>e</i>	0.2071198	<i>i</i>	3.61560	-0.28778075	+0.26823849
<i>P</i>	4.34	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 06	704	0.9+	0.0	1998 09 23	809	0.5-	1.0+	1998 10 28	704	0.4+	1.4-
1997 04 06	704	0.5-	0.0	1998 10 11	699	0.2-	1.3-	1998 10 28	704	0.6+	1.1+
1997 04 08	704	0.5-	0.1+	1998 10 11	699	0.2-	0.2-	1998 10 29	704	0.4+	0.2+
1997 04 08	704	0.0	0.2-	1998 10 11	699	0.1+	0.7+	1998 10 29	704	0.5+	0.7-
1998 09 21	809	0.6+	0.3+	1998 10 20	699	1.0-	0.3+	1998 10 29	704	0.0	0.1+
1998 09 21	809	0.3-	1.0-	1998 10 20	699	0.2+	0.7+	1998 10 29	704	0.5-	0.3-
1998 09 21	809	0.1-	0.9-	1998 10 20	699	0.1-	1.0+	1998 10 29	704	0.4-	0.7-
1998 09 23	809	0.3+	0.4+	1998 10 28	704	0.4+	0.4+				
1998 09 23	809	0.4+	0.4+	1998 10 28	704	0.7-	0.2-				

1998 SW₇₅ = 1978 RU₉ = 1995 WU₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	168.25926		(2000.0)	P	Q
<i>n</i>	0.30070427	ω	101.24772	-0.56213421	+0.82614823
<i>a</i>	2.2065290	Ω	134.47801	-0.77830779	-0.51267833
<i>e</i>	0.1293240	<i>i</i>	3.09513	-0.27971794	-0.23375205
<i>P</i>	3.28	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1978 09 02	809	1.3+	1.4+	1998 09 26	704	0.2+	0.1-	1998 09 29	704	(0.6-	0.7-)
1978 09 02	809	0.6-	0.6-	1998 09 26	704	0.5-	0.9-	1998 09 29	704	0.2-	0.6-
1978 09 02	809	0.6-	0.1+	1998 09 26	704	0.3+	1.7-	1998 09 29	704	0.2+	0.9-
1978 09 02	809	0.0	0.3-	1998 09 26	704	0.4+	0.2-	1998 09 29	704	0.8+	1.5+
1995 11 17	691	0.1+	0.0	1998 09 26	704	1.4-	0.9+	1998 09 29	704	1.0+	0.9+
1995 11 17	691	0.2+	0.2+	1998 09 27	704	0.2-	0.2-	1998 10 02	704	(2.5+	2.0-)
1995 11 17	691	0.1+	0.1-	1998 09 27	704	(1.1-	0.3-)	1998 10 02	704	(1.4-	2.7-)
1995 11 23	691	0.4-	0.2+	1998 09 27	704	0.4+	1.3+	1998 10 02	704	0.3-	0.4-
1995 11 23	691	0.3-	0.2+	1998 09 27	704	2.5-	1.5-	1998 10 02	704	0.5+	0.1+
1995 11 23	691	0.3-	0.1+	1998 09 27	704	0.0	0.4+				

1998 SV₁₀₅ = 1994 PQ₂₂

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	297.51417		(2000.0)	P	Q
<i>n</i>	0.26265825	ω	13.32807	-0.46274341	-0.88567529
<i>a</i>	2.4147677	Ω	104.24734	+0.80969851	-0.43974264
<i>e</i>	0.1342902	<i>i</i>	2.24988	+0.36091114	-0.14901575
<i>P</i>	3.75	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1994 08 12	809	0.6-	0.2-	1998 09 26	704	1.0-	0.5-	1998 10 28	704	0.2+	0.2+
1994 08 12	809	0.4-	0.1-	1998 09 26	704	0.0	0.3-	1998 10 28	704	0.6-	3.3+
1994 08 12	809	1.1-	1.2-	1998 09 26	704	0.7-	0.1+	1998 10 28	704	1.4-	3.2+
1994 08 13	809	1.4+	0.8+	1998 09 27	704	0.5+	0.0	1998 10 28	704	2.0-	1.1+
1994 08 13	809	0.1+	0.2-	1998 09 27	704	0.2+	0.7+	1998 10 29	704	1.1+	2.1-
1994 08 13	809	0.7+	0.6+	1998 09 27	704	0.7+	0.4+	1998 10 29	704	2.2+	2.6-
1998 09 26	704	0.6-	0.1+	1998 09 27	704	0.7+	0.2-	1998 10 29	704	0.5-	2.3-
1998 09 26	704	0.6-	0.0	1998 09 27	704	0.5+	0.6+	1998 10 29	704	1.1+	1.5-

1998 SK₁₀₇ = 2167 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28540663	ω	202.17198	+0.81935799	-0.57287785		
<i>a</i>	2.2846869	Ω	192.84683	+0.53944139	+0.78315866		
<i>e</i>	0.2521800	<i>i</i>	5.55626	+0.19405018	+0.24181290		
<i>P</i>	3.45	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 26	675	0.9-	0.1-	1998 09 27	704	0.1+	0.1-	1998 10 28	704	0.1+	0.8+
1960 09 28	675	1.2+	0.1+	1998 09 27	704	0.8+	0.5+	1998 10 28	704	0.2+	0.4-
1960 09 29	675	0.4-	0.3+	1998 09 27	704	1.0-	0.4+	1998 10 28	704	0.2-	0.6-
1998 09 15	699	0.5+	0.0	1998 09 27	704	0.4+	0.6-	1998 10 28	704	0.6+	0.7-
1998 09 15	699	0.1-	0.3+	1998 09 27	704	0.5-	0.1+	1998 10 28	704	1.5+	0.2+
1998 09 15	699	0.7-	0.5+	1998 10 10	699	0.5-	0.3-	1998 10 29	704	0.4-	0.6-
1998 09 26	704	0.4-	0.1+	1998 10 10	699	0.1-	0.8+	1998 10 29	704	0.9-	0.2-
1998 09 26	704	0.3+	0.3-	1998 10 10	699	0.3-	0.6+	1998 10 29	704	0.1+	0.1+
1998 09 26	704	1.2+	0.0	1998 10 19	699	0.6-	0.1+	1998 10 29	704	0.6-	0.1+
1998 09 26	704	0.3-	0.6-	1998 10 19	699	0.1+	0.0	1998 10 29	704	0.0	0.8+
1998 09 26	704	0.4+	1.5-	1998 10 19	699	0.5+	0.3+				

1998 SA₁₀₉ = 1993 FY₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28402173	ω	149.37976	-0.21707635	-0.97504486		
<i>a</i>	2.2921076	Ω	313.11323	+0.88219387	-0.17555203		
<i>e</i>	0.1145550	<i>i</i>	3.65475	+0.41786582	-0.13590069		
<i>P</i>	3.47	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 21	809	0.1+	0.1-	1998 09 27	704	0.3-	0.2+	1998 10 29	704	0.1-	0.1-
1993 03 22	809	0.9+	0.5+	1998 09 27	704	0.4+	0.6+	1998 10 29	704	0.5-	0.7+
1993 03 26	809	1.1-	0.5-	1998 09 27	704	0.3-	0.2+	1998 10 29	704	0.2+	1.1+
1998 09 26	704	0.4+	0.1+	1998 09 27	704	0.5-	0.4+	1998 10 29	704	0.6+	1.8+
1998 09 26	704	0.5+	0.4-	1998 10 28	704	0.4-	1.3-	1998 10 29	704	0.6-	0.2+
1998 09 26	704	0.0	0.1-	1998 10 28	704	0.3-	1.3-	1998 11 10	699	0.2+	0.2-
1998 09 26	704	0.0	0.5-	1998 10 28	704	0.3-	0.5-	1998 11 10	699	0.3+	0.5+
1998 09 26	704	0.1-	0.6-	1998 10 28	704	0.1-	0.7-	1998 11 10	699	0.5+	0.7+
1998 09 27	704	0.6+	0.3+	1998 10 28	704	0.1+	1.4-				

1998 SE₁₁₁ = 1987 SG₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26892653	ω	198.38905	+0.53575716	-0.84414041		
<i>a</i>	2.3770973	Ω	219.22230	+0.77856862	+0.50293526		
<i>e</i>	0.1944255	<i>i</i>	1.79253	+0.32679530	+0.18569623		
<i>P</i>	3.66	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1987 09 29	054	0.2-	0.1-	1998 09 27	704	0.1-	0.1+	1998 10 28	704	0.2-	1.1-
1987 09 30	054	0.5-	0.2-	1998 09 27	704	0.4+	0.0	1998 10 28	704	0.1+	0.4-
1987 09 30	054	0.8+	0.3+	1998 09 27	704	0.8-	0.4-	1998 10 28	704	0.4-	0.2+
1998 09 26	704	0.9+	0.1-	1998 10 15	327	0.2+	0.1-	1998 10 28	704	0.0	0.8-
1998 09 26	704	0.4-	0.6+	1998 10 15	327	0.1+	0.1+	1998 10 29	704	0.5-	0.2+
1998 09 26	704	0.8+	0.0	1998 10 15	327	0.2-	0.2+	1998 10 29	704	0.2-	0.2+
1998 09 26	704	0.6-	0.6-	1998 10 18	327	0.0	0.2+	1998 10 29	704	1.0+	0.6+
1998 09 26	704	0.6+	0.5-	1998 10 18	327	0.0	0.2+	1998 10 29	704	0.2-	0.3-
1998 09 27	704	0.1+	0.4+	1998 10 18	327	0.1-	0.3-	1998 10 29	704	0.5+	0.7+
1998 09 27	704	1.1-	0.4+	1998 10 28	704	0.2-	0.4+				

1998 SZ₁₁₄ = 1994 XB₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21808103	ω	251.51870	+0.93950335	+0.34162602		
<i>a</i>	2.7335317	Ω	88.49928	-0.30408387	+0.86540568		
<i>e</i>	0.0627215	<i>i</i>	1.43317	-0.15769101	+0.36655786		
<i>P</i>	4.52	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 12 04	098	1.0-	0.3-	1998 09 27	704	1.2-	0.6+	1998 10 29	704	0.0	0.6-
1994 12 04	098	1.5+	0.5+	1998 09 27	704	0.0	0.5+	1998 10 29	704	1.1-	0.8-
1994 12 04	098	0.5-	0.3-	1998 09 27	704	0.2+	0.4+	1998 10 29	704	0.9+	0.1-
1998 09 26	704	0.0	0.1-	1998 09 27	704	1.3-	1.4-	1998 10 29	704	1.2-	1.2-
1998 09 26	704	0.1+	0.1+	1998 10 28	704	0.1-	0.8-	1998 10 29	704	1.4+	0.2-
1998 09 26	704	1.2+	0.1+	1998 10 28	704	0.8+	0.2+	1998 11 11	699	0.1-	0.3-
1998 09 26	704	0.6+	0.4-	1998 10 28	704	0.4-	0.6+	1998 11 11	699	0.1+	0.1-
1998 09 26	704	1.1+	0.2-	1998 10 28	704	0.8-	1.2+	1998 11 11	699	0.1-	0.5+
1998 09 27	704	0.4-	0.2+	1998 10 28	704	0.3+	1.6+				

1998 SM₁₁₅ = 1976 UF₁₉ = 1982 YR₄

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17708288	ω	110.60082	+0.06209976	-0.99806600		
<i>a</i>	3.1406413	Ω	335.83832	+0.91313900	+0.05795038		
<i>e</i>	0.1874103	<i>i</i>	0.39291	+0.40289054	+0.02249470		
<i>P</i>	5.57	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 10 24	381	0.1+	0.2+	1998 09 27	704	0.2+	1.1+	1998 10 26	120	1.7-	0.1-
1976 10 24	381	0.0	0.4-	1998 09 27	704	0.6-	0.0	1998 10 28	704	0.3+	0.2+
1982 12 23	095	0.0	0.3-	1998 09 27	704	0.3-	0.8-	1998 10 28	704	0.3+	1.5-
1998 09 15	699	0.4+	0.5-	1998 10 15	327	0.2-	0.3+	1998 10 28	704	0.9-	0.3-
1998 09 15	699	1.0-	0.5+	1998 10 15	327	0.7+	0.6+	1998 10 28	704	0.7-	0.3-
1998 09 15	699	0.4+	0.2-	1998 10 15	327	0.2+	0.6+	1998 10 28	704	1.3-	0.3+
1998 09 26	704	0.0	0.6-	1998 10 16	120	0.8+	0.7-	1998 10 29	704	0.3-	0.2+
1998 09 26	704	0.7+	1.1-	1998 10 16	120	0.5+	0.1-	1998 10 29	704	1.1+	0.7+
1998 09 26	704	0.3+	0.2+	1998 10 24	120	0.7-	0.5-	1998 10 29	704	0.1+	1.4+
1998 09 26	704	0.7+	0.8-	1998 10 24	120	1.0+	0.3-	1998 10 29	704	0.3-	2.0+
1998 09 26	704	0.2+	0.3+	1998 10 26	120	(2.2-	0.8-)	1998 10 29	704	0.2+	0.4+
1998 09 27	704	0.1+	0.3-	1998 10 26	120	(2.8-	0.8-)				
1998 09 27	704	0.3-	0.1-	1998 10 26	120	(2.5-	1.7-)				

1998 SY₁₁₅ = 1990 TP₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24497982	ω	242.45034	-0.29925387	+0.95324983		
<i>a</i>	2.5295844	Ω	10.40009	-0.77275645	-0.21631675		
<i>e</i>	0.1460720	<i>i</i>	13.44550	-0.55972725	-0.21100194		
<i>P</i>	4.02	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 10 10	033	0.3-	0.2-	1998 09 26	704	1.3+	0.9+	1998 10 28	704	1.4-	2.1-
1990 10 11	033	0.4-	0.1-	1998 09 26	704	0.4-	0.1-	1998 10 28	704	0.9-	1.3+
1990 10 11	033	0.2+	0.1+	1998 09 26	704	0.9-	0.8+	1998 10 28	704	0.4+	0.6+
1990 10 12	033	1.2+	0.2+	1998 09 27	704	0.5-	0.9-	1998 10 29	704	0.4+	0.4-
1990 10 13	033	0.2+	0.2-	1998 09 27	704	0.4-	0.5-	1998 10 29	704	0.4-	1.7+
1990 10 14	033	0.8-	0.3+	1998 09 27	704	0.3+	0.1+	1998 10 29	704	1.2+	0.7-
1998 09 26	704	0.5-	0.3-	1998 09 27	704	0.6+	0.9+	1998 10 29	704	0.1+	1.4+
1998 09 26	704	0.5+	0.9-	1998 10 28	704	0.7-	1.5-	1998 10 29	704	1.3+	0.3-

1998 SZ₁₁₅ = 1996 FH₁₆

Id. A. Gnädig

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Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	145.00529	(2000.0)	P		Q	
<i>n</i>	0.17139146	ω	18.36325	-0.43584403	+0.89813874	
<i>a</i>	3.2097898	Ω	225.84515	-0.83558621	-0.42781930	
<i>e</i>	0.1000553	<i>i</i>	4.65261	-0.33441841	-0.10157484	
<i>P</i>	5.75	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 22	809	0.9-	0.4+	1998 09 26	704	0.6-	1.1-	1998 10 22	327	0.4+	0.2-
1996 03 22	809	0.3-	0.7-	1998 09 27	704	0.7-	0.4+	1998 10 22	327	0.4+	0.2-
1996 03 22	809	0.2-	0.1+	1998 09 27	704	0.5-	0.1+	1998 10 28	704	1.4-	1.2-
1996 03 26	809	0.6+	0.1-	1998 09 27	704	0.6+	0.8+	1998 10 28	704	0.8+	0.7-
1996 03 26	809	0.2-	0.3+	1998 09 27	704	0.7+	1.0+	1998 10 28	704	1.4-	0.2-
1996 03 26	809	1.1+	0.4+	1998 09 27	704	0.6+	0.1+	1998 10 28	704	0.0	0.2+
1998 09 26	704	0.7-	0.5+	1998 10 20	327	0.7+	0.2+	1998 10 29	704	1.1-	0.4-
1998 09 26	704	0.1-	0.2-	1998 10 20	327	0.3+	0.2+	1998 10 29	704	1.0+	1.3+
1998 09 26	704	0.4+	1.2-	1998 10 20	327	0.5+	0.1-	1998 10 29	704	1.1-	1.3+
1998 09 26	704	0.2+	0.6-	1998 10 22	327	0.3+	0.1-	1998 10 29	704	0.7+	0.3+

1998 SR₁₁₇ = 1996 FJ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	21.33905	(2000.0)	P		Q	
<i>n</i>	0.21650642	ω	16.95509	+0.92645999	-0.37601101	
<i>a</i>	2.7467694	Ω	5.22595	+0.32012357	+0.76345822	
<i>e</i>	0.0529648	<i>i</i>	10.73062	+0.19797169	+0.52511642	
<i>P</i>	4.55	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 16	566	0.3+	0.1-	1998 09 26	704	0.4-	0.4-	1998 10 28	704	1.0+	0.1-
1996 03 16	566	0.0	0.3-	1998 09 26	704	0.1-	0.2+	1998 10 28	704	0.7+	0.1+
1996 03 16	566	0.0	0.2-	1998 09 27	704	0.1-	0.5+	1998 10 28	704	3.7-	0.1-
1996 03 18	566	0.0	0.1+	1998 09 27	704	0.6-	0.4+	1998 10 29	704	0.8-	0.2-
1996 03 18	566	0.0	0.4+	1998 09 27	704	0.9+	0.3+	1998 10 29	704	0.3+	0.7-
1996 03 18	566	0.3-	0.0	1998 09 27	704	0.7-	0.8-	1998 10 29	704	0.2+	1.5+
1998 09 26	704	1.0+	0.1+	1998 09 27	704	0.3+	1.8-	1998 10 29	704	0.7+	1.1+
1998 09 26	704	0.4+	0.5+	1998 10 28	704	0.1-	0.5+	1998 10 29	704	0.9+	0.8-
1998 09 26	704	0.6-	1.0+	1998 10 28	704	0.7+	1.3-				

1998 SS₁₁₇ = 1991 TD₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	141.71668	(2000.0)	P		Q	
<i>n</i>	0.27673669	ω	307.32827	-0.32107617	+0.94627683	
<i>a</i>	2.3321593	Ω	303.90107	-0.85363829	-0.30670242	
<i>e</i>	0.1573507	<i>i</i>	2.64785	-0.41013628	-0.10243915	
<i>P</i>	3.56	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1991 10 05	033	0.4-	0.7-	1998 09 26	704	1.6-	1.0+	1998 10 28	704	0.3-	0.4-
1991 10 06	033	0.4+	0.2-	1998 09 27	704	0.2+	0.2+	1998 10 28	704	1.0+	0.2-
1991 10 06	033	0.4-	0.0	1998 09 27	704	0.1-	1.1+	1998 10 29	704	0.6+	0.1-
1991 10 09	033	0.0	0.5+	1998 09 27	704	1.0+	0.3+	1998 10 29	704	0.1-	1.6+
1991 10 09	033	0.7-	0.2-	1998 09 27	704	0.7+	0.0	1998 10 29	704	2.0-	0.1+
1991 10 10	033	1.2+	0.4+	1998 09 27	704	1.2-	0.8-	1998 10 29	704	0.9-	2.2+
1998 09 26	704	0.8+	0.1-	1998 10 28	704	0.2+	2.5-	1998 10 29	704	0.2-	1.4+
1998 09 26	704	0.3+	0.6-	1998 10 28	704	0.5+	1.6-				
1998 09 26	704	0.1+	0.9-	1998 10 28	704	0.8+	0.7-				

1998 SC₁₁₈ = 1994 NT₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	46.87331	(2000.0)	P		Q	
<i>n</i>	0.27145913	ω	103.95131	+0.98530530	+0.16962692	
<i>a</i>	2.3622893	Ω	246.28563	-0.16393066	+0.90626875	
<i>e</i>	0.2075827	<i>i</i>	1.25198	-0.04796053	+0.38717395	
<i>P</i>	3.63	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i> 6

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Residuals in seconds of arc

1994 07 11	809	0.3+	1.6+	1998 09 26	704	1.1+	0.0	1998 10 28	704	0.2-	0.3-
1994 07 11	809	0.1+	1.4+	1998 09 26	704	0.8+	0.2-	1998 10 28	704	0.5+	0.9-
1994 07 11	809	0.3-	0.5+	1998 09 26	704	0.2-	0.0	1998 10 28	704	0.1+	0.6-
1994 07 12	809	0.4-	1.3-	1998 09 27	704	1.5-	0.3-	1998 10 29	704	0.0	1.4-
1994 07 12	809	0.8+	1.7-	1998 09 27	704	0.4-	0.1-	1998 10 29	704	0.5+	0.4+
1994 07 12	809	0.5-	0.7-	1998 09 27	704	0.4-	0.0	1998 10 29	704	1.0+	2.0+
1998 09 26	704	1.3-	0.5+	1998 09 27	704	1.5+	0.8+	1998 10 29	704	0.8-	0.5-
1998 09 26	704	0.2+	0.2+	1998 10 28	704	0.6-	1.0-	1998 10 29	704	0.3-	1.2+

1998 SR₁₁₈ = 1980 FL₅ = 1992 ER₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	16.24608	(2000.0)	P		Q	
<i>n</i>	0.24290471	ω	199.40963	+0.87345459	-0.48685565	
<i>a</i>	2.5439706	Ω	189.73340	+0.45200366	+0.81608702	
<i>e</i>	0.0567980	<i>i</i>	2.36448	+0.18102421	+0.31140578	
<i>P</i>	4.06	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1980 03 16	809	0.3+	0.4-	1998 09 26	704	0.8-	0.8-	1998 10 28	704	1.1+	1.3-
1980 03 16	809	0.1+	0.5-	1998 09 26	704	0.8+	0.7+	1998 10 28	704	0.4-	1.4-
1980 03 17	809	0.5-	0.4-	1998 09 26	704	0.1-	0.0	1998 10 28	704	0.8+	0.7-
1980 03 17	809	0.3-	0.2+	1998 09 26	704	0.2+	0.5-	1998 10 28	704	0.7+	0.7-
1980 03 17	809	0.1-	0.1+	1998 09 27	704	0.4+	0.8-	1998 10 29	704	1.1-	2.8+
1980 03 17	809	0.2-	0.4-	1998 09 27	704	0.8-	0.5+	1998 10 29	704	0.0	0.8+
1992 03 04	809	0.3-	1.5+	1998 09 27	704	0.6-	1.0+	1998 10 29	704	1.8-	1.1-
1992 03 07	809	0.8+	0.2-	1998 09 27	704	1.3+	1.0+	1998 10 29	704	0.3+	1.7-
1998 09 26	704	1.1+	0.9+	1998 09 27	704	0.6-	0.0	1998 10 29	704	0.4-	1.0+

1998 SH₁₁₉ = 1976 UN₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	18.58761	(2000.0)	P		Q	
<i>n</i>	0.17856058	ω	311.97852	+0.95256817	-0.30347221	
<i>a</i>	3.1232901	Ω	65.69919	+0.28608054	+0.86743222	
<i>e</i>	0.2256602	<i>i</i>	1.43165	+0.10378733	+0.39429173	
<i>P</i>	5.52	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1976 10 22	381	0.2+	0.4+	1998 09 26	704	0.7-	0.1-	1998 09 27	704	0.3+	0.2-
1976 10 22	381	1.5-	0.1-	1998 09 26	704	0.4-	0.9-	1998 09 27	704	1.8+	0.5-
1976 10 22	381	0.6+	0.0	1998 09 26	704	0.1+	0.9-	1998 09 27	704	0.3+	1.3-
1976 10 22	381	(2.2-	1.1-)	1998 09 26	704	0.0	1.9+	1998 10 17	691	0.0	0.3+
1976 10 24	381	0.7+	0.4-	1998 09 27	704	0.1-	0.9+	1998 10 17	691	0.1+	0.8-
1998 09 26	704	0.5-	0.8+	1998 09 27	704	0.5-	0.3+	1998 10 17	691	0.3-	0.6+

1998 SJ₁₁₉ = 1977 DC₁ = 1988 PN₂ = 1991 PD₂₇ = 1995 YP₄

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	151.14470	(2000.0)	P		Q	
<i>n</i>	0.30071390	ω	136.68892	-0.32243994	+0.94641476	
<i>a</i>	2.2064820	Ω	114.49296	-0.87384791	-0.29021124	
<i>e</i>	0.0569259	<i>i</i>	1.14657	-0.36389878	-0.14169169	
<i>P</i>	3.28	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1977 02 18	381	1.1+	0.7+	1995 12 22	691	0.2-	0.3-	1998 10 19	699	0.4+	0.1-
1977 02 18	381	0.9+	0.2-	1995 12 22	691	0.6-	0.8-	1998 10 19	699	0.2+	0.2-
1977 02 19	381	0.5-	0.2-	1998 09 26	704	0.2-	0.4+	1998 10 19	699	0.1+	0.3-
1977 02 19	381	0.3-	0.5-	1998 09 26	704	0.5-	1.0+	1998 10 28	704	1.1+	0.5+
1988 08 13	033	0.1-	0.2+	1998 09 26	704	0.3-	0.1+	1998 10 28	704	1.2-	0.2+
1988 08 14	033	0.2+	1.9-	1998 09 26	704	0.6-	0.8+	1998 10 28	704	1.0+	0.1-
1988 08 14	033	0.6+	0.7-	1998 09 26	704	0.0	1.0+	1998 10 28	704	1.2-	1.0-
1991 08 05	809	0.3+	0.2+	1998 09 27	704	0.9+	0.2-	1998 10 28	704	1.0+	0.8+
1991 08 05	809	0.7-	0.3+	1998 09 27	704	0.9+	0.3+	1998 10 29	704	0.6-	1.2+
1991 08 05	809	1.2-	0.0	1998 09 27	704	1.0+	0.1-	1998 10 29	704	(0.1-	2.4-)

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1995 12 16	691	1.0−	0.1−	1998 09 27	704	0.4+	0.6−	1998 10 29	704	0.3+	1.2−
1995 12 16	691	1.0−	0.0	1998 10 10	699	0.3+	0.1+	1998 10 29	704	0.7+	0.9−
1995 12 16	691	0.9−	0.2+	1998 10 10	699	0.2−	1.3+				
1995 12 22	691	0.9−	0.7−	1998 10 10	699	0.4+	0.7+				

1998 SK₁₁₉ = 1989 UY₉ = 1991 EZ₇ = 1996 FC₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	311.33278		(2000.0)		P		Q
<i>n</i>	0.21310450	ω	78.57169	−0.18587803	−0.98061597		
<i>a</i>	2.7759244	Ω	22.43043	+0.82624410	−0.19013202		
<i>e</i>	0.1182471	<i>i</i>	9.34861	+0.53176127	−0.04735114		
<i>P</i>	4.62	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1989 10 30	872	1.1−	0.2−	1998 09 26	704	0.1−	0.2−	1998 10 28	704	0.9−	0.8+
1989 10 30	872	1.4+	0.4−	1998 09 26	704	0.6−	0.6−	1998 10 28	704	0.4+	1.1+
1991 03 06	877	1.5+	0.3+	1998 09 26	704	0.7−	0.1+	1998 10 28	704	0.5−	1.0+
1991 03 06	877	0.4−	1.2+	1998 09 26	704	0.5−	0.9+	1998 10 29	704	0.5−	0.4+
1996 03 22	809	(2.3+	1.4+)	1998 09 27	704	0.7−	0.1+	1998 10 29	704	0.7−	0.1+
1996 03 22	809	1.4+	0.7+	1998 09 27	704	0.2−	0.1−	1998 10 29	704	0.5−	0.8+
1996 03 22	809	1.2+	1.7+	1998 09 27	704	0.4+	0.0	1998 10 29	704	0.1−	0.5+
1996 03 26	809	1.1+	1.6+	1998 09 27	704	0.7+	0.0	1998 10 29	704	0.6−	0.0
1996 03 26	809	0.2−	1.3+	1998 09 27	704	(0.8−	2.5−)	1998 11 10	699	0.3+	0.2+
1996 03 26	809	0.1+	1.3+	1998 10 28	704	0.0	0.7+	1998 11 10	699	0.5−	1.1+
1998 09 26	704	0.4−	0.3−	1998 10 28	704	0.3+	1.3+	1998 11 10	699	0.2+	0.1+

1998 SD₁₂₂ = 1991 JC₄ = 1996 FY₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	157.01385		(2000.0)		P		Q
<i>n</i>	0.18481016	ω	24.01893	−0.47761775	+0.87351970		
<i>a</i>	3.0524753	Ω	217.64432	−0.82894770	−0.48351840		
<i>e</i>	0.0385495	<i>i</i>	8.85777	−0.29107903	−0.05633197		
<i>P</i>	5.33	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 05 12	809	1.5+	0.6−	1998 09 26	704	0.3+	1.2−	1998 10 29	704	0.3−	1.4+
1991 05 12	809	0.9+	0.5−	1998 09 26	704	0.8+	1.4−	1998 10 29	704	0.2+	0.2+
1991 05 12	809	1.0+	1.1−	1998 09 27	704	0.2+	0.3−	1998 10 29	704	0.8−	0.5+
1991 05 17	809	0.6−	1.3+	1998 09 27	704	0.2−	0.3+	1998 11 10	704	1.0−	0.2+
1991 05 17	809	0.8−	1.2+	1998 09 27	704	0.3+	0.6−	1998 11 10	704	0.1−	1.4+
1991 05 17	809	1.9−	0.6+	1998 09 27	704	(0.6+	2.2−)	1998 11 10	704	0.9−	0.3+
1996 03 22	809	0.1−	0.6+	1998 09 27	704	0.3−	1.9−	1998 11 10	699	0.2−	0.9+
1996 03 22	809	0.1−	0.7+	1998 10 17	699	0.3+	0.4+	1998 11 10	699	0.0	0.7+
1996 03 22	809	0.8−	0.2+	1998 10 17	699	0.5−	0.8+	1998 11 10	699	0.7+	0.4+
1996 03 26	809	1.6+	1.8+	1998 10 17	699	0.1−	0.3+	1998 11 11	704	0.8−	0.9−
1996 03 26	809	(0.7+	2.4+)	1998 10 28	704	0.4+	0.2+	1998 11 11	704	0.0	0.8+
1996 03 26	809	0.4+	1.7+	1998 10 28	704	0.7+	0.5+	1998 11 11	704	0.5−	0.6+
1998 09 14	699	1.0+	0.1+	1998 10 28	704	0.4+	1.0+	1998 11 11	704	0.7−	0.3−
1998 09 14	699	0.2+	0.7+	1998 10 28	704	0.0	0.1−	1998 11 11	704	0.6−	0.3−
1998 09 14	699	0.4−	0.3+	1998 10 28	704	0.3−	0.6+				
1998 09 26	704	0.9+	0.5−	1998 10 29	704	0.5−	0.5+				

1998 SK₁₂₂ = 1988 XS₂ = 1991 RJ₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	326.37229		(2000.0)		P		Q
<i>n</i>	0.28889927	ω	226.93642	−0.06942831	−0.99667929		
<i>a</i>	2.2662358	Ω	227.09663	+0.93131924	−0.04947262		
<i>e</i>	0.0952227	<i>i</i>	3.32974	+0.35752507	−0.06467505		
<i>P</i>	3.41	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 12 11	877	0.7+	2.1−	1998 09 26	704	0.4+	0.1+	1998 10 28	704	1.4−	0.4+
1988 12 11	877	0.0	0.2+	1998 09 26	704	0.1−	0.4+	1998 10 28	704	1.0−	0.3−
1988 12 14	877	1.6−	0.1−	Y 1998 09 26	704	0.2+	0.3+	1998 10 28	704	0.2−	0.6−
1988 12 14	877	0.7+	3.1+	Y 1998 09 27	704	0.2+	0.1+	1998 10 29	704	0.1+	0.6−

1991 09 14	675	0.2−	0.5+	1998 09 27	704	0.6+	0.6+	1998 10 29	704	0.3+	0.8−
1991 09 14	675	0.6+	0.1+	1998 09 27	704	0.2+	1.5+	1998 10 29	704	1.4+	1.1−
1991 09 17	675	0.2−	0.3+	1998 09 27	704	0.7+	0.6+	1998 10 29	704	0.3+	0.7−
1991 09 17	675	0.2−	0.9−	1998 09 27	704	0.4−	1.6+	1998 10 29	704	0.5+	1.3−
1998 09 26	704	0.0	0.2+	1998 10 28	704	0.8−	0.6−				
1998 09 26	704	0.5+	0.3+	1998 10 28	704	1.2−	0.6−				

1998 SW₁₂₂ = 1987 YA₁ = 1988 AQ₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	19.57643		(2000.0)		P		Q
<i>n</i>	0.26217468	ω	114.66595	+0.84661549	−0.53206419		
<i>a</i>	2.4177360	Ω	277.48122	+0.48371598	+0.77887138		
<i>e</i>	0.2161227	<i>i</i>	0.70758	+0.22194835	+0.33206487		
<i>P</i>	3.76	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 12 22	033	0.8−	0.3−	1998 09 27	704	0.2−	0.4+	1998 10 28	704	0.2−	0.5−
1988 01 12	033	1.9+	1.3+	1998 09 27	704	0.9+	0.2−	1998 10 28	704	0.3−	0.5+
1988 01 12	033	1.0−	0.3+	1998 10 11	699	0.0	0.1+	1998 10 29	704	0.4+	0.3+
1998 09 26	704	0.1+	0.1−	1998 10 11	699	0.2+	0.4+	1998 10 29	704	0.0	0.4−
1998 09 26	704	0.7+	0.1−	1998 10 11	699	0.5−	0.4+	1998 10 29	704	0.0	1.1−
1998 09 26	704	0.1+	0.1−	1998 10 17	699	0.1+	0.0	1998 10 29	704	0.3+	1.5−
1998 09 26	704	0.3−	0.7+	1998 10 17	699	0.3+	0.1+	1998 10 29	704	0.5+	1.2−
1998 09 26	704	0.6−	0.4+	1998 10 17	699	0.0	0.1+	1998 11 10	699	0.1−	0.3+
1998 09 27	704	0.1+	0.3+	1998 10 28	704	0.1−	0.5−	1998 11 10	699	0.7+	0.2+
1998 09 27	704	0.2−	2.0+	1998 10 28	704	0.7−	0.9−	1998 11 10	699	0.5+	0.0
1998 09 27	704	1.4−	0.8+	1998 10 28	704	0.0	0.3−				

1998 SY₁₂₂ = 4044 T-1

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	17.41410		(2000.0)		P		Q
<i>n</i>	0.27078752	ω	19.45437	+0.84049850	−0.54111147		
<i>a</i>	2.3661937	Ω	13.41075	+0.48002059	+0.72006751		
<i>e</i>	0.1161843	<i>i</i>	6.82947	+0.25128173	+0.43439747		
<i>P</i>	3.64	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	0.6−	0.1+	1998 09 26	704	0.4+	1.8+	1998 10 27	104	0.5+	0.4−
1971 03 26	675	0.2−	1.4−	1998 09 27	704	0.7+	0.0	1998 10 27	104	0.4+	0.3−
1971 03 26	675	0.5−	0.9−	1998 09 27	704	0.2+	0.1−	1998 10 28	704	0.1−	0.2+
1971 03 27	675	0.4+	0.3−	1998 09 27	704	0.5−	1.5−	1998 10 28	704	0.4−	0.5−
1971 03 27	675	0.4−	1.2+	1998 09 27	704	2.2−	1.4−	1998 10 28	704	2.3−	1.4−
1971 04 02	675	0.1+	0.6−	1998 10 22	327	0.3+	0.6−	1998 10 28	704	1.4+	0.2−
1998 09 18	699	0.5−	0.9+	1998 10 22	327	0.3+	0.5−	1998 10 28	704	2.4−	1.1+
1998 09 18	699	0.9+	1.4+	1998 10 22	327	0.3+	0.5−	1998 10 29	704	0.7−	0.1−
1998 09 18	699	0.3+	0.6−	1998 10 26	327	0.1−	0.2−	1998 10 29	704	0.2−	0.6−
1998 09 26	704	2.0+	0.4−	1998 10 26	327	0.1+	0.2+	1998 10 29	704	0.3+	0.8+
1998 09 26	704	1.3+	0.9−	1998 10 26	327	0.3+	0.2−	1998 10 29	704	0.4−	2.3+
1998 09 26	704	0.7+	0.6−	1998 10 27	104	0.1−	0.6−	1998 10 29	704	0.1−	1.9+
1998 09 26	704	0.5+	0.2−	1998 10 27	104	0.0	0.5−				

1998 ST₁₂₃ = 1996 EM₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	329.61564		(2000.0)		P		Q
<i>n</i>	0.21723965	ω	248.38743	+0.17147704	−0.98459607		
<i>a</i>	2.7405853	Ω	191.89288	+0.95405371	+0.17460357		
<i>e</i>	0.0786683	<i>i</i>	9.53844	+0.24571761	+0.00917492		
<i>P</i>	4.54	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 15	566	0.2−	0.3+	1998 09 27	704	0.4+	1.0+	1998 10 28	704	0.0	0.
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M.P.C. 33288

1996 04 20	566	0.6+	0.7+	1998 10 10	699	0.2+	0.8+	1998 10 29	704	0.4+	0.6−
1998 09 26	704	0.1−	0.3+	1998 10 18	888	0.1−	0.1−	1998 10 29	704	0.6+	0.4−
1998 09 26	704	0.1−	1.1+	1998 10 18	888	0.2−	0.1−	1998 10 29	704	1.9+	0.1−
1998 09 26	704	1.1−	0.8−	1998 10 18	888	0.4−	0.2−	1998 10 29	704	0.6+	0.8−
1998 09 26	704	0.3−	0.7+	1998 10 22	888	0.1−	0.1−	1998 11 11	699	0.5−	0.1+
1998 09 26	704	0.6+	1.0+	1998 10 22	888	0.1+	0.1+	1998 11 11	699	0.0	0.8+
1998 09 27	704	1.0−	0.3−	1998 10 22	888	0.3−	0.1+	1998 11 11	699	0.5−	0.5+

1998 SX₁₂₃ = 2304 T-1 = 1991 XT₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27309355	<i>ω</i>	25.13734	+0.43614907	−0.89940415		
<i>a</i>	2.3528546	<i>Ω</i>	39.02241	+0.81761567	+0.38257078		
<i>e</i>	0.1809615	<i>i</i>	2.64805	+0.37587047	+0.21145161		
<i>P</i>	3.61	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	0.8−	0.0	1998 09 26	704	0.8+	0.8−	1998 10 28	704	0.3−	0.8+
1971 03 24	675	0.0	0.6−	1998 09 26	704	0.2−	0.5−	1998 10 28	704	0.9+	0.1+
1971 03 25	675	(9.2+	3.0−)	1998 09 26	704	0.3+	0.2+	1998 10 29	704	0.3+	0.5−
1971 03 25	675	(6.3+	1.7−)	1998 09 27	704	0.4+	0.6+	1998 10 29	704	0.1−	0.3+
1971 03 26	675	2.3+	2.0−	1998 09 27	704	0.0	0.0	1998 10 29	704	0.3−	1.7+
1971 03 27	675	1.8−	2.0+	1998 09 27	704	0.8−	1.1+	1998 10 29	704	0.4+	0.5+
1991 12 10	033	0.8−	0.3+	1998 09 27	704	1.2−	0.2−	1998 10 29	704	0.6−	0.4−
1991 12 10	033	0.9+	0.6+	1998 09 27	704	0.9−	0.5+	1998 11 10	699	0.1+	0.8−
1991 12 11	033	0.2−	0.2−	1998 10 28	704	0.4+	0.9−	1998 11 10	699	0.2−	0.9−
1998 09 26	704	0.1−	0.2−	1998 10 28	704	0.7+	0.6+	1998 11 10	699	0.6−	1.8−
1998 09 26	704	1.0+	0.3−	1998 10 28	704	0.2+	0.5−				

1998 SJ₁₂₄ = 1993 FT₆₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25586907	<i>ω</i>	291.29431	+0.76914670	+0.63627831		
<i>a</i>	2.4572963	<i>Ω</i>	29.28935	−0.53176324	+0.68900568		
<i>e</i>	0.1574823	<i>i</i>	7.00852	−0.35445905	+0.34701742		
<i>P</i>	3.85	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 03 19	809	0.7+	0.4−	1998 09 27	704	0.2−	1.2+	1998 10 28	704	1.1+	0.1−
1993 03 20	809	0.8−	0.1+	1998 09 27	704	1.3+	0.1−	1998 10 29	704	1.6−	2.9+
1998 09 26	704	1.0−	0.7−	1998 09 27	704	0.3+	1.3+	1998 10 29	704	0.1+	0.2−
1998 09 26	704	0.5−	0.6−	1998 09 27	704	0.8+	0.7−	1998 10 29	704	0.1−	1.5−
1998 09 26	704	0.2+	0.6−	1998 10 28	704	0.6+	1.3+	1998 10 29	704	0.3−	0.4−
1998 09 26	704	0.4−	0.3+	1998 10 28	704	1.3−	1.2−				
1998 09 27	704	0.3+	0.0	1998 10 28	704	0.8+	1.1−				

1998 SO₁₂₄ = 1997 LY

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18493109	<i>ω</i>	167.57204	+0.99689958	+0.07441014		
<i>a</i>	3.0511444	<i>Ω</i>	188.28898	−0.07830967	+0.96994717		
<i>e</i>	0.2971137	<i>i</i>	10.22058	+0.00766994	+0.23165841		
<i>P</i>	5.33	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 06 01	691	1.2−	0.6−	1998 09 26	704	0.4−	0.1−	1998 10 28	704	0.5+	0.2−
1997 06 01	691	0.7−	0.3−	1998 09 26	704	0.4+	0.5+	1998 10 28	704	0.2−	0.7−
1997 06 01	691	1.0−	0.3−	1998 09 27	704	0.1+	0.0	1998 10 28	704	0.3−	0.5+
1997 06 07	691	1.3+	1.3+	1998 09 27	704	0.7+	0.1+	1998 10 29	704	0.6+	0.2−
1997 06 07	691	0.9−	0.0	1998 09 27	704	0.5−	0.4+	1998 10 29	704	0.1+	0.0
1997 06 07	691	2.6+	0.2−	1998 09 27	704	0.3+	0.2+	1998 10 29	704	0.3−	0.2+
1998 09 26	704	0.2−	0.1+	1998 09 27	704	0.3+	0.1−	1998 10 29	704	0.0	0.2−
1998 09 26	704	0.5−	0.4−	1998 10 28	704	0.9−	0.2−	1998 10 29	704	0.4−	0.4−
1998 09 26	704	0.1+	0.6−	1998 10 28	704	0.5+	0.8+				

1998 DEC. 8

1998 SR₁₂₄ = 1994 SV₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25235637	<i>ω</i>	336.35297	−0.63827601	−0.76967234		
<i>a</i>	2.4800468	<i>Ω</i>	153.30350	+0.71131027	−0.59683746		
<i>e</i>	0.0052951	<i>i</i>	1.84059	+0.29434917	−0.22669260		
<i>P</i>	3.91	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 09 29	691	0.0	0.5−	1998 09 26	704	0.3+	0.4−	1998 10 28	704	0.2−	0.9+
1994 09 29	691	0.2+	0.5−	1998 09 26	704	0.2−	1.2+	1998 10 29	704	0.2+	1.1−
1994 09 29	691	0.3+	0.5−	1998 09 27	704	0.8+	0.3+	1998 10 29	704	0.2−	1.3−
1994 10 06	691	0.3+	0.0	1998 09 27	704	0.6−	0.8+	1998 10 29	704	1.7+	1.5+
1994 10 06	691	0.0	0.0	1998 09 27	704	0.1+	0.3+	1998 10 29	704	0.3−	0.6+
1994 10 06	691	0.1−	0.3−	1998 09 27	704	0.9+	0.3+	1998 11 11	699	0.5+	1.7−
1998 09 26	704	0.1+	0.9+	1998 10 28	704	1.1−	1.2−	1998 11 11	699	0.1+	0.6+
1998 09 26	704	0.3−	0.2−	1998 10 28	704	0.8−	0.6−	1998 11 11	699	0.4+	0.6−
1998 09 26	704	0.7−	0.2+	1998 10 28	704	1.4−	1.1+				

1998 SK₁₂₅ = 1979 OU₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26516924	<i>ω</i>	179.68818	+0.90511882	+0.42259115		
<i>a</i>	2.3994993	<i>Ω</i>	155.14921	−0.39031541	+0.86942968		
<i>e</i>	0.1259047	<i>i</i>	6.37379	−0.16856392	+0.25594679		
<i>P</i>	3.72	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1979 07 24	413	0.8−	0.6−	1998 09 26	704	0.3−	0.0	1998 10 28	704	0.2−	0.4−
1979 07 26	675	1.5+	0.1+	1998 09 27	704	0.0	0.4+	1998 10 28	704	0.1+	0.2+
1979 07 26	675	0.6−	1.5+	1998 09 27	704	0.0	0.8+	1998 10 29	704	0.3+	0.6+
1979 07 27	675	0.2−	0.5−	1998 09 27	704	0.2−	0.2+	1998 10 29	704	0.7−	0.6+
1979 07 28	413	0.2+	0.6−	1998 09 27	704	0.5−	0.1+	1998 10 29	704	0.7−	0.5+
1998 09 26	704	0.1−	0.1+	1998 09 27	704	0.3−	0.4−	1998 10 29	704	0.7+	0.5−
1998 09 26	704	0.4+	0.2+	1998 10 28	704	0.1+	0.1+	1998 10 29	704	0.1+	0.3−
1998 09 26	704	0.4+	0.7−	1998 10 28	704	0.6+	1.0−				
1998 09 26	704	0.5+	0.2−	1998 10 28	704	0.4−	0.3−				

1998 SE₁₂₆ = 1996 KB_s

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23634500	<i>ω</i>	35.41001	−0.28311957	−0.95437011		
<i>a</i>	2.5908271	<i>Ω</i>	71.20188	+0.85520062	−0.29603938		
<i>e</i>	0.2697969	<i>i</i>	5.75821	+0.43413731	−0.03922212		
<i>P</i>	4.17	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 05 19	809	0.8+	1.0+	1998 09 26	704	0.7+	1.5−	1998 10 28	704	0.7+	0.1−
1996 05 19	809	0.8+	0.3+	1998 09 26	704	0.5+	1.1−	1998 10 28	704	0.6−	0.5+
1996 05 19	809	0.2−	1.9+	1998 09 26	704	0.4+	0.7−	1998 10 28	704	1.0+	0.3−
1996 05 22	809	0.5+	0.5+	1998 09 26	704	0.9+	0.2+	1998 10 28	704	1.2−	0.6−
1996 05 22	809	1.0+	0.6+	1998 09 27	704	0.5−	1.1−	1998 10 29	704	0.5+	1.5+
1996 05 22	809	0.2−	0.7+	1998 09 27	704	0.1−	0.1+	1998 10 29	704	0.8−	1.1+
1996 05 23	809	3.0−	1.2−	1998 09 27	704	0.0	1.2+	1998 10 29	704	0.9−	0.7+
1996 05 23	809	0.4+	1.2−	1998 09 27	704	0.5−	0.7−	1998 10 29	704	0.4−	0.1+
1996 05 23	809	0.4+	1.4−	1998 09 27	704	0.1+	0.1+				
1998 09 26	704	0.0	0.1−	1998 10 28	704	0.1−	1.8+				

1998 DEC. 8

M.P.C. 33289

1998 SV₁₂₆ = 1996 GC₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	338.52149		(2000.0)	P		Q	
<i>n</i>	0.20948906	ω	318.01147	+0.46492890		−0.87970372	
<i>a</i>	2.8077718	Ω	104.05977	+0.83721299		+0.40018165	
<i>e</i>	0.0441146	<i>i</i>	5.90589	+0.28795059		+0.25685798	
<i>P</i>	4.70	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 13	691	0.5−	0.2−	1998 09 26	704	0.3+	1.3−	1998 10 28	704	0.0	0.0
1996 04 13	691	0.5−	0.3−	1998 09 26	704	0.2−	0.6+	1998 10 28	704	1.3−	2.1−
1996 04 13	691	0.6−	0.4−	1998 09 27	704	0.4−	0.2+	1998 10 28	704	1.4−	0.0
1996 04 21	691	1.2+	0.3+	1998 09 27	704	0.8+	0.8+	1998 10 29	704	0.3−	1.5−
1996 04 21	691	0.2+	0.5+	1998 09 27	704	0.0	0.4+	1998 10 29	704	0.1+	1.2+
1996 04 21	691	0.2+	0.1+	1998 09 27	704	0.2+	0.6+	1998 10 29	704	1.7+	1.6+
1998 09 26	704	0.1−	0.2−	1998 09 27	704	0.1−	0.0	1998 10 29	704	0.5+	2.0+
1998 09 26	704	0.3−	0.8−	1998 10 28	704	0.4+	0.1−	1998 10 29	704	0.9−	0.2+
1998 09 26	704	0.2+	0.3−	1998 10 28	704	0.9+	1.2−				

1998 SW₁₂₇ = 1991 LO₅ = 2200 T-1

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	57.81518		(2000.0)	P		Q	
<i>n</i>	0.30403153	ω	193.46872	+0.95022389		+0.30964616	
<i>a</i>	2.1904010	Ω	148.42648	−0.27939613		+0.89592751	
<i>e</i>	0.1565947	<i>i</i>	3.78367	−0.13788531		+0.31848572	
<i>P</i>	3.24	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	(3.1−	4.0−)	1998 09 26	704	0.3+	0.5+	1998 10 19	699	0.7+	0.1−
1971 03 25	675	0.9+	0.7−	1998 09 26	704	0.3−	1.0+	1998 10 19	699	0.1+	0.1−
1971 03 25	675	0.2+	2.3−	1998 09 26	704	0.6+	0.3+	1998 10 28	704	0.0	0.4−
1971 03 26	675	1.7−	0.8−	1998 09 27	704	1.0+	0.2−	1998 10 28	704	0.4−	0.1+
1971 03 27	675	0.8−	0.0	1998 09 27	704	1.3+	0.4−	1998 10 28	704	0.1+	0.0
1991 06 06	809	1.8+	0.1−	1998 09 27	704	0.5+	0.3−	1998 10 28	704	0.2−	0.1−
1991 06 06	809	0.9+	0.7−	1998 09 27	704	0.4+	1.6−	1998 10 28	704	1.1−	0.4+
1991 06 06	809	(2.8+	1.2−)	1998 09 27	704	0.9+	0.9−	1998 10 29	704	0.3+	0.3−
1991 06 08	809	1.1−	0.5+	1998 10 10	699	0.9+	0.2+	1998 10 29	704	0.4−	0.2+
1991 06 08	809	(2.1−	0.1−)	1998 10 10	699	0.3+	0.5+	1998 10 29	704	0.7−	0.4−
1991 06 08	809	1.7−	0.6−	1998 10 10	699	0.2+	0.5+	1998 10 29	704	0.9+	0.8−
1998 09 24	699	0.6−	0.1+	1998 10 17	699	0.2−	0.2−	1998 10 29	704	0.4−	0.8−
1998 09 24	699	0.3−	0.0	1998 10 17	699	0.1+	0.1−	1998 11 11	699	1.0−	0.2−
1998 09 24	699	0.2−	0.1−	1998 10 17	699	0.1+	0.1−	1998 11 11	699	0.9−	0.2−
1998 09 26	704	0.7−	0.2−	1998 10 19	699	0.3+	0.0	1998 11 11	699	0.5−	0.1+

1998 SL₁₂₉ = 1996 AX₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	35.66735		(2000.0)	P		Q	
<i>n</i>	0.27480266	ω	195.49208	+0.98691755		−0.16115406	
<i>a</i>	2.3430889	Ω	173.77584	+0.15223319		+0.92163770	
<i>e</i>	0.1766043	<i>i</i>	2.54136	+0.05309234		+0.35300613	
<i>P</i>	3.59	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 13	691	0.5−	0.0	1998 09 26	704	0.2−	0.2−	1998 10 28	704	0.8+	0.3+
1996 01 13	691	0.2+	0.2−	1998 09 26	704	0.5−	0.3−	1998 10 28	704	0.3−	2.0+
1996 01 13	691	0.2−	0.1−	1998 09 27	704	0.2−	0.4−	1998 10 28	704	0.9−	0.5+
1996 01 19	691	0.2+	0.2−	1998 09 27	704	0.4−	0.7−	1998 10 29	704	1.4+	0.6−
1996 01 19	691	0.0	0.1−	1998 09 27	704	0.8+	0.1+	1998 10 29	704	0.1+	1.1+
1996 01 19	691	0.1+	0.0	1998 09 27	704	0.4+	0.1+	1998 10 29	704	0.2+	0.1−
1998 09 26	704	0.0	0.0	1998 09 27	704	0.2−	0.9+	1998 10 29	704	0.4−	0.6+
1998 09 26	704	0.3+	1.3−	1998 10 28	704	0.2+	0.1−	1998 10 29	704	0.3−	1.5−
1998 09 26	704	0.1−	1.1−	1998 10 28	704	0.4−	0.6+				

1998 SO₁₂₉ = 1996 HD₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	19.46180		(2000.0)	P		Q	
<i>n</i>	0.19561349	ω	336.62822	+0.92752975		−0.37234741	
<i>a</i>	2.9390266	Ω	45.27399	+0.34969081		+0.83402426	
<i>e</i>	0.0560565	<i>i</i>	2.60903	+0.13192762		+0.40713749	
<i>P</i>	5.04	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 19	691	0.4−	0.2−	1998 09 27	704	0.6−	0.6−	1998 10 29	704	0.3−	1.4+
1996 04 19	691	0.6−	0.6+	1998 09 27	704	0.0	0.3+	1998 10 29	704	0.5+	0.1−
1996 04 19	691	0.4−	0.1+	1998 09 27	704	0.6+	0.8−	1998 10 29	704	0.3−	0.5+
1996 04 24	691	0.2+	0.9−	1998 09 27	704	0.1+	0.2+	1998 10 29	704	0.1+	0.0
1996 04 24	691	0.3+	0.5−	1998 09 27	704	0.1+	0.4−	1998 11 10	704	0.3+	1.0−
1996 04 24	691	0.3+	0.3−	1998 10 10	699	0.6−	1.0+	1998 11 10	704	0.3+	0.6−
1998 09 18	699	0.1+	0.4+	1998 10 10	699	0.6−	0.7+	1998 11 10	704	0.2−	0.9−
1998 09 18	699	0.3−	0.6+	1998 10 10	699	1.0−	0.8+	1998 11 10	704	0.8+	0.5+
1998 09 18	699	0.5−	0.1−	1998 10 28	704	0.5+	0.0	1998 11 11	704	1.0+	0.9+
1998 09 26	704	0.2+	0.4+	1998 10 28	704	0.3+	0.2+	1998 11 11	704	0.5−	0.7−
1998 09 26	704	1.8+	0.3−	1998 10 28	704	0.1−	0.7−	1998 11 11	704	0.2+	0.1−
1998 09 26	704	0.5+	1.5−	1998 10 28	704	0.1+	1.4−	1998 11 11	704	2.0−	0.0
1998 09 26	704	0.8−	1.7−	1998 10 28	704	1.1+	0.2+	1998 11 11	704	0.5−	0.3+
1998 09 26	704	0.2+	1.2+	1998 10 29	704	0.0	0.2−				

1998 SQ₁₂₉ = 1997 EO₅₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	82.31036		(2000.0)	P		Q	
<i>n</i>	0.27850209	ω	281.72370	+0.63974680		+0.76689649	
<i>a</i>	2.3222934	Ω	28.25011	−0.65659918		+0.57977461	
<i>e</i>	0.1601053	<i>i</i>	6.17699	−0.39950163		+0.27519297	
<i>P</i>	3.54	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 10	809	0.7+	1.5+	1998 09 26	704	0.2+	0.3−	1998 10 28	704	1.2−	0.3+
1997 03 10	809	0.3+	1.1+	1998 09 27	704	0.6+	0.0	1998 10 29	704	0.7−	0.2+
1997 03 10	809	0.1+	1.2+	1998 09 27	704	0.3+	0.2+	1998 10 29	704	0.1−	0.3+
1997 03 11	809	0.8−	1.7−	1998 09 27	704	0.7+	0.5+	1998 10 29	704	1.3+	0.0
1997 03 11	809	0.1+	1.0−	1998 09 27	704	0.0	0.2+	1998 10 29	704	0.1−	1.0+
1997 03 11	809	0.4−	1.1−	1998 09 27	704	0.0	0.0	1998 10 29	704	0.8+	0.7+
1998 09 26	704	0.4−	0.2+	1998 10 28	704	0.2+	0.6−	1998 11 10	699	0.3−	0.1−
1998 09 26	704	0.4−	0.1−	1998 10 28	704	0.1−	0.5+	1998 11 10	699	0.0	0.1−
1998 09 26	704	0.3−	0.9−	1998 10 28	704	(2.6−	2.4+)	1998 11 10	699	0.7+	1.4−
1998 09 26	704	0.4−	0.3−	1998 10 28	704	0.8−	0.5−				

1998 SW₁₂₉ = 1996 FK₁₆

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	305.25095		(2000.0)	P		Q	
<i>n</i>	0.22510635	ω	94.49953	−0.41666841		−0.90550213	
<i>a</i>	2.6763581	Ω	20.70724	+0.71765163		−0.38189267	
<i>e</i>	0.1428984	<i>i</i>	13.13166	+0.55799961		−0.18499697	
<i>P</i>	4.38	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 22	809	0.4+	1.7+	1998 09 26	704	0.2−	0.3−	1998 10 28	704	(2.5−	1.3+)
1996 03 22	809	0.3+	1.5+	1998 09 27	704	1.0−	0.5−	1998 10 28	704	0.7−	1.2−
1996 03 22	809	(0.2+	2.4+)	1998 09 27	704	0.8−	0.3+	1998 10 28	704	0.3+	0.2+
1996 03 26	809	0.7+	0.1+	1998 09 27	704	0.2−	1.2+	1998 10 29	704	0.0	0.3+
1996 03 26	809	0.1−	0.4−	1998 09 27	704	1.0−	0.3+	1998 10 29	704	1.0+	1.2+
1996 03 26	809	0.9+	0.6+	1998 09 27	704	0.8−	0.1−	1998 10 29	704	0.7−	0.4+
1998 09 18	699	0.6+	0.1−	1998 10 11	699	1.0−	0.2−	1998 10 29	704	0.7+	0.8+
1998 09 18	699	0.1+	0.1+	1998 10 11	699	0.6−	0.2+	1998 10 29	704	0.4−	0.4+
1998 09 18	699	0.2−	0.3+	1998 10 11	699	0.0	0.1−	1998 11 10	699	1.1+	0.9+
1998 09 26	704	0.1+	0.2−	1998 10 17	699	0.2−	0.2+	1998 11 10	699	0.0	0.2+
1998 09 26	704	0.4−	1.5−	1998 10 17	699	0.2+	0.4+	1998 11 10	699	1.2+	1.3+

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1998 09 26 704 0.3+ 0.6− 1998 10 17 699 0.4− 0.5+
 1998 09 26 704 0.5+ 0.9− 1998 10 28 704 (3.0− 0.5+)

1998 SA₁₃₀ = 1974 HN₁ = 1985 DD₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	237.41190		(2000.0)	P	Q
<i>n</i>	0.26292386	ω	9.38301	−0.99871827	−0.04974640
<i>a</i>	2.4131411	Ω	167.75392	+0.04311548	−0.93274828
<i>e</i>	0.1185853	<i>i</i>	2.52185	+0.02651157	−0.35707974
<i>P</i>	3.75	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1974 04 24	805	0.9+ 0.7−	1998 09 26	704	0.4+ 1.1−	1998 10 28	704	0.2+ 0.7−
1974 04 25	805	1.1− 0.0	1998 09 27	704	0.2− 1.2+	1998 10 28	704	0.8− 0.7−
1985 02 22	675	0.3+ 0.7+	1998 09 27	704	0.6− 0.4−	1998 10 28	704	0.1− 0.1+
1985 02 23	675	0.5− 1.0−	1998 09 27	704	1.0+ 0.4+	1998 10 29	704	0.2+ 0.8+
1998 09 26	704	0.6− 0.6+	1998 09 27	704	1.6+ 0.5+	1998 10 29	704	0.1− 0.7+
1998 09 26	704	1.2+ 1.5−	1998 09 27	704	0.1+ 0.2+	1998 10 29	704	0.1− 0.1+
1998 09 26	704	0.1+ 1.9−	1998 10 28	704	1.1− 0.1+	1998 10 29	704	0.8− 0.6+

1998 SC₁₃₀ = 1991 RN₁₅

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	39.27848		(2000.0)	P	Q
<i>n</i>	0.28547426	ω	353.01454	+0.99561480	−0.09230356
<i>a</i>	2.2843260	Ω	12.31261	+0.08890834	+0.88310044
<i>e</i>	0.1969868	<i>i</i>	4.08909	+0.02909426	+0.46001485
<i>P</i>	3.45	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 09 11	675	1.5+ 0.7+	1998 09 26	704	0.3− 0.7+	1998 10 28	704	0.6− 1.0−
1991 09 11	675	0.3− 0.2−	1998 09 26	704	0.2+ 0.0	1998 10 28	704	0.8+ 0.3−
1991 09 14	675	0.3+ 0.5−	1998 09 26	704	0.2+ 1.1+	1998 10 28	704	0.0 0.2+
1991 09 14	675	0.8− 0.5−	1998 09 27	704	0.5− 0.7+	1998 10 28	704	0.7− 0.8+
1991 09 15	675	0.0 0.0	1998 09 27	704	1.1− 0.3−	1998 10 29	704	0.7− 1.4−
1991 09 15	675	1.2+ 0.0	1998 09 27	704	0.4− 1.0−	1998 10 29	704	0.4− 0.2+
1991 09 16	675	(0.6− 2.3−)	1998 09 27	704	(0.9− 2.1−)	1998 10 29	704	0.1− 0.5+
1991 09 16	675	1.3− 0.7+	1998 10 11	699	0.1− 0.1+	1998 10 29	704	1.2+ 0.1+
1998 09 18	699	0.4− 0.2+	1998 10 11	699	0.5− 0.1−	1998 10 29	704	1.7+ 1.1+
1998 09 18	699	0.4− 0.0	1998 10 11	699	0.3− 0.3+	1998 11 10	699	0.0 0.2−
1998 09 18	699	0.4+ 0.7+	1998 10 17	699	0.2− 0.1+	1998 11 10	699	0.0 0.2−
1998 09 26	704	0.1+ 0.2−	1998 10 17	699	0.4+ 0.5−	1998 11 10	699	0.2+ 0.5−
1998 09 26	704	0.3+ 0.1+	1998 10 17	699	0.5+ 0.2−			

1998 SD₁₃₀ = 1993 RB₅ = 1996 FW

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	72.87545		(2000.0)	P	Q
<i>n</i>	0.20409159	ω	132.31791	+0.81269474	+0.58265412
<i>a</i>	2.8570597	Ω	192.04936	−0.54326707	+0.75367042
<i>e</i>	0.0564473	<i>i</i>	1.76696	−0.21068495	+0.30413002
<i>P</i>	4.83	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 09 15	809	(2.5+ 2.3+)	1996 03 16	566	0.8+ 0.5−	1998 10 28	704	1.0+ 0.1+
1993 09 15	809	(1.8+ 2.2+)	1996 03 20	566	0.3− 0.3−	1998 10 28	704	0.5− 0.1−
1993 09 15	809	0.0 1.8+	1996 03 20	566	1.1− 0.2−	1998 10 28	704	0.6+ 0.4−
1993 09 16	809	(4.5+ 0.8−)	1996 03 20	566	0.5− 0.2−	1998 10 28	704	1.4+ 0.1−
1993 09 16	809	(4.0+ 0.8−)	1998 09 26	704	0.2+ 0.8−	1998 10 29	704	0.3− 0.1−
1993 09 16	809	(2.9+ 1.1−)	1998 09 26	704	0.0 0.2−	1998 10 29	704	0.3− 0.5+
1993 09 17	809	0.2− 0.5−	1998 09 26	704	0.5+ 1.2−	1998 10 29	704	0.6− 0.5−
1993 09 17	809	1.2− 0.2+	1998 09 26	704	0.3+ 1.0−	1998 10 29	704	0.2− 0.1−
1993 09 17	809	0.8− 0.2−	1998 09 26	704	0.3− 0.6−	1998 10 29	704	1.0− 0.4+
1993 09 18	809	0.1+ 0.2−	1998 09 27	704	0.0 0.8−	1998 11 10	704	0.4− 0.3−
1993 09 18	809	0.4− 0.6−	1998 09 27	704	0.5+ 1.3+	1998 11 10	704	0.9− 0.1+
1993 09 18	809	0.7− 0.3−	1998 09 27	704	0.4− 0.0	1998 11 10	704	0.6− 0.7+

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1993 09 18	675	0.2+ 0.2−	1998 09 27	704	1.0− 0.9−	1998 11 10	704	0.2+ 0.6+
1993 09 18	675	0.5− 0.7+	1998 09 27	704	0.8− 0.1+	1998 11 10	699	0.2− 0.9+
1993 09 22	675	0.6+ 0.1−	1998 10 11	699	0.1− 0.3+	1998 11 10	699	0.1− 0.1+
1993 09 22	675	0.5+ 0.5−	1998 10 11	699	0.3− 0.0	1998 11 10	699	1.6+ 0.0
1993 09 23	809	(2.3+ 0.1+)	1998 10 11	699	0.2− 0.5−	1998 11 11	704	0.3+ 0.7−
1993 09 23	809	1.9+ 0.4+	1998 10 17	699	0.0 0.3+	1998 11 11	704	0.6− 0.5−
1993 09 23	809	0.8+ 1.2−	1998 10 17	699	0.0 1.1+	1998 11 11	704	0.6+ 0.1+
1996 03 16	566	0.1− 0.2+	1998 10 17	699	0.2− 1.6+	1998 11 11	704	1.0+ 0.1−
1996 03 16	566	0.9+ 0.2−	1998 10 28	704	0.3+ 0.3+	1998 11 11	704	0.6+ 0.1−

1998 SG₁₃₀ = 1981 TY₁ = 1981 WO₄ = 1991 SF₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	37.79834		(2000.0)	P	Q
<i>n</i>	0.28925993	ω	354.64171	+0.99009045	−0.13600979
<i>a</i>	2.2643516	Ω	13.32886	+0.13381926	+0.83828117
<i>e</i>	0.2160157	<i>i</i>	8.72232	+0.04258286	+0.52800192
<i>P</i>	3.41	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1981 10 03	095	0.5− 1.9+	1998 09 26	704	0.1− 0.4−	1998 10 28	704	0.8− 0.8−
1981 11 19	095	1.3+ 1.3−	1998 09 27	704	0.1− 0.2−	1998 10 28	704	0.5− 0.5−
1981 11 24	095	1.3− 0.3+	1998 09 27	704	0.4+ 0.7+	1998 10 29	704	0.1+ 0.4+
1991 09 16	675	0.7− 0.9−	1998 09 27	704	0.6− 0.2+	1998 10 29	704	0.5+ 1.1+
1991 09 16	675	0.5+ 1.5+	1998 09 27	704	0.1+ 0.2−	1998 10 29	704	0.1− 0.1+
1998 09 26	704	0.5+ 0.5−	1998 09 27	704	0.6− 0.4−	1998 10 29	704	0.0 0.6+
1998 09 26	704	0.1+ 0.2−	1998 10 28	704	0.2+ 0.1+	1998 10 29	704	0.1+ 1.3+
1998 09 26	704	0.7+ 0.9−	1998 10 28	704	0.5+ 0.6−			
1998 09 26	704	0.6+ 1.1−	1998 10 28	704	0.2− 0.0			

1998 SN₁₃₀ = 1992 OQ₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	61.51560		(2000.0)	P	Q
<i>n</i>	0.17858464	ω	86.84709	+0.78267127	+0.62233261
<i>a</i>	3.1230096	Ω	234.66592	−0.57643597	+0.71785824
<i>e</i>	0.1924938	<i>i</i>	0.79401	−0.23483454	+0.31206036
<i>P</i>	5.52	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 07 26	809	0.9+ 0.6−	1998 09 26	704	0.6+ 0.5−	1998 10 28	704	0.3− 0.9+
1992 07 26	809	0.8− 0.2+	1998 09 26	704	0.7− 0.9−	1998 10 29	704	0.1+ 0.2+
1992 07 30	809	0.7− 1.0−	1998 09 27	704	0.3+ 0.1−	1998 10 29	704	0.5+ 1.3−
1992 07 30	809	0.5− 0.4−	1998 09 27	704	0.3+ 0.2−	1998 10 29	704	0.1+ 0.2+
1992 07 30	809	0.5+ 0.1−	1998 09 27	704	0.3− 0.5−	1998 10 29	704	0.8− 0.2+
1992 07 31	809	0.6+ 1.0+	1998 09 27	704	0.1+ 0.1−	1998 10 29	704	0.3+ 0.7−
1992 07 31	809	0.4+ 0.8+	1998 09 27	704	0.9− 0.9−	1998 11 10	699	1.0+ 0.5−
1992 07 31	809	0.6− 0.6+	1998 10 28	704	0.3− 0.1+	1998 11 10	699	0.8− 1.6+
1998 09 26	704	0.3+ 0.4+	1998 10 28	704	0.2+ 0.4+	1998 11 10	699	0.1+ 1.2+
1998 09 26	704	0.9+ 0.2+	1998 10 28	704	0.4− 0.2+			
1998 09 26	704	0.5+ 1.1−	1998 10 28	704	0.8− 1.1+			

1998 SR₁₃₀ = 1975 VF₄ = 1992 JW₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	86.80509		(2000.0)	P	Q
<i>n</i>	0.21291698	ω	98.03272	+0.66365819	+0.74604799
<i>a</i>	2.7775541	Ω	213.75029	−0.71913633	+0.61626730
<i>e</i>	0.0518481	<i>i</i>	5.62952	−0.20591440	+0.25224395
<i>P</i>	4.63	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1975 11 02	095	0.4+ 1.6−	1998 09 27	704	0.4− 0.3+	1998 10 29	704	0.4− 0.9−
1992 05 04	809	0.9− 0.4−	1998 09 27	704	0.6− 0.8+	1998 10 29	704	1.3+ 1.0−
1992 05 04	809	0.9− 0.4−	1998 09 27	704	0.5− 0.0	1998 10 29	704	0.4− 1.5+
1992 05 04	809	0.9− 0.3−	1998 10 11	699	1.4+ 0.1+	1998 11 10	704	0.2+ 0.2−
1992 05 07	809	(3.9− 0.5−)	1998 10 11	699	0.4− 0.4+	1998 11 10	704	0.5− 0.8+
1992 05 07	809	(3.5− 0.6−)	1998 10 11	699	0.1− 0.2−	1998 11 10	704	1.3− 0.3+

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1992 05 07	809	(3.3− 0.6−)	1998 10 17	699	0.6+ 0.2+	1998 11 10	699	0.5+ 0.8+
1992 05 08	809	0.8+ 0.1+	1998 10 17	699	0.3+ 0.4−	1998 11 10	704	0.9+ 0.2+
1992 05 08	809	0.7+ 0.3+	1998 10 17	699	0.4+ 0.1−	1998 11 10	699	0.7+ 0.6+
1992 05 08	809	1.1+ 0.0	1998 10 28	704	0.2+ 0.5−	1998 11 10	699	0.5+ 0.9+
1998 09 26	704	0.3+ 0.1+	1998 10 28	704	0.0 0.9−	1998 11 11	704	0.4− 0.6+
1998 09 26	704	0.1+ 0.0	1998 10 28	704	1.1− 0.0	1998 11 11	704	0.0 0.1+
1998 09 26	704	0.5− 0.2−	1998 10 28	704	0.7− 1.0−	1998 11 11	704	0.1+ 0.5+
1998 09 26	704	0.3− 0.5−	1998 10 28	704	1.0− 0.8−	1998 11 11	704	0.1− 0.1+
1998 09 27	704	0.4+ 0.2−	1998 10 29	704	0.2+ 0.3−	1998 11 11	704	0.5+ 0.5+
1998 09 27	704	0.4− 0.3+	1998 10 29	704	0.3+ 0.4−			

1998 SS₁₃₀ = 1991 PO₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	154.64923		(2000.0)		P		Q
n	0.30091029	ω	262.18941		−0.39768145		+0.91744509
a	2.2055218	Ω	344.36074		−0.82329778		−0.36258335
e	0.1303067	i	2.55108		−0.40500646		−0.16379201
P	3.28	H	14.5	G	0.15	U	5

Residuals in seconds of arc

1991 08 05	675	0.7− 0.5−	1998 09 26	704	0.0 0.6+	1998 10 28	704	0.4+ 2.2−
1991 08 05	675	0.5+ 0.1+	1998 09 27	704	0.1− 0.6−	1998 10 28	704	0.8+ 0.6−
1991 08 07	675	0.7+ 0.2−	1998 09 27	704	0.5+ 0.2+	1998 10 28	704	0.1+ 0.3+
1991 08 07	675	0.5− 0.5+	1998 09 27	704	0.2− 1.1+	1998 10 29	704	0.1− 0.4+
1998 09 26	704	0.8− 0.8−	1998 09 27	704	0.6− 1.1+	1998 10 29	704	0.8− 0.5+
1998 09 26	704	1.0+ 0.5−	1998 09 27	704	0.2− 0.2−	1998 10 29	704	1.0− 0.4−
1998 09 26	704	0.1+ 0.5−	1998 10 28	704	0.0 0.3+	1998 10 29	704	0.8+ 1.3+

1998 SV₁₃₁ = 1990 WU₆ = 1992 EZ₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	54.06681		(2000.0)		P		Q
n	0.23562112	ω	124.82175		+0.96854256		+0.19276830
a	2.5961308	Ω	224.65824		−0.22702462		+0.94345547
e	0.0654162	i	12.93796		+0.10190745		+0.26968899
P	4.18	H	14.0	G	0.15	U	3

Residuals in seconds of arc

1990 11 21	809	0.1− 1.3−	1998 09 26	704	0.0 0.3+	1998 10 29	704	1.1+ 0.4+
1990 11 21	809	0.4− 1.4−	1998 09 26	704	0.7+ 0.4+	1998 10 29	704	0.4+ 0.9+
1990 11 21	809	0.7− 0.5−	1998 09 27	704	0.4− 0.8−	1998 10 29	704	1.2+ 0.6+
1990 11 22	809	1.1+ 0.9+	1998 09 27	704	0.5− 0.0	1998 10 29	704	1.3+ 0.4+
1990 11 22	809	0.8+ 0.6+	1998 09 27	704	0.2+ 0.5−	1998 11 10	704	1.3− 0.2+
1990 11 22	809	0.9− 1.3−	1998 09 27	704	0.7+ 0.7+	1998 11 10	704	1.2− 0.3−
1992 03 10	413	0.6− 0.9+	1998 09 27	704	0.1+ 0.4−	1998 11 10	704	0.1− 0.2−
1992 03 10	413	1.8+ 0.2+	1998 10 28	704	0.3+ 0.1+	1998 11 10	704	0.5− 0.1−
1992 03 11	413	0.8− 1.3+	1998 10 28	704	0.1− 0.6+	1998 11 11	704	1.1− 0.2+
1992 03 11	413	0.4+ 0.1+	1998 10 28	704	0.8+ 0.3+	1998 11 11	704	0.5− 0.2+
1998 09 26	704	0.5− 0.4−	1998 10 28	704	0.1+ 0.1−	1998 11 11	704	1.1− 0.2+
1998 09 26	704	0.6− 0.7−	1998 10 28	704	0.5+ 0.2+	1998 11 11	704	0.9− 0.1+
1998 09 26	704	0.6+ 0.4−	1998 10 29	704	0.8+ 0.8+	1998 11 11	704	1.2− 1.4+

1998 SE₁₃₂ = 1992 MG

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Williams

M	96.14911		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.20486637	ω	81.37652		+0.50477692		+0.85206540
a	2.8498517	Ω	219.93740		−0.85230770		+0.46645564
e	0.0696139	i	12.46031		−0.13701035		+0.23749460
P	4.81	H	13.1	G	0.15	U	4

Residuals in seconds of arc

1992 06 28	675	0.3− 0.1+	1998 09 27	704	0.6− 0.5−	1998 10 29	704	0.6+ 0.0
1992 06 28	675	0.1− 0.5−	1998 09 27	704	1.0− 1.0−	1998 10 29	704	1.2+ 0.1−
1992 06 29	675	0.2+ 1.0+	1998 09 28	112	0.7− 0.6−	1998 10 29	704	0.9+ 0.0
1992 06 29	675	1.0+ 0.5−	1998 09 28	112	1.3− 0.8−	1998 10 29	704	0.7+ 0.5−
1992 06 30	675	1.0− 0.0	1998 10 11	112	1.8− 0.5+	1998 10 29	704	1.1+ 0.5−

1992 06 30	675	0.0 0.0	1998 10 11	112	0.1+ 0.6+	1998 11 10	704	0.2− 0.0
1998 09 23	098	0.0 0.6+	1998 10 11	699	0.5− 1.3+	1998 11 10	704	0.0 0.4−
1998 09 23	098	1.4− 0.1+	1998 10 11	699	0.6− 1.0+	1998 11 10	704	0.4− 0.5−
1998 09 23	098	(0.6− 2.4−)	1998 10 11	699	0.4− 1.0+	1998 11 10	704	0.8− 0.3−
1998 09 26	704	0.2+ 0.4−	1998 10 21	910	0.3+ 0.6+	1998 11 11	704	0.2− 0.1+
1998 09 26	704	1.3+ 1.5−	1998 10 21	910	0.2+ 0.6+	1998 11 11	704	0.4+ 0.4−
1998 09 26	704	1.5+ 0.6−	1998 10 22	910	0.3+ 0.6+	1998 11 11	704	0.6+ 0.6−
1998 09 26	704	0.7+ 0.3+	1998 10 28	704	0.2− 0.1−	1998 11 11	704	0.6− 0.4−
1998 09 26	704	0.3+ 0.8−	1998 10 28	704	0.2+ 0.2−	1998 11 11	704	0.8+ 0.8−
1998 09 27	704	(0.5− 2.2−)	1998 10 28	704	0.3+ 0.4+	1998 11 15	566	0.4+ 0.5+
1998 09 27	704	0.5− 0.3−	1998 10 28	704	0.5− 1.3+	1998 11 15	566	0.1− 0.7+
1998 09 27	704	0.8− 0.4+	1998 10 28	704	0.8+ 0.5+	1998 11 15	566	0.4− 0.1+

1998 SK₁₃₂ = 1992 DR

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	245.87882		(2000.0)		P		Q	
n	0.24578435	ω	215.08037		−0.98609765		−0.15794345	
a	2.5240613	Ω	315.74127		+0.16429205		−0.88018183	
e	0.0945000	i	4.24228		+0.02489077		−0.44758665	
P	4.01	H	13.8		G	0.15	U	5

Residuals in seconds of arc

1992 02 22	399	0.4− 0.2+	1998 09 26	704	0.3+ 0.5+	1998 10 29	704	1.6+ 1.7+
1992 02 22	399	2.4+ 0.1+	1998 09 26	704	0.4+ 0.3−	1998 10 29	704	1.6+ 1.1+
1992 02 25	399	3.0− 3.2−	1998 09 26	704	0.0 1.4−	1998 10 29	704	1.3+ 0.9−
1992 02 25	399	1.1− 1.2−	1998 09 27	704	1.4− 0.4+	1998 11 10	704	2.0− 1.4−
1992 02 26	399	2.0− 0.0	1998 09 27	704	0.4− 0.5−	1998 11 10	704	1.4− 1.0+
1992 02 27	675	0.9+ 0.6+	1998 09 27	704	1.5+ 0.7+	1998 11 10	704	1.8− 0.4−
1992 02 27	675	1.4+ 0.2+	1998 09 27	704	0.3− 0.3+	1998 11 10	704	0.3− 0.1+
1992 02 28	675	1.7+ 1.7+	1998 10 28	704	0.9− 0.7+	1998 11 11	704	0.5+ 0.6+
1992 02 28	675	2.1+ 1.7+	1998 10 28	704	0.7+ 0.5−	1998 11 11	704	0.4+ 0.6+
1992 03 07	399	0.3+ 0.3−	1998 10 28	704	0.3+ 0.9−	1998 11 11	704	1.0+ 0.2+
1992 03 07	399	2.4− 0.0	1998 10 28	704	0.3+ 0.6−	1998 11 11	704	1.0+ 0.1−
1998 09 26	704	0.6− 0.0	1998 10 28	704	0.6− 0.2−			
1998 09 26	704	0.8− 0.5−	1998 10 29	704	0.6− 0.4−			

1998 SR₁₃₂ = 1993 FW₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	310.99960		(2000.0)		P		Q
n	0.28372491	ω	183.75598		−0.36414191		−0.93000021
a	2.2937059	Ω	287.60409		+0.85585207		−0.31296894
e	0.0863916	i	3.00709		+0.36731173		−0.19274350
P	3.47	H	15.0	G	0.15	U	5

Residuals in seconds of arc

1993 03 21	809	0.5− 0.7+	1998 09 27	704	(0.3− 2.6+)	1998 10 29	704	1.0+ 1.1−
1993 03 22	809	1.2+ 0.5+	1998 09 27	704	0.3− 0.9+	1998 11 10	704	(2.5− 0.6+)
1993 03 26	809	0.7− 0.9−	1998 10 28	704	0.0 0.7−	1998 11 10	704	0.5− 0.1+
1998 09 26	704	0.4− 0.6+	1998 10 28	704	0.1− 1.0+	1998 11 10	704	0.1− 0.7+
1998 09 26	704	0.0 0.5−	1998 10 28	704	0.3− 0.9−	1998 11 10	704	0.3+ 0.4−
1998 09 26	704	1.3+ 1.7−	1998 10 28	704	0.4− 0.1+	1998 11 11	704	(2.3− 0.3+)
1998 09 26	704	0.9+ 0.8−	1998 10 28	704	0.7− 0.8−	1998 11 11	704	1.2− 0.4+
1998 09 26	704	0.3− 1.4+	1998 10 29	704	1.0+ 0.3−	1998 11 11	704	0.6− 0.5+
1998 09 27	704	0.1− 1.4+	1998 10 29	704	1.1+ 0.7+	1998 11 11	704	0.8+ 0.1−
1998 09 27	704	1.4− 0.5+	1998 10 29	704	0.1+ 0.3−			

1998 ST₁₃₂ = 1989 WM₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	315.54453		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.21127600	ω	145.75419		−0.05556542		−0.99736804
a	2.7919176	Ω	307.38699		+0.90244231		−0.03020737
e	0.0233371	i	3.36067		+0.42721231		−0.06591281
P	4.67	H	13.9	G	0.15	U	5

Residuals in seconds of arc

1989 11 28	033	1.1−	0.4+	1998 09 27	704	0.4−	1.1+	1998 10 29	704	0.6+	0.7+
1989 11 28	033	1.1+	0.9−	1998 09 27	704	1.5−	0.9+	1998 10 29	704	0.1+	1.5−
1989 11 29	033	1.4−	1.0−	1998 10 11	699	0.2+	0.2+	1998 11 10	704	0.4−	0.5−
1989 11 29	033	1.4+	1.2+	1998 10 11	699	0.4−	0.6+	1998 11 10	704	0.8−	0.6+
1998 09 26	704	0.4−	1.0−	1998 10 11	699	0.7−	0.2+	1998 11 10	704	0.1−	0.1+
1998 09 26	704	0.2−	0.7−	1998 10 28	704	0.0	1.0−	1998 11 10	704	0.1−	0.0
1998 09 26	704	0.3+	0.6−	1998 10 28	704	0.5+	0.4−	1998 11 11	704	0.8+	1.1+
1998 09 26	704	0.7+	0.2−	1998 10 28	704	1.0+	0.7−	1998 11 11	704	0.6−	0.7+
1998 09 26	704	0.0	1.6−	1998 10 28	704	1.3−	0.3−	1998 11 11	704	(0.7−	2.3+)
1998 09 27	704	0.6+	0.1+	1998 10 29	704	0.4−	0.5+	1998 11 11	704	0.0	0.4−
1998 09 27	704	0.8+	0.5+	1998 10 29	704	0.5+	0.6+				
1998 09 27	704	0.7+	0.8+	1998 10 29	704	0.5+	0.4+				

1998 SW₁₃₂ = 1991 LD₄ = 1996 HU₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	4.74418	(2000.0)		P	Q		
<i>n</i>	0.18315141	ω	184.63827	+0.73954565	−0.66546355		
<i>a</i>	3.0708778	Ω	217.72691	+0.62275828	+0.73348206		
<i>e</i>	0.1080880	<i>i</i>	9.51457	+0.25542974	+0.13842808		
<i>P</i>	5.38	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 06 06	809	1.4+	0.2−	1998 09 26	704	0.6+	0.4−	1998 10 28	704	1.6−	0.9+
1991 06 06	809	0.8+	0.1−	1998 09 26	704	0.9+	1.2−	1998 10 28	704	1.8−	0.7+
1991 06 06	809	0.9−	0.9−	1998 09 26	704	1.2+	1.1−	1998 10 28	704	1.1−	1.6+
1991 06 08	809	0.2−	0.3+	1998 09 26	704	0.7+	1.0−	1998 10 29	704	0.0	0.0
1991 06 08	809	0.0	0.1+	1998 09 26	704	1.1+	0.8−	1998 10 29	704	0.1+	0.2+
1991 06 08	809	1.1−	0.6+	1998 09 26	704	0.2+	0.3−	1998 10 29	704	0.8+	0.4+
1996 04 18	809	0.1−	0.3+	1998 09 27	704	1.4+	0.9+	1998 10 29	704	0.7+	0.8−
1996 04 18	809	0.1−	0.1−	1998 09 27	704	(2.1+	0.6+)	1998 10 29	704	0.6+	0.5−
1996 04 18	809	0.1+	0.5−	1998 09 27	704	(2.6+	0.9+)	1998 11 10	704	1.4−	1.6+
1996 04 20	809	(1.1−	4.1−)	1998 09 27	704	(2.1+	2.1−)	1998 11 10	704	0.1+	0.7−
1996 04 20	809	(1.9−	3.2−)	1998 09 27	704	1.2+	0.4−	1998 11 10	704	0.3−	0.6−
1996 04 20	809	(1.7−	4.0−)	1998 10 11	699	1.1−	0.2+	1998 11 10	704	0.1+	0.6−
1998 09 14	699	0.2+	1.2+	1998 10 11	699	0.7−	0.1−	1998 11 10	704	0.0	0.3−
1998 09 14	699	0.6−	1.0+	1998 10 11	699	1.4−	0.1+	1998 11 11	704	0.4−	0.0
1998 09 14	699	0.6−	1.2+	1998 10 17	699	0.2+	0.6+	1998 11 11	704	0.6−	0.5−
1998 09 26	704	1.0−	1.0+	1998 10 17	699	0.4+	0.5+	1998 11 11	704	0.9+	0.8−
1998 09 26	704	0.4+	0.0	1998 10 17	699	0.2+	0.4+	1998 11 11	704	1.0+	0.7−
1998 09 26	704	0.1+	1.3−	1998 10 28	704	1.3−	0.4+	1998 11 11	704	1.0+	1.4−

1998 SG₁₃₃ = 1977 UV₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	302.05394	(2000.0)		P	Q		
<i>n</i>	0.23442721	ω	262.73828	−0.34431454	−0.93277180		
<i>a</i>	2.6049378	Ω	208.14360	+0.92567528	−0.31830680		
<i>e</i>	0.0473766	<i>i</i>	13.07375	+0.15675704	−0.16916723		
<i>P</i>	4.20	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 18	675	0.4−	0.1−	1998 10 10	699	0.8−	1.2+	1998 10 29	704	0.1−	1.4−
1977 10 19	675	0.4+	0.4+	1998 10 10	699	0.5+	0.5+	1998 11 10	704	0.8−	0.9+
1998 09 26	704	0.0	0.5−	1998 10 17	699	0.4+	1.7+	1998 11 10	704	0.3+	0.0
1998 09 26	704	0.3−	1.1−	1998 10 17	699	0.1+	1.1+	1998 11 10	704	0.4−	0.2+
1998 09 26	704	0.2+	0.5−	1998 10 17	699	0.6+	0.8+	1998 11 10	704	1.2−	0.5−
1998 09 26	704	0.2+	1.1−	1998 10 28	704	0.6−	0.6−	1998 11 10	699	0.9+	1.2+
1998 09 26	704	0.8+	0.9+	1998 10 28	704	1.3−	1.9−	1998 11 10	699	0.8+	0.8+
1998 09 27	704	0.1−	0.4−	1998 10 28	704	0.4−	0.3−	1998 11 10	699	0.1−	0.0
1998 09 27	704	0.7−	1.0−	1998 10 28	704	0.6+	0.8−	1998 11 11	704	0.6+	1.3+
1998 09 27	704	0.2+	1.4+	1998 10 29	704	0.5−	0.7−	1998 11 11	704	0.8−	0.8−
1998 09 27	704	0.5+	1.1+	1998 10 29	704	0.5−	0.7−	1998 11 11	704	0.9+	1.5+
1998 09 27	704	0.4+	0.2+	1998 10 29	704	0.4−	0.8−	1998 11 11	704	1.1+	1.0−
1998 10 10	699	0.8+	0.2−	1998 10 29	704	0.2−	0.0	1998 11 11	704	0.5−	0.8−

1998 SP₁₃₃ = 1994 PR₁₁ = 1997 EW₄₈

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	114.82424	(2000.0)		P	Q		
<i>n</i>	0.26739748	ω	44.32416	+0.06697126	+0.99758914		
<i>a</i>	2.3861506	Ω	229.52461	−0.92193893	+0.05490245		
<i>e</i>	0.1838524	<i>i</i>	1.37000	−0.38150159	+0.04244568		
<i>P</i>	3.69	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 10	809	0.5+	0.6+	1998 09 14	699	(3.0+	0.3−)	1998 10 10	699	0.5+	0.8+
1994 08 10	809	0.0	0.2+	1998 09 14	699	1.8+	0.1+	1998 10 17	699	0.3+	0.2+
1994 08 10	809	0.7−	0.1−	1998 09 26	704	0.2−	0.3+	1998 10 17	699	0.3−	0.4+
1994 08 11	809	(2.7+	4.9+)	1998 09 26	704	1.0+	1.9+	1998 10 17	699	0.3−	0.1+
1994 08 11	809	(2.8+	5.1+)	1998 09 26	704	0.2+	1.0+	1998 10 28	704	(0.6−	3.2−)
1994 08 11	809	(2.3+	5.4+)	1998 09 26	704	0.5+	1.0+	1998 10 28	704	0.7−	1.0−
1997 03 11	809	0.0	0.4+	1998 09 26	704	0.7+	1.5+	1998 10 28	704	0.1−	1.2−
1997 03 11	809	0.4+	1.0+	1998 09 27	704	0.5+	0.4−	1998 10 28	704	(2.8−	0.0)
1997 03 11	809	0.3−	0.7+	1998 09 27	704	0.6−	0.5−	1998 10 29	704	1.9−	0.5−
1997 03 12	809	0.3+	0.2+	1998 09 27	704	0.7+	0.5−	1998 10 29	704	0.2−	0.8+
1997 03 12	809	0.6+	0.0	1998 09 27	704	(0.2+	2.9−)	1998 10 29	704	(3.0−	0.1+)
1997 03 12	809	0.2+	0.3+	1998 10 10	699	0.0	0.2−	1998 10 29	704	1.4−	1.9−
1998 09 14	699	(2.6+	0.0)	1998 10 10	699	0.4+	0.3−	1998 10 29	704	1.5−	0.7+

1998 SQ₁₃₃ = 1994 PB₂₂

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	337.05520	(2000.0)		P	Q		
<i>n</i>	0.26482507	ω	80.86446	+0.00399083	−0.99997048		
<i>a</i>	2.4015778	Ω	8.91475	+0.90003260	+0.00073051		
<i>e</i>	0.1767964	<i>i</i>	2.42821	+0.43580431	+0.00764845		
<i>P</i>	3.72	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	2.0+	0.1−	1998 09 26	704	0.7+	0.9+	1998 10 17	699	0.1+	0.3+
1994 08 12	809	0.7+	1.1+	1998 09 26	704	0.8−	0.7−	1998 10 17	699	0.6−	0.6+
1994 08 12	809	1.7+	0.4+	1998 09 26	704	1.1−	0.2+	1998 10 28	704	0.8+	0.1+
1994 08 13	809	0.3+	0.0	1998 09 26	704	1.3−	0.2+	1998 10 28	704	0.6+	0.5−
1994 08 13	809	1.6−	0.7+	1998 09 27	704	0.2+	0.2+	1998 10 28	704	0.1−	0.4−
1994 08 13	809	0.0	1.2−	1998 09 27	704	0.1−	0.5+	1998 10 28	704	0.7−	0.8−
1994 09 05	809	0.3−	0.5−	1998 09 27	704	0.5+	0.6+	1998 10 28	704	0.4+	1.2−
1994 09 05	809	1.2−	0.2−	1998 09 27	704	0.7−	1.0+	1998 10 29	704	0.8−	0.4−
1994 09 05	809	0.2−	0.6−	1998 09 27	704	0.6−	0.9−	1998 10 29	704	1.5+	0.7+
1994 09 06	809	0.1−	0.5+	1998 10 10	699	0.2−	0.5+	1998 10 29	704	0.2+	0.5−
1994 09 06	809	0.3−	0.2−	1998 10 10	699	0.3+	0.2+	1998 10 29	704	1.4+	0.9−
1994 09 06	809	0.3−	0.9−	1998 10 10	699	1.0+	1.6+	1998 10 29	704	0.1−	0.5−
1998 09 26	704	1.1−	0.4−	1998 10 17	699	0.1−	0.4+				

1998 SR₁₃₃ = 1998 TH₃₁ = 1983 QS = 1997 GB₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	80.48878	(2000.0)		P	Q		
<i>n</i>	0.26683724	ω	95.36798	+0.57116111	+0.82074238		
<i>a</i>	2.3894893	Ω	209.47434	−0.76282800	+0.52509899		
<i>e</i>	0.2221622	<i>i</i>	1.45892	−0.30309804	+0.22506220		
<i>P</i>	3.69	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

1998 DEC. 8

1997 04 09	691	0.4+	0.4−	1998 10 10	699	0.1−	0.1−	1998 11 10	704	0.1−	0.3+
1997 04 09	691	0.2+	0.1−	1998 10 10	699	0.7+	0.1+	1998 11 10	704	1.0−	0.2−
1997 04 09	691	0.1−	0.4+	1998 10 10	699	0.4−	0.3−	1998 11 10	704	0.8+	0.3−
1997 04 16	691	0.9−	1.2−	1998 10 17	699	0.3−	0.9−	1998 11 10	704	1.3+	0.3−
1997 04 16	691	0.6−	1.1−	1998 10 17	699	0.3+	1.0−	1998 11 11	704	1.8+	1.5+
1997 04 16	691	0.7−	1.2−	1998 10 17	699	0.2−	0.5−	1998 11 11	704	0.7+	1.9+
1998 09 26	704	0.2−	0.3−	1998 10 28	704	0.2−	0.6−	1998 11 11	704	0.9−	2.3+
1998 09 26	704	0.2+	0.9−	1998 10 28	704	0.5−	0.2+	1998 11 11	704	0.4−	1.2+

1998 SZ₁₃₃ = 1977 EF₆

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Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.25723372	<i>ω</i>	232.68088	+0.29323628	−0.95542178		
<i>a</i>	2.4485977	<i>Ω</i>	200.34848	+0.90545170	+0.28908169		
<i>e</i>	0.0972799	<i>i</i>	5.67346	+0.30687084	+0.06000838		
<i>P</i>	3.83	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 03 12	381	1.6−	0.7+	1998 09 26	704	0.0	0.5+	1998 10 17	699	0.0	0.3+
1977 03 12	381	0.3+	0.1+	1998 09 26	704	0.4+	0.1−	1998 10 17	699	0.1−	0.3+
1977 03 14	381	0.9+	0.6−	1998 09 26	704	0.7+	0.9−	1998 11 10	704	0.2−	0.9−
1977 03 14	381	0.9−	0.3−	1998 09 26	704	0.5+	0.9−	1998 11 10	704	0.4+	0.6−
1977 03 15	381	0.9+	0.5−	1998 09 26	704	0.2+	0.2−	1998 11 10	704	0.8−	0.4−
1977 03 15	381	0.2+	0.1+	1998 09 27	704	0.2−	0.2+	1998 11 10	704	0.6−	0.9−
1998 09 16	411	0.2−	0.9−	1998 09 27	704	0.2+	0.9−	1998 11 10	699	0.1+	0.7+
1998 09 16	411	0.1−	0.7−	1998 09 27	704	0.1−	0.1+	1998 11 10	699	0.0	0.9+
1998 09 18	809	(2.0+	2.9+)	1998 09 27	704	1.2−	0.2−	1998 11 10	699	0.8+	1.1+
1998 09 18	809	(1.2+	3.6+)	1998 09 27	704	1.2−	0.3+	1998 11 11	704	0.5+	1.0+
1998 09 18	809	(0.2+	3.1+)	1998 10 10	699	0.2−	0.9+	1998 11 11	704	0.3+	0.1+
1998 09 20	809	(0.9+	3.0+)	1998 10 10	699	0.3−	1.7+	1998 11 11	704	0.9−	0.8+
1998 09 20	809	(0.6+	3.1+)	1998 10 10	699	0.0	0.1+	1998 11 11	704	0.3+	1.3−
1998 09 20	809	(0.2−	2.6+)	1998 10 17	699	0.5+	0.2−	1998 11 11	704	1.2+	0.3−

1998 SF₁₃₄ = 1993 FY₄₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.27019198	<i>ω</i>	336.46096	+0.99974774	−0.00693030		
<i>a</i>	2.3696693	<i>Ω</i>	23.96566	+0.01565039	+0.89721193		
<i>e</i>	0.1746825	<i>i</i>	3.01496	−0.01610969	+0.44154583		
<i>P</i>	3.65	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 19	809	0.3−	1.2+	1998 09 26	704	0.7−	1.0−	1998 10 28	704	1.1+	0.4+
1993 03 20	809	1.1+	0.0	1998 09 26	704	0.5−	1.2−	1998 10 28	704	0.3+	0.2+
1993 03 24	809	0.2+	0.7+	1998 09 26	704	0.7−	0.1−	1998 10 28	704	0.2−	0.4+
1998 09 18	809	1.1+	0.1+	1998 09 26	704	1.5−	1.3−	1998 10 28	704	0.6+	0.8+
1998 09 18	809	0.5−	0.0	1998 09 27	704	0.7−	0.8−	1998 10 29	704	0.1−	0.0
1998 09 18	809	1.1−	0.3+	1998 09 27	704	0.3−	2.0−	1998 10 29	704	1.3+	1.3−
1998 09 20	809	2.5+	2.2+	1998 09 27	704	0.4−	0.9−	1998 10 29	704	0.2+	0.5+
1998 09 20	809	0.4+	2.8+	1998 09 27	704	0.4+	0.1−	1998 10 29	704	0.1+	0.3+
1998 09 20	809	0.6+	2.6+	1998 09 27	704	0.3−	0.1+	1998 10 29	704	0.3−	0.1+
1998 09 26	704	2.0−	0.1−	1998 10 28	704	0.2+	0.1−				

1998 SO₁₃₄ = 1993 FP₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.28523514	<i>ω</i>	260.76558	+0.09924716	−0.99504678		
<i>a</i>	2.2856025	<i>Ω</i>	183.55327	+0.94499996	+0.09603043		
<i>e</i>	0.1197427	<i>i</i>	5.22967	+0.31164896	+0.02569178		
<i>P</i>	3.46	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 19	809	1.3−	1.9+	1998 09 27	704	1.3+	1.7+	1998 10 28	704	0.2−	1.2−
1993 03 20	809	0.4−	0.1−	1998 09 27	704	1.6+	0.4−	1998 10 28	704	0.2+	1.0+

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1993 03 24	809	1.7+	1.8−	1998 09 27	704	2.0−	2.3+	1998 10 29	704	0.9−	0.4−
1998 09 26	704	0.5−	0.3+	1998 10 11	699	0.5+	0.2+	1998 10 29	704	0.3+	1.6+
1998 09 26	704	1.1+	0.9−	1998 10 11	699	0.7+	0.1+	1998 10 29	704	2.0+	1.6+
1998 09 26	704	1.1−	2.5−	1998 10 11	699	0.2−	0.6+	1998 10 29	704	0.8−	1.6−
1998 09 26	704	1.0−	1.3−	1998 10 28	704	1.1−	1.3−	1998 10 29	704	0.5+	0.4−
1998 09 27	704	0.2+	0.5+	1998 10 28	704	0.8−	0.1+				

1998 SV₁₃₄ = 1992 QN₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.17377089	<i>ω</i>	227.05750	+0.96160876	+0.27302115		
<i>a</i>	3.1804216	<i>Ω</i>	117.08087	−0.24184620	+0.89084563		
<i>e</i>	0.2187632	<i>i</i>	1.78370	−0.12968815	+0.36311640		
<i>P</i>	5.67	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 08 29	095	0.4+	0.3+	1998 09 27	704	1.1−	0.9+	1998 10 29	704	0.1+	0.0
1992 08 29	095	(3.4−	0.5−)	1998 09 27	704	0.1−	0.8+	1998 10 29	704	0.4−	0.1+
1992 08 30	095	1.1−	0.6+	1998 09 27	704	0.7−	0.5+	1998 10 29	704	0.2−	0.8−
1992 08 30	095	0.2+	1.7−	1998 10 11	699	0.3−	0.6+	1998 11 10	704	0.5+	0.6−
1992 09 03	095	1.2+	0.2−	1998 10 11	699	0.3−	0.6+	1998 11 10	704	0.7−	0.3+
1992 09 03	095	0.4−	0.2+	1998 10 11	699	0.3−	0.8+	1998 11 10	704	0.5+	0.2−
1998 09 26	704	0.5+	0.3+	1998 10 28	704	0.0	0.1+	1998 11 10	704	0.1−	0.2−
1998 09 26	704	0.4+	0.3−	1998 10 28	704	0.9+	0.9−	1998 11 10	704	0.7−	0.4−
1998 09 26	704	0.7+	0.0	1998 10 28	704	0.1+	0.2−	1998 11 11	704	0.4−	0.2+
1998 09 26	704	0.3+	0.0	1998 10 28	704	0.3−	0.1+	1998 11 11	704	1.1+	0.6−
1998 09 26	704	0.7−	0.3−	1998 10 28	704	0.8+	0.4−	1998 11 11	704	0.8+	0.5+
1998 09 27	704	0.6−	0.2+	1998 10 29	704	0.6−	0.5−	1998 11 11	704	0.4−	0.0
1998 09 27	704	0.3+	0.6+	1998 10 29	704	0.3+	0.1−	1998 11 11	704	0.3+	0.6−

1998 SE₁₃₅ = 1992 PR₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.17699583	<i>ω</i>	128.73760	+0.66419831	+0.74751153		
<i>a</i>	3.1416709	<i>Ω</i>	182.92286	−0.72601425	+0.64240749		
<i>e</i>	0.2048392	<i>i</i>	9.24578	−0.17816825	+0.16893527		
<i>P</i>	5.57	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 08 02	675	0.1−	0.2+	1998 09 26	704	0.5+	0.1+	1998 10 28	704	0.5+	0.5−
1992 08 02	675	0.0	0.3+	1998 09 26	704	0.1+	0.2−	1998 10 28	704	1.0−	0.9+
1992 08 03	675	0.1−	1.0−	1998 09 26	704	0.6+	0.5−	1998 10 28	704	0.6+	1.5−
1992 08 03	675	1.2−	0.7−	1998 09 26	704	0.6+	0.7+	1998 10 28	704	0.2−	0.7−
1992 08 06	675	0.5+	0.1−	1998 09 27	704	0.2−	1.0−	1998 10 29	704	0.6+	0.7+
1992 08 06	675	0.4−	0.3+	1998 09 27	704	0.8−	1.1+	1998 10 29	704	0.0	0.3−
1992 08 06	675	0.2+	0.2+	1998 09 27	704	0.8−	0.1−	1998 10 29	704	0.0	0.4+
1992 08 06	675	0.9+	0.7+	1998 09 27	704	0.4−	0.7+	1998 10 29	704	0.7+	0.3+
1998 09 26	704	0.8+	1.1−	1998 09 27	704	0.5−	0.2+	1998 10 29	704	1.0−	0.9+

1998 SN₁₃₅ = 1987 SU₂₁ = 1991 UG₄

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Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		(2000.0)		P	Q		

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1998 09 18	699	0.2+	0.3+	1998 10 11	699	0.4+	0.6+	1998 10 29	704	0.3+	0.1+
1998 09 26	704	0.7+	0.7+	1998 10 11	699	0.6+	0.3+	1998 10 29	704	0.9-	0.1-
1998 09 26	704	0.8-	0.0	1998 10 11	699	0.7+	0.4+	1998 10 29	704	0.1+	0.4+
1998 09 26	704	0.1-	0.7-	1998 10 20	699	0.6+	0.3+	1998 10 29	704	0.2+	0.2+
1998 09 26	704	0.2-	0.6-	1998 10 20	699	0.2+	0.8+	1998 10 29	704	0.4-	0.8-

1998 SF₁₃₆ = 4304 T-2 = 1976 JH₂ = 1994 NT₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	105.47725						
<i>n</i>	0.27700735	ω	184.88390	+0.09444767	+0.99352315		
<i>a</i>	2.3306399	Ω	90.54542	-0.91122779	+0.11183317		
<i>e</i>	0.2318817	<i>i</i>	3.62238	-0.40092836	-0.02012715		
<i>P</i>	3.56	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1973 09 29	675	1.0-	0.9-	1994 07 09	809	0.1+	0.8+	1998 09 27	704	0.6+	0.6-
1973 09 29	675	0.7-	2.3-	1994 07 09	809	0.3-	1.0+	1998 10 28	704	0.2-	1.8+
1973 09 30	675	1.3+	0.2+	1994 07 09	809	0.9-	0.3+	1998 10 28	704	1.0-	0.5+
1973 09 30	675	0.4+	0.8-	1998 09 26	704	0.6-	0.4-	1998 10 28	704	1.0+	0.9-
1973 10 04	675	1.7+	1.3-	1998 09 26	704	0.1-	0.1-	1998 10 28	704	0.1-	1.4+
1973 10 04	675	0.9+	0.4-	1998 09 26	704	0.7-	0.2-	1998 10 28	704	0.5-	0.9+
1973 10 05	675	0.2-	0.0	1998 09 26	704	0.4-	0.6-	1998 10 29	704	0.8-	0.2+
1973 10 05	675	0.1+	0.3+	1998 09 26	704	0.5-	0.0	1998 10 29	704	1.1-	0.5-
1976 05 02	095	0.3-	0.8-	1998 09 27	704	0.5+	0.3-	1998 10 29	704	1.3+	0.4-
1994 07 08	809	0.2+	0.2-	1998 09 27	704	0.4+	1.0+	1998 10 29	704	0.4-	1.6+
1994 07 08	809	0.6+	0.1-	1998 09 27	704	1.3+	0.3+	1998 10 29	704	0.7-	0.2-
1994 07 08	809	0.3+	0.3-	1998 09 27	704	0.2-	1.1+				

1998 SA₁₃₇ = 4445 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	130.75852						
<i>n</i>	0.23388755	ω	210.85802	-0.36538292	+0.91807154		
<i>a</i>	2.6089433	Ω	38.32093	-0.79544530	-0.22215044		
<i>e</i>	0.2099656	<i>i</i>	14.35697	-0.48348951	-0.32831971		
<i>P</i>	4.21	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 16	675	0.2-	0.4+	1998 09 26	704	0.0	0.5-	1998 10 28	704	0.1-	0.4+
1977 10 16	675	0.5-	0.1+	1998 09 26	704	0.2-	0.7+	1998 10 28	704	1.2+	0.4+
1977 10 17	675	0.8-	0.7+	1998 09 26	704	0.9-	0.5+	1998 10 28	704	0.3+	0.5+
1977 10 17	675	0.1-	0.5-	1998 09 27	704	0.2-	0.6-	1998 10 28	704	0.8-	0.6+
1977 10 21	675	1.0+	0.3-	1998 09 27	704	0.5+	0.1+	1998 10 29	704	0.7+	1.2-
1977 10 21	675	0.3-	1.6-	1998 09 27	704	0.7+	1.0+	1998 10 29	704	0.9-	0.4+
1977 10 22	675	0.9+	1.2+	1998 09 27	704	0.0	0.1+	1998 10 29	704	1.0+	0.1+
1998 09 26	704	0.1-	0.7-	1998 09 27	704	0.2-	0.0	1998 10 29	704	1.4-	1.2-
1998 09 26	704	0.5+	0.9-	1998 10 28	704	0.2-	0.2+				

1998 SM₁₃₇ = 1977 XU₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	290.90239						
<i>n</i>	0.27689803	ω	36.56294	-0.58682066	-0.80377078		
<i>a</i>	2.3312533	Ω	89.57174	+0.71775879	-0.57234735		
<i>e</i>	0.0782779	<i>i</i>	5.62125	+0.37478505	-0.16239163		
<i>P</i>	3.56	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 12 07	675	0.2-	0.5+	1998 09 27	704	1.2-	0.4+	1998 11 10	704	0.2+	0.7-
1977 12 08	675	0.1-	0.5+	1998 10 28	704	0.0	1.7-	1998 11 10	704	0.1-	0.1-
1998 09 26	704	1.0-	1.1+	1998 10 28	704	0.1+	0.3+	1998 11 10	704	1.0+	0.1+
1998 09 26	704	0.7-	0.2-	1998 10 28	704	1.2+	1.4-	1998 11 10	704	0.8+	0.7+
1998 09 26	704	0.7-	0.2-	1998 10 28	704	0.3+	1.4+	1998 11 11	704	0.2-	0.8-
1998 09 26	704	1.1-	0.0	1998 10 29	704	0.5+	0.2-	1998 11 11	704	0.7-	0.5-
1998 09 26	704	1.2-	0.8+	1998 10 29	704	1.4+	1.0-	1998 11 11	704	1.0-	0.5+
1998 09 27	704	0.4-	0.3-	1998 10 29	704	0.9+	0.6+	1998 11 11	704	0.6+	0.0

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1998 09 27	704	0.1+	0.4+	1998 10 29	704	1.3+	0.3-	1998 11 11	704	0.8-	0.9-
1998 09 27	704	0.1-	0.8+	1998 10 29	704	1.1+	0.4+				

1998 SC₁₃₈ = 1272 T-1 = 1993 TL₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	2.79335						
<i>n</i>	0.19950125	ω	225.88068	+0.71994601	-0.69402911		
<i>a</i>	2.9007189	Ω	178.06812	+0.64614381	+0.66966323		
<i>e</i>	0.0657272	<i>i</i>	1.96340	+0.25332968	+0.26433831		
<i>P</i>	4.94	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	1.4-	0.9+	1993 10 20	809	1.0-	0.6+	1998 09 27	704	1.2+	1.5+
1971 03 25	675	1.3+	0.1-	1993 10 20	809	1.0-	0.8+	1998 09 27	704	0.8-	1.1+
1971 03 25	675	1.2-	1.1+	1993 10 20	809	0.0	0.3+	1998 10 28	704	1.0+	0.1-
1971 03 26	675	1.1+	0.9+	1998 09 26	704	0.2-	0.9-	1998 10 28	704	2.0+	1.4-
1971 03 27	675	1.4+	0.6+	1998 09 26	704	0.6-	1.3-	1998 10 28	704	0.5+	1.1-
1993 10 09	809	0.5-	0.8+	1998 09 26	704	1.0-	1.7-	1998 10 28	704	0.3+	0.8-
1993 10 09	809	0.0	0.8+	1998 09 26	704	1.4-	2.0-	1998 10 29	704	0.0	1.0+
1993 10 09	809	1.0-	1.4+	1998 09 26	704	0.6-	2.2-	1998 10 29	704	0.6+	0.4-
1993 10 11	809	0.5+	1.3+	1998 09 27	704	0.6+	0.4-	1998 10 29	704	1.0+	1.1+
1993 10 11	809	0.3-	2.0+	1998 09 27	704	1.1-	1.6+	1998 10 29	704	1.2+	1.8-
1993 10 11	809	0.6-	2.3+	1998 09 27	704	0.3-	0.1+				

1998 SM₁₃₈ = 1993 SP₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	358.75962						
<i>n</i>	0.20277105	ω	125.87820	+0.65236965	-0.75772335		
<i>a</i>	2.8694505	Ω	283.39282	+0.68981188	+0.60258959		
<i>e</i>	0.0639030	<i>i</i>	0.96633	+0.31396402	+0.25048176		
<i>P</i>	4.86	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 09 17	809	0.2-	0.6+	1998 09 20	809	0.2+	0.5+	1998 09 27	704	0.5-	0.1+
1993 09 17	809	0.3-	0.2-	1998 09 20	809	1.0-	0.7-	1998 10 28	704	0.1+	1.1-
1993 09 17	809	1.4-	0.8-	1998 09 20	809	0.1-	0.4+	1998 10 28	704	0.3-	0.8-
1993 09 18	809	1.7+	1.7+	1998 09 26	704	1.2+	0.4+	1998 10 28	704	0.6+	0.6-
1993 09 18	809	1.9+	1.1+	1998 09 26	704	0.8+	0.2-	1998 10 28	704	0.1+	0.4-
1993 09 18	809	0.7+	0.9+	1998 09 26	704	1.2+	1.2-	1998 10 28	704	1.4+	0.2-
1993 09 22	809	0.5-	2.0-	1998 09 26	704	1.1+	0.3+	1998 10 29	704	0.5+	0.6-
1993 09 22	809	0.6-	2.0-	1998 09 26	704	0.6+	1.1-	1998 10 29	704	0.1+	0.9+
1993 09 22	809	0.8-	0.2-	1998 09 27	704	0.4-	0.9+	1998 10 29	704	0.8-	1.3+
1998 09 18	809	0.3+	0.4+	1998 09 27	704	2.0-	0.0	1998 10 29	704	0.3-	0.2-
1998 09 18	809	0.1-	0.2+	1998 09 27	704	1.4-	0.5+	1998 10 29	704	0.8-	0.5+
1998 09 18	809	0.3-	0.6-	1998 09 27	704	0.7-	2.0+				

1998 SN₁₃₈ = 1992 ST₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	313.74616		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.18000228	ω	98.32811	-0.39009578	-0.92058579
a	3.1065907	Ω	14.67459	+0.81320738	-0.35394347
e	0.2046247	i	4.21739	+0.43187849	-0.16506308
P	5.48	H	13.9	G 0.15	U 4

1998 DEC. 8

M.P.C. 33295

1998 09 20	809	0.4+	1.2+	1998 10 28	704	(0.4−	2.4−)	1998 11 11	704	0.1+	0.6+
1998 09 20	809	0.7+	0.8+	1998 10 28	704	0.6−	0.6−	1998 11 11	704	0.7−	0.1−
1998 09 26	704	0.0	1.0−	1998 10 28	704	0.7+	0.1−	1998 11 11	704	1.6−	0.7−

1998 SA₁₃₉ = 1990 EG₄ = 1991 RW₈ = 1997 ES₅₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	92.50978		(2000.0)		P		Q
<i>n</i>	0.28581860	ω	324.51265	+0.52235530			+0.85234611
<i>a</i>	2.2824909	Ω	336.94527	−0.76654671			+0.45624443
<i>e</i>	0.1728894	<i>i</i>	3.73583	−0.37356536			+0.25563085
<i>P</i>	3.45	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 03 02	809	1.3+	0.1−	1998 09 14	699	0.2+	1.3+	1998 10 28	704	0.6+	0.5−
1990 03 02	809	0.0	0.6−	1998 09 14	699	0.2+	0.7+	1998 10 28	704	0.4+	0.5−
1990 03 02	809	0.5+	1.1−	1998 09 26	704	0.5−	0.3−	1998 10 28	704	0.1−	0.5+
1990 03 04	809	0.2−	1.0+	1998 09 26	704	0.6−	0.1+	1998 10 29	704	1.1+	1.0−
1990 03 04	809	0.3−	1.5+	1998 09 26	704	1.2−	0.4+	1998 10 29	704	0.0	0.8−
1990 03 04	809	0.4−	1.3+	1998 09 26	704	0.6−	0.1−	1998 10 29	704	0.8+	0.7−
1991 09 11	675	0.3+	0.9−	1998 09 26	704	1.5−	0.4+	1998 10 29	704	0.6+	0.2+
1991 09 11	675	(0.8+	2.4−)	1998 09 27	704	0.7−	0.1−	1998 10 29	704	0.8+	0.6−
1991 09 14	675	0.4+	0.2−	1998 09 27	704	0.5−	0.9+	1998 11 10	704	0.2−	0.4+
1991 09 14	675	0.1+	0.3−	1998 09 27	704	1.2−	1.3+	1998 11 10	704	0.1−	1.2+
1997 03 05	809	(1.5−	2.5−)	1998 09 27	704	0.8−	0.6+	1998 11 10	704	0.7+	0.2+
1997 03 05	809	(2.6−	2.9−)	1998 09 27	704	1.6−	1.4+	1998 11 10	704	0.0	0.4+
1997 03 05	809	(1.8−	3.0−)	1998 10 11	699	0.1−	0.2+	1998 11 11	704	0.2+	0.3−
1997 03 06	809	0.2−	0.1+	1998 10 11	699	0.1+	0.4−	1998 11 11	704	0.3−	0.2+
1997 03 06	809	0.0	0.2−	1998 10 11	699	0.1+	0.5+	1998 11 11	704	0.2+	0.8−
1997 03 06	809	0.0	0.4−	1998 10 28	704	0.6+	0.6−	1998 11 11	704	0.6+	0.9−
1998 09 14	699	0.0	0.4+	1998 10 28	704	0.1+	0.6−	1998 11 11	704	1.5+	0.1−

1998 SD₁₃₉ = 1993 PG₇ = 1997 MY₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	105.39421		(2000.0)		P		Q
<i>n</i>	0.21652018	ω	328.31338	+0.46857071			+0.88245491
<i>a</i>	2.7466530	Ω	329.57043	−0.79248583			+0.39915945
<i>e</i>	0.0393512	<i>i</i>	4.68981	−0.39039429			+0.24888765
<i>P</i>	4.55	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 08 15	010	1.0+	1.1+	1997 06 29	704	1.0−	0.5+	1998 10 29	704	(1.6+	2.3−)
1993 08 15	010	0.3+	0.2−	1997 06 29	704	1.9−	0.6+	1998 10 29	704	(0.5−	2.5−)
1993 08 15	010	0.2−	1.1−	1998 09 26	704	0.7−	0.9+	1998 10 29	704	(0.4+	3.7−)
1993 08 17	010	0.8−	0.4−	1998 09 26	704	0.2+	0.1+	1998 10 29	704	(0.6+	2.7−)
1997 06 28	704	0.6+	0.3−	1998 09 26	704	0.0	0.2+	1998 10 29	704	(0.4−	3.7−)
1997 06 28	704	0.1−	0.1+	1998 09 27	704	0.6+	0.2−	1998 11 10	704	0.1+	0.7−
1997 06 28	704	0.6+	0.3−	1998 09 27	704	0.4+	0.6+	1998 11 10	704	0.2+	0.1−
1997 06 29	704	0.6−	0.5+	1998 09 27	704	0.6−	0.6+	1998 11 10	704	0.6+	0.1+
1997 06 29	704	0.4+	0.1−	1998 09 27	704	0.6+	0.4−	1998 11 10	704	0.6−	0.8−
1997 06 29	704	0.0	0.1−	1998 09 27	704	1.5−	0.1−	1998 11 11	704	0.0	0.0
1997 06 29	704	0.0	0.9−	1998 10 28	704	0.4−	0.9+	1998 11 11	704	(2.3+	1.2+)
1997 06 29	704	0.2+	0.4−	1998 10 28	704	0.2−	0.7+	1998 11 11	704	1.3+	0.5−
1997 06 29	704	0.0	0.0	1998 10 28	704	0.2−	0.4+	1998 11 11	704	1.2+	1.1−
1997 06 29	704	1.6+	0.6+	1998 10 28	704	0.7−	0.0	1998 11 11	704	0.4−	0.3+

1998 SJ₁₃₉ = 9089 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	24.83566		(2000.0)		P		Q
<i>n</i>	0.23425317	ω	70.75554	+0.91890826			−0.39201659
<i>a</i>	2.6062280	Ω	312.29769	+0.33593455			+0.83606563
<i>e</i>	0.2753330	<i>i</i>	3.40560	+0.20677425			+0.38381931
<i>P</i>	4.21	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 10 17	675	0.7−	0.9+	1998 09 27	704	0.9+	0.8−	1998 10 28	704	2.1−	2.2−
1960 10 22	675	0.5+	0.6−	1998 09 27	704	0.4−	0.1+	1998 10 28	704	0.6−	0.2+
1960 10 24	675	0.3+	0.4−	1998 09 27	704	0.2−	1.3+	1998 10 28	704	0.5+	0.5+
1960 10 26	675	0.5+	0.9−	1998 09 27	704	0.6−	1.1+	1998 10 29	704	0.8+	0.2+
1998 09 26	704	0.1+	0.7−	1998 09 27	704	1.3−	1.2+	1998 10 29	704	0.3+	0.4+
1998 09 26	704	0.3+	0.2−	1998 10 11	699	0.5+	0.0	1998 10 29	704	0.5+	0.3+
1998 09 26	704	1.3+	0.3−	1998 10 11	699	0.3+	0.0	1998 10 29	704	0.1−	0.6+
1998 09 26	704	0.8−	0.4−	1998 10 11	699	0.5+	0.4−	1998 10 29	704	0.1−	0.0
1998 09 26	704	0.5−	0.0	1998 10 28	704	0.4+	0.0				

1998 SE₁₄₀ = 1996 BN₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	59.78495		(2000.0)		P		Q
<i>n</i>	0.24267042	ω	344.90507	+0.96226314			+0.27211337
<i>a</i>	2.5456078	Ω	359.29555	−0.22988975			+0.80899383
<i>e</i>	0.1096105	<i>i</i>	9.31313	−0.14560339			+0.52104059
<i>P</i>	4.06	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 01 21	691	0.7+	0.0	1998 09 26	704	0.1−	0.2−	1998 10 28	704	0.5+	0.1−
1996 01 21	691	0.4−	0.0	1998 09 26	704	2.0−	0.1+	1998 10 28	704	0.3−	1.1+
1996 01 21	691	0.5−	0.1−	1998 09 27	704	0.0	0.0	1998 10 29	704	0.8+	0.3+
1996 01 27	691	0.4−	0.3+	1998 09 27	704	0.2−	0.1+	1998 10 29	704	0.6+	0.3−
1996 01 27	691	0.3+	0.0	1998 09 27	704	0.1−	0.7−	1998 10 29	704	0.6+	0.1+
1996 01 27	691	0.3+	0.0	1998 09 27	704	0.5+	0.7+	1998 10 29	704	0.7+	0.5−
1998 09 26	704	0.3+	1.1+	1998 09 27	704	1.8−	1.1−	1998 10 29	704	0.3+	0.4−
1998 09 26	704	0.4+	0.2+	1998 10 28	704	0.7−	0.8−				
1998 09 26	704	0.0	1.0−	1998 10 28	704	0.0	1.3+				

1998 SL₁₄₀ = 1996 CM₃

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	53.35996		(2000.0)		P		Q
<i>n</i>	0.24407315	ω	60.65198	+0.92574550			+0.37621427
<i>a</i>	2.5358451	Ω	277.22635	−0.35892074			+0.84239689
<i>e</i>	0.2513876	<i>i</i>	2.20591	−0.11904275			+0.38578531
<i>P</i>	4.04	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 02 10	691	1.0+	0.2−	1998 09 27	704	0.1−	0.1+	1998 10 28	704	0.4+	0.4+
1996 02 10	691	0.7+	0.2−	1998 09 27	704	0.1+	0.1−	1998 10 28	704	1.5−	1.0−
1996 02 10	691	0.6+	0.1+	1998 09 27	704	0.1−	1.2+	1998 10 28	704	0.9−	0.4−
1996 02 16	691	0.6−	0.3+	1998 09 27	704	1.0−	1.1+	1998 10 28	704	1.4−	0.6+
1996 02 16	691	0.7−	0.3+	1998 09 27	704	1.0−	0.2−	1998 10 29	704	0.3+	0.5−
1996 02 16	691	0.9−	0.1+	1998 10 11	699	0.1+	0.4−	1998 10 29	704	0.7+	0.2−
1998 09 26	704	0.3−	0.0	1998 10 11	699	0.8+	0.2+	1998 10 29	704	0.3+	0.2−
1998 09 26	704	0.2+	0.9+	1998 10 11	699	0.8+	0.5+	1998 10 29	704	0.1+	0.0
1998 09 26	704	0.6+	0.5−	1998 10 26	910	0.7+	0.2+	1998 10 29	704	1.0−	0.5−
1998 09 26	704	0.7+	0.6−	1998 10 26	910	0.7+	0.0				
1998 09 26	704	0.2+	0.2−	1998 10 26	910	0.6+	0.0				

1998 SO₁₄₀ = 1979 UR₃ = 1995 WA₆ = 1997 EO₄₉ = 1997 FT₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	56.92090		(2000.0)		P		Q
<i>n</i>	0.31162761	ω	128.30499	+0.98381747			+0.17421926
<i>a</i>	2.1546601	Ω	221.70928	−0.17766044			+0.91824857
<i>e</i>	0.1497830	<i>i</i>	3.60562	−0.02323675			+0.35562229
<i>P</i>	3.16	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 10 16	095	0.4−	1.3+	1997 04 03	704	0.5−	0.4+	1998 10 28	704	0.1+	0.3−
1995 11 18	399	0.3−	0.2+	1997 04 03	704	0.6−	0.3−	1998 10 28	704	0.2+	0.8−
1995 11 18	399	0.7−	1.0−	1998 09 26	704	0.3+	0.5−	1998 10 28	704	0.2−	0.7

1995 11 25	399	0.8+	0.6+	1998 09 26	704	0.1−	0.1+	1998 10 29	704	1.1+	0.3+
1997 03 11	809	0.8+	0.9+	1998 09 26	704	0.3−	0.4−	1998 10 29	704	0.4−	0.2+
1997 03 11	809	0.9+	0.1+	1998 09 26	704	0.8−	0.3−	1998 10 29	704	0.5+	0.3+
1997 03 11	809	0.8+	0.4+	1998 09 27	704	0.2−	0.3+	1998 10 29	704	0.9−	0.2+
1997 03 11	809	(2.2−	3.6+)	1998 09 27	704	0.4+	0.4+	1998 11 10	704	0.0	0.8−
1997 03 11	809	(0.9−	2.5+)	1998 09 27	704	0.5−	1.1+	1998 11 10	704	1.3+	1.1+
1997 03 11	809	(2.1−	3.4+)	1998 09 27	704	(1.0−	2.3+)	1998 11 10	704	0.6+	0.4−
1997 03 12	809	0.7+	0.3−	1998 09 27	704	0.5−	0.4+	1998 11 10	704	0.1+	1.0−
1997 03 12	809	1.0+	0.4+	1998 10 10	699	0.1−	0.2−	1998 11 10	704	0.2+	0.0
1997 03 12	809	0.6+	0.1+	1998 10 10	699	0.2−	0.1+	1998 11 11	704	0.3+	1.2−
1997 03 13	809	(2.0−	3.7+)	1998 10 10	699	0.2−	0.6+	1998 11 11	704	1.4−	0.5−
1997 03 13	809	(1.9−	3.1+)	1998 10 17	699	0.4+	0.6+	1998 11 11	704	0.2−	0.2−
1997 03 13	809	(1.7−	2.5+)	1998 10 17	699	0.6+	0.4+	1998 11 11	704	0.3−	1.0+
1997 03 31	704	1.1−	1.2+	1998 10 17	699	0.2−	0.4+	1998 11 11	704	1.2−	0.8+
1997 03 31	704	0.8−	1.6+	1998 10 28	704	0.2+	0.2+				

1998 SU₁₄₀ = 1468 T-2

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	35.77672		(2000.0)		P		Q
<i>n</i>	0.27725362	ω	162.10194	+0.96685697			−0.25238493
<i>a</i>	2.3292596	Ω	212.59476	+0.22461957			+0.91269274
<i>e</i>	0.1167652	<i>i</i>	4.10834	+0.12138228			+0.32139355
<i>P</i>	3.55	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 30	675	0.3−	0.5+	1998 09 20	809	0.8+	0.7+	1998 10 28	704	0.7+	0.1+
1973 09 30	675	1.0+	2.6+	1998 09 26	704	1.0−	0.3+	1998 10 28	704	0.1+	0.1−
1973 10 04	675	0.0	0.6−	1998 09 26	704	0.1−	1.1−	1998 10 28	704	1.1+	0.5+
1973 10 04	675	0.7−	1.9−	1998 09 26	704	1.1−	1.2−	1998 10 28	704	0.5+	0.6−
1973 10 05	675	0.1+	0.6−	1998 09 26	704	1.3−	1.0−	1998 10 29	704	1.1+	0.9+
1973 10 05	675	0.2−	0.1+	1998 09 26	704	0.7−	0.8−	1998 10 29	704	0.2+	1.0+
1998 09 18	809	2.0+	0.6+	1998 09 27	704	1.0−	0.3−	1998 10 29	704	0.5−	0.6+
1998 09 18	809	2.0+	0.6+	1998 09 27	704	0.4−	0.1−	1998 10 29	704	0.2+	0.0
1998 09 18	809	1.5+	0.4+	1998 09 27	704	2.5−	0.7−	1998 10 29	704	0.4+	0.7−
1998 09 20	809	1.1+	0.1−	1998 09 27	704	1.1−	0.4+				
1998 09 20	809	0.8+	0.2+	1998 09 27	704	2.5−	0.3+				

1998 SZ₁₄₀ = 1993 SG₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	96.75676		(2000.0)		P		Q
<i>n</i>	0.20396120	ω	85.56020	+0.62690802			+0.77881233
<i>a</i>	2.8582772	Ω	223.28558	−0.72635993			+0.57455340
<i>e</i>	0.0083764	<i>i</i>	1.74854	−0.28175803			+0.25167388
<i>P</i>	4.83	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 09 17	809	0.5−	0.8−	1998 09 26	704	0.3+	0.0	1998 10 29	704	0.2+	0.6+
1993 09 17	809	1.6−	1.0−	1998 09 26	704	0.1−	0.6+	1998 10 29	704	0.8+	0.3+
1993 09 17	809	1.3−	1.1−	1998 09 26	704	0.6−	1.0+	1998 10 29	704	1.1+	0.0
1993 09 18	809	1.7+	0.3−	1998 09 27	704	0.1−	0.1+	1998 11 10	704	0.7+	0.5−
1993 09 18	809	1.6+	0.4+	1998 09 27	704	0.2−	0.5+	1998 11 10	704	0.2−	0.9−
1993 09 18	809	1.3+	0.4−	1998 09 27	704	0.3+	1.3+	1998 11 10	704	0.2−	0.9−
1998 09 14	699	0.2+	1.2+	1998 09 27	704	1.1−	1.0+	1998 11 10	704	0.0	0.5−
1998 09 14	699	1.0+	1.1+	1998 09 27	704	0.6−	0.2+	1998 11 11	704	0.7−	2.0−
1998 09 14	699	0.1−	0.6+	1998 10 28	704	0.3+	0.2+	1998 11 11	704	1.1−	1.2−
1998 09 18	809	0.8+	0.4+	1998 10 28	704	0.3+	0.2+	1998 11 11	704	0.9−	0.8−
1998 09 18	809	0.1−	0.3+	1998 10 28	704	1.0+	0.5−	1998 11 11	704	0.2−	1.0−
1998 09 18	809	0.5−	0.6+	1998 10 28	704	0.4+	0.1+	1998 11 11	704	0.9−	0.1+
1998 09 26	704	0.1+	0.3−	1998 10 29	704	1.1+	1.5+				
1998 09 26	704	0.5+	0.5−	1998 10 29	704	2.6−	0.6+				

1998 ST₁₄₂ = 1991 NN₃ = 1997 EY₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	86.69181		(2000.0)		P		Q
<i>n</i>	0.30027409	ω	318.28357	+0.70634724			+0.70786417
<i>a</i>	2.2086360	Ω	356.65405	−0.64306391			+0.64087217
<i>e</i>	0.1321705	<i>i</i>	1.34886	−0.29587561			+0.29700366
<i>P</i>	3.28	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 07 06	809	0.5−	0.3+	1998 09 20	809	0.2+	0.4+	1998 10 28	704	0.3+	0.9+
1991 07 06	809	0.4−	0.4+	1998 09 20	809	0.2−	0.1+	1998 10 29	704	0.4+	0.2−
1991 07 06	809	0.2−	0.4+	1998 09 20	809	0.1−	0.2+	1998 10 29	704	0.5−	0.5+
1991 07 07	809	0.5+	0.1−	1998 09 26	704	0.6+	0.3+	1998 10 29	704	0.8−	0.7+
1991 07 07	809	0.5+	0.2+	1998 09 26	704	1.1+	0.1−	1998 10 29	704	0.3−	0.0
1997 03 10	809	0.0	0.4+	1998 09 26	704	0.2−	1.4+	1998 10 29	704	0.9−	0.8+
1997 03 10	809	0.0	1.1+	1998 09 26	704	0.2+	0.6+	1998 11 10	704	0.2−	0.6−
1997 03 10	809	0.3+	0.2+	1998 09 26	704	1.1−	0.5+	1998 11 10	704	0.1−	0.6+
1997 03 11	809	0.5+	0.8+	1998 09 27	704	0.4−	0.6+	1998 11 10	704	0.7+	0.7−
1997 03 11	809	0.6+	0.8+	1998 09 27	704	0.5−	1.0−	1998 11 10	704	0.5+	0.7−
1997 03 11	809	0.1+	0.0	1998 09 27	704	0.5−	0.7−	1998 11 10	704	0.3−	0.7−
1998 09 14	699	1.2−	0.6+	1998 10 10	699	0.7+	0.1+	1998 11 11	704	0.6−	0.4+
1998 09 14	699	0.4+	0.5+	1998 10 10	699	0.1+	1.6+	1998 11 11	704	0.1−	0.2+
1998 09 14	699	0.2+	0.2+	1998 10 10	699	0.8+	0.1−	1998 11 11	704	0.6−	0.5+
1998 09 18	809	0.5+	1.7−	1998 10 28	704	0.3−	0.0	1998 11 11	704	(1.0+	2.5−)
1998 09 18	809	(1.0+	2.5−)	1998 10 28	704	0.0	0.5−	1998 11 11	704	(0.8+	2.4−)
1998 09 18	809	0.1+	1.8−	1998 10 28	704	0.8+	0.1−				

1998 SP₁₄₃ = 1993 QA₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	287.68467		(2000.0)		P		Q
<i>n</i>	0.21489614	ω	98.81401	−0.53626284			−0.84361367
<i>a</i>	2.7604738	Ω	23.67733	+0.74537537			−0.48842723
<i>e</i>	0.0369076	<i>i</i>	3.87923	+0.39602744			−0.22305787
<i>P</i>	4.59	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 08 20	809	0.2+	0.4+	1998 09 20	809	0.3+	1.5+	1998 11 10	704	0.6−	0.9+
1993 08 20	809	0.4−	0.3−	1998 09 20	809	0.6+	2.0+	1998 11 10	704	0.6+	0.2−
1993 08 20	809	0.1−	0.3−	1998 09 26	704	0.3−	2.3−	1998 11 10	704	0.5+	0.0
1993 08 24	809	0.9−	0.4+	1998 09 26	704	1.4−	1.9−	1998 11 10	704	1.9−	1.4+
1993 08 24	809	0.3+	0.1−	1998 09 26	704	1.1−	2.6−	1998 11 11	704	0.1−	1.2+
1993 08 24	809	0.7+	0.5+	1998 09 26	704	0.2−	0.6−	1998 11 11	704	1.9−	0.2+
1998 09 18	809	1.4+	1.0+	1998 09 26	704	0.7−	2.4−	1998 11 11	704	1.6+	0.9−
1998 09 18	809	0.1+	0.4+	1998 09 27	704	0.1−	0.3−	1998 11 11	704	0.7+	0.2−
1998 09 18	809	0.2−	0.6+	1998 09 27	704	1.4+	0.1+				
1998 09 20	809	1.5+	1.1+	1998 09 27	704	0.1+	0.8+				

1998 SW₁₄₃ = 1979 OK₂ = 1997 HK₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	44.50082		(2000.0)		P		Q
<i>n</i>	0.26507773	ω	183.54852	+0.99937241			+0.03513246
<i>a</i>	2.4000514	Ω	174.43208	−0.03124314			+0.93444076
<i>e</i>	0.1842579	<i>i</i>	2.67382	−0.01669259			+0.35438139
<i>P</i>	3.72	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 07 24	675	(5.1+	0.5+)	1998 09 18	809	0.6+	1.0−	1998 10 28	704	0.8+	0.2+
1979 07 24	413	0.0	0.0	1998 09 18	809	0.2−	0.9−	1998 10 28	704	0.3+	0.7−
1979 07 25	675	0.2+	0.3+	1998 09 20	809	1.6+	0.1+	1998 10 29	704	0.5−	0.2+
1979 07 27	675	0.4−	0.4+	1998 09 20	809	0.7+	0.8−	1998 10 29	704	0.1−	0.2+
1997 04 30	704	0.3+	0.1+	1998 09 20	809	0.9+	0.5−	1998 10 29	704	0.0	0.3+
1997 04 30	704	0.5+	0.6−	1998 09 26	704	(1.0−	2.3+)	1998 10 29	704	0.9−	1.0−
1997 04 30	704	0.2−	0.1+	1998 09 26	704	0.8+	0.7−	1998 10 29	704	1.0−	0.6−

1997 05 01	704	1.2+	0.6+	1998 09 27	704	1.1−	1.9+	1998 11 10	704	1.2−	0.2−
1997 05 01	704	0.6+	0.2−	1998 09 27	704	(0.2−	3.5+)	1998 11 10	704	0.2+	0.6+
1997 05 01	704	0.2−	0.5+	1998 09 27	704	1.7−	1.7+	1998 11 11	704	1.1+	0.2−
1997 05 01	704	0.9−	0.3+	1998 09 27	704	1.3−	0.3−	1998 11 11	704	0.1+	0.2−
1997 05 05	704	1.6−	0.2−	1998 10 10	699	0.1−	1.9−	1998 11 11	704	0.9+	0.5+
1997 05 05	704	0.4+	0.8−	1998 10 10	699	0.6+	0.2−	1998 11 11	704	0.3+	0.2+
1997 05 05	704	0.8−	0.2+	1998 10 10	699	0.8−	0.2−	1998 11 11	704	1.1−	0.1−
1997 05 05	704	0.4+	0.4−	1998 10 28	704	0.7−	0.1+				
1998 09 18	809	2.0+	0.4+	1998 10 28	704	0.4−	0.1+				

1998 SA₁₄₄ = 1996 FX₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	231.12101		(2000.0)	P	Q		
<i>n</i>	0.19746712	ω	26.30730	−0.99909694	−0.03813432		
<i>a</i>	2.9206052	Ω	151.48832	+0.02864550	−0.93024319		
<i>e</i>	0.0600014	<i>i</i>	2.24965	+0.03138071	−0.36495668		
<i>P</i>	4.99	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 24	809	0.9+	0.5−	1998 09 18	809	0.6−	1.5+	1998 10 28	704	0.5+	0.3+
1996 03 24	809	1.2−	0.5−	1998 09 18	809	1.9−	0.4+	1998 10 28	704	0.9−	0.2+
1996 03 24	809	0.9−	0.7−	1998 09 20	809	1.4+	1.4−	1998 10 29	704	1.3−	0.3−
1996 03 27	809	0.2+	1.3+	1998 09 20	809	0.3+	1.8−	1998 10 29	704	0.4−	0.7+
1996 03 27	809	0.2+	0.5+	1998 09 20	809	0.3+	0.9−	1998 10 29	704	0.1−	2.6−
1996 03 27	809	0.7+	0.4−	1998 10 28	704	0.7+	0.4+	1998 10 29	704	0.3+	0.9+
1998 09 18	809	0.7+	1.9+	1998 10 28	704	0.2+	0.3+	1998 10 29	704	1.0+	0.3+

1998 SB₁₄₄ = 1997 LH₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.29664		(2000.0)	P	Q		
<i>n</i>	0.24236536	ω	225.64847	+0.99586507	+0.08856759		
<i>a</i>	2.5477434	Ω	129.25971	−0.07414479	+0.92098204		
<i>e</i>	0.1728933	<i>i</i>	1.49586	−0.05249106	+0.37940462		
<i>P</i>	4.07	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 07	809	1.7+	0.7−	1998 09 18	809	0.3−	0.3+	1998 10 28	704	1.2−	0.3−
1997 06 07	809	0.3+	0.5−	1998 09 18	809	1.6−	0.1−	1998 10 28	704	0.4+	0.5−
1997 06 07	809	0.4−	0.6+	1998 09 20	809	1.0+	0.6−	1998 10 29	704	0.6−	0.7−
1997 06 08	809	1.0−	0.2+	1998 09 20	809	0.2+	0.2−	1998 10 29	704	0.2−	0.2+
1997 06 08	809	0.2−	0.3+	1998 09 20	809	0.1−	0.5−	1998 10 29	704	0.1+	0.2+
1997 06 08	809	0.3−	0.3+	1998 10 28	704	1.0+	0.2−	1998 10 29	704	0.5−	2.3+
1998 09 18	809	1.0+	0.9+	1998 10 28	704	0.2+	0.3−	1998 10 29	704	0.7+	0.5−

1998 SE₁₄₄ = 1984 UD₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	342.55498		(2000.0)	P	Q		
<i>n</i>	0.21118797	ω	58.35910	+0.11805393	−0.99086295		
<i>a</i>	2.7926934	Ω	25.10872	+0.85107007	+0.06712161		
<i>e</i>	0.2148690	<i>i</i>	8.84156	+0.51160825	+0.11698418		
<i>P</i>	4.67	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1984 10 29	046	1.1−	0.1+	1998 10 28	704	0.1+	0.1+	1998 11 10	704	0.6−	0.2+
1984 10 29	046	1.0−	0.3+	1998 10 28	704	0.9−	0.3+	1998 11 10	704	0.1+	0.8+
1984 10 30	046	2.0+	0.9−	1998 10 28	704	0.1−	0.4+	1998 11 10	704	1.3−	1.0+
1984 10 30	046	0.6+	0.2−	1998 10 28	704	1.5−	1.4+	1998 11 11	704	0.4+	0.1−
1998 09 18	809	0.7+	0.1+	1998 10 29	704	0.9+	0.6+	1998 11 11	704	0.7+	0.1−
1998 09 18	809	0.6−	0.2+	1998 10 29	704	0.6+	0.3+	1998 11 11	704	0.1−	1.1−
1998 09 18	809	1.1−	0.5+	1998 10 29	704	0.6+	0.1−	1998 11 11	704	0.1+	0.9−
1998 09 20	809	0.5+	1.0−	1998 10 29	704	0.5+	0.1+	1998 11 11	704	1.1+	1.3−
1998 09 20	809	0.5+	0.2−	1998 10 29	704	0.2−	0.3−				
1998 09 20	809	0.2−	0.3−	1998 11 10	704	0.6−	0.0				

1998 SM₁₄₄ = 1992 CS₆ = 1996 EJ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	337.22684		(2000.0)	P	Q		
<i>n</i>	0.26421423	ω	243.48453	−0.06107091	−0.99794248		
<i>a</i>	2.4052778	Ω	210.03632	+0.92909221	−0.04968764		
<i>e</i>	0.1793073	<i>i</i>	2.23529	+0.36477117	−0.04052090		
<i>P</i>	3.73	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 01 30	809	0.5+	0.8+	1998 09 20	809	(0.9−	5.5−)	1998 10 18	327	0.6−	0.1+
1992 02 02	809	0.5+	0.2−	1998 09 20	809	(2.6−	5.4−)	1998 10 18	327	0.6−	0.1−
1992 02 02	809	0.6+	1.0−	1998 09 20	809	(1.9−	4.1−)	1998 10 28	704	0.2−	0.3+
1992 02 02	809	1.7−	0.3+	1998 09 21	809	0.7+	1.5−	1998 10 28	704	0.9−	0.3−
1996 03 15	566	0.3−	1.3−	1998 09 21	809	(0.4+	2.2−)	1998 10 28	704	0.7+	0.5+
1996 03 15	566	0.4+	0.5+	1998 09 21	809	(0.2+	3.5−)	1998 10 28	704	0.2−	0.8+
1996 03 15	566	0.4−	1.5−	1998 10 10	699	0.3+	0.2+	1998 10 29	704	0.5+	0.2−
1996 03 15	566	0.6+	0.8+	1998 10 10	699	0.0	0.9+	1998 10 29	704	0.7+	0.1−
1996 03 15	566	0.6−	1.1−	1998 10 10	699	0.3+	0.5+	1998 10 29	704	0.7+	0.2−
1996 03 15	566	0.7+	0.7+	1998 10 17	327	0.6−	0.4−	1998 10 29	704	1.2+	1.1−
1996 03 20	566	0.2−	0.8+	1998 10 17	327	0.9−	0.4−	1998 10 29	704	0.4+	1.0+
1996 03 20	566	0.2−	0.3+	1998 10 17	327	0.8−	0.3−				
1996 03 20	566	0.1−	0.7+	1998 10 18	327	0.7−	0.0				

1998 ST₁₄₄ = 1981 UT₂₂ = 1992 SO₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	8.93133		(2000.0)	P	Q		
<i>n</i>	0.17181100	ω	197.43569	+0.79220705	−0.60772349		
<i>a</i>	3.2045625	Ω	200.29759	+0.57723410	+0.77574791		
<i>e</i>	0.0749199	<i>i</i>	9.20619	+0.19801210	+0.16996277		
<i>P</i>	5.74	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 10 24	675	0.4+	0.3−	1998 09 20	809	(1.9+	2.8+)	1998 11 10	704	0.1−	0.3−
1981 10 25	675	0.4+	0.2−	1998 09 20	809	(0.6+	2.4+)	1998 11 10	704	0.5−	0.7−
1981 10 26	675	0.7−	0.6−	1998 09 20	809	(0.3+	2.4+)	1998 11 10	704	0.8−	0.9−
1992 09 30	675	0.5+	0.3−	1998 09 21	809	0.6+	1.6+	1998 11 11	704	0.9+	0.9+
1992 09 30	675	0.6+	1.1−	1998 09 21	809	0.7−	0.7+	1998 11 11	704	0.4+	0.6−
1992 10 03	675	0.1+	0.5−	1998 09 21	809	0.8−	1.7+	1998 11 11	704	(2.7+	0.0)
1992 10 03	675	0.4−	0.4−	1998 10 10	699	0.8−	0.8+	1998 11 11	704	0.8+	0.2+
1998 09 14	699	1.0+	0.4+	1998 10 10	699	1.3−	0.3−	1998 11 11	704	1.1+	0.8−
1998 09 14	699	0.9+	1.0+	1998 10 10	699	0.3−	0.3−				
1998 09 14	699	0.6−	0.0	1998 11 10	704	0.3−	0.3+				

1998 SK₁₄₅ = 1996 AQ₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	52.75185		(2000.0)	P	Q		
<i>n</i>	0.26652887	ω	157.79024	+0.96770805	+0.25203226		
<i>a</i>	2.3913320	Ω	187.61627	−0.23614585	+0.90007349		
<i>e</i>	0.2238206	<i>i</i>	1.97498	−0.08818312	+0.35545386		
<i>P</i>	3.70	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 13	691	0.8+	0.1−	1998 09 21	809	1.2−	0.9+	1998 10 29	704	1.3+	0.3−
1996 01 13	691	0.4+	0.2+	1998 10 10	699	1.2+	0.3−	1998 10 29	704	1.3+	0.7−
1996 01 13	691	0.7+	0.1+	1998 10 10	699	0.8+	1.5−	1998 11 10	704	1.4−	0.8+
1996 01 19	691	0.2−	0.6+	1998 10 10	699	0.8−	1.5−	1998 11 10	704	0.0	0.8−
1996 01 19	691	1.3−	0.3−	1998 10 28	704	(1.6−	2.3+)	1998 11 10	704	1.5−	1.0+
1996 01 19	691	0.1−	0.5+	1998 10 28	704	0.9−	0.6+	1998 11 10	704	1.1−	0.3−
1998 09 20	809	0.2−	1.8+	1998 10 28	704	1.0−	0.4+	1998 11 11	704	0.2+	0.8+
1998 09 20	809	0.6−	0.5+	1998 10 28	704	0.4+	1.7+	1998 11 11	704	(1.7−	2.7−)
1998 09 20	809	0.0	1.0+	1998 10 29	704	0.7+	0.0	1998 11 11	704	0.8+	1.8−
1998 09 21	809	1.3+	0.7+	1998 10 29	704	1.0+	0.5−	1998 11 11	704	0.5−	1.0−
1998 09 21	809	0.6−	0.4−	1998 10 29	704	0.7+	0.9−				

1998 SO₁₄₅ = 1990 HC₆ = 1994 RP₂₃
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	80.42167	ω	250.66424	+0.75185088	+0.65865467		
<i>a</i>	2.3920795	Ω	68.12625	−0.59218761	+0.69452985		
<i>e</i>	0.1365610	<i>i</i>	1.84664	−0.28988633	+0.28948630		
<i>P</i>	3.70	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 04 29	413	0.1−	0.2−	1998 09 20	809	0.2−	0.3−	1998 10 29	704	0.4−	0.7−
1990 05 01	413	0.7+	0.0	1998 09 20	809	0.6−	0.0	1998 10 29	704	0.4−	1.0−
1990 05 02	413	0.5−	0.0	1998 09 21	809	1.4+	1.1+	1998 10 29	704	0.5−	0.4+
1994 09 05	809	0.2−	1.0+	1998 09 21	809	1.0+	1.4+	1998 10 29	704	0.5−	0.4+
1994 09 05	809	0.3−	0.1−	1998 09 21	809	0.3+	1.9+	1998 11 10	704	1.1+	0.1−
1994 09 05	809	0.6−	0.1+	1998 10 10	699	0.5−	0.8−	1998 11 10	704	0.2+	0.4−
1994 09 06	809	0.5+	0.4−	1998 10 10	699	0.2+	0.4+	1998 11 10	704	0.2−	0.4+
1994 09 06	809	0.3+	0.5−	1998 10 10	699	0.9−	1.6−	1998 11 10	704	0.6−	0.0
1994 09 06	809	0.2+	0.2−	1998 10 28	704	0.0	0.5−	1998 11 11	704	0.4−	0.1−
1998 09 14	699	0.4−	0.1+	1998 10 28	704	0.3+	0.1−	1998 11 11	704	0.1−	1.4+
1998 09 14	699	0.0	0.1−	1998 10 28	704	0.3−	0.5−	1998 11 11	704	0.1+	0.8+
1998 09 14	699	0.3+	0.5−	1998 10 28	704	0.7−	1.2−	1998 11 11	704	0.1+	0.7+
1998 09 20	809	1.2+	0.6−	1998 10 29	704	0.4−	0.1−	1998 11 11	704	1.4+	0.1−

1998 SQ₁₄₅ = 1991 RT₁₃
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	194.41215	ω	17.82418	−0.77668092	+0.62860322		
<i>a</i>	2.2496058	Ω	201.28061	−0.59059701	−0.74898229		
<i>e</i>	0.1202339	<i>i</i>	6.37649	−0.21900209	−0.20948396		
<i>P</i>	3.37	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 13	675	1.0+	0.9−	1998 10 10	699	0.3+	0.9−	1998 11 10	704	1.8−	0.5−
1991 09 13	675	0.0	0.7−	1998 10 10	699	0.3+	0.7+	1998 11 10	704	(1.0−	2.8−)
1991 09 15	675	0.0	0.0	1998 10 28	704	0.4+	0.1+	1998 11 10	704	(2.2−	0.1−)
1991 09 15	675	0.6−	0.5+	1998 10 28	704	0.1+	0.3−	1998 11 10	704	(2.5−	0.0)
1998 09 20	809	0.6+	0.2+	1998 10 28	704	0.4+	0.2+	1998 11 11	704	1.3−	0.0
1998 09 20	809	0.3−	0.7+	1998 10 28	704	0.5+	0.3+	1998 11 11	704	1.4−	0.6−
1998 09 20	809	1.0−	0.4+	1998 10 29	704	0.0	0.1−	1998 11 11	704	0.5−	1.0−
1998 09 21	809	1.0+	1.3+	1998 10 29	704	0.1+	1.2+	1998 11 11	704	0.7−	1.2−
1998 09 21	809	0.9+	1.1+	1998 10 29	704	0.3−	0.9−	1998 11 11	704	0.8−	1.3−
1998 09 21	809	0.7+	1.2+	1998 10 29	704	0.7+	0.6+				
1998 10 10	699	1.7+	0.5−	1998 10 29	704	0.3+	0.5+				

1998 ST₁₄₅ = 1992 OP₃ = 1996 JS₁₃
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	21.55898	ω	237.87224	+0.91252200	−0.40799423		
<i>a</i>	3.0470212	Ω	146.18132	+0.39066352	+0.84830354		
<i>e</i>	0.0957069	<i>i</i>	2.99263	+0.12118421	+0.33752306		
<i>P</i>	5.32	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 07 26	809	0.0	0.9+	1996 05 11	691	0.2−	0.3+	1998 10 29	704	0.5−	1.1−
1992 07 26	809	0.0	1.2+	1996 05 20	691	0.1+	1.1−	1998 10 29	704	0.0	0.5−
1992 07 26	809	0.6+	1.3+	1996 05 20	691	0.3+	0.9−	1998 10 29	704	0.3−	0.0
1992 07 26	809	1.5+	0.3+	1996 05 20	691	0.1−	0.6−	1998 10 29	704	0.5+	1.3−
1992 07 26	809	1.2+	0.4+	1998 09 20	809	(1.4+	2.7+)	1998 10 29	704	0.2+	0.4−
1992 07 26	809	0.6−	1.0−	1998 09 20	809	(0.1+	2.3+)	1998 11 10	704	1.1+	0.4−
1992 07 30	809	0.7−	0.0	1998 09 20	809	0.2−	1.1+	1998 11 10	704	0.4+	0.6−
1992 07 30	809	1.1−	0.4+	1998 09 21	809	1.4+	1.9+	1998 11 10	704	0.1−	0.4−
1992 07 30	809	1.1−	0.1−	1998 09 21	809	0.7+	1.5+	1998 11 10	704	0.8−	0.5+
1992 07 30	809	0.1−	0.9−	1998 09 21	809	0.6+	1.0+	1998 11 11	704	0.8−	0.7+
1992 07 30	809	0.4−	1.6−	1998 10 28	704	0.1−	0.4−	1998 11 11	704	0.8−	0.8−
1992 07 30	809	0.9+	1.2−	1998 10 28	704	0.7+	0.8−	1998 11 11	704	0.1+	0.6−

1996 05 11 691 0.3− 0.3+ 1998 10 28 704 0.1+ 0.7− 1998 11 11 704 0.8− 0.5+
 1996 05 11 691 0.3− 0.3+ 1998 10 28 704 0.2− 0.7− 1998 11 11 704 0.5− 0.4+

1998 ST₁₄₆ = 1997 GM₃₄
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	58.22146	ω	285.99923	+0.97696583	+0.21040712		
<i>a</i>	2.2002679	Ω	61.86616	−0.17709268	+0.89246040		
<i>e</i>	0.1648634	<i>i</i>	2.31296	−0.11906279	+0.39905298		
<i>P</i>	3.26	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	1.1+	0.2−	1998 09 21	809	(1.8+	2.4−)	1998 11 10	704	0.2+	0.2+
1997 04 03	704	0.5+	0.4−	1998 09 21	809	1.8+	1.5−	1998 11 10	704	0.4−	0.1+
1997 04 11	704	0.9−	0.4−	1998 10 28	704	(2.4+	0.9+)	1998 11 10	704	0.5−	0.5−
1997 04 11	704	0.4−	0.9−	1998 10 28	704	0.9+	0.2−	1998 11 10	704	0.7−	0.3−
1997 04 11	704	0.6−	1.1−	1998 10 28	704	0.3+	1.2−	1998 11 11	704	1.4+	0.4−
1997 04 11	704	1.2−	0.6−	1998 10 29	704	0.2−	0.3+	1998 11 11	704	0.6+	0.0
1998 09 20	809	(2.6+	1.0−)	1998 10 29	704	0.1+	0.1−	1998 11 11	704	1.0+	0.0
1998 09 20	809	0.6+	0.2−	1998 10 29	704	1.2−	0.9+	1998 11 11	704	1.3−	0.3−
1998 09 20	809	0.8+	0.7−	1998 10 29	704	1.4−	0.6+				
1998 09 21	809	(3.6+	1.7−)	1998 10 29	704	0.4−	0.2+				

1998 SY₁₄₆ = 1993 RV₁₀
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	58.78576	ω	173.02845	+0.98027889	+0.19758890		
<i>a</i>	2.7872243	Ω	175.57107	−0.18340204	+0.91612360		
<i>e</i>	0.0425872	<i>i</i>	2.56235	−0.07360017	+0.34882112		
<i>P</i>	4.65	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 09 14	809	0.6+	0.7−	1998 09 20	809	0.3+	1.2+	1998 10 28	704	1.3−	1.2+
1993 09 14	809	0.9−	1.3−	1998 09 20	809	0.9+	0.4+	1998 10 28	704	0.6+	0.1−
1993 09 14	809	0.2+	0.7−	1998 09 21	809	0.0	0.0	1998 10 29	704	0.4−	0.6+
1993 09 19	809	0.3−	0.0	1998 09 21	809	1.7−	0.2−	1998 10 29	704	1.2+	1.2−
1993 09 19	809	0.3−	0.4+	1998 09 21	809	1.5−	1.3−	1998 10 29	704	0.1−	2.6−
1993 09 19	809	0.7+	2.1+	1998 10 28	704	0.9+	2.6+				
1998 09 20	809	1.9+	0.8+	1998 10 28	704	0.7−	1.2−				

1998 SE₁₄₇ = 1989 AO₄
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	336.50893	ω	9.50633	+0.12116973	−0.99235145		
<i>a</i>	3.0858438	Ω	73.53683	+0.90909822	+0.10139906		
<i>e</i>	0.1298009	<i>i</i>	1.40954	+0.39857034	+0.07040476		
<i>P</i>	5.42	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 01 04	413	1.7−	0.9+	1998 09 21	809	0.0	0.2+	1998 10 28	704	1.2+	1.3−
1989 01 04	413	0.9+	0.1−	1998 10 14	699	1.4−	1.9+	1998 10 28	704	1.0+	2.0−
1989 01 10	413	1.8−	1.5+	1998 10 14	699	1.3−	0.1+	1998 10 29	704	0.9+	0.9−
1989 01 10	413	2.7+	1.7−	1998 10 14	699	0.9−	0.3+	1998 10 29	704	0.5+	0.7−
1998 09 20	809	0.2+	0.7+	1998 10 20	699	0.3+	1.9+	1998 10 29	704	0.3+	0.3−
1998 09 20	809	1.4−	0.8+	1998 10 20	699	0.0	0.9+	1998 10 29	704	0.7−	0.1−
1998 09 20	809	1.3−	1.3+	1998 10 20	699	0.6−	1.7+	1998 10 29	704	1.0−	0.7−
1998 09 21	809	0.7+	0.9−	1998 10 28	704	1.8+	0.6−				
1998 09 21	809	0.1−	1.0−	1998 10 28	704	1.7+	1.1−				

1998 SP₁₄₇ = 1979 BO₂ = 1990 DA₄
 Id. S. Nakano

1998 DEC. 8

M.P.C. 33299

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	135.52183	(2000.0)	P		Q	
<i>n</i>	0.18707797	ω	152.97251	-0.07095238	+0.99648716	
<i>a</i>	3.0277565	Ω	112.93073	-0.92367947	-0.04880154	
<i>e</i>	0.0754703	<i>i</i>	2.76871	-0.37653950	-0.06805701	
<i>P</i>	5.27	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1979 01 27	675	0.8+	0.5-	1990 03 01	809	0.4+	0.3+	1998 10 20	699	0.2-	0.3+
1979 01 29	675	0.8-	0.7+	1990 03 01	809	0.5+	0.2+	1998 10 20	699	0.1-	0.1+
1990 02 27	809	0.1-	1.1-	1998 09 20	809	1.6+	0.1+	1998 11 10	704	0.8-	0.9+
1990 02 27	809	0.1-	1.2-	1998 09 20	809	0.2+	0.7-	1998 11 10	704	0.1+	0.1+
1990 02 27	809	0.2+	1.3-	1998 09 20	809	0.4+	1.2+	1998 11 10	704	0.9+	0.7-
1990 02 28	809	0.3+	0.2+	1998 09 21	809	0.8+	0.4-	1998 11 10	704	0.4-	1.4-
1990 02 28	809	0.2+	0.2+	1998 09 21	809	0.2+	0.3+	1998 11 11	704	(2.4-	1.3-)
1990 02 28	809	0.1-	0.3+	1998 09 21	809	0.1-	0.1+	1998 11 11	704	0.1-	0.6+
1990 02 28	809	0.6-	0.7+	1998 10 14	699	0.6-	0.5+	1998 11 11	704	0.1+	1.1-
1990 02 28	809	0.4-	0.8+	1998 10 14	699	0.6-	0.0	1998 11 11	704	0.1+	0.1-
1990 02 28	809	0.4-	0.7+	1998 10 14	699	0.5-	0.1+				
1990 03 01	809	0.0	0.3+	1998 10 20	699	0.5-	0.2-				

1998 SX₁₄₇ = 1997 GB₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	107.54166	(2000.0)	P		Q	
<i>n</i>	0.26713068	ω	172.37684	+0.27903735	+0.95961861	
<i>a</i>	2.3877391	Ω	113.82042	-0.88308297	+0.27100875	
<i>e</i>	0.1882454	<i>i</i>	2.23280	-0.37723020	+0.07540813	
<i>P</i>	3.69	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 03	704	0.7+	0.0	1998 09 20	809	2.2-	0.6-	1998 10 28	704	1.4+	0.1-
1997 04 03	704	0.0	0.1+	1998 09 20	809	1.7-	0.1-	1998 10 28	704	2.0+	0.3+
1997 04 03	704	0.1+	0.6-	1998 09 21	809	1.3+	0.2-	1998 10 29	704	0.3-	0.9-
1997 04 03	704	0.4-	0.0	1998 09 21	809	0.8+	0.7+	1998 10 29	704	0.6-	0.6+
1997 04 11	704	0.1-	0.3+	1998 09 21	809	0.0	0.8+	1998 10 29	704	0.6-	1.6+
1997 04 11	704	0.1-	0.6+	1998 10 28	704	0.1+	0.6-	1998 10 29	704	0.8-	1.0-
1998 09 20	809	0.6+	0.4-	1998 10 28	704	0.8+	0.3-	1998 10 29	704	1.2-	0.5+

1998 SA₁₄₈ = 4055 T-1 = 1977 RW₁₄

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	354.27865	(2000.0)	P		Q	
<i>n</i>	0.23747209	ω	255.57147	+0.36156189	-0.93231032	
<i>a</i>	2.5826229	Ω	173.21461	+0.88044972	+0.33846005	
<i>e</i>	0.1493132	<i>i</i>	4.07415	+0.30672672	+0.12744514	
<i>P</i>	4.15	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1971 03 24	675	0.2+	0.0	1998 09 20	809	1.6-	0.5-	1998 10 20	699	0.8+	0.2-
1971 03 26	675	0.1-	0.9-	1998 09 20	809	1.6-	0.7-	1998 11 10	704	0.1+	0.4-
1971 03 26	675	0.9-	1.0-	1998 09 21	809	0.8+	0.1+	1998 11 10	704	0.2+	0.3-
1971 03 27	675	0.2-	1.2-	1998 09 21	809	0.7+	0.3+	1998 11 10	704	0.1-	0.8+
1977 09 09	675	0.7+	1.8-	1998 09 21	809	0.3+	1.3-	1998 11 10	704	0.3-	1.1-
1977 09 10	675	(0.4+	4.1-)	1998 10 14	699	0.5+	0.6+	1998 11 11	704	0.1+	0.6-
1998 09 14	699	1.6+	1.4+	1998 10 14	699	0.3+	0.3+	1998 11 11	704	0.7-	1.4+
1998 09 14	699	1.2-	0.0	1998 10 14	699	0.7+	0.7+	1998 11 11	704	0.7+	1.2-
1998 09 14	699	0.7+	0.4-	1998 10 20	699	0.2-	0.0	1998 11 11	704	0.6-	0.7+
1998 09 20	809	0.2-	1.0-	1998 10 20	699	0.0	0.7+	1998 11 11	704	0.6-	0.7-

1998 SS₁₅₆ = 1997 GP₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	81.33253	(2000.0)	P		Q	
<i>n</i>	0.32359391	ω	43.32355	+0.80529030	+0.59205010	
<i>a</i>	2.1012086	Ω	280.34794	-0.55229057	+0.72986483	
<i>e</i>	0.0789728	<i>i</i>	1.82753	-0.21559837	+0.34172213	
<i>P</i>	3.05	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 05	566	0.3-	0.5-	1998 09 26	704	1.6+	1.1+	1998 10 28	704	0.0	0.1-
1997 04 05	566	0.5+	0.2-	1998 09 26	704	0.2+	0.5-	1998 10 28	704	0.1+	0.9-
1997 04 05	566	0.3+	0.1-	1998 09 26	704	0.7+	0.6-	1998 10 28	704	2.1-	1.1+
1997 04 10	327	0.3-	0.1+	1998 09 27	704	0.8-	0.4-	1998 10 29	704	0.7-	1.9-
1997 04 10	327	0.4-	0.4+	1998 09 27	704	0.7-	0.1-	1998 10 29	704	0.1-	0.7+
1997 04 10	327	0.1+	0.2+	1998 09 27	704	0.3+	0.5+	1998 10 29	704	1.0+	3.3+
1998 09 26	704	2.0-	0.5-	1998 09 27	704	0.0	0.9+	1998 10 29	704	0.7+	0.2-
1998 09 26	704	0.7+	0.6-	1998 10 28	704	1.1+	2.0-				

1998 ST₁₆₀ = 1991 GF₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	88.62931	(2000.0)	P		Q	
<i>n</i>	0.19151418	ω	120.38416	+0.56252748	+0.82677346	
<i>a</i>	2.9808177	Ω	183.85039	-0.77265563	+0.52444662	
<i>e</i>	0.0766458	<i>i</i>	2.48495	-0.29422120	+0.20347331	
<i>P</i>	5.15	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1991 04 08	809	0.3+	0.5-	1998 09 26	704	1.0+	0.6+	1998 10 28	704	1.2-	1.2-
1991 04 08	809	0.6-	1.5+	1998 09 26	704	0.1+	0.6+	1998 10 28	704	0.0	1.2+
1991 04 08	809	1.3-	2.0+	1998 09 27	704	0.3+	0.6-	1998 10 29	704	1.7-	0.9-
1991 04 10	809	0.4+	0.0	1998 09 27	704	0.9-	0.1-	1998 10 29	704	1.2+	0.3-
1991 04 10	809	0.8+	1.3-	1998 09 27	704	0.8+	0.3-	1998 10 29	704	0.5+	1.1+
1991 04 10	809	0.6+	1.1-	1998 09 27	704	3.0-	0.3-	1998 10 29	704	0.3-	1.1-
1998 09 26	704	0.9+	0.3+	1998 10 28	704	0.6+	0.7+	1998 10 29	704	1.2-	0.7-
1998 09 26	704	0.8+	0.5+	1998 10 28	704	1.9+	1.1+				

1998 SQ₁₆₁ = 1994 UY₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	23.38184	(2000.0)	P		Q	
<i>n</i>	0.24511155	ω	350.66044	+0.91298858	-0.40571941	
<i>a</i>	2.5286780	Ω	33.37961	+0.37917646	+0.80496317	
<i>e</i>	0.1597439	<i>i</i>	4.47601	+0.15058904	+0.43292730	
<i>P</i>	4.02	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1994 10 28	033	0.4+	0.3-	1998 09 26	704	0.7+	1.0-	1998 10 28	704	1.6-	2.1+
1994 10 28	033	0.0	0.1+	1998 09 26	704	0.2-	0.4+	1998 10 28	704	0.1+	0.2+
1994 11 01	033	0.1-	0.3-	1998 09 27	704	0.5-	0.0	1998 10 28	704	0.2+	2.2+
1994 11 01	033	0.0	0.1+	1998 09 27	704	0.4+	1.0-	1998 10 29	704	0.1+	0.5-
1998 09 26	704	0.0	0.3-	1998 09 27	704	1.1-	0.3+	1998 10 29	704	0.4+	0.6-
1998 09 26	704	0.6+	0.5-	1998 09 27	704	0.9+	0.8+	1998 10 29	704	0.3+	2.0-
1998 09 26	704	0.8-	1.1+	1998 10 28	704	1.3+	0.9+	1998 10 29	704	1.2-	1.6-

1998 SS₁₆₁ = 1994 PT₁₈

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	359.76177	(2000.0)	P		Q	
<i>n</i>	0.26075934	ω	276.05742	+0.48191118	-0.87586246	
<i>a</i>	2.4264767	Ω	145.09666	+0.82022903	+0.44088437	
<i>e</i>	0.2023268	<i>i</i>	2.50729	+0.30819791	+0.19617832	
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 12	809	0.7+	0.6+	1998 09 26	704	0.9+	1.4-	1998 10 28	704	0.7-	0.8-
1994 08 12	809	0.5-	0.3-	1998 09 26	704	0.3+	1.2-	1998 10 28	704	1.2+	0.5+
1994 08 12	809	0.6-	0.3-	1998 09 26	704	0.5+	0.5-	1998 10 29	704	0.1-	0.4-
1994 08 13	809	0.8+	0.4+	1998 09 26	704	0.7+	0.4+	1998 10 29	704	1.4-	0.0
1994 08 13	809	0.1-	0.6+	1998 09 27	704	0.4-	0.3-	1998 10 29	704	1.1+	0.7+
1994 08 13	809	0.4-	0.3-	1998 09 27	704	0.1-	0.1-	1998 10 29	704	0.3-	0.3+
1994 09 05	809	1.4-	1.5-	1998 09 27	704	0.7-	0.5+	1998 10 29	704	0.1-	0.5-
1994 09 05	809	0.4-	1.2-	1998 09 27	704	0.2+	1.0+	1998 11 10	704	0.7+	0.2+
1994 09 05	809	0.9-	1.5-	1998 10 11	699	0.4-	0.4+	1998 11 10	704	0.9+	1.0-
1994 09 06	809	1.3+	1.2+	1998 10 11	699	0.5-	0.6+	1998 11 10	704	1.7-	0.8+
1994 09 06	809	0.7+	0.7+	1998 10 11	699	0.7-	0.2+	1998 11 10	704	1.4-	0.6+
1994 09 06	809	1.1+	1.1+	1998 10 20	699	0.0	0.8+	1998 11 11	704	1.0+	0.8-
1998 09 18	699	0.5-	0.8+	1998 10 20	699	0.1+	0.6+	1998 11 11	704	0.8+	0.5+
1998 09 18	699	0.4-	0.9+	1998 10 20	699	0.3+	0.6+	1998 11 11	704	0.2+	0.4+
1998 09 18	699	0.5+	0.4+	1998 10 28	704	0.1-	0.4-	1998 11 11	704	0.2+	0.9-
1998 09 26	704	0.5-	0.4-	1998 10 28	704	0.3+	0.7-	1998 11 11	704	0.2-	1.2-

1998 SW₁₆₁ = 1995 YT₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	30.98397		(2000.0)	P		Q
<i>n</i>	0.27568438	ω	292.66399	+0.96260484	-0.26572885	
<i>a</i>	2.3380903	Ω	82.77839	+0.26395622	+0.87615074	
<i>e</i>	0.2146197	<i>i</i>	3.04660	+0.06098388	+0.40217914	
<i>P</i>	3.58	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1995 12 22	691	0.4-	0.0	1998 09 26	704	0.9+	0.5+	1998 10 11	699	0.1+	0.1+
1995 12 22	691	0.1-	0.3-	1998 09 26	704	0.6+	0.2-	1998 10 11	699	0.1-	0.3+
1995 12 22	691	0.2-	0.1-	1998 09 26	704	0.4+	0.9-	1998 10 11	699	0.1+	1.0+
1995 12 27	691	0.3+	0.3+	1998 09 26	704	1.1+	1.0-	1998 10 20	699	0.3-	0.1+
1995 12 27	691	0.4+	0.1+	1998 09 27	704	1.1-	0.0	1998 10 20	699	0.2-	0.4-
1995 12 27	691	0.0	0.0	1998 09 27	704	1.0+	0.0	1998 10 20	699	0.3+	0.0
1998 09 26	704	0.6-	0.6+	1998 09 27	704	2.1-	0.0				

1998 SR₁₆₂ = 1992 JK₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	141.55738		(2000.0)	P		Q
<i>n</i>	0.21247385	ω	26.28478	-0.28583083	+0.95152819	
<i>a</i>	2.7814146	Ω	227.34009	-0.90416366	-0.30704716	
<i>e</i>	0.1604550	<i>i</i>	8.88290	-0.31747255	+0.01778040	
<i>P</i>	4.64	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1992 05 07	809	1.5-	0.6+	1992 05 12	809	(4.5-	2.2-)	1998 10 28	704	1.7+	1.7-
1992 05 07	809	1.2-	0.9+	1992 05 12	809	(4.6-	2.3-)	1998 10 28	704	0.6-	0.5+
1992 05 07	809	0.7-	0.9+	1992 05 12	809	1.2+	0.1+	1998 10 28	704	0.3-	1.1-
1992 05 08	809	1.5-	0.9-	1992 05 12	809	1.3+	0.1+	1998 10 29	704	0.3+	0.1+
1992 05 08	809	1.5-	0.8-	1992 05 12	809	1.4+	0.2+	1998 10 29	704	0.8-	0.1-
1992 05 08	809	1.1-	0.7-	1998 09 26	704	0.1-	0.3+	1998 10 29	704	0.7+	0.6+
1992 05 08	809	1.2-	0.6+	1998 09 26	704	0.4-	0.1-	1998 10 29	704	0.3-	0.2-
1992 05 08	809	1.0-	0.6+	1998 09 26	704	0.4+	0.9-	1998 10 29	704	0.5+	0.6-
1992 05 08	809	0.9-	0.5+	1998 09 26	704	0.6+	0.9-	1998 11 10	704	0.5+	0.4+
1992 05 10	809	1.9+	0.3-	1998 09 26	704	1.1-	0.5-	1998 11 10	704	0.2-	0.9-
1992 05 10	809	1.5+	0.3-	1998 09 27	704	0.0	0.6+	1998 11 10	704	0.1-	0.2-
1992 05 11	809	0.2-	0.2-	1998 09 27	704	0.8+	0.2+	1998 11 10	704	0.4-	0.8-
1992 05 11	809	0.0	0.3+	1998 09 27	704	0.2+	0.3+	1998 11 11	704	0.8-	0.4+
1992 05 11	809	0.2+	0.4+	1998 10 11	699	0.8+	0.2-	1998 11 11	704	1.4-	0.5+
1992 05 11	809	0.5+	0.7-	1998 10 11	699	0.7+	1.8+	1998 11 11	704	0.4-	0.3-
1992 05 11	809	1.1+	0.8-	1998 10 11	699	0.8-	1.9+	1998 11 11	704	(3.8-	1.5+)
1992 05 11	809	1.5+	0.8-	1998 10 28	704	0.7+	0.4+				

1998 SE₁₆₃ = 1993 BF₈

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	112.54934		(2000.0)	P		Q
<i>n</i>	0.28346591	ω	158.22754	+0.14669945	+0.98588252	
<i>a</i>	2.2951029	Ω	120.12708	-0.92076913	+0.16591646	
<i>e</i>	0.1835621	<i>i</i>	5.35472	-0.36147404	-0.02252535	
<i>P</i>	3.48	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 01 21	691	0.0	0.1-	1998 09 26	704	0.4-	0.4-	1998 10 20	699	0.2-	0.0
1993 01 21	691	0.1-	0.3-	1998 09 26	704	0.1+	0.7-	1998 10 20	699	0.6-	0.3+
1993 01 21	691	0.4+	0.2-	1998 09 26	704	0.2+	1.2-	1998 10 20	699	0.1-	0.2+
1993 01 26	691	(0.6-	3.0-)	1998 09 27	704	0.8-	1.4-	1998 10 28	704	0.5-	1.2+
1993 01 26	691	0.2-	0.2+	1998 09 27	704	0.4-	0.0	1998 10 28	704	0.3-	0.6+
1993 01 26	691	0.1-	0.4+	1998 09 27	704	0.5+	0.3+	1998 10 28	704	0.6-	0.0
1998 09 22	699	0.9+	0.2+	1998 09 27	704	0.9-	1.0-	1998 10 28	704	0.0	0.6-
1998 09 22	699	0.2+	0.7+	1998 10 11	699	0.3+	0.8-	1998 10 29	704	0.8+	0.3-
1998 09 22	699	(0.3+	2.6+)	1998 10 11	699	0.4+	0.2+	1998 10 29	704	0.0	0.1-
1998 09 24	699	1.4+	0.7+	1998 10 11	699	0.7+	0.7-	1998 10 29	704	1.1+	0.2+
1998 09 24	699	0.5+	0.5+	1998 10 17	699	0.0	0.2+	1998 10 29	704	0.3-	0.4+
1998 09 24	699	1.5-	1.4+	1998 10 17	699	0.0	0.5-				
1998 09 26	704	0.6-	0.2-	1998 10 17	699	0.0	0.8+				

1998 SH₁₆₃ = 1996 AN₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.78174		(2000.0)	P		Q
<i>n</i>	0.21705165	ω	307.43896	+0.74811829	+0.66299596	
<i>a</i>	2.7421675	Ω	11.12377	-0.55490590	+0.64778842	
<i>e</i>	0.1820113	<i>i</i>	8.19009	-0.36386601	+0.37524194	
<i>P</i>	4.54	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1996 01 15	691	0.2+	0.0	1998 09 26	704	0.8+	1.0+	1998 10 20	327	0.1-	0.3-
1996 01 15	691	0.1+	0.3-	1998 09 26	704	0.6-	1.6+	1998 10 20	327	0.1-	0.2+
1996 01 15	691	0.6-	0.1+	1998 09 26	704	0.7-	1.2+	1998 10 20	327	0.3-	0.1+
1996 01 21	691	0.2+	0.2+	1998 09 27	704	0.1-	2.1-	1998 10 22	327	0.3-	0.5+
1996 01 21	691	0.4+	0.0	1998 09 27	704	0.2+	1.4-	1998 10 22	327	0.2+	0.1-
1996 01 21	691	0.3-	0.1+	1998 09 27	704	0.4-	1.3-	1998 10 22	327	0.3+	0.2-
1998 09 26	704	1.5+	0.6+	1998 09 27	704	0.6-	0.3+				

1998 SK₁₆₃ = 1996 EN₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	51.32924		(2000.0)	P		Q
<i>n</i>	0.21430227	ω	345.01177	+0.96968024	+0.24437474	
<i>a</i>	2.7655714	Ω	0.84572	-0.21579074	+0.85836677	
<i>e</i>	0.1133892	<i>i</i>	4.30034	-0.11469349	+0.45109585	
<i>P</i>	4.60	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1996 03 11	691	0.2+	0.1-	1998 09 26	704	1.6+	1.7+	1998 10 28	704	2.2+	0.5+
1996 03 11	691	1.0-	0.1-	1998 09 26	704	0.8+	1.2-	1998 10 28	704	1.5-	1.5-
1996 03 11	691	0.0	0.1-	1998 09 27	704	0.3-	0.8+	1998 10 28	704	(5.0-	0.2-)
1996 03 18	691	0.3+	0.0	1998 09 27	704	0.1+	0.5+	1998 10 29	704	1.1+	0.1+
1996 03 18	691	0.4+	0.2+	1998 09 27	704	2.0-	0.1+	1998 10 29	704	2.4-	0.2-
1998 09 26	704	0.6+	1.4-	1998 09 27	704	2.7-	0.5-	1998 10 29	704	0.6+	0.5-
1998 09 26	704	2.2+	0.1-	1998 10 28	704	0.3-	1.6+				

1998 SV₁₆₃ = 1951 XN₁ = 1993 VO₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	230.13569		(2000.0)	P		Q
<i>n</i>	0.18761707	ω	120.39491	-0.98420522	+0.04700196	
<i>a</i>	3.0219538	Ω	62.77901	-0.12338263	-0.87349839	
<i>e</i>	0.0323929	<i>i</i>	11.06572	+0.12695202	-0.48455276	
<i>P</i>	5.25	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1951 12 01	675	0.8+	0.5-	1998 09 19	809	1.1+	0.1+	1998 11 11	704	0.1+	0.2+
1951 12 01	675	0.4-	0.5-	1998 09 19	809	0.1+	0.1-	1998 11 11	704	0.6-	0.3+
1993 11 11	399	0.3-	1.0+	1998 10 12	699	0.5+	0.0	1998 11 11	704	0.4-	0.1+
1993 11 11	399	0.0	0.7+	1998 10 12	699	0.1+	0.0	1998 11 11	704	0.1+	0.5-
1993 11 16	399	0.1+	0.3+	1998 10 12	699	0.6+	0.1+	1998 11 11	704	0.6-	1.0-
1993 11 16	399	0.4-	0.2-	1998 11 10	704	0.0	0.0	1998 11 15	566	0.1-	0.7-
1998 09 18	809	(2.2+ 1.4+)		1998 11 10	704	0.4-	0.3-	1998 11 15	566	0.6-	0.0
1998 09 18	809	1.1+	1.3+	1998 11 10	704	0.7-	0.0	1998 11 15	566	0.5-	0.3-
1998 09 18	809	0.3+	1.2+	1998 11 10	704	1.3+	0.2+				
1998 09 19	809	(2.3+ 1.5+)		1998 11 10	704	0.5-	1.1-				

1998 SX₁₆₃ = 1996 FS₁₃

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams			
<i>M</i>	73.52955	(2000.0)	P	Q		
<i>n</i>	0.18138147	ω	282.82959	+0.84766606	+0.51027773	
<i>a</i>	3.0908228	Ω	46.70424	-0.37549374	+0.77037673	
<i>e</i>	0.0908130	<i>i</i>	11.50651	-0.37478887	+0.38227781	
<i>P</i>	5.43	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1996 03 18	691	0.2+	0.0	1998 10 14	699	0.0	0.4-	1998 11 11	704	0.2-	0.5+
1996 03 18	691	0.0	0.2+	1998 10 14	699	0.0	0.2-	1998 11 11	704	0.8-	0.0
1996 03 18	691	0.1-	0.0	1998 10 14	699	0.2-	0.2+	1998 11 11	046	0.5+	0.1+
1996 03 24	691	0.1-	0.1-	1998 10 20	699	0.7+	0.1+	1998 11 11	046	0.4+	0.1+
1996 03 24	691	0.0	0.1-	1998 10 20	699	0.0	0.5+	1998 11 11	046	0.4+	0.0
1996 03 26	809	(1.2- 4.5-)		1998 10 20	699	0.2-	0.1-	1998 11 11	046	0.5-	0.1-
1996 03 26	809	(2.0- 4.2-)		1998 11 10	704	0.1-	0.3+	1998 11 11	046	0.5-	0.1+
1996 03 26	809	(1.7- 3.9-)		1998 11 10	704	0.3-	0.3-	1998 11 11	046	0.2-	0.1-
1998 09 18	809	(3.9+ 3.7+)		1998 11 10	704	0.0	0.3-	1998 11 12	046	0.4+	0.1-
1998 09 18	809	(3.4+ 4.0+)		1998 11 10	704	0.7-	0.5+	1998 11 12	046	0.2+	0.1-
1998 09 18	809	(2.7+ 3.0+)		1998 11 10	704	0.4+	1.1-	1998 11 12	046	0.2+	0.1-
1998 09 19	809	(4.6+ 3.6+)		1998 11 11	704	0.2-	1.6+	1998 11 12	046	0.3+	0.1-
1998 09 19	809	(3.5+ 4.4+)		1998 11 11	704	0.5+	0.6-				
1998 09 19	809	(3.1+ 3.8+)		1998 11 11	704	0.1+	0.6-				

1998 SZ₁₆₃ = 5004 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams			
<i>M</i>	270.41801	(2000.0)	P	Q		
<i>n</i>	0.23702662	ω	101.25362	-0.89452142	-0.40142453	
<i>a</i>	2.5858578	Ω	55.37003	+0.25594407	-0.82066733	
<i>e</i>	0.1116078	<i>i</i>	13.83030	+0.36650249	-0.40664910	
<i>P</i>	4.16	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1977 10 11	675	1.1+	0.4+	1998 09 18	809	1.2-	0.4-	1998 11 10	704	0.1-	0.8-
1977 10 11	675	1.5+	0.1+	1998 09 19	809	0.0	0.3+	1998 11 11	704	0.8-	1.2+
1977 10 12	675	0.3-	0.1+	1998 09 19	809	0.8-	0.0	1998 11 11	704	0.1-	1.1+
1977 10 12	675	0.1-	0.0	1998 09 19	809	2.2-	0.1-	1998 11 11	704	0.3+	0.2+
1977 10 16	675	1.0-	0.4-	1998 11 10	704	0.7+	0.2+	1998 11 11	704	0.5+	0.2+
1977 10 16	675	1.0-	0.7-	1998 11 10	704	0.2-	0.4-	1998 11 11	704	0.6+	0.1-
1998 09 18	809	1.8+	0.7+	1998 11 10	704	0.4-	0.5-				
1998 09 18	809	0.6+	0.2-	1998 11 10	704	0.9+	0.8-				

1998 SK₁₆₄ = 1994 WD₂

Id. G. V. Williams, B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams			
<i>M</i>	238.44108	(2000.0)	P	Q		
<i>n</i>	0.22671231	ω	83.21137	-0.98354914	+0.12810737	
<i>a</i>	2.6637041	Ω	104.09152	-0.16656984	-0.91598493	
<i>e</i>	0.1437952	<i>i</i>	7.54515	+0.06989697	-0.38021062	
<i>P</i>	4.35	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1994 11 26	400	0.0	1.1-	1998 09 19	809	(0.2- 4.5+)	1998 11 10	704	0.8-	1.7+	
1994 11 26	400	(3.6- 0.4+)		1998 09 19	809	(0.6- 3.9+)	1998 11 10	704	(2.7- 1.2+)		
1994 11 29	400	1.3+	0.5+	1998 09 19	809	(1.6- 4.4+)	1998 11 11	704	0.6+	0.8-	
1994 11 29	400	0.4+	0.1-	1998 10 12	699	0.3- 0.5+	1998 11 11	704	1.0+	0.1-	
1994 12 02	905	0.6-	0.1+	1998 10 12	699	0.0 0.4-	1998 11 11	704	0.8+	0.6-	
1994 12 02	905	1.2-	0.8+	1998 10 12	699	0.8- 0.5+	1998 11 11	704	0.1+	1.4-	
1998 09 18	809	0.1-	0.1+	1998 11 10	704	0.6+	0.1-	1998 11 11	704	0.2+	1.1-
1998 09 18	809	0.7-	0.1+	1998 11 10	704	0.4+	0.8+				
1998 09 18	809	0.9-	0.3-	1998 11 10	704	0.4-	0.9+				

1998 TU = 1993 FM₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams			
<i>M</i>	340.18242	(2000.0)	P	Q		
<i>n</i>	0.28873919	ω	56.09368	+0.03948845	-0.99770525	
<i>a</i>	2.2670733	Ω	31.78025	+0.87883534	+0.00848599	
<i>e</i>	0.1076198	<i>i</i>	5.99430	+0.47548828	+0.06717314	
<i>P</i>	3.41	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 17	809	0.5+	0.4-	1998 10 14	699	0.7+	0.2+	1998 10 28	704	0.2+	0.3+
1993 03 18	809	0.6+	0.2+	1998 10 14	699	0.9+	0.4-	1998 10 28	704	0.7+	0.3+
1993 03 23	809	1.0-	0.4+	1998 10 14	699	1.4+	0.2-	1998 10 28	704	0.2+	0.4+
1998 10 12	691	0.4-	0.1+	1998 10 18	691	0.6-	0.3+	1998 10 28	704	1.3-	0.1-
1998 10 12	691	0.4-	0.1-	1998 10 18	691	0.5-	0.3+	1998 10 29	704	0.4+	0.6+
1998 10 12	691	0.4-	0.2-	1998 10 18	691	0.6-	0.2+	1998 10 29	704	0.1+	0.0
1998 10 13	691	0.8-	0.1+	1998 10 20	699	1.1+	0.5-	1998 10 29	704	0.6+	1.6-
1998 10 13	691	0.8-	0.2+	1998 10 20	699	0.8-	0.2+	1998 10 29	704	0.4+	0.4-
1998 10 13	691	0.6-	0.3+	1998 10 20	699	0.7+	0.2-	1998 10 29	704	0.2-	0.5+

1998 TU₁ = 1994 UX₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams			
<i>M</i>	24.59732	(2000.0)	P	Q		
<i>n</i>	0.23738183	ω	161.27188	+0.94758808	-0.28983943	
<i>a</i>	2.5832775	Ω	216.45200	+0.25655750	+0.94104168	
<i>e</i>	0.1823583	<i>i</i>	13.07622	+0.19040767	+0.17445246	
<i>P</i>	4.15	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1994 10 31	675	0.3+	0.7-	1998 10 12	699	0.4-	0.1+	1998 10 28	704	0.2-	0.4-
1994 10 31	675	0.6-	0.1+	1998 10 12	699	0.1-	0.0	1998 10 28	704	0.8-	0.4+
1994 11 01	675	1.4-	0.2+	1998 10 12	112	(0.1+ 2.2+)		1998 10 28	704	0.2+	0.5+
1994 11 01	675	1.8+	0.3+	1998 10 12	112	0.6-	0.3-	1998 10 29	704	0.2-	0.0
1998 10 10	112	0.2+	1.0-	1998 10 12	112	1.3-	0.1-	1998 10 29	704	0.1+	0.2+
1998 10 10	112	1.3+	0.1-	1998 10 12	112	0.4+	0.9-	1998 10 29	704	0.4-	1.1+
1998 10 10	112	0.9+	0.5+	1998 10 15	112	(0.1+ 2.1+)		1998 10 29	704	0.2+	1.3+
1998 10 10	112	1.2+	0.4-	1998 10 15	112	0.9-	0.6-	1998 10 29	704	0.4-	0.9+
1998 10 10	112	0.6+	0.5+	1998 10 15	112	0.6-	0.4+	1998 11 10	699	1.3+	0.5-
1998 10 11	112	0.1+	0.2-	1998 10 15	112	0.1-	1.2-	1998 11 10	699	0.3+	0.3-
1998 10 11	112	0.2+	0.9+	1998 10 28	704	0.1+	0.1-	1998 11 10	699	0.4+	0.8-
1998 10 12	699	0.4-	0.3+	1998 10 28	704	0.8-	0.3-				

1998 TV₁ = 1961 XQ = 1987 YD₃

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams			
<i>M</i>	24.82382	(2000.0)	P	Q		
<i>n</i>	0.26616770	ω	341.17665	+0.80522475	-0.56105622	
<i>a</i>	2.3934948	Ω	54.46966	+0.56980725	+0.64255531	
<i>e</i>	0.2490670	<i>i</i>	13.63973	+0.16411216	+0.52186070	
<i>P</i>	3.70	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1961 12 08	760	0.9-	0.4-	1998 10 18	809	0.3+	1.0+	1998 11 11	704	0.9-	0.6-
1961 12 08	760	0.5+	1.1+	1998 10 18	809	0.5-	0.9+	1998 11 11	704	0.3-	0.0
1987 12 20	010	0.8-	0.5-	1998 10 19	809	(3.2+ 0.2-)		1998 11 11	704	0.7-	0.1-

1987 12 20	010	0.7+	0.4-	1998 10 19	809	1.8+	0.3+	1998 11 13	120	0.0	0.1+
1987 12 20	010	0.2+	0.3+	1998 10 19	809	1.8+	0.4-	1998 11 13	120	0.3-	0.3+
1998 10 12	699	0.2+	0.1-	1998 10 20	120	0.1-	0.4+	1998 11 13	120	(2.3+	1.2-)
1998 10 12	699	0.4+	0.0	1998 10 20	120	0.2-	0.5+	1998 11 13	120	0.1+	0.1+
1998 10 12	699	0.4+	0.1-	1998 10 26	120	0.4-	0.4-	1998 11 13	120	0.5+	0.0
1998 10 14	120	0.4-	0.1-	1998 10 26	120	0.1+	0.1-	1998 11 13	120	0.2+	0.1-
1998 10 14	120	1.1-	0.1+	1998 10 29	704	0.6-	0.5+	1998 11 13	120	0.2-	0.3+
1998 10 14	120	0.9-	0.5+	1998 10 29	704	0.1-	0.4-	1998 11 13	120	0.0	0.2+
1998 10 14	120	0.1+	0.3-	1998 10 29	704	1.1-	0.8-	1998 11 13	120	0.1+	0.0
1998 10 14	120	0.2+	0.3-	1998 10 29	704	1.7-	0.3-	1998 11 13	120	0.0	0.1+
1998 10 14	120	0.2+	0.4-	1998 10 29	704	0.8-	0.4-	1998 11 13	120	0.1-	0.0
1998 10 14	120	0.0	0.3-	1998 11 10	704	1.4+	0.2-	1998 11 13	120	0.1-	0.2-
1998 10 14	120	0.1-	0.3-	1998 11 10	704	0.8+	0.3+	1998 11 25	691	0.7-	0.2+
1998 10 14	120	0.0	0.4-	1998 11 10	704	1.6+	0.5-	1998 11 25	691	0.8-	0.3-
1998 10 14	120	0.6-	0.5-	1998 11 10	704	1.8+	0.2+	1998 11 25	691	0.6-	0.2-
1998 10 14	120	0.2+	0.4-	1998 11 10	704	1.5+	0.0				
1998 10 18	809	0.2-	1.2+	1998 11 11	704	0.2-	0.7+				

1998 TX₂ = 4784 P-L = 1984 DL₂ = 1984 EL₁

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Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	273.10865	(2000.0)		P		Q	
<i>n</i>	0.18370862	ω	147.05013	-0.89722701		-0.44148491	
<i>a</i>	3.0646651	Ω	6.76823	+0.38760130		-0.79679837	
<i>e</i>	0.1452778	<i>i</i>	4.20740	+0.21153940		-0.41255720	
<i>P</i>	5.37	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.4+	0.4-	1998 10 13	910	0.8+	0.3-	1998 10 15	691	1.3-	0.1+
1960 09 26	675	0.6+	0.3-	1998 10 13	910	0.8+	0.2+	1998 10 15	691	1.3-	0.2-
1960 09 27	675	0.3+	1.1+	1998 10 13	910	0.4+	0.0	1998 10 15	691	0.9-	0.2+
1960 09 28	675	0.3-	0.2+	1998 10 15	910	0.7+	0.7-	1998 10 20	910	0.8-	0.1-
1984 02 26	095	4.2+	0.2+	1998 10 15	910	0.1+	0.7-	1998 10 20	910	0.8-	0.3+
1984 03 03	801	4.5-	0.1-	1998 10 15	910	0.0	0.7-	1998 10 20	910	1.0-	0.2+

1998 TG₃ = 1983 RH

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	61.19416	(2000.0)		P		Q	
<i>n</i>	0.26297217	ω	109.22421	+0.65458984		+0.74159481	
<i>a</i>	2.4128456	Ω	203.68391	-0.75439227		+0.65337318	
<i>e</i>	0.2990321	<i>i</i>	21.43511	+0.04903515		+0.15212039	
<i>P</i>	3.75	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1983 09 07	675	0.4+	0.2+	1998 10 14	699	0.4+	0.7+	1998 10 28	704	0.1+	0.5+
1983 09 07	675	0.9+	0.3-	1998 10 14	699	0.1+	0.2+	1998 10 28	704	0.1+	0.1-
1983 10 09	675	0.9-	0.6+	1998 10 15	704	0.6-	0.3+	1998 10 29	704	0.5+	0.1-
1983 10 09	675	0.2-	3.3-	1998 10 15	704	0.6-	0.5-	1998 10 29	704	0.7-	0.1+
1998 10 14	704	0.2+	0.5+	1998 10 15	704	0.0	0.1-	1998 10 29	704	0.2+	0.4+
1998 10 14	704	0.5-	0.9+	1998 10 15	704	0.1-	1.4-	1998 10 29	704	0.4-	0.2-
1998 10 14	704	0.1+	0.3+	1998 10 15	704	0.2+	0.7-	1998 10 29	704	0.2-	0.7-
1998 10 14	704	0.1+	1.7+	1998 10 28	704	0.4+	0.1-	1998 11 16	566	0.7+	0.8-
1998 10 14	704	0.4-	0.8+	1998 10 28	704	0.2+	0.1+	1998 11 16	566	0.2+	0.9+
1998 10 14	699	0.2+	0.6+	1998 10 28	704	0.1+	0.1-	1998 11 16	566	0.1+	0.9-

1998 TM₅ = 4048 T-1

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	96.37978	(2000.0)		P		Q	
<i>n</i>	0.23137418	ω	235.86503	+0.50717104		+0.85968961	
<i>a</i>	2.6278029	Ω	64.72366	-0.76688920		+0.48241780	
<i>e</i>	0.1935987	<i>i</i>	3.86298	-0.39326644		+0.16794893	
<i>P</i>	4.26	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	0.9+	2.2-	1998 10 17	691	0.7-	0.1-	1998 11 10	704	0.7-	0.4+
1971 03 26	675	0.1-	1.1+	1998 10 17	691	1.1-	0.4-	1998 11 10	704	1.1-	0.3+
1971 03 26	675	0.1-	0.3+	1998 10 20	120	0.6-	0.3-	1998 11 10	704	(0.0	3.0+)
1971 03 27	675	(4.4-	0.5-)	1998 10 20	120	1.1+	0.7+	1998 11 11	704	0.5+	0.7+
1971 04 02	675	0.7-	0.6+	1998 10 23	691	0.6-	0.1-	1998 11 11	704	1.6+	0.1+
1998 10 13	120	1.4+	0.2+	1998 10 23	691	0.5-	0.1+	1998 11 11	704	0.0	0.5-
1998 10 13	120	1.3+	0.5-	1998 10 23	691	0.6-	0.1+	1998 11 11	704	0.5+	1.2-
1998 10 15	120	0.1-	0.4+	1998 10 24	691	0.8-	0.2-	1998 11 11	120	1.3+	0.7+
1998 10 15	120	1.5+	0.3-	1998 10 24	691	0.8-	0.2-	1998 11 11	120	0.1-	0.5+
1998 10 17	691	0.8-	0.4-	1998 10 24	691	0.8-	0.1-				

1998 TT₅ = 1995 JT₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	293.65185	(2000.0)		P		Q	
<i>n</i>	0.17371202	ω	82.37421	-0.79713438		-0.57541405	
<i>a</i>	3.1811401	Ω	62.31933	+0.43968599		-0.76085828	
<i>e</i>	0.2064570	<i>i</i>	11.92372	+0.41382727		-0.29998892	
<i>P</i>	5.67	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 05 05	010	0.2-	0.7+	1998 10 15	120	0.8-	1.1-	1998 11 10	704	0.0	0.5-
1995 05 05	010	0.7-	0.7+	1998 10 15	120	0.9+	0.9-	1998 11 10	704	0.3+	0.3-
1995 05 05	010	1.1-	1.0+	1998 10 16	120	0.2-	0.7-	1998 11 10	704	1.1-	0.2+
1995 05 08	010	1.0+	1.0-	1998 10 19	809	2.5+	2.3+	1998 11 11	704	0.1-	0.3-
1995 05 08	010	0.1-	0.9-	1998 10 19	809	1.7+	3.1+	1998 11 11	704	1.0-	0.2+
1995 05 08	010	0.9+	0.8-	1998 10 19	809	2.4+	3.6+	1998 11 11	704	0.6-	0.1-
1998 10 13	120	1.3+	0.2-	1998 10 20	120	2.2-	1.0-	1998 11 11	704	0.2-	0.2-
1998 10 13	120	1.6-	1.0-	1998 10 20	120	1.3-	0.5-	1998 11 11	704	0.3+	0.5+
1998 10 13	120	0.9-	0.9-	1998 11 10	704	0.2-	0.6-	1998 11 11	120	1.0+	0.2-
1998 10 15	120	1.4-	1.1-	1998 11 10	704	0.5+	0.9-	1998 11 11	120	0.8+	0.3+

1998 TH₆ = 1992 PB

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Marsden			
<i>M</i>	356.59930	(2000.0)		P		Q	
<i>n</i>	0.18507678	ω	8.24184	+0.72575722		-0.66048895	
<i>a</i>	3.0495429	Ω	35.61546	+0.61084172		+0.49001294	
<i>e</i>	0.1086601	<i>i</i>	19.29597	+0.31646302		+0.56889513	
<i>P</i>	5.33	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 07 28	413	(3.8+	5.0+)	1998 10 13	046	0.8-	0.1+	1998 10 20	046	0.4+	0.2-
1992 07 28	413	0.6+	0.4-	1998 10 16	046	0.4+	0.3-	1998 11 11	046	0.2-	1.0+
1992 08 01	413	(3.4-	0.4-)	1998 10 16	046	1.0+	0.2-	1998 11 11	046	0.3+	0.2+
1992 08 01	413	0.6-	0.4+	1998 10 16	046	0.8+	0.3-	1998 11 11	046	0.2+	0.3-
1998 10 13	557	0.8-	0.1+	1998 10 16	046	0.6+	0.1+	1998 11 11	046	0.3+	0.4-
1998 10 13	557	0.5-	0.0	1998 10 16	046	0.8+	0.1-	1998 11 12	046	0.1-	0.1-
1998 10 13	046	0.7-	0.2+	1998 10 16	046	0.9+	0.1+	1998 11 12	046	0.8-	0.0
1998 10 13	046	1.1-	0.2+	1998 10 20	046	0.2-	0.2-	1998 11 12	046	0.1-	0.1-
1998 10 13	046	0.6-	0.2+	1998 10 20	046	0.1+	0.1-				

1998 TL₆ = 5706 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	337.91065	(2000.0)		P		Q	
<i>n</i>	0.23662681	ω	339.62612	-0.20487955		-0.97202420	
<i>a</i>	2.5887697	Ω	122.03705	+0.91574042		-0.23179462	
<i>e</i>	0.1767572	<i>i</i>	7.78741	+0.34560650		+0.03795015	
<i>P</i>	4.17	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 11	675	1.0-	0.8+	1998 10 13	557	0.9-	1.5+	1998 10 19	809	0.5+	1.9-
1977 10 11	675	0.9-	0.7+	1998 10 13	557	0.8-	1.7+	1998 10 19	809	0.6+	1.1-
1977 10 12	675	0.3+	1.3+	1998 10 17	557	0.3-	1.2+	1998 10 20	557	0.3+	1.4+
1977 10 12	675	0.8-	0.4+	1998 10 17	557	0.3-	1.0+	1998 10 21	557	0.7+	1.4+
1977 10 16	675	2.1+	0.7-	1998 10 18	809	1.1+	1.8-	1998 11 11	557	0.5-	0.2+

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1977 10 16	675	0.1−	2.4−	1998 10 18	809	0.6+	1.6−	1998 11 12	557	0.4−	0.1+
1977 10 17	675	1.4+	0.5+	1998 10 18	809	1.3−	1.5−	1998 11 12	557	0.4−	0.1+
1977 10 17	675	1.0−	0.7−	1998 10 19	809	1.3+	1.0−	1998 11 12	557	0.1−	0.3+

1998 TZ₆ = 1997 LF₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	76.73498		(2000.0)	P	Q						
<i>n</i>	0.22367328	ω	143.83912	+0.84529819	+0.53405614						
<i>a</i>	2.6877774	Ω	183.98271	−0.52810483	+0.83059541						
<i>e</i>	0.1954107	<i>i</i>	13.29239	−0.08109418	+0.15778246						
<i>P</i>	4.41	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1997 06 09	691	0.5−	0.0	1998 10 15	428	0.7+	1.0−	1998 10 29	699	0.1−	0.4+
1997 06 09	691	0.0	0.1+	1998 10 18	428	0.7−	0.8−	1998 11 14	428	0.1+	0.6+
1997 06 09	691	0.3−	0.3−	1998 10 18	428	1.7−	0.8+	1998 11 14	428	0.8−	0.6−
1997 07 02	691	0.4+	0.1+	1998 10 27	428	0.2−	0.8−	1998 11 26	428	0.2−	0.5+
1997 07 02	691	0.1+	0.0	1998 10 27	428	0.6+	0.4−	1998 11 26	428	0.5+	0.7−
1997 07 02	691	0.3+	0.1+	1998 10 29	699	0.0	0.2+				
1998 10 15	428	1.6+	1.3+	1998 10 29	699	0.3+	0.4+				

1998 TX₁₂ = 1994 RM₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	250.58018		(2000.0)	P	Q						
<i>n</i>	0.27528590	ω	333.64962	−0.99495984	+0.09884165						
<i>a</i>	2.3403460	Ω	212.03673	−0.08546024	−0.92396273						
<i>e</i>	0.1685446	<i>i</i>	1.82452	−0.05245439	−0.36949046						
<i>P</i>	3.58	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1994 09 12	691	0.0	0.3+	1998 10 13	691	0.5−	0.2−	1998 11 10	704	2.0+	1.1−
1994 09 12	691	0.1+	0.1+	1998 10 18	691	0.2−	0.2−	1998 11 11	704	0.2+	0.0
1994 09 12	691	0.2−	0.2+	1998 10 18	691	0.0	0.3−	1998 11 11	704	0.6+	1.5+
1994 09 14	691	0.1+	0.2−	1998 10 18	691	0.0	0.5−	1998 11 11	704	2.0+	1.3+
1994 09 14	691	0.2−	0.0	1998 11 10	704	0.3+	2.0−	1998 11 25	691	1.6−	0.5+
1998 10 13	691	0.4−	0.3−	1998 11 10	704	0.6−	0.3−	1998 11 25	691	1.0−	0.1+
1998 10 13	691	0.6−	0.2−	1998 11 10	704	0.7−	0.9+	1998 11 25	691	0.4+	0.7+

1998 TH₁₅ = 1992 EV₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	319.10183		(2000.0)	P	Q						
<i>n</i>	0.25636008	ω	261.70145	−0.47588212	−0.87948716						
<i>a</i>	2.4541576	Ω	216.71743	+0.81096619	−0.43605211						
<i>e</i>	0.1376817	<i>i</i>	0.59500	+0.34039691	−0.19068533						
<i>P</i>	3.84	<i>H</i>	17.4	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1992 03 01	809	0.1−	0.2+	1998 10 18	691	0.2+	0.1−	1998 11 21	691	0.4+	0.1+
1992 03 03	809	0.1+	0.2−	1998 10 18	691	0.2+	0.1+	1998 11 21	691	0.3+	0.4+
1998 10 14	691	0.3−	0.0	1998 11 18	691	0.4−	0.5−	1998 11 21	691	0.3+	0.1−
1998 10 14	691	0.1−	0.1+	1998 11 18	691	0.5−	0.1+				
1998 10 14	691	0.1+	0.1−	1998 11 18	691	0.3−	0.1−				

1998 TL₁₅ = 1986 TL₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	321.88282		(2000.0)	P	Q						
<i>n</i>	0.08133720	ω	224.28452	+0.15091413	−0.94729508						
<i>a</i>	5.2756573	Ω	219.69469	+0.98443296	+0.17006728						
<i>e</i>	0.0271056	<i>i</i>	26.26015	+0.09009260	−0.27149430						
<i>P</i>	12.12	<i>H</i>	11.8	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1986 10 07	675	1.0+	0.9−	1998 10 20	910	1.4+	0.2+	1998 11 11	704	0.1+	0.5+
1986 10 07	675	0.9+	0.0	1998 10 20	910	1.2+	0.2+	1998 11 11	704	0.2+	1.4−

1986 10 08	675	(5.8−	1.1−)	1998 11 10	704	0.7−	0.8−	1998 11 16	566	0.7−	0.5+
1986 10 08	675	1.9−	0.5+	1998 11 10	704	0.4+	0.6+	1998 11 16	566	0.1−	0.4+
1998 10 13	910	0.1+	0.2−	1998 11 10	704	0.6−	1.6−	1998 11 16	566	0.2−	0.5+
1998 10 13	910	0.0	0.1+	1998 11 10	704	1.4−	0.1−	1998 11 25	691	0.1−	0.2−
1998 10 13	910	0.1−	0.0	1998 11 11	704	0.2−	0.3−	1998 11 25	691	0.3−	1.1+
1998 10 20	910	1.4+	0.2+	1998 11 11	704	0.1−	0.4−	1998 11 25	691	0.4−	1.0+

1998 TO₁₅ = 1976 UX₁ = 1987 HK₂

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	320.45728		(2000.0)	P	Q						
<i>n</i>	0.22415704	ω	243.68638	−0.26333699	−0.95494489						
<i>a</i>	2.6839090	Ω	222.33146	+0.94164175	−0.22360411						
<i>e</i>	0.1374864	<i>i</i>	11.72703	+0.20967697	−0.19514471						
<i>P</i>	4.40	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1				

Residuals in seconds of arc

1954 09 06	675	0.5+	0.7−	1998 10 20	910	1.1+	1.2+	1998 11 06	120	0.0	0.2+
1976 10 26	095	0.4−	1.7−	1998 10 27	120	0.1+	0.4−	1998 11 06	120	1.3−	0.2+
1987 04 23	010	0.9+	1.6+	1998 10 27	120	0.2−	0.2−	1998 11 06	132	0.2−	1.0+
1987 04 23	010	0.1+	0.9+	1998 10 27	120	0.3−	0.2−	1998 11 06	132	0.4−	0.5+
1987 04 23	010	0.2−	0.9+	1998 10 28	704	0.2+	0.3−	1998 11 06	132	1.7−	0.2+
1991 03 18	413	0.6+	0.4−	1998 10 28	704	0.1+	0.6−	1998 11 10	704	0.7+	0.1−
1991 03 18	413	0.9−	0.4−	1998 10 28	704	0.1+	0.4−	1998 11 10	704	0.2−	0.4−
1998 10 11	699	0.3−	0.2+	1998 10 28	704	0.2+	0.0	1998 11 10	704	0.7−	0.2+
1998 10 11	699	0.2+	0.2+	1998 10 28	120	0.2−	0.0	1998 11 10	704	0.2+	0.3−
1998 10 11	699	0.0	0.9+	1998 10 28	120	0.4−	0.2−	1998 11 11	704	0.5−	0.2+
1998 10 15	910	0.9+	0.7+	1998 10 29	704	1.0−	0.7−	1998 11 11	704	0.1+	0.4+
1998 10 15	910	0.8+	0.8+	1998 10 29	704	0.8−	1.0+	1998 11 11	704	0.1+	0.1−
1998 10 15	910	0.8+	0.7+	1998 10 29	704	0.8−	0.3−	1998 11 11	704	0.8+	0.2−
1998 10 20	910	1.0+	1.2+	1998 10 29	704	0.0	0.7−	1998 11 11	704	1.0+	0.5−
1998 10 20	910	1.0+	1.1+	1998 10 29	704	0.5−	0.1−				

1998 TP₁₇ = 1987 SO₇ = 1991 KK

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	96.25086		(2000.0)	P	Q						
<i>n</i>	0.18564763	ω	186.65503	+0.56334055	+0.80903490						
<i>a</i>	3.0432884	Ω	117.76102	−0.74904441	+0.58572899						
<i>e</i>	0.0797141	<i>i</i>	10.92176	−0.34868308	+0.04882698						
<i>P</i>	5.31	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	2				

Residuals in seconds of arc

1987 09 18	010	0.2+	0.4−	1998 10 19	158	1.5+	1.3−	1998 10 21	158	0.0	0.2+
1987 09 18	010	0.2−	0.4−	1998 10 20	158	(0.9−	3.1−)	1998 10 27	158	1.1−	0.7+
1987 09 18	010	0.2+	0.2+	1998 10 20	158	0.9−	0.1+	1998 10 28	158	0.2−	0.4−
1987 09 18	010	0.2−	0.4+	1998 10 20	158	0.0	0.5−	1998 10 28	158	0.1−	0.1+
1991 05 18	413	1.2−	0.5+	1998 10 20	158	(0.4−	2.3−)	1998 11 17	158	0.1+	0.4−
1991 05 18	413	0.1+	0.6−	1998 10 20	158	0.4−	0.6+	1998 11 17	158	0.0	0.3−
1991 05 18	413	1.1+	0.0	1998 10 20	158	0.1+	0.5+	1998 11 17	158	0.1+	0.5−
1998 10 14	158	0.2−	0.1+	1998 10 20	158	0.1+	0.2+	1998 11 18	158	0.4+	0.2−
1998 10 14	158	0.1−	0.7+	1998 10 21	158	0.0	0.4+	1998 11 18	158	0.4+	0.0
1998 10 15	158	0.4+	0.2−	1998 10 21	158	0.1+	0.2+				

1998 TR₁₇ = 1993 OW₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	58.92400		(2000.0)	P	Q						
<i>n</i>	0.23212788	ω	169.52500	+0.98922454	+0.14640394						
<i>a</i>	2.6221117	Ω	182.05696	−0.13594192	+0.91640050						
<i>e</i>	0.1132371	<i>i</i>	1.32492	−0.05435620	+0.37252653						
<i>P</i>	4.25	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	6				

Residuals in seconds of arc

1993 07 12	809	0.8−	0
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M.P.C. 33304

1993 07 12	809	0.2+	0.9−	1998 10 15	120	1.3−	0.2−	1998 11 10	704	0.4+	0.7+
1993 07 12	809	0.2−	0.3−	1998 10 18	699	0.4−	0.2−	1998 11 10	704	1.9−	1.7+
1993 07 12	809	0.5−	0.6−	1998 10 18	699	1.0−	0.1+	1998 11 11	704	0.6+	0.1−
1993 07 12	809	(2.7−	2.2−)	1998 10 18	699	1.9+	1.3+	1998 11 11	704	0.3−	0.9+
1993 07 19	809	(0.8−	2.8−)	1998 10 20	120	0.3+	0.8−	1998 11 11	704	0.1+	0.3+
1993 07 19	809	(0.1+	3.1−)	1998 10 20	120	(4.2+	0.9−)	1998 11 11	120	0.4+	0.1+
1993 07 19	809	(0.9−	2.6−)	1998 10 22	120	0.7+	0.3+	1998 11 11	120	0.5+	0.8−
1993 07 19	809	0.5+	1.0+	1998 10 22	120	0.6+	1.3−				
1993 07 19	809	0.2+	0.7+	1998 10 22	120	2.0+	0.3−				

1998 TY₁₇ = 1997 NZ₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23759719	ω	31.06605	−0.96996912	+0.24237951		
<i>a</i>	2.5817163	Ω	162.92543	−0.23493518	−0.91202122		
<i>e</i>	0.1217913	<i>i</i>	3.96446	−0.06297123	−0.33086170		
<i>P</i>	4.15	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 07 11	691	0.0	0.1−	1998 10 15	120	0.4+	0.8−	1998 11 10	704	0.2+	0.7+
1997 07 11	691	0.1+	0.3−	1998 10 24	120	0.9+	0.3+	1998 11 11	704	1.0+	0.0
1997 07 11	691	0.2+	0.0	1998 10 24	120	0.1−	0.0	1998 11 11	704	0.9−	0.3−
1997 07 14	691	0.1−	0.1+	1998 10 27	120	(2.5−	0.9+)	1998 11 11	704	0.6−	0.9+
1997 07 14	691	0.1−	0.1+	1998 10 27	120	0.5+	0.4+	1998 11 15	120	0.1+	0.5−
1997 07 14	691	0.1−	0.2+	1998 11 10	704	0.1+	0.1−	1998 11 15	120	0.1+	0.3−
1998 10 14	120	1.1−	0.3−	1998 11 10	704	0.7−	0.0				

1998 TY₂₀ = 1996 HP₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20178632	ω	144.35119	+0.17910165	−0.98375078		
<i>a</i>	2.8787784	Ω	295.32842	+0.89940262	+0.16888063		
<i>e</i>	0.0706781	<i>i</i>	0.79431	+0.39874493	+0.06094050		
<i>P</i>	4.88	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 17	809	1.0+	0.3+	1998 10 11	699	0.3+	2.1−	1998 10 28	704	0.6+	0.4+
1996 04 17	809	0.4−	0.3+	1998 10 13	691	0.5−	0.3+	1998 10 28	704	0.6+	1.0+
1996 04 17	809	0.1+	0.7−	1998 10 13	691	0.7−	0.3+	1998 10 28	704	0.3+	1.1+
1996 04 18	809	0.2+	0.7−	1998 10 13	691	0.6−	0.2+	1998 10 29	704	0.3−	1.6−
1996 04 18	809	0.3−	0.4+	1998 10 19	691	0.3−	0.1−	1998 10 29	704	0.5−	0.5−
1996 04 18	809	0.4−	0.6+	1998 10 19	691	0.6−	0.1+	1998 10 29	704	0.5−	0.3−
1998 10 11	699	1.4+	0.7+	1998 10 19	691	0.5−	0.2+	1998 10 29	704	0.1+	1.1−
1998 10 11	699	0.6+	0.2+	1998 10 28	704	0.5+	1.4+				

1998 TT₂₆ = 1996 KS₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19261484	ω	13.10602	−0.56505053	+0.81799766		
<i>a</i>	2.9694514	Ω	222.62377	−0.77059516	−0.56987412		
<i>e</i>	0.0411581	<i>i</i>	9.15065	−0.29478975	−0.07825158		
<i>P</i>	5.12	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 05 19	809	0.1−	0.2−	1996 05 23	809	0.8+	0.4+	1998 11 11	557	0.5+	0.1−
1996 05 19	809	1.6−	0.9+	1996 05 23	809	0.4+	0.6−	1998 11 11	557	0.5+	0.0
1996 05 19	809	1.1−	0.1+	1998 10 14	691	0.6−	0.6−	1998 11 12	557	0.6+	0.2−
1996 05 22	809	0.5−	0.1−	1998 10 14	691	0.1−	0.2+	1998 11 12	557	0.7+	0.2−
1996 05 22	809	0.3+	0.3−	1998 10 19	691	0.0	0.2+	1998 11 25	691	0.4−	0.1+
1996 05 22	809	0.1+	0.3−	1998 10 19	691	0.1−	0.2+	1998 11 25	691	0.6−	0.0
1996 05 23	809	1.7+	0.0	1998 10 19	691	0.2+	0.3+	1998 11 25	691	0.6−	0.0

1998 DEC. 8

1998 TD₂₇ = 1995 AM₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21474355	ω	211.10153	−0.33053797	+0.94123190		
<i>a</i>	2.7617814	Ω	39.71580	−0.84203648	−0.26085036		
<i>e</i>	0.0452396	<i>i</i>	6.24224	−0.42628538	−0.21456839		
<i>P</i>	4.59	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 01 04	010	0.6+	0.2+	1998 10 18	699	0.4+	0.7+	1998 11 10	704	0.3+	0.2+
1995 01 04	010	1.1−	0.1+	1998 10 18	699	0.4+	0.3−	1998 11 11	704	0.4+	0.5−
1995 01 04	010	0.9+	0.4−	1998 10 18	699	0.1+	0.4−	1998 11 11	704	0.4−	0.1−
1995 01 04	010	0.7+	0.1+	1998 10 19	691	0.9−	0.3−	1998 11 11	704	0.1+	0.9+
1995 01 05	010	0.3−	0.3−	1998 10 19	691	0.6−	0.2+	1998 11 11	704	0.1−	1.8+
1995 01 05	010	0.9−	0.1+	1998 10 19	691	0.9−	0.2−	1998 11 24	691	0.2−	0.2−
1998 10 14	691	0.1−	0.5−	1998 11 10	704	1.0+	0.7−	1998 11 24	691	0.1+	0.1+
1998 10 14	691	0.1+	0.4−	1998 11 10	704	0.4+	0.2−	1998 11 24	691	0.1+	0.1+
1998 10 14	691	0.0	0.1−	1998 11 10	704	0.4−	0.1−				

1998 TH₂₉ = 1990 DF₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19574610	ω	93.00002	+0.03279456	−0.99945957		
<i>a</i>	2.9376990	Ω	355.11894	+0.90614188	+0.03068420		
<i>e</i>	0.0499702	<i>i</i>	1.51832	+0.42170062	+0.01179178		
<i>P</i>	5.04	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 02 24	809	0.8−	0.3−	1998 10 15	691	0.5−	0.0	1998 11 10	704	0.6−	0.2+
1990 02 24	809	0.5−	0.2−	1998 10 15	691	0.4−	0.1−	1998 11 10	704	0.2+	0.7+
1990 02 24	809	0.1−	0.3−	1998 10 20	691	0.3+	0.1+	1998 11 10	704	1.4+	2.7−
1990 02 25	809	0.3+	0.2+	1998 10 20	691	0.3+	0.0	1998 11 11	704	0.4−	0.2+
1990 02 25	809	0.4+	0.3+	1998 10 20	691	0.9+	0.1+	1998 11 11	704	0.3−	0.9+
1990 02 25	809	0.6+	0.3+	1998 11 10	704	0.2+	0.9+	1998 11 11	704	0.0	0.5−
1998 10 15	691	0.6−	0.1−	1998 11 10	704	0.8−	1.2+	1998 11 11	704	0.4+	1.1−

1998 TG₃₀ = 1998 UC₁₉ = 1993 FB₄₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28166742	ω	352.30900	+0.91806359	−0.39616928		
<i>a</i>	2.3048622	Ω	31.04246	+0.36519697	+0.83097014		
<i>e</i>	0.2067167	<i>i</i>	1.60706	+0.15424145	+0.39056180		
<i>P</i>	3.50	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 19	809	0.5−	0.5+	1998 10 22	327	0.5+	0.1+	1998 11 11	704	0.2−	0.0
1993 03 20	809	0.4+	0.0	1998 10 27	120	0.3+	0.6+	1998 11 11	704	0.0	0.1−
1993 03 24	809	0.3+	0.1−	1998 10 27	120	0.4+	0.4+	1998 11 11	704	0.3−	0.3−
1998 08 31	910	0.4−	0.7−	1998 10 28	120	0.5+	0.7+	1998 11 11	704	0.1+	0.2+
1998 08 31	910	0.4−	0.6−	1998 10 28	120	0.6+	0.5+	1998 11 11	704	0.1−	0.4−
1998 08 31	910	0.5−	0.7−	1998 10 29	691	1.7−	0.2+	1998 11 11	704	0.3+	0.6−
1998 10 10	699	1.4+	0.3−	1998 10 29	691	1.7−	0.0	1998 11 11	704	0.5+	0.2+
1998 10 10	699	1.3+	0.1−	1998 10 29	691	1.7−	0.2+	1998 11 11	704	1.5−	0.5−
1998 10 10	699	0.2+	1.2+	1998 11 10	704	0.2+	0.3−	1998 11 15	120	0.0	0.6−
1998 10 19	699	0.2−	1.2+	1998 11 10	704	0.3+	0.2+	1998 11 15	120	0.4+	1.0−
1998 10 19	699	(2.1+	1.4+)	1998 11 10	704	0.2−	0.4−	1998 11 23	691	0.5−	0.3−
1998 10 19	699	1.1+	1.2+	1998 11 10	704	0.8+	0.1+	1998 11 23	691	0.5−	0.6−
1998 10 22	327	1.1+	0.4+	1998 11 10	704	0.3−	0.8−	1998 11 23	691	0.6−	0.3−
1998 10 22	327	0.6+	0.4+	1998 11 11	704	0.3−	0.2+				

1998 TL₃₀ = 1993 OH₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	20.80681		(2000.0)	P		Q	
<i>n</i>	0.21921560	ω	178.97416	+0.82921457	-0.55856637		
<i>a</i>	2.7240918	Ω	215.00705	+0.51255791	+0.77431368		
<i>e</i>	0.1859958	<i>i</i>	2.01483	+0.22290711	+0.29739189		
<i>P</i>	4.50	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 07 24	691	0.1-	1.1+	1998 10 10	699	0.7+	2.0+	1998 11 10	704	1.0+	1.0-
1993 07 24	691	0.9-	0.4-	1998 10 19	699	1.0-	0.1-	1998 11 11	704	1.2-	1.6-
1993 07 24	691	0.3-	0.8-	1998 10 19	699	0.6-	0.5-	1998 11 11	704	0.4-	0.6+
1993 07 26	691	0.1-	0.5-	1998 10 19	699	0.9-	0.7+	1998 11 11	704	0.1+	0.3-
1993 07 26	691	0.9+	0.1-	1998 11 10	704	0.5+	0.0	1998 11 11	704	0.3+	0.7-
1993 07 26	691	0.8+	0.0	1998 11 10	704	0.2-	0.3+	1998 11 11	704	0.2-	0.8+
1998 10 10	699	0.8+	0.1+	1998 11 10	704	0.2+	0.6-				
1998 10 10	699	0.1+	1.3+	1998 11 10	704	0.9+	0.6-				

1998 TN₃₀ = 1979 TF₁ = 1993 FC₇₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	59.95757		(2000.0)	P		Q	
<i>n</i>	0.26102731	ω	105.52713	+0.95303837	+0.30278768		
<i>a</i>	2.4248158	Ω	236.84811	-0.28058682	+0.87519058		
<i>e</i>	0.2004893	<i>i</i>	0.41904	-0.11396888	+0.37730767		
<i>P</i>	3.78	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 10 14	095	0.2+	0.5-	1998 11 10	704	0.2-	0.2-	1998 11 15	691	1.3-	0.0
1993 03 21	809	0.1-	0.7+	1998 11 10	704	0.8+	0.7-	1998 11 15	691	1.3-	0.0
1993 03 22	809	0.7+	0.7+	1998 11 10	704	1.1+	0.9-	1998 11 16	566	(2.3+ 0.2-)	
1998 10 10	699	(2.7- 0.2+)		1998 11 10	704	1.3+	0.7-	1998 11 16	566	1.4+	0.7-
1998 10 10	699	0.7-	1.8+	1998 11 11	704	0.7+	0.7+	1998 11 16	566	0.8+	0.5-
1998 10 10	699	1.2-	1.5+	1998 11 11	704	0.7+	0.3+	1998 11 19	691	0.2-	0.1+
1998 10 19	699	0.2+	0.5+	1998 11 11	704	(2.0- 0.5+)		1998 11 19	691	0.1-	0.0
1998 10 19	699	0.3+	0.5+	1998 11 11	704	1.8-	0.0	1998 11 19	691	0.1-	0.1-
1998 10 19	699	0.4+	0.3+	1998 11 15	691	1.2-	0.2-				

1998 TQ₃₀ = 1978 WC₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	78.97175		(2000.0)	P		Q	
<i>n</i>	0.24363167	ω	88.60510	+0.79587102	+0.60493024		
<i>a</i>	2.5389075	Ω	234.17038	-0.56724907	+0.73026668		
<i>e</i>	0.1447676	<i>i</i>	1.80025	-0.21170219	+0.31744288		
<i>P</i>	4.05	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 11 29	675	0.8-	0.6-	1998 10 19	699	0.0	0.7-	1998 11 10	704	2.4-	1.8+
1978 11 30	675	0.8+	0.6+	1998 10 19	699	0.1+	0.1-	1998 11 11	704	0.3+	0.3+
1998 10 10	699	1.1+	0.5+	1998 11 10	704	0.3+	0.9-	1998 11 11	704	1.5+	0.0
1998 10 10	699	0.7-	0.3-	1998 11 10	704	0.2+	0.3-	1998 11 11	704	0.4+	0.2-
1998 10 10	699	0.4-	0.6+	1998 11 10	704	0.8-	0.5-	1998 11 11	704	0.3+	0.5+
1998 10 19	699	0.1-	0.4-	1998 11 10	704	0.6+	0.0	1998 11 11	704	0.4-	0.3-

1998 TR₃₀ = 1996 HP₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	169.45725		(2000.0)	P		Q	
<i>n</i>	0.19044218	ω	28.46421	-0.46672257	+0.88288001		
<i>a</i>	2.9919933	Ω	213.78892	-0.82808838	-0.45685401		
<i>e</i>	0.0266379	<i>i</i>	5.35412	-0.31054739	-0.10866142		
<i>P</i>	5.18	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 17	809	(3.1+ 3.0+)		1998 10 10	699	0.4-	0.2+	1998 11 10	704	0.8+	0.5-
1996 04 17	809	(2.7+ 1.8+)		1998 10 10	699	0.1-	0.7+	1998 11 10	704	0.0	1.5+

1996 04 17	809	(0.5- 2.6+)		1998 10 15	327	0.1-	0.4-	1998 11 11	704	0.3+	0.7-
1996 04 18	809	0.5-	0.2-	1998 10 15	327	0.1+	0.2+	1998 11 11	704	0.6-	0.2+
1996 04 18	809	0.4+	0.8-	1998 10 15	327	0.3-	0.2-	1998 11 11	704	0.7-	0.7+
1996 04 18	809	0.3+	0.7-	1998 10 19	699	0.4-	0.3-	1998 11 11	704	0.4-	1.2-
1996 05 22	809	1.6-	0.2-	1998 10 19	699	0.2+	0.4-	1998 11 16	566	0.4+	0.9+
1996 05 22	809	1.0+	0.4+	1998 10 19	699	0.6-	0.4-	1998 11 16	566	0.0	0.7-
1996 05 22	809	(2.8- 1.8-)		1998 11 10	704	0.1+	0.6-	1998 11 16	566	0.8+	0.4-
1998 10 10	699	0.6+	0.1-	1998 11 10	704	0.6+	0.1+				

1998 TT₃₀ = 1997 GZ₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	133.70523		(2000.0)	P		Q	
<i>n</i>	0.29916988	ω	259.18831	+0.10922409	+0.99364598		
<i>a</i>	2.2140672	Ω	17.15325	-0.87222506	+0.10891140		
<i>e</i>	0.1600817	<i>i</i>	5.28420	-0.47675312	+0.02838959		
<i>P</i>	3.29	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 05	704	0.2-	0.1-	1998 10 10	699	0.8+	0.4+	1998 11 10	704	0.6-	0.1-
1997 04 05	704	0.1-	0.9+	1998 10 10	699	0.0	0.1-	1998 11 10	704	0.5+	0.1+
1997 04 06	704	0.0	0.7-	1998 10 18	699	0.1-	0.5+	1998 11 11	704	0.2+	0.5-
1997 04 06	704	0.5-	0.0	1998 10 18	699	0.5+	0.3+	1998 11 11	704	0.2+	0.1-
1997 04 07	704	0.8+	0.7-	1998 10 18	699	0.7-	0.1-	1998 11 11	704	0.2-	0.2-
1997 04 07	704	0.0	0.6+	1998 11 10	704	0.4+	0.1-	1998 11 11	704	0.2-	0.7+
1998 10 10	699	0.6-	0.8-	1998 11 10	704	0.2-	0.1+				

1998 TY₃₀ = 1981 SJ₅ = 1981 UZ = 1987 XE₁ = 1992 QT₁ = 1996 HJ₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.10401		(2000.0)	P		Q	
<i>n</i>	0.17503898	ω	293.84366	+0.77400801	+0.61754441		
<i>a</i>	3.1650424	Ω	28.63086	-0.42062706	+0.66654899		
<i>e</i>	0.2381020	<i>i</i>	16.96611	-0.47326998	+0.41755400		
<i>P</i>	5.63	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 09 25	095	0.3-	0.8-	1996 04 20	566	0.8+	0.4-	1998 11 10	704	0.3+	0.2-
1981 10 30	704	0.8+	1.2+	1996 04 22	691	1.4-	0.6-	1998 11 10	704	0.2+	0.1-
1981 10 31	704	(1.5- 5.3-)		1996 04 22	691	1.4-	0.5-	1998 11 10	704	0.8+	0.3-
1987 12 12	054	0.8-	0.7+	1996 04 22	691	1.3-	0.6-	1998 11 10	704	0.3+	1.8-
1987 12 12	054	0.9-	0.4+	1998 10 10	699	0.2+	0.3+	1998 11 11	704	0.2-	0.2-
1992 08 25	675	0.0	0.9-	1998 10 10	699	0.6+	0.3+	1998 11 11	704	0.2+	0.5-
1992 08 25	675	0.3+	0.8-	1998 10 10	699	0.5+	0.4+	1998 11 11	704	0.3+	0.5-
1992 08 27	675	0.2+	0.3+	1998 10 19	699	0.7-	0.4+	1998 11 11	704	0.7-	0.2+
1992 08 27	675	0.3-	0.4+	1998 10 19	699	0.0	0.4+	1998 11 11	704	0.7+	1.0-
1996 04 20	566	0.9+	0.2-	1998 10 19	699	0.1-	0.5+				
1996 04 20	566	0.6+	0.2-	1998 11 10	704	0.0	0.2-				

1998 TT₃₁ = 1996 JF₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	12.64813		(2000.0)	P		Q	
<i>n</i>	0.18618207	ω	327.50233	+0.81341678	-0.55624430		
<i>a</i>	3.0374618	Ω	67.21988	+0.56530926	+0.68704762		
<i>e</i>	0.1310026	<i>i</i>	10.63356	+0.13703495	+0.46750171		
<i>P</i>	5.29	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 05 09	691	0.3-	0.3-	1998 10 11	699	0.7+	0.3-	1998 10 28	704	0.1+	0.3+
1996 05 09	691	0.7-	0.7+	1998 10 11	699	0.3-	0.1+	1998 10 28	704	0.2+	0.6+
1996 05 09	691	0.1-	0.1-	1998 10 20	699	0.0	0.1+	1998 10 29	704	0.4+	1.0+
1996 05 15	691	0.5+	0.0	1998 10 20	699	0.3-	0.1-	1998 10 29	704	0.0	0.3-
1996 05 15	691	0.4+	0.0	1998 10 20	699	0.5-	0.1+	1998 10 29	704	0.3+	0.2-
1996 05 15	691	0.5+	0.0	1998 10 28	704	1.8-	0.8-	1998 10 29	704	0.1+	0.4+
1998 10 11	699	0.8+	0.4-	1998 10 28	704	0.3+	0.1-	1998 10 29	704	0.1-	0.2-

1998 TZ₃₁ = 1995 CW₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	15.13691		(2000.0)	P		Q	
<i>n</i>	0.20585603	ω	111.04579	+0.78570636	−0.61534834		
<i>a</i>	2.8407105	Ω	286.98628	+0.54012655	+0.73234148		
<i>e</i>	0.1844672	<i>i</i>	3.79743	+0.30154408	+0.29158597		
<i>P</i>	4.79	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 02 01	691	0.4+	0.4+	1998 10 11	699	0.4−	0.7+	1998 10 28	704	0.0	0.4−
1995 02 01	691	0.1+	0.3+	1998 10 19	699	0.7+	0.8+	1998 10 29	704	0.8+	0.9−
1995 02 01	691	0.0	0.3+	1998 10 19	699	0.1+	0.9+	1998 10 29	704	1.1−	1.0+
1995 02 08	691	0.3−	0.1−	1998 10 19	699	0.3+	0.9+	1998 10 29	704	0.6−	0.4−
1995 02 08	691	0.1−	0.7−	1998 10 28	704	0.2−	0.0	1998 10 29	704	1.1−	0.4+
1998 10 11	699	0.0	0.2−	1998 10 28	704	1.0+	1.5−	1998 10 29	704	1.3+	0.3−
1998 10 11	699	0.1+	0.1+	1998 10 28	704	0.8−	0.9−				

1998 TD₃₂ = 1978 EW₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	283.70223		(2000.0)	P		Q	
<i>n</i>	0.27023312	ω	171.42267	−0.81437418	−0.57938457		
<i>a</i>	2.3694288	Ω	333.08482	+0.52799368	−0.71588986		
<i>e</i>	0.0852020	<i>i</i>	4.21738	+0.24086793	−0.38963474		
<i>P</i>	3.65	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 03 15	675	0.7−	0.1+	1998 10 28	704	0.6+	0.3−	1998 11 10	704	0.9−	0.1+
1978 03 16	675	0.7+	0.0	1998 10 28	704	1.4+	0.5−	1998 11 10	704	0.4+	0.7−
1998 10 11	699	1.0−	0.3+	1998 10 28	704	0.5−	0.4−	1998 11 11	704	0.1−	0.9−
1998 10 11	699	0.4+	0.7−	1998 10 29	704	0.9−	1.7+	1998 11 11	704	0.5−	1.1+
1998 10 11	699	0.4−	0.4+	1998 10 29	704	0.8−	1.4−	1998 11 11	704	0.0	1.1−
1998 10 19	699	0.2−	0.5+	1998 10 29	704	0.7+	0.2+	1998 11 11	704	0.1+	0.8+
1998 10 19	699	0.3+	0.5+	1998 10 29	704	0.4+	0.4+	1998 11 11	704	0.0	0.9−
1998 10 19	699	0.3−	0.1+	1998 10 29	704	0.2+	0.0				
1998 10 28	704	0.9+	0.1+	1998 11 10	704	0.4+	0.7+				

1998 TL₃₂ = 1976 UB₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	236.57532		(2000.0)	P		Q	
<i>n</i>	0.22473619	ω	166.89673	−0.99659117	+0.07288120		
<i>a</i>	2.6792961	Ω	17.42298	−0.08240989	−0.85772238		
<i>e</i>	0.1576985	<i>i</i>	7.41788	−0.00382762	−0.50892106		
<i>P</i>	4.39	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1976 10 22	381	0.1+	0.4−	1998 10 19	699	0.3+	0.7−	1998 10 29	704	0.1−	0.2−
1976 10 22	381	0.7+	0.2+	1998 10 19	699	0.2+	0.4+	1998 10 29	704	0.6+	0.7−
1976 10 24	381	0.8−	0.2+	1998 10 19	699	0.5+	0.1−	1998 10 29	704	0.0	0.2+
1998 10 11	699	0.7−	0.0	1998 10 28	704	0.7+	1.1−	1998 10 29	327	0.2−	0.3−
1998 10 11	699	0.1−	0.3+	1998 10 28	704	0.7−	0.4+	1998 10 29	327	0.0	0.1−
1998 10 11	699	0.1−	0.4+	1998 10 28	704	0.8−	0.9+	1998 10 29	327	0.0	0.3+
1998 10 17	327	0.1−	0.3−	1998 10 28	704	0.2+	0.5−	1998 10 30	327	0.2+	0.2−
1998 10 17	327	0.3+	0.6−	1998 10 29	704	0.5+	0.8+	1998 10 30	327	0.6−	0.1+
1998 10 17	327	0.0	0.2+	1998 10 29	704	0.7−	0.3+	1998 10 30	327	0.8+	0.6+

1998 TD₃₃ = 1997 GV₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	57.19282		(2000.0)	P		Q	
<i>n</i>	0.30980436	ω	153.85899	+0.98708896	+0.15959660		
<i>a</i>	2.1631055	Ω	196.97398	−0.15389843	+0.92151759		
<i>e</i>	0.1950369	<i>i</i>	2.66539	−0.04439204	+0.35402579		
<i>P</i>	3.18	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	0.8−	0.6+	1998 10 20	699	0.4−	0.9+	1998 11 10	704	0.9+	1.2−
1997 04 03	704	0.3−	1.8+	1998 10 20	699	0.3−	0.1+	1998 11 11	704	0.8−	0.2+
1997 04 07	704	1.4+	1.1−	1998 10 20	699	0.4−	0.2+	1998 11 11	704	0.2+	0.5+
1997 04 07	704	0.1−	0.6−	1998 11 10	704	1.2+	0.6−	1998 11 11	704	0.9−	1.5+
1998 10 14	699	0.3+	0.0	1998 11 10	704	0.7+	1.1−	1998 11 11	704	0.8−	0.6−
1998 10 14	699	0.0	0.4+	1998 11 10	704	0.1+	0.1+	1998 11 11	704	0.8−	0.1−
1998 10 14	699	0.4+	0.1+	1998 11 10	704	0.5+	0.2+				

1998 TJ₃₃ = 1993 FX₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	40.03699		(2000.0)	P		Q	
<i>n</i>	0.27443675	ω	307.64129	+0.97449039	−0.21642029		
<i>a</i>	2.3451711	Ω	64.92751	+0.22098132	+0.87904697		
<i>e</i>	0.1765372	<i>i</i>	3.76139	+0.03918853	+0.42478074		
<i>P</i>	3.59	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 19	809	0.2+	0.3−	1998 10 20	699	0.1−	0.4−	1998 11 10	704	0.0	0.6−
1993 03 20	809	1.8+	0.0	1998 10 20	699	0.1−	0.4−	1998 11 10	704	0.1+	0.9+
1993 03 24	809	0.6+	0.9+	1998 10 20	699	0.4+	0.9−	1998 11 11	704	1.3−	0.8+
1993 03 25	691	0.7−	0.3−	1998 10 20	699	0.0	0.9+	1998 11 11	704	0.0	0.4+
1993 03 25	691	1.0−	0.4−	1998 10 20	699	0.3+	0.3−	1998 11 11	704	0.2−	0.1−
1993 03 25	691	1.1−	0.3−	1998 10 20	699	0.4−	0.2+	1998 11 11	704	0.7−	0.4−
1998 10 14	699	0.3+	0.0	1998 11 10	704	0.1−	0.2−	1998 11 11	704	0.1−	0.2−
1998 10 14	699	0.2+	0.0	1998 11 10	704	1.0+	0.7+				
1998 10 14	699	0.5+	0.2+	1998 11 10	704	0.3+	0.8−				

1998 TN₃₃ = 1996 FF₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	29.47985		(2000.0)	P		Q	
<i>n</i>	0.20061883	ω	293.66117	+0.91481515	−0.40007517		
<i>a</i>	2.8899362	Ω	89.96004	+0.38775664	+0.83178911		
<i>e</i>	0.0720594	<i>i</i>	3.16748	+0.11295144	+0.38479441		
<i>P</i>	4.91	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 24	809	0.1−	0.5+	1998 10 14	699	0.4+	0.3−	1998 11 10	704	1.0−	0.5+
1996 03 24	809	1.0−	0.2−	1998 10 20	699	0.1−	0.2−	1998 11 11	704	0.0	0.3−
1996 03 24	809	1.3−	0.4+	1998 10 20	699	0.2−	0.6+	1998 11 11	704	0.3−	0.0
1996 03 26	809	1.8+	1.0−	1998 10 20	699	0.2+	0.1−	1998 11 11	704	0.3+	0.7+
1996 03 26	809	0.0	0.8+	1998 11 10	704	0.5+	1.1−	1998 11 11	704	0.2−	0.2+
1996 03 26	809	0.6+	0.5−	1998 11 10	704	0.3−	0.3+	1998 11 11	704	0.0	0.3+
1998 10 14	699	0.3+	0.1−	1998 11 10	704	0.2+	0.1−				
1998 10 14	699	0.3−	0.0	1998 11 10	704	0.7+	0.5−				

1998 TR₃₃ = 1993 TT₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	83.57780		(2000.0)	P		Q	
<i>n</i>	0.20270443	ω	213.21495	+0.71507318	+0.69751995		
<i>a</i>	2.8700792	Ω	102.48341	−0.63060913	+0.67218480		
<i>e</i>	0.1495080	<i>i</i>	2.71333	−0.30166615	+0.24826100		
<i>P</i>	4.86	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 09	809	1.1−	1.3−	1993 10 21	809	0.3−	1.6−	1998 11 10	704	1.5−	0.9+
1993 10 09	809	1.1−	0.8−	1998 10 14	699	0.4+	0.0	1998 11 10	704	0.1+	0.4+
1993 10 09	809	1.8−	1.9−	1998 10 14	699	0.4+	0.7−	1998 11 10	704	0.5+	0.1−
1993 10 11	809	2.2+	2.6+	1998 10 14	699	0.0	0.2−	1998 11 11	704	0.9−	0.1−
1993 10 11	809	0.8+	1.7+	1998 10 20	699	0.1−	0.4+	1998 11 11	704	0.2−	0.2−
1993 10 11	809	1.0+	3.2+	1998 10 20	699	0.1−	0.3−	1998 11 11	704	0.5+	0.2−
1993 10 21	809	0.3+	0.8−	1998 10 20	699	0.5−	0.2+	1998 11 11	704	0.5+	0.4−
1993 10 21	809	0.0	1.2−	1998 11 10	704	0.9+	0.7+	1998 11 11	704	0.0	0.2−

1998 DEC. 8

M.P.C. 33307

1998 TA₃₄ = 1989 TS₁₅ = 1996 FS₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	278.77182		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.22681399	ω	314.78229	-0.87880884	-0.47260845		
<i>a</i>	2.6629080	Ω	197.35055	+0.47585310	-0.85773002		
<i>e</i>	0.1142091	<i>i</i>	12.75682	+0.03548031	-0.20233750		
<i>P</i>	4.35	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 10 03	809	1.0+	0.2+	1989 10 07	809	1.3-	0.4-	1998 10 20	699	0.1-	0.0
1989 10 03	809	1.4+	0.3+	1989 10 07	809	1.2-	0.5-	1998 10 20	699	0.2-	0.1-
1989 10 03	809	1.7+	0.2+	1996 03 24	809	0.7-	0.4+	1998 11 10	704	0.2-	0.1-
1989 10 03	809	1.3-	0.5+	1996 03 24	809	1.0-	1.1+	1998 11 10	704	0.1+	0.1+
1989 10 03	809	0.8-	0.5+	1996 03 24	809	1.6-	1.4+	1998 11 10	704	0.3-	0.3-
1989 10 03	809	0.5-	0.6+	1996 03 27	809	1.3+	0.2-	1998 11 10	704	0.4+	0.0
1989 10 05	809	1.0+	0.4-	1996 03 27	809	0.9+	0.0	1998 11 10	704	0.0	0.1-
1989 10 05	809	0.7+	0.2-	1996 03 27	809	1.3+	0.2-	1998 11 11	704	0.1-	0.6+
1989 10 06	809	0.1-	0.4+	1998 10 14	699	0.1+	0.1-	1998 11 11	704	0.2+	0.3+
1989 10 06	809	0.2+	0.4+	1998 10 14	699	0.0	0.1+	1998 11 11	704	0.5-	0.2+
1989 10 06	809	0.4+	0.4+	1998 10 14	699	0.0	0.2+	1998 11 11	704	0.2-	0.2+
1989 10 07	809	1.5-	0.4-	1998 10 20	699	0.2+	0.8-	1998 11 11	704	0.3+	0.9+

1998 TD₃₄ = 1996 LX₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	25.25784		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18973702	ω	190.36038	+0.89845971	-0.43647857		
<i>a</i>	2.9994019	Ω	195.78123	+0.41428875	+0.87862591		
<i>e</i>	0.1053658	<i>i</i>	10.05936	+0.14537875	+0.19365682		
<i>P</i>	5.19	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 06 08	809	0.8+	0.9+	1998 10 14	699	0.4+	0.2+	1998 11 10	704	0.1+	0.2+
1996 06 08	809	0.1+	0.9+	1998 10 14	699	0.4-	0.0	1998 11 10	704	0.2+	0.4-
1996 06 08	809	0.3-	1.2+	1998 10 20	699	0.1-	0.2-	1998 11 10	704	2.0+	1.7+
1996 06 10	809	0.0	1.2-	1998 10 20	699	0.2+	0.2-	1998 11 11	704	0.6-	0.0
1996 06 10	809	0.2+	1.0-	1998 10 20	699	0.5+	0.2-	1998 11 11	704	0.0	0.6-
1996 06 10	809	0.9-	0.7-	1998 11 10	704	0.2-	0.2-	1998 11 11	704	0.8-	0.0
1998 10 14	699	0.7-	0.3+	1998 11 10	704	0.5-	0.5-				

1998 TG₃₄ = 1997 EK₅₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	92.49808		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28207616	ω	122.69575	+0.59185696	+0.80601024		
<i>a</i>	2.3026351	Ω	183.61827	-0.77271841	+0.56479842		
<i>e</i>	0.1929784	<i>i</i>	6.61367	-0.22937216	+0.17706001		
<i>P</i>	3.49	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 10	809	0.1+	1.0+	1998 10 20	699	0.1-	0.2-	1998 11 11	704	0.6+	0.1+
1997 03 10	809	0.6+	0.4-	1998 10 20	699	0.0	0.4-	1998 11 11	704	0.0	0.5-
1997 03 10	809	0.3+	0.5-	1998 10 20	699	0.3+	0.6-	1998 11 11	704	0.1-	0.2+
1997 03 11	809	0.1+	0.4+	1998 11 10	704	0.3+	0.1+	1998 11 11	704	0.9-	0.2-
1997 03 11	809	0.7-	0.2-	1998 11 10	704	0.2-	0.2-	1998 11 15	566	0.0	0.3-
1997 03 11	809	0.3-	0.2-	1998 11 10	704	1.4+	0.0	1998 11 15	566	0.1-	0.1-
1998 10 14	699	0.4-	0.4+	1998 11 10	704	0.7-	0.6+	1998 11 15	566	0.3+	0.2-
1998 10 14	699	0.1+	0.2+	1998 11 10	704	0.1+	0.9+				
1998 10 14	699	0.1+	0.2+	1998 11 11	704	0.6-	0.1+				

1998 TK₃₄ = 1991 RR₆ = 1994 LL₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	102.54803		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.29510395	ω	113.29285	+0.43080528	+0.90243635		
<i>a</i>	2.2343577	Ω	182.23739	-0.86039348	+0.40941345		
<i>e</i>	0.2110040	<i>i</i>	5.77643	-0.27226801	+0.13412402		
<i>P</i>	3.34	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 09 03	413	0.6+	0.0	1998 09 26	327	(2.3-	0.2+)	1998 11 10	704	0.4+	0.3+
1991 09 03	413	0.0	0.3+	1998 09 26	327	(2.5-	0.5-)	1998 11 10	704	0.4-	0.0
1991 09 04	413	0.6-	0.4-	1998 10 14	699	1.8+	1.6+	1998 11 10	704	1.2+	1.2+
1994 06 08	691	0.1-	0.1+	1998 10 14	699	1.0+	0.7-	1998 11 11	704	0.6+	0.7+
1994 06 08	691	0.3+	0.4-	1998 10 14	699	0.1-	0.4+	1998 11 11	704	0.3+	0.2-
1994 06 09	691	0.0	0.3+	1998 10 20	699	1.0-	1.0-	1998 11 11	704	0.1-	1.1-
1994 06 09	691	0.2-	0.1+	1998 10 20	699	1.6-	0.2+	1998 11 11	704	0.0	0.4+
1998 09 26	327	(2.6-	0.3+)	1998 10 20	699	1.4-	0.2-	1998 11 11	704	0.9-	1.5-

1998 TL₃₄ = 1977 RD₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	344.43831		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28433450	ω	261.80770	+0.07220388	-0.99737004		
<i>a</i>	2.2904264	Ω	184.06763	+0.94646577	+0.07050647		
<i>e</i>	0.1413253	<i>i</i>	5.09024	+0.31462539	+0.01678829		
<i>P</i>	3.47	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 09 09	675	1.0-	0.8-	1998 10 20	699	0.9-	0.4-	1998 11 11	704	0.5+	0.7+
1977 09 10	675	1.0+	0.8+	1998 10 20	699	0.9+	0.9-	1998 11 11	704	0.5-	0.3+
1998 10 14	699	0.9+	0.9+	1998 11 10	704	0.4+	0.2-	1998 11 11	704	0.8+	0.2-
1998 10 14	699	0.6+	0.2+	1998 11 10	704	0.6+	1.1-	1998 11 11	704	0.6-	0.7-
1998 10 14	699	0.8-	0.2+	1998 11 10	704	0.5+	1.5+	1998 11 11	704	1.3-	0.3-
1998 10 20	699	0.9-	0.1+	1998 11 10	704	0.2-	0.1+				

1998 TR₃₄ = 1990 XV₁ = 1996 HV₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	331.76420		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23547915	ω	26.50080	-0.16891709	-0.98135941		
<i>a</i>	2.5971742	Ω	73.33807	+0.88646835	-0.19191508		
<i>e</i>	0.1690108	<i>i</i>	5.49003	+0.43086064	+0.01011526		
<i>P</i>	4.19	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 12 15	801	0.3+	0.1-	1998 10 14	699	0.4-	0.5+	1998 11 10	704	0.2-	0.6-
1990 12 15	801	0.3-	0.7+	1998 10 14	699	0.6-	0.8+	1998 11 10	704	0.1+	0.2-
1996 04 17	691	0.6-	0.2-	1998 10 20	699	0.0	0.7+	1998 11 10	704	0.6+	1.2-
1996 04 17	691	0.8-	0.3-	1998 10 20	699	0.0	0.2-	1998 11 10	704	0.2+	0.1-
1996 04 17	691	0.7-	0.4-	1998 10 20	699	0.6-	0.6+	1998 11 11	704	0.0	0.4-
1996 04 19	691	0.2+	0.0	1998 10 26	910	1.3+	0.3+	1998 11 11	704	1.0-	0.2+
1996 04 19	691	0.9+	0.1-	1998 10 26	910	1.2+	0.6+	1998 11 11	704	0.0	0.7-
1996 04 19	691	0.5+	0.0	1998 10 27	910	1.2+	0.5+	1998 11 11	704	0.1+	1.0-
1998 10 14	699	0.3-	0.2+	1998 11 10	704	1.2-	0.6-	1998 11 11	704	0.1-	0.8-

1998 TW₃₄ = 1996 FK

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	103.25709		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19211746	ω	102.31448	+0.43810025	+0.89793373		
<i>a</i>	2.9745744	Ω	193.90139	-0.87786692	+0.41725597		
<i>e</i>	0.0951423	<i>i</i>	10.12315	-0.19343693	+0.14004450		
<i>P</i>	5.13	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 16	566	0.3+	0.9+	1998 10 14	699	0.1+	0.2+	1998 11 10	704	0.7+	0.3-
1996 03 16	566	0.1+	0.6+	1998 10 20	699	0.3-	0.2-	1998 11 11	704	0.1+	0.1-

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1996 03 16	566	0.2+	0.5+	1998 10 20	699	0.6−	0.1+	1998 11 11	704	0.5−	0.9+
1996 03 18	566	0.3−	0.6−	1998 10 20	699	0.3+	0.4−	1998 11 11	704	0.2+	1.1+
1996 03 18	566	0.3−	0.8−	1998 11 10	704	0.1−	0.5+	1998 11 11	704	0.1+	0.4−
1996 03 18	566	0.1−	0.7−	1998 11 10	704	0.6+	0.5+	1998 11 11	704	1.3−	1.9−
1998 10 14	699	0.2+	0.1−	1998 11 10	704	0.9+	1.7−				
1998 10 14	699	0.5+	0.0	1998 11 10	704	0.7−	1.5+				

1998 UZ = 1953 EE₂ = 1970 EX₂ = 1985 TH₂ = 1987 CQ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	316.62320		(2000.0)	P	Q
<i>n</i>	0.23222009	ω	266.75424	−0.51442061	−0.84907653
<i>a</i>	2.6214175	Ω	215.05625	+0.84616595	−0.47984439
<i>e</i>	0.1988979	<i>i</i>	12.07631	+0.13919274	−0.22094888
<i>P</i>	4.24	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1953 03 09	675	0.8−	0.1+	1998 10 19	727	0.1+	0.2+	1998 10 30	727	0.3+	0.4+
1953 03 09	675	0.2+	2.1−	1998 10 19	727	0.2−	0.0	1998 11 10	704	0.1−	0.2+
1970 03 06	805	0.2−	1.0+	1998 10 19	727	0.1+	0.0	1998 11 10	704	0.3+	0.1−
1970 03 06	805	0.8+	0.1+	1998 10 19	699	0.5+	0.1+	1998 11 10	704	0.1+	0.4−
1970 03 06	805	0.0	0.9+	1998 10 19	699	0.1+	0.4+	1998 11 10	704	0.2+	0.4−
1985 10 11	046	(3.5−	3.3−)	1998 10 19	699	0.2+	0.1+	1998 11 10	704	0.2+	0.4−
1985 10 11	046	0.0	0.1+	1998 10 20	727	0.1−	0.3−	1998 11 11	727	0.2−	0.2+
1987 02 05	808	(0.9+	10.3−)	1998 10 20	727	0.3+	0.4−	1998 11 11	727	0.4−	0.0
1987 02 05	808	(1.7+	9.4−)	1998 10 20	327	0.2+	0.5−	1998 11 11	727	0.1−	0.5−
1998 10 10	699	0.1+	1.0+	1998 10 20	327	0.0	0.6−	1998 11 11	704	0.6+	0.1+
1998 10 10	699	0.1+	1.2+	1998 10 20	327	0.2+	0.5−	1998 11 11	704	0.6+	0.2−
1998 10 10	699	0.6+	0.5+	1998 10 23	727	0.3−	0.3−	1998 11 11	704	0.1−	0.4+
1998 10 15	327	0.2−	0.4−	1998 10 23	727	0.0	0.5−	1998 11 11	704	0.4+	0.4−
1998 10 15	327	0.3−	0.2−	1998 10 27	727	0.2−	0.2+	1998 11 11	704	0.8+	0.2−
1998 10 15	327	0.1+	0.5−	1998 10 27	727	0.0	0.3+	1998 11 12	727	0.4−	0.3+
1998 10 16	327	0.2−	0.0	1998 10 27	727	0.0	0.6+	1998 11 12	727	0.1−	0.1−
1998 10 16	327	0.1−	0.2−	1998 10 27	691	1.6−	0.2−	1998 11 12	727	0.2−	0.4+
1998 10 16	327	0.1−	0.2−	1998 10 27	691	1.6−	0.0	1998 11 23	727	0.4+	1.0+
1998 10 17	327	0.1+	0.2−	1998 10 27	691	1.6−	0.2−	1998 11 23	727	0.7+	0.6+
1998 10 17	327	0.2+	0.2−	1998 10 30	727	0.2+	0.5+	1998 11 23	727	0.1−	0.7−
1998 10 17	327	0.4+	0.1−	1998 10 30	727	0.2+	0.2+				

1998 UK₁ = 1995 GL₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	307.35870		(2000.0)	P	Q
<i>n</i>	0.17555852	ω	282.73903	−0.41190294	−0.91121573
<i>a</i>	3.1587950	Ω	191.58874	+0.84480568	−0.37995005
<i>e</i>	0.1398711	<i>i</i>	1.33364	+0.34152499	−0.15913470
<i>P</i>	5.61	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 04 08	695	0.8−	0.4−	1998 10 19	426	0.2+	0.4−	1998 10 29	704	0.1−	1.1+
1995 04 08	695	0.3−	0.6−	1998 10 19	426	0.0	1.2−	1998 10 29	704	0.3+	0.1+
1995 04 08	695	0.2−	0.0	1998 10 20	426	0.0	0.3−	1998 10 29	704	0.9+	0.8−
1995 04 08	695	(11.3−	1.1−)	1998 10 20	426	0.9+	0.1−	1998 10 29	704	0.4−	1.8+
1995 04 09	695	0.2+	0.5−	1998 10 20	426	0.2−	0.8−	1998 10 29	704	0.2+	0.8−
1995 04 09	695	(3.7−	0.9+)	1998 10 25	426	0.2−	0.2+	1998 11 16	426	0.0	0.4+
1995 04 10	695	0.3+	0.1+	1998 10 25	426	0.5+	0.2−	1998 11 16	426	0.8−	0.6−
1995 04 10	695	0.1+	0.5+	1998 10 25	426	0.3−	0.3−	1998 11 16	426	0.2+	0.4−
1995 04 10	695	0.2+	0.3+	1998 10 28	704	0.4+	0.0	1998 11 19	426	0.9+	0.2−
1995 04 11	695	0.4+	0.4+	1998 10 28	704	0.3−	0.0	1998 11 19	426	0.3−	1.1+
1995 04 11	695	0.2+	0.1−	1998 10 28	704	0.7−	0.1+				
1998 10 19	426	0.8+	0.7+	1998 10 28	704	1.8−	0.2+				

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1998 UW₅ = 1996 GK₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	284.07556		(2000.0)	P	Q
<i>n</i>	0.24407861	ω	44.27028	−0.81572321	−0.57412286
<i>a</i>	2.5358073	Ω	100.56434	+0.50878633	−0.77016849
<i>e</i>	0.1230276	<i>i</i>	4.11599	+0.27519469	−0.27789107
<i>P</i>	4.04	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 04 13	691	0.1+	0.2−	1996 04 21	691	0.0	0.1+	1998 10 23	910	0.0	0.1−
1996 04 13	691	0.1+	0.0	1998 10 22	910	0.2+	0.1−	1998 10 23	910	0.2−	0.1−
1996 04 13	691	0.5−	0.2+	1998 10 22	910	0.0	0.1+	1998 10 26	910	0.1+	0.3−
1996 04 21	691	0.2−	0.4−	1998 10 22	910	0.0	0.1−	1998 10 26	910	0.0	0.0
1996 04 21	691	0.3+	0.3+	1998 10 23	910	0.0	0.1−	1998 10 27	910	0.2−	0.7+

1998 UV₆ = 1983 VZ₆ = 1995 CY₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	4.33773		(2000.0)	P	Q
<i>n</i>	0.19528287	ω	136.35252	+0.68916750	−0.72435400
<i>a</i>	2.9423429	Ω	270.07342	+0.65949573	+0.63786978
<i>e</i>	0.0877090	<i>i</i>	1.08633	+0.30018917	+0.26159783
<i>P</i>	5.05	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1983 11 09	033	0.2−	0.3−	1998 10 25	587	0.1+	0.1−	1998 10 30	587	0.1−	0.2−
1983 11 10	033	0.3+	0.2−	1998 10 27	587	0.6−	0.3−	1998 10 30	587	1.4−	0.9−
1995 02 07	691	0.4+	0.2−	1998 10 27	587	0.3+	0.9+	1998 10 30	587	0.9−	0.7−
1995 02 07	691	0.4+	0.4−	1998 10 27	587	0.2+	0.2−	1998 11 10	704	1.0−	0.1−
1995 02 07	691	0.6+	0.1−	1998 10 28	704	0.5+	0.1+	1998 11 10	704	0.0	0.2−
1995 02 21	691	0.6−	0.1+	1998 10 28	704	0.9+	0.4−	1998 11 10	704	0.2+	0.3+
1995 02 21	691	0.4−	0.1+	1998 10 28	704	1.1+	0.1+	1998 11 10	704	0.8−	0.2−
1995 02 21	691	0.4−	0.2+	1998 10 28	704	0.1+	0.5+	1998 11 11	704	0.2+	0.2−
1998 09 14	699	(0.0	2.1−)	1998 10 29	704	0.8−	0.1−	1998 11 11	704	0.4+	0.8+
1998 09 14	699	0.2+	1.0−	1998 10 29	704	0.1−	1.2+	1998 11 11	704	0.1+	0.3−
1998 09 14	699	0.1−	0.4−	1998 10 29	704	0.1+	0.0	1998 11 11	704	0.2−	0.9+
1998 10 20	587	0.2+	0.2+	1998 10 29	704	0.3−	0.3−	1998 11 11	704	0.5−	0.6+
1998 10 20	587	0.1+	0.3+	1998 10 29	704	0.6+	0.7−	1998 11 15	587	0.3+	0.6+
1998 10 22	587	0.3+	0.2−	1998 10 29	327	0.2−	0.3+	1998 11 15	587	0.4−	0.5+
1998 10 22	587	0.7+	0.1−	1998 10 29	327	0.0	0.2+	1998 11 17	587	0.5+	0.0
1998 10 25	587	0.0	0.3−	1998 10 29	327	0.1−	0.1−	1998 11 17	587	0.1+	0.4−

1998 UX₆ = 1993 DL₃

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Williams

<i>M</i>	73.52809		(2000.0)	P	Q
<i>n</i>	0.28813053	ω	49.22206	+0.88074870	+0.46967172
<i>a</i>	2.2702649	Ω	282.68467	−0.45110154	+0.79295415
<i>e</i>	0.1462848	<i>i</i>	3.56993	−0.14418436	+0.38811364
<i>P</i>	3.42	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 02 26	691	0.2−	0.4−	1998 10 28	704	(2.0+	1.8−)	1998 11 10	704	1.0+	0.6+
1993 02 26	691	0.2−	0.1+	1998 10 28	704	0.8−	0.0	1998 11 10	704	1.1−	0.5−
1993 02 26	691	0.0	0.2−	1998 10 29	704	0.2−	0.9−	1998 11 10	704	(3.0−	1.6−)
1993 03 19	691	0.0	0.1+	1998 10 29	704	0.0	1.9−	1998 11 11	704	0.3+	1.0+
1993 03 19	691	0.2+	0.0	1998 10 29	704	0.6+	0.2+	1998 11 11	704	1.2−	0.8+
1993 03 19	691	0.2+	0.5+	1998 10 29	704	1.0−	0.5+	1998 11 11	704	0.8+	0.0
1998 10 20	595	0.3+	0.1+	1998 10 29	704	(2.4−	0.3−)	1998 11 11	704	0.1+	0.2+
1998 10 20	595	0.1−	0.6+	1998 10 30	595	0.5+	0.5+	1998 11 11	704	0.4+	0.4+
1998 10 23	595	0.4−	0.1+	1998 10 30	595	0.4+	0.5+	1998 11 11	595	0.1−	0.4−
1998 10 23	595	0.2+	0.1+	1998 10 31	595	0.0	0.0	1998 11 11	595	0.1+	0.5−
1998 10 28	704	0.6+	0.8−	1998 10 31	595	0.4−	0.5−				
1998 10 28	704	0.4+	1.0+	1998 11 10	704	0.6−	0.9−				

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1998 UD₇ = 1968 KC = 1980 FJ₄ = 1981 SA₂

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Epoch 1999 Jan. 22.0 TT = JDT 2451200.5				Williams							
<i>M</i>	85.94896	(2000.0)		P		Q					
<i>n</i>	0.23621011	ω	271.42503	+0.58051702		+0.81369506					
<i>a</i>	2.5918134	Ω	34.11840	−0.72417252		+0.53279436					
<i>e</i>	0.2871957	<i>i</i>	3.06650	−0.37225550		+0.23244464					
<i>P</i>	4.17	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1968 05 22	095	0.5+	2.2−	1981 09 26	688	0.2+	1.6−	1998 11 10	704	1.1+	0.2+
1980 03 16	809	0.2+	1.4−	1998 10 03	327	0.5−	0.5+	1998 11 10	704	0.3+	0.1−
1980 03 16	809	0.9−	1.1−	1998 10 03	327	0.3−	0.8+	1998 11 10	704	0.2+	1.1−
1980 03 16	809	1.7−	0.1−	1998 10 03	327	0.4−	0.7+	1998 11 11	704	0.4+	0.1+
1980 03 16	809	2.0−	0.4+	1998 10 22	120	0.1−	0.1+	1998 11 11	704	0.3+	0.8−
1980 03 17	809	0.1+	2.3−	1998 10 22	120	1.6+	0.4−	1998 11 11	704	1.2+	1.4+
1980 03 17	809	1.0−	2.9−	1998 10 22	120	0.0	0.2+	1998 11 11	704	0.5+	0.5+
1980 03 17	809	0.8−	0.3−	1998 10 23	120	0.1−	0.4−	1998 11 11	704	0.7+	0.4+
1980 03 17	809	0.5−	1.8−	1998 10 23	120	0.0	0.1−	1998 11 25	691	1.1−	0.9−
1981 09 25	688	0.1+	2.5−	1998 10 29	120	0.3−	0.0	1998 11 25	691	0.6−	0.6−
1981 09 25	688	0.7−	2.3−	1998 10 29	120	0.4−	0.1−	1998 11 25	691	0.8−	0.5−
1981 09 25	095	0.8+	0.6+	1998 11 10	704	0.1−	0.0				
1981 09 26	688	2.9+	3.2−	1998 11 10	704	0.1−	0.1−				

1998 US₇ = 1992 JT

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	192.69375		(2000.0)	P			Q				
n	0.23266399	ω	17.87192	-0.65726180			+0.74229670				
a	2.6180822	Ω	211.42217	-0.71840844			-0.66936531				
e	0.0865402	i	14.48419	-0.22780747			-0.03075216				
P	4.24	H	14.0	G	0.15		U	4			
Residuals in seconds of arc											
1992 05 01	691	0.7+	0.3-	1998 10 23	120	0.7+	0.3-	1998 11 10	704	0.3-	0.7+
1992 05 01	691	0.6+	0.6-	1998 10 23	120	0.8-	0.2+	1998 11 10	704	1.1+	1.2-
1992 05 01	691	0.4+	0.2-	1998 10 23	120	0.1-	0.9+	1998 11 10	704	0.2-	0.5-
1992 05 08	691	0.7-	0.4+	1998 10 24	120	0.5+	0.7-	1998 11 11	704	0.4-	0.2-
1992 05 08	691	0.3-	0.2+	1998 10 24	120	0.5+	0.3-	1998 11 11	704	0.4-	1.4+
1992 05 08	691	0.8-	0.7+	1998 10 28	120	0.0	0.1+	1998 11 11	704	0.7-	1.1-
1998 10 22	120	1.4-	0.7-	1998 10 28	120	0.4+	0.3+				
1998 10 22	120	1.0+	0.6+	1998 11 10	704	0.1+	0.9+				

1998 UW₇ = 1990 VX₅

Id. G. V. Williams, B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	330.18617		(2000.0)	P		Q					
n	0.24276566	ω	294.53718	-0.25736125		-0.96604436					
a	2.5449419	Ω	170.29226	+0.92841306		-0.25376362					
e	0.1153344	i	7.79831	+0.26798204		-0.04860372					
P	4.06	H	14.3	G	0.15	U	6				
Residuals in seconds of arc											
1990 11 15	809	0.3+	0.6-	1990 11 23	809	0.9-	0.8+	1998 10 23	120	0.1-	0.5-
1990 11 15	809	0.4-	0.1-	1998 10 18	809	0.4-	0.8-	1998 10 24	120	(3.4-	0.8-
1990 11 15	809	1.2-	1.2-	1998 10 18	809	0.5-	1.4-	1998 10 24	120	(4.4-	0.7+
1990 11 17	809	1.4+	0.1+	1998 10 18	809	1.5-	1.4-	1998 10 28	120	0.3+	0.5+
1990 11 17	809	1.5+	0.5-	1998 10 19	809	0.4+	1.3+	1998 10 28	120	1.0+	0.0
1990 11 17	809	0.3+	0.2-	1998 10 19	809	0.0	1.1+	1998 10 29	120	0.0	0.7+
1990 11 23	809	0.2-	0.5+	1998 10 19	809	0.4+	0.7+	1998 10 29	120	0.4+	0.6+
1990 11 23	809	0.6-	0.9+	1998 10 23	120	0.2-	0.4-				

1998 UY₇ = 1969 VW₂ = 1977 RZ₄ = 1985 QY₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5				Williams							
<i>M</i>	36.60664		(2000.0)	P		Q					
<i>n</i>	0.23747314	ω	188.30133	+0.91907097		−0.39167335					
<i>a</i>	2.5826153	Ω	194.98560	+0.37056466		+0.89654806					
<i>e</i>	0.1092347	<i>i</i>	9.70625	+0.13412825		+0.20686604					
<i>P</i>	4.15	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1969 11 15	095	0.0	0.1−	1998 10 23	120	0.2+	0.3−	1998 11 10	704	0.6+	0.0
1977 09 09	095	(2.9−	4.1+)	1998 10 23	120	0.3+	0.2−	1998 11 10	704	0.6+	0.5−
1985 08 16	675	1.0−	0.6−	1998 10 23	120	0.2+	0.1−	1998 11 10	704	(1.6+	2.2−)
1985 08 16	675	1.1+	1.1+	1998 10 24	120	1.0−	0.1+	1998 11 11	704	0.8−	0.8+
1985 08 17	675	1.1−	1.5−	1998 10 24	120	0.1+	0.1+	1998 11 11	704	0.7−	0.7−
1985 08 17	675	0.9+	1.0+	1998 10 28	120	0.5+	0.6+	1998 11 11	704	0.8−	0.1−
1985 08 23	675	(5.6−	0.3−)	1998 10 28	120	0.2+	0.3+	1998 11 15	120	0.1−	0.0
1985 08 23	675	(8.6−	2.6−)	1998 11 10	704	0.5+	0.0	1998 11 15	120	0.2+	0.1+

1998 UD₈ = 1981 FW = 1996 GE₁₈

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	129.22122		(2000.0)	P			Q				
n	0.20058724	ω	212.38877	+0.33970675			+0.93904602				
a	2.8902396	Ω	77.51694	-0.85097965			+0.33080138				
e	0.0428982	i	3.10223	-0.40054084			+0.09361102				
P	4.91	H	12.9	G	0.15	U	4				
Residuals in seconds of arc											
1981 03 27	046	0.3-	1.9-	1998 10 18	699	0.7+	0.2+	1998 11 11	699	1.2+	0.2-
1981 03 27	046	0.9-	0.8-	1998 10 23	120	0.1-	0.5-	1998 11 11	704	0.4+	0.2+
1996 04 15	809	(1.0+	4.7+)	1998 10 24	120	0.2+	0.2-	1998 11 11	704	0.5+	0.0
1996 04 15	809	(1.8+	4.3+)	1998 10 24	120	0.1+	0.6-	1998 11 11	699	0.5+	0.1-
1996 04 15	809	(2.0+	3.8+)	1998 10 24	120	0.9-	0.9-	1998 11 11	704	1.0+	0.1-
1996 04 17	809	1.4+	1.0+	1998 10 24	120	0.8-	0.3-	1998 11 11	699	0.4+	0.1-
1996 04 17	809	1.0+	1.2+	1998 10 29	120	0.2-	0.7-	1998 11 24	120	0.6-	0.9+
1996 04 17	809	0.8+	1.0+	1998 10 29	120	0.5+	0.5-	1998 11 24	120	0.7-	0.8+
1996 04 18	691	0.8-	0.2+	1998 11 10	704	0.7-	0.4+	1998 11 24	120	0.1-	0.8+
1996 04 18	691	0.8-	0.8+	1998 11 10	704	0.4-	0.4-	1998 11 24	120	0.0	0.8+
1998 10 18	699	0.6+	0.1+	1998 11 10	704	(0.5-	2.6-)	1998 11 28	120	1.0-	1.4+
1998 10 18	699	0.3+	0.3+	1998 11 10	704	1.8-	0.7-	1998 11 28	120	0.0	1.3+

1998 UL₈ = 1986 PQ₁ = 1987 VX

Id. S. Nakano, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	349.52758		(2000.0)		P		Q				
<i>n</i>	0.18063659	ω	2.58395		-0.00165315		-0.99900674				
<i>a</i>	3.0993139	Ω	87.51333		+0.91667967		-0.01930845				
<i>e</i>	0.1454385	<i>i</i>	2.55455		+0.39961938		+0.04015862				
<i>P</i>	5.46	<i>H</i>	13.0		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1986 08 01	675	0.7-	0.2+	1998 10 20	699	0.3+	1.1-	1998 11 07	411	1.0-	0.0
1986 08 01	675	(9.6+	3.9+)	1998 10 20	699	0.9+	0.8-	1998 11 07	411	0.5-	0.3+
1986 08 02	675	0.5+	0.4+	1998 10 24	411	0.0	0.3+	1998 11 19	910	0.5+	0.9+
1986 08 02	675	(3.9-	0.6-)	1998 10 24	411	0.6-	0.5-	1998 11 19	910	0.5+	0.9+
1986 08 04	675	(15.5+	0.2+)	1998 10 25	411	0.1+	0.2+	1998 11 19	910	0.3+	1.0+
1986 08 04	675	(18.1+	2.9+)	1998 10 25	411	0.1-	0.5-	1998 11 23	411	0.6-	0.8+
1987 11 15	046	0.2-	0.8-	1998 10 27	910	0.1+	0.2-	1998 11 23	411	1.2-	0.6+
1987 11 15	046	0.6+	0.6-	1998 10 27	910	0.1+	0.1-				
1998 10 20	699	0.8+	0.6-	1998 10 27	910	0.1+	0.0				

1998 UM₈ = 1950 MF = 1981 UE₂₂ = 1997 JU₁₇ = 1997 LP₁₃

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	157.04734		(2000.0)		P		Q				
<i>n</i>	0.29258214	ω	174.34840		-0.00527728		+0.99668374				
<i>a</i>	2.2471782	Ω	95.33052		-0.92063440		+0.02685867				
<i>e</i>	0.1748832	<i>i</i>	4.67791		-0.39039014		-0.07681238				
<i>P</i>	3.37	<i>H</i>	13.9		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1950 06 24	839	0.1+	0.4+	1997 06 08	809	0.8+	0.4+	1998 11 21	704	0.1-	0.3-
1981 10 24	675	0.6-	0.3-	1997 06 08	809	0.3-	0.3+	1998 11 21	704	0.8+	0.3-
1981 10 25	675	0.3+	0.4-	1997 06 08	809	0.4+	0.2+	1998 11 21	704	0.1+	0.3-
1981 10 26	675	0.0	0.1-	1997 06 08	809	(1.7+	2.7+)	1998 11 21	704	0.6+	1.9-
1997 05 03	809	(3.1+	1.9+)	1997 06 08	809	(1.0+	2.8+)	1998 11 23	411	0.3+	0.3+
1997 05 03	809	(3.4+	3.1+)	1997 06 08	809	(1.5+	3.1+)	1998 11 23	411	0.9-	1.6+
1997 05 03	809	(2.3+	2.3+)	1998 10 24	411	0.1+	0.5-	1998 11 24	704	0.4-	1.2+
1997 05 04	809	(2.7+	3.2+)	1998 10 24	411	0.8+	0.9-	1998 11 24	704	0.1-	0.7+
1997 05 04	809	(3.2+	2.7+)	1998 10 25	411	0.3+	0.2-	1998 11 24	704	1.1-	1.2+
1997 05 04	809	(3.4+	2.7+)	1998 10 25	411	0.1+	0.4-	1998 11 24	704	1.9-	1.7+
1997 06 07	809	0.4+	0.1+	1998 11 07	411	0.1-	0.0	1998 11 24	704	(1.5-	2.3+)
1997 06 07	809	0.3-	0.2+	1998 11 07	411	0.3+	0.1-				
1997 06 07	809	0.6-	0.2+	1998 11 21	704	0.7+	1.2+				

1998 UR₈ = 1993 OM₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	31.93808		(2000.0)			P		Q			
<i>n</i>	0.22565029	ω	49.39775			+0.96736883		−0.25253950			
<i>a</i>	2.6720554	Ω	325.21585			+0.22024269		+0.87816867			
<i>e</i>	0.1556571	<i>i</i>	2.06202			+0.12526255		+0.40625557			
<i>P</i>	4.37	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1993 07 20	809	0.4−	0.4+	1998 10 18	327	0.1−	0.9−	1998 11 10	704	0.1−	0.6−
1993 07 20	809	0.4−	0.2−	1998 10 18	327	0.4−	0.5−	1998 11 10	704	0.2−	0.3−
1993 07 20	809	0.1−	1.2+	1998 10 28	704	0.2−	0.0	1998 11 10	704	0.5+	0.0
1993 07 24	809	0.9+	1.2−	1998 10 28	704	0.7−	0.2−	1998 11 10	704	0.5−	0.3+
1998 10 11	699	0.8−	0.4+	1998 10 28	704	0.3−	0.4−	1998 11 11	704	(2.1+	2.0+)
1998 10 11	699	0.1+	1.0+	1998 10 28	704	0.3+	0.5+	1998 11 11	704	0.4+	1.3−
1998 10 11	699	0.3+	0.8+	1998 10 29	704	0.6−	0.9+	1998 11 11	704	1.1+	0.6−
1998 10 17	327	1.0+	0.3−	1998 10 29	704	(2.1−	1.7+)	1998 11 11	704	0.4+	0.2+
1998 10 17	327	0.7+	0.5−	1998 10 29	704	1.4−	0.7+	1998 11 11	704	0.9+	1.1+
1998 10 17	327	0.6+	0.4−	1998 10 29	704	0.5−	0.2−	1998 11 14	327	0.4−	0.2+
1998 10 17	327	0.7+	0.8−	1998 10 29	704	0.5−	1.1+	1998 11 14	327	0.8−	0.4+
1998 10 17	327	0.6+	0.7−	1998 10 29	327	0.1−	0.6+	1998 11 14	327	0.0	0.6+
1998 10 17	327	0.6+	0.8−	1998 10 29	327	0.1−	0.2+				
1998 10 18	327	0.2−	0.4−	1998 10 29	327	0.4−	0.1+				

1998 UW₁₂ = 1998 QE₆ = 1997 GT₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	76.64148		(2000.0)			P		Q			
<i>n</i>	0.27075228	ω	123.63839			+0.74718713		+0.66456402			
<i>a</i>	2.3663990	Ω	194.71824			−0.61987548		+0.69242748			
<i>e</i>	0.2228868	<i>i</i>	1.83321			−0.23972022		+0.28088938			
<i>P</i>	3.64	<i>H</i>	16.0		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1997 04 03	704	0.6+	0.8−	1998 08 24	910	0.1+	0.4+	1998 10 18	691	0.8−	0.2−
1997 04 03	704	0.4−	0.0	1998 08 24	910	0.1+	0.5+	1998 10 20	699	(2.2+	1.2+)
1997 04 06	704	0.3+	0.0	1998 08 25	910	0.2+	0.2+	1998 10 20	699	1.5+	0.5+
1997 04 06	704	0.8−	0.2+	1998 08 25	910	0.4−	0.1+	1998 10 20	699	1.6+	0.5+
1997 04 07	704	0.8+	1.3+	1998 08 25	910	0.4−	0.2−	1998 10 23	691	0.2−	0.2−
1997 04 07	704	0.1−	0.4+	1998 10 18	691	0.8−	0.3−	1998 10 23	691	0.5−	0.0
1998 08 24	910	0.1+	0.2+	1998 10 18	691	0.8−	0.1−	1998 10 23	691	0.3−	0.1−

1998 UE₁₅ = 1988 NO

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	82.38546		(2000.0)		P		Q				
n	0.30879636	ω	208.19283		+0.85258523		+0.50555467				
a	2.1678103	Ω	120.83665		-0.44582426		+0.83575989				
e	0.2358897	i	8.86603		-0.27265208		+0.21428924				
P	3.19	H	15.0		G	0.15	U	5			
Residuals in seconds of arc											
1988 07 12	675	1.0-	0.2+	1998 10 23	120	0.4-	0.2-	1998 10 26	120	0.2-	0.5-
1988 07 14	675	1.0+	0.1-	1998 10 23	120	0.9+	0.5-	1998 10 26	120	0.1+	0.1+
1998 10 16	120	0.3-	0.3-	1998 10 26	120	0.6+	0.3-	1998 10 29	120	0.7+	0.1+
1998 10 16	120	0.0	0.1-	1998 10 26	120	1.0-	0.2+	1998 10 29	120	0.2-	0.9+
1998 10 16	120	0.7+	0.1+	1998 10 26	120	2.9-	0.4+	1998 11 12	120	0.4+	0.1+
1998 10 23	120	0.4+	0.0	1998 10 26	120	0.8+	0.5-	1998 11 12	120	0.4+	0.4+

1998 UO₁₅ = 1986 TY₁₈ = 1996 DQ₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	74.01076	(2000.0)		P		Q					
n	0.25276944	ω	51.30308	+0.90898023		+0.41679866					
a	2.4773441	Ω	284.06359	-0.38427934		+0.83249232					
e	0.1775035	i	0.34345	-0.16150643		+0.36501426					
P	3.90	H	15.0	G	0.15	U	5				
Residuals in seconds of arc											
1986 10 02	095	0.7-	1.7+	1998 10 26	120	0.4+	0.3+	1998 11 12	910	0.7+	0.2+
1996 02 16	010	0.6+	0.5-	1998 10 28	120	0.8-	0.8-	1998 11 12	910	0.7+	0.2+
1996 02 16	010	0.6-	0.0	1998 10 28	120	0.3-	0.2-	1998 11 12	910	0.5+	0.4+
1996 02 16	010	0.6+	0.1+	1998 10 29	120	0.9+	0.3-	1998 11 17	910	0.0	0.0
1996 02 17	010	0.2-	1.5+	1998 11 10	699	0.7-	0.3-	1998 11 17	910	0.2-	0.1+
1996 02 17	010	(2.2-	2.6+)	1998 11 10	699	0.9-	0.5-	1998 11 18	910	0.0	0.1+
1996 02 17	010	(0.2+	2.8+)	1998 11 10	699	0.7-	1.5+	1998 11 19	910	0.3-	0.1-
1998 10 20	699	0.0	1.7-	1998 11 10	910	0.6+	0.3-	1998 11 19	910	0.4-	0.0
1998 10 20	699	0.2+	0.0	1998 11 11	910	0.8+	0.3-	1998 11 19	910	0.5-	0.2-
1998 10 20	699	0.2-	0.5+	1998 11 11	910	0.6+	0.3-	1998 11 26	120	1.2-	0.1-
1998 10 23	120	0.5+	0.2-	1998 11 11	910	0.5+	0.3+	1998 11 26	120	1.2-	0.4+
1998 10 23	120	0.0	0.1-	1998 11 11	910	0.6+	0.2+				
1998 10 26	120	0.3-	0.4-	1998 11 11	910	0.6+	0.3+				

1998 UP₁₅ = 1977 EU₄ = 1992 AY₆ = 1992 CR₄ = 1992 CE₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	279.87668		(2000.0)	P			Q				
n	0.25822398	ω	74.64332	-0.93388564	-0.35341268						
a	2.4423337	Ω	84.63638	+0.30353724	-0.86392567						
e	0.0980000	i	3.13096	+0.18900466	-0.35879229						
P	3.82	H	14.3	G	0.15	U	4				
Residuals in seconds of arc											
1977 03 15	381	0.0	0.4-	1998 10 18	699	1.4-	0.5+	1998 11 11	699	0.0	0.7-
1977 03 15	381	0.1-	0.1+	1998 10 23	120	0.5-	0.0	1998 11 24	120	0.9-	0.2-
1992 01 14	877	1.1+	1.2+	1998 10 23	120	0.6+	0.5+	1998 11 24	120	0.1-	0.4-
1992 01 14	877	0.2-	1.9-	1998 10 23	120	0.5+	0.1-	1998 11 24	120	(2.2-	0.8+)
1992 02 01	372	(4.2-	1.4-)	1998 10 26	120	0.0	0.2-	1998 11 24	120	0.2+	0.4-
1992 02 01	372	0.8-	0.8+	1998 10 26	120	1.0+	0.5+	1998 11 26	120	1.2-	1.5-
1992 02 08	399	(8.7-	4.9+)	1998 10 29	120	0.4+	0.2+	1998 11 26	120	0.5-	0.8+
1992 02 08	399	(5.9-	2.4+)	1998 10 29	120	0.3+	0.3-	1998 11 26	120	0.8-	1.1+
1998 10 18	699	0.8+	0.4-	1998 11 11	699	0.4+	0.1+				
1998 10 18	699	0.6+	0.2+	1998 11 11	699	0.7+	0.1+				

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1998 DEC. 8

M.P.C. 33311

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	62.44698		(2000.0)	P		Q	
<i>n</i>	0.23968429	ω	266.16400	+0.90747718	+0.41195284		
<i>a</i>	2.5667073	Ω	69.49317	-0.34204933	+0.83833646		
<i>e</i>	0.2775453	<i>i</i>	5.04349	-0.24390042	+0.35705300		
<i>P</i>	4.11	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 01 15	691	0.1-	0.0	1998 10 23	120	0.6-	0.1-
1996 01 15	691	0.5-	0.0	1998 10 23	120	1.1+	0.4-
1996 01 15	691	0.3-	0.2-	1998 10 23	120	0.2+	0.0
1996 01 27	691	0.2+	0.2+	1998 10 27	120	1.0+	0.2+
1996 01 27	691	0.4+	0.1+	1998 10 27	120	1.0-	0.1-
1996 01 27	691	0.3+	0.0	1998 10 27	120	0.1+	2.0-
1998 10 18	699	0.1-	1.0+	1998 10 30	120	0.7-	0.1-
1998 10 18	699	0.1+	0.4+	1998 10 30	120	1.1+	0.6-
1998 10 18	699	1.0-	0.8+	1998 11 24	120	0.1-	0.0

1998 UR₁₆ = 1996 FX₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	119.31460		(2000.0)	P		Q	
<i>n</i>	0.17903502	ω	204.62496	+0.28278839	+0.95806022		
<i>a</i>	3.1177698	Ω	81.82880	-0.87208375	+0.27694312		
<i>e</i>	0.1424201	<i>i</i>	2.68576	-0.39937533	+0.07364179		
<i>P</i>	5.51	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 03 24	809	0.0	0.9-	1998 10 18	699	0.0	0.3+
1996 03 24	809	0.1+	1.3-	1998 10 18	699	0.8+	0.0
1996 03 24	809	0.6-	0.9-	1998 10 24	120	0.6-	0.9-
1996 03 26	809	0.2+	1.4+	1998 10 26	120	0.8-	0.2+
1996 03 26	809	0.1+	1.1+	1998 10 26	120	0.6+	0.1+
1996 03 26	809	0.2+	0.6+	1998 10 27	120	1.1-	0.1-
1998 10 18	699	0.7+	0.2+	1998 10 27	120	0.8-	0.0

1998 UB₁₇ = 1994 LD₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	69.33597		(2000.0)	P		Q	
<i>n</i>	0.28738191	ω	241.72387	+0.85650182	+0.31433764		
<i>a</i>	2.2742058	Ω	97.40684	-0.19151224	+0.93008560		
<i>e</i>	0.2634086	<i>i</i>	24.38275	-0.47929917	+0.19008582		
<i>P</i>	3.43	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1994 06 09	675	0.4-	1.7-	1998 10 27	703	0.2+	0.2+
1994 06 09	675	0.6+	1.4-	1998 10 28	703	0.5+	0.4+
1994 06 12	675	1.1+	1.8+	1998 10 28	703	0.3+	0.4+
1994 06 12	675	1.3-	1.1+	1998 10 29	703	0.0	0.1-
1998 10 27	703	0.7+	0.5+	1998 10 29	703	0.5+	0.1+
1998 10 27	703	0.3+	0.3+	1998 11 13	704	0.8-	0.3-

1998 UP₁₈ = 1980 RW₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	21.53192		(2000.0)	P		Q	
<i>n</i>	0.27997755	ω	157.58136	+0.51296926	-0.85315562		
<i>a</i>	2.3141273	Ω	261.44081	+0.77231424	+0.50690630		
<i>e</i>	0.0844943	<i>i</i>	5.50157	+0.37469087	+0.12317263		
<i>P</i>	3.52	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1980 09 13	675	0.6-	0.1-	1998 10 29	411	1.2+	0.1+
1980 09 14	675	0.6+	0.1+	1998 11 07	411	1.3-	1.5+
1998 10 25	411	0.1+	0.9-	1998 11 07	411	1.3-	1.7+
				1998 11 23	411	0.8+	1.2-
				1998 11 23	411	0.5+	0.5-

1998 10 25	411	0.1+	0.7-	1998 11 08	411	0.3-	0.1-
1998 10 29	411	0.5+	0.7-	1998 11 08	411	0.2+	0.6+

1998 UW₁₈ = 1977 AY₁ = 1994 AD₁₆

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	14.38325		(2000.0)	P		Q	
<i>n</i>	0.17445252	ω	8.12194	+0.65405866	-0.75354916		
<i>a</i>	3.1721317	Ω	41.06543	+0.68824521	+0.55654677		
<i>e</i>	0.1503330	<i>i</i>	5.77608	+0.31388820	+0.34988478		
<i>P</i>	5.65	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1977 01 13	095	0.4-	2.6-	1998 10 18	699	1.0-	0.7-
1994 01 14	033	0.8-	1.2+	1998 10 18	699	0.8+	0.2-
1994 01 15	033	0.8+	0.6+	1998 10 26	120	0.3-	0.8-
1994 01 15	033	0.6+	0.6+	1998 10 27	120	0.8+	0.3-
1998 10 18	699	0.9+	0.8+	1998 10 28	120	0.5-	0.0

1998 UF₁₉ = 1990 SM₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	21.61203		(2000.0)	P		Q	
<i>n</i>	0.25390962	ω	238.32749	+0.75667736	-0.65361809		
<i>a</i>	2.4699222	Ω	162.47275	+0.61536737	+0.70431342		
<i>e</i>	0.1759713	<i>i</i>	2.84075	+0.22082203	+0.27699458		
<i>P</i>	3.88	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1990 09 23	809	2.6-	0.2-	1998 10 27	120	0.1-	0.4-
1990 09 23	809	2.2-	0.2-	1998 10 27	120	1.7-	2.3+
1990 09 23	809	1.4-	0.2-	1998 10 28	120	0.9+	0.0
1990 09 23	809	1.0+	0.1+	1998 10 28	120	1.1+	0.3+
1990 09 23	809	1.5+	0.0	1998 11 06	120	0.7-	0.1-
1990 09 23	809	2.3+	0.0	1998 11 06	120	0.2+	0.2-
1990 09 24	809	0.0	0.1+	1998 11 10	704	0.4+	0.4-
1990 09 24	809	0.6+	0.1+	1998 11 10	704	1.3-	0.6+
1990 09 24	809	1.0+	0.1+	1998 11 10	704	0.2+	0.3-

1998 UR₁₉ = 1997 GA₄₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	34.77819		(2000.0)	P		Q	
<i>n</i>	0.27447498	ω	329.63400	+0.97211727	-0.16622586		
<i>a</i>	2.3449533	Ω	40.99861	+0.23129023	+0.79590088		
<i>e</i>	0.2134869	<i>i</i>	14.60286	-0.03863723	+0.58216042		
<i>P</i>	3.59	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 04 02	704	1.1+	0.3+	1998 10 17	699	0.1-	0.4-
1997 04 02	704	0.9+	1.1+	1998 10 20	699	0.3-	0.1-
1997 04 02	704	0.6-	0.2-	1998 10 20	699	0.3-	0.3+
1997 04 02	704	1.6+	0.5+	1998 10 20	699	0.9-	0.7+
1997 04 02	704	0.1+	0.2+	1998 10 28	704	0.2-	0.1-
1997 04 02	704	0.2-	1.7-	1998 10 28	704	0.2+	0.3+
1997 04 08	704	0.9-	0.7+	1998 10 28	704	1.8+	0.1-
1997 04 08	704	1.2-	0.0	1998 10 28	704	0.4+	1.3+
1997 04 08	704	0.5-	0.4-	1998 10 29	704	0.0	0.4-
1997 04 08	704	0.5-	0.7-	1998 10 29	704	0.5+	0.0
1998 10 17	699	0.1-	0.3-	1998 10 29	704	0.5-	0.2-
1998 10 17	699	0.2-	0.5-	1998 10 29	704	0.2+	0.3-

1998 UW₁₉ = 1995 ES₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17967297	ω	0.97970	+0.93034021	−0.36652743		
<i>a</i>	3.1103855	Ω	20.53287	+0.33622149	+0.84046744		
<i>e</i>	0.0590982	<i>i</i>	1.82478	+0.14636328	+0.39908913		
<i>P</i>	5.49	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 03 02	691	0.2+	0.1−	1998 10 29	120	1.0+	0.5−	1998 11 10	910	0.2+	0.3+
1995 03 02	691	0.4+	0.2−	1998 10 30	120	0.0	1.0−	1998 11 10	910	0.1+	0.3+
1995 03 02	691	0.1−	0.1+	1998 11 09	910	0.5−	0.2+	1998 11 11	910	1.0+	0.4−
1995 03 07	691	0.4+	0.3+	1998 11 09	910	0.5−	0.3+	1998 11 11	910	1.1+	0.3−
1995 03 07	691	0.5−	0.1−	1998 11 10	910	0.6−	0.4+	1998 11 11	910	1.0+	0.2−
1995 03 07	691	0.3−	0.1−	1998 11 10	699	1.1−	0.9−	1998 11 12	910	0.6+	0.1+
1998 10 23	120	0.5+	0.4+	1998 11 10	699	0.9−	0.6+	1998 11 12	910	0.4+	0.1−
1998 10 23	120	0.5−	0.3+	1998 11 10	699	2.0−	0.4+	1998 11 12	910	0.4+	0.1+
1998 10 29	120	0.1−	0.4−	1998 11 10	910	0.1+	0.3+				

1998 UZ₁₉ = 1993 QE

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21863336	ω	358.56300	+0.96640069	−0.25692805		
<i>a</i>	2.7289260	Ω	16.33094	+0.23609848	+0.87559554		
<i>e</i>	0.1733780	<i>i</i>	1.54780	+0.10162292	+0.40904819		
<i>P</i>	4.51	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 08 16	691	0.2−	0.0	1998 10 19	699	0.2−	0.5+	1998 11 10	704	0.1+	0.2+
1993 08 16	691	0.2−	0.0	1998 10 19	699	0.0	1.2+	1998 11 10	704	0.6+	1.8−
1993 08 16	691	0.3−	0.0	1998 10 26	120	0.3−	0.1−	1998 11 11	704	0.5−	1.0+
1993 08 18	691	0.0	0.1−	1998 10 27	120	0.8+	0.9−	1998 11 11	704	0.8−	0.1+
1993 08 18	691	0.4+	0.1+	1998 10 28	120	0.2−	0.8−	1998 11 11	704	0.0	0.4−
1993 08 18	691	0.3+	0.1−	1998 10 29	120	0.9+	0.4−	1998 11 14	376	0.1+	0.4+
1998 10 19	699	0.8−	0.3+	1998 11 10	704	0.9+	0.6+	1998 11 14	376	0.8−	0.1+

1998 UD₂₀ = 1997 MH₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17745361	ω	211.51688	+0.95056867	+0.30261504		
<i>a</i>	3.1362655	Ω	130.70426	−0.26237926	+0.90264130		
<i>e</i>	0.2011670	<i>i</i>	5.26731	−0.16606123	+0.30604383		
<i>P</i>	5.55	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 29	704	0.5+	2.5−	1997 07 02	704	0.2−	0.9+	1998 10 19	809	0.9+	0.3−
1997 06 29	704	0.5+	0.9−	1997 07 02	704	1.0−	0.9+	1998 10 28	120	1.1−	0.4+
1997 06 29	704	1.8+	0.4+	1998 10 18	809	0.5−	0.5+	1998 10 28	120	0.8−	0.3+
1997 06 29	704	0.2−	0.0	1998 10 18	809	0.7−	1.0−	1998 10 29	120	1.7+	0.8+
1997 07 02	704	0.4−	0.5+	1998 10 18	809	0.7−	0.4+	1998 10 30	120	(4.8+	2.7−)
1997 07 02	704	0.5−	0.5+	1998 10 19	809	0.8+	0.8−	1998 10 30	120	0.7−	1.5+
1997 07 02	704	0.4−	0.2+	1998 10 19	809	1.0+	1.8−	1998 10 30	120	(2.9−	0.1+)

1998 UK₂₀ = 1975 WT₁ = 1980 XM₁ = 1991 CH₃ = 1996 DE₃

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21813902	ω	230.36885	−0.32511068	+0.94093200		
<i>a</i>	2.7330473	Ω	21.24430	−0.76781361	−0.20424020		
<i>e</i>	0.1133184	<i>i</i>	15.13471	−0.55205553	−0.27006095		
<i>P</i>	4.52	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1975 11 26	381	0.6+	0.5+	1996 03 03	107	1.2+	0.0	1998 10 28	399	0.3−	0.2−
1975 11 26	381	0.0	1.4−	1996 03 03	107	0.4+	0.1−	1998 11 12	399	0.5+	0.3−
1980 12 10	095	(3.6−	0.6+)	1998 10 20	399	1.0−	1.5+	1998 11 12	399	0.6+	0.7+
1991 02 07	675	(0.1+	2.1−)	1998 10 20	399	0.8+	0.7−	1998 11 18	399	0.9+	0.3−
1991 02 09	675	0.3−	1.2−	1998 10 25	399	1.7−	1.3+	1998 11 18	399	0.7+	0.2+
1996 02 24	107	0.5−	0.7+	1998 10 25	399	0.3−	0.2−	1998 11 19	399	1.0−	1.2−
1996 02 24	107	0.3−	0.5+	1998 10 28	399	1.2−	0.6+	1998 11 19	399	0.9+	0.1+

1998 UL₂₀ = 1982 VG = 1987 QM₃ = 1987 SP₂₆

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	95.76513	ω	79.22507	+0.79166632	+0.59488378		
<i>a</i>	3.0206720	Ω	244.12608	−0.60337381	+0.72550001		
<i>e</i>	0.1108693	<i>i</i>	8.90014	−0.09593997	+0.34606793		
<i>P</i>	5.25	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 11 11	046	2.2−	1.2−	1998 10 28	358	(0.8−	2.6+)	1998 11 21	704	0.3+	0.1+
1982 11 11	046	0.6+	0.7−	1998 10 28	358	(0.1−	2.3+)	1998 11 21	704	0.1+	0.0
1982 11 12	046	1.6+	0.7−	1998 10 29	358	(2.4−	1.6−)	1998 11 21	704	0.0	0.6+
1982 11 12	046	0.5+	0.2+	1998 10 29	358	0.2+	0.5+	1998 11 21	704	0.5+	1.0+
1987 08 30	010	0.5+	0.1−	1998 10 29	358	0.5−	0.1−	1998 11 21	704	0.2+	0.0
1987 08 30	010	0.5+	0.2−	1998 11 12	399	0.8+	0.5−	1998 11 24	704	0.1−	0.4+
1987 09 26	095	1.0−	1.0+	1998 11 18	399	1.6−	0.3−	1998 11 24	704	1.4+	1.4−
1998 10 26	358	0.0	0.9+	1998 11 18	399	0.6−	0.5+	1998 11 24	704	0.5+	0.9−
1998 10 26	358	0.5+	1.0+	1998 11 19	399	0.3+	1.5+	1998 11 24	704	0.0	1.2−
1998 10 26	358	(0.7−	3.4+)	1998 11 19	399	1.2−	1.7+	1998 11 24	704	0.6−	1.9−

1998 UN₂₀ = 1987 SX₉ = 1994 RR = 1995 YX₂₂ = 1997 GZ₄₁

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27741222	ω	171.33131	+0.13488219	+0.99000877		
<i>a</i>	2.3283718	Ω	106.41282	−0.91164739	+0.14024433		
<i>e</i>	0.1977514	<i>i</i>	2.45580	−0.38820848	+0.01463434		
<i>P</i>	3.55	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 09 29	033	1.2−	0.9+	1997 04 09	809	(2.8−	0.1+)	1998 10 30	120	0.0	0.1−
1987 09 29	033	0.7+	1.4+	1997 04 09	809	(3.4−	0.6−)	1998 10 30	120	0.3−	0.0
1994 09 01	400	0.9−	0.5−	1997 04 09	809	(3.6−	0.7−)	1998 11 11	699	0.5+	0.2−
1994 09 01	400	0.3−	0.6−	1997 04 10	809	(2.4−	2.3−)	1998 11 11	699	0.9+	0.2−
1994 09 06	400	1.3+	0.2−	1997 04 10	809	(2.6−	2.9−)	1998 11 11	699	(2.3+	3.8+)
1994 09 06	400	0.5−	0.3+	1997 04 10	809	(2.8−	3.2−)	1998 11 17	552	1.3−	0.7−
1995 12 21	566	1.2+	0.7+	1997 04 11	809	(1.5+	2.9+)	1998 11 17	552	1.3−	0.4−
1995 12 21	566	0.4+	1.0+	1997 04 11	809	(1.5+	2.4+)	1998 11 19	552	0.3−	0.3−
1995 12 21	566	0.5+	0.8+	1997 04 11	809	1.1+	1.6+	1998 11 19	552	0.8−	0.4+
1995 12 23	566	0.8−	0.0	1997 04 12	809	0.3+	1.6+	1998 11 26	120	0.4−	0.6+
1995 12 23	566	0.3−	0.4−	1997 04 12	809	(0.2−	3.1+)	1998 11 26	120	0.2−	0.0
1995 12 23	566	0.6−	0.4−	1997 04 12	809	(0.6−	3.9+)	1998 11 29	120	0.3+	0.9+
1995 12 24	566	0.6−	0.5−	1998 10 23	120	0.2+	0.8+	1998 11 29	120	(1.5−	2.4−)
1995 12 24	566	0.5−	1.0−	1998 10 23	120	0.0	0.7+	1998 11 29	120	1.3+	1.3+
1995 12 24	566	0.1+	0.9−	1998 10 23	120	1.3+	0.4+				

1998 UR₂₀ = 1978 RW₁₂ = 1991 GC₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20450698	ω	25.96590	+0.75212797	+0.65882461		
<i>a</i>	2.8531896	Ω	292.81439	−0.60760570	+0.68389237		
<i>e</i>	0.0094768	<i>i</i>	0.99002	−0.25518391	+0.31343477		
<i>P</i>	4.82	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 09 06	809	0.1−	0.1+	1998 10 30	120	0.5−	0.3+	1998 11 11	910	0.3−	0.1−
1991 04 08	809	1.1+	0.5−	1998 10 30	120	0.1+	0.7+	1998 11 11	910	0.4−	0.0
1991 04 08	809	0.4+	0.8+	1998 11 10	699	0.1−	0.3−	1998 11 12	557	0.5−	0.0
1991 04 08	809	2.8−	0.1+	1998 11 10	699	1.2−	0.1+	1998 11 12	557	0.8−	0.2+
1991 04 10	809	0.8+	0.7+	1998 11 10	699	0.2+	0.2−	1998 11 12	557	0.8−	0.2+
1991 04 10	809	0.0	0.7−	1998 11 10	910	0.5+	0.3+	1998 11 12	910	1.2+	0.2−
1991 04 10	809	0.5+	0.3−	1998 11 10	910	0.4+	0.5+	1998 11 12	910	1.5+	0.3−
1998 10 18	699	1.5+	0.5+	1998 11 10	910	0.6+	0.4+	1998 11 12	910	1.3+	0.3−
1998 10 18	699	0.1−	1.6−	1998 11 10	910	0.7+	0.5+	1998 11 14	557	0.9−	0.1+
1998 10 18	699	1.2−	0.0	1998 11 11	910	0.5+	0.6+	1998 11 14	557	1.1−	0.3−
1998 10 29	120	0.1+	1.1−	1998 11 11	910	0.4+	0.5+				
1998 10 29	120	0.6−	0.5−	1998 11 11	910	0.5−	0.1−				

1998 UV₂₀ = 1953 ED₂ = 1972 TX₅ = 1992 JM₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	271.20239		(2000.0)	P	Q
<i>n</i>	0.23112147	ω	299.22306	−0.93947151	−0.30868554
<i>a</i>	2.6297180	Ω	223.27616	+0.33732107	−0.90937167
<i>e</i>	0.0729723	<i>i</i>	12.52653	−0.06006475	−0.27884835
<i>P</i>	4.26	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1953 03 09	675	0.3−	1.6+	1998 10 18	699	0.5+	0.5+	1998 11 10	704	0.6−	0.0
1953 03 09	675	0.7+	0.1−	1998 10 18	699	0.0	0.6+	1998 11 11	699	0.2+	1.3+
1972 10 06	095	0.1−	0.3+	1998 10 18	699	0.3+	0.6+	1998 11 11	704	0.0	1.3+
1992 05 02	809	0.9−	3.2+	1998 10 29	120	0.2+	0.4+	1998 11 11	704	0.4+	0.9+
1992 05 02	809	0.7−	2.8+	1998 10 29	120	0.1+	0.5+	1998 11 11	699	0.2+	1.0+
1992 05 02	809	0.8−	1.8+	1998 10 30	120	0.5−	0.1−	1998 11 11	704	0.2+	1.3+
1992 05 03	809	0.8+	1.5+	1998 10 30	120	0.2−	0.3+	1998 11 11	699	0.4+	1.0+
1992 05 03	809	0.2+	1.7+	1998 11 10	704	1.3−	1.2+	1998 11 26	120	0.6+	0.7+
1992 05 03	809	1.3+	1.3+	1998 11 10	704	1.1−	0.4+	1998 11 26	120	0.0	0.9+

1998 UZ₂₀ = 1993 FH₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	59.21204		(2000.0)	P	Q
<i>n</i>	0.27691003	ω	315.32090	+0.99676863	+0.02946365
<i>a</i>	2.3311860	Ω	43.15758	+0.00901157	+0.88340970
<i>e</i>	0.1331382	<i>i</i>	6.27206	−0.07981913	+0.46767424
<i>P</i>	3.56	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 17	809	0.6+	0.8−	1998 11 11	910	1.5+	0.2+	1998 11 12	106	0.5−	0.2+
1993 03 18	809	0.6−	0.7+	1998 11 11	910	1.6+	0.3+	1998 11 12	106	0.2−	0.1+
1998 10 29	120	0.1−	0.1−	1998 11 11	910	1.1+	0.1−	1998 11 13	106	0.5−	0.5+
1998 10 29	120	0.8+	0.0	1998 11 11	910	1.0+	0.4−	1998 11 13	106	0.6−	0.9−
1998 10 30	120	0.8−	0.7−	1998 11 11	910	1.1+	0.3−	1998 11 13	106	0.8−	0.2−
1998 10 30	120	0.1+	0.8+	1998 11 12	557	0.4−	0.2−	1998 11 13	106	1.6−	0.8+
1998 11 10	699	0.6+	0.2+	1998 11 12	557	0.3−	0.3−	1998 11 14	557	0.4−	0.0
1998 11 10	699	0.9−	0.6−	1998 11 12	557	0.3−	0.3−	1998 11 14	557	0.8−	0.3+
1998 11 10	699	0.3−	0.5+	1998 11 12	106	(2.6−	0.8+)				
1998 11 10	910	1.5+	0.2+	1998 11 12	106	0.8−	0.1+				

1998 UX₂₂ = 1994 WE₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	14.21668		(2000.0)	P	Q
<i>n</i>	0.23742233	ω	353.94973	+0.56117101	−0.82621704
<i>a</i>	2.5829838	Ω	61.90330	+0.76173406	+0.49211500
<i>e</i>	0.1225623	<i>i</i>	3.21819	+0.32380290	+0.27420473
<i>P</i>	4.15	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 11 27	010	0.9−	1.0+	1998 10 31	120	0.1+	0.1+	1998 11 16	691	1.0−	0.2−
1994 11 27	010	1.0−	0.6+	1998 10 31	120	1.7−	0.0	1998 11 17	910	1.3+	0.4+
1994 11 28	010	0.3−	0.3+	1998 10 31	120	0.7−	0.6+	1998 11 17	910	1.5+	0.4+

1994 11 28	010	1.0+	0.3−	1998 11 10	699	0.6+	0.7−	1998 11 18	910	1.5+	0.3+
1994 11 28	010	0.8+	1.2−	1998 11 10	699	0.6−	0.9+	1998 11 19	910	1.4+	0.4+
1994 11 29	010	0.4+	0.8−	1998 11 10	699	1.5+	1.2+	1998 11 19	910	1.5+	0.3+
1998 10 18	699	0.1+	0.4+	1998 11 14	691	(2.3−	0.0)	1998 11 19	910	1.5+	0.3+
1998 10 18	699	1.2+	0.9−	1998 11 14	691	(2.3−	0.2−)	1998 11 23	691	1.9−	0.3−
1998 10 18	699	0.3+	0.4−	1998 11 14	691	(2.5−	0.1−)	1998 11 23	691	1.7−	0.2−
1998 10 30	120	0.6−	1.3−	1998 11 16	691	1.0−	0.4−	1998 11 23	691	1.9−	0.2−
1998 10 30	120	0.6−	0.1−	1998 11 16	691	1.0−	0.3−				

1998 UY₂₂ = 1991 RP₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	47.06549		(2000.0)	P	Q
<i>n</i>	0.28975770	ω	332.94793	+0.97738287	−0.20755442
<i>a</i>	2.2617576	Ω	39.09921	+0.20379385	+0.87318896
<i>e</i>	0.2076583	<i>i</i>	3.68603	+0.05648707	+0.44097869
<i>P</i>	3.40	<i>H</i>	16.1	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1991 09 14	675	0.6+	0.3+	1998 10 31	120	2.0+	0.5−	1998 11 11	704	0.2+	0.7−
1991 09 14	675	0.2−	0.5+	1998 11 10	704	0.2−	0.3+	1998 11 18	704	0.3+	0.5−
1991 09 16	675	0.2−	0.0	1998 11 10	704	1.4−	1.4+	1998 11 18	704	1.5−	1.3+
1991 09 16	675	0.4−	0.6−	1998 11 10	704	0.3+	1.5−	1998 11 18	704	0.3+	0.2+
1998 10 30	120	1.6+	0.1+	1998 11 10	704	0.7+	1.6−	1998 11 21	704	0.4+	1.1+
1998 10 30	120	0.4+	0.2+	1998 11 11	704	0.0	0.3+	1998 11 21	704	0.7+	0.8+
1998 10 31	120	0.2−	0.5+	1998 11 11	704	0.7−	0.0	1998 11 21	704	(2.3+	0.6+)
1998 10 31	120	1.1−	0.7−	1998 11 11	704	1.6−	1.3−	1998 11 21	704	0.1−	0.5+

1998 UB₂₃ = 1993 FJ₃₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	39.85095		(2000.0)	P	Q
<i>n</i>	0.28075295	ω	343.09831	+0.90448118	−0.42260559
<i>a</i>	2.3098644	Ω	42.05110	+0.40059151	+0.79535933
<i>e</i>	0.1670870	<i>i</i>	4.93376	+0.14642487	+0.43452048
<i>P</i>	3.51	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 19	809	0.8−	0.7+	1998 11 10	704	0.3+	1.5−	1998 11 18	704	0.5−	0.5−
1993 03 20	809	0.3+	0.7−	1998 11 10	704	0.1−	1.7−	1998 11 18	704	0.3−	1.4−
1993 03 24	809	0.4+	0.1−	1998 11 10	699	0.6+	1.2+	1998 11 18	704	0.9−	0.6−
1998 10 30	120	0.3−	0.4+	1998 11 10	704	1.0+	1.0−	1998 11 21	704	0.0	0.2+
1998 10 31	120	0.3−	0.8+	1998 11 10	699	0.5+	0.3+	1998 11 21	704	0.0	0.9+
1998 10 31	120	0.2+	0.1+	1998 11 11	704	0.4+	0.9−	1998 11 21	704	0.2−	1.3+
1998 10 31	120	0.2+	0.0	1998 11 11	704	0.1−	0.9−	1998 11 21	704	0.1+	2.0+
1998 10 31	120	0.5−	0.4+	1998 11 11	704	0.3−	0.4−	1998 11 21	704	(0.5+	2.6+)
1998 11 10	699	0.2+	2.0+	1998 11 18	704	0.1−	0.2−				
1998 11 10	704	0.3+	0.2−	1998 11 18	704	0.3−	0.6−				

1998 UC₂₃ = 1994 RO₂₂

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	47.38024		(2000.0)	P	Q
<i>n</i>	0.27038745	ω	88.24828	+0.97372097	−0.20766949
<i>a</i>	2.3685271	Ω	283.72946	+0.15113104	+0.89630576
<i>e</i>	0.1392520	<i>i</i>	5.52284	+0.17037278	+0.39180271
<i>P</i>	3.65	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 09 03	033	0.3−	0.1−	1998 10 25	098	0.3−	0.3−	1998 11 12	905	0.4+	0.5−
1994 09 04	033	0.7+	0.2+	1998 10 31	112	0.3+	0.2+	1998 11 12	905	1.0−	0.6+
1994 09 09	033	1.2+	0.2+	1998 10 31	112	0.1+	0.3−	1998 11 19	886	0.5+	0.2−
1994 09 09	033	1.5−	0.3−	1998 11 11	905	0.2−	0.3−	1998 11 19	886	0.6−	0.3−
1998 10 25	098	0.3+	1.5+	1998 11 11	905	0.6+	0.2−				

1998 UL₂₃ = 1996 FC₅

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	5.86801		(2000.0)	P		Q	
<i>n</i>	0.25806004	ω	13.42846	+0.28656703		−0.95636610	
<i>a</i>	2.4433680	Ω	59.94504	+0.87281327		+0.23609544	
<i>e</i>	0.1476949	<i>i</i>	3.77255	+0.39506498		+0.17211284	
<i>P</i>	3.82	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 26	691	0.6−	0.2+	1998 11 17	610	1.5+	0.8+	1998 11 21	704	0.5+	0.3+
1996 03 26	691	0.1−	0.2+	1998 11 17	610	0.9+	0.4+	1998 11 24	704	0.3−	0.3−
1996 03 26	691	0.4−	0.0	1998 11 17	610	0.4+	0.2+	1998 11 24	704	0.1−	1.0−
1996 03 28	120	0.7−	0.8−	1998 11 17	610	0.2−	0.1−	1998 11 24	704	1.5+	1.2−
1996 03 28	120	0.1+	0.4−	1998 11 17	610	0.8−	0.4−	1998 11 24	704	0.6+	1.2−
1996 03 28	120	0.8+	0.1+	1998 11 19	610	1.2+	0.7+	1998 11 24	704	0.5−	1.8−
1996 03 29	120	(2.4+	0.8−)	1998 11 20	610	0.4−	0.7+	1998 11 28	358	0.8−	0.1−
1996 03 29	120	0.9+	0.7+	1998 11 20	610	1.5−	0.8+	1998 11 28	358	(2.7−	0.1−)
1998 10 26	358	0.4−	0.1−	1998 11 20	610	(2.9−	0.9+)	1998 11 28	358	0.2−	0.5−
1998 10 26	358	1.1+	1.5−	1998 11 20	610	(4.0−	1.0+)	1998 11 29	358	(2.7+	0.7+)
1998 10 29	358	1.0−	1.4+	1998 11 21	704	0.8−	0.7+	1998 11 29	358	1.0−	0.6+
1998 11 01	358	(2.3−	1.6−)	1998 11 21	704	0.6−	0.2+	1998 11 29	358	1.1+	0.7+
1998 11 01	358	0.2+	0.7−	1998 11 21	704	0.4−	0.0				
1998 11 01	358	(2.8−	1.1−)	1998 11 21	704	0.2+	1.2+				

1998 UN₂₃ = 1975 VV₄ = 1977 DQ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	2.86140		(2000.0)	P		Q	
<i>n</i>	0.17237884	ω	330.19704	+0.33956024		−0.93987471	
<i>a</i>	3.1975211	Ω	99.93236	+0.87013533		+0.29914334	
<i>e</i>	0.1372881	<i>i</i>	2.12530	+0.35716012		+0.16476893	
<i>P</i>	5.72	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1975 11 02	095	0.1−	0.2+	1998 11 01	358	(1.3+	2.2−)	1998 11 24	704	0.3+	0.4+
1977 02 18	381	0.1−	0.6+	1998 11 12	727	0.6−	0.4+	1998 11 24	704	0.0	0.3−
1977 02 18	381	0.1−	1.1−	1998 11 12	727	0.3−	0.3−	1998 11 24	704	0.5+	0.2−
1977 02 19	381	0.2+	0.4+	1998 11 12	727	0.3−	0.2+	1998 11 24	704	0.0	0.4−
1977 02 19	381	0.0	0.1+	1998 11 21	704	0.5−	0.4−	1998 11 26	358	0.8−	0.0
1998 10 26	358	(2.9+	0.8+)	1998 11 21	704	0.3−	0.4−	1998 11 26	358	1.2−	0.3−
1998 10 26	358	1.3+	1.1−	1998 11 21	704	0.4+	0.2−	1998 11 29	358	0.8+	0.0
1998 10 28	358	0.2+	2.0−	1998 11 21	704	0.6+	0.8+	1998 11 29	358	0.7+	0.2−
1998 11 01	358	0.5−	1.7+	1998 11 21	704	1.1+	0.6+	1998 11 29	358	0.3−	0.5+
1998 11 01	358	1.3−	1.1+	1998 11 24	704	0.2+	0.2+				

1998 UE₂₄ = 1997 LT₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	21.72134		(2000.0)	P		Q	
<i>n</i>	0.27634447	ω	313.06955	+0.83529769		−0.53388771	
<i>a</i>	2.3343656	Ω	79.60727	+0.53522327		+0.73499702	
<i>e</i>	0.0942035	<i>i</i>	7.67176	+0.12575303		+0.41802308	
<i>P</i>	3.57	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 08	809	0.5+	0.2+	1998 10 17	699	0.5+	0.1−	1998 11 10	704	0.2+	0.4−
1997 06 08	809	0.5+	0.2−	1998 10 17	699	0.5+	0.1+	1998 11 10	704	0.2−	0.5−
1997 06 08	809	1.2+	0.1−	1998 10 20	699	0.1−	0.9−	1998 11 11	704	1.3+	2.0+
1997 06 09	809	0.5−	0.5+	1998 10 20	699	0.4−	0.5+	1998 11 11	704	0.9+	0.7−
1997 06 09	809	1.3−	0.1−	1998 10 20	699	0.5−	0.1−	1998 11 11	704	0.2−	0.4+
1997 06 09	809	0.4−	0.3−	1998 11 10	704	0.2−	1.5−	1998 11 11	704	0.9−	0.5+
1998 10 17	699	0.1−	0.7+	1998 11 10	704	0.7−	0.1+				

1998 UO₂₄ = 1989 VD₆ = 1996 LC₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	0.80890		(2000.0)	P		Q	
<i>n</i>	0.22215196	ω	227.79890	+0.32965644		−0.94306734	
<i>a</i>	2.7000344	Ω	203.06541	+0.89601877		+0.32726371	
<i>e</i>	0.1243086	<i>i</i>	6.47276	+0.29745082		+0.05935031	
<i>P</i>	4.44	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 11 03	675	0.3+	0.4−	1996 06 08	809	0.4−	0.7−	1998 10 20	699	0.6−	1.0−
1989 11 03	675	0.4+	0.5+	1996 06 08	809	0.6+	0.4−	1998 10 20	699	0.2+	0.1+
1989 11 04	675	0.2−	0.5−	1996 06 10	809	2.0+	1.1−	1998 10 20	699	0.2−	0.6−
1989 11 04	675	0.5−	0.0	1996 06 10	809	0.9+	0.7−	1998 11 18	399	1.5+	1.5+
1996 04 17	809	1.7−	0.2−	1996 06 10	809	0.7+	1.5−	1998 11 18	399	0.2−	0.2+
1996 04 17	809	2.5−	0.3−	1998 10 18	699	0.6+	1.0−	1998 11 19	399	0.2+	0.9−
1996 04 17	809	2.1−	0.2−	1998 10 18	699	0.2−	1.5−	1998 11 19	399	2.1−	0.1−
1996 06 08	809	2.0+	1.0−	1998 10 18	699	1.5+	1.6−				

1998 UR₂₄ = 1992 RX₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	27.27282		(2000.0)	P		Q	
<i>n</i>	0.17548008	ω	295.58628	+0.87657096		−0.47944708	
<i>a</i>	3.1597363	Ω	93.08780	+0.45523973		+0.79777920	
<i>e</i>	0.2336510	<i>i</i>	2.40368	+0.15614139		+0.36562119	
<i>P</i>	5.62	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 09 02	809	0.3+	0.3+	1998 10 20	699	0.0	1.2−	1998 11 21	704	1.7−	0.7+
1992 09 02	809	0.4+	0.4−	1998 11 11	699	0.8+	0.7+	1998 11 21	704	0.1−	0.9+
1992 09 02	809	0.2−	0.3+	1998 11 11	699	1.2+	0.8−	1998 11 21	704	1.1+	1.0+
1992 09 03	809	0.5−	0.3−	1998 11 11	699	0.4+	1.4+	1998 11 21	704	(0.3−	3.6+)
1998 10 18	699	0.3−	1.1+	1998 11 18	704	1.2−	0.9+	1998 11 28	120	0.7−	0.6−
1998 10 18	699	0.3−	0.0	1998 11 18	704	0.3−	0.2−	1998 11 28	120	1.1+	1.6−
1998 10 18	699	0.6−	1.0−	1998 11 18	704	0.0	0.6+	1998 11 29	120	0.3−	1.1−
1998 10 20	699	1.7+	0.7−	1998 11 18	704	1.8−	1.3+	1998 11 29	120	0.6+	1.2−
1998 10 20	699	0.6−	0.6+	1998 11 18	704	0.8−	0.7−	1998 11 29	120	1.8+	0.2−

1998 US₂₄ = 1996 RX₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	336.77323		(2000.0)	P		Q	
<i>n</i>	0.08242980	ω	353.84417	−0.00339926		−0.99337555	
<i>a</i>	5.2289346	Ω	96.30968	+0.92233562		−0.04749512	
<i>e</i>	0.1060481	<i>i</i>	6.63609	+0.38637475		+0.10463856	
<i>P</i>	11.96	<i>H</i>	11.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 09 12	809	0.3−	0.3−	1998 10 18	699	0.4+	0.6−	1998 11 21	704	0.2−	0.7−
1996 09 13	809	0.1−	0.5+	1998 10 20	699	0.3−	0.8−	1998 11 21	704	0.6+	0.1−
1996 09 13	809	0.0	0.5+	1998 10 20	699	0.9−	0.9+	1998 11 21	704	0.2−	0.5−
1996 09 14	809	0.3+	0.3−	1998 10 20	699	0.1+	0.4+	1998 11 21	704	0.4−	0.0
1996 09 14	809	0.3+	0.3−	1998 11 11	699	0.4−	0.3+	1998 11 24	704	0.7+	0.2+
1996 09 16	809	0.2−	0.0	1998 11 11	699	1.0+	0.5+	1998 11 24	704	0.1+	0.0
1998 10 18	699	0.0	0.7−	1998 11 11	699	0.1−	0.7+	1998 11 24	704	0.8−	0.1−
1998 10 18	699	0.5+	0.5+	1998 11 21	704	0.3+	0.4−	1998 11 24	704	0.5−	0.2+

1998 UV₂₄ = 1978 WV₇ = 1996 HA₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	28.59048		(2000.0)	P		Q	
<i>n</i>	0.19470197	ω	331.42045	+0.89945515		−0.43520466	
<i>a</i>	2.9481924	Ω	54.43210	+0.40966942		+0.80804576	
<i>e</i>	0.0803667	<i>i</i>	2.79858	+0.15215584		+0.39706290	
<i>P</i>	5.06	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 11 29	675	0.3+	0.2-	1996 04 18	809	0.7+	1.1-	1998 11 06	120	0.4+	0.1+
1978 11 30	675	0.1-	0.8-	1998 10 18	699	0.4-	0.1+	1998 11 06	120	1.0+	0.4-
1996 04 17	809	1.0+	1.6+	1998 10 18	699	0.5+	0.7-	1998 11 15	120	0.2-	0.6+
1996 04 17	809	0.2+	1.9+	1998 10 18	699	0.2+	0.0	1998 11 15	120	0.1+	0.4+
1996 04 17	809	0.0	1.8+	1998 10 19	699	0.2+	0.1+	1998 11 25	691	1.3-	0.8+
1996 04 18	809	0.7-	1.5-	1998 10 19	699	0.6+	0.1-	1998 11 25	691	0.8-	0.7+
1996 04 18	809	0.7-	1.4-	1998 10 19	699	0.5-	0.2-	1998 11 25	691	0.8-	0.7+

1998 UZ₂₄ = 1975 VB₈ = 1993 SM₁₅ = 1995 BL₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	45.22157		(2000.0)	P	Q		
<i>n</i>	0.21589125	ω	318.73335	+0.92268077	-0.37312260		
<i>a</i>	2.7519847	Ω	63.42089	+0.37608887	+0.81543793		
<i>e</i>	0.1690935	<i>i</i>	6.23690	+0.08495510	+0.44253870		
<i>P</i>	4.57	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 11 06	095	0.6+	1.3-	1995 02 03	033	0.8+	0.8-	1998 11 08	426	0.2-	0.2+
1993 09 19	675	0.1-	0.5-	1998 10 25	426	0.3-	0.1-	1998 11 14	426	0.1+	0.5+
1993 09 19	675	0.0	0.7+	1998 10 25	426	0.0	0.0	1998 11 14	426	1.1+	0.2-
1993 09 23	675	0.4-	0.3-	1998 10 25	426	0.3-	0.1-	1998 11 14	426	0.3+	0.3-
1993 09 23	675	0.2+	0.7+	1998 11 08	426	0.0	0.4-	1998 11 16	426	0.7-	0.5+
1995 01 31	033	0.3-	0.3+	1998 11 08	426	0.9+	0.8+	1998 11 16	426	0.4-	0.2+
1995 01 31	033	0.5-	0.6+	1998 11 08	426	0.5-	0.3-	1998 11 16	426	0.2-	0.2+

1998 UC₂₆ = 1993 RE₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	130.12431		(2000.0)	P	Q		
<i>n</i>	0.21293326	ω	103.68692	+0.26047736	+0.96547510		
<i>a</i>	2.7774125	Ω	181.42240	-0.92662712	+0.24910348		
<i>e</i>	0.0321154	<i>i</i>	7.08448	-0.27113415	+0.07619240		
<i>P</i>	4.63	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 09 15	809	1.9+	0.1-	1993 09 18	809	1.3-	0.8-	1998 10 19	809	1.5+	2.2+
1993 09 15	809	1.7+	0.6-	1993 09 22	675	2.1-	2.4+	1998 11 10	704	0.1+	0.5+
1993 09 15	809	1.5+	0.2+	1993 09 22	675	2.0-	1.3-	1998 11 10	704	2.1-	0.4+
1993 09 17	809	1.4+	1.4+	1998 10 18	809	0.0	0.3-	1998 11 10	704	1.3-	2.2-
1993 09 17	809	1.3+	1.4+	1998 10 18	809	0.3-	1.3-	1998 11 11	704	1.3+	0.0
1993 09 17	809	0.8-	0.3-	1998 10 18	809	1.2-	0.4-	1998 11 11	704	0.5-	0.2+
1993 09 18	809	0.5+	0.5-	1998 10 19	809	1.6+	1.9+	1998 11 11	704	0.8+	0.3-
1993 09 18	809	2.0-	2.0-	1998 10 19	809	1.3+	1.2+	1998 11 11	704	1.1-	1.7-

1998 UJ₂₆ = 1992 SU₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	10.21151		(2000.0)	P	Q		
<i>n</i>	0.17535986	ω	271.92193	+0.68045628	-0.72921813		
<i>a</i>	3.1611802	Ω	134.90933	+0.70633784	+0.62644703		
<i>e</i>	0.1824754	<i>i</i>	5.85532	+0.19510540	+0.27532715		
<i>P</i>	5.62	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 09 22	809	0.4+	0.4+	1998 10 18	809	0.1-	1.0-	1998 11 10	704	0.3+	0.9-
1992 09 22	809	1.3-	0.6-	1998 10 18	809	0.7-	1.1-	1998 11 10	704	1.0+	2.1+
1992 09 22	809	0.6+	0.3-	1998 10 19	809	1.2+	0.9+	1998 11 10	704	0.9+	1.4+
1992 09 23	809	0.5-	0.1-	1998 10 19	809	0.5-	0.2-	1998 11 11	704	1.4-	0.1-
1992 09 23	809	0.2+	0.2+	1998 10 19	809	0.6-	0.2+	1998 11 11	704	0.2-	0.6-
1992 09 23	809	0.5+	0.5+	1998 11 10	704	0.7+	0.1+	1998 11 11	704	2.0-	1.0-
1998 10 18	809	0.6+	0.1+	1998 11 10	704	0.8+	0.1-				

1998 UM₂₆ = 1991 RB₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	108.31593		(2000.0)	P	Q		
<i>n</i>	0.29117750	ω	169.56948	+0.44265588	+0.89403949		
<i>a</i>	2.2543993	Ω	126.66967	-0.82876200	+0.43725502		
<i>e</i>	0.1696084	<i>i</i>	4.92882	-0.34235845	+0.09747530		
<i>P</i>	3.38	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 15	675	0.0	0.0	1998 10 18	809	1.6+	0.4+	1998 11 10	704	0.0	0.7-
1991 09 15	675	0.1-	0.2+	1998 10 18	809	1.4+	0.9+	1998 11 10	704	1.2-	1.0-
1991 09 17	675	0.2+	0.7-	1998 10 19	809	0.0	0.9+	1998 11 11	704	0.6+	0.2+
1991 09 17	675	0.0	0.5+	1998 10 19	809	0.0	0.3+	1998 11 11	704	0.5+	1.3+
1998 10 14	699	1.4-	1.8-	1998 10 19	809	0.2-	0.9+	1998 11 11	704	0.1+	0.4-
1998 10 14	699	0.9-	0.6-	1998 11 10	704	0.4+	0.2-	1998 11 11	704	0.8-	0.3+
1998 10 14	699	1.2-	1.1-	1998 11 10	704	0.1-	0.6-	1998 11 11	704	0.2-	0.4+
1998 10 18	809	1.7+	1.1+	1998 11 10	704	0.2-	0.3-				

1998 UA₂₇ = 1991 RL₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	173.85530		(2000.0)	P	Q		
<i>n</i>	0.29671328	ω	133.64968	-0.42837707	+0.90040238		
<i>a</i>	2.2262712	Ω	110.84379	-0.85067073	-0.37351201		
<i>e</i>	0.1418679	<i>i</i>	4.66159	-0.30471691	-0.22307920		
<i>P</i>	3.32	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 15	675	0.6+	0.7-	1998 10 18	809	0.2-	0.5+	1998 11 10	704	0.5-	1.0+
1991 09 15	675	0.8-	0.1+	1998 10 18	809	1.1-	0.1-	1998 11 10	704	0.3-	0.8+
1991 09 17	675	0.0	0.1+	1998 10 19	809	(4.2+	1.0+)	1998 11 11	704	0.1+	0.2+
1991 09 17	675	0.3+	0.5+	1998 10 19	809	(3.0+	0.2+)	1998 11 11	704	0.4+	0.1-
1998 10 14	699	0.5+	0.1-	1998 10 19	809	(3.5+	0.2+)	1998 11 11	704	0.6+	1.3-
1998 10 14	699	0.3+	0.0	1998 11 10	704	0.5-	0.2+	1998 11 11	704	0.2+	1.2-
1998 10 14	699	0.4+	0.3-	1998 11 10	704	0.3-	0.7+	1998 11 11	704	0.4+	0.8-
1998 10 18	809	0.1-	0.3-	1998 11 10	704	0.0	0.8+				

1998 UU₂₈ = 1982 XU₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	60.27854		(2000.0)	P	Q		
<i>n</i>	0.18381809	ω	275.28863	+0.96917405	+0.16649202		
<i>a</i>	3.0634482	Ω	75.21961	-0.07275587	+0.89765068		
<i>e</i>	0.1029818	<i>i</i>	10.82586	-0.23538958	+0.40804861		
<i>P</i>	5.36	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1982 12 13	381	0.6+	0.4+	1998 10 19	809	0.8-	1.6-	1998 11 11	704	0.4-	0.8+
1982 12 14	381	1.0+	0.7-	1998 10 19	809	1.5-	1.8-	1998 11 11	704	0.3+	0.2+
1982 12 14	381	0.4+	0.3+	1998 10 19	809	1.2-	1.2-	1998 11 11	704	0.1-	0.1-
1998 10 18	809	1.4+	1.3+	1998 11 10	704	0.0	0.2-	1998 11 15	120	0.4-	0.0
1998 10 18	809	1.4+	1.6+	1998 11 10	704	0.2+	0.1-	1998 11 15	120	0.9-	0.2-
1998 10 18	809	0.3+	1.5+	1998 11 10	704	1.5+	0.1+				

1998 UG₃₄ = 1990 OX₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	93.20515		(2000.0)	P	Q		
<i>n</i>	0.25796402	ω	327.73657	+0.45542058	+0.89005356		
<i>a</i>	2.4439743	Ω	329.34206	-0.80829402	+0.40400100		
<i>e</i>	0.1684300	<i>i</i>	2.23870	-0.37316602	+0.21115835		
<i>P</i>	3.82	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 07 27	675	0.1-	0.4-	1998 10 28	704	1.1-	1.1-	1998 11 10	704	1.6+	0.9+
1990 07 27	675	0.2-	0.3+	1998 10 28	704	0.9-	0.6-	1998 11 10	704	0.6-	0.2-
1990 07 30	675	0.1+	1.0+	1998 10 29	704	1.2+	1.3+	1998 11 10	704	0.0	0.3-

1990 07 30	675	0.2+	0.9−	1998 10 29	704	0.4+	1.2−	1998 11 11	704	0.6−	0.6+
1998 10 28	704	0.1−	0.4+	1998 10 29	704	0.3+	0.5+	1998 11 11	704	0.4+	0.1−
1998 10 28	704	1.0−	1.9+	1998 10 29	704	1.0+	0.5−	1998 11 11	704	0.7−	0.2−
1998 10 28	704	0.5+	0.4−	1998 10 29	704	0.1+	0.6−	1998 11 11	704	0.4−	0.4−

1998 UU₄₀ = 1993 RQ₁₂ = 1995 AQ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	43.26013		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.20691186	ω	89.34726	+0.99832987	+0.05479732
a	2.8310386	Ω	267.51140	−0.05755449	+0.91602054
e	0.1724042	i	1.04929	−0.00499459	+0.39737089
P	4.76	H	14.2	G	0.15
				U	5

Residuals in seconds of arc

1993 09 14	809	0.6+	1.1+	1995 01 09	691	0.5+	0.1+	1998 10 29	704	0.5+	1.0−
1993 09 14	809	0.6−	0.3+	1995 01 09	691	0.4+	0.4+	1998 11 10	704	0.0	0.7−
1993 09 14	809	0.9−	1.8+	1998 10 28	704	1.3+	0.2+	1998 11 10	704	1.4−	0.3+
1993 09 19	809	1.8−	0.8−	1998 10 28	704	0.1−	0.6+	1998 11 10	704	0.7+	0.8−
1993 09 19	809	0.4−	0.3−	1998 10 28	704	2.0+	0.4+	1998 11 10	704	0.2−	0.0
1993 09 19	809	1.9+	0.7+	1998 10 28	704	0.0	0.7+	1998 11 11	704	2.2−	1.0−
1995 01 08	691	0.7−	0.6+	1998 10 29	704	0.2−	1.2−	1998 11 11	704	0.1−	0.4−
1995 01 08	691	0.0	0.4+	1998 10 29	704	1.3+	0.3+	1998 11 11	704	0.6−	0.7−
1995 01 08	691	0.3−	0.3+	1998 10 29	704	0.3+	1.1−	1998 11 11	704	1.0−	1.7+
1995 01 09	691	0.6+	0.3+	1998 10 29	704	0.3+	0.1−				

1998 VC = 1978 EP₂ = 1978 GC₁ = 1993 JM₁

Id. T. Utata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	217.83182		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.26862404	ω	303.06867	−0.81261575	+0.58229935		
a	2.3788815	Ω	272.55499	−0.52632785	−0.75103764		
e	0.1547481	i	1.38507	−0.25026914	−0.31123934		
P	3.67	H	14.1	G	0.15	U	4

Residuals in seconds of arc

1978 03 05	095	0.6+	0.6−	1998 11 01	888	0.8+	0.2+	1998 11 10	910	0.1+	0.2+
1978 04 07	095	0.7−	0.2+	1998 11 07	888	0.5+	0.9−	1998 11 10	910	0.3+	0.4+
1993 05 14	809	0.6−	0.3+	1998 11 07	888	0.2−	0.4−	1998 11 10	910	0.3+	0.1+
1993 05 14	809	1.1−	0.5+	1998 11 07	888	0.1−	0.5−	1998 11 13	910	1.2+	0.2+
1993 05 14	809	1.4−	0.3+	1998 11 08	888	0.6−	0.1−	1998 11 13	910	1.1+	0.2−
1993 05 15	809	1.4+	0.2+	1998 11 08	888	0.8−	0.0	1998 11 13	910	0.7+	0.2+
1993 05 15	809	0.4+	0.1+	1998 11 08	888	0.7−	0.3−	1998 11 24	888	0.3−	0.2+
1993 05 15	809	0.9+	0.0	1998 11 10	699	0.5+	0.6+	1998 11 24	888	0.4−	0.2+
1993 05 23	809	0.6−	0.9−	1998 11 10	699	0.2+	0.6−	1998 11 26	691	0.8−	0.3−
1993 05 23	809	0.6+	0.5−	1998 11 10	699	0.8+	0.6−	1998 11 26	691	0.8−	0.3−
1993 05 23	809	0.1+	0.7−	1998 11 10	888	0.3−	0.3+	1998 11 26	691	0.7−	0.1−
1998 11 01	888	0.1+	0.3−	1998 11 10	888	0.3−	0.0				
1998 11 01	888	0.2+	0.3+	1998 11 10	888	0.5−	0.5+				

1998 VE = 1990 RP

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	42.74010		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.25510686	ω	99.23158	+0.98266265	−0.18436593
a	2.4621885	Ω	271.39438	+0.16148714	+0.90299942
e	0.2259967	i	1.12217	+0.09108248	+0.38807377
P	3.86	H	15.4	G	0.15
				U	5

Residuals in seconds of arc

1990 09 13	675	0.9+	0.4+	1998 11 07	888	0.1−	0.3−	1998 11 10	888	0.2−	0.3+
1990 09 13	675	0.6−	0.8−	1998 11 08	886	1.4−	1.3−	1998 11 10	910	0.5+	0.8+
1990 09 15	675	1.2−	0.5−	1998 11 08	886	0.8+	0.8−	1998 11 10	910	0.3+	0.2+
1990 09 15	675	0.1−	0.0	1998 11 08	888	0.1−	0.2−	1998 11 10	910	0.3+	0.2+
1990 09 18	675	0.8+	0.9−	1998 11 08	888	0.5−	0.2−	1998 11 13	910	0.8+	0.4+
1990 09 18	675	0.5+	0.7−	1998 11 08	888	0.2−	0.2−	1998 11 13	910	1.0+	0.4+
1990 09 20	675	0.0	0.9+	1998 11 09	910	0.8+	0.6+	1998 11 13	910	0.9+	0.4+

1990 09 20	675	0.5−	2.0+	1998 11 09	910	0.8+	0.6+	1998 11 13	888	0.2−	0.6−
1998 10 19	699	0.3+	1.1−	1998 11 10	910	0.6+	0.8+	1998 11 13	888	0.3−	0.1−
1998 10 19	699	0.2+	0.3−	1998 11 10	699	0.2+	0.6+	1998 11 13	888	0.8−	0.4−
1998 10 19	699	0.7−	0.4−	1998 11 10	699	0.1+	0.1−	1998 11 26	691	0.7−	0.2−
1998 11 07	888	0.1−	0.1−	1998 11 10	699	0.6−	0.9+	1998 11 26	691	0.1+	0.1−
1998 11 07	888	0.0	0.0	1998 11 10	888	0.5−	0.2+	1998 11 26	691	0.5−	0.2−
1998 11 07	888	0.2−	0.2−	1998 11 10	888	0.6−	0.3+				

1998 VF = 1998 QT₁₀₆ = 1985 PN₂ = 1985 SY₁

Id. B. G. Marsden, N. S. Chernykh (d)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.30365739	<i>ω</i>	245.75576		+0.45281925		+0.88823652	
<i>a</i>	2.1921998	<i>Ω</i>	51.39431		−0.77789930		+0.43600150	
<i>e</i>	0.1939753	<i>i</i>	5.68414		−0.43569187		+0.14470165	
<i>P</i>	3.25	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1985 08 13	095	0.1−	0.2−	1998 11 07	118	0.7+	0.2+	1998 11 12	118	0.3−	0.3+
1985 09 19	095	0.9+	1.6−	1998 11 07	118	0.2+	0.5+	1998 11 13	118	0.1−	0.1−
1985 09 20	095	0.3+	0.7−	1998 11 08	118	0.4−	1.1+	1998 11 13	118	0.1+	0.1−
1998 08 25	809	0.2+	0.4+	1998 11 08	118	0.6−	0.8+	1998 11 13	118	0.2+	0.1−
1998 08 25	809	1.0−	0.0	1998 11 08	118	0.8−	1.0+	1998 11 16	118	0.1−	0.4−
1998 08 25	809	1.5−	1.0−	1998 11 11	118	0.1+	0.1+	1998 11 16	118	0.3−	0.0
1998 08 26	809	0.1+	0.6+	1998 11 11	118	0.4+	0.5+	1998 11 23	118	0.1+	1.4−
1998 08 26	809	0.5+	0.5+	1998 11 11	118	0.2+	0.2−	1998 11 23	118	0.1+	1.2−
1998 08 26	809	0.6+	0.8+	1998 11 12	118	0.2+	0.4+	1998 11 23	118	0.2−	1.1−
1998 11 07	118	0.4+	0.7+	1998 11 12	118	0.2+	0.1+				

1998 VA₄ = 1992 AA₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>				P		Q	
<i>n</i>	0.26725242	ω	101.66908	−0.96857076	−0.13167955		
<i>a</i>	2.3870139	Ω	71.04291	+0.02211032	−0.89059859		
<i>e</i>	0.1554962	<i>i</i>	12.89270	+0.24775353	−0.43530983		
<i>P</i>	3.69	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 01 13	303	0.5−	0.2+	1998 11 13	910	0.4−	0.2+	1998 11 29	426	0.4−
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1998 DEC. 8

M.P.C. 33317

1982 12 14 381 0.6+ 1.1+ 1998 11 11 699 0.2- 0.1+
 1985 03 22 688 0.1- 1.4+ 1998 11 11 699 0.4+ 0.1+

1998 VB₅ = 1981 QL₃ = 1995 DO₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	163.19064		(2000.0)		P		Q
<i>n</i>	0.18425875	ω	225.30896	-0.12521325			+0.99203280
<i>a</i>	3.0585620	Ω	37.50447	-0.90369459			-0.10826857
<i>e</i>	0.0588576	<i>i</i>	1.30603	-0.40946030			-0.06441147
<i>P</i>	5.35	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 08 25	809	1.5-	2.5+	1981 09 06	809	0.8+	1.2-	1998 11 21	704	0.8+	0.3-
1981 08 25	809	1.2-	2.1+	1981 09 06	809	0.1-	1.5-	1998 11 21	704	0.6+	0.4-
1981 08 25	809	0.2-	2.6+	1981 09 07	809	0.4-	0.1-	1998 11 21	704	1.3+	0.5-
1981 08 26	809	2.3-	2.7-	1981 09 07	809	0.2-	0.1+	1998 11 21	704	1.1+	1.1+
1981 08 26	809	2.3-	1.9-	1981 09 07	809	0.1+	0.3-	1998 11 21	704	0.0	2.0+
1981 08 27	809	1.4+	0.8+	1995 02 22	033	0.3-	0.4-	1998 11 24	704	0.3+	0.0
1981 08 27	809	1.0+	1.7+	1995 02 23	033	0.0	0.7-	1998 11 24	704	1.5+	1.1-
1981 08 27	809	1.8+	2.1+	1995 02 24	033	0.1-	0.3+	1998 11 24	704	0.3+	2.0-
1981 09 04	809	0.2-	0.5-	1998 11 11	120	0.6-	0.4+	1998 11 24	704	0.1+	1.1-
1981 09 04	809	0.2+	0.6-	1998 11 11	120	0.3-	0.0	1998 11 24	704	0.3+	2.0-
1981 09 04	809	1.0+	0.1+	1998 11 12	120	2.7-	0.0	1998 11 25	691	0.8-	0.1+
1981 09 05	809	0.2+	0.6-	1998 11 12	120	0.8-	1.3+	1998 11 25	691	0.8-	0.2+
1981 09 05	809	0.6+	0.8-	1998 11 16	566	0.1+	0.1+	1998 11 25	691	0.5-	0.4+
1981 09 05	809	0.4+	1.0-	1998 11 16	566	0.4+	0.3+	1998 11 26	120	0.6-	1.4+
1981 09 06	809	1.2+	1.4-	1998 11 16	566	0.1-	0.4+	1998 11 26	120	0.3+	0.1+

1998 VH₅ = 1979 FU = 1987 SK₃

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	212.19619		(2000.0)		P		Q
<i>n</i>	0.28301753	ω	298.23364	-0.76959474			+0.63023636
<i>a</i>	2.2975263	Ω	281.02188	-0.54308682			-0.73055900
<i>e</i>	0.0831884	<i>i</i>	5.99978	-0.33582829			-0.26284156
<i>P</i>	3.48	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 03 29	808	0.6-	0.3-	1998 11 10	704	0.6+	0.8-	1998 11 11	704	0.2-	0.5-
1979 03 29	808	0.6+	0.3+	1998 11 10	704	0.1+	0.4-	1998 11 11	704	0.5-	1.1-
1987 09 25	054	1.0+	1.1+	1998 11 10	704	0.6+	0.5-	1998 11 11	704	0.3-	0.2+
1987 09 25	054	0.2+	0.0	1998 11 10	704	1.3+	0.4-	1998 11 11	886	1.7-	0.3+
1987 09 29	054	0.6+	1.3+	1998 11 10	704	1.3+	1.5-	1998 11 11	886	1.5-	0.1-
1987 09 29	054	0.5+	0.2-	1998 11 10	888	0.2+	0.2+	1998 11 13	385	0.3-	0.7+
1987 09 30	054	0.3-	0.5-	1998 11 10	888	0.4-	0.2+	1998 11 13	385	0.1-	1.0+
1987 09 30	054	2.1-	1.7-	1998 11 10	888	0.4-	0.0	1998 11 19	886	0.1-	0.7-
1998 11 08	905	0.2+	0.2-	1998 11 11	704	0.2+	0.6+	1998 11 19	886	0.8+	1.7+
1998 11 08	905	0.1+	1.2+	1998 11 11	704	0.1+	0.1+				

1998 VJ₅ = 1988 TG₄ = 1993 VR₅

Id. T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	87.47512		(2000.0)		P		Q
<i>n</i>	0.20352399	ω	287.50795	+0.63041959			+0.77262829
<i>a</i>	2.8623692	Ω	22.10578	-0.61500500			+0.55604009
<i>e</i>	0.2407605	<i>i</i>	11.48737	-0.47364543			+0.30637386
<i>P</i>	4.84	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 10 14	046	0.2-	0.4-	1993 11 09	691	0.3-	0.2+	1998 11 11	704	1.7-	1.3-
1988 10 14	046	2.3+	0.4+	1998 11 08	905	0.1+	1.4+	1998 11 11	704	0.7+	0.7-
1993 11 08	691	0.8-	0.1+	1998 11 08	905	0.5-	1.8+	1998 11 11	704	1.0+	0.9-
1993 11 08	691	0.5-	0.0	1998 11 10	704	0.3-	0.4+	1998 11 11	704	0.6-	0.4-
1993 11 08	691	0.3-	0.1-	1998 11 10	704	0.9+	1.2+	1998 11 11	886	0.8+	1.1+
1993 11 09	691	0.8-	0.1-	1998 11 10	704	0.1+	0.6+	1998 11 11	886	0.2+	0.3-

1993 11 09	691	1.0-	0.3-	1998 11 10	704	0.4-	0.1-	1998 11 13	385	0.4+	0.1+
1993 11 09	691	0.8-	0.2-	1998 11 10	704	0.6-	0.6-	1998 11 13	385	0.1-	0.4-
1993 11 09	691	0.3-	0.2-	1998 11 10	888	0.2+	0.6+	1998 11 19	886	1.2+	1.7-
1993 11 09	691	0.1+	0.0	1998 11 10	888	0.2+	1.0+	1998 11 19	886	1.0+	1.3-

1998 VV₅ = 1975 VT₂ = 1992 UU₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	16.70155		(2000.0)		P		Q
<i>n</i>	0.17551993	ω	352.90203	+0.43698981			-0.89286200
<i>a</i>	3.1592580	Ω	71.13659	+0.83079261			+0.35430588
<i>e</i>	0.1109960	<i>i</i>	6.60216	+0.34470791			+0.27796545
<i>P</i>	5.62	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1975 10 29	033	0.8+	1.2-	1998 11 03	327	0.1+	0.0	1998 11 09	327	0.0	0.0
1975 10 30	033	0.3+	0.4-	1998 11 03	327	0.2-	0.3-	1998 11 11	411	0.1+	0.5-
1975 10 31	033	0.7-	0.4-	1998 11 03	327	0.1+	0.3-	1998 11 11	411	0.5+	0.0
1975 11 02	095	0.4+	0.3+	1998 11 04	327	0.2+	0.2+	1998 11 12	411	0.3-	1.0+
1992 10 21	402	0.5+	0.6+	1998 11 04	327	0.4-	0.6+	1998 11 12	411	0.1-	0.1+
1992 10 21	402	0.3-	0.6-	1998 11 04	327	0.2-	0.2+	1998 11 20	411	0.1-	0.9-
1992 10 24	402	1.0-	0.3+	1998 11 09	327	0.2+	0.1+	1998 11 20	411	0.1+	0.9-
1992 10 24	402	0.1-	1.8+	1998 11 09	327	0.2+	0.1-				

1998 VX₅ = 1996 FW₁₈

Id. T. Urata, S. Nakano, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	62.79338		(2000.0)		P		Q
<i>n</i>	0.18882559	ω	318.23843	+0.98576913			+0.16605330
<i>a</i>	3.0090459	Ω	32.23101	-0.13828139			+0.88955418
<i>e</i>	0.1671141	<i>i</i>	2.81392	-0.09559019			+0.42558156
<i>P</i>	5.22	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 03 24	809	0.5+	0.3-	1998 11 12	888	0.1+	0.2-	1998 11 21	704	0.1+	0.2+
1996 03 24	809	1.3-	0.5+	1998 11 12	888	0.1-	0.1-	1998 11 21	704	0.7+	1.3-
1996 03 24	809	1.7-	0.3+	1998 11 12	888	0.3+	0.3-	1998 11 21	704	3.6-	0.6-
1996 03 26	809	1.7+	0.5-	1998 11 14	888	0.5-	0.0	1998 11 23	888	0.3-	0.3-
1996 03 26	809	0.0	0.0	1998 11 14	888	0.6-	0.3+	1998 11 24	704	0.2+	0.1-
1996 03 26	809	0.8+	0.0	1998 11 14	888	0.8-	0.0	1998 11 24	704	0.1+	0.2+
1998 11 11	888	0.9+	0.0	1998 11 18	888	0.3+	0.9+	1998 11 24	704	0.7+	0.0
1998 11 11	888	0.4+	0.2+	1998 11 21	704	0.1-	0.1-	1998 11 24	704	0.7+	0.8+
1998 11 11	888	0.7+	0.4+	1998 11 21	704	0.6+	0.1-				

1998 VC₆ = 1994 RO₁₉

Id. T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	25.43822		(2000.0)		P		Q
<i>n</i>	0.26742557	ω	141.74989	+0.71434257			-0.69942085
<i>a</i>	2.3859835	Ω	262.64734	+0.63622605			+0.66274028
<i>e</i>	0.2058218	<i>i</i>	1.32402	+0.29142942			+0.26755522
<i>P</i>	3.69	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 09 05	809	0.2-	1.1+	1998 11 11	888	0.1+	0.7+	1998 11 14	888	0.2-	0.2-
1994 09 05	809	0.1-	0.2+	1998 11 11	888	0.2+	0.7+	1998 11 20	888	0.1+	0.5-
1994 09 05	809	0.6-	0.2+	1998 11 12	888	0.2+	0.1+	1998 11 20	888	0.1-	0.6-
1994 09 06	809	0.6+	0.2-	1998 11 12	888	0.1-	0.2+	1998 11 20	888	0.0	0.4-
1994 09 06	809	0.4-	0.7-	1998 11 12	888	0.1-	0.0	1998 11 22	385	0.4-	0.6-
1994 09 06	809	0.6+	0.8-	1998 11 14	888	0.1+	0.1-	1998 11 22	385	0.8+	0.3+
1998 11 11	888	0.2+	0.6+	1998 11 14	888	0.6-	0.1-				

1998 VF₆ = 1976 YT₅ = 1981 US₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17603891	ω	149.78719	−0.10791736	−0.99222097		
<i>a</i>	3.1530457	Ω	306.33865	+0.89600878	−0.07002777		
<i>e</i>	0.1003443	<i>i</i>	4.41857	+0.43072277	−0.10292553		
<i>P</i>	5.60	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1976 12 18	095	0.0	0.1+	1998 11 11	704	0.1+	0.5+	1998 11 15	888	0.5+	0.0
1981 10 24	675	0.2+	0.1+	1998 11 11	704	0.0	0.2−	1998 11 15	888	0.1−	0.3+
1981 10 25	675	0.3+	0.1+	1998 11 11	704	1.3+	1.2−	1998 11 15	888	0.3+	0.1+
1981 10 26	675	0.5−	0.1−	1998 11 11	704	0.3−	0.4+	1998 11 16	566	0.0	0.9−
1998 11 10	704	0.2−	0.5+	1998 11 11	905	2.6+	1.4+	1998 11 16	566	0.0	1.4−
1998 11 10	704	0.9−	0.0	1998 11 11	905	0.1+	0.6+	1998 11 16	566	0.1−	1.1−
1998 11 10	704	0.5−	0.6+	1998 11 12	905	0.2+	1.1−	1998 11 23	385	0.3−	0.1+
1998 11 10	704	1.0+	1.7+	1998 11 12	905	0.6−	0.8+	1998 11 23	385	0.0	0.3+
1998 11 10	704	3.5−	0.8−	1998 11 15	886	0.7+	0.5+				
1998 11 11	704	0.4−	0.2−	1998 11 15	886	0.5+	1.3−				

1998 VL₇ = 1978 WZ₁₇ = 1997 MW₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19445870	ω	169.16754	+0.85856046	−0.51258564		
<i>a</i>	2.9506506	Ω	221.67507	+0.46911363	+0.79432880		
<i>e</i>	0.1231179	<i>i</i>	0.98219	+0.20689695	+0.32603329		
<i>P</i>	5.07	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 11 30	675	0.4+	0.0	1998 10 28	704	0.1−	1.1−	1998 11 10	704	1.1−	0.7+
1978 12 01	675	0.3−	0.5−	1998 10 28	704	0.3−	0.6−	1998 11 10	699	0.8+	0.4−
1997 06 28	704	0.2−	0.5−	1998 10 28	704	1.2−	0.8−	1998 11 10	704	0.2+	1.1−
1997 06 28	704	0.3+	0.5−	1998 10 29	704	1.1−	0.2−	1998 11 10	699	0.1−	0.5+
1997 06 28	704	0.5+	0.6−	1998 10 29	704	0.9+	0.5−	1998 11 10	699	0.0	1.1+
1997 07 02	704	0.1+	0.5+	1998 10 29	704	0.6−	0.7+	1998 11 11	704	0.7−	1.9+
1997 07 02	704	0.1+	0.3+	1998 10 29	704	0.0	0.5−	1998 11 11	704	0.8−	0.1−
1997 07 02	704	0.5−	0.5+	1998 10 29	704	0.4+	0.2−	1998 11 11	704	0.8−	0.1−
1997 07 02	704	0.1−	0.3+	1998 11 10	704	0.5+	1.1+	1998 11 11	704	1.0+	0.2−
1998 10 28	704	0.5+	0.2−	1998 11 10	704	0.7+	1.1+	1998 11 11	704	0.1−	0.6−
1998 10 28	704	1.5+	0.4+	1998 11 10	704	0.2+	0.2−				

1998 VQ₇ = 1990 HG₅ = 1991 VY₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26918965	ω	212.78318	+0.21885254	+0.96828734		
<i>a</i>	2.3755480	Ω	70.10514	−0.86537010	+0.24967000		
<i>e</i>	0.1028913	<i>i</i>	7.36334	−0.45081942	−0.00919395		
<i>P</i>	3.66	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 04 29	413	0.4−	0.3−	1998 10 28	704	0.7−	1.0+	1998 11 10	704	0.2−	0.2−
1990 05 01	413	0.5+	0.4−	1998 10 29	704	0.1−	0.3+	1998 11 10	704	0.0	0.6−
1990 05 02	413	0.1−	0.3+	1998 10 29	704	0.5−	0.6−	1998 11 10	704	0.2+	0.2−
1991 11 13	399	2.0−	0.5+	1998 10 29	704	0.4+	0.5+	1998 11 11	704	0.1+	0.3−
1991 11 13	399	2.1+	0.7−	1998 10 29	704	0.5−	0.1+	1998 11 11	704	0.2+	0.8−
1998 10 28	704	0.3−	0.2+	1998 10 29	704	0.5−	0.1+	1998 11 11	704	0.5+	0.2−
1998 10 28	704	0.3+	0.6+	1998 11 10	704	0.5+	0.1+	1998 11 11	704	0.3+	0.4−
1998 10 28	704	0.1−	0.2+	1998 11 10	704	0.2−	0.2+	1998 11 11	704	0.7+	0.2−

1998 VU₉ = 1992 EX₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24669610	ω	127.67825	+0.41295692	−0.90987741		
<i>a</i>	2.5178385	Ω	297.88622	+0.82075366	+0.39076836		
<i>e</i>	0.0852444	<i>i</i>	2.58544	+0.39475311	+0.13936713		
<i>P</i>	4.00	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 03 01	809	0.5−	1.1+	1998 10 29	704	0.5+	1.1+	1998 11 10	704	0.2−	0.9−
1992 03 03	809	0.1−	0.3−	1998 10 29	704	1.0+	0.5+	1998 11 11	704	0.9+	2.4+
1992 03 06	809	0.7+	0.7−	1998 10 29	704	0.2+	0.7+	1998 11 11	704	0.2−	0.3+
1998 10 28	704	0.1+	0.1+	1998 10 29	704	0.9−	0.3−	1998 11 11	704	0.1+	1.9−
1998 10 28	704	0.3+	0.9−	1998 10 29	704	0.5−	1.2+	1998 11 11	704	1.0+	0.1+
1998 10 28	704	0.1+	0.8−	1998 11 10	704	0.1−	0.8−	1998 11 11	704	1.2−	0.9+
1998 10 28	704	0.9−	0.2+	1998 11 10	704	0.3−	2.0−				

1998 VG₁₅ = 1976 ST₃ = 1997 MB₅Id. G. V. Williams; 1997 MB₅ = 1996 FT₁₆ (*MPC* 32968) is invalid

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18181277	ω	1.77542	+0.87973432	+0.47544701		
<i>a</i>	3.0859328	Ω	329.83497	−0.43633413	+0.80378858		
<i>e</i>	0.1723143	<i>i</i>	0.47912	−0.18889162	+0.35759483		
<i>P</i>	5.42	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 09 24	095	0.9−	0.1+	1997 07 02	704	0.4−	0.5+	1998 11 11	704	1.2−	0.5+
1976 09 29	095	1.7+	1.9−	1998 10 15	691	0.6−	0.3−	1998 11 11	704	(1.9−	2.4+)
1997 06 28	704	0.4+	0.1−	1998 10 15	691	0.4−	0.2−	1998 11 11	704	0.0	1.2+
1997 06 28	704	1.1+	0.2+	1998 10 15	691	0.6−	0.4−	1998 11 16	691	0.1−	0.4−
1997 06 28	704	0.9+	0.7+	1998 10 19	699	1.5+	0.3+	1998 11 16	691	0.1−	0.3−
1997 06 29	704	0.3−	1.0+	1998 10 19	699	1.5+	0.1+	1998 11 16	691	0.3−	0.1−
1997 06 29	704	0.0	0.6+	1998 10 19	699	1.2+	0.4+	1998 11 16	691	0.1−	0.4−
1997 06 29	704	0.4+	0.2+	1998 11 10	704	0.1+	0.1+	1998 11 21	691	0.8−	0.2−
1997 06 29	704	0.3+	0.1+	1998 11 10	704	0.4+	0.3+	1998 11 21	691	0.6−	0.1−
1997 06 29	704	1.8−	0.9−	1998 11 10	704	0.1+	0.4+	1998 11 21	691	0.6−	0.3−
1997 07 02	704	0.1+	0.3+	1998 11 10	704	0.4−	1.0+	1998 11 25	691	0.2+	0.1+
1997 07 02	704	0.3+	0.2+	1998 11 10	704	(2.9−	0.4−)	1998 11 25	691	0.4+	0.2+
1997 07 02	704	1.1−	1.4−	1998 11 11	704	0.8−	0.1+	1998 11 25	691	0.2+	0.0

1998 VM₁₅ = 1957 QA = 1980 KH₂ = 1982 UO₁₀ = 1990 TY₁₃**= 1991 CH₄**

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.12344969	ω	88.77787	+0.63767427	+0.76688350		
<i>a</i>	3.9946253	Ω	221.13965	−0.74331465	+0.58788811		
<i>e</i>	0.2029992	<i>i</i>	6.32983	−0.20212585	+0.25744370		
<i>P</i>	7.98	<i>H</i>	11.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1957 08 22	024	0.2+	0.7−	1998 11 10	704	1.2+	0.3+	1998 11 15	691	0.6−	0.4−
1980 05 18	808	0.9−	0.1+	1998 11 10	704	0.4+	0.2+	1998 11 15	691	0.5−	0.5−
1980 05 18	808	1.0+	1.5+	1998 11 10	704	0.3+	0.2−	1998 11 19	691	1.2−	0.1−
1982 10 24	095	0.2−	0.2−	1998 11 10	704	0.3+	1.0+	1998 11 19	691	1.3−	0.1−
1990 10 14	033	0.4+	0.3−	1998 11 11	704	0.1−	0.6+	1998 11 19	691	1.0−	0.1−
1990 10 14	033	0.1−	0.6−	1998 11 11	704	1.6+	1.8+	1998 11 25	691	0.5−	0.7−
1990 10 14	033	0.1−	0.4−	1998 11 11	704	0.8+	1.4+	1998 11 25	691	0.7−	0.2−
1991 02 15	493	1.3+	0.3+	1998 11 11	704	0.6+	0.7+	1998 11 25	691	0.8−	0.3−
1991 02 15	493	0.4−	1.1−	1998 11 11	704	0.4+	0.3+				
1998 11 10	704	0.5+	0.6+	1998 11 15	691	0.4−	0.6−				

1998 DEC. 8

M.P.C. 33319

1998 VO₁₈ = 1978 ES₉ = 1981 UZ₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	3.80107	(2000.0)	P	Q
<i>n</i>	0.17537754	ω 69.49547	+0.55728283	-0.83001873
<i>a</i>	3.1609678	Ω 346.56603	+0.72123038	+0.49729355
<i>e</i>	0.0940150	<i>i</i> 5.54940	+0.41141534	+0.25252333
<i>P</i>	5.62	<i>H</i> 12.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1978 03 15	675	0.3-	1.2-	1998 11 10	704	0.3+	0.9-	1998 11 11	704	1.0+	1.0-
1978 03 16	675	0.3+	1.2+	1998 11 10	704	0.2+	0.1+	1998 11 12	399	0.2-	2.1+
1981 10 24	675	0.0	0.0	1998 11 10	704	0.3+	0.0	1998 11 12	399	1.4-	0.1+
1981 10 25	675	0.2+	0.1+	1998 11 10	704	1.8+	0.1-	1998 11 18	399	1.0-	0.1+
1981 10 26	675	0.2-	0.0	1998 11 11	704	0.2-	0.3-	1998 11 18	399	(2.4-	2.0+)
1998 10 28	399	0.2-	0.1-	1998 11 11	704	0.8+	0.7+	1998 11 19	399	2.0-	0.2-
1998 10 28	399	0.4-	0.2+	1998 11 11	704	0.9+	0.1+	1998 11 19	399	1.3-	0.0
1998 11 10	704	0.1+	0.1-	1998 11 11	704	1.2+	0.9-				

1998 VP₂₀ = 1991 PH₄ = 1996 LF₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	181.18642	(2000.0)	P	Q
<i>n</i>	0.17428306	ω 86.05065	-0.61056206	+0.79169190
<i>a</i>	3.1741877	Ω 146.29070	-0.74075973	-0.56153662
<i>e</i>	0.1366203	<i>i</i> 2.16091	-0.28015886	-0.24062536
<i>P</i>	5.66	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 08 03	809	0.8+	0.9+	1996 06 13	566	0.2+	0.0	1998 11 10	704	0.7-	0.7+
1991 08 03	809	0.2-	1.0+	1996 06 14	566	0.0	0.2+	1998 11 10	704	1.4+	0.9-
1991 08 03	809	0.4-	0.5-	1996 06 14	566	0.2+	0.1+	1998 11 11	704	1.0+	0.8-
1991 08 05	809	1.0+	0.1+	1996 06 14	566	0.2-	0.2+	1998 11 11	704	0.6+	0.9+
1991 08 05	809	0.7+	0.6-	1998 10 28	120	0.4-	0.9+	1998 11 11	704	0.2+	0.4-
1991 08 05	809	1.8-	0.9-	1998 10 28	120	0.1-	0.5+	1998 11 11	704	0.7+	0.3-
1996 06 13	566	0.1-	0.2-	1998 11 10	704	0.4-	0.3+	1998 11 11	704	2.1-	0.0
1996 06 13	566	0.1-	0.4-	1998 11 10	704	0.2-	1.0-				

1998 VY₂₀ = 1997 NV₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	8.91494	(2000.0)	P	Q
<i>n</i>	0.19869469	ω 218.39744	+0.61279632	-0.79022537
<i>a</i>	2.9085634	Ω 193.81291	+0.73006036	+0.56851671
<i>e</i>	0.1451670	<i>i</i> 1.18858	+0.30247733	+0.22876321
<i>P</i>	4.96	<i>H</i> 14.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 07 07	684	1.3-	0.2-	1998 11 10	704	0.1+	0.3+	1998 11 11	704	0.1+	0.3+
1997 07 07	684	1.0-	0.1-	1998 11 10	704	0.7+	0.8-	1998 11 11	704	0.5-	0.7+
1997 07 08	684	0.6+	0.2+	1998 11 10	704	0.0	0.2-	1998 11 25	691	0.0	0.0
1997 07 08	684	0.3+	0.3+	1998 11 10	704	0.7-	0.1+	1998 11 25	691	0.0	0.1-
1997 07 08	684	0.7+	0.3-	1998 11 11	704	0.0	0.4+	1998 11 25	691	0.1-	0.2-
1997 07 09	684	0.3+	0.0	1998 11 11	704	0.2+	0.2-				
1997 07 09	684	0.4+	0.2+	1998 11 11	704	0.2+	0.1-				

1998 VB₂₈ = 1981 UQ₂₇ = 1992 SL₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	48.20868	(2000.0)	P	Q
<i>n</i>	0.17609033	ω 29.14425	+0.99794112	-0.05436026
<i>a</i>	3.1524319	Ω 333.90580	+0.03262385	+0.88714056
<i>e</i>	0.1586867	<i>i</i> 4.43812	+0.05521961	+0.45828658
<i>P</i>	5.60	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 10 24	675	0.4+	0.5+	1992 10 03	675	0.3-	0.2-	1998 11 11	704	0.7-	0.0
1981 10 25	675	0.2+	0.1-	1998 11 10	704	0.0	1.0-	1998 11 11	704	0.0	0.5-

1981 10 26	675	0.7-	0.1+	1998 11 10	704	0.1-	0.9+	1998 11 11	704	0.3+	0.4+
1992 09 30	675	0.6+	0.2-	1998 11 10	704	0.1-	0.6+	1998 11 11	704	0.4+	0.0
1992 09 30	675	0.1-	0.2+	1998 11 10	704	0.2-	0.0	1998 11 19	905	0.4-	0.7-
1992 10 03	675	0.2-	0.0	1998 11 11	704	0.1+	0.2+	1998 11 19	905	0.8+	0.2-

1998 VN₂₈ = 1980 WJ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	332.23278	(2000.0)	P	Q
<i>n</i>	0.27186148	ω 39.59183	-0.32762836	-0.94059609
<i>a</i>	2.3599579	Ω 69.69708	+0.84097775	-0.33330369
<i>e</i>	0.1251115	<i>i</i> 5.45140	+0.43059967	-0.06471202
<i>P</i>	3.63	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1980 11 30	095	0.9+	0.3-	1998 11 11	699	0.1+	0.1-	1998 11 18	399	0.4-	1.0+
1980 12 10	095	0.9-	0.2+	1998 11 11	704	0.4+	0.4-	1998 11 18	399	0.5+	0.3-
1998 11 10	704	0.2+	0.0	1998 11 11	699	0.4+	0.1+	1998 11 19	399	0.1+	0.1+
1998 11 10	704	0.4+	0.9-	1998 11 11	704	0.5+	0.1-	1998 11 19	399	0.2-	0.8-
1998 11 10	704	0.1-	0.0	1998 11 11	699	0.2+	0.0	1998 11 22	399	0.7+	0.8+
1998 11 10	704	0.8-	0.1-	1998 11 11	704	0.1-	0.5-	1998 11 22	399	0.5-	0.4-
1998 11 10	704	0.7-	1.6+	1998 11 11	704	0.5-	0.1+				

1998 VV₂₈ = 1954 TL₁ = 1979 OP₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	20.16968	(2000.0)	P	Q
<i>n</i>	0.26984194	ω 125.21460	+0.61000725	-0.78705702
<i>a</i>	2.3717182	Ω 286.93395	+0.69224445	+0.58571125
<i>e</i>	0.1187499	<i>i</i> 5.50831	+0.38560184	+0.19360678
<i>P</i>	3.65	<i>H</i> 14.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1954 10 06	675	1.5+	0.6+	1998 11 10	704	0.3-	0.5-	1998 11 11	704	1.0+	0.4-
1954 10 06	675	1.6-	0.3-	1998 11 10	704	0.2-	0.5-	1998 11 11	704	0.4+	1.1+
1979 07 24	413	0.9-	0.7+	1998 11 10	704	(3.1-	0.7-)	1998 11 19	905	0.2+	0.2+
1979 07 27	675	0.9+	0.9-	1998 11 11	704	0.1+	0.1+	1998 11 19	905	0.2+	0.4-
1998 11 10	704	0.2-	0.1+	1998 11 11	704	0.6-	0.6+				
1998 11 10	704	0.4-	0.6-	1998 11 11	704	(2.2+	0.7-)				

1998 VC₂₉ = 1975 UL = 1986 SL₂ = 1995 FS₄Id. G. V. Williams; 1986 SL₂ = 1986 PV₅ (*MPC* 17178) is invalid

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	62.11772	(2000.0)	P	Q
<i>n</i>	0.17305627	ω 212.51558	+0.98522635	+0.16110651
<i>a</i>	3.1891711	Ω 138.08941	-0.13256741	+0.93216149
<i>e</i>	0.1126799	<i>i</i> 4.98850	-0.10842013	+0.32422160
<i>P</i>	5.70	<i>H</i> 12.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1975 10 30	033	0.0	0.0	1998 11 10	704	0.2+	0.3-	1998 11 18	704	0.3+	0.4+
1986 09 29	095	0.2+	0.5-	1998 11 10	704	0.6+	1.7-	1998 11 18	704	0.4+	0.9+
1995 03 23	691	0.2-	0.2-	1998 11 11	699	0.1-	0.2+	1998 11 18	704	(2.4+	0.3+)
1995 03 23	691	0.1-	0.0	1998 11 11	704	0.5-	0.3+	1998 11 21	704	0.8-	0.5+
1995 03 23	691	0.3-	0.1-	1998 11 11	704	0.8-	0.2-	1998 11 21	704	0.3+	0.2+
1995 04 04	691	0.1+	0.1-	1998 11 11	699	0.1+	0.1+	1998 11 21	704	0.2+	0.5-
1995 04 04	691	0.1+	0.0	1998 11 11	704	0.2-	0.1-	1998 11 21	704	0.5+	0.2-
1995 04 04	691	0.2+	0.3-	1998 11 11	699	0.2-	0.0	1998 11 21	704	0.1+	0.2+
1998 11 10	704	0.0	0.1-	1998 11 18	704	0.7-	0.8+				
1998 11 10	704	0.1+	0.7-	1998 11 18	704	0.3+	0.2+				

1998 VD₃₀ = 1986 WG₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	329.01333		(2000.0)	P		Q					
<i>n</i>	0.08253807	ω	233.99504	-0.11007469		-0.94753910					
<i>a</i>	5.2243608	Ω	225.42687	+0.99218676		-0.08691460					
<i>e</i>	0.1017082	<i>i</i>	24.91433	+0.05872813		-0.30759634					
<i>P</i>	11.94	<i>H</i>	10.7	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1986 11 30	381	0.4-	0.4+	1998 11 11	699	0.4-	0.9+	1998 11 21	704	0.0	0.6+
1986 11 30	381	0.4-	0.1-	1998 11 11	699	1.3+	0.6-	1998 11 21	704	2.3-	2.5+
1986 12 01	381	0.7+	0.1-	1998 11 11	704	0.6+	0.9-	1998 11 24	704	0.7-	0.5-
1986 12 01	381	0.1+	0.1-	1998 11 11	699	0.2-	0.1-	1998 11 24	704	0.3+	1.4+
1998 11 10	704	0.6-	1.1+	1998 11 11	704	0.8+	0.9-	1998 11 24	704	0.1+	1.0-
1998 11 10	704	1.1-	2.1+	1998 11 11	704	0.7+	3.3-	1998 11 24	704	1.1+	0.5-
1998 11 10	704	0.9+	1.0+	1998 11 21	704	0.5-	0.9-	1998 11 24	704	1.6+	0.2+
1998 11 10	704	1.2-	0.0	1998 11 21	704	0.3-	1.1-				

1998 VK₃₀ = 1989 YC₁ = 1996 LS₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	44.36828		(2000.0)	P		Q				
<i>n</i>	0.20424237	ω	271.23758	+0.93906895	−0.33992024					
<i>a</i>	2.8556533	Ω	108.63624	+0.33288809	+0.86238662					
<i>e</i>	0.0870493	<i>i</i>	3.08689	+0.08564474	+0.37515803					
<i>P</i>	4.83	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc										
1989 12 30	413	(7.1− 3.3+)	1998 11 11	704	0.4−	0.6+	1998 11 19	704	0.3+	0.3−
1989 12 30	413	1.0+ 0.1+	1998 11 11	704	0.7−	0.7−	1998 11 19	704	0.1−	0.5−
1989 12 31	413	1.9− 0.2+	1998 11 11	704	0.1+ 0.2−	1998 11 19		704	0.6−	0.6−
1989 12 31	413	0.9+ 0.3−	1998 11 11	699	0.2− 0.5+	1998 11 21		704	0.3+ 0.4−	
1996 06 08	809	0.2+ 1.3−	1998 11 11	704	0.9− 0.5−	1998 11 21		704	0.4+ 0.0	
1996 06 08	809	0.5+ 1.1−	1998 11 11	699	0.4+ 0.7+	1998 11 21		704	0.2+ 0.3−	
1996 06 08	809	0.4+ 0.9−	1998 11 11	699	0.2− 0.3+	1998 11 21		704	0.6− 0.4+	
1996 06 10	809	0.2+ 0.8+	1998 11 18	704	0.8+ 0.9+	1998 11 21		704	2.4− 0.3−	
1996 06 10	809	0.5− 1.0+	1998 11 18	704	1.0+ 0.1−	1998 11 24		704	0.2− 0.4−	
1996 06 10	809	0.7− 1.7+	1998 11 18	704	1.5+ 0.7−	1998 11 24		704	0.8− 0.1−	
1998 11 10	704	0.7− 0.7+	1998 11 18	704	2.1+ 2.2−	1998 11 24		704	0.2− 0.6+	
1998 11 10	704	0.7− 0.7+	1998 11 18	704	0.7+ 0.0	1998 11 24		704	0.9+ 0.6+	
1998 11 10	704	0.3+ 1.0−	1998 11 19	704	0.5− 0.3+	1998 11 24		704	1.6+ 2.4+	
1998 11 10	704	0.3− 0.4−	1998 11 19	704	0.9− 0.1+					

1998 VM₃₀ = 1992 BY₃

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	24.85207		(2000.0)	P			Q				
<i>n</i>	0.28163436	ω	23.18313	+0.65886358			−0.75196535				
<i>a</i>	2.3050426	Ω	25.61911	+0.68230535			+0.58552198				
<i>e</i>	0.1071753	<i>i</i>	2.80236	+0.31679361			+0.30284010				
<i>P</i>	3.50	<i>H</i>	15.0	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1992 01 28	691	0.0	0.4+	1998 11 11	704	0.6+	0.2+	1998 11 21	704	0.5+	0.6−
1992 01 28	691	0.2−	0.0	1998 11 11	704	0.5+	0.7+	1998 11 23	888	0.3−	0.2−
1992 01 28	691	0.0	0.5+	1998 11 11	704	1.1+	0.8−	1998 11 23	888	0.2−	0.1+
1992 01 29	691	0.1+	0.0	1998 11 18	399	0.0	1.1+	1998 11 23	888	0.1−	0.3+
1992 01 29	691	0.2−	0.1−	1998 11 18	399	0.3+	0.0	1998 11 24	704	0.2+	0.1−
1992 01 29	691	0.2+	0.9−	1998 11 19	399	(2.4−	1.1−)	1998 11 24	704	0.2+	0.8+
1998 11 10	704	0.6+	0.6+	1998 11 19	399	(2.6−	1.5−)	1998 11 24	704	0.0	0.2+
1998 11 10	704	0.2+	0.6−	1998 11 21	704	0.1−	0.0	1998 11 24	704	0.8+	0.2+
1998 11 10	704	1.2−	0.8+	1998 11 21	704	0.6−	0.8−	1998 11 24	888	0.1−	0.4+
1998 11 10	704	1.3−	1.3−	1998 11 21	704	0.9−	0.7−	1998 11 24	888	0.3−	0.1+
1998 11 11	704	0.2−	0.5+	1998 11 21	704	0.5+	1.1−				

1998 VV₃₀ = 1983 VD₃ = 1983 XP = 1992 EC₂₇

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	8.00700		(2000.0)	P		Q					
n	0.26286361	ω	77.60026	+0.32048441		-0.94724631					
a	2.4135098	Ω	353.70370	+0.85521225		+0.29105009					
e	0.1853433	i	1.96658	+0.40731039		+0.13421723					
P	3.75	H	14.8	G	0.15	U	4				
Residuals in seconds of arc											
1983 11 08	381	(0.2-	3.2-)	1998 11 10	704	0.4-	0.6-	1998 11 21	704	0.8+	1.3-
1983 12 08	801	0.5-	1.7+	1998 11 10	704	0.3+	0.4+	1998 11 21	704	0.0	0.4-
1992 02 24	691	0.1-	0.5-	1998 11 10	704	0.6+	1.6+	1998 11 21	704	0.6-	1.1-
1992 02 24	691	0.5-	0.4-	1998 11 11	704	0.9+	0.2+	1998 11 21	704	0.1-	1.3-
1992 02 24	691	0.7-	0.6-	1998 11 11	704	0.5-	1.2-	1998 11 21	704	0.2-	0.1+
1992 02 25	675	0.8+	0.0	1998 11 11	704	0.2+	0.6-	1998 11 24	704	1.2+	1.1-
1992 02 25	675	(1.1+	2.6-)	1998 11 12	399	0.9-	0.5+	1998 11 24	704	0.5+	0.8+
1992 03 02	809	0.3-	1.0+	1998 11 12	399	0.4+	1.2+	1998 11 24	704	0.4+	0.1+
1992 03 04	809	0.8+	0.5+	1998 11 18	399	1.2-	0.2-	1998 11 24	704	0.0	0.9+
1998 11 10	704	0.0	0.3+	1998 11 18	399	0.9-	0.0				

1998 VR₃₁ = 1981 UO₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	344.48436		(2000.0)	P		Q					
n	0.29431260	ω	226.73608	-0.30630577	-0.95006764						
a	2.2383611	Ω	241.18953	+0.89189171	-0.26455211						
e	0.0948508	i	3.89809	+0.33272505	-0.16548008						
P	3.35	H	15.1	G	0.15	U	6				
Residuals in seconds of arc											
1981 10 24	675	1.0+	1.2+	1998 11 15	684	0.1+	0.3+	1998 11 16	684	0.1+	0.1+
1981 10 25	675	1.0-	0.8-	1998 11 15	684	0.1+	0.2+	1998 11 20	684	0.0	0.3-
1981 10 26	675	0.0	0.5-	1998 11 16	684	0.1+	0.2+	1998 11 20	684	0.4-	0.5-

1998 VY₃₂ = 1996 FA₁₉

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	314.19889		(2000.0)	P		Q					
n	0.25472131	ω	79.59248	-0.70996264		-0.70281824					
a	2.4646724	Ω	55.73635	+0.62311137		-0.65649508					
e	0.1451219	i	3.10158	+0.32815435		-0.27397213					
P	3.87 <th>H</th> <td>14.6<th>G</th><td>0.15<th>U</th><td>5</td></td></td>	H	14.6 <th>G</th> <td>0.15<th>U</th><td>5</td></td>	G	0.15 <th>U</th> <td>5</td>	U	5				
Residuals in seconds of arc											
1996 03 24	809	0.3+	0.1-	1998 11 12	369	0.1+	0.1-	1998 11 21	704	0.9-	0.4+
1996 03 24	809	0.5-	0.2+	1998 11 14	369	0.2-	0.4+	1998 11 24	704	0.8+	0.7-
1996 03 24	809	0.3+	1.6-	1998 11 14	369	0.3+	1.3+	1998 11 24	704	0.4+	0.2-
1996 03 26	809	0.6+	0.6+	1998 11 14	369	1.3+	0.3-	1998 11 24	704	0.9+	0.2+
1996 03 26	809	0.8-	0.5+	1998 11 14	369	0.5-	0.4+	1998 11 24	704	0.1-	1.2+
1996 03 26	809	0.2+	0.4+	1998 11 18	369	0.4+	0.0	1998 11 24	704	0.5-	0.6+
1998 11 11	369	0.4-	0.7-	1998 11 21	704	1.1+	1.0-	1998 11 28	369	0.7-	0.7-
1998 11 11	369	0.6-	0.1-	1998 11 21	704	0.2+	0.8-	1998 11 28	369	0.1+	0.1-
1998 11 11	369	0.9-	0.3-	1998 11 21	704	0.5+	0.4-	1998 11 28	369	0.1+	0.5+
1998 11 12	369	0.0	0.5+	1998 11 21	704	0.6-	0.2-	1998 11 28	369	0.9-	0.0

1998 VY₃₃ = 1976 SF₄ = 1982 BJ₁₅ = 1989 SM₉ = 1996 FC₁₆

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	22.80861		(2000.0)	P		Q		Williams	
<i>n</i>	0.22658346	ω	137.35471	+0.67711010		-0.73539261			
<i>a</i>	2.6647139	Ω	270.00808	+0.66772343		+0.62930904			
<i>e</i>	0.2178369	<i>i</i>	1.53719	+0.30930137		+0.25133215			
<i>P</i>	4.35	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1976 09 24	095	(3.8− 1.9+)	1996 03 22	809	(1.1+ 2.1+)	1998 11 19	399	0.9− 0.3−
1976 09 29	095	0.5+ 2.0+	1996 03 26	809	0.4+ 0.7−	1998 11 19	399	0.7− 0.7+
1982 01 30	675	0.9− 0.8+	1996 03 26	809	1.8− 1.5−	1998 11 19	127	0.1+ 0.4−
1982 01 31	675	0.1+ 0.3+	1996 03 26	809	(1.9− 2.0−)	1998 11 19	127	0.1− 0.4−
1989 09 25	809	0.3− 0.2−	1998 11 11	127	1.7+ 0.7+	1998 11 19	127	0.7+ 0.5−
1989 09 25	809	0.0 0.3−	1998 11 11	127	0.6+ 0.9+	1998 11 20	127	0.2+ 0.0
1989 09 25	809	0.1+ 0.2−	1998 11 11	127	1.0− 0.4+	1998 11 20	127	0.3+ 0.1−
1989 09 26	809	1.1− 0.2−	1998 11 12	399	0.7+ 0.7+	1998 11 20	127	0.3+ 0.3−
1989 09 26	809	0.4− 0.1−	1998 11 17	127	0.2+ 0.5−	1998 11 20	127	0.1+ 0.1−
1989 09 26	809	0.2+ 0.1−	1998 11 17	127	0.5− 0.8−	1998 11 20	127	0.2+ 0.1+
1996 03 22	809	1.1+ 1.5+	1998 11 18	399	0.3+ 0.5−	1998 11 20	127	0.3+ 0.4−
1996 03 22	809	1.3+ 1.2+	1998 11 18	399	1.5− 0.6+	1998 11 20	127	0.0 0.2−

1998 VC₃₄ = 1191 T-1 = 1995 DW₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	5.12321		(2000.0)	P	Q
<i>n</i>	0.20161502	ω	121.11592	+0.46996132	−0.88254668
<i>a</i>	2.8804088	Ω	300.84428	+0.80347856	+0.43510359
<i>e</i>	0.0466045	<i>i</i>	1.05041	+0.36545665	+0.17831498
<i>P</i>	4.89	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1971 03 25	675	0.3+ 1.2−	1995 02 21	691	0.0 0.4−	1998 11 14	376	0.3− 0.3+
1971 03 25	675	1.3− 0.8+	1995 03 01	691	0.1− 0.4−	1998 11 17	376	0.2− 0.5+
1971 03 26	675	1.4+ 0.8−	1995 03 01	691	0.3− 0.4+	1998 11 17	376	0.4+ 1.2−
1971 03 27	675	0.2+ 0.6−	1998 11 12	376	0.1+ 0.0	1998 11 19	376	0.6− 0.7+
1971 04 02	675	0.6− 2.0+	1998 11 12	376	0.0 0.8+	1998 11 19	376	0.4+ 0.0
1995 02 21	691	0.2+ 0.1+	1998 11 14	376	0.5− 0.3−			
1995 02 21	691	0.1+ 0.2+	1998 11 14	376	0.8+ 0.6−			

1998 VV₃₄ = 1978 RB₅ = 1990 DX₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	64.11020		(2000.0)	P	Q
<i>n</i>	0.29806060	ω	358.48496	+0.98727902	+0.15816128
<i>a</i>	2.2195572	Ω	352.35681	−0.14455935	+0.85026731
<i>e</i>	0.1438623	<i>i</i>	7.03214	−0.06620213	+0.50202641
<i>P</i>	3.31	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1978 09 06	095	1.0− 1.8+	1998 10 20	399	0.2− 2.0−	1998 11 18	399	0.1− 1.0+
1990 02 28	809	0.1− 0.5+	1998 10 20	399	1.0+ 0.9−	1998 11 19	399	1.3− 0.5+
1990 02 28	809	0.2+ 0.5+	1998 10 25	399	0.2− 0.9−	1998 11 19	399	0.4+ 0.3+
1990 02 28	809	0.7+ 0.4+	1998 10 25	399	1.1− 0.8−	1998 11 22	399	1.1+ 0.6+
1990 03 01	809	0.5− 0.2−	1998 11 12	399	0.0 1.0+	1998 11 22	399	1.2+ 1.0+
1990 03 01	809	0.1− 0.1−	1998 11 12	399	0.5− 0.2+			
1990 03 01	809	0.3+ 0.1−	1998 11 18	399	0.3− 0.8−			

1998 VW₃₄ = 1989 YO₁ = 1995 CT₄ = 1996 HN₁₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	24.37709		(2000.0)	P	Q
<i>n</i>	0.20320147	ω	187.95961	+0.76775167	−0.64062197
<i>a</i>	2.8653972	Ω	211.88986	+0.58918881	+0.71361427
<i>e</i>	0.0649939	<i>i</i>	1.37565	+0.25182119	+0.28347515
<i>P</i>	4.85	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1989 12 30	413	0.2+ 0.9+	1996 04 17	809	(4.3− 2.2+)	1998 11 10	699	0.8+ 0.4+
1989 12 30	413	0.8− 0.7+	1996 04 18	809	0.8− 0.9−	1998 11 12	399	0.2− 1.2−
1989 12 31	413	0.7+ 0.5+	1996 04 18	809	0.5− 0.3+	1998 11 12	399	0.4− 0.1+
1989 12 31	413	0.8+ 1.3+	1996 04 18	809	1.2− 0.4+	1998 11 18	399	0.3− 0.7−
1995 02 01	691	0.2− 0.2−	1996 04 18	809	(1.5+ 3.2+)	1998 11 18	399	0.1+ 0.9+
1995 02 01	691	0.1− 0.3−	1996 04 18	809	(1.1+ 3.1+)	1998 11 19	399	0.2+ 0.5−
1995 02 01	691	0.3− 0.7−	1996 04 18	809	(0.7+ 3.1+)	1998 11 19	399	0.6− 0.6−

1995 02 02	691	0.2− 0.3−	1996 05 22	809	1.9+ 1.8−	1998 11 22	399	0.4+ 0.4−
1995 02 02	691	0.0 0.8−	1996 05 22	809	(1.1+ 2.2−)	1998 11 22	399	0.6+ 0.1−
1995 02 02	691	0.1− 0.4−	1996 05 22	809	(0.9+ 3.2−)	1998 11 27	691	1.5+ 1.6−
1996 04 17	809	(2.7− 2.1+)	1998 11 10	699	0.6+ 0.3−	1998 11 27	691	1.4− 0.1−
1996 04 17	809	(4.1− 2.3+)	1998 11 10	699	0.7+ 1.4+	1998 11 27	691	1.5− 0.1−

1998 VA₃₅ = 1980 VF₄ = 1987 ST₆ = 1993 FF₇₄ = 1994 PX₂₃

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	66.59081		(2000.0)	P	Q
<i>n</i>	0.27515948	ω	353.99432	+0.99441830	+0.10550947
<i>a</i>	2.3410628	Ω	359.94911	−0.09488324	+0.89410513
<i>e</i>	0.1578577	<i>i</i>	2.51734	−0.04614564	+0.43525138
<i>P</i>	3.58	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 11 01	675	0.4− 0.3+	1994 08 13	809	0.5+ 0.4−	1998 11 19	399	1.5− 0.1−
1980 11 02	675	0.4− 0.3+	1994 08 13	809	0.0 0.2−	1998 11 19	399	1.6− 0.1+
1987 09 21	046	1.1+ 0.4−	1998 11 12	399	0.9− 1.5+	1998 11 21	704	0.4+ 0.4−
1987 09 22	046	(3.7+ 1.0−)	1998 11 12	399	0.3− 1.7+	1998 11 21	704	1.0+ 0.5+
1993 03 21	809	0.9− 0.2−	1998 11 18	704	0.4+ 0.3+	1998 11 21	704	1.0+ 1.2−
1993 03 22	809	0.7+ 0.5−	1998 11 18	704	1.1+ 0.9−	1998 11 21	704	0.9+ 0.6+
1994 08 12	809	0.4− 0.1+	1998 11 18	704	1.8+ 2.0−	1998 11 21	704	1.6− 1.3−
1994 08 12	809	0.6− 0.0	1998 11 18	704	(0.2+ 2.8−)	1998 11 22	399	0.8− 0.4+
1994 08 12	809	0.8− 0.0	1998 11 18	399	(1.2− 2.1+)			
1994 08 13	809	0.9+ 0.2+	1998 11 18	399	0.2+ 0.2+			

1998 VF₃₅ = 1985 JT = 1991 NJ₂

Id. G. V. Williams, A. Lowe

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	303.06073		(2000.0)	P	Q
<i>n</i>	0.18854712	ω	300.98521	−0.62997548	−0.77620968
<i>a</i>	3.0120079	Ω	188.20383	+0.75893818	−0.60846174
<i>e</i>	0.0519141	<i>i</i>	10.12633	+0.16475357	−0.16514493
<i>P</i>	5.23	<i>H</i>	12.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1985 05 11	675	1.0+ 2.1−	1998 11 11	704	0.3+ 0.2+	1998 11 13	704	0.3+ 0.5+
1985 05 13	675	1.0− 2.1+	1998 11 11	704	0.7+ 0.9−	1998 11 13	704	0.1− 0.8−
1991 07 14	675	(0.6− 6.4−)	1998 11 12	399	0.1+ 0.4−	1998 11 18	399	0.1− 0.1+
1991 07 14	675	0.0 0.4−	1998 11 12	399	1.8− 0.9−	1998 11 18	399	1.6− 0.9−
1991 07 18	675	0.2− 0.3+	1998 11 13	704	1.7+ 0.1−	1998 11 19	399	0.9− 0.6+
1991 07 18	675	0.2+ 0.1+	1998 11 13	704	0.7+ 2.0+	1998 11 19	399	0.1− 0.7+
1998 11 11	704	0.3+ 0.3+	1998 11 13	704	0.4+ 0.3−			

1998 WJ = 1993 FQ₆₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	38.90468		(2000.0)	P	Q
<i>n</i>	0.29268854	ω	179.57047	+0.72509006	−0.68704227
<i>a</i>	2.2466336	Ω	223.95219	+0.63162525	+0.69073270
<i>e</i>	0.0817753	<i>i</i>	3.89022	+0.27439741	+0.22552440
<i>P</i>	3.37	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 21	809	0.9− 0.1+	1998 11 17	684	0.2+ 0.4−	1998 11 22	684	0.3− 0.2+
1993 03 22	809	0.9+ 0.1−	1998 11 17	684	0.1+ 0.0	1998 11 22	684	0.3+ 0.4+
1998 11 16	684	0.0 0.2+	1998 11 21	684	0.1+ 0.2−	1998 11 25	684	0.0 0.1−
1998 11 16	684	0.2− 0.2+	1998 11 21	684	0.5− 0.3−	1998 11 25	684	0.2+ 0.1+

1998 WE₃ = 1993 RA₁₇

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	17.29691		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21744772	ω	69.40280	+0.65657117	-0.75375984
<i>a</i>	2.7388367	Ω	339.48102	+0.65942470	+0.59137956
<i>e</i>	0.0239749	<i>i</i>	4.51214	+0.36616029	+0.28655946
<i>P</i>	4.53	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 09 15	809	1.3+	0.7+	1998 11 18	888	0.7-	0.3-	1998 11 23	888	0.3+	0.1-
1993 09 15	809	0.1+	0.1-	1998 11 18	888	0.2-	0.4-	1998 11 23	888	0.1-	0.1-
1993 09 15	809	0.7-	1.2+	1998 11 18	888	0.0	0.0	1998 11 26	888	0.9+	0.5+
1993 09 22	809	0.0	0.2-	1998 11 19	888	0.3-	0.1-	1998 11 26	888	1.0+	1.1+
1993 09 22	809	0.0	1.3-	1998 11 19	888	0.6-	0.1-				
1993 09 22	809	0.7-	0.2-	1998 11 19	888	0.3-	0.4-				

1998 WS₃ = 1987 HZ₁ = 1990 FM₃ = 1991 RN₂₄ = 1993 BG₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	263.51985		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.30609735	ω	125.65156	-0.99578842	+0.06237050
<i>a</i>	2.1805347	Ω	58.01353	-0.08549816	-0.89634724
<i>e</i>	0.0812015	<i>i</i>	4.54400	+0.03309814	-0.43894367
<i>P</i>	3.22	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1987 04 28	046	0.5-	1.0-	1993 01 24	400	0.5+	0.5+	1998 11 21	704	1.2+	0.5-
1987 04 28	046	0.7-	0.9-	1993 01 24	400	0.3+	0.6-	1998 11 21	704	1.3+	1.3-
1987 04 29	046	(5.0-	1.5-)	1998 11 12	399	0.7+	0.7+	1998 11 21	704	1.0+	0.4+
1987 04 29	046	(5.9-	3.2+)	1998 11 18	704	1.3+	1.2-	1998 11 21	704	0.3+	1.2-
1990 03 24	046	0.7-	0.7-	1998 11 18	704	0.8+	0.6+	1998 11 21	704	0.1-	1.2-
1990 03 24	046	0.6+	1.4-	1998 11 18	704	0.4+	0.3+	1998 11 24	704	0.1-	0.8-
1991 09 12	675	0.6+	0.3+	1998 11 18	704	0.2+	0.8+	1998 11 24	704	1.0-	0.7-
1991 09 12	675	0.7+	0.1-	1998 11 18	704	0.6+	0.4+	1998 11 24	704	1.2-	0.2+
1991 09 16	675	0.2+	1.2-	1998 11 18	399	0.6+	0.4-	1998 11 24	704	0.4-	0.4+
1991 09 16	675	0.6-	0.4-	1998 11 18	399	0.7-	1.0-	1998 11 24	704	1.1-	1.1+
1993 01 23	400	0.2-	0.5+	1998 11 19	399	1.0-	0.4+				
1993 01 23	400	0.8-	0.7+	1998 11 19	399	1.7-	0.2-				

1998 WO₅ = 1998 UD₃₁ = 1990 SH₂₀ = 1992 CT₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	331.73929		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.25495214	ω	124.95293	-0.08369389	-0.99517689
<i>a</i>	2.4631845	Ω	329.72531	+0.87798090	-0.04935572
<i>e</i>	0.0899745	<i>i</i>	5.82537	+0.47132248	-0.08477601
<i>P</i>	3.87	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1990 09 19	675	0.1-	0.4-	1998 11 05	560	0.9-	0.4+	1998 11 18	560	0.4+	0.2-
1990 09 19	675	1.0+	1.2-	1998 11 05	560	0.8+	0.1+	1998 11 18	560	0.2+	0.1-
1992 02 12	303	0.6-	1.0-	1998 11 05	560	0.2-	0.2+	1998 11 19	560	0.0	0.6-
1992 02 13	303	0.2+	0.1+	1998 11 17	560	0.5-	0.4-	1998 11 19	560	0.3+	0.0
1998 10 30	560	0.2-	0.5+	1998 11 17	560	0.6-	0.0	1998 11 19	560	0.0	0.5-
1998 10 30	560	0.1-	0.7+	1998 11 17	560	0.1+	0.2+				
1998 10 30	560	0.2-	0.7+	1998 11 18	560	0.5+	0.1-				

1998 WC₆ = 1988 VZ₁₁ = 1991 PE₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	89.20683		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.29810971	ω	225.22725	+0.78352767	+0.61678462
<i>a</i>	2.2193134	Ω	96.54462	-0.54655967	+0.74173653
<i>e</i>	0.1893801	<i>i</i>	4.34339	-0.29556203	+0.26344573
<i>P</i>	3.31	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1988 11 03	327	0.7-	0.3-	1998 11 11	699	0.3-	0.3-	1998 11 19	399	1.3-	0.2+
1988 11 03	327	0.4+	1.1+	1998 11 18	704	0.3+	0.4-	1998 11 21	704	0.4+	0.5+
1991 08 06	675	0.3+	0.4-	1998 11 18	704	1.0+	1.1-	1998 11 21	704	0.9+	0.7+
1991 08 06	675	0.5+	0.1-	1998 11 18	704	0.6+	1.0-	1998 11 21	704	0.0	0.9-
1991 08 10	675	0.3-	0.7+	1998 11 18	704	(0.6-	2.9-)	1998 11 21	704	1.2+	1.1+
1991 08 10	675	0.5-	0.4-	1998 11 18	399	0.6-	0.6+	1998 11 22	399	1.2-	0.7-
1998 11 11	699	0.1+	0.2+	1998 11 18	399	0.2+	0.6+	1998 11 22	399	0.4+	0.6-
1998 11 11	699	0.5-	0.4+	1998 11 19	399	0.8-	0.2-				

1998 WO₆ = 1996 JC₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	21.54014		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.22651649	ω	351.21916	+0.42509240	-0.84759132
<i>a</i>	2.6652391	Ω	73.09889	+0.84931404	+0.25216607
<i>e</i>	0.2101913	<i>i</i>	19.38795	+0.31298901	+0.46690601
<i>P</i>	4.35	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 05 15	691	0.5-	0.5-	1996 05 17	691	0.2+	0.1-	1998 11 24	411	0.8-	0.4+
1996 05 15	691	0.3-	0.2+	1996 05 17	691	0.2+	0.0	1998 11 24	411	0.4+	0.4-
1996 05 15	691	0.1-	0.3+	1998 11 23	411	0.9-	0.1-	1998 11 28	411	0.5+	0.1-
1996 05 17	691	0.5+	0.2+	1998 11 23	411	0.6-	0.3+	1998 11 28	411	1.3+	0.1-

1998 WG₇ = 1986 LR = 1993 FU₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	108.61030		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26869091	ω	216.09380	+0.68209923	+0.72361590
<i>a</i>	2.3784868	Ω	97.17407	-0.64354698	+0.66249025
<i>e</i>	0.2310541	<i>i</i>	6.10130	-0.34725773	+0.19361482
<i>P</i>	3.67	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1986 06 10	801	0.1-	0.2-	1998 11 23	385	0.5-	0.3+	1998 11 29	888	0.1+	0.5-
1993 03 17	809	0.8-	0.2+	1998 11 24	888	0.2+	0.0	1998 11 29	888	0.2-	0.1-
1993 03 18	809	0.9+	0.2-	1998 11 24	888	0.6+	0.3+				
1998 11 23	385	0.8-	0.0	1998 11 29	888	0.6+	0.2-				

1998 WO₉ = 1997 LF₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	87.77190		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28278950	ω	270.78837	+0.92504613	+0.37077461
<i>a</i>	2.2987612	Ω	67.45137	-0.30316936	+0.85159658
<i>e</i>	0.0700119	<i>i</i>	5.12862	-0.22886240	+0.37055290
<i>P</i>	3.49	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 06 05	046	0.3-	0.6+	1997 06 09	046	0.2+	0.4-	1998 11 18	704	0.5-	2.2-
1997 06 05	046	0.7-	0.9+	1997 06 09	046	0.1+	0.1+	1998 11 18	704	0.8-	1.4-
1997 06 05	046	0.9-	0.3+	1997 06 10	046	0.5+	0.3-	1998 11 21	704	0.8-	0.1+
1997 06 05	046	1.1-	0.1-	1997 06 10	046	0.5+	0.5-	1998 11 21	704	0.2+	1.0+
1997 06 05	046	0.3-	0.1+	1997 06 10	046	0.0	0.1-	1998 11 21	704	0.2-	0.3-
1997 06 07	046	0.0	0.4-	1997 06 10	046	0.4+	0.2+	1998 11 21	704	0.3-	1.6+
1997 06 08	046	0.0	0.0	1998 11 11	699	0.3-	0.4+	1998 11 21	704	0.5-	1.2+
1997 06 08	046	0.4+	0.0	1998 11 11	699	0.1-	0.5+	1998 11 28	120	0.9+	0.3+
1997 06 08	046	0.3-	0.5-	1998 11 11	699	0.1+	0.5+	1998 11 28	120	1.0+	0.6+
1997 06 09	046	0.6+	0.2+	1998 11 18	704	1.3+	0.2+	1998 11 29	120	0.7-	0.2-
1997 06 09	046	0.7+	0.2-	1998 11 18	704	1.0+	0.8-	1998 11 29	120	0.6+	0.9+
1997 06 09	046	0.6+	0.1+	1998 11 18	704	1.2+	1.6-	1998 11 29	120	2.2-	0.6-

1998 WX₉ = 1996 RU₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08452961	ω	336.03779	+0.41190579	−0.90718468		
<i>a</i>	5.1419770	Ω	89.54355	+0.84927350	+0.34810021		
<i>e</i>	0.0669234	<i>i</i>	4.91814	+0.33025467	+0.23630956		
<i>P</i>	11.66	<i>H</i>	11.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 09 12	809	0.1−	0.2−	1998 11 18	704	0.0	1.9−	1998 11 21	704	0.1+	0.2+
1996 09 16	809	0.1+	0.2+	1998 11 18	704	2.1−	2.4−	1998 11 21	704	0.5+	0.8−
1998 11 11	699	0.3−	1.0+	1998 11 19	704	0.3−	0.0	1998 11 21	704	0.6+	1.6+
1998 11 11	699	0.0	0.7+	1998 11 19	704	0.5−	0.9−	1998 11 24	704	1.1+	0.0
1998 11 11	699	0.1+	1.7+	1998 11 19	704	1.6+	0.7−	1998 11 24	704	1.4−	1.9+
1998 11 18	704	0.7+	0.4−	1998 11 19	704	0.8−	0.2+	1998 11 24	704	0.1+	0.3−
1998 11 18	704	0.3−	1.0−	1998 11 19	704	0.1+	0.5+	1998 11 24	704	0.3−	0.1+
1998 11 18	704	0.8+	1.5−	1998 11 21	704	0.8+	1.4+	1998 11 24	704	0.6−	0.7+

1998 WW₁₀ = 4832 T-2

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23966001	ω	284.26600	+0.99660616	−0.03463820		
<i>a</i>	2.5668806	Ω	77.75939	+0.06243481	+0.90927867		
<i>e</i>	0.1247366	<i>i</i>	4.38237	−0.05364756	+0.41474389		
<i>P</i>	4.11	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1973 09 19	675	1.5+	0.7−	1998 11 11	699	1.2+	0.5−	1998 11 21	704	0.1−	0.9−
1973 09 19	675	1.6+	0.0	1998 11 14	691	0.5−	0.2−	1998 11 21	704	0.2−	0.5+
1973 09 20	675	1.6−	0.2+	1998 11 14	691	0.6−	0.3−	1998 11 21	704	0.6−	0.1+
1973 09 24	675	0.5−	0.7+	1998 11 14	691	0.7−	0.4−	1998 11 24	704	0.3+	0.0
1973 09 24	675	0.8−	1.2+	1998 11 16	691	0.1−	0.0	1998 11 24	704	0.4+	0.4+
1973 09 25	675	0.5−	0.5−	1998 11 16	691	0.0	0.3−	1998 11 24	704	0.7−	0.6+
1973 09 25	675	0.3+	0.8−	1998 11 16	691	0.2−	0.3−	1998 11 24	704	0.1+	0.9+
1998 11 11	699	0.7+	0.1+	1998 11 21	704	0.4−	0.2+				
1998 11 11	699	1.1+	0.6+	1998 11 21	704	0.5+	0.5−				

1998 WF₁₁ = 1996 KX₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20002170	ω	266.98352	+0.84746535	−0.52889784		
<i>a</i>	2.8956850	Ω	124.94301	+0.50642949	+0.77981079		
<i>e</i>	0.0728972	<i>i</i>	3.18139	+0.15915920	+0.33490625		
<i>P</i>	4.93	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 14	691	0.0	0.3−	1996 05 23	809	0.5+	0.5+	1998 11 21	704	0.7+	0.6−
1996 04 14	691	0.4−	0.2−	1996 05 23	809	0.2−	0.0	1998 11 21	704	0.8+	0.4+
1996 04 14	691	0.2−	0.3−	1998 11 11	699	0.0	0.4−	1998 11 24	704	(2.6+	1.1+)
1996 05 22	809	(3.1−	2.5−)	1998 11 11	699	0.5+	0.4−	1998 11 24	704	0.2−	0.1−
1996 05 22	809	(3.5−	2.4−)	1998 11 11	699	0.4+	0.4−	1998 11 24	704	0.8−	0.3−
1996 05 22	809	(2.7−	3.1−)	1998 11 21	704	0.0	0.3+	1998 11 24	704	0.8−	0.3+
1996 05 23	809	0.3+	0.5+	1998 11 21	704	0.0	0.0	1998 11 24	704	0.7−	1.4+

1998 WW₁₉ = 1975 UV = 1988 AO₃ = 1997 QN₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17377985	ω	266.65078	+0.98915908	−0.05567645		
<i>a</i>	3.1803123	Ω	96.50960	+0.10391537	+0.91920786		
<i>e</i>	0.0637167	<i>i</i>	7.86073	−0.10375892	+0.38981668		
<i>P</i>	5.67	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 10 30	033	0.6−	0.3−	1997 09 01	566	0.6−	0.1+	1998 11 27	426	0.2+	0.5−
1975 10 31	033	0.9+	0.3−	1997 09 01	566	0.1−	0.3−	1998 11 27	426	0.5−	0.3−
1988 01 12	033	0.8+	0.2+	1997 09 02	566	0.0	1.0+	1998 11 27	426	0.2+	0.0
1988 01 12	033	1.0−	0.9+	1997 09 02	566	0.2+	0.4+	1998 11 28	426	0.1+	0.0
1997 08 30	566	0.1−	0.6−	1997 09 02	566	0.2+	0.1+	1998 11 28	426	0.4+	0.2+
1997 08 30	566	0.2+	0.4−	1998 11 11	699	0.6−	0.3−	1998 11 28	426	0.1−	0.6−
1997 08 30	566	0.1+	0.1+	1998 11 11	699	0.4+	0.5+				
1997 09 01	566	0.2−	0.4+	1998 11 11	699	0.0	0.6+				

2027 P-L = 1998 SZ₁₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25986476	ω	110.18999	+0.85507479	−0.51785910		
<i>a</i>	2.4320423	Ω	281.00665	+0.46533961	+0.78844789		
<i>e</i>	0.2088309	<i>i</i>	1.50996	+0.22870538	+0.33192148		
<i>P</i>	3.79	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1960 09 24	675	0.0	0.0	1998 09 27	704	0.9+	0.3−	1998 10 29	704	1.7+	0.5−
1960 09 26	675	0.7+	0.4+	1998 09 27	704	1.0+	1.0−	1998 10 29	704	0.2+	1.1−
1960 09 28	675	0.0	0.6+	1998 09 27	704	0.6−	0.5+	1998 11 10	704	0.0	0.0
1960 09 29	675	0.1+	0.6−	1998 09 27	704	0.2−	0.3−	1998 11 10	704	0.1+	0.0
1960 10 17	675	0.5−	0.1−	1998 09 27	704	0.6−	0.1+	1998 11 10	704	0.4+	0.5−
1960 10 22	675	1.4−	0.6−	1998 10 17	699	0.1+	0.3+	1998 11 10	699	0.4+	1.6+
1960 10 25	675	0.2−	0.7+	1998 10 17	699	0.1+	0.5+	1998 11 10	704	0.6−	1.0−
1960 10 26	675	0.3+	1.4+	1998 10 17	699	0.1+	0.1+	1998 11 10	699	0.1+	0.6+
1998 09 14	699	0.6−	0.4+	1998 10 28	704	0.3−	0.0	1998 11 10	699	1.3−	0.1+
1998 09 14	699	0.5−	0.1+	1998 10 28	704	0.6−	0.4−	1998 11 11	704	1.5+	0.0
1998 09 14	699	0.6+	0.6−	1998 10 28	704	1.2−	0.3−	1998 11 11	704	0.1+	0.5+
1998 09 26	704	0.6−	0.2+	1998 10 28	704	0.7−	0.2+	1998 11 11	704	0.1+	1.0+
1998 09 26	704	0.9+	0.5+	1998 10 28	704	0.5−	1.4−	1998 11 11	704	0.4−	0.4+
1998 09 26	704	0.6+	0.5−	1998 10 29	704	0.2−	0.3−	1998 11 11	704	(2.4+	1.0−)
1998 09 26	704	0.2−	0.2+	1998 10 29	704	0.9+	0.2+				
1998 09 26	704	0.2−	0.2−	1998 10 29	704	0.2+	1.1−				

2507 P-L = 1998 VH₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28667302	ω	80.45134	+0.12478162	−0.99217541		
<i>a</i>	2.2779534	Ω	2.39249	+0.86646188	+0.10691450		
<i>e</i>	0.1207981	<i>i</i>	5.75292	+0.48339772	+0.06447676		
<i>P</i>	3.44	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.1−	0.4+	1960 10 22	675	0.5+	0.6+	1998 11 10	704	1.8+	1.9−
1960 09 26	675	0.1+	0.2−	1960 10 24	675	0.4−	0.2−	1998 11 11	704	0.4+	0.2+
1960 09 28	675	0.4−	1.0+	1960 10 25	675	1.4+	0.9+	1998 11 11	704	0.9−	1.7+
1960 09 29	675	0.0	1.2−	1960 10 26	675	0.7−	1.0−	1998 11 11	704	0.6−	1.1−
1960 10 17	675	1.0+	0.5−	1998 11 10	704	0.1+	1.0+	1998 11 11	704	0.2−	0.4+
1960 10 22	675	1.5−	0.2+	1998 11 10	704	0.6−	0.2−				

2722 P-L = 1998 FL₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22481922	ω	67.66073	−0.35663481	+0.93421950		
<i>a</i>	2.6786363	Ω	181.49591	−0.92370868	−0.35368553		
<i>e</i>	0.1535924	<i>i</i>	14.97908	−0.13990672	−0.04626518		
<i>P</i>	4.38	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.4+	0.9+	1960 09 29	675	1.2−	1.2−	1998 03 20	704	1.1+	1.2+
1960 09 24	675	1.3+	0.3+	1960 09 29	675	0.7+	0.6+	1998 03 20	704	0.4−	0.0
1960 09 26	675	0.1−	0.0	1960 10 17	675	0.5+	0.6+	1998 03 22	704	0.7−	0.4−
1960 09 26	675	0.2−	0.6−	1998 03 20	704	(2.0+	1.6−)	1998 03 22	704	0.1−	0.4−

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1960 09 28	675	0.6−	0.4−	1998 03 20	704	0.1−	0.1+	1998 03 22	704	0.4−	0.6−
1960 09 28	675	0.7−	0.2−	1998 03 20	704	0.6+	0.0	1998 03 22	704	(3.4−	1.3−)

2731 P-L = 1998 SB₉₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	4.54701		(2000.0)		P		Q
<i>n</i>	0.18139085	ω	205.23436	+0.87343115			−0.48677199
<i>a</i>	3.0907163	Ω	183.96830	+0.47265728			+0.85395211
<i>e</i>	0.1432738	<i>i</i>	10.89409	+0.11710308			+0.18389894
<i>P</i>	5.43	<i>H</i>	15.0	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.3−	0.2−	1998 09 26	704	0.5+	0.9+	1998 09 27	704	0.2+	0.4+
1960 09 26	675	1.0−	0.4−	1998 09 26	704	1.9−	0.2−	1998 09 27	704	0.2−	0.1+
1960 09 28	675	0.6+	0.2+	1998 09 26	704	0.9−	0.8−	1998 10 14	699	0.3+	1.1+
1960 09 29	675	0.8+	0.6+	1998 09 26	704	0.2+	0.7−	1998 10 14	699	0.7+	0.1−
1960 10 22	675	0.4−	1.3−	1998 09 26	704	0.4+	0.4−	1998 10 14	699	0.2+	0.1+
1960 10 25	675	0.6+	0.7+	1998 09 27	704	0.1−	0.2−				
1960 10 26	675	0.4−	0.0	1998 09 27	704	0.5+	0.1+				

2814 P-L = 1997 GW₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	41.96632		(2000.0)		P		Q
<i>n</i>	0.17800601	ω	282.55537	+0.26927605			+0.96304538
<i>a</i>	3.1297737	Ω	3.08423	−0.83616349			+0.23679451
<i>e</i>	0.1294004	<i>i</i>	6.22223	−0.47782950			+0.12834313
<i>P</i>	5.54	<i>H</i>	15.5	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.5+	0.1−	1960 09 29	675	0.5−	0.2−	1997 04 05	704	0.5+	1.4−
1960 09 26	675	0.4−	0.8+	1960 10 17	675	0.0	0.2+	1997 04 05	704	0.3−	0.5+
1960 09 28	675	0.1+	0.8−	1997 04 03	704	0.5+	0.6+	1997 04 07	704	0.6−	0.2+
1960 09 28	675	0.0	0.2+	1997 04 03	704	0.1+	0.9+	1997 04 07	704	0.0	0.7−

4013 P-L = 1998 VJ₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	71.90607		(2000.0)		P		Q
<i>n</i>	0.21030003	ω	135.94102	+0.94663470			+0.31751803
<i>a</i>	2.8005489	Ω	205.70010	−0.31958698			+0.90241610
<i>e</i>	0.2442939	<i>i</i>	7.33462	−0.04179599			+0.29125157
<i>P</i>	4.69	<i>H</i>	14.9	<i>G</i>	0.15		<i>U</i> 4

Residuals in seconds of arc

1960 09 24	675	0.2+	0.1−	1960 10 22	675	0.3−	0.0	1998 11 15	428	0.8+	0.4+
1960 09 25	675	0.3−	0.1+	1960 10 24	675	0.2+	0.7+	1998 11 15	428	0.4−	0.1−
1960 09 26	675	0.2+	0.5−	1960 10 26	675	0.4+	0.6+	1998 11 16	428	0.1+	0.0
1960 09 28	675	0.5−	0.6−	1998 11 14	428	0.2+	0.2−	1998 11 16	428	0.3−	0.2−
1960 10 17	675	0.1+	0.0	1998 11 14	428	0.4−	0.3−	1998 11 26	428	0.0	0.2+

4105 P-L = 1998 VC₂₆

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	1.24072		(2000.0)		P		Q
<i>n</i>	0.23440427	ω	204.98962	+0.27427332			−0.96018149
<i>a</i>	2.6051078	Ω	229.13874	+0.89368861			+0.27491120
<i>e</i>	0.2463235	<i>i</i>	4.03041	+0.35509833			+0.04975286
<i>P</i>	4.20	<i>H</i>	15.6	<i>G</i>	0.15		<i>U</i> 4

Residuals in seconds of arc

1960 09 24	675	0.8−	0.2−	1960 10 26	675	0.8+	0.2−	1998 11 10	704	0.7+	0.7−
1960 09 25	675	0.3+	0.1+	1998 10 18	699	0.4+	0.0	1998 11 10	704	0.5−	0.6−
1960 09 26	675	0.4+	1.1+	1998 10 18	699	0.2+	0.3+	1998 11 11	704	0.3+	0.2+
1960 09 28	675	0.3+	0.1+	1998 10 18	699	0.1−	1.0+	1998 11 11	704	0.3+	0.2−
1960 10 17	675	0.0	0.1−	1998 11 10	704	0.2−	0.1+	1998 11 11	704	0.9−	0.5+

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1960 10 22	675	0.3−	0.3−	1998 11 10	704	0.4−	0.4−	1998 11 11	704	0.3−	0.5+
1960 10 24	675	0.4−	1.1−	1998 11 10	704	0.1+	0.1+	1998 11 11	704	0.3+	0.1−

4112 P-L = 1997 EO₅₆ = 1997 JV₁₈

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	226.73217		(2000.0)		P		Q
<i>n</i>	0.22911943	ω	129.09763	−0.36417194			−0.93127595
<i>a</i>	2.6450148	Ω	342.25087	+0.84382577			−0.32530341
<i>e</i>	0.0439220	<i>i</i>	1.91625	+0.39412799			−0.16402074
<i>P</i>	4.30	<i>H</i>	14.3	<i>G</i>	0.15		<i>U</i> 2

Residuals in seconds of arc

1960 09 24	675	0.5−	1.0−	1976 05 30	413	0.0	0.5−	1997 03 10	809	0.4−	0.7−
1960 09 24	675	0.7+	1.5+	1984 03 11	413	0.9−	0.3−	1997 03 10	809	0.6−	0.6−
1960 09 25	675	0.3−	0.5−	1984 03 11	413	0.7−	0.7−	1997 03 11	809	0.6+	1.8+
1960 09 26	675	0.3+	0.4−	1984 05 23	413	1.9+	0.0	1997 03 11	809	0.4+	1.5+
1960 09 27	675	0.2+	0.4+	1984 05 23	413	0.2−	0.3+	1997 03 11	809	0.4+	1.5+
1960 09 28	675	0.8+	0.1+	1993 04 20	413	0.5−	0.1+	1997 05 05	691	0.2−	0.1+
1960 10 17	675	0.7−	0.3−	1993 04 20	413	1.2+	0.2−	1997 05 05	691	0.3−	0.4−
1960 10 22	675	0.9−	0.0	1993 05 24	413	1.5−	0.1+	1997 05 05	691	0.2−	0.7−
1960 10 26	675	0.1+	0.6+	1993 05 24	413	1.1+	0.4+				
1976 05 30	413	0.3−	0.2+	1997 03 10	809	0.6+	1.4−				

4285 P-L = 1996 RS₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	122.96587		(2000.0)		P		Q
<i>n</i>	0.19072758	ω	53.25150	+0.73613413			−0.67620589
<i>a</i>	2.9890078	Ω	349.19010	+0.56074326			+0.63345663
<i>e</i>	0.0786904	<i>i</i>	8.95425	+0.37904293			+0.37613600
<i>P</i>	5.17	<i>H</i>	15.5	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.2+	0.5+	1996 09 13	691	0.1−	0.0	1996 09 13	566	0.8+	0.0
1960 09 25	675	1.0−	0.4+	1996 09 13	691	0.0	0.2+	1996 09 20	691	0.8−	0.0
1960 09 26	675	0.4+	0.6−	1996 09 13	691	0.1−	0.0	1996 09 20	691	0.8−	0.0
1960 09 28	675	0.3+	0.2−	1996 09 13	566	1.1+	0.1+	1996 09 20	691	0.8−	0.3−
1960 10 17	675	0.1−	0.4−	1996 09 13	566	0.7+	0.0				

4664 P-L = 1979 WA₅ = 1998 VJ₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	51.01207		(2000.0)		P		Q
<i>n</i>	0.20918654	ω	343.51419	+0.99583697			+0.08474603
<i>a</i>	2.8104782	Ω	11.77762	−0.05327306			+0.83993021
<i>e</i>	0.1744438	<i>i</i>	9.46586	−0.07396430			+0.53603671
<i>P</i>	4.71	<i>H</i>	13.7	<i>G</i>	0.15		<i>U</i> 4

Residuals in seconds of arc

1960 09 24	675	0.3−	0.1+	1998 10 28	399	0.3−	0.8+	1998 11 11	704	0.3−	0.1−
1960 09 26	675	0.5+	0.5+	1998 10 28	399	1.2+	0.7−	1998 11 11	704	0.5−	1.3+
1960 09 27	675	0.2+	0.4+	1998 11 10	704	0.3+	0.2+	1998 11 12	399	0.4−	0.4−
1960 09 28	675	0.4+	0.4+	1998 11 10	704	0.2+	0.3−	1998 11 12	399	1.8−	0.0
1960 10 22	675	0.1−	0.4+	1998 11 10	704	0.0	0.8+	1998 11 18	399	1.0+	0.3+
1960 10 24	675	1.1−	1.0−	1998 11 10	704	1.9+	0.1−	1998 11 18	399	1.2+	0.4+
1960 10 26	675	0.1−	0.9−	1998 11 10	704	0.7+	0.4+	1998 11 19	399	0.3+	0.2+
1979 11 17	095	0.9+	0.2+	1998 11 11	704	0.4+	0.4+	1998 11 19	399	0.2−	0.3+
1998 10 25	399	1.1−	1.5−	1998 11 11	704	0.1−	0.4+	1998 11 22	399	0.9−	1.5−
1998 10 25	399	0.8−	1.6−	1998 11 11	704	0.4−	0.6+	1998 11 22	399	1.1−	0.1+

4770 P-L = 1998 SU₉₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	101.11219		(2000.0)		P		Q	
<i>n</i>	0.18158558	ω	256.13617		+0.06772311		+0.99645938	
<i>a</i>	3.0885063	Ω	17.97282		−0.84164995		+0.08387499	
<i>e</i>	0.0981241	<i>i</i>	9.29194		−0.53576015		−0.00580493	
<i>P</i>	5.43	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1960 09 24	675	1.4−	0.1−	1960 10 22	675	0.8−	0.5−	1998 09 27	704	0.2−	1.3+
1960 09 24	675	0.5+	0.3−	1998 09 26	704	0.3−	0.9+	1998 09 27	704	0.5−	0.4−
1960 09 26	675	0.5+	0.2+	1998 09 26	704	0.1−	0.9−	1998 09 27	704	0.4−	0.2+
1960 09 27	675	0.1+	0.3−	1998 09 26	704	1.8+	0.0	1998 10 15	691	0.1+	0.1−
1960 09 27	675	0.7−	0.6+	1998 09 26	704	0.9+	0.8−	1998 10 15	691	0.3−	0.0
1960 09 28	675	0.5+	0.6+	1998 09 27	704	0.5−	0.1+	1998 10 15	691	0.2−	0.2−
1960 09 28	675	1.4+	0.0	1998 09 27	704	0.2−	0.4−				

4810 P-L = 1998 SS₇₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	295.60522		(2000.0)		P		Q	
<i>n</i>	0.18012526	ω	93.05408		−0.14872108		−0.98866484	
<i>a</i>	3.1051765	Ω	5.62527		+0.80320711		−0.13291572	
<i>e</i>	0.1210436	<i>i</i>	12.12458		+0.57683653		−0.06982299	
<i>P</i>	5.47	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.4+	0.2−	1998 09 26	704	0.2+	1.1−	1998 09 27	704	0.6+	0.7+
1960 09 26	675	0.2−	1.1−	1998 09 26	704	0.3−	1.1−	1998 10 14	910	0.2+	0.5+
1960 09 27	675	0.9+	0.9+	1998 09 26	704	0.7−	0.9+	1998 10 14	910	0.1−	0.7+
1960 09 28	675	0.0	1.5+	1998 09 26	704	1.4−	1.5−	1998 10 14	910	0.0	0.4+
1960 10 17	675	0.6−	0.4−	1998 09 27	704	0.2−	1.2+	1998 10 18	910	0.4+	0.0
1960 10 22	675	0.0	0.2−	1998 09 27	704	0.1+	1.1−	1998 10 18	910	0.2+	0.2−
1960 10 26	675	0.3−	0.4−	1998 09 27	704	0.4+	0.8+	1998 10 18	910	0.2+	0.3−
1998 09 26	704	0.8+	0.2−	1998 09 27	704	0.4−	0.5+				

5552 P-L = 1998 UY₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	30.98032		(2000.0)		P		Q		
n	0.23434805	ω	354.10029		+0.95248648		−0.29950267		
a	2.6055245	Ω	23.55794		+0.28480772		+0.81135002		
e	0.1968344	i	7.96559		+0.10795404		+0.50200528		
P	4.21	H	15.7		G	0.15	U	5	

Residuals in seconds of arc

1960 10 17	675	0.4+	0.0	1998 10 28	704	0.9−	0.8+	1998 10 29	704	0.0	0.4−
1960 10 22	675	0.2−	0.8−	1998 10 28	704	1.2+	0.5+	1998 10 29	704	0.2−	0.5−
1960 10 25	675	0.2+	0.9+	1998 10 28	704	0.1+	0.5+	1998 10 29	704	0.3+	0.6−
1960 10 26	675	0.4−	0.1−	1998 10 29	704	0.5−	0.2−				

6059 P-L

Id. T. Kobayashi (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	25.96485		(2000.0)		P		Q		
n	0.21168128	ω	200.32174		+0.45919152		−0.88732109		
a	2.7883530	Ω	222.37332		+0.82349313		+0.44312005		
e	0.0516615	i	3.61367		+0.33316995		+0.12769461		
P	4.66	H	13.4	G	0.15		U	5	

Residuals in seconds of arc

1960 09 24	675	0.3+	0.3+	1960 10 17	675	0.0	0.0	1998 11 18	411	0.5+	0.4−
1960 09 25	675	0.3−	0.7+	1960 10 22	675	0.0	0.3+	1998 11 18	411	0.9−	0.9−
1960 09 26	675	0.6−	0.2−	1960 10 24	675	0.6+	0.7−	1998 11 19	411	0.1+	0.7+
1960 09 28	675	0.6+	0.8−	1960 10 26	675	0.6−	0.4+	1998 11 19	411	0.2+	0.6+

6075 P-L = 1998 VO₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	17.62031		(2000.0)		P		Q	
<i>n</i>	0.28658269	<i>ω</i>	217.20559		+0.63786653		−0.76968717	
<i>a</i>	2.2784320	<i>Ω</i>	193.23126		+0.73160753		+0.61637697	
<i>e</i>	0.1950097	<i>i</i>	6.67564		+0.24057580		+0.16631620	
<i>P</i>	3.44	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1960 09 24	675	0.1−	0.1+	1960 10 22	675	0.9−	0.6+	1998 11 10	704	1.1−	0.6−
1960 09 25	675	0.5+	0.1−	1960 10 26	675	0.4+	0.1−	1998 11 10	704	0.6+	0.1+
1960 09 26	675	0.3−	0.1−	1998 10 26	120	0.2+	0.3+	1998 11 11	704	0.8−	0.1+
1960 09 28	675	0.0	0.6+	1998 10 26	120	(7.1−	1.2+)	1998 11 11	704	0.9−	0.6−
1960 10 17	675	0.4+	1.1−	1998 11 10	704	0.0	0.0	1998 11 11	704	0.8+	0.7+
1960 10 17	675	(1.0+	2.8−)	1998 11 10	704	1.1+	0.2+				

6577 P-L = 1998 WM₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	109.86207	(2000.0)		P		Q	
n	0.21088463	ω	179.70298	+0.58571675		+0.81008968	
a	2.7953709	Ω	126.15051	−0.74370082		+0.55004142	
e	0.1507083	i	1.86503	−0.32224988		+0.20300037	
P	4.67	H	13.8	G	0.15	U	6

Residuals in seconds of arc

1960 09 24	675	0.3−	0.8−	1960 10 22	675	0.7−	0.5+	1998 11 18	704	0.2+	1.0+
1960 09 26	675	0.2−	0.4−	1960 10 24	675	1.0+	0.0	1998 11 21	704	0.2+	0.3−
1960 09 27	675	0.2+	0.3+	1960 10 26	675	0.1−	0.8−	1998 11 21	704	0.2−	1.4−
1960 09 28	675	0.8+	0.2+	1998 11 18	704	0.7+	0.6+	1998 11 21	704	0.2−	0.9−
1960 10 17	675	0.8−	0.5+	1998 11 18	704	0.5−	0.4+	1998 11 21	704	0.7−	1.7−
1960 10 17	675	0.0	0.5+	1998 11 18	704	0.5+	2.2+				

6599 P-L

Id. T. Kobayashi (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	333.08234		(2000.0)		P		Q			
n	0.23801082	ω	13.69631		−0.56025439		−0.82786650			
a	2.5787243	Ω	110.38366		+0.75718728		−0.52528406			
e	0.0789678	i	1.67648		+0.33583098		−0.19675800			
P	4.14	H	13.7		G	0.15	U	5		

Residuals in seconds of arc

1960 09 24	675	0.7−	0.0	1960 10 17	675	0.1+	0.4+	1998 11 18	411	0.0	0.2−
1960 09 26	675	0.6−	0.0	1960 10 22	675	1.3−	1.0−	1998 11 18	411	0.3+	0.2−
1960 09 27	675	0.2+	1.0+	1960 10 24	675	1.4+	0.4−	1998 11 19	411	0.3+	0.5+
1960 09 28	675	0.6+	0.6+	1960 10 26	675	0.3+	0.6−	1998 11 19	411	0.5−	0.1+

6605 P-L = 1998 UD₁₆Id. G. V. Williams; the identification 6605 P-L = 1993 OZ₁₂ = 1993 OW₁₃(MPC 23986) is invalid, although the double designation 1993 OZ₁₂= 1993 OW₁₃ (*ibid.*) is correct

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	10.34088		(2000.0)			P		Q		
n	0.23453064	ω	258.41252			+0.65079704		−0.75860916		
a	2.6041720	Ω	150.91148			+0.71923515		+0.60279716		
e	0.1879816	i	3.68318			+0.24323654		+0.24728066		
P	4.20	H	15.0			G	0.15	U	4	

Residuals in seconds of arc

1960 09 24	675	0.0	0.5−	1998 09 18	699	0.1+	1.5+	1998 11 10	704	0.2+	0.6−
1960 09 26	675	0.2−	0.7−	1998 10 23	910	0.8+	0.5+	1998 11 10	704	1.6+	1.3−
1960 09 27	675	0.3+	0.9−	1998 10 23	910	0.5+	0.5+	1998 11 11	704	0.3+	0.6−
1960 09 28	675	0.1+	0.3−	1998 10 23	910	0.6+	0.7+	1998 11 11	704	0.4−	0.1−

M.P.C. 33326

1960 10 22	675	0.7−	0.0	1998 10 26	910	0.4+	0.9+	1998 11 11	704	1.1−	0.5−
1960 10 24	675	0.8+	0.4−	1998 10 26	910	0.2+	1.1+	1998 11 11	704	0.9−	1.3−
1960 10 26	675	0.5+	0.9+	1998 10 27	910	0.5+	1.0+	1998 11 11	704	1.3−	1.2−
1998 09 18	699	0.9−	0.1+	1998 11 10	704	0.3−	0.0				
1998 09 18	699	0.2−	1.5+	1998 11 10	704	0.9−	0.4−				

6793 P-L = 1998 WT₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	155.93468	(2000.0)		P	Q		
<i>n</i>	0.28876794	<i>ω</i>	224.40522	−0.01065341	+0.99882957		
<i>a</i>	2.2669228	<i>Ω</i>	45.04750	−0.89787495	+0.01121222		
<i>e</i>	0.1380003	<i>i</i>	3.82264	−0.44012166	−0.04705088		
<i>P</i>	3.41	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.1+	0.1+	1998 11 18	704	0.0	0.2+	1998 11 21	704	1.3+	0.2−
1960 09 26	675	0.1−	0.4−	1998 11 18	704	0.1−	0.2+	1998 11 25	376	0.9−	0.3+
1960 09 27	675	0.2+	0.2−	1998 11 18	704	(2.4+	1.0−)	1998 11 25	376	0.0	0.0
1960 09 28	675	0.5+	0.4−	1998 11 18	704	(1.9+	2.5−)	1998 11 28	376	0.4−	0.9+
1960 10 17	675	0.9+	0.7+	1998 11 21	704	0.2+	1.4−	1998 11 28	376	0.1−	0.3−
1960 10 22	675	1.8−	0.4+	1998 11 21	704	(2.2−	0.1−)				

9097 P-L = 1998 VJ₃₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	258.14184	(2000.0)		P	Q		
<i>n</i>	0.23765620	<i>ω</i>	184.25789	−0.99793383	+0.06423776		
<i>a</i>	2.5812889	<i>Ω</i>	359.42073	−0.05467722	−0.85933532		
<i>e</i>	0.1340936	<i>i</i>	7.12382	−0.03374112	−0.50736212		
<i>P</i>	4.15	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.9−	0.6−	1960 10 26	675	0.4+	0.1+	1998 11 11	704	0.2+	0.1+
1960 09 28	675	0.9+	0.7+	1998 11 11	704	0.2+	0.9−	1998 11 16	704	0.6+	1.6+
1960 10 17	675	0.6−	0.1+	1998 11 11	704	1.0−	0.3−	1998 11 16	704	0.8−	0.6+
1960 10 22	675	0.2+	0.3−	1998 11 11	704	0.5+	0.3+	1998 11 16	704	0.3+	1.5−

2140 T-1 = 1984 YJ₆ = 1991 HC₃ = 1998 SZ₁₂₃

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	341.07537	(2000.0)		P	Q		
<i>n</i>	0.19959250	<i>ω</i>	20.67102	+0.43967372	−0.89766373		
<i>a</i>	2.8998347	<i>Ω</i>	43.26049	+0.81782161	+0.38642030		
<i>e</i>	0.0530184	<i>i</i>	2.49052	+0.37128807	+0.21184705		
<i>P</i>	4.94	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	0.2−	0.3+	1984 12 23	010	(7.3−	8.5−)	1998 09 27	704	0.5−	0.0
1971 03 25	675	0.5−	1.1+	1991 04 19	809	0.0	0.0	1998 09 27	704	0.8−	0.0
1971 03 25	675	0.4+	0.4+	1991 04 19	809	0.1−	0.2−	1998 10 28	704	0.3−	0.4+
1971 03 26	675	0.6−	0.8+	1991 04 19	809	0.1+	0.1+	1998 10 28	704	0.6+	0.4+
1971 03 27	675	0.2+	1.4+	1998 09 26	704	0.4+	0.4+	1998 10 28	704	0.2−	0.6+
1971 04 02	675	1.8+	0.5+	1998 09 26	704	1.2+	0.1−	1998 10 28	704	0.5−	0.2−
1971 04 16	675	0.6−	0.6−	1998 09 26	704	0.7+	0.2−	1998 10 28	704	0.5−	0.2+
1971 04 16	675	1.4+	0.2+	1998 09 26	704	0.1−	0.3+	1998 10 29	704	0.2−	0.8+
1971 05 13	675	0.2+	0.8−	1998 09 26	704	0.7+	0.4+	1998 10 29	704	0.4−	0.4−
1971 05 14	675	1.0−	0.8−	1998 09 27	704	0.1−	0.6+	1998 10 29	704	0.4−	0.3+
1971 05 16	675	0.7+	1.2+	1998 09 27	704	1.0−	1.4+	1998 10 29	704	0.2+	0.8−
1984 12 23	010	0.1−	1.3−	1998 09 27	704	0.3−	0.5+	1998 10 29	704	0.1+	0.8−

2307 T-1 = 1998 SV₁₃₃

Id. A. Gnädig

1998 DEC. 8

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	298.03412	(2000.0)		P	Q		
<i>n</i>	0.23673127	<i>ω</i>	102.61379	−0.51631399	−0.85562215		
<i>a</i>	2.5880081	<i>Ω</i>	18.60821	+0.73466184	−0.46440685		
<i>e</i>	0.1056983	<i>i</i>	6.56413	+0.44010436	−0.22855420		
<i>P</i>	4.16	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	0.7−	1.9−	1971 05 16	675	0.3+	2.0+	1998 09 27	704	0.2−	0.2+
1971 03 25	675	1.6−	0.3+	1998 09 18	809	0.8+	0.4+	1998 09 27	704	0.2+	1.5+
1971 03 25	675	0.5+	0.3+	1998 09 18	809	0.7−	1.5−	1998 09 27	704	(0.4+	3.4+)
1971 03 26	675	1.0−	1.1+	1998 09 18	809	(2.5−	1.5−)	1998 09 27	704	1.4−	1.4+
1971 03 26	675	0.1+	1.1−	1998 09 20	809	0.9+	0.8+	1998 11 10	704	0.9−	0.2+
1971 03 26	675	0.1−	0.7−	1998 09 20	809	1.4−	0.1−	1998 11 10	704	0.5+	0.5+
1971 03 27	675	0.1+	1.6+	1998 09 20	809	0.6−	0.3−	1998 11 10	704	0.8−	1.1−
1971 04 02	675	1.2+	2.0+	1998 09 26	704	0.2−	0.2−	1998 11 10	704	(2.4−	0.8+)
1971 04 16	675	1.7+	1.7−	1998 09 26	704	0.4−	1.2+	1998 11 11	704	0.6+	1.0−
1971 05 13	675	0.7+	0.4+	1998 09 26	704	1.5+	1.9−	1998 11 11	704	0.2−	0.3−
1971 05 14	675	0.2+	0.7−	1998 09 26	704	0.4+	0.4−	1998 11 11	704	0.7+	0.3−
				1998 09 26	704	0.8+	1.1+	1998 11 11	704	0.4−	1.3+

1259 T-2 = 1998 VN₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	296.81182	(2000.0)		P	Q		
<i>n</i>	0.20035486	<i>ω</i>	91.76389	−0.55505766	−0.83152577		
<i>a</i>	2.8924740	<i>Ω</i>	31.98175	+0.74586153	−0.50914298		
<i>e</i>	0.0453137	<i>i</i>	2.36054	+0.36824119	−0.22212231		
<i>P</i>	4.92	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	1.3−	0.4−	1973 09 30	675	1.7+	2.3+	1998 11 10	704	0.2+	0.2+
1973 09 19	675	0.9−	1.3−	1973 10 04	675	1.4−	0.2+	1998 11 10	704	0.2+	0.8+
1973 09 20	675	0.9−	0.8+	1973 10 04	675	1.2+	1.2+	1998 11 10	704	0.9−	0.4+
1973 09 24	675	0.4−	1.0−	1973 10 04	675	2.4+	0.2+	1998 11 11	704	0.8−	0.3−
1973 09 24	675	0.9−	1.0−	1973 10 05	675	0.2+	0.7−	1998 11 11	704	0.0	0.7+
1973 09 25	675	2.4−	0.1+	1973 10 05	675	1.3+	1.5+	1998 11 11	704	0.6−	0.6+
1973 09 25	675	1.6−	0.1+	1973 10 05	675	0.7+	1.1−	1998 11 11	704	0.9+	0.8+
1973 09 29	675	0.5+	1.5−	1973 10 05	675	1.3+	1.0+	1998 11 25	691	0.2+	0.0
1973 09 29	675	(0.4−	2.8−)	1998 10 19	699	0.9+	1.2−	1998 11 25	691	0.3+	0.0
1973 09 30	675	0.6−	0.6−	1998 10 19	699	0.5+	1.3−	1998 11 25	691	0.1+	0.1+
1973 09 30	675	2.2+	0.7+	1998 10 19	699	0.1−	1.0−				
1973 09 30	675	1.3−	0.1−	1998 11 10	704	0.7−	0.2−				

2047 T-2 = 1998 VV₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	67.44650	(2000.0)		P	Q		
<i>n</i>	0.23892439	<i>ω</i>	349.96043	+0.92901849	+0.36968598		
<i>a</i>	2.5721467	<i>Ω</i>	348.30477	−0.33377999	+0.81851406		
<i>e</i>	0.1806543	<i>i</i>	4.53533	−0.15973591	+0.43973515		
<i>P</i>	4.13	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	0.6+	0.3+	1973 09 29	675	1.0+	0.2+	1998 11 10	704	0.5+	0.7−
1973 09 19	675	0.7+	1.3+	1973 09 30	675	1.0+	0.2−	1998 11 10	704	1.3−	1.5−
1973 09 20	675	0.1+	1.2−	1973 09 30	675	0.3+	0.5+	1998 11 11	704	0.3+	0.6−
1973 09 24	675	0.0	0.7−	1973 10 04	675	0.8−	0.1+	1998 11 11	704	1.0+	0.1−
1973 09 24	675	0.5+	0.7−	1973 10 04	675	0.2+	0.3−	1998 11 11	704	1.0−	0.5+
1973 09 25	675	1.8−	0.1−	1973 10 05	675	0.0	0.5−	1998 11 11	704	0.6+	1.7+
1973 09 25	675	2.6−	0.2+	1973 10 05	675	0.6+	0.2+				
1973 09 29	675	0.3+	1.0+	1998 11 10	704	0.1+	0.8+				

1998 DEC. 8

M.P.C. 33327

3092 T-2 = 1998 SF₁₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23843586	ω	77.77308	+0.07956616	−0.99635862		
<i>a</i>	2.5756588	Ω	7.85858	+0.80511565	+0.04611064		
<i>e</i>	0.0410607	<i>i</i>	12.94894	+0.58775676	+0.07171681		
<i>P</i>	4.13	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1973 09 19	675	1.4−	0.6+	1973 09 30	675	0.8−	1.1+	1998 09 26	704	0.0	0.5−
1973 09 19	675	1.3−	0.4+	1973 09 30	675	0.0	0.3+	1998 09 26	704	0.8+	0.2−
1973 09 20	675	0.1+	0.2+	1973 10 04	675	0.0	0.2−	1998 09 27	704	0.0	0.7−
1973 09 24	675	0.6−	0.6−	1973 10 04	675	1.9+	0.2−	1998 09 27	704	0.1−	0.6+
1973 09 24	675	0.1+	0.2+	1973 10 05	675	1.2−	0.8+	1998 09 27	704	0.7+	1.1+
1973 09 25	675	0.7+	1.6−	1973 10 05	675	0.9−	0.7+	1998 09 27	704	2.2−	0.3+
1973 09 25	675	0.3+	0.5−	1998 09 26	704	0.6+	0.1−	1998 09 27	704	0.6−	1.1+
1973 09 29	675	1.5+	0.1−	1998 09 26	704	0.4+	0.8−				
1973 09 29	675	1.6+	0.9−	1998 09 26	704	0.4+	0.7−				

3161 T-2 = 1998 TD₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23883415	ω	269.41111	+0.96156839	+0.26838869		
<i>a</i>	2.5727945	Ω	75.01942	−0.22198657	+0.88406520		
<i>e</i>	0.1918846	<i>i</i>	3.43689	−0.16158033	+0.38261761		
<i>P</i>	4.13	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	0.6+	0.5+	1998 10 14	699	0.7−	0.1−	1998 10 28	120	0.3+	0.4+
1973 09 19	675	0.7+	1.3−	1998 10 14	699	0.5−	0.9−	1998 11 10	704	1.3+	0.0
1973 09 20	675	0.1−	0.1−	1998 10 14	699	0.3−	0.6−	1998 11 10	704	0.0	0.3+
1973 09 24	675	1.3−	0.9+	1998 10 15	120	0.4−	0.3−	1998 11 10	704	0.1−	0.1−
1973 09 24	675	0.0	0.4−	1998 10 16	120	2.6+	1.1+	1998 11 10	704	1.5+	1.4−
1973 09 25	675	1.5+	1.3−	1998 10 16	120	0.4−	0.1−	1998 11 10	704	1.0−	2.4−
1973 09 25	675	1.5+	1.1−	1998 10 16	120	0.8−	0.1+	1998 11 11	704	0.1+	0.4+
1973 09 29	675	1.7−	0.1+	1998 10 20	120	0.4−	0.5+	1998 11 11	704	0.8−	0.8−
1973 09 29	675	1.0−	1.1+	1998 10 20	120	0.4+	0.5+	1998 11 11	704	0.5+	0.2−
1973 09 30	675	0.0	0.9−	1998 10 23	120	0.1−	1.1+	1998 11 11	704	0.5+	0.9−
1973 09 30	675	0.1+	0.3−	1998 10 23	120	0.4−	0.1+	1998 11 11	704	0.1−	1.1+
1973 10 04	675	0.2−	0.9+	1998 10 24	120	0.7+	1.0−	1998 11 11	120	1.9−	0.5+
1973 10 04	675	0.9−	1.2+	1998 10 27	120	0.2−	1.0+	1998 11 11	120	0.0	1.2+
1973 10 05	675	1.0+	0.6+	1998 10 27	120	0.3−	0.6−	1998 11 11	120	0.9+	0.7+
1973 10 05	675	0.2−	0.3+	1998 10 28	120	0.3−	0.3+				

3222 T-2 = 1998 VH₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27842699	ω	320.18483	+0.98740420	+0.15536289		
<i>a</i>	2.3227109	Ω	30.91618	−0.12623918	+0.88761765		
<i>e</i>	0.1432565	<i>i</i>	3.33871	−0.09537621	+0.43358653		
<i>P</i>	3.54	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	1.8−	0.5+	1973 09 24	675	0.5−	0.2−	1973 10 05	675	1.0+	1.4−
1973 09 19	675	2.1+	1.5+	1973 09 25	675	1.0−	0.3−	1973 10 05	675	1.3+	0.3+
1973 09 19	675	1.2+	0.6−	1973 09 25	675	1.3−	0.7−	1998 11 10	704	0.4+	0.2−
1973 09 19	675	2.0−	0.1−	1973 09 25	675	0.4−	0.7−	1998 11 10	704	0.4+	0.0
1973 09 19	675	0.5−	2.1+	1973 09 25	675	0.3−	0.6−	1998 11 10	704	0.5−	0.9+
1973 09 19	675	0.3−	1.2−	1973 09 29	675	0.1−	0.3+	1998 11 10	704	0.3+	0.1−
1973 09 20	675	2.7+	1.1+	1973 09 29	675	0.0	0.2−	1998 11 11	704	0.3+	0.2+
1973 09 20	675	0.2+	0.4−	1973 09 30	675	0.0	0.4−	1998 11 11	704	0.8+	0.7−
1973 09 24	675	0.9−	0.2+	1973 09 30	675	1.2−	1.2−	1998 11 11	704	0.3−	0.6+
1973 09 24	675	0.7+	0.4+	1973 10 04	675	1.6+	1.4+	1998 11 11	704	0.3+	1.0−
1973 09 24	675	0.0	0.1+	1973 10 04	675	0.4−	0.0	1998 11 11	704	1.8−	0.6+

4092 T-2 = 1993 TS₁₇ = 1998 SK₁₄₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19845554	ω	348.72229	+0.98579804	−0.15874945		
<i>a</i>	2.9108996	Ω	20.65566	+0.16361755	+0.83442647		
<i>e</i>	0.2920994	<i>i</i>	8.93382	+0.03783551	+0.52776044		
<i>P</i>	4.97	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 19	675	0.9−	0.4−	1993 10 11	809	1.6+	0.2+	1998 09 27	704	0.9−	0.6−
1973 09 19	675	0.7−	0.6+	1993 10 11	809	1.2+	0.7+	1998 10 10	699	0.1+	0.4−
1973 09 20	675	1.0−	0.3+	1993 10 11	809	0.4+	0.4+	1998 10 10	699	0.3−	0.3+
1973 09 24	675	1.4+	1.0+	1993 10 13	675	1.4−	0.9−	1998 10 10	699	0.2−	0.2+
1973 09 24	675	0.2−	1.1+	1993 10 13	675	0.9−	1.2−	1998 10 28	704	0.4−	0.5+
1973 09 25	675	1.3+	0.1+	1998 09 18	809	1.0+	1.3+	1998 10 28	704	0.3−	0.4+
1973 09 25	675	0.7+	1.1−	1998 09 18	809	0.0	0.6+	1998 10 28	704	0.1−	0.3+
1973 09 29	675	0.1+	0.2−	1998 09 18	809	0.1−	0.5+	1998 10 28	704	0.7−	1.1+
1973 09 29	675	0.5−	0.2−	1998 09 20	809	(2.1+	0.1+)	1998 10 29	704	(3.8−	0.7+)
1973 09 30	675	0.6+	0.1−	1998 09 20	809	1.5+	0.3+	1998 10 29	704	0.2−	0.2+
1973 09 30	675	0.3+	0.4−	1998 09 20	809	1.9+	0.1−	1998 10 29	704	0.4−	0.2+
1973 10 04	675	0.6−	1.0+	1998 09 26	704	0.4−	0.5+	1998 10 29	704	0.5−	0.8−
1973 10 04	675	0.7−	0.3+	1998 09 26	704	0.5−	0.7−	1998 11 10	704	0.8+	0.6+
1973 10 05	675	0.3+	0.5−	1998 09 26	704	0.1−	1.2−	1998 11 10	704	0.4−	0.2+
1973 10 05	675	0.3−	0.8−	1998 09 26	704	0.3−	0.3−	1998 11 10	704	0.3−	0.5−
1993 10 09	809	(2.5+	1.0+)	1998 09 26	704	0.2+	0.5+	1998 11 10	704	0.5−	1.0−
1993 10 09	809	(2.8+	1.3+)	1998 09 27	704	0.1−	0.2−	1998 11 11	704	0.1+	0.6+
1993 10 09	809	1.9+	1.2+	1998 09 27	704	0.1+	0.2−	1998 11 11	704	0.7+	0.8−
1993 10 10	675	1.2−	1.9−	1998 09 27	704	0.3−	0.6+	1998 11 11	704	1.4+	0.3+
1993 10 10	675	1.2−	1.3−	1998 09 27	704	0.2−	0.1−	1998 11 11	704	0.4−	0.0

4257 T-2 = 1998 VO₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20033110	ω	244.42761	+0.71569078	+0.69650202		
<i>a</i>	2.8927027	Ω	71.37672	−0.61962235	+0.66735447		
<i>e</i>	0.0627046	<i>i</i>	3.12669	−0.32226518	+0.26367206		
<i>P</i>	4.92	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1973 09 19	675	1.3+	0.6−	1973 09 30	675	1.3+	1.5+	1998 11 10	704	0.7+	1.0−
1973 09 19	675	0.1+	0.9−	1973 09 30	675	1.3+	0.2−	1998 11 10	704	(3.8−	0.4+)
1973 09 20	675	0.9+	0.2−	1973 10 04	675	0.8+	0.5−	1998 11 11	704	0.7+	0.1+
1973 09 24	675	1.8−	1.2+	1973 10 04	675	0.1−	0.1−	1998 11 11	704	0.3−	1.1+
1973 09 24	675	1.6−	0.1+	1973 10 05	675	1.3−	0.4−	1998 11 11	704	0.9−	0.7+
1973 09 25	675	1.4−	0.4+	1973 10 05	675	0.1−	0.9+	1998 11 11	704	0.1+	0.0
1973 09 25	675	0.3−	1.3+	1998 11 10	704	0.4−	0.1−	1998 11 11	699	0.8−	0.6+
1973 09 29	675	0.4+	1.2−	1998 11 10	704	0.5+	0.9−	1998 11 11	699	1.2+	0.4+
1973 09 29	675	0.6+	1.3−	1998 11 10	704	1.5−	0.9−	1998 11 11	699	0.7+	0.0

4297 T-2 = 1991 PM₆ = 1998 SY₁₁₁

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	262.79778		(2000.0)		P		Q				
n	0.15813911	ω	55.50042		−0.66263386		−0.74668929				
a	3.3866984	Ω	76.11032		+0.66604422		−0.62296824				
e	0.0378311	i	3.42910		+0.34249301		−0.23316447				
P	6.23	H	12.8		G	0.15	U		4		
Residuals in seconds of arc											
1973 09 25	675	1.3−	1.9−	1991 08 14	809	0.2+	0.4−	1998 10 17	699	0.7−	0.2−
1973 09 25	675	(3.2+	2.1−)	1991 08 14	809	0.1−	1.3−	1998 10 19	699	0.7−	0.5−
1973 09 29	675	(3.6+	4.1−)	1998 09 26	704	0.8−	0.3−	1998 10 19	699	0.2−	0.2−
1973 09 29	675	(3.9+	4.4−)	1998 09 26	704	0.0	1.0−	1998 10 19	699	0.1−	0.5+
1973 09 30	675	1.5+	0.1+	1998 09 26	704	0.8−	0.7+	1998 10 28	704	0.8−	0.5−
1973 09 30	675	2.3+	1.4+	1998 09 26	704	0.3−	0.6+	1998 10 28	704	0.5−	1.1−

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1973 10 04	675	0.5−	0.7+	1998 09 26	704	0.1−	0.4−	1998 10 28	704	0.2−	0.4−
1973 10 04	675	0.1+	1.0+	1998 09 27	704	0.6+	1.2+	1998 10 28	704	(4.9−	0.0)
1973 10 05	675	1.6−	0.5+	1998 09 27	704	1.1+	1.3+	1998 10 29	704	0.5+	0.1+
1973 10 05	675	1.5−	0.1+	1998 09 27	704	0.6+	0.5+	1998 10 29	704	0.5−	0.0
1991 08 06	809	0.5+	0.8+	1998 09 27	704	1.1+	0.0	1998 10 29	704	0.8+	1.4−
1991 08 06	809	0.1+	1.3+	1998 09 27	704	0.8+	0.2−	1998 10 29	704	(3.1−	0.2+)
1991 08 06	809	1.1−	0.3+	1998 10 17	699	0.6+	0.3−				
1991 08 14	809	0.6+	1.1−	1998 10 17	699	0.3+	0.2−				

1090 T-3 = 1998 SB₅

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	56.40254		(2000.0)	P	Q		
<i>n</i>	0.23386524	ω	330.67080	+0.83343901	+0.55234884		
<i>a</i>	2.6091093	Ω	355.68379	−0.45260329	+0.66459805		
<i>e</i>	0.1659572	<i>i</i>	13.08145	−0.31706415	+0.50320988		
<i>P</i>	4.21	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 11	675	0.3−	1.3+	1998 09 20	557	0.6−	0.1−	1998 09 26	704	0.5+	1.9−
1977 10 11	675	0.2−	0.1+	1998 09 20	557	0.6−	0.7−	1998 09 27	704	0.6−	1.5−
1977 10 12	675	1.6−	0.5+	1998 09 21	557	0.6−	0.1+	1998 09 27	704	1.6+	1.9+
1977 10 12	675	0.7−	1.0+	1998 09 21	557	0.2+	0.1+	1998 09 27	704	1.0+	1.0+
1977 10 16	675	(0.3−	3.4−)	1998 09 24	557	0.4−	0.2+	1998 09 27	704	0.8−	0.2+
1977 10 16	675	0.5+	0.8−	1998 09 25	557	0.1−	0.2−	1998 09 27	704	1.4−	1.4+
1977 10 17	675	2.3+	1.0−	1998 09 25	557	0.1−	0.1+	1998 10 13	557	0.1−	0.0
1977 10 17	675	0.6−	0.1−	1998 09 25	557	0.1−	0.4+	1998 10 13	557	0.0	0.1−
1977 10 22	675	(1.2+	4.8−)	1998 09 26	704	1.1+	0.5+	1998 10 13	557	0.3−	0.3+
1977 10 22	675	(0.1−	3.6−)	1998 09 26	704	1.1+	0.2+	1998 11 21	557	0.0	0.8−
1998 09 20	557	0.3−	0.2−	1998 09 26	704	0.7−	1.0−	1998 11 21	557	0.5+	0.6+
1998 09 20	557	0.6−	0.4+	1998 09 26	704	1.8+	1.6−	1998 11 21	557	0.3+	0.3−

2349 T-3 = 1998 VX₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	8.23178		(2000.0)	P	Q		
<i>n</i>	0.18961769	ω	187.52971	+0.63072033	−0.76772496		
<i>a</i>	3.0006602	Ω	223.45751	+0.72027157	+0.63340333		
<i>e</i>	0.0682989	<i>i</i>	9.46381	+0.28879183	+0.09694642		
<i>P</i>	5.20	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 10 07	675	2.4+	0.2−	1977 10 22	675	0.5+	0.3+	1998 11 11	704	0.2+	0.5−
1977 10 11	675	1.0−	0.7+	1977 10 22	675	0.4−	0.2−	1998 11 11	704	0.3+	0.1−
1977 10 11	675	0.8−	0.5+	1998 10 18	699	0.6−	0.5+	1998 11 11	699	0.6+	0.1+
1977 10 12	675	0.1−	0.3−	1998 10 18	699	0.3+	0.3+	1998 11 11	704	0.7−	0.2+
1977 10 12	675	2.1−	1.2−	1998 10 18	699	0.1+	0.0	1998 11 11	699	0.5+	0.1−
1977 10 16	675	0.3+	0.4−	1998 11 10	704	0.3+	0.0	1998 11 11	699	0.5+	0.1+
1977 10 16	675	0.2+	1.1−	1998 11 10	704	0.3+	0.2+	1998 11 25	691	0.6−	0.3+
1977 10 17	675	1.1−	1.4+	1998 11 10	704	0.5−	0.1+	1998 11 25	691	0.6−	0.3+
1977 10 17	675	1.6−	0.9+	1998 11 10	704	0.9+	0.6−	1998 11 25	691	0.8−	0.2+
1977 10 21	675	1.4+	0.4−	1998 11 11	704	0.3+	0.6−				
1977 10 21	675	2.3+	0.2−	1998 11 11	704	0.6−	0.4−				

2496 T-3 = 1998 WC₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	160.24968		(2000.0)	P	Q		
<i>n</i>	0.19173586	ω	48.17795	−0.06636306	+0.99311864		
<i>a</i>	2.9785197	Ω	218.34000	−0.95537176	−0.09114316		
<i>e</i>	0.0202151	<i>i</i>	8.94901	−0.28785541	+0.07354111		
<i>P</i>	5.14	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 07	675	0.9+	0.1−	1977 10 17	675	0.1−	1.8+	1998 11 18	704	0.3+	1.3+
1977 10 11	675	1.0−	1.4+	1977 10 17	675	1.9−	1.0+	1998 11 18	704	0.1+	1.2−
1977 10 11	675	1.6−	0.4+	1977 10 21	675	0.8+	0.0	1998 11 18	704	0.5−	0.3+

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1977 10 12	675	0.7−	1.1−	1977 10 21	675	2.2+	1.3+	1998 11 21	704	0.2+	0.0
1977 10 12	675	1.3−	0.9−	1977 10 22	675	1.4+	0.1−	1998 11 21	704	0.7−	1.2−
1977 10 16	675	0.2+	1.7−	1977 10 22	675	0.5+	0.3−	1998 11 21	704	0.7+	0.1−
1977 10 16	675	0.5+	1.7−	1998 11 18	704	0.0	0.8+				

3168 T-3 = 1998 TR₂₆

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	51.40595		(2000.0)	P	Q		
<i>n</i>	0.28275365	ω	329.58427	+0.99835847	+0.04330824		
<i>a</i>	2.2989555	Ω	28.00767	−0.02116758	+0.88706423		
<i>e</i>	0.2165329	<i>i</i>	4.57791	−0.05321935	+0.45961011		
<i>P</i>	3.49	<i>H</i>	16.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 10 07	675	0.9+	2.4−	1998 08 31	910	0.6−	0.0	1998 10 19	691	0.4−	0.6+
1977 10 11	675	0.7−	0.3+	1998 08 31	910	0.4−	0.1+	1998 10 19	691	0.3−	0.7+
1977 10 11	675	0.5+	0.5+	1998 08 31	910	0.7−	0.2−	1998 11 10	704	0.2−	0.6+
1977 10 12	675	1.6+	1.1−	1998 09 22	910	0.3+	0.6+	1998 11 10	704	0.9+	1.6−
1977 10 12	675	0.9+	0.8−	1998 09 22	910	0.4+	0.6+	1998 11 10	704	0.7+	1.7−
1977 10 16	675	0.4+	1.3−	1998 09 22	910	0.4+	0.7+	1998 11 10	704	0.5+	0.3−
1977 10 16	675	0.7+	0.4−	1998 10 14	691	0.6−	0.6+	1998 11 10	704	0.1−	1.2−
1977 10 17	675	0.1−	0.4+	1998 10 14	691	0.3−	0.5+	1998 11 11	704	0.8−	0.6−
1977 10 17	675	1.9−	0.2+	1998 10 14	691	0.6−	0.6+	1998 11 11	704	0.5−	1.1+
1977 10 21	675	1.3−	0.9+	1998 10 18	699	0.2−	0.7+	1998 11 11	704	1.5+	0.9−
1977 10 21	675	0.7−	0.3+	1998 10 18	699	0.1+	1.0+	1998 11 11	704	0.2−	0.1+
1977 10 22	675	1.2+	0.0	1998 10 18	699	0.1+	1.2+				
1977 10 22	675	(2.7+	1.4−)	1998 10 19	691	0.4−	0.3+				

3229 T-3 = 1998 WM₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	30.27921		(2000.0)	P	Q		
<i>n</i>	0.23662000	ω	342.31910	+0.83041141	−0.55615679		
<i>a</i>	2.5888194	Ω	51.51779	+0.51617234	+0.74548860		
<i>e</i>	0.2230133	<i>i</i>	2.43546	+0.20972126	+0.36733686		
<i>P</i>	4.17	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	0.8−	0.4−	1977 10 17	675	0.3−	0.3−	1998 11 18	704	0.2+	0.7−
1977 10 11	675	1.9−	1.1+	1977 10 21	675	0.8−	1.4−	1998 11 18	704	0.7+	1.3−
1977 10 11	675	1.0−	1.5+	1977 10 21	675	0.3+	1.9−	1998 11 21	704	0.6−	0.5+
1977 10 12	675	0.9+	0.2+	1977 10 22	675	1.8+	0.0	1998 11 21	704	0.0	0.1−
1977 10 12	675	1.2+	0.0	1977 10 22	675	(2.8+	2.7−)	1998 11 21	704	0.2−	0.7−
1977 10 16	675	0.3+	0.8+	1998 11 15	120	0.1+	0.9+	1998 11 21	704	0.1−	1.3+
1977 10 16	675	0.4+	0.3+	1998 11 15	120	(0.7+	3.9+)				
1977 10 17	675	0.0	0.1−	1998 11 18	704	0.2−	0.4+				

3320 T-3 = 1998 WE₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	52.97444		(2000.0)	P	Q		
<i>n</i>	0.23780045	ω	294.20129	+0.97744552	−0.20825746		
<i>a</i>	2.5802450	Ω	77.83407	+0.20443445	+0.89141583		
<i>e</i>	0.1270019	<i>i</i>	2.05528	+0.05297935	+0.40250049		
<i>P</i>	4.14	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 07	675	0.5+	0.5−	1977 10 17	675	0.6−	0.4−	1998 11 21	704	0.9−	1.1+
1977 10 11	675	1.3−	1.4+	1977 10 21	675	0.2−	0.7+	1998 11 21	704	2.3−	0.4+
1977 10 11	675	1.7−	1.9+	1977 10 21	675	1.0−	0.5+	1998 11 24	704	0.0	1.2−
1977 10 12	675	2.2+	0.3+	1977 10 22	675	1.2+	0.0	1998 11 24	704	0.2+	0.6−
1977 10 12	675	1.3+	1.8−	1977 10 22	675	1.6+	1.3−	1998 11 24	704	0.3+	0.1−
1977 10 16	675	1.0−	0.1+	1998 11 21	704	0.9+	0.2−	1998 11 24	704	0.0	0.4+
1977 10 16	675	0.2−	1.4−	1998 11 21	704	0.4+	0.3−	1998 11 24	704	0.9+	0.8+
1977 10 17	675	0.7−	0.2+	1998 11 21	704	0.5+	0.0				

3393 T-3 = 1998 TR₁₄

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	67.13976	(2000.0)	P	Q	
<i>n</i>	0.18785032	ω 124.20090	+0.76131807	+0.64670784	
<i>a</i>	3.0194517	Ω 195.67539	−0.63699336	+0.73263687	
<i>e</i>	0.1114271	<i>i</i> 9.91364	−0.12097213	+0.21216076	
<i>P</i>	5.25	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1977 10 07	675	1.1−	2.1−	1977 10 21	675	0.8−	0.8+	1998 10 14	691	1.4−	0.7+
1977 10 11	675	0.6−	0.3+	1977 10 21	675	1.1−	0.2−	1998 10 18	691	1.3−	0.6+
1977 10 11	675	0.8−	0.7+	1977 10 22	675	2.2+	2.4−	1998 10 18	691	1.1−	0.8+
1977 10 12	675	1.6+	0.6−	1977 10 22	675	1.2+	1.3−	1998 10 18	691	1.5−	0.7+
1977 10 12	675	1.1+	0.9−	1998 09 15	699	0.6+	1.0+	1998 11 11	699	1.1+	1.5+
1977 10 16	675	0.7+	1.0−	1998 09 15	699	1.3+	0.1−	1998 11 11	699	1.1+	0.9−
1977 10 16	675	0.5+	1.2−	1998 09 15	699	1.3+	0.1+	1998 11 11	699	0.9+	1.5+
1977 10 17	675	0.1+	0.3−	1998 10 14	691	1.1−	1.0+				
1977 10 17	675	1.3−	0.8+	1998 10 14	691	1.2−	0.5+				

4049 T-3 = 1998 SM₁₄₂

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	336.08977	(2000.0)	P	Q	
<i>n</i>	0.23489550	ω 42.92391	−0.21489807	−0.97085637	
<i>a</i>	2.6014745	Ω 59.74708	+0.85948088	−0.23959076	
<i>e</i>	0.2963059	<i>i</i> 7.05519	+0.46380108	−0.00584622	
<i>P</i>	4.20	<i>H</i> 15.2	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1977 10 07	675	1.2+	0.1+	1977 10 21	675	1.1+	0.7+	1998 10 01	910	0.4+	0.1−
1977 10 11	675	0.7−	1.2−	1977 10 22	675	0.4+	1.8−	1998 10 01	910	0.3+	0.0
1977 10 11	675	0.3−	1.6−	1998 09 26	704	0.1−	0.7−	1998 10 01	910	0.3+	0.1−
1977 10 12	675	1.5−	0.7−	1998 09 26	704	0.3−	0.8+	1998 10 11	699	0.5+	0.5−
1977 10 12	675	0.1+	0.6−	1998 09 26	704	0.5−	1.2+	1998 10 11	699	0.0	0.3−
1977 10 16	675	0.7−	1.0+	1998 09 26	704	0.5−	0.7+	1998 10 11	699	0.8+	0.2+
1977 10 16	675	0.0	0.5+	1998 09 26	704	0.8−	1.1−	1998 10 20	699	0.1+	0.3+
1977 10 17	675	0.3+	0.1−	1998 09 27	704	1.6−	0.5+	1998 10 20	699	0.4+	0.2+
1977 10 17	675	1.4+	1.0+	1998 09 27	704	0.7−	1.6+	1998 10 20	699	0.1−	0.4+
1977 10 21	675	0.5+	0.4−	1998 09 27	704	0.2+	0.4+				

4196 T-3 = 1998 US₂₇

Id. B. G. Marsden

Object	<i>H</i>	<i>G</i>	Epoch	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	<i>a</i>	Obs.	Opp. & Arc	rms Perts	<i>U</i>	Computer	<i>MPC</i>	Object
(2373)	12.5	0.15	19990122	276.64852	215.55242	146.67244	10.08204	0.1718107	2.7948524	92	10 1929–1998	0.99	M-v 1	Sumzina	32922	(2373)
(2384)	12.2	0.15	19990122	61.70581	204.40918	8.29575	13.57090	0.1230048	2.6081435	72	11 1943–1998	1.23	M-v 2	Sumzina	33068	(2384)
(2390)	12.2	0.15	19990122	136.67941	354.39316	326.03513	10.36376	0.1473049	2.6183322	92	9 1942–1997	0.78	M-v 1	Sumzina	30870	(2390)
(2396)	11.6	0.15	19990122	260.14638	49.81543	158.74078	12.61002	0.0736218	2.7924430	29	7 1953–1992	1.24	M-v 2	Sumzina	33068	(2396)
(2437)	13.1	0.15	19990122	138.69531	151.00231	219.17703	2.94103	0.1478085	2.1890125	73	13 1929–1997	1.19	M-v 2	Sumzina	32046	(2437)
(2442)	12.8	0.15	19990122	58.77168	104.45154	190.82399	5.08324	0.1184684	2.3885306	92	13 1942–1998	1.02	M-v 1	Sumzina	32742	(2442)
(2448)	10.4	0.15	19990122	354.85324	71.95826	131.36995	17.70594	0.1151049	2.7926912	49	9 1953–1995	1.19	M-v 1	Sumzina	24761	(2448)
(2453)	11.2	0.15	19990122	268.97261	342.98931	12.20345	10.32765	0.1089206	3.0195704	75	11 1921–1998	0.93	M-v 1	Sumzina	31274	(2453)
(2460)	12.5	0.15	19990122	44.45774	304.17755	176.24391	3.73886	0.1098940	2.2574211	62	16 1955–1997	1.01	M-v 1	Sumzina	32923	(2460)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	17.78176	(2000.0)	P	Q	
<i>n</i>	0.23643613	ω 255.10158	+0.71759582	−0.69510886	
<i>a</i>	2.5901614	Ω 148.89697	+0.66690534	+0.66786864	
<i>e</i>	0.0966272	<i>i</i> 4.81466	+0.20073244	+0.26603598	
<i>P</i>	4.17	<i>H</i> 14.9	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1977 10 11	675	0.6+	0.6+	1977 10 21	675	0.6+	0.7+	1998 11 10	704	0.3+	0.7−
1977 10 11	675	0.4+	0.2−	1977 10 22	675	1.7−	0.4+	1998 11 10	704	0.4−	0.3−
1977 10 12	675	0.3+	0.5−	1977 10 22	675	1.5+	1.7−	1998 11 10	704	0.2−	0.3+
1977 10 12	675	0.8−	1.0−	1998 10 18	809	0.8+	1.1+	1998 11 10	704	0.2+	0.3+
1977 10 16	675	0.4−	1.2+	1998 10 18	809	0.1+	0.2−	1998 11 10	704	0.1−	0.7+
1977 10 16	675	0.7+	0.5+	1998 10 18	809	0.2+	1.3+	1998 11 11	704	0.1−	1.0−
1977 10 17	675	0.6+	0.0	1998 10 19	809	0.5+	0.2−	1998 11 11	704	0.1+	0.7−
1977 10 17	675	0.9−	0.7−	1998 10 19	809	0.8−	0.8−				
1977 10 21	675	0.7−	0.4+	1998 10 19	809	0.8−	0.6+				

4205 T-3 = 1998 WY₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	93.11499	(2000.0)	P	Q	
<i>n</i>	0.23810883	ω 218.31986	+0.72160311	+0.68956938	
<i>a</i>	2.5780166	Ω 97.96533	−0.61887804	+0.68233485	
<i>e</i>	0.2111931	<i>i</i> 3.56067	−0.31028844	+0.24272047	
<i>P</i>	4.14	<i>H</i> 13.9	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1977 10 07	675	0.5−	0.0	1977 10 17	675	0.9−	0.6+	1998 11 21	704	0.6−	0.0
1977 10 11	675	1.1+	0.1−	1977 10 21	675	0.6+	0.5+	1998 11 24	704	0.3+	0.2−
1977 10 11	675	0.6+	0.0	1977 10 21	675	0.3−	1.2−	1998 11 24	704	0.0	0.2−
1977 10 12	675	0.3−	1.4−	1977 10 22	675	1.5−	1.1+	1998 11 24	704	0.4−	0.0
1977 10 12	675	0.8−	0.1−	1977 10 22	675	0.8+	1.1−	1998 11 24	704	0.6+	0.0
1977 10 16	675	0.7+	1.1+	1998 11 21	704	0.2+	0.2+	1998 11 24	704	0.6−	1.4+
1977 10 16	675	0.0	1.2+	1998 11 21	704	0.2+	0.6−				
1977 10 17	675	0.4+	0.6−	1998 11 21	704	0.4+	0.6−				

5173 T-3 = 1998 WA

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	327.15208	(2000.0)	P	Q	
<i>n</i>	0.37727785	ω 290.28742	−0.41859533	−0.90762373	
<i>a</i>	1.8968304	Ω 184.82325	+0.90812015	−0.41794335	
<i>e</i>	0.0698479	<i>i</i> 22.05829	+0.00978435	−0.03927494	
<i>P</i>	2.61	<i>H</i> 16.9	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1977 10 16	675	0.7−	0.5−	1977 10 21	675	0.5−	0.5+	1998 11 17	703	0.2+	0.1−
1977 10 16	675	0.5+	0.1−	1998 11 16	703	0.4+	0.2+	1998 11 17	703	0.2−	0.7−
1977 10 17	675	0.5+	0.1−	1998 11 16	703	0.3−	0.3−	1998 11 19	703	0.1−	0.2+
1977 10 17	675	0.5−	0.8+	1998 11 16	703	0.4+	0.3+	1998 11 19	703	0.1+	0.1−
1977 10 21	675	0.6+	0.7−	1998 11 17	703	0.5−	0.5+				

(2466)	12.1	0.15	19990122	69.08030	194.26060	159.92898	5.09399	0.1661656	2.6361192	77	16	1929-1998	1.15	M-v	1	Sumzina	24582	(2466)
(2469)	11.6	0.15	19990122	23.74184	140.53924	152.33096	9.67406	0.1254152	3.1167692	59	9	1949-1998	1.17	M-v	1	Sumzina	30470	(2469)
(2477)	12.4	0.15	19990122	114.52589	86.96628	208.41203	6.08440	0.1524340	2.5572753	48	10	1961-1998	0.85	M-v	1	Williams	32221	(2477)
(2478)	12.8	0.15	19990122	245.69557	232.83865	229.01298	4.13562	0.0685569	2.2259891	60	13	1932-1998	1.26	M-v	2	Sumzina	31274	(2478)
(2482)	12.7	0.15	19990122	321.10536	2.58490	103.22301	3.12999	0.0593817	2.9277970	71	9	1953-1998	0.75	M-v	1	Williams	31583	(2482)
(2498)	12.0	0.15	19990122	117.17907	358.46772	332.32594	1.24180	0.0851163	2.9155462	67	14	1950-1997	0.99	M-v	1	Sumzina	33068	(2498)
(2528)	12.6	0.15	19990122	64.51371	183.26888	162.79858	0.50649	0.1820966	3.1366226	87	18	1933-1998	1.24	M-v	1	Sumzina	31005	(2528)
(2533)	11.7	0.15	19990122	28.65558	220.37345	201.56298	1.56010	0.1617968	3.1017227	106	18	1948-1994	1.11	M-v	1	Sumzina	32046	(2533)
(2571)	13.0	0.15	19990122	103.33900	284.21535	67.06264	2.87426	0.1943019	2.2279605	65	8	1931-1994	1.15	M-v	1	Sumzina	32302	(2571)
(2616)	12.5	0.15	19990122	327.24210	201.35257	146.80482	1.44172	0.0763050	2.1621231	76	15	1929-1998	1.06	M-v	1	Sumzina	30687	(2616)
(2617)	10.4	0.15	19990122	53.25146	345.41962	74.00739	12.82962	0.2264769	3.1690522	32	7	1975-1993	1.23	M-v	1	Sumzina	32302	(2617)
(2623)	13.1	0.15	19990122	145.34893	22.30071	349.34925	4.06393	0.2347352	2.2552373	58	9	1919-1998	1.12	M-v	2	Sumzina	27934	(2623)
(2627)	12.0	0.15	19990122	189.39901	316.76829	109.67469	2.49829	0.1747252	3.1079613	67	12	1950-1998	0.91	M-v	1	Sumzina	32743	(2627)
(2670)	10.5	0.15	19990122	171.05275	175.69740	285.19947	9.83896	0.0767358	3.1666209	38	13	1957-1998	1.28	M-v	1	Sumzina	32047	(2670)
(2697)	10.2	0.15	19990122	98.41899	129.24022	271.70325	3.60620	0.0966385	3.5523790	105	15	1936-1998	1.26	M-v	1	Sumzina	31583	(2697)
(2707)	11.6	0.15	19990122	312.78269	342.60657	79.91915	2.67974	0.1379008	3.1876189	205	17	1953-1998	1.03	M-v	1	Sumzina	31137	(2707)
(2721)	12.0	0.15	19990122	130.48231	278.63168	85.20219	2.23036	0.1845073	3.2272705	45	11	1956-1998	0.92	M-v	1	Sumzina	31137	(2721)
(2778)	13.0	0.15	19990122	248.27572	286.27247	92.09919	4.61535	0.1213259	2.2809965	69	13	1948-1998	1.29	M-v	2	Sumzina	33069	(2778)
(2807)	12.6	0.15	19990122	17.30144	93.00919	28.58249	7.88303	0.1823770	2.7934881	29	9	1954-1997	1.14	M-v	1	Sumzina	31138	(2807)
(2832)	12.6	0.15	19990122	57.10840	347.82687	162.96631	4.16692	0.0871628	2.4755247	44	12	1903-1998	1.27	M-v	2	Sumzina	32743	(2832)
(2833)	12.2	0.15	19990122	73.51786	346.50463	337.24115	1.33918	0.0707978	2.8750429	75	12	1944-1998	1.23	M-v	1	Sumzina	31138	(2833)
(2852)	12.3	0.15	19990122	246.24691	256.76667	110.17831	1.70013	0.0846214	2.7850616	146	11	1949-1998	0.74	M-v	1	Sumzina	32513	(2852)
(2857)	12.7	0.15	19990122	127.23284	332.08678	150.06208	5.73682	0.0965603	2.3994564	95	14	1942-1998	1.26	M-v	1	Sumzina	30781	(2857)
(2860)	12.6	0.15	19990122	235.80252	70.72051	334.66106	22.70756	0.2151112	2.3317295	64	7	1978-1997	1.19	M-v	2	Sumzina	32303	(2860)
(2884)	11.8	0.15	19990122	190.85453	15.36682	41.49515	1.95024	0.1749947	3.1117552	124	14	1929-1998	0.99	M-v	1	Sumzina	32743	(2884)
(2898)	12.5	0.15	19990122	155.15267	209.54390	116.87771	14.30453	0.0209520	2.5555597	28	8	1938-1994	1.04	M-v	1	Sumzina	31785	(2898)
(2907)	11.5	0.15	19990122	167.81878	197.77338	172.79228	10.18386	0.0883947	3.0196340	50	13	1954-1996	1.30	M-v	1	Sumzina	33069	(2907)
(2933)	11.7	0.15	19990122	139.69263	220.16561	121.61489	7.22516	0.0482099	2.6085243	49	10	1940-1998	1.10	M-v	1	Sumzina	22084	(2933)
(2939)	12.6	0.15	19990122	91.49305	235.90898	350.33787	3.97087	0.1603085	2.4421470	82	11	1976-1998	1.23	M-v	2	Sumzina	31954	(2939)
(2942)	13.2	0.15	19990122	244.25949	154.31103	116.56130	6.81553	0.1538551	2.2385540	35	10	1932-1998	1.05	M-v	2	Sumzina	30896	(2942)
(2962)	11.3	0.15	19990122	334.61893	119.06348	54.49784	15.65535	0.0383346	2.5683675	50	7	1931-1998	1.04	M-v	2	Sumzina	33069	(2962)
(2977)	12.7	0.15	19990122	86.86072	184.09393	170.74350	9.59753	0.1713023	2.7830876	49	8	1974-1997	0.92	M-v	1	Sumzina	32744	(2977)
(2978)	11.7	0.15	19990122	260.01916	5.41180	349.11708	1.23474	0.1782001	3.1037648	145	12	1929-1998	0.82	M-v	1	Sumzina	31006	(2978)
(2993)	12.3	0.15	19990122	250.93092	74.42615	313.71353	12.27780	0.1965455	2.5858479	63	9	1970-1998	1.15	M-v	1	Sumzina	32744	(2993)
(2996)	11.8	0.15	19990122	280.62913	301.35035	334.65441	3.66942	0.0316998	2.7827877	97	14	1949-1998	1.22	M-v	1	Sumzina	32225	(2996)
(3018)	12.8	0.15	19990122	165.93440	71.54342	228.65307	4.73533	0.1863584	2.3677407	60	8	1979-1997	1.17	M-v	1	Sumzina	33070	(3018)
(3019)	11.7	0.15	19990122	113.55260	321.68105	104.36823	3.22022	0.0515839	2.8644632	158	13	1940-1998	0.70	M-v	0	Sumzina	33070	(3019)
(3052)	13.1	0.15	19990122	321.87612	279.60903	238.67540	3.90127	0.1823090	2.3740379	35	8	1976-1998	0.76	M-v	1	Sumzina	32048	(3052)
(3055)	12.5	0.15	19990122	298.64239	63.03658	3.55508	15.01829	0.1079606	2.5625671	38	7	1976-1993	1.06	M-v	2	Sumzina	32303	(3055)
(3058)	14.3	0.15	19990122	210.96081	210.48450	208.04245	3.54584	0.1570342	2.2486376	103	10	1905-1998	0.89	M-v	2	Sumzina	30091	(3058)
(3060)	13.4	0.15	19990122	277.23682	4.63504	326.92686	7.26573	0.1769825	2.2779147	90	12	1953-1998	1.20	M-v	2	Sumzina	32303	(3060)
(3071)	11.8	0.15	19990122	192.81078	34.48028	134.51871	2.20118	0.0783871	3.2232151	120	15	1910-1998	0.78	M-v	1	Sumzina	32744	(3071)
(3080)	11.7	0.15	19990122	17.44129	307.14845	48.33006	13.87438	0.1968890	2.6100747	39	8	1935-1997	1.04	M-v	2	Sumzina	33070	(3080)
(3110)	13.2	0.15	19990122	200.98587	74.23263	348.15874	2.24279	0.1250470	2.5609552	89	13	1930-1998	1.05	M-v	1	Sumzina	33070	(3110)
(3119)	12.2	0.15	19990122	346.24484	325.50453	110.91253	4.72523	0.1966620	3.0659344	73	9	1973-1998	1.18	M-v	1	Sumzina	30290	(3119)
(3134)	10.7	0.15	19990122	282.75311	165.00268	257.29660	7.62140	0.2200716	3.9795488	99	16	1921-1998	1.11	M-v	1	Sumzina	32048	(3134)
(3166)	13.0	0.15	19990122	203.52250	118.69404	72.06090	5.24086	0.1166849	2.2384293	89	15	1940-1998	1.20	M-v	2	Sumzina	30687	(3166)
(3171)	10.8	0.15	19990122	114.26328	23.32621	32.12232	11.37338	0.1328554	3.1921410	31	10	1962-1996	1.19	M-v	1	Sumzina	33070	(3171)
(3188)	14.1	0.15	19990122	286.58228	22.62754	336.66582	4.70120	0.1326831	2.2889927	94	11	1954-1998	0.84	M-v	2	Sumzina	32304	(3188)
(3195)	12.4	0.15	19990122	41.63735	57.66291	275.63416	0.86337	0.0661728	2.9133979	130	13	1953-1998	1.05	M-v	1	Sumzina	31006	(3195)
(3208)	12.0	0.15	19990122	134.18764	23.42335	137.13855	2.33476	0.1175402	3.1110039	53	10	1931-1992	0.96	M-v	1	Sumzina	32744	(3208)
(3211)	12.8	0.15	19990122	73.94071	83.85475	337.46609	10.50739	0.2474184	2.7367652	38	7	1931-1994	0.97	M-v	1	Sumzina	30091	(3211)
(3219)	11.6	0.15	19990122	21.08728	289.23030	290.21042	6.79577	0.1295901	3.0359123	56	8	1934-1998	1.27	M-v	1	Sumzina	33070	(3219)

(3231)	13.1	0.15	19990122	292.71039	54.00143	324.69591	6.39626	0.1268311	2.4451737	53	9	1949-1998	1.26	M-v	1	Sumzina	32048	(3231)
(3242)	12.3	0.15	19990122	99.42797	243.55464	191.55773	12.36064	0.1604029	2.6804518	44	7	1979-1995	0.76	M-v	1	Sumzina	32304	(3242)
(3254)	11.0	0.15	19990122	49.94435	305.55904	43.58713	4.44746	0.1671777	3.9523846	61	8	1982-1998	0.94	M-v	1	Sumzina	31957	(3254)
(3263)	13.0	0.15	19990122	354.64465	9.38950	78.57797	7.74608	0.0669809	2.4140368	52	9	1932-1998	1.23	M-v	2	Sumzina	30896	(3263)
(3275)	13.1	0.15	19990122	242.21366	192.22212	45.51927	8.59441	0.1822977	2.3316212	49	10	1964-1997	1.10	M-v	2	Sumzina	20034	(3275)
(3282)	13.3	0.15	19990122	116.27905	18.42074	162.49337	3.16494	0.0425319	2.1891136	95	10	1949-1998	1.08	M-v	2	Sumzina	31584	(3282)
(3345)	11.6	0.15	19990122	13.04060	194.42941	305.01005	15.82876	0.1877984	2.4743871	37	11	1938-1997	1.25	M-v	2	Sumzina	30757	(3345)
(3370)	14.0	0.15	19990122	286.01607	300.27207	144.77626	7.10877	0.1094868	2.2163904	71	11	1934-1998	1.26	M-v	1	Sumzina	28317	(3370)
(3371)	12.3	0.15	19990122	289.31849	343.40123	293.89054	9.68204	0.0139924	2.7387567	34	8	1955-1998	0.71	M-v	1	Sumzina	33070	(3371)
(3427)	13.6	0.15	19990122	336.15444	75.97853	310.32214	2.60398	0.1351688	2.2811790	58	10	1954-1998	0.99	M-v	1	Sumzina	21267	(3427)
(3435)	12.9	0.15	19990122	266.15368	295.56288	171.01234	7.71259	0.0456760	2.3250258	78	8	1952-1998	0.92	M-v	1	Sumzina	31584	(3435)
(3453)	11.8	0.15	19990122	12.51226	318.29782	301.12409	4.51303	0.0841786	2.3869293	89	11	1935-1998	1.07	M-v	1	Sumzina	29660	(3453)
(3466)	13.3	0.15	19990122	179.77386	128.21043	104.95371	1.76371	0.1600239	2.3373633	57	11	1943-1998	0.96	M-v	1	Williams	22432	(3466)
(3473)	13.6	0.15	19990122	207.55187	57.93766	129.67153	0.96267	0.1558602	2.3643205	73	9	1924-1998	1.03	M-v	2	Sumzina	30782	(3473)
(3479)	11.4	0.15	19990122	245.47151	89.57197	196.93032	12.48703	0.1044952	3.0474580	55	11	1953-1991	1.28	M-v	1	Sumzina	28299	(3479)
(3534)	12.4	0.15	19990122	205.13637	199.80166	247.40055	7.65296	0.1945917	2.7518593	64	7	1936-1998	1.20	M-v	1	Sumzina	27914	(3534)
(3552)	13.0	0.15	19990122	280.03527	316.71114	350.62989	30.83200	0.7141715	4.2326154	69	6	1983-1998	1.09	M-v	1	Sumzina	31382	(3552)
(3557)	10.8	0.15	19990122	272.77971	125.41440	186.42913	6.03425	0.1758522	4.0095770	106	8	1969-1998	1.21	M-v	1	Sumzina	31721	(3557)
(3603)	12.9	0.15	19990122	142.95596	347.70513	278.32029	5.22868	0.1247798	2.5693910	55	8	1955-1998	0.91	M-v	2	Williams	33071	(3603)
(3631)	10.5	0.15	19990122	265.15128	149.81689	151.33354	14.36702	0.0766670	3.0966056	68	13	1952-1998	0.93	M-v	1	Sumzina	29661	(3631)
(3682)	11.5	0.15	19990122	142.24026	113.23990	256.04494	13.56335	0.3187514	2.7585614	31	8	1923-1994	1.22	M-v	2	Sumzina	31233	(3682)
(3722)	12.9	0.15	19990122	130.34316	136.14535	232.56230	6.45473	0.1994264	2.2362291	39	8	1927-1998	1.19	M-v	2	Sumzina	32306	(3722)
(3735)	11.6	0.15	19990122	156.21260	252.57627	300.06981	5.22048	0.1420576	3.1159865	93	10	1903-1998	0.97	M-v	1	Sumzina	32049	(3735)
(3745)	14.2	0.15	19990122	29.60524	329.05032	356.64436	9.03096	0.2496318	2.4298944	28	7	1953-1997	1.00	M-v	2	Sumzina	33071	(3745)
(3763)	12.5	0.15	19990122	335.16728	169.23007	23.31566	7.02917	0.1053929	2.2524720	60	12	1928-1997	0.98	M-v	2	Sumzina	32930	(3763)
(3764)	13.5	0.15	19990122	78.22265	325.86493	146.26732	4.87658	0.0906869	2.2497891	27	7	1958-1990	1.11	M-v	2	Sumzina	32515	(3764)
(3787)	11.7	0.15	19990122	53.77541	305.63750	186.06856	12.05103	0.1350322	2.8502462	32	6	1931-1991	1.18	M-v	2	Sumzina	32306	(3787)
(3837)	13.0	0.15	19990122	207.26756	40.15859	233.96884	4.83209	0.0716446	2.4244854	46	10	1962-1998	1.22	M-v	1	Sumzina	26400	(3837)
(3928)	13.3	0.15	19990122	59.85880	53.99927	269.40872	2.45291	0.1897487	2.2462823	84	11	1978-1998	1.00	M-v	2	Sumzina	32306	(3928)
(3959)	14.0	0.15	19990122	3.31437	197.69561	211.05243	3.28062	0.1876087	2.2588449	121	9	1954-1998	1.26	M-v	1	Sumzina	32050	(3959)
(4067)	13.0	0.15	19990122	185.20925	89.81082	328.81768	6.32843	0.1870626	2.6268462	125	9	1953-1998	1.05	M-v	1	Sumzina	33072	(4067)
(4682)	14.2	0.15	19990122	123.60991	88.34175	321.61911	3.82567	0.1947753	2.2712105	32	4	1973-1997	1.13	M-v	2	Sumzina	33073	(4682)
(4798)	13.4	0.15	19990122	57.76548	160.66555	93.72962	3.65794	0.1089667	2.1975181	77	10	1954-1998	0.99	M-v	1	Sumzina	29945	(4798)
(4858)	14.2	0.15	19990122	340.68706	124.95814	330.19899	3.27733	0.1087926	2.1820523	100	7	1985-1998	0.77	M-v	1	Williams	32308	(4858)
(5004)	14.4	0.15	19990122	289.48145	86.03855	21.76047	3.34808	0.0688611	2.2410684	64	7	1978-1998	0.90	M-v	2	Sicoli	31140	(5004)
(5016)	13.0	0.15	19990122	139.32754	97.00800	187.41875	3.64242	0.1325219	2.2950341	54	7	1976-1998	0.66	M-v	1	Sicoli	33074	(5016)
(5020)	14.6	0.15	19990122	92.03179	130.96604	197.51113	1.09679	0.2125947	2.1538734	71	8	1953-1998	1.22	M-v	2	Sumzina	30783	(5020)
(5053)	13.1	0.15	19990122	275.14110	11.81735	150.32460	11.48707	0.1658612	2.3995112	57	9	1979-1998	0.81	M-v	1	Sicoli	33074	(5053)
(5080)	12.9	0.15	19990122	0.99730	88.67963	345.03151	5.45452	0.1236654	2.3491904	68	9	1924-1998	1.14	M-v	1	Sumzina	32308	(5080)
(5193)	11.8	0.15	19990122	125.32583	20.31208	91.04125	2.71154	0.1569386	3.1811269	74	12	1909-1998	1.01	M-v	1	Sumzina	32749	(5193)
(5213)	11.9	0.15	19990122	335.18060	255.85148	198.27509	9.48532	0.0451556	2.9983421	47	11	1954-1998	0.81	M-v	1	Williams	29318	(5213)
(6045)	13.3	0.15	19990122	142.97492	85.96835	202.81717	3.09025	0.1388875	2.2158917	46	8	1971-1998	0.96	M-v	1	Williams	31278	(6045)
(6326)	12.2	0.15	19990122	336.09454	281.79769	199.74638	12.57501	0.1298628	2.6813702	42	5	1978-1998	0.97	M-v	2	Williams	32311	(6326)
(7543)	10.6	0.15	19990122	34.22319	206.46282	195.57386	14.09947	0.0649482	5.1506329	44	6	1956-1998	0.83	M-v	1	Williams	33078	(7543)
(7780)	13.8	0.15	19990122	164.62560	44.57252	201.63575	11.08340	0.1323786	2.5352944	86	5	1993-1998	0.77	M-v	1	Williams	31796	(7780)
1958 TL ₁	12.5	0.15	19990122	77.97436	161.97823	203.75952	17.69156	0.1892226	3.1570062	58	4	1958-1998	0.74	M-v	1	Williams	33064	1958 TL ₁
1969 TQ ₁	13.1	0.15	19990122	82.41886	330.72857	68.69363	2.97878	0.1626754	3.1493118	39	6	1969-1998	0.73	M-v	1	Williams	31271	1969 TQ ₁
1970 OF	13.2	0.15	19990122	136.40211	30.04300	321.74144	6.29736	0.3121444	2.6959143	16	6	1970-1998	0.63	M-v	3	Williams	31271	1970 OF
1971 UK ₁	15.3	0.15	19990122	347.74401	235.08534	206.33786	7.74047	0.2229908	2.4656601	50	3	1971-1998	0.73	M-v	3	Williams	32916	1971 UK ₁
1972 TE	13.6	0.15	19990122	46.80022	158.07897	218.74268	4.38527	0.2682095	2.6378855	29	5	1959-1998	0.51	M-v	2	Williams	33064	1972 TE
1973 SS	11.4	0.15	19990122	314.42833	18.25218	97.08592	3.21616	0.0864042	5.1606586	32	4	1973-1998	0.78	M-v	2	Williams	33064	1973 SS
1973 SX	11.5	0.15	19990122	307.07689	120.66149	353.54001	7.93928	0.0762283	5.1909723	38	3	1973-1998	0.92	M-v	5	Williams	32916	1973 SX
1973 SF ₁	11.3	0.15	19990122	38.96028	338.20808	40.58474	8.44366	0.1511649	5.1616697	30	3	1973-1998	0.75	M-v	4	Williams	30866	1973 SF ₁

1973 SJ ₁	12.0	0.15	19990122	249.67496	8.53796	181.94189	2.63546	0.1238379	3.9576039	56	5	1973–1998	0.74	M-v	1	Williams	30892	1973 SJ ₁
1973 SN ₁	11.6	0.15	19990122	268.59749	54.20655	101.99983	4.20461	0.0015988	5.1541492	26	4	1973–1998	0.78	M-v	1	Williams	33064	1973 SN ₁
1973 SR ₁	12.6	0.15	19990122	324.28467	47.14428	40.54385	8.87761	0.0596554	5.2183320	28	2	1973–1998	0.47	M-v	4	Williams	32437	1973 SR ₁
1973 SA ₂	10.7	0.15	19990122	3.22798	331.53359	78.42955	5.84819	0.0319938	5.1933235	29	4	1951–1998	0.76	M-v	1	Williams	33064	1973 SA ₂
1974 SE	13.7	0.15	19990122	110.54503	91.47294	283.34519	2.87380	0.1568186	2.2231400	9	3	1974–1998	0.90	M-v	5	Williams	32207	1974 SE
1975 NC	13.8	0.15	19990122	88.99177	357.55814	270.15957	5.75820	0.1554510	2.7505504	50	5	1953–1998	0.73	M-v	3	Williams	32738	1975 NC
1975 SE ₁	14.9	0.15	19990122	84.40445	305.40803	24.28154	9.96382	0.2447801	2.4279196	16	3	1975–1998	0.72	M-v	4	Williams	26394	1975 SE ₁
1975 SE ₂	15.1	0.15	19990122	69.77323	331.94865	40.62974	6.85484	0.1385613	2.4205229	15	3	1975–1998	0.85	M-v	4	Williams	22072	1975 SE ₂
1975 TJ ₃	13.9	0.15	19990122	350.12441	33.58262	35.64805	8.23616	0.2990199	2.7727714	44	4	1975–1998	0.60	M-v	2	Williams	32916	1975 TJ ₃
1975 VV ₂	12.5	0.15	19990122	124.46477	292.97548	40.96564	16.78091	0.1869314	3.1032667	26	4	1975–1998	0.63	M-v	2	Williams	31414	1975 VV ₂
1975 VW ₅	13.8	0.15	19990122	58.76046	270.05753	68.16856	8.46534	0.1452658	2.4475798	32	3	1975–1998	0.69	M-v	3	Williams	33064	1975 VW ₅
1976 QA	14.3	0.15	19990122	80.59273	12.95883	324.48103	2.76409	0.1957700	2.3466315	23	4	1976–1998	0.78	M-v	2	Williams	24758	1976 QA
1976 YF ₃	11.9	0.15	19990122	302.73166	243.36532	250.95211	13.39042	0.1030892	3.1486138	41	4	1976–1998	0.70	M-v	2	Williams	33064	1976 YF ₃
1977 QN ₁	13.1	0.15	19990122	57.34427	309.09560	343.64361	12.92774	0.1804251	2.6207765	23	2	1977–1998	0.76	M-v	4	Williams	32738	1977 QN ₁
1977 RD ₂	12.6	0.15	19990122	62.35631	337.64662	50.40062	3.20384	0.1867639	2.9444658	36	9	1977–1998	0.76	M-v	1	Williams	30778	1977 RD ₂
1977 TO ₆	14.7	0.15	19990122	53.08143	256.35308	84.35924	6.98107	0.1883004	2.3065009	34	4	1977–1998	0.99	M-v	3	Williams	33064	1977 TO ₆
1978 PA ₃	15.3	0.15	19990122	68.85756	170.46790	169.10965	2.16220	0.1950757	2.2129919	53	3	1978–1998	0.72	M-v	3	Williams	33064	1978 PA ₃
1978 RR ₈	13.9	0.15	19990122	352.19472	325.34659	164.51114	11.11563	0.2349048	2.4384627	37	7	1978–1998	0.85	M-v	2	Williams	30684	1978 RR ₈
1978 RH ₉	15.0	0.15	19990122	109.71663	151.79429	149.29661	4.12338	0.1424490	2.2050699	26	3	1978–1998	0.67	M-v	4	Williams	33064	1978 RH ₉
1978 SH ₃	14.8	0.15	19990122	35.45034	159.56752	213.81263	3.94136	0.1735233	2.2245300	65	3	1978–1998	0.77	M-v	3	Williams	33064	1978 SH ₃
1978 SD ₇	14.7	0.15	19990122	77.83987	97.32581	216.94371	3.73673	0.2006059	2.2278985	75	3	1988–1998	0.76	M-v	3	Williams	33064	1978 SD ₇
1978 UN ₅	15.1	0.15	19990122	47.58945	301.52877	11.01572	5.16887	0.2569104	2.5382022	50	6	1954–1998	0.66	M-v	2	Williams	33064	1978 UN ₅
1978 UD ₇	14.8	0.15	19990122	85.02900	280.81854	8.95774	8.49402	0.2119501	2.2397378	34	2	1978–1998	0.59	M-v	4	Williams	33064	1978 UD ₇
1978 VM ₇	14.9	0.15	19990122	59.75239	88.83527	241.25933	6.44971	0.2895971	2.5371558	26	4	1978–1998	0.52	M-v	4	Williams	33065	1978 VM ₇
1978 WU	14.6	0.15	19990122	43.21612	106.45923	240.37042	8.58992	0.2063400	2.5434740	27	3	1978–1998	0.68	M-v	3	Williams	33065	1978 WU
1978 YM	13.8	0.15	19990122	49.99041	19.63638	0.85119	7.82803	0.1366974	2.2336698	42	4	1974–1998	0.77	M-v	2	Williams	33065	1978 YM
1979 EL	12.2	0.15	19990122	329.46898	319.35496	91.14862	14.77629	0.1596643	2.6359246	17	3	1979–1998	0.98	M-v	5	Williams	22073	1979 EL
1979 MK	13.8	0.15	19990122	92.64049	170.08890	163.86135	6.35766	0.1327229	2.3709320	33	4	1979–1998	0.67	M-v	1	Williams	32509	1979 MK
1979 MW ₆	15.0	0.15	19990122	139.38464	73.08902	198.64047	2.59990	0.0376560	2.7342572	13	2	1979–1998	0.58	M-v	5	Williams	32917	1979 MW ₆
1979 SO	13.6	0.15	19990122	65.09112	350.29440	8.68264	8.17691	0.2296994	2.7747430	34	3	1979–1998	0.75	M-v	3	Williams	33065	1979 SO
1979 WX ₃	13.7	0.15	19990122	44.23659	266.77445	124.67158	1.93177	0.1771539	2.4343059	46	9	1950–1998	0.77	M-v	1	Williams	26913	1979 WX ₃
1980 BA	14.4	0.15	19990122	348.84977	332.89327	109.13442	6.85708	0.1675589	2.4724942	39	3	1980–1998	0.76	M-v	3	Williams	33065	1980 BA
1980 FO ₁	12.1	0.15	19990122	52.38348	90.93404	314.31229	1.24647	0.0646070	2.9061549	36	8	1973–1998	0.73	M-v	1	Williams	27930	1980 FO ₁
1980 FY ₂	13.7	0.15	19990122	298.61610	90.79612	2.60342	0.76300	0.0518796	3.0080527	29	3	1980–1998	0.62	M-v	4	Williams	33065	1980 FY ₂
1980 FX ₃	13.9	0.15	19990122	28.91278	112.72104	356.36733	5.78171	0.0830376	2.4488323	33	4	1980–1998	0.82	M-v	2	Williams	30753	1980 FX ₃
1981 EF ₂	13.8	0.15	19990122	164.61001	325.51141	300.46603	6.49537	0.0316051	2.4274614	59	6	1981–1998	0.83	M-v	2	Williams	33065	1981 EF ₂
1981 EQ ₁₀	15.7	0.15	19990122	0.10457	140.10402	306.25738	3.07916	0.1973101	2.3977205	27	4	1951–1998	0.95	M-v	2	Williams	27725	1981 EQ ₁₀
1981 EW ₁₃	15.2	0.15	19990122	278.72123	244.10799	271.29750	1.76871	0.0774747	2.4279707	46	5	1978–1998	0.89	M-v	2	Williams	33065	1981 EW ₁₃
1981 ED ₁₅	14.8	0.15	19990122	15.95679	125.31971	288.77020	3.08884	0.0813939	2.4302091	32	4	1949–1998	0.81	M-v	2	Williams	33065	1981 ED ₁₅
1981 EO ₁₈	14.7	0.15	19990122	62.23257	88.81620	331.64598	2.39968	0.0587888	2.3765436	36	7	1953–1998	0.78	M-v	1	Williams	30685	1981 EO ₁₈
1981 EM ₂₄	14.0	0.15	19990122	87.06327	51.05681	333.84871	2.84898	0.1002459	2.7904593	24	4	1981–1998	0.87	M-v	2	Williams	31134	1981 EM ₂₄
1981 EP ₂₇	14.0	0.15	19990122	62.04792	157.33225	186.00285	12.49472	0.0417254	2.8975143	36	4	1978–1998	0.90	M-v	3	Williams	33065	1981 EP ₂₇
1981 EY ₂₇	14.2	0.15	19990122	50.87243	301.83982	5.88792	11.78475	0.1836514	2.5278561	53	4	1981–1998	0.93	M-v	3	Williams	32739	1981 EY ₂₇
1981 EH ₂₈	14.8	0.15	19990122	301.89175	81.22626	26.22890	2.31797	0.0696932	2.4498740	31	2	1981–1998	0.95	M-v	5	Williams	32918	1981 EH ₂₈
1981 EW ₃₀	15.2	0.15	19990122	65.52699	174.74605	171.17835	0.92483	0.1735620	2.1574600	61	4	1981–1998	0.80	M-v	2	Williams	33065	1981 EW ₃₀
1981 EM ₃₁	15.9	0.15	19990122	170.21102	139.56694	162.64929	1.31145	0.1106889	2.4069011	27	6	1978–1998	0.83	M-v	2	Williams	30779	1981 EM ₃₁
1981 EQ ₃₃	15.9	0.15	19990122	196.78098	1.57733	294.79529	5.18834	0.1333025	2.3880273	19	5	1978–1998	0.84	M-v	3	Williams	23990	1981 EQ ₃₃
1981 EQ ₄₇	15.2	0.15	19990122	17.07246	279.64732	127.19978	1.65083	0.1527001	2.4291204	46	4	1981–1998	0.75	M-v	2	Williams	33065	1981 EQ ₄₇
1981 FL	14.4	0.15	19990122	325.81604	357.38721	184.11374	7.90355	0.1882063	2.3689754	36	9	1953–1998	0.94	M-v	2	Williams	31003	1981 FL
1981 QJ ₃	13.7	0.15	19990122	61.11525	200.27827	140.03506	2.62792	0.1885397	3.1133133	72	3	1981–1998	0.57	M-v	4	Williams	33065	1981 QJ ₃
1981 RB ₂	12.9	0.15	19990122	92.44166	47.27095	255.74391	12.92609	0.2012590	2.5874288	34	4	1981–1998	0.66	M-v	2	Williams	33065	1981 RB ₂
1981 RW ₄	14.3	0.15	19990122	26.02429	334.01623	43.31393	3.88216	0.2252896	2.6133839	36	2	1981–1998	0.67	M-v	3	Williams	32918	1981 RW ₄
1981 UU ₂₉	15.8	0.15	19990122	60.38177	109.45575	244.58812	1.29304	0.1929394	2.2524753	48	3	1981–1998	0.74	M-v	3	Williams	33065	1981 UU ₂₉

1981 VN	13.1	0.15	19990122	8.66514	16.30406	39.90813	15.90682	0.1052389	2.6208112	63	3	1981–1998	0.81	M-v	3	Williams	33065	1981 VN
1981 YG	13.0	0.15	19990122	5.11125	216.48386	277.58298	14.82880	0.1313854	2.5828642	18	5	1981–1998	0.67	M-v	2	Williams	30685	1981 YG
1982 DP ₁	14.1	0.15	19990122	14.43503	62.10336	43.84906	6.01528	0.1368538	2.2764844	30	6	1982–1998	0.86	M-v	1	Williams	29654	1982 DP ₁
1982 DW ₃	14.3	0.15	19990122	29.98876	317.71263	129.95346	3.76654	0.1125115	2.2760915	29	5	1953–1998	0.80	M-v	1	Williams	29654	1982 DW ₃
1982 TK ₁	12.2	0.15	19990122	19.52716	176.03912	244.15361	9.78999	0.0857111	3.0089658	17	4	1930–1998	0.87	M-v	2	Williams	33065	1982 TK ₁
1982 TS ₁	13.0	0.15	19990122	28.38016	155.36900	246.59579	8.76194	0.0832170	3.0222557	39	4	1982–1998	0.64	M-v	1	Williams	32510	1982 TS ₁
1982 US ₆	13.8	0.15	19990122	32.25442	323.16199	46.71679	8.06630	0.1577043	2.5351930	66	6	1982–1998	0.83	M-v	3	Williams	33065	1982 US ₆
1982 UC ₁₁	14.6	0.15	19990122	38.32492	133.10914	243.94178	3.41978	0.2086800	2.5194211	54	6	1982–1998	0.77	M-v	3	Williams	33065	1982 UC ₁₁
1982 VB ₄	14.1	0.15	19990122	297.28168	77.38358	57.57206	3.88214	0.1412980	2.5348220	35	4	1978–1998	0.71	M-v	4	Williams	33065	1982 VB ₄
1983 RP ₃	14.2	0.15	19990122	45.62844	196.66104	130.77330	3.09996	0.0630850	2.4137836	54	2	1983–1998	0.55	M-v	4	Williams	32740	1983 RP ₃
1984 DQ	13.7	0.15	19990122	185.59407	251.02952	330.81560	11.07004	0.2266340	2.5509686	65	8	1980–1998	0.61	M-v	1	Williams	30468	1984 DQ
1984 LK	12.9	0.15	19990122	208.54038	76.54576	238.15284	6.55305	0.3856307	3.1148336	44	6	1968–1998	0.80	M-v	1	Williams	31415	1984 LK
1984 QU	15.0	0.15	19990122	43.16287	26.53917	352.56633	5.21634	0.2496730	2.2765926	23	3	1984–1998	0.95	M-v	3	Williams	33065	1984 QU
1984 RA	14.2	0.15	19990122	77.98962	272.91517	142.70836	23.21590	0.1016594	1.9263288	13	4	1984–1998	1.08	M-v	3	Williams	30650	1984 RA
1984 SA	14.1	0.15	19990122	75.20982	77.66525	254.35942	5.87247	0.2223245	2.2842845	52	3	1984–1998	0.64	M-v	4	Williams	33065	1984 SA
1984 SS	12.9	0.15	19990122	31.49858	114.01152	220.16084	23.28145	0.2959984	2.3219297	25	2	1984–1998	0.61	M-v	2	Williams	32918	1984 SS
1984 SO ₄	13.7	0.15	19990122	84.03063	54.53509	286.57679	4.97754	0.1176278	2.2761187	56	3	1984–1998	0.72	M-v	4	Williams	32510	1984 SO ₄
1984 SZ ₅	14.8	0.15	19990122	84.14668	273.82185	13.34626	8.22536	0.2397458	2.3036482	97	4	1984–1998	0.72	M-v	3	Williams	33065	1984 SZ ₅
1984 WJ ₁	14.1	0.15	19990122	34.74762	351.32513	34.58819	10.75761	0.2047586	2.3195788	39	2	1984–1998	0.68	M-v	3	Williams	33066	1984 WJ ₁
1984 YL ₁	14.2	0.15	19990122	27.78538	41.98287	65.35251	6.22838	0.1363526	2.2655398	17	4	1984–1998	0.89	M-v	2	Williams	31415	1984 YL ₁
1985 CU ₁	14.1	0.15	19990122	10.87307	119.87907	324.19075	24.14882	0.2375233	2.3325973	53	3	1985–1998	0.72	M-v	3	Williams	32510	1985 CU ₁
1985 CL ₂	14.4	0.15	19990122	229.83972	18.34875	163.31566	1.61465	0.1238072	2.4173250	53	2	1985–1998	0.70	M-v	5	Williams	32919	1985 CL ₂
1985 PN	11.9	0.15	19990122	79.60971	264.84742	152.11193	17.35526	0.1183776	3.1302780	32	5	1985–1998	0.52	M-v	1	Williams	31004	1985 PN
1985 PE ₁	14.5	0.15	19990122	92.22235	8.99633	308.64747	3.14365	0.2382158	2.1629788	35	4	1979–1998	0.60	M-v	2	Williams	33066	1985 PE ₁
1985 PB ₂	13.3	0.15	19990122	63.01597	213.10663	145.61867	14.10128	0.2004846	2.5935575	12	4	1983–1998	0.74	M-v	2	Williams	30650	1985 PB ₂
1985 QP	15.3	0.15	19990122	45.79738	0.58616	357.85728	3.14664	0.1772478	2.1857846	75	4	1971–1998	0.79	M-v	2	Williams	33066	1985 QP
1985 QP ₅	13.5	0.15	19990122	139.72144	307.27486	358.29551	14.16271	0.0959600	2.5511234	23	7	1965–1998	0.73	M-v	2	Williams	30685	1985 QP ₅
1985 QD ₆	15.0	0.15	19990122	97.52134	225.33319	121.88048	5.17865	0.2954800	2.5529067	17	4	1985–1998	1.18	M-v	4	Williams	30288	1985 QD ₆
1985 RN ₃	15.1	0.15	19990122	62.90467	342.16518	353.67709	4.63118	0.1590105	2.1797094	50	2	1985–1998	0.56	M-v	4	Williams	32919	1985 RN ₃
1985 SX ₂	13.5	0.15	19990122	27.17651	77.92028	323.70825	3.67485	0.1401681	2.6207330	43	3	1981–1998	0.69	M-v	2	Williams	33066	1985 SX ₂
1985 TU	14.1	0.15	19990122	38.99970	152.67149	239.66196	1.55613	0.2199204	2.6213737	22	4	1985–1998	1.01	M-v	2	Williams	24759	1985 TU
1985 UC	13.5	0.15	19990122	124.82436	294.58189	11.36677	16.61302	0.2347356	2.5767539	33	6	1985–1998	0.72	M-v	2	Williams	29940	1985 UC
1985 UO ₃	13.0	0.15	19990122	71.19960	331.11676	31.81783	22.65520	0.0446910	2.6123474	31	4	1985–1998	0.79	M-v	2	Williams	33066	1985 UO ₃
1986 CP ₁	13.5	0.15	19990122	343.26464	129.40977	35.76808	4.09809	0.1240595	2.6624102	61	6	1954–1998	0.77	M-v	1	Williams	30893	1986 CP ₁
1986 JC	13.8	0.15	19990122	170.12127	176.19789	101.81575	8.32384	0.2403659	2.3379680	24	7	1954–1998	0.85	M-v	1	Williams	30893	1986 JC
1986 QG ₁	14.6	0.15	19990122	321.31642	85.70799	111.77685	4.57230	0.0141414	2.3212953	38	4	1986–1998	0.85	M-v	2	Williams	31135	1986 QG ₁
1986 QR ₁	13.9	0.15	19990122	142.39113	289.44860	351.76598	4.34849	0.0953037	2.4272529	38	3	1986–1998	0.74	M-v	4	Williams	33066	1986 QR ₁
1986 QT ₁	14.0	0.15	19990122	60.46642	20.69257	17.51274	2.50444	0.2172204	2.4203898	38	4	1986–1998	0.50	M-v	3	Williams	24407	1986 QT ₁
1986 QK ₂	13.2	0.15	19990122	177.78769	174.28877	140.89222	14.21340	0.0509481	2.3448117	20	5	1986–1998	0.99	M-v	2	Williams	27324	1986 QK ₂
1986 RP ₅	13.4	0.15	19990122	40.71346	13.09204	15.17507	14.32279	0.2345697	3.1834030	30	3	1986–1998	0.68	M-v	4	Williams	26166	1986 RP ₅
1986 RB ₁₂	11.9	0.15	19990122	55.29174	85.81201	265.19743	14.68021	0.1177945	3.1936266	29	3	1986–1998	0.71	M-v	3	Williams	33066	1986 RB ₁₂
1987 BS ₁	13.6	0.15	19990122	349.08251	150.77427	295.08194	12.26407	0.1269048	2.5842123	53	6	1987–1998	0.75	M-v	2	Williams	33066	1987 BS ₁
1987 DN ₆	14.5	0.15	19990122	323.28008	179.80461	287.80968	2.41065	0.1679046	2.6278158	99	4	1987–1998	0.78	M-v	3	Williams	33066	1987 DN ₆
1987 GA	12.8	0.15	19990122	218.89300	167.21741	49.65786	11.07046	0.1970860	2.6814064	55	3	1934–1998	0.99	M-v	4	Williams	32919	1987 GA
1987 QT	15.4	0.15	19990122	14.27201	45.79523	334.40729	8.34288	0.2201876	2.3810970	48	2	1987–1998	0.95	M-v	4	Williams	33066	1987 QT
1987 RN ₆	12.8	0.15	19990122	44.68301	310.00165	80.18018	5.94266	0.0584048	2.9900216	28	4	1987–1998	0.54	M-v	1	Williams	30686	1987 RN ₆
1987 SJ ₂	14.7	0.15	19990122	55.33241	171.35513	140.01770	2.70041	0.1769383	2.4002600	53	3	1972–1998	0.60	M-v	3	Williams	32740	1987 SJ ₂
1987 SV ₃	14.1	0.15	19990122	88.13526	331.81809	3.87438	9.22406	0.1607066	2.3212423	48	4	1980–1998	0.78	M-v	3	Williams	33066	1987 SV ₃
1987 SL ₅	14.5	0.15	19990122	346.73217	210.74162	225.56436	4.47837	0.2024800	2.3777794	37	2	1987–1998	0.51	M-v	4	Williams	32919	1987 SL ₅
1987 SO ₅	12.8	0.15	19990122	38.43378	32.60163	354.87956	8.35960	0.0158612	3.0321908	16	3	1982–1998	0.86	M-v	4	Williams	22698	1987 SO ₅
1987 SP ₁₂	13.6	0.15	19990122	14.73603	187.31998	186.43281	2.72346	0.2665162	3.1080573	69	3	1976–1998	0.71	M-v	3	Williams	33066	1987 SP ₁₂
1987 SR ₁₂	13.8	0.15	19990122	152.28928	116.30898	177.58368	4.28214	0.1565732	2.2781843	33	6	1976–1998	0.71	M-v	1	Williams	30469	1987 SR ₁₂
1987 SD ₁₃	15.1	0.15	19990122	16.39634	333.58809	65.19916	1.92676	0.1934598	2.3631894	65	2	1987–1998	0.83	M-v	4	Williams	32919	1987 SD ₁₃

1987 SQ ₁₇	13.9	0.15	19990122	134.30878	0.77819	345.26046	5.40750	0.2045061	2.2577860	21	5	1943–1998	0.79	M-v	2	Williams	30780	1987 SQ ₁₇
1987 UR	13.2	0.15	19990122	42.92260	19.58656	23.89597	6.00400	0.2670727	3.0149514	15	3	1961–1998	0.87	M-v	2	Williams	33066	1987 UR
1987 UT	14.5	0.15	19990122	72.94856	49.00664	296.23796	4.12828	0.2408926	2.3317584	26	3	1987–1998	0.77	M-v	2	Williams	33066	1987 UT
1987 UX	15.0	0.15	19990122	37.35199	159.87986	205.34998	24.44645	0.2443948	2.3846855	55	2	1987–1998	0.69	M-v	3	Williams	33066	1987 UX
1987 UA ₁	13.6	0.15	19990122	61.15070	122.62310	235.91043	11.37560	0.1409552	2.3613323	63	2	1987–1998	0.72	M-v	4	Williams	33066	1987 UA ₁
1987 VR	13.1	0.15	19990122	9.83444	218.81238	212.51985	9.00636	0.0752435	3.0594401	56	4	1987–1998	0.53	M-v	2	Marsden	30894	1987 VR
1987 WD	13.9	0.15	19990122	70.37393	307.83953	13.77940	8.94389	0.1565125	2.3991361	77	3	1987–1998	0.79	M-v	3	Williams	33066	1987 WD
1987 WF ₁	13.0	0.15	19990122	64.92516	133.13140	233.57390	23.00341	0.2781935	2.3529748	32	3	1987–1998	0.51	M-v	2	Williams	31273	1987 WF ₁
1987 WJ ₁	13.1	0.15	19990122	12.79495	357.30805	33.11950	7.11129	0.1394775	3.1475893	61	4	1987–1998	0.63	M-v	2	Williams	33066	1987 WJ ₁
1987 YU ₁	10.7	0.15	19990122	18.29688	176.69708	227.57701	21.10646	0.1249790	5.1687669	31	4	1986–1998	0.71	M-v	1	Williams	33066	1987 YU ₁
1988 BX ₃	14.0	0.15	19990122	284.00616	359.69319	232.82112	5.73870	0.0685567	2.3484835	28	5	1974–1998	0.50	M-v	1	Williams	30894	1988 BX ₃
1988 CO ₁	14.0	0.15	19990122	32.83159	315.27064	126.50945	3.97659	0.1394366	2.3711958	36	4	1988–1998	1.05	M-v	2	Williams	27727	1988 CO ₁
1988 CU ₁	14.5	0.15	19990122	271.25631	198.69005	339.45621	1.65268	0.1199972	2.4393015	26	5	1988–1998	0.89	M-v	2	Williams	30469	1988 CU ₁
1988 CT ₂	14.2	0.15	19990122	162.11196	147.45897	121.97291	3.00968	0.1082111	2.4640965	53	7	1985–1998	0.86	M-v	1	Williams	30894	1988 CT ₂
1988 CF ₆	13.4	0.15	19990122	4.93143	237.85491	260.16462	3.64781	0.1408809	2.3725725	21	4	1979–1998	0.53	M-v	2	Williams	21568	1988 CF ₆
1988 DE	13.4	0.15	19990122	217.02903	173.57940	352.94383	13.28382	0.0965552	2.5835659	50	2	1988–1998	0.68	M-v	4	Williams	33066	1988 DE
1988 DJ ₂	15.1	0.15	19990122	87.92615	46.59601	327.75388	1.26648	0.2317512	2.3655117	56	7	1983–1998	0.78	M-v	1	Williams	30288	1988 DJ ₂
1988 FE	13.7	0.15	19990122	314.11882	139.48525	47.69128	10.28678	0.1807144	2.4142202	26	3	1988–1998	0.88	M-v	3	Williams	21569	1988 FE
1988 FM	13.4	0.15	19990122	211.02039	183.15649	15.19544	13.72557	0.1142950	2.5629060	65	7	1951–1998	0.82	M-v	2	Williams	33066	1988 FM
1988 GF	12.6	0.15	19990122	149.67188	49.87835	227.23807	13.34192	0.1768052	2.5940630	32	4	1988–1998	0.64	M-v	3	Williams	33067	1988 GF
1988 PL	15.1	0.15	19990122	72.27709	135.53903	206.32487	1.96605	0.1389675	2.1848293	41	5	1971–1998	0.96	M-v	2	Williams	33067	1988 PL
1988 RQ ₂	12.5	0.15	19990122	237.32629	252.33495	311.52562	10.90603	0.0706807	2.7790669	39	8	1954–1998	0.69	M-v	1	Williams	33067	1988 RQ ₂
1988 RV ₄	14.4	0.15	19990122	156.19402	22.14397	303.42073	1.64112	0.1790710	2.6594383	69	4	1988–1998	0.73	M-v	1	Williams	31136	1988 RV ₄
1988 RY ₅	13.3	0.15	19990122	55.22929	163.49186	185.20430	1.99131	0.0916714	2.8266430	57	4	1979–1998	0.89	M-v	2	Williams	33067	1988 RY ₅
1988 RQ ₈	14.9	0.15	19990122	68.86760	288.45781	37.92415	4.92853	0.1809621	2.2252947	49	6	1949–1998	0.83	M-v	2	Williams	32920	1988 RQ ₈
1988 RL ₉	14.0	0.15	19990122	2.26212	62.94480	328.12699	5.11882	0.1064272	2.2138191	61	3	1988–1998	0.80	M-v	3	Williams	32741	1988 RL ₉
1988 RQ ₁₂	12.4	0.15	19990122	26.51870	100.44277	9.50318	3.51288	0.2117511	3.9394141	21	3	1988–1998	0.73	M-v	3	Williams	31098	1988 RQ ₁₂
1988 RF ₁₃	14.0	0.15	19990122	129.31389	270.85542	31.42550	17.12107	0.1444068	2.7532396	22	4	1988–1998	0.53	M-v	2	Williams	28613	1988 RF ₁₃
1988 TT	13.0	0.15	19990122	21.30805	337.82524	4.29597	10.83103	0.1005415	3.0069970	59	5	1988–1998	0.82	M-v	2	Williams	33067	1988 TT
1988 UO	12.1	0.15	19990122	142.68967	309.49117	31.36980	9.72010	0.1868504	2.7291260	43	4	1988–1998	0.67	M-v	2	Williams	31004	1988 UO
1988 UT	15.2	0.15	19990122	47.95135	264.25055	138.68257	2.19497	0.1599692	2.1888758	35	5	1988–1998	0.49	M-v	1	Williams	30288	1988 UT
1988 VR ₂	13.5	0.15	19990122	354.66340	0.55662	88.20127	13.23097	0.2722556	2.9345171	33	3	1988–1998	0.78	M-v	3	Williams	33067	1988 VR ₂
1988 VP ₃	15.0	0.15	19990122	19.43782	17.40640	34.18131	6.05742	0.1250455	2.2309305	47	4	1981–1998	0.84	M-v	4	Williams	33067	1988 VP ₃
1988 VT ₃	14.5	0.15	19990122	325.63142	216.70975	245.93449	3.98728	0.1143377	2.2520417	43	2	1988–1998	0.88	M-v	5	Williams	32920	1988 VT ₃
1989 AL ₃	14.5	0.15	19990122	3.20893	332.13103	127.15384	5.06622	0.0837941	2.2577208	33	6	1988–1998	0.80	M-v	1	Williams	30469	1989 AL ₃
1989 AN ₅	13.9	0.15	19990122	13.19078	281.33031	129.25015	9.94060	0.1165845	3.0689177	24	3	1989–1998	0.63	M-v	4	Williams	30686	1989 AN ₅
1989 AJ ₆	14.0	0.15	19990122	143.21155	285.52763	318.11614	5.71259	0.1004204	2.3976222	74	3	1989–1998	0.77	M-v	4	Williams	33067	1989 AJ ₆
1989 BV ₁	14.2	0.15	19990122	220.03180	181.86167	336.89535	1.91167	0.1358927	2.4148787	53	4	1989–1998	0.87	M-v	3	Williams	32741	1989 BV ₁
1989 CT ₂	14.2	0.15	19990122	103.36370	72.95947	225.22387	5.79299	0.1080762	2.3725711	56	5	1983–1998	0.72	M-v	1	Williams	33067	1989 CT ₂
1989 CB ₃	14.5	0.15	19990122	319.83268	217.77688	264.45870	5.43583	0.1207110	2.2993780	32	4	1989–1998	0.98	M-v	2	Williams	33067	1989 CB ₃
1989 DB	13.6	0.15	19990122	234.17249	150.72942	35.40455	3.33382	0.1735244	2.3733856	55	3	1978–1998	0.85	M-v	4	Williams	32920	1989 DB
1989 EZ ₂	14.8	0.15	19990122	264.50650	264.45220	270.67483	6.79462	0.1151581	2.3175560	25	5	1980–1998	0.90	M-v	2	Williams	33067	1989 EZ ₂
1989 GF ₁	14.2	0.15	19990122	7.32829	151.04494	338.40212	3.74218	0.1048224	2.2778290	34	5	1989–1998	0.56	M-v	1	Williams	30780	1989 GF ₁
1989 GR ₄	14.4	0.15	19990122	11.89057	303.09696	186.65852	4.09401	0.1136424	2.2663786	58	5	1989–1998	0.69	M-v	1	Williams	30780	1989 GR ₄
1989 HA	13.3	0.15	19990122	92.04666	125.12863	143.01247	15.08375	0.1634675	2.5830580	39	3	1989–1998	0.62	M-v	2	Williams	32741	1989 HA
1989 NA	15.4	0.15	19990122	74.46724	202.27170	97.06283	14.14152	0.4512540	2.6458843	58	5	1976–1998	0.73	M-v	1	Williams	29657	1989 NA
1989 OL	14.0	0.15	19990122	125.85918	249.84569	46.87669	13.05971	0.1368031	2.5374028	26	5	1977–1998	0.72	M-v	3	Williams	28884	1989 OL
1989 RD ₁	13.5	0.15	19990122	45.10843	261.13544	87.02977	13.28280	0.1936215	2.6662340	35	3	1989–1998	0.70	M-v	3	Williams	33067	1989 RD ₁
1989 SF ₁	13.5	0.15	19990122	137.88088	128.88593	160.49564	8.00080	0.1438181	2.6207708	32	5	1989–1998	0.90	M-v	2	Williams	30686	1989 SF ₁
1989 SK ₁	15.1	0.15	19990122	67.52710	279.16930	57.06446	4.60848	0.2253635	2.6781513	26	2	1989–1998	0.72	M-v	5	Williams	32920	1989 SK ₁
1989 SA ₂	15.4	0.15	19990122	55.86872	285.47334	57.66167	6.40422	0.1732991	2.7020736	24	2	1989–1998	0.92	M-v	5	Williams	32920	1989 SA ₂
1989 SQ ₄	15.0	0.15	19990122	118.97534	39.09606	101.47760	3.32632	0.1329924	2.3213731	29	4	1980–1998	0.66	M-v	2	Williams	32921	1989 SQ ₄
1989 ST ₄	13.9	0.15	19990122	111.63557	229.01256	47.42076	6.57057	0.0789415	2.7446535	50	2	1989–1998	0.88	M-v	5	Williams	32921	1989 ST ₄

1989 SV ₅	14.3	0.15	19990122	9.83947	47.48511	71.95143	6.28147	0.1834439	2.5687072	20	4	1981–1998	1.07	M-v	4	Williams	30289	1989 SV ₅
1989 SW ₈	13.7	0.15	19990122	40.22498	189.35315	183.14618	13.40888	0.1907534	2.6737429	51	3	1989–1998	0.71	M-v	3	Marsden	33067	1989 SW ₈
1989 SY ₁₃	13.7	0.15	19990122	294.32800	216.53293	296.64154	12.05732	0.1096554	2.6534172	16	3	1989–1998	0.74	M-v	4	Williams	29134	1989 SY ₁₃
1989 TH ₁	13.0	0.15	19990122	23.99970	45.62604	344.09918	8.20856	0.2918527	2.7163659	59	4	1962–1998	0.81	M-v	2	Williams	33067	1989 TH ₁
1989 TM ₁	13.4	0.15	19990122	55.79859	38.34754	21.95752	9.92585	0.1659247	2.5958802	37	4	1989–1998	0.78	M-v	2	Williams	31273	1989 TM ₁
1989 TU ₁	13.4	0.15	19990122	30.24109	160.14751	260.62376	6.66183	0.2841260	2.6699482	42	3	1989–1998	0.61	M-v	3	Williams	33067	1989 TU ₁
1989 TX ₂	14.0	0.15	19990122	4.90582	273.98363	185.27022	15.12765	0.0772333	2.6016121	32	4	1989–1998	0.94	M-v	4	Williams	31005	1989 TX ₂
1989 TU ₄	14.9	0.15	19990122	80.36111	197.39821	106.06583	4.55234	0.1682731	2.7266280	37	3	1989–1998	0.88	M-v	3	Williams	33067	1989 TU ₄
1989 TB ₅	14.1	0.15	19990122	142.83924	112.45256	164.93183	6.51117	0.0409850	2.6749783	34	3	1989–1998	1.15	M-v	5	Williams	28613	1989 TB ₅
1989 TR ₁₁	13.3	0.15	19990122	78.95651	324.53533	14.47325	12.79906	0.1977896	2.6463639	25	3	1979–1998	0.74	M-v	3	Williams	33067	1989 TR ₁₁
1989 TD ₁₆	13.5	0.15	19990122	44.08655	4.99173	348.66164	2.96088	0.0985847	2.7097344	64	3	1989–1998	0.63	M-v	4	Williams	33067	1989 TD ₁₆
1989 UR	18.5	0.15	19990122	348.74443	289.26016	234.58950	10.30858	0.3559477	1.0802414	148	3	1989–1998	0.64	M-v	3	Williams	33067	1989 UR
1989 UX ₇	13.9	0.15	19990122	32.50825	155.72340	228.88973	13.88424	0.2912077	2.6900514	46	2	1989–1998	0.72	M-v	3	Williams	33067	1989 UX ₇
1989 VS ₁	13.7	0.15	19990122	52.58514	296.60630	117.79241	3.63784	0.2011121	2.6294965	21	3	1989–1998	0.81	M-v	2	Williams	33067	1989 VS ₁
1989 WH	14.2	0.15	19990122	2.01309	196.71880	223.83097	8.62577	0.1443140	2.7590635	41	2	1989–1998	0.78	M-v	4	Williams	32921	1989 WH
1989 WD ₃	13.8	0.15	19990122	336.59244	227.94958	241.99902	5.07708	0.1488562	2.7340110	32	3	1989–1998	0.89	M-v	4	Williams	18632	1989 WD ₃
1989 WU ₄	14.1	0.15	19990122	14.84604	149.01719	275.63025	3.53028	0.0698533	2.7140864	20	3	1989–1998	0.86	M-v	5	Williams	30273	1989 WU ₄
1990 BA	17.8	0.15	19990122	328.90438	170.76092	311.94631	1.99403	0.3373326	1.7402645	47	3	1990–1998	0.66	M-v	2	Williams	32512	1990 BA
1990 EJ	12.5	0.15	19990122	200.53382	212.90687	345.81491	8.85153	0.1535024	3.1092429	40	2	1990–1998	0.81	M-v	4	Williams	32921	1990 EJ
1990 EQ ₂	15.1	0.15	19990122	317.54160	215.93438	254.61056	3.53019	0.0884471	2.1890939	49	4	1990–1998	0.75	M-v	3	Williams	33068	1990 EQ ₂
1990 EN ₃	14.8	0.15	19990122	152.63014	38.83986	210.16364	5.16059	0.0879872	2.2583918	35	3	1990–1998	0.89	M-v	4	Williams	32921	1990 EN ₃
1990 EN ₄	13.4	0.15	19990122	303.91323	147.38034	337.36770	7.98108	0.0337615	2.9820486	28	4	1990–1998	0.87	M-v	2	Williams	33068	1990 EN ₄
1990 FK ₁	12.2	0.15	19990122	162.05202	68.42233	175.25136	11.45672	0.1695391	3.1790191	34	4	1984–1998	0.69	M-v	2	Williams	33068	1990 FK ₁
1990 FM ₁	12.4	0.15	19990122	348.47829	41.86059	121.88276	8.21193	0.1649714	2.7951842	32	6	1976–1998	0.78	M-v	1	Williams	31137	1990 FM ₁
1990 HG	13.7	0.15	19990122	190.49919	166.65683	49.17721	23.75356	0.0753660	2.2810886	22	4	1981–1998	0.79	M-v	2	Williams	33068	1990 HG
1990 MR	14.5	0.15	19990122	162.72864	7.12765	248.47588	6.89115	0.2184860	2.3413906	35	5	1980–1998	0.74	M-v	2	Williams	33068	1990 MR
1990 OS ₁	13.7	0.15	19990122	190.41307	226.13111	3.68210	9.68579	0.1886021	2.3596327	32	6	1953–1998	0.73	M-v	1	Williams	28614	1990 OS ₁
1990 OX ₁	14.0	0.15	19990122	66.76707	280.06378	86.99550	5.73304	0.1187436	2.3967171	41	4	1989–1998	0.62	M-v	3	Williams	33068	1990 OX ₁
1990 QK ₃	14.5	0.15	19990122	106.16445	239.46170	151.24954	6.25213	0.1239714	2.3074683	29	4	1990–1998	0.73	M-v	3	Williams	31005	1990 QK ₃
1990 QB ₅	14.1	0.15	19990122	18.17578	337.12553	67.03696	5.92343	0.1816872	2.4621582	29	3	1990–1998	0.57	M-v	3	Williams	32922	1990 QB ₅
1990 QJ ₅	14.6	0.15	19990122	78.12957	359.83000	19.84362	2.74046	0.2109357	2.3805521	54	4	1990–1998	0.75	M-v	2	Williams	30289	1990 QJ ₅
1990 QE ₇	14.2	0.15	19990122	284.82528	319.19104	142.96287	2.13641	0.1215162	2.5360527	69	4	1990–1998	0.73	M-v	3	Williams	33068	1990 QE ₇
1990 QN ₇	14.2	0.15	19990122	162.47314	226.08158	37.84037	2.72431	0.1913482	2.3779769	28	3	1990–1998	0.71	M-v	4	Williams	24228	1990 QN ₇
1990 QL ₉	14.0	0.15	19990122	34.21418	157.13963	52.25356	2.72695	0.0104131	2.8586604	23	3	1976–1998	0.65	M-v	4	Williams	32922	1990 QL ₉
1990 QX ₁₇	13.8	0.15	19990122	86.55360	111.42188	249.00825	1.24729	0.2265816	2.3806033	27	4	1979–1998	0.70	M-v	2	Williams	29658	1990 QX ₁₇
1990 RE ₂	14.1	0.15	19990122	38.15769	192.97405	195.24571	3.54073	0.1974722	2.4576350	59	6	1986–1998	0.78	M-v	2	Williams	33068	1990 RE ₂
1990 RF ₂	13.8	0.15	19990122	162.90690	41.69950	232.54531	1.74042	0.1615000	2.3787302	32	4	1990–1998	0.62	M-v	2	Williams	30470	1990 RF ₂
1990 RY ₂	13.1	0.15	19990122	34.55652	69.75048	278.32471	2.35502	0.2702644	3.9278873	63	3	1990–1998	0.55	M-v	3	Williams	33068	1990 RY ₂
1990 RS ₆	14.6	0.15	19990122	235.32034	213.45381	349.08261	6.20829	0.0698988	2.3821522	35	3	1990–1998	0.73	M-v	4	Williams	33068	1990 RS ₆
1990 RO ₇	14.9	0.15	19990122	16.05718	191.27720	162.09448	3.26201	0.0458124	2.5552638	48	3	1990–1998	0.70	M-v	4	Williams	32742	1990 RO ₇
1990 RT ₈	15.5	0.15	19990122	89.56770	158.16241	153.83514	3.03376	0.2117395	2.4527438	17	3	1990–1998	0.33	M-v	5	Williams	27710	1990 RT ₈
1990 RM ₉	14.0	0.15	19990122	81.44786	105.29951	245.22786	5.37435	0.2626234	2.4051154	23	4	1990–1998	0.38	M-v	1	Williams	30470	1990 RM ₉
1990 SY	13.4	0.15	19990122	39.46838	337.78030	331.02689	8.41714	0.1859248	2.5947144	37	4	1990–1998	0.83	M-v	3	Williams	33068	1990 SY
1990 SZ	13.8	0.15	19990122	342.82059	72.81524	346.98770	10.57803	0.1753636	2.5411139	55	6	1986–1998	0.75	M-v	2	Williams	33068	1990 SZ
1990 SD ₅	14.8	0.15	19990122	179.54083	213.70950	36.08292	3.26494	0.1633368	2.4050184	27	5	1989–1998	0.68	M-v	1	Williams	33068	1990 SD ₅
1990 SG ₈	13.9	0.15	19990122	21.98385	24.31924	91.21616	3.44518	0.1825630	2.3412639	43	6	1981–1998	0.77	M-v	1	Williams	27454	1990 SG ₈
1990 SX ₁₀	13.6	0.15	19990122	146.58051	33.71617	311.01132	5.81131	0.0796439	2.3159766	19	3	1990–1998	0.62	M-v	3	Williams	31005	1990 SX ₁₀
1990 SV ₁₃	14.4	0.15	19990122	348.98979	19.11236	7.58755	4.42975	0.0599125	2.5401283	64	6	1978–1998	0.75	M-v	3	Williams	32742	1990 SV ₁₃
1990 ST ₁₅	13.2	0.15	19990122	171.68803	309.14166	311.99665	6.22016	0.0879200	2.3741310	32	4	1989–1998	0.69	M-v	2	Williams	32513	1990 ST ₁₅
1990 SK ₂₈	13.7	0.15	19990122	34.46784	19.15966	346.90875	2.50706	0.1564597	2.5233360	61	3	1990–1998	0.52	M-v	4	Williams	33068	1990 SK ₂₈
1990 TO ₄	14.6	0.15	19990122	331.14117	5.56325	83.06807	10.40581	0.1649421	2.5456612	18	3	1982–1998	0.79	M-v	4	Williams	33068	1990 TO ₄
1990 TM ₅	14.1	0.15	19990122	122.09528	78.42287	246.07189	6.13448	0.1338459	2.3686843	20	5	1990–1998	0.87	M-v	2	Williams	30687	1990 TM ₅
1990 TF ₈	14.0	0.15	19990122	318.48293	247.78755	217.01891	13.90008	0.1372827	2.5446275	33	2	1990–1998	0.75	M-v	4	Williams	32923	1990 TF ₈

1990 TU ₁₁	14.7	0.15	19990122	353.35921	126.46652	336.92088	2.29527	0.1282641	2.4281452	31	4	1990–1998	0.57	M-v	3	Williams	28614	1990 TU ₁₁
1990 TG ₁₃	14.7	0.15	19990122	18.55953	23.34548	65.09055	11.49950	0.2004675	2.4263871	17	4	1990–1998	0.85	M-v	3	Williams	29658	1990 TG ₁₃
1990 TK ₁₅	13.5	0.15	19990122	100.34925	38.80677	342.49488	6.30318	0.1278264	2.3694174	32	5	1950–1998	0.57	M-v	2	Williams	31005	1990 TK ₁₅
1990 UA ₁	12.5	0.15	19990122	276.10607	220.17566	236.79992	12.06926	0.1283344	2.6746350	33	2	1990–1998	0.74	M-v	4	Williams	32742	1990 UA ₁
1990 UU ₁	14.4	0.15	19990122	33.07362	174.27344	192.40782	13.59417	0.1771543	2.5528068	75	4	1990–1998	0.52	M-v	2	Williams	33068	1990 UU ₁
1990 UQ ₂	13.3	0.15	19990122	105.25195	325.62148	43.77918	8.47443	0.2254077	2.3911194	27	3	1990–1998	0.89	M-v	4	Williams	31229	1990 UQ ₂
1990 UE ₅	15.7	0.15	19990122	81.19354	130.66864	201.38369	21.24104	0.0883623	1.9324024	46	2	1990–1998	0.60	M-v	4	Williams	33068	1990 UE ₅
1990 VN ₁	13.3	0.15	19990122	350.83898	346.39761	46.02344	8.73469	0.1164240	2.6249175	28	4	1977–1998	0.77	M-v	2	Williams	32742	1990 VN ₁
1990 VK ₄	14.7	0.15	19990122	21.58671	268.25275	137.51963	5.36274	0.1835556	2.5266375	28	3	1990–1998	0.82	M-v	4	Williams	33068	1990 VK ₄
1990 VN ₄	13.6	0.15	19990122	199.43396	350.38956	205.82671	12.62938	0.1168772	2.6405524	81	3	1990–1998	0.67	M-v	3	Williams	33068	1990 VN ₄
1990 VS ₄	14.6	0.15	19990122	48.51923	138.63810	206.89582	11.91761	0.1934769	2.5679098	79	5	1986–1998	0.59	M-v	3	Williams	33068	1990 VS ₄
1990 VQ ₅	13.7	0.15	19990122	202.32034	74.61519	133.37206	8.73957	0.0626559	2.5913976	39	4	1990–1998	0.80	M-v	2	Williams	33068	1990 VQ ₅
1990 VG ₆	13.3	0.15	19990122	294.06457	348.89323	165.23390	8.07426	0.1162278	2.5269734	30	4	1990–1998	0.75	M-v	3	Williams	33068	1990 VG ₆
1990 VP ₆	13.0	0.15	19990122	77.75403	122.69375	203.19795	12.74081	0.0610267	2.5899136	83	3	1990–1998	0.55	M-v	3	Williams	33068	1990 VP ₆
1990 VW ₈	13.8	0.15	19990122	306.48634	238.51169	222.89654	12.95844	0.1637780	2.5896017	39	2	1990–1998	0.66	M-v	4	Williams	33068	1990 VW ₈
1990 WD ₂	14.5	0.15	19990122	347.10996	8.80973	103.28566	7.31969	0.0790155	2.4763568	34	5	1990–1998	0.80	M-v	3	Williams	30687	1990 WD ₂
1990 WR ₂	14.0	0.15	19990122	4.84159	335.37832	94.07397	8.99749	0.2499617	2.5417074	34	4	1979–1998	0.84	M-v	3	Williams	32742	1990 WR ₂
1990 WA ₅	13.0	0.15	19990122	93.63127	142.76755	119.35948	6.34664	0.0133690	2.7419898	31	6	1985–1998	0.86	M-v	1	Williams	32743	1990 WA ₅
1990 XF	12.1	0.15	19990122	313.99863	219.57305	293.19874	11.03897	0.2022244	2.5515957	34	6	1983–1998	0.80	M-v	3	Williams	33068	1990 XF
1991 AK	12.9	0.15	19990122	294.66576	159.42533	333.06434	1.93923	0.0445631	2.6543432	47	6	1976–1998	0.66	M-v	1	Williams	33068	1991 AK
1991 AS ₁	13.2	0.15	19990122	357.89198	122.25846	317.85061	30.67214	0.2245104	2.6026813	28	3	1991–1998	0.59	M-v	2	Williams	33068	1991 AS ₁
1991 AN ₂	12.7	0.15	19990122	86.51925	173.02633	147.33957	17.73076	0.1792847	2.5576995	36	6	1991–1998	0.90	M-v	1	Williams	30289	1991 AN ₂
1991 AC ₃	14.0	0.15	19990122	198.34092	119.15116	136.06594	4.52359	0.1580318	2.6435737	46	5	1991–1998	0.76	M-v	1	Williams	30781	1991 AC ₃
1991 BK	13.8	0.15	19990122	316.32122	48.19774	67.24976	5.73141	0.2799962	2.6289641	65	4	1991–1998	0.72	M-v	2	Williams	33068	1991 BK
1991 BV ₁	13.1	0.15	19990122	222.94979	63.86156	154.34302	8.16131	0.2529023	2.7181148	26	5	1991–1998	0.92	M-v	2	Williams	31006	1991 BV ₁
1991 CL	12.5	0.15	19990122	234.50176	50.20832	128.68168	13.92767	0.1570479	2.7662254	26	4	1989–1998	0.71	M-v	2	Williams	33069	1991 CL
1991 DE	13.0	0.15	19990122	307.28424	81.48446	82.37214	13.10881	0.2301153	2.6019604	26	3	1991–1998	0.65	M-v	3	Williams	32743	1991 DE
1991 DK	11.7	0.15	19990122	113.24487	19.65229	357.18383	15.64917	0.1429727	2.5794307	71	6	1972–1998	0.59	M-v	2	Marsden	30895	1991 DK
1991 DY	13.2	0.15	19990122	278.42589	342.01189	188.80736	7.10059	0.1446221	2.6670555	34	4	1991–1998	0.77	M-v	1	Williams	33069	1991 DY
1991 EJ	10.7	0.15	19990122	35.64214	95.29965	280.61936	22.84854	0.1235961	5.2155312	21	3	1991–1998	0.58	M-v	2	Williams	30976	1991 EJ
1991 EN	10.3	0.15	19990122	134.56882	5.14902	289.38292	19.64230	0.0248723	5.1250248	31	4	1991–1998	0.79	M-v	1	Williams	26420	1991 EN
1991 GJ ₁	13.2	0.15	19990122	11.95714	97.04896	35.24512	13.76043	0.1363371	2.5803225	40	5	1989–1998	0.56	M-v	1	Williams	30895	1991 GJ ₁
1991 GX ₁	10.2	0.15	19990122	340.04609	160.66519	298.89614	9.52660	0.0371274	5.1901358	25	4	1990–1998	0.94	M-v	1	Williams	29658	1991 GX ₁
1991 GP ₃	12.9	0.15	19990122	110.21016	60.32781	214.26231	2.35793	0.2114895	3.0580114	48	3	1989–1998	0.88	M-v	5	Williams	33069	1991 GP ₃
1991 GR ₇	15.2	0.15	19990122	150.99893	282.88981	231.00928	5.00823	0.0694203	2.2567644	22	2	1991–1998	0.51	M-v	5	Williams	32924	1991 GR ₇
1991 GD ₈	13.7	0.15	19990122	299.95928	208.51417	218.96887	9.28471	0.0470518	3.0595262	24	2	1991–1998	0.54	M-v	5	Williams	32924	1991 GD ₈
1991 LU ₁	14.3	0.15	19990122	129.28338	60.92263	221.36607	5.47809	0.0574319	3.0389984	23	3	1991–1998	0.75	M-v	4	Williams	33069	1991 LU ₁
1991 LL ₂	13.6	0.15	19990122	86.33863	89.23613	212.13734	1.85540	0.1366644	3.1751427	27	2	1991–1998	0.86	M-v	5	Williams	32924	1991 LL ₂
1991 NC ₁	14.8	0.15	19990122	91.96954	139.96421	126.26211	5.68586	0.2125210	2.2819034	52	2	1991–1998	0.71	M-v	4	Williams	32743	1991 NC ₁
1991 OL ₁	13.0	0.15	19990122	71.36398	246.66623	113.53131	2.77939	0.1936878	3.2060985	23	6	1986–1998	0.59	M-v	1	Williams	30781	1991 OL ₁
1991 PV	15.4	0.15	19990122	78.18323	94.74599	221.48013	1.84900	0.2037276	2.2461162	46	2	1991–1998	0.66	M-v	4	Williams	33069	1991 PV
1991 PG ₃	13.4	0.15	19990122	213.64196	136.79481	91.44759	2.77009	0.1545667	3.0388958	22	4	1990–1998	0.77	M-v	2	Williams	29942	1991 PG ₃
1991 PE ₅	12.6	0.15	19990122	346.47756	274.52414	245.36674	1.21774	0.0096214	2.8767168	55	7	1980–1998	0.85	M-v	1	Williams	31138	1991 PE ₅
1991 PM ₅	17.7	0.15	19990122	136.07734	140.30313	132.75654	14.41729	0.2552071	1.7194201	26	5	1982–1998	0.75	M-v	3	Williams	28614	1991 PM ₅
1991 PW ₉	13.1	0.15	19990122	122.98018	157.20735	152.87824	9.97330	0.0805307	3.1580376	32	5	1991–1998	0.86	M-v	1	Williams	31274	1991 PW ₉
1991 PG ₁₁	14.9	0.15	19990122	59.61154	137.52252	179.36106	6.61393	0.2373770	2.3049297	78	4	1977–1998	0.69	M-v	2	Williams	33069	1991 PG ₁₁
1991 PM ₁₃	14.7	0.15	19990122	81.63798	278.87102	357.66741	4.06755	0.2059917	2.3042566	62	4	1977–1998	0.74	M-v	3	Williams	33069	1991 PM ₁₃
1991 PR ₁₆	14.9	0.15	19990122	70.48377	187.47345	138.46145	1.42347	0.1957715	2.2718818	38	3	1991–1998	0.65	M-v	3	Williams	33069	1991 PR ₁₆
1991 PL ₁₈	15.3	0.15	19990122	90.36268	7.35287	301.03923	3.93776	0.1620388	2.2517272	24	2	1991–1998	0.72	M-v	4	Williams	32924	1991 PL ₁₈
1991 PO ₁₈	14.0	0.15	19990122	110.59358	290.76044	345.35025	5.66271	0.2133876	2.2492894	27	2	1991–1998	0.57	M-v	4	Williams	32924	1991 PO ₁₈
1991 PB ₂₀	14.3	0.15	19990122	290.71709	344.45381	118.17519	5.90283	0.0862904	2.2730082	27	3	1991–1998	0.72	M-v	4	Williams	32660	1991 PB ₂₀
1991 QJ	14.2	0.15	19990122	77.84467	162.48429	161.14164	5.98917	0.2063000	2.2516968	37	3	1981–1998	0.84	M-v	3	Marsden	33069	1991 QJ
1991 RE ₁	13.7	0.15	19990122	290.22997	173.69324	312.87930	4.36191	0.0953928	2.2414982	30	2	1991–1998	0.71	M-v	5	Williams	32925	1991 RE ₁

1991 RE ₂	14.9	0.15	19990122	4.31603	149.62129	265.58360	4.61956	0.1449777	2.2749028	30	3	1991–1998	0.72	M-v	3	Williams	33069	1991 RE ₂
1991 RF ₂	12.3	0.15	19990122	57.39312	102.25445	329.22261	10.03492	0.0608394	3.0973781	16	5	1980–1998	0.94	M-v	2	Williams	30655	1991 RF ₂
1991 RS ₂	14.0	0.15	19990122	311.85703	242.50466	210.29481	6.48341	0.0638369	2.3062898	95	3	1991–1998	0.59	M-v	3	Williams	33069	1991 RS ₂
1991 RB ₃	14.3	0.15	19990122	46.26022	147.22292	255.15961	2.92622	0.1450017	2.2253484	18	4	1991–1998	0.57	M-v	2	Williams	28614	1991 RB ₃
1991 RT ₃	14.5	0.15	19990122	17.18070	177.06138	224.28370	5.01312	0.1476034	2.2875093	90	5	1977–1998	0.76	M-v	3	Williams	33069	1991 RT ₃
1991 RT ₅	14.1	0.15	19990122	23.21890	313.23876	33.19302	7.38915	0.1395151	2.3554274	27	3	1982–1998	0.73	M-v	4	Williams	32743	1991 RT ₅
1991 RF ₆	14.6	0.15	19990122	66.62700	250.47711	112.42981	2.95627	0.2091844	2.2420869	29	4	1981–1998	0.70	M-v	2	Williams	33069	1991 RF ₆
1991 RJ ₇	14.3	0.15	19990122	214.14468	300.30974	291.73249	3.35229	0.1180912	2.2378326	44	4	1991–1998	0.70	M-v	2	Williams	30470	1991 RJ ₇
1991 RL ₈	15.3	0.15	19990122	44.50237	337.64289	21.64373	7.37559	0.1908804	2.2961267	55	2	1991–1998	0.75	M-v	4	Williams	33069	1991 RL ₈
1991 RC ₉	14.7	0.15	19990122	48.62690	337.58035	18.93965	4.05960	0.0978382	2.2904691	41	2	1991–1998	0.52	M-v	4	Williams	32925	1991 RC ₉
1991 RU ₉	15.3	0.15	19990122	54.84109	64.35055	281.05634	1.16471	0.1670589	2.2876416	38	2	1991–1998	0.69	M-v	4	Williams	32925	1991 RU ₉
1991 RS ₁₃	14.1	0.15	19990122	124.24413	3.92915	288.07573	4.36123	0.1431397	2.2352972	17	3	1991–1998	0.71	M-v	4	Williams	26398	1991 RS ₁₃
1991 RE ₁₅	14.0	0.15	19990122	85.33105	330.34730	343.22196	7.93924	0.2214460	2.2610081	42	4	1981–1998	0.75	M-v	2	Williams	33069	1991 RE ₁₅
1991 RK ₁₅	14.1	0.15	19990122	44.99495	334.62315	3.86553	5.18486	0.1561925	2.3115196	65	6	1963–1998	0.79	M-v	3	Williams	33069	1991 RK ₁₅
1991 RV ₁₆	14.7	0.15	19990122	37.04463	19.16227	21.69659	7.15041	0.1159234	2.2371675	30	5	1954–1998	0.74	M-v	2	Williams	33069	1991 RV ₁₆
1991 RW ₁₇	14.5	0.15	19990122	83.58507	121.42692	195.85575	3.20556	0.0765315	2.2685831	75	2	1991–1998	0.68	M-v	5	Williams	32925	1991 RW ₁₇
1991 RX ₂₅	14.4	0.15	19990122	127.04329	252.78765	90.69304	5.05901	0.2033234	2.1629153	27	5	1988–1998	0.71	M-v	2	Williams	26925	1991 RX ₂₅
1991 RK ₂₆	15.1	0.15	19990122	88.72792	296.84457	20.95089	7.25158	0.1951128	2.2711500	24	3	1991–1998	0.56	M-v	3	Williams	29943	1991 RK ₂₆
1991 RJ ₄₁	15.0	0.15	19990122	30.19197	8.70394	12.90192	7.68071	0.1274843	2.2830510	59	2	1991–1998	0.60	M-v	3	Williams	33070	1991 RJ ₄₁
1991 SA	15.4	0.15	19990122	48.17932	56.39318	267.69128	5.65423	0.2585446	2.3282070	50	2	1991–1998	0.78	M-v	3	Williams	33070	1991 SA
1991 SM ₂	14.6	0.15	19990122	356.60410	57.90204	15.88637	6.94984	0.0645731	2.2722151	37	3	1991–1998	0.73	M-v	3	Williams	33070	1991 SM ₂
1991 TO	15.4	0.15	19990122	59.04163	246.00888	122.07169	5.13823	0.1149239	2.2569412	19	3	1991–1998	0.77	M-v	3	Williams	30449	1991 TO
1991 TH ₁	15.0	0.15	19990122	31.02700	2.68096	18.37805	22.97355	0.2234437	2.2971861	47	2	1991–1998	0.60	M-v	3	Williams	33070	1991 TH ₁
1991 TP ₁	14.3	0.15	19990122	120.95328	82.30331	234.25743	3.79313	0.2157006	2.2039966	49	5	1991–1998	0.76	M-v	2	Williams	31138	1991 TP ₁
1991 TC ₃	15.2	0.15	19990122	349.49718	124.55656	345.32862	3.44595	0.0651907	2.2124564	17	4	1991–1998	0.85	M-v	2	Williams	25065	1991 TC ₃
1991 TX ₄	14.3	0.15	19990122	5.53303	116.05953	358.14323	5.83909	0.1434651	2.2138088	28	4	1991–1998	0.94	M-v	2	Williams	33070	1991 TX ₄
1991 TO ₁₃	13.8	0.15	19990122	115.11469	105.74264	220.94408	6.86966	0.1292176	2.2854885	40	7	1987–1998	0.65	M-v	1	Williams	30290	1991 TO ₁₃
1991 UR	14.2	0.15	19990122	57.41044	331.27037	10.69270	6.92584	0.1283463	2.3186129	62	2	1991–1998	0.63	M-v	4	Williams	33070	1991 UR
1991 UK ₁	14.2	0.15	19990122	67.02027	11.17965	333.26191	4.88057	0.2137704	2.2781085	29	2	1991–1998	0.86	M-v	4	Williams	33070	1991 UK ₁
1991 UJ ₂	14.1	0.15	19990122	108.29290	264.85938	31.52592	5.33639	0.1579209	2.3051724	48	2	1991–1998	0.70	M-v	4	Williams	32926	1991 UJ ₂
1991 UO ₂	14.1	0.15	19990122	14.32618	290.00180	113.13781	4.74104	0.1972325	2.3239598	78	5	1984–1998	0.88	M-v	2	Williams	33070	1991 UO ₂
1991 UN ₃	13.8	0.15	19990122	45.26501	304.65830	84.33894	4.56430	0.0970199	2.2940248	55	3	1991–1998	0.87	M-v	3	Williams	33070	1991 UN ₃
1991 VE	18.2	0.15	19990122	294.29527	193.42764	62.09097	7.22355	0.6644975	0.8907614	76	3	1991–1998	0.69	M-v	5	Williams	31138	1991 VE
1991 VL ₁	14.7	0.15	19990122	121.11913	256.28652	102.71852	5.96640	0.1262793	2.1752493	40	5	1991–1998	0.48	M-v	2	Williams	33070	1991 VL ₁
1991 VP ₁	14.4	0.15	19990122	15.76052	317.01709	123.14958	4.91974	0.1280040	2.2552408	30	6	1989–1998	0.87	M-v	1	Williams	29943	1991 VP ₁
1991 VQ ₁	13.7	0.15	19990122	54.23985	297.44548	71.86271	7.34573	0.2070752	2.2806679	60	3	1991–1998	0.70	M-v	3	Williams	33070	1991 VQ ₁
1991 VR ₂	14.9	0.15	19990122	77.62068	274.84766	45.51849	23.31965	0.2653034	2.2983747	21	2	1991–1998	0.58	M-v	4	Williams	32926	1991 VR ₂
1991 VZ ₂	16.1	0.15	19990122	38.38544	336.79568	23.40887	3.98520	0.3531552	2.3226260	58	4	1959–1998	0.75	M-v	2	Williams	33070	1991 VZ ₂
1991 VG ₃	14.4	0.15	19990122	31.54976	178.69507	219.03021	25.83852	0.1688115	2.2655310	38	3	1991–1998	0.70	M-v	3	Williams	33070	1991 VG ₃
1991 VA ₄	14.6	0.15	19990122	346.51489	341.69573	105.02527	3.13040	0.2016134	2.3318623	49	2	1991–1998	0.82	M-v	4	Williams	32926	1991 VA ₄
1991 VE ₅	14.4	0.15	19990122	122.24485	221.85550	110.29462	3.75228	0.2009383	2.2049682	16	4	1990–1998	0.85	M-v	2	Williams	30079	1991 VE ₅
1991 VM ₅	14.1	0.15	19990122	57.16224	267.32006	70.06966	6.34611	0.2115435	2.3240226	48	3	1977–1998	0.62	M-v	3	Williams	33070	1991 VM ₅
1991 XC	13.8	0.15	19990122	313.26017	92.23324	0.98192	21.37547	0.3028904	2.4406639	51	3	1991–1998	0.54	M-v	2	Williams	33070	1991 XC
1991 XL	14.1	0.15	19990122	120.06409	224.37894	78.21867	5.14940	0.1398512	2.3137991	35	3	1991–1998	0.71	M-v	3	Williams	32661	1991 XL
1991 XN	15.2	0.15	19990122	6.35299	17.23804	64.86660	8.60950	0.2875658	2.3201240	28	2	1991–1998	0.71	M-v	3	Williams	32926	1991 XN
1991 YX	14.0	0.15	19990122	69.43204	265.60870	134.82399	5.79032	0.1595932	2.2744694	17	4	1987–1998	0.77	M-v	2	Williams	28886	1991 YX
1991 YL ₁	14.9	0.15	19990122	287.66606	200.17670	313.03027	0.79145	0.1396600	2.3831855	32	4	1991–1998	0.66	M-v	2	Williams	33070	1991 YL ₁
1992 AM	15.2	0.15	19990122	23.78404	299.87905	100.11682	23.79794	0.2813928	2.3474405	22	3	1991–1998	0.56	M-v	3	Williams	30079	1992 AM
1992 AJ ₁	13.2	0.15	19990122	186.98548	306.27184	272.82972	5.06543	0.1067009	2.5225316	42	2	1992–1998	0.69	M-v	5	Williams	32926	1992 AJ ₁
1992 AO ₁	13.8	0.15	19990122	332.19365	41.38989	62.32962	4.08546	0.2084672	2.4118063	50	2	1992–1998	0.74	M-v	4	Williams	32926	1992 AO ₁
1992 AU ₁	13.8	0.15	19990122	6.59317	45.97951	87.74838	24.66854	0.2535673	2.2713065	24	3	1991–1998	0.66	M-v	2	Williams	32744	1992 AU ₁
1992 AO ₂	14.1	0.15	19990122	244.77381	72.29180	118.12937	8.56476	0.1417562	2.4383187	24	4	1992–1998	0.77	M-v	2	Marsden	28886	1992 AO ₂
1992 AT ₂	13.8	0.15	19990122	130.20461	330.95323	293.23449	3.72262	0.1845148	2.5403489	24	4	1984–1998	0.85	M-v	4	Williams	33070	1992 AT ₂

1992 BP ₂	14.8	0.15	19990122	302.23674	244.03885	217.11874	5.53682	0.0869745	2.4776183	32	3	1992–1998	0.71	M-v	4	Williams	32927	1992 BP ₂
1992 BQ ₂	14.0	0.15	19990122	247.42741	283.19158	236.53615	4.34587	0.0641166	2.4897291	20	3	1992–1998	0.85	M-v	5	Williams	33070	1992 BQ ₂
1992 CF	13.1	0.15	19990122	236.95726	308.44618	284.12294	9.69709	0.0555611	2.3791585	21	4	1992–1998	0.80	M-v	2	Williams	30871	1992 CF
1992 CG ₃	13.9	0.15	19990122	352.80607	257.12254	176.30025	6.24282	0.0984838	2.4142199	43	2	1992–1998	0.79	M-v	4	Williams	33070	1992 CG ₃
1992 DG ₁	13.3	0.15	19990122	286.97801	231.27219	348.24326	5.57537	0.1526574	2.3692032	26	6	1959–1998	0.73	M-v	2	Williams	31006	1992 DG ₁
1992 DF ₈	14.6	0.15	19990122	24.71286	172.90483	200.79332	7.49101	0.0358308	2.5684058	38	2	1992–1998	0.69	M-v	4	Williams	32927	1992 DF ₈
1992 DM ₉	15.1	0.15	19990122	73.83966	129.48484	187.56845	9.06215	0.0217756	2.5997438	28	2	1992–1998	0.79	M-v	5	Williams	32927	1992 DM ₉
1992 DV ₉	16.5	0.15	19990122	327.77968	268.17474	202.91405	3.14805	0.1345807	2.4399857	20	3	1992–1998	0.52	M-v	4	Williams	27308	1992 DV ₉
1992 EA ₆	14.2	0.15	19990122	349.38729	315.72733	127.86057	7.13210	0.1533756	2.4430456	29	4	1986–1998	0.69	M-v	2	Williams	33070	1992 EA ₆
1992 EP ₆	14.4	0.15	19990122	341.41848	65.72120	78.73679	5.73132	0.0386380	2.3555842	23	3	1992–1998	0.79	M-v	4	Williams	27567	1992 EP ₆
1992 EP ₁₀	14.3	0.15	19990122	216.84738	39.73316	163.10740	14.77838	0.0486691	2.5331953	30	3	1992–1998	0.47	M-v	3	Williams	33070	1992 EP ₁₀
1992 EG ₁₄	14.5	0.15	19990122	18.93257	144.30327	320.43281	3.89234	0.1024286	2.3454616	22	3	1992–1998	0.48	M-v	3	Williams	31006	1992 EG ₁₄
1992 EK ₁₄	13.6	0.15	19990122	48.58973	19.00453	336.30736	3.59951	0.2562895	2.5500019	50	4	1980–1998	0.65	M-v	2	Williams	33070	1992 EK ₁₄
1992 EB ₂₆	15.3	0.15	19990122	318.02912	120.59675	348.76046	9.05815	0.1825144	2.4667954	20	3	1992–1998	0.73	M-v	2	Williams	33070	1992 EB ₂₆
1992 EQ ₂₇	14.1	0.15	19990122	2.18429	131.52966	166.82671	1.87909	0.0706997	2.9222028	39	5	1989–1998	0.68	M-v	1	Williams	32048	1992 EQ ₂₇
1992 FL ₁	16.2	0.15	19990122	249.54190	237.81528	317.59704	5.28527	0.4213922	2.5284724	123	4	1988–1998	0.61	M-v	1	Marsden	29135	1992 FL ₁
1992 FV ₁	12.8	0.15	19990122	218.56821	167.60690	46.66278	8.59024	0.1706758	2.5839719	40	6	1942–1998	0.73	M-v	2	Williams	33070	1992 FV ₁
1992 HD ₄	14.2	0.15	19990122	238.14884	340.83099	213.12824	7.15372	0.1367384	2.5788212	29	2	1992–1998	0.77	M-v	4	Williams	32928	1992 HD ₄
1992 HS ₄	13.1	0.15	19990122	119.27568	179.51034	100.24351	9.44728	0.1911398	2.8003756	27	3	1992–1998	0.64	M-v	3	Williams	33071	1992 HS ₄
1992 JQ	13.4	0.15	19990122	203.27051	54.17875	184.69576	12.34665	0.1831026	2.6169943	34	4	1992–1998	0.73	M-v	2	Williams	30896	1992 JQ
1992 JB ₂	12.9	0.15	19990122	57.74136	149.19313	218.44851	11.07815	0.0635912	2.6430916	40	3	1992–1998	0.75	M-v	4	Williams	33071	1992 JB ₂
1992 OF ₁	12.4	0.15	19990122	32.70124	231.03674	125.12895	9.69608	0.2294724	3.1077489	41	5	1970–1998	0.57	M-v	1	Williams	33071	1992 OF ₁
1992 OP ₁	12.7	0.15	19990122	63.73445	101.58817	240.46984	15.04312	0.1107671	3.0372022	35	4	1982–1998	0.59	M-v	1	Williams	33071	1992 OP ₁
1992 PB ₁	13.1	0.15	19990122	14.78446	221.09410	149.51483	8.02241	0.1168656	3.1490473	45	2	1992–1998	0.77	M-v	4	Williams	33071	1992 PB ₁
1992 PH ₂	13.0	0.15	19990122	64.12656	69.39155	271.45190	9.44136	0.1400423	3.0396383	40	4	1987–1998	0.57	M-v	1	Williams	33071	1992 PH ₂
1992 PK ₂	13.1	0.15	19990122	125.64061	6.24342	236.01911	5.86493	0.1436927	3.1201577	46	2	1992–1998	0.74	M-v	5	Williams	32928	1992 PK ₂
1992 RD ₁	13.2	0.15	19990122	104.42062	333.65694	359.50298	13.68170	0.1019106	2.9920574	31	5	1976–1998	0.79	M-v	2	Williams	30657	1992 RD ₁
1992 RB ₃	13.8	0.15	19990122	79.01011	109.32380	246.49774	0.54261	0.1095312	2.9686050	41	4	1987–1998	0.80	M-v	4	Williams	30782	1992 RB ₃
1992 RO ₃	14.5	0.15	19990122	124.96126	81.22309	199.29802	0.43625	0.1378892	3.0286772	17	3	1992–1998	0.91	M-v	5	Williams	33071	1992 RO ₃
1992 RJ ₅	14.4	0.15	19990122	63.09496	276.57391	81.38928	3.38220	0.1740110	3.0683012	24	3	1992–1998	0.66	M-v	4	Williams	27729	1992 RJ ₅
1992 RX ₆	12.8	0.15	19990122	40.03704	22.13510	8.39135	9.52783	0.0927385	3.0405087	36	3	1992–1998	0.79	M-v	3	Williams	33071	1992 RX ₆
1992 RM ₇	14.1	0.15	19990122	18.44075	345.77994	65.43157	2.26734	0.1569730	3.0922741	44	4	1992–1998	0.60	M-v	1	Williams	30688	1992 RM ₇
1992 SK	17.0	0.15	19990122	284.04336	233.49607	9.04458	15.32102	0.3248602	1.2485109	82	6	1953–1998	0.75	M-v	3	Williams	28615	1992 SK
1992 SB ₁	12.1	0.15	19990122	60.86388	346.03892	1.94973	17.05589	0.1671000	3.1671611	47	3	1992–1998	0.68	M-v	3	Williams	33071	1992 SB ₁
1992 SJ ₂	12.5	0.15	19990122	312.33031	325.25227	168.25788	10.92224	0.0504727	2.9997711	28	4	1990–1998	0.80	M-v	2	Williams	25427	1992 SJ ₂
1992 SF ₁₁	13.5	0.15	19990122	295.45804	304.54687	176.07951	1.53148	0.1175712	3.1909267	48	3	1992–1998	0.73	M-v	4	Williams	33071	1992 SF ₁₁
1992 SQ ₂₄	12.7	0.15	19990122	285.52030	309.26953	204.03600	10.11926	0.0516119	2.9882742	36	5	1987–1998	0.80	M-v	2	Williams	32515	1992 SQ ₂₄
1992 UP ₆	12.4	0.15	19990122	100.52090	154.32617	218.65885	12.80632	0.1608880	2.9734414	23	3	1992–1998	0.81	M-v	3	Williams	31275	1992 UP ₆
1992 UM ₉	13.2	0.15	19990122	66.53843	161.54396	186.52382	6.46046	0.1309868	3.1864327	50	4	1992–1998	0.75	M-v	1	Williams	33071	1992 UM ₉
1992 WF ₁	12.0	0.15	19990122	101.72881	262.49127	101.77769	11.06705	0.1010735	3.0287187	27	3	1992–1998	0.62	M-v	3	Williams	33071	1992 WF ₁
1992 YH ₂	12.9	0.15	19990122	66.13778	322.82109	86.80981	10.48689	0.0646236	3.1775168	26	5	1982–1998	0.63	M-v	1	Williams	30896	1992 YH ₂
1992 YN ₂	14.6	0.15	19990122	216.09434	83.69936	76.51974	2.31169	0.1391137	2.3020890	47	3	1992–1998	0.76	M-v	4	Williams	32745	1992 YN ₂
1993 BY ₄	16.1	0.15	19990122	328.80140	165.27305	315.32256	1.64610	0.0606664	2.1627008	16	3	1971–1998	0.84	M-v	4	Williams	23980	1993 BY ₄
1993 CB	13.9	0.15	19990122	196.72869	69.47883	135.02614	5.42983	0.1308653	2.3400968	40	2	1993–1998	0.78	M-v	5	Williams	32929	1993 CB
1993 DF ₂	14.3	0.15	19990122	217.84297	70.27592	151.37079	4.70362	0.0596930	2.2506661	25	4	1991–1998	0.60	M-v	2	Williams	24393	1993 DF ₂
1993 EQ	14.0	0.15	19990122	257.09213	158.15907	14.59666	7.18271	0.0467212	2.2845820	35	4	1991–1998	0.65	M-v	2	Williams	33071	1993 EQ
1993 EU	13.3	0.15	19990122	188.89140	135.91298	82.95145	3.14540	0.1670859	2.3734252	42	2	1993–1998	0.77	M-v	4	Williams	32929	1993 EU
1993 FL ₁	13.6	0.15	19990122	193.53350	179.88925	38.90562	7.26831	0.0587037	2.3365195	36	2	1993–1998	0.76	M-v	4	Williams	32929	1993 FL ₁
1993 FJ ₆	13.1	0.15	19930314	285.55456	187.73421	90.17732	2.35866	0.1958615	3.0311783	3	1	6 days	0.00			Williams		1993 FJ ₆
1993 FZ ₆	14.6	0.15	19990122	131.30512	208.95249	69.47971	3.30406	0.1999477	2.3992341	19	3	1993–1998	0.84	M-v	4	Williams	33071	1993 FZ ₆
1993 FH ₇	14.6	0.15	19990122	125.15647	200.33142	88.66804	3.52037	0.2036367	2.3882711	36	3	1993–1998	0.81	M-v	4	Williams	33071	1993 FH ₇
1993 FG ₈	14.6	0.15	19990122	37.19314	209.93243	169.74678	12.44677	0.1910801	2.3065024	28	2	1993–1998	0.62	M-v	4	Williams	33071	1993 FG ₈
1993 FL ₈	14.0	0.15	19990122	143.21956	229.63436	36.32284	7.33554	0.1007545	2.3711019	36	3	1976–1998	0.66	M-v	4	Williams	33071	1993 FL ₈

1993 FW ₉	14.2	0.15	19990122	99.66347	222.39482	67.95203	3.08265	0.1645892	2.4525248	39	2	1993–1998	0.75	M-v	5	Williams	32930	1993 FW ₉
1993 FR ₁₁	13.9	0.15	19990122	54.20673	129.20575	171.99763	13.77320	0.1646627	2.5663175	31	4	1989–1998	0.57	M-v	2	Williams	33071	1993 FR ₁₁
1993 FO ₁₂	14.5	0.15	19990122	187.94038	184.13503	51.07381	4.72943	0.1007038	2.3339235	14	2	1993–1998	0.66	M-v	5	Williams	32930	1993 FO ₁₂
1993 FM ₁₄	14.9	0.15	19990122	341.01050	57.55631	42.09706	6.15545	0.0813415	2.2443852	28	6	1954–1998	0.75	M-v	1	Williams	28616	1993 FM ₁₄
1993 FS ₁₄	12.6	0.15	19990122	148.93779	295.25957	105.03091	6.44225	0.1597753	3.1625300	40	4	1992–1998	0.65	M-v	2	Williams	31585	1993 FS ₁₄
1993 FG ₂₃	14.3	0.15	19990122	60.64215	155.99896	262.83858	1.96822	0.0721276	2.1758209	38	6	1988–1998	0.80	M-v	1	Williams	26926	1993 FG ₂₃
1993 FR ₂₃	14.0	0.15	19990122	50.49307	23.27491	359.87098	6.37744	0.2056759	2.2928006	38	5	1984–1998	0.75	M-v	2	Williams	32745	1993 FR ₂₃
1993 FW ₂₄	14.9	0.15	19990122	182.44509	19.03143	287.14683	1.18257	0.1795181	2.2072490	20	6	1981–1998	0.54	M-v	1	Williams	30782	1993 FW ₂₄
1993 FS ₂₆	13.7	0.15	19990122	184.15021	287.86241	285.83223	2.60418	0.0848114	2.3983690	53	3	1993–1998	0.71	M-v	4	Williams	33071	1993 FS ₂₆
1993 FV ₂₇	15.0	0.15	19990122	287.20726	215.68186	293.37773	1.77142	0.0564988	2.2680811	21	4	1993–1998	0.83	M-v	3	Williams	33071	1993 FV ₂₇
1993 FS ₃₁	14.3	0.15	19990122	108.10383	240.98083	51.88090	4.62320	0.0747079	2.4057034	46	2	1993–1998	0.79	M-v	5	Williams	32930	1993 FS ₃₁
1993 FB ₃₂	15.4	0.15	19990122	356.11505	227.04817	160.44505	3.58144	0.1842836	2.4228161	31	4	1949–1998	0.76	M-v	3	Williams	32745	1993 FB ₃₂
1993 FW ₄₁	15.4	0.15	19990122	88.12288	317.66973	5.41143	3.67708	0.0640987	2.3600133	37	2	1993–1998	0.80	M-v	5	Williams	32931	1993 FW ₄₁
1993 FS ₄₆	15.4	0.15	19990122	297.25118	288.41915	180.34766	5.22775	0.0915259	2.3248843	19	2	1993–1998	0.88	M-v	6	Williams	32931	1993 FS ₄₆
1993 FJ ₅₀	14.5	0.15	19990122	339.54653	161.98257	341.92418	2.06425	0.0342082	2.1595989	25	5	1991–1998	0.58	M-v	2	Williams	26927	1993 FJ ₅₀
1993 FW ₇₃	15.7	0.15	19990122	132.21819	55.85232	216.11689	3.75520	0.1925711	2.4327287	13	2	1993–1998	0.57	M-v	6	Williams	32931	1993 FW ₇₃
1993 FE ₇₆	14.9	0.15	19990122	60.16330	114.57212	206.54371	3.73482	0.3144771	2.5462246	48	2	1993–1998	0.59	M-v	4	Williams	33071	1993 FE ₇₆
1993 GA ₁	14.4	0.15	19990122	39.32835	14.09188	7.60157	7.12089	0.1186110	2.3118549	41	3	1993–1998	0.80	M-v	2	Williams	33071	1993 GA ₁
1993 GC ₁	13.1	0.15	19990122	130.25552	260.14759	68.51245	5.24758	0.1602687	2.2926344	21	4	1987–1998	0.62	M-v	2	Williams	27326	1993 GC ₁
1993 HS	14.0	0.15	19990122	239.01924	245.41499	20.73933	2.75197	0.1220312	2.1812075	37	6	1991–1998	0.70	M-v	2	Williams	31007	1993 HS
1993 HX	13.8	0.15	19990122	129.12084	145.59175	133.73108	3.05124	0.0458639	2.4082730	45	2	1993–1998	0.84	M-v	5	Williams	32931	1993 HX
1993 HL ₆	13.6	0.15	19990122	272.29113	345.70871	215.78192	7.51827	0.1444861	2.1958963	32	6	1967–1998	0.92	M-v	2	Williams	31007	1993 HL ₆
1993 KZ ₁	13.6	0.15	19990122	198.02847	169.34966	89.95265	25.56597	0.2007936	2.3467043	23	3	1993–1998	0.74	M-v	3	Williams	31234	1993 KZ ₁
1993 LS ₁	13.8	0.15	19990122	63.15695	24.42373	301.40406	12.82206	0.1778313	2.5473797	18	3	1982–1998	0.56	M-v	2	Williams	33071	1993 LS ₁
1993 NA ₂	13.7	0.15	19990122	351.49813	300.90595	123.70280	9.61394	0.1775644	2.6317919	28	4	1991–1998	0.84	M-v	3	Williams	33072	1993 NA ₂
1993 OM ₃	14.2	0.15	19990122	305.32674	92.82636	120.63288	6.40323	0.1090900	2.2341135	36	6	1986–1998	0.78	M-v	2	Williams	30897	1993 OM ₃
1993 OS ₁₀	13.6	0.15	19990122	51.38032	53.63904	274.15547	4.02348	0.0246102	2.7269081	65	3	1989–1998	0.64	M-v	3	Williams	33072	1993 OS ₁₀
1993 QE ₁	13.0	0.15	19990122	104.12497	191.63012	124.38484	14.60759	0.1636176	2.6385231	17	4	1979–1998	0.61	M-v	2	Williams	30451	1993 QE ₁
1993 RQ ₅	14.4	0.15	19990122	316.20301	301.79159	183.36279	7.06364	0.0503769	2.6998240	52	5	1979–1998	0.76	M-v	2	Williams	30898	1993 RQ ₅
1993 RY ₁₁	13.4	0.15	19990122	46.66431	111.14096	221.30638	1.05063	0.0832680	2.9138877	49	4	1978–1998	0.69	M-v	3	Williams	32932	1993 RY ₁₁
1993 SS ₁	13.8	0.15	19990122	53.26045	285.47323	146.87626	4.02002	0.1478677	2.5797489	26	4	1993–1998	0.82	M-v	2	Williams	31007	1993 SS ₁
1993 SO ₂	13.7	0.15	19990122	222.25078	338.06123	207.97810	7.59768	0.1115334	2.7923003	80	3	1993–1998	0.73	M-v	3	Williams	33072	1993 SO ₂
1993 SU ₄	13.6	0.15	19990122	62.43060	343.21724	354.38431	12.08613	0.0381828	2.7945395	27	3	1977–1998	0.83	M-v	4	Williams	32933	1993 SU ₄
1993 TV ₁₂	13.4	0.15	19990122	351.35445	46.97333	43.03927	9.67363	0.1405118	2.7968599	39	2	1993–1998	0.72	M-v	4	Williams	32933	1993 TV ₁₂
1993 TD ₁₇	14.6	0.15	19990122	136.81999	199.96560	87.74887	1.78145	0.0407090	2.7765599	21	3	1993–1998	0.51	M-v	3	Williams	32934	1993 TD ₁₇
1993 TL ₁₇	14.3	0.15	19990122	269.21293	357.65941	183.70706	9.66910	0.1698287	2.7096982	21	4	1991–1998	0.83	M-v	2	Williams	31538	1993 TL ₁₇
1993 TL ₁₈	12.8	0.15	19990122	218.50690	98.61593	41.01586	4.80831	0.0830529	3.2246061	18	5	1987–1998	0.67	M-v	2	Williams	32934	1993 TL ₁₈
1993 TV ₁₉	12.9	0.15	19990122	105.48826	214.23230	84.10061	3.43933	0.0180840	2.8908958	35	2	1993–1998	0.63	M-v	5	Williams	32934	1993 TV ₁₉
1993 TY ₂₂	13.7	0.15	19990122	70.59504	120.74904	187.43949	9.74135	0.0799123	2.9983615	31	2	1993–1998	0.59	M-v	5	Williams	32934	1993 TY ₂₂
1993 TA ₂₄	13.2	0.15	19990122	112.98616	135.71967	100.41380	2.60311	0.1145895	3.1864765	26	3	1989–1998	0.93	M-v	3	Williams	32746	1993 TA ₂₄
1993 TU ₂₉	13.5	0.15	19990122	26.32549	256.10179	117.88644	3.28043	0.0575118	2.9375101	31	2	1993–1998	0.74	M-v	5	Williams	32935	1993 TU ₂₉
1993 TN ₃₀	13.9	0.15	19990122	79.46558	201.32861	106.77249	4.42800	0.1965930	2.8987875	19	3	1982–1998	0.92	M-v	4	Williams	32935	1993 TN ₃₀
1993 TM ₃₁	14.0	0.15	19990122	339.32524	316.34933	115.24059	3.04312	0.0338545	2.9079744	36	2	1993–1998	0.83	M-v	5	Williams	32935	1993 TM ₃₁
1993 TU ₃₈	14.0	0.15	19990122	334.77637	3.44728	98.47898	5.52436	0.0245062	2.7969219	29	5	1988–1998	0.78	M-v	1	Williams	29662	1993 TU ₃₈
1993 TW ₃₈	13.4	0.15	19990122	89.28939	135.23107	168.57689	9.87082	0.0553945	2.9740160	62	3	1993–1998	0.63	M-v	3	Williams	32936	1993 TW ₃₈
1993 UJ ₁	14.8	0.15	19990122	343.20424	244.82104	207.56810	20.77886	0.0845874	1.8539873	45	3	1992–1998	0.80	M-v	3	Williams	32936	1993 UJ ₁
1993 UT ₆	13.4	0.15	19990122	2.56132	307.18788	178.91296	11.13225	0.1772206	2.6602399	25	4	1982–1998	0.81	M-v	2	Williams	30900	1993 UT ₆
1993 UW ₆	13.8	0.15	19990122	52.13302	235.11756	97.88645	6.16737	0.1141068	3.0079037	22	2	1993–1998	0.46	M-v	5	Williams	32936	1993 UW ₆
1993 VD ₄	12.8	0.15	19990122	63.71064	292.64372	49.70603	14.07448	0.0919788	2.9613322	26	4	1952–1998	0.72	M-v	2	Williams	32936	1993 VD ₄
1993 VV ₄	12.7	0.15	19990122	354.55530	339.40789	83.67990	9.72205	0.0461420	3.0376462	51	3	1993–1998	0.79	M-v	3	Williams	33072	1993 VV ₄
1993 VV ₇	13.4	0.15	19990122	49.60218	301.06594	110.48973	33.51903	0.3340076	2.7381702	33	3	1993–1998	0.56	M-v	2	Williams	24914	1993 VV ₇
1993 WD	16.9	0.15	19990122	296.22238	132.26298	56.58643	63.46284	0.2666086	1.0067276	312	7	1991–1998	0.61	M-v	3	Williams	31276	1993 WD
1993 XM	13.0	0.15	19990122	305.76258	37.65560	107.67412	16.71081	0.1523457	3.0500920	31	3	1993–1998	0.68	M-v	2	Williams	25442	1993 XM

1993 YD	12.9	0.15	19990122	245.51812	74.09502	100.31744	14.79843	0.0204404	3.1739334	44	4	1993–1998	0.70	M-v	1	Marsden	27568	1993 YD
1993 YF	14.0	0.15	19990122	357.49322	306.66159	113.34740	2.56707	0.1712140	3.1177659	31	4	1976–1998	0.78	M-v	3	Williams	33072	1993 YF
1994 AJ ₁	13.2	0.15	19990122	46.16360	128.17885	287.49386	9.35776	0.0945439	2.9909641	24	4	1989–1998	0.59	M-v	2	Williams	31008	1994 AJ ₁
1994 AL ₁	15.5	0.15	19990122	307.28406	54.03697	101.26458	28.56130	0.1666804	1.8823690	25	3	1994–1998	0.47	M-v	2	Williams	30452	1994 AL ₁
1994 AC ₃	13.8	0.15	19990122	321.23855	82.76526	31.23269	0.57948	0.1189384	3.2239619	38	3	1977–1998	0.74	M-v	3	Williams	32937	1994 AC ₃
1994 BD ₄	13.5	0.15	19990122	335.18724	305.92876	157.22124	5.95641	0.0876544	3.1536406	14	3	1981–1998	0.48	M-v	4	Williams	23343	1994 BD ₄
1994 FQ	14.1	0.15	19990122	326.25182	344.54723	157.16133	16.40279	0.1213428	3.0890875	35	5	1994–1998	0.84	M-v	2	Williams	30900	1994 FQ
1994 HB	17.0	0.15	19990122	92.16053	127.92682	189.28188	1.97578	0.2125768	2.1598471	30	3	1994–1998	0.42	M-v	4	Williams	29945	1994 HB
1994 NS	14.5	0.15	19990122	151.24769	78.94258	203.79700	6.48285	0.2398821	2.1665643	25	5	1988–1998	0.80	M-v	2	Williams	30092	1994 NS
1994 NF ₁	13.8	0.15	19990122	126.64007	199.05911	99.24187	8.19710	0.1399465	2.2168165	23	4	1994–1998	0.69	M-v	2	Williams	33072	1994 NF ₁
1994 NO ₁	14.2	0.15	19990122	161.02726	337.92726	260.95866	4.99973	0.1778496	2.2606766	35	3	1991–1998	0.79	M-v	5	Williams	33072	1994 NO ₁
1994 NS ₁	15.0	0.15	19990122	41.65534	115.57729	240.25048	1.64585	0.0989018	2.3553087	43	3	1987–1998	0.69	M-v	3	Williams	32937	1994 NS ₁
1994 PN	15.8	0.15	19990122	57.68122	233.90661	113.23511	46.05902	0.5407168	2.3749430	70	3	1994–1998	0.63	M-v	1	Williams	29619	1994 PN
1994 PS	13.7	0.15	19990122	231.53689	32.07007	154.48393	11.21365	0.1073995	2.3487568	27	3	1994–1998	0.67	M-v	3	Williams	32937	1994 PS
1994 PU	14.3	0.15	19990122	81.91855	66.59206	330.97977	3.56659	0.1328379	2.2024061	19	4	1955–1998	0.61	M-v	2	Williams	30453	1994 PU
1994 PA ₂	14.7	0.15	19990122	95.65943	8.53850	356.98329	3.77573	0.1872008	2.2258856	18	5	1981–1998	0.85	M-v	2	Williams	27327	1994 PA ₂
1994 PC ₂	14.5	0.15	19990122	110.75050	283.95031	359.92482	2.04989	0.2274023	2.3554350	44	3	1994–1998	0.99	M-v	3	Williams	32937	1994 PC ₂
1994 PK ₈	14.6	0.15	19990122	152.43248	350.12701	258.03821	1.02977	0.1534510	2.3382923	35	2	1994–1998	0.85	M-v	5	Williams	33072	1994 PK ₈
1994 PS ₁₀	15.8	0.15	19990122	63.02061	16.04548	327.48361	2.23305	0.1926002	2.3917455	25	3	1993–1998	0.55	M-v	4	Marsden	24748	1994 PS ₁₀
1994 PQ ₁₆	14.7	0.15	19990122	19.15324	98.90364	331.67107	5.37524	0.1116176	2.2849927	22	3	1991–1998	0.75	M-v	3	Williams	32747	1994 PQ ₁₆
1994 PP ₁₇	15.6	0.15	19990122	25.10354	118.60807	266.63373	0.92875	0.2117686	2.4399559	47	2	1994–1998	0.73	M-v	3	Williams	32938	1994 PP ₁₇
1994 PD ₁₈	14.2	0.15	19990122	118.80764	120.73956	158.89054	6.68858	0.1176945	2.3829329	68	3	1971–1998	0.79	M-v	4	Williams	33072	1994 PD ₁₈
1994 PX ₂₀	15.1	0.15	19990122	136.85877	286.78847	341.05296	1.75986	0.1050285	2.3646216	22	2	1994–1998	0.58	M-v	5	Williams	32939	1994 PX ₂₀
1994 PG ₂₄	15.0	0.15	19990122	330.40133	304.80982	139.58835	1.77317	0.1504586	2.4019843	40	2	1994–1998	0.85	M-v	5	Williams	32939	1994 PG ₂₄
1994 PM ₂₅	15.4	0.15	19990122	1.16831	291.82316	137.48298	2.85643	0.1258700	2.3387987	28	3	1994–1998	0.86	M-v	3	Williams	27568	1994 PM ₂₅
1994 PS ₂₇	16.0	0.15	19990122	355.59918	353.69415	67.31101	2.31204	0.1201892	2.3885853	15	2	1994–1998	0.73	M-v	7	Williams	32939	1994 PS ₂₇
1994 PW ₂₇	14.1	0.15	19990122	106.08390	322.06220	357.53261	3.37399	0.0946422	2.2995594	46	5	1966–1998	0.93	M-v	2	Williams	33073	1994 PW ₂₇
1994 PM ₂₈	15.8	0.15	19990122	179.41437	239.17793	20.75729	3.89700	0.0834253	2.2325749	15	3	1991–1998	0.53	M-v	4	Williams	26905	1994 PM ₂₈
1994 PE ₂₉	16.3	0.15	19990122	41.31251	298.18398	82.63983	1.57630	0.2133686	2.3801415	29	2	1994–1998	0.71	M-v	4	Williams	32939	1994 PE ₂₉
1994 PZ ₂₉	14.9	0.15	19990122	69.37662	102.97304	237.24096	3.69896	0.2476763	2.3818427	31	4	1971–1998	0.75	M-v	2	Williams	25083	1994 PZ ₂₉
1994 PQ ₃₁	15.1	0.15	19990122	14.71400	232.17365	201.98163	3.46353	0.1101557	2.2875861	35	7	1977–1998	0.73	M-v	1	Marsden	30291	1994 PQ ₃₁
1994 PX ₃₁	14.6	0.15	19990122	227.10970	259.11776	300.24240	6.17851	0.0448928	2.3115808	26	3	1994–1998	0.83	M-v	4	Williams	33073	1994 PX ₃₁
1994 PO ₃₂	14.0	0.15	19990122	242.88452	223.67947	304.42533	5.93418	0.0750286	2.3759553	24	3	1979–1998	0.52	M-v	4	Williams	33073	1994 PO ₃₂
1994 PQ ₃₂	15.6	0.15	19990122	74.77936	141.23374	190.33364	5.53469	0.1251095	2.3894802	22	4	1979–1998	0.86	M-v	2	Williams	30092	1994 PQ ₃₂
1994 PU ₃₂	14.6	0.15	19990122	142.84445	80.42965	209.72680	4.43866	0.0339528	2.2927279	21	3	1993–1998	0.72	M-v	4	Williams	25083	1994 PU ₃₂
1994 PE ₃₃	13.9	0.15	19990122	257.83502	253.71661	293.43121	3.94858	0.0861190	2.2479434	31	3	1994–1998	0.85	M-v	5	Williams	26566	1994 PE ₃₃
1994 PE ₃₅	15.4	0.15	19990122	14.60099	234.75845	172.93894	3.12172	0.1600035	2.3708714	26	2	1994–1998	0.50	M-v	4	Williams	32939	1994 PE ₃₅
1994 PN ₃₇	14.9	0.15	19990122	115.44353	126.42806	157.43075	6.09545	0.1844209	2.3434525	32	2	1994–1998	0.93	M-v	4	Williams	32940	1994 PN ₃₇
1994 PV ₃₇	14.6	0.15	19990122	93.02876	119.06286	172.15104	2.35845	0.1831618	2.4062191	60	3	1979–1998	0.74	M-v	4	Williams	33073	1994 PV ₃₇
1994 PV ₃₉	15.0	0.15	19990122	137.84660	330.40557	275.36774	1.30503	0.1816826	2.3801781	28	3	1990–1998	0.71	M-v	4	Williams	32940	1994 PV ₃₉
1994 QA	13.4	0.15	19990122	256.93739	121.66277	69.42780	25.12463	0.2242908	2.3309327	30	4	1950–1998	0.67	M-v	3	Williams	33073	1994 QA
1994 RO	16.8	0.15	19990122	12.62919	171.05628	226.34106	1.29183	0.1992305	2.4470396	27	2	1994–1998	1.04	M-v	5	Williams	32940	1994 RO
1994 RV	13.9	0.15	19990122	94.51438	348.97910	331.47676	5.31870	0.1344409	2.3784510	44	4	1993–1998	0.66	M-v	2	Williams	33073	1994 RV
1994 RH ₉	14.7	0.15	19990122	69.62796	340.30060	353.48903	9.88450	0.3477403	2.4092393	35	3	1994–1998	0.64	M-v	3	Williams	32517	1994 RH ₉
1994 RJ ₁₁	13.5	0.15	19990122	76.72839	357.78969	345.74406	6.50293	0.1417470	2.3617031	35	4	1987–1998	0.68	M-v	2	Williams	33073	1994 RJ ₁₁
1994 SE	16.1	0.15	19990122	77.60038	274.15296	61.65108	8.09029	0.4091543	2.3413791	54	5	1976–1998	0.58	M-v	1	Williams	29663	1994 SE
1994 SZ ₁	17.2	0.15	19990122	78.06292	279.75508	44.05395	3.05490	0.1870867	2.4445150	20	2	1994–1998	0.44	M-v	5	Williams	32940	1994 SZ ₁
1994 ST ₇	15.0	0.15	19990122	131.94969	128.09765	158.46460	2.63019	0.1621969	2.3592205	23	3	1994–1998	0.47	M-v	3	Williams	32668	1994 ST ₇
1994 SS ₉	15.9	0.15	19990122	105.40178	156.25488	148.87187	0.98488	0.1843385	2.3914167	33	5	1979–1998	0.55	M-v	1	Williams	32517	1994 SS ₉
1994 SH ₁₁	14.0	0.15	19990122	216.15908	202.77159	21.43447	6.61782	0.0602217	2.3308770	34	4	1993–1998	0.67	M-v	2	Williams	28854	1994 SH ₁₁
1994 TW	14.6	0.15	19990122	26.18320	351.77225	20.62253	13.81370	0.1779601	2.5313741	41	2	1994–1998	0.60	M-v	3	Williams	32941	1994 TW
1994 TQ ₁	13.6	0.15	19990122	145.97087	233.54260	55.55512	7.10059	0.1473724	2.3472003	17	3	1976–1998	0.62	M-v	5	Williams	24572	1994 TQ ₁
1994 TR ₁	14.2	0.15	19990122	47.64629	119.88427	205.96796	12.09923	0.3049208	2.5573269	49	4	1993–1998	0.78	M-v	2	Williams	33073	1994 TR ₁

1994 TU ₁	14.6	0.15	19990122	112.69856	357.30964	331.59977	6.87042	0.1439295	2.3528278	49	5	1990–1998	0.77	M-v	1	Williams	30292	1994 TU ₁
1994 TY ₂	13.5	0.15	19990122	7.76184	64.12762	17.90804	10.83676	0.2712501	2.4461718	26	4	1988–1998	0.81	M-v	2	Williams	32748	1994 TY ₂
1994 TB ₃	13.9	0.15	19990122	6.32671	12.33143	14.62342	14.60012	0.1506471	2.6010668	19	2	1994–1998	0.75	M-v	4	Williams	32941	1994 TB ₃
1994 TN ₃	15.5	0.15	19990122	1.46936	73.88676	25.78312	1.86656	0.1383176	2.3773469	52	6	1974–1998	0.63	M-v	1	Marsden	30472	1994 TN ₃
1994 TQ ₃	13.4	0.15	19990122	61.54362	322.68628	19.46312	12.90977	0.1210898	2.5323812	48	3	1990–1998	0.65	M-v	4	Williams	33073	1994 TQ ₃
1994 TT ₃	14.2	0.15	19990122	86.75704	127.40195	208.16026	22.73272	0.2687564	2.4396914	20	4	1986–1998	0.84	M-v	2	Williams	30093	1994 TT ₃
1994 TR ₆	15.9	0.15	19990122	34.89453	155.17914	173.03440	3.57516	0.2365405	2.6044637	26	2	1994–1998	0.55	M-v	3	Williams	32748	1994 TR ₆
1994 TK ₁₁	14.4	0.15	19990122	72.64198	95.25441	235.80645	2.15246	0.0712778	2.4712785	76	3	1977–1998	0.58	M-v	4	Williams	33073	1994 TK ₁₁
1994 TM ₁₄	13.8	0.15	19990122	8.66042	253.37040	198.43551	6.11091	0.0660896	2.3581993	34	5	1985–1998	0.76	M-v	1	Williams	30093	1994 TM ₁₄
1994 TZ ₁₄	14.6	0.15	19990122	19.77287	200.88069	182.78264	5.05235	0.2055648	2.5521280	78	3	1994–1998	0.58	M-v	3	Williams	33073	1994 TZ ₁₄
1994 TO ₁₅	13.8	0.15	19990122	182.65507	204.15977	22.61843	8.31778	0.2451168	2.4418200	30	5	1989–1998	0.81	M-v	2	Williams	33073	1994 TO ₁₅
1994 TW ₁₅	15.4	0.15	19990122	19.82252	150.53985	221.10025	3.57860	0.2267457	2.5556755	72	2	1994–1998	0.63	M-v	4	Williams	33073	1994 TW ₁₅
1994 UQ	13.3	0.15	19990122	135.96409	197.46509	61.53117	13.77544	0.1286249	2.6793945	27	2	1994–1998	0.59	M-v	4	Williams	32941	1994 UQ
1994 UW	14.3	0.15	19990122	67.44603	359.42448	13.20550	6.27742	0.1510760	2.3947061	26	5	1953–1998	0.54	M-v	2	Williams	29138	1994 UW
1994 UY	14.2	0.15	19990122	39.86760	48.94784	318.58933	2.88800	0.1738609	2.5224365	68	4	1950–1998	0.59	M-v	4	Williams	33073	1994 UY
1994 UC ₁	13.4	0.15	19990122	140.61775	248.42475	35.08127	1.61116	0.1141718	2.4557473	59	4	1977–1998	0.78	M-v	2	Williams	33073	1994 UC ₁
1994 UJ ₁	14.4	0.15	19990122	31.03147	19.64012	348.00723	3.11083	0.1821426	2.5733448	74	4	1992–1998	0.59	M-v	3	Marsden	33073	1994 UJ ₁
1994 UM ₁	13.9	0.15	19990122	69.10959	69.55816	250.46976	3.38700	0.1989102	2.5660456	76	5	1986–1998	0.64	M-v	3	Williams	33073	1994 UM ₁
1994 UQ ₁	13.8	0.15	19990122	53.14902	134.27002	201.89037	3.54123	0.1971942	2.5704516	102	5	1980–1998	0.64	M-v	2	Williams	33073	1994 UQ ₁
1994 UR ₆	14.4	0.15	19990122	319.65492	262.27702	285.62065	2.30865	0.1532740	2.2026065	23	3	1989–1998	0.66	M-v	3	Williams	32941	1994 UR ₆
1994 UW ₉	16.1	0.15	19990122	34.25311	46.85900	318.54523	1.96262	0.2445326	2.5384115	25	2	1994–1998	0.49	M-v	4	Williams	32942	1994 UW ₉
1994 VB	14.5	0.15	19990122	61.50688	300.95291	36.42178	13.60385	0.1977114	2.5397165	60	3	1994–1998	0.69	M-v	3	Williams	33073	1994 VB
1994 VH	14.4	0.15	19990122	38.76897	332.09220	32.30322	7.56716	0.2691649	2.5340751	82	5	1986–1998	0.62	M-v	2	Williams	33073	1994 VH
1994 VL	15.1	0.15	19990122	355.04160	50.11921	23.15949	5.56842	0.2194837	2.5441547	64	2	1994–1998	0.66	M-v	4	Williams	33073	1994 VL
1994 VT	14.3	0.15	19990122	8.91668	133.49222	335.80088	1.97866	0.1732433	2.4033014	18	4	1981–1998	0.74	M-v	2	Williams	28888	1994 VT
1994 VA ₁	18.9	0.15	19990122	275.29299	310.89697	231.85077	7.63598	0.1749429	1.5731789	35	3	1994–1998	0.49	M-v	4	Williams	33073	1994 VA ₁
1994 VD ₁	14.8	0.15	19990122	34.66502	34.24804	68.29419	7.65956	0.0803789	2.2807305	20	4	1994–1998	0.52	M-v	1	Williams	30689	1994 VD ₁
1994 VE ₁	13.6	0.15	19990122	47.53249	192.04131	170.47368	2.44584	0.1615385	2.5514740	43	2	1994–1998	0.43	M-v	4	Williams	32942	1994 VE ₁
1994 VH ₁	13.3	0.15	19990122	271.79942	53.96677	87.13026	4.10947	0.0595929	2.6353028	67	2	1994–1998	0.63	M-v	5	Williams	32942	1994 VH ₁
1994 VA ₂	14.3	0.15	19990122	22.25983	324.26883	71.38769	14.03109	0.1656711	2.5314110	19	3	1978–1998	0.60	M-v	4	Williams	33073	1994 VA ₂
1994 VF ₂	13.5	0.15	19990122	300.19412	68.32143	55.58782	13.09884	0.2243998	2.6297363	39	5	1970–1998	0.69	M-v	1	Williams	33073	1994 VF ₂
1994 VR ₂	13.1	0.15	19990122	256.92643	123.65374	42.44128	12.91213	0.0944890	2.5459186	31	2	1994–1998	0.74	M-v	4	Williams	32942	1994 VR ₂
1994 VU ₆	13.7	0.15	19990122	27.75161	144.34165	209.77478	13.05017	0.2126985	2.6367539	49	2	1994–1998	0.78	M-v	3	Williams	33073	1994 VU ₆
1994 VY ₆	15.5	0.15	19990122	31.00349	101.68187	266.70282	3.03624	0.2779899	2.5503594	31	2	1994–1998	0.55	M-v	4	Williams	32942	1994 VY ₆
1994 VB ₇	14.3	0.15	19990122	43.39147	196.61929	223.42684	2.81415	0.1557015	2.3933906	22	4	1990–1998	0.75	M-v	2	Williams	30472	1994 VB ₇
1994 WJ	14.9	0.15	19990122	39.96794	316.89778	53.56204	5.62824	0.2857471	2.5484425	45	2	1994–1998	0.60	M-v	4	Williams	33073	1994 WJ
1994 WJ ₁	14.9	0.15	19990122	344.19665	19.60407	65.22844	15.23557	0.2179219	2.6167055	22	2	1994–1998	0.72	M-v	3	Williams	32943	1994 WJ ₁
1994 WP ₁	14.7	0.15	19990122	333.50596	199.24029	277.45653	3.86114	0.1660617	2.5501492	36	3	1994–1998	0.60	M-v	5	Williams	30276	1994 WP ₁
1994 WE ₂	13.3	0.15	19990122	12.27288	266.11455	97.01667	9.10629	0.2181445	2.7471303	29	4	1982–1998	0.59	M-v	1	Williams	33073	1994 WE ₂
1994 WW ₂	13.7	0.15	19990122	87.55634	305.65188	14.56100	3.16146	0.0611558	2.6964081	39	2	1994–1998	0.58	M-v	4	Williams	33074	1994 WW ₂
1994 WN ₃	13.4	0.15	19990122	34.89624	258.74117	133.21385	6.79475	0.2315760	2.5245920	19	2	1994–1998	0.73	M-v	4	Williams	33074	1994 WN ₃
1994 WA ₄	13.5	0.15	19990122	307.27957	252.03644	209.10003	11.71266	0.0835881	2.7041358	53	2	1994–1998	0.61	M-v	3	Williams	33074	1994 WA ₄
1994 XJ	13.7	0.15	19990122	346.38914	100.94155	64.89763	6.97447	0.0589938	2.3305177	17	4	1988–1998	0.53	M-v	2	Williams	29106	1994 XJ
1994 XP	13.8	0.15	19990122	37.78818	156.40937	225.62355	7.28621	0.2088880	2.5575419	68	2	1994–1998	0.72	M-v	4	Williams	33074	1994 XP
1994 XQ ₄	14.0	0.15	19990122	19.13535	311.88777	77.77302	4.13254	0.1193387	2.7464496	49	2	1994–1998	0.65	M-v	4	Williams	32943	1994 XQ ₄
1994 YC	15.3	0.15	19990122	311.47563	182.48625	315.52057	4.91866	0.1641845	2.6247390	22	4	1991–1998	0.45	M-v	3	Williams	30455	1994 YC
1994 YR	14.6	0.15	19990122	72.36207	243.02665	102.33613	4.29431	0.2905055	2.6206135	34	3	1994–1998	0.67	M-v	2	Williams	30292	1994 YR
1994 YY ₁	13.0	0.15	19950103	327.52589	67.60078	89.13485	6.99066	0.2092380	2.6503609	6	1	6 days	0.19			Williams	24753	1994 YY ₁
1994 YA ₂	13.6	0.15	19990122	339.38018	97.43496	358.28852	22.07909	0.0445438	2.6513822	31	5	1989–1998	0.73	M-v	1	Williams	33074	1994 YA ₂
1994 YM ₂	13.1	0.15	19990122	324.37784	213.33160	231.17956	12.50643	0.1243707	2.7288532	19	4	1989–1998	0.71	M-v	2	Williams	32943	1994 YM ₂
1995 AF	12.6	0.15	19990122	95.44185	27.95976	294.33477	11.53425	0.1682361	2.6652673	34	5	1967–1998	0.79	M-v	3	Williams	33074	1995 AF
1995 AH	14.3	0.15	19990122	39.11890	268.51897	138.32434	4.15047	0.1275592	2.6135220	35	6	1989–1998	0.61	M-v	1	Williams	30472	1995 AH
1995 AO ₁	14.3	0.15	19990122	313.21482	307.46179	211.09804	10.04421	0.3205575	2.6970159	35	3	1995–1998	0.46	M-v	2	Williams	27731	1995 AO ₁

1995 BA	14.8	0.15	19990122	11.36450	57.41776	68.82332	1.74788	0.1664194	2.4256389	21	3	1995–1998	0.30	M-v	3	Williams	31240	1995 BA
1995 BY	13.3	0.15	19990122	11.94927	0.59715	35.96804	2.61203	0.0820560	2.9266169	78	3	1995–1998	0.64	M-v	4	Williams	33074	1995 BY
1995 BP ₁	13.0	0.15	19990122	61.42085	306.49942	89.49441	13.50059	0.2565070	2.6304706	18	3	1989–1998	0.75	M-v	3	Williams	29622	1995 BP ₁
1995 BL ₂	17.2	0.15	19990122	178.55970	348.33870	312.52062	23.89024	0.5037985	1.2346747	144	4	1991–1998	0.56	M-v	3	Williams	27937	1995 BL ₂
1995 CN	14.6	0.15	19990122	18.16038	286.09627	119.02452	7.39922	0.0846371	2.7607037	21	4	1984–1998	0.54	M-v	1	Marsden	28075	1995 CN
1995 CD ₂	12.1	0.15	19990122	145.70851	22.62264	232.70329	21.12178	0.0425308	3.2357624	37	4	1995–1998	0.65	M-v	2	Williams	33074	1995 CD ₂
1995 DK	13.3	0.15	19990122	289.32381	358.48636	161.40863	9.98598	0.1127970	2.8730901	25	5	1990–1998	0.58	M-v	1	Williams	30689	1995 DK
1995 DL	12.6	0.15	19990122	222.75745	202.24555	348.83719	4.27955	0.0940175	3.1737697	33	2	1995–1998	0.62	M-v	4	Williams	32944	1995 DL
1995 DG ₁	15.4	0.15	19990122	340.53344	272.67025	211.43284	4.30050	0.1120537	2.7577629	26	3	1995–1998	0.37	M-v	3	Williams	30664	1995 DG ₁
1995 DZ ₁	13.2	0.15	19990122	136.01879	202.23773	79.12102	7.31974	0.1250940	3.0957111	61	4	1995–1998	0.68	M-v	2	Williams	33074	1995 DZ ₁
1995 DO ₂	13.5	0.15	19990122	332.30601	15.93261	118.65199	3.65385	0.1343305	2.7540543	40	3	1995–1998	0.56	M-v	4	Williams	30689	1995 DO ₂
1995 DZ ₁₁	13.6	0.15	19990122	333.66068	311.61714	140.87549	2.83733	0.0362842	2.9421840	34	4	1990–1998	0.75	M-v	1	Williams	33074	1995 DZ ₁₁
1995 EF	13.2	0.15	19990122	260.77188	56.36846	127.79656	8.50040	0.1613734	2.7969553	33	3	1994–1998	0.61	M-v	3	Williams	33074	1995 EF
1995 EA ₈	14.4	0.15	19990122	329.45317	283.95264	163.16650	0.65058	0.2033645	2.9959841	44	3	1995–1998	0.54	M-v	4	Williams	32944	1995 EA ₈
1995 EE ₈	12.6	0.15	19990122	4.71570	142.50415	350.56470	15.08079	0.1242129	2.6208553	15	5	1978–1998	0.78	M-v	2	Williams	28889	1995 EE ₈
1995 ED ₉	12.9	0.15	19990122	343.39839	263.17854	161.78029	6.55192	0.1327333	3.1424894	45	3	1987–1998	0.61	M-v	4	Williams	32944	1995 ED ₉
1995 FV ₁₄	13.0	0.15	19990122	258.30457	135.95471	35.75283	8.67041	0.1015895	3.1720682	35	5	1978–1998	0.90	M-v	2	Williams	33074	1995 FV ₁₄
1995 GJ ₇	12.9	0.15	19990122	296.58499	200.78265	15.79865	9.20860	0.1564172	2.6594009	27	6	1982–1998	0.78	M-v	2	Williams	31141	1995 GJ ₇
1995 HY ₂	13.5	0.15	19990122	331.34306	328.62688	128.89250	3.24696	0.1726689	3.2132065	25	2	1995–1998	0.54	M-v	4	Williams	32945	1995 HY ₂
1995 QS ₃	12.4	0.15	19990122	188.79705	67.81199	305.60780	12.40167	0.1182702	3.1748211	26	5	1984–1998	0.59	M-v	1	Williams	32749	1995 QS ₃
1995 RC	14.6	0.15	19990122	350.05083	58.52858	331.83369	5.52656	0.1674985	2.2098480	95	3	1995–1998	0.57	M-v	2	Williams	33074	1995 RC
1995 UW ₄	14.8	0.15	19990122	70.71199	279.56802	48.73044	8.11432	0.1355759	2.1887487	55	2	1995–1998	0.62	M-v	4	Williams	33074	1995 UW ₄
1995 VG ₂	13.9	0.15	19990122	31.93612	303.84342	27.57917	7.87827	0.1412438	2.3160788	29	3	1995–1998	0.48	M-v	3	Williams	32749	1995 VG ₂
1995 WS ₁	14.2	0.15	19990122	22.76213	316.91181	44.00927	3.87375	0.1895580	2.2340248	58	3	1985–1998	0.74	M-v	2	Williams	33074	1995 WS ₁
1995 WS ₇	14.5	0.15	19990122	244.33898	86.47710	90.27315	1.13170	0.0671800	2.2319430	48	4	1990–1998	0.82	M-v	2	Williams	33074	1995 WS ₇
1995 WU ₇	15.3	0.15	19990122	293.51932	48.37353	69.67856	3.89402	0.0627054	2.2677082	24	2	1995–1998	0.71	M-v	5	Williams	32946	1995 WU ₇
1995 WA ₈	15.4	0.15	19990122	11.98274	39.13540	0.68963	5.29959	0.1446069	2.2050931	55	3	1988–1998	0.62	M-v	2	Williams	33074	1995 WA ₈
1995 WP ₈	14.1	0.15	19990122	71.63801	273.77576	59.15659	5.50713	0.1799696	2.1635408	54	3	1994–1998	0.74	M-v	2	Williams	33074	1995 WP ₈
1995 XE	13.5	0.15	19990122	175.18773	276.98460	278.51734	13.91889	0.0473483	2.5749188	34	2	1995–1998	0.65	M-v	4	Williams	32750	1995 XE
1995 YH ₁	14.5	0.15	19990122	32.90937	100.70331	277.12559	3.49409	0.1313388	2.2834675	67	3	1991–1998	0.63	M-v	3	Williams	33075	1995 YH ₁
1995 YX ₁	14.2	0.15	19990122	295.02581	271.07396	218.54635	2.20654	0.1002387	2.3040320	47	2	1995–1998	0.68	M-v	4	Williams	32947	1995 YX ₁
1995 YY ₁	14.4	0.15	19990122	194.18347	138.03672	105.43390	6.21662	0.1305282	2.2748430	21	4	1993–1998	0.75	M-v	2	Williams	31588	1995 YY ₁
1995 YM ₃	13.8	0.15	19990122	133.02522	203.72154	114.49599	6.06842	0.0862357	2.1611752	17	3	1991–1998	0.74	M-v	4	Williams	26574	1995 YM ₃
1995 YN ₃	14.1	0.15	19990122	241.39516	289.83762	278.30003	6.20680	0.1428784	2.2621963	24	5	1976–1998	0.68	M-v	2	Williams	30689	1995 YN ₃
1995 YO ₃	14.8	0.15	19990122	320.08011	221.88676	215.19806	0.59720	0.1609989	2.3983950	59	3	1976–1998	0.62	M-v	3	Williams	32750	1995 YO ₃
1995 YS ₂₅	16.4	0.15	19990122	286.42195	78.00136	50.25768	5.68626	0.0389856	2.3372531	45	4	1991–1998	0.52	M-v	1	Williams	32750	1995 YS ₂₅
1996 AA	14.8	0.15	19990122	277.30027	206.67646	294.23022	5.85977	0.0558757	2.3794978	22	3	1989–1998	0.50	M-v	4	Williams	32947	1996 AA
1996 AA ₁	14.3	0.15	19990122	203.43887	320.90288	289.17517	1.13696	0.1288490	2.2370388	27	6	1981–1998	0.67	M-v	1	Williams	30473	1996 AA ₁
1996 AO ₁	15.0	0.15	19990122	354.79952	326.29982	69.52247	3.91873	0.1931642	2.3924569	110	3	1996–1998	0.63	M-v	3	Marsden	32750	1996 AO ₁
1996 AJ ₂	14.4	0.15	19990122	269.51332	36.03200	114.25111	3.41984	0.1274103	2.4028440	42	3	1996–1998	0.64	M-v	4	Williams	33075	1996 AJ ₂
1996 AP ₃	13.5	0.15	19990122	53.98147	65.76200	273.60050	6.82828	0.1934665	2.2872858	45	3	1988–1998	0.47	M-v	2	Williams	33075	1996 AP ₃
1996 AB ₄	14.9	0.15	19990122	325.54893	250.03853	218.71927	4.24580	0.1037495	2.2977667	39	3	1991–1998	0.59	M-v	4	Williams	32948	1996 AB ₄
1996 AW ₄	14.7	0.15	19990122	244.78920	116.60575	75.54797	3.27843	0.1661706	2.3574970	23	3	1942–1998	0.63	M-v	4	Williams	33075	1996 AW ₄
1996 AK ₁₀	15.5	0.15	19990122	7.35382	165.38101	249.39643	1.87340	0.1225976	2.2965621	40	3	1993–1998	0.66	M-v	4	Williams	33075	1996 AK ₁₀
1996 BS ₁	13.9	0.15	19990122	112.72370	283.15521	34.47469	4.16183	0.0877817	2.3766172	38	4	1990–1998	0.59	M-v	1	Williams	29947	1996 BS ₁
1996 BE ₂	13.8	0.15	19990122	273.89960	86.98081	84.93510	6.37699	0.0982677	2.2579086	41	4	1986–1998	0.73	M-v	2	Williams	33075	1996 BE ₂
1996 BL ₂	14.9	0.15	19990122	37.07343	155.89583	230.23643	3.93901	0.1702729	2.2840421	50	3	1984–1998	0.72	M-v	3	Williams	33075	1996 BL ₂
1996 BY ₂	14.2	0.15	19990122	306.57765	287.42216	158.20299	4.10002	0.1919556	2.4808821	47	2	1996–1998	0.72	M-v	4	Williams	32750	1996 BY ₂
1996 CQ ₁	14.9	0.15	19990122	55.95233	40.40993	319.36226	6.21033	0.1319461	2.3649295	31	3	1994–1998	0.78	M-v	4	Williams	33075	1996 CQ ₁
1996 CJ ₇	14.7	0.15	19990122	197.48509	120.73969	135.82181	7.45389	0.0932634	2.3503273	17	3	1996–1998	0.85	M-v	4	Williams	30901	1996 CJ ₇
1996 CN ₇	14.5	0.15	19990122	178.39603	252.87379	17.11493	2.41321	0.1463737	2.4110099	27	3	1996–1998	0.83	M-v	4	Williams	30784	1996 CN ₇
1996 CT ₇	14.5	0.15	19990122	357.80391	192.29673	210.89115	6.13499	0.1317886	2.4257876	66	3	1996–1998	0.79	M-v	4	Williams	33075	1996 CT ₇
1996 CY ₇	15.2	0.15	19990122	249.71336	102.58779	104.36244	2.92197	0.1829692	2.3678544	22	3	1993–1998	0.93	M-v	4	Williams	27112	1996 CY ₇

1996 CU ₈	13.8	0.15	19990122	226.69678	154.21544	356.76833	9.03444	0.0900325	2.7852892	44	2	1996–1998	0.75	M-v	4	Williams	32750	1996 CU ₈
1996 CG ₉	14.3	0.15	19990122	60.57094	167.66261	194.51249	6.87099	0.1372492	2.3047054	36	2	1996–1998	0.74	M-v	4	Williams	33075	1996 CG ₉
1996 DE	13.6	0.15	19990122	82.47090	187.40046	145.62694	16.19848	0.1391818	2.6093948	36	6	1988–1998	0.75	M-v	1	Williams	30473	1996 DE
1996 DF	13.0	0.15	19990122	34.89168	280.46751	128.09510	5.91296	0.0674369	2.3683289	27	6	1989–1998	0.60	M-v	1	Williams	33075	1996 DF
1996 DL	15.2	0.15	19990122	314.66376	329.25939	151.59507	4.62566	0.1058085	2.3620024	35	3	1980–1998	0.64	M-v	3	Williams	33075	1996 DL
1996 DX	14.3	0.15	19990122	320.40136	8.42560	101.39047	3.06389	0.1676412	2.3809546	45	2	1996–1998	0.65	M-v	4	Williams	32949	1996 DX
1996 DM ₂	13.6	0.15	19990122	177.73005	117.45366	106.42726	5.81478	0.0520353	2.7386293	30	2	1996–1998	0.68	M-v	4	Williams	32949	1996 DM ₂
1996 DQ ₂	14.0	0.15	19990122	189.45879	145.27223	97.82226	5.14147	0.0509058	2.5245069	36	4	1980–1998	0.58	M-v	3	Williams	33075	1996 DQ ₂
1996 EH	13.3	0.15	19990122	237.94845	342.62497	246.43031	7.86042	0.1540861	2.3621889	23	5	1982–1998	0.69	M-v	1	Williams	30901	1996 EH
1996 EH ₁	12.9	0.15	19990122	151.34547	43.09851	197.71977	14.69930	0.1568562	3.1692948	42	4	1979–1998	0.74	M-v	2	Williams	32950	1996 EH ₁
1996 EG ₂	13.5	0.15	19990122	153.00308	114.05818	165.90496	12.32065	0.0398569	2.5380155	22	6	1976–1998	0.88	M-v	1	Williams	30473	1996 EG ₂
1996 ER ₂	15.0	0.15	19990122	316.33172	214.72075	258.05516	2.70796	0.0500214	2.4349701	65	3	1996–1998	0.59	M-v	3	Marsden	33075	1996 ER ₂
1996 EO ₁₂	15.2	0.15	19990122	76.13871	78.58561	302.83112	7.46615	0.2501542	2.2095328	16	3	1991–1998	0.57	M-v	3	Williams	31387	1996 EO ₁₂
1996 ER ₁₂	15.4	0.15	19990122	87.73792	106.50459	256.15826	4.87766	0.2131923	2.2982859	14	3	1980–1998	0.37	M-v	4	Williams	27115	1996 ER ₁₂
1996 FG ₃	18.3	0.15	19990122	112.60103	23.76968	300.00929	1.99204	0.3496776	1.0538399	247	4	1996–1998	0.60	M-v	3	Williams	31588	1996 FG ₃
1996 FA ₄	14.0	0.15	19990122	298.75676	77.63452	41.57906	13.23983	0.1111977	2.6498567	50	3	1981–1998	0.66	M-v	2	Williams	32951	1996 FA ₄
1996 FJ ₅	12.9	0.15	19990122	38.51080	15.85477	12.90267	15.51355	0.1241606	2.5736514	37	4	1977–1998	0.73	M-v	3	Williams	33075	1996 FJ ₅
1996 GL ₁	14.5	0.15	19990122	341.98941	58.32940	40.20255	6.69801	0.1324953	2.3224321	45	4	1987–1998	0.65	M-v	1	Williams	33075	1996 GL ₁
1996 GP ₁	13.7	0.15	19990122	317.28707	73.71447	3.20196	22.14342	0.0437187	2.6561187	59	2	1996–1998	0.49	M-v	3	Williams	33075	1996 GP ₁
1996 GV ₁	13.3	0.15	19990122	285.96573	101.73163	39.09348	13.23386	0.1196156	2.6366945	20	4	1983–1998	0.70	M-v	1	Williams	32951	1996 GV ₁
1996 GN ₂	14.2	0.15	19990122	3.96092	219.27955	191.75427	9.08799	0.1281133	2.7285048	45	2	1996–1998	0.66	M-v	4	Williams	32951	1996 GN ₂
1996 GL ₃	14.6	0.15	19990122	323.36402	356.28077	92.34492	3.84010	0.0350178	2.7385911	27	2	1996–1998	0.52	M-v	4	Williams	32951	1996 GL ₃
1996 GU ₈	13.7	0.15	19990122	117.04327	228.23875	77.62794	3.85262	0.0595590	2.7379686	47	4	1982–1998	0.78	M-v	1	Williams	33075	1996 GU ₈
1996 GG ₂₀	13.9	0.15	19990122	71.47216	215.90965	137.61468	2.54578	0.1288862	2.9124681	20	4	1978–1998	1.20	M-v	2	Williams	30689	1996 GG ₂₀
1996 GM ₂₀	13.5	0.15	19990122	167.94771	177.49556	59.30960	0.82847	0.1568418	3.0759158	37	3	1990–1998	0.86	M-v	4	Williams	33076	1996 GM ₂₀
1996 HP	14.2	0.15	19990122	285.62700	112.64083	52.48201	14.45956	0.0917262	2.5816378	36	2	1996–1998	0.54	M-v	4	Williams	32952	1996 HP
1996 HX	14.1	0.15	19990122	113.08420	316.40344	2.70935	6.22349	0.1694293	3.0163113	43	3	1996–1998	0.32	M-v	2	Marsden	30785	1996 HX
1996 HC ₁	13.3	0.15	19990122	297.69766	86.61337	56.62020	13.81478	0.1128281	2.5932555	76	3	1996–1998	0.63	M-v	3	Williams	33076	1996 HC ₁
1996 HM ₁	16.0	0.15	19990122	347.70592	126.57705	352.14011	2.11913	0.1317086	2.3844020	27	3	1996–1998	0.74	M-v	4	Williams	30669	1996 HM ₁
1996 HP ₁	15.1	0.15	19990122	242.78855	355.46784	198.19006	11.08758	0.1200246	2.6161167	57	3	1996–1998	0.57	M-v	3	Marsden	33076	1996 HP ₁
1996 HE ₂	12.8	0.15	19990122	131.55755	201.64996	72.45634	10.10441	0.0300098	3.1108789	34	3	1996–1998	0.66	M-v	3	Williams	33076	1996 HE ₂
1996 HR ₁₀	13.5	0.15	19990122	22.13503	343.34923	38.85757	0.44907	0.2174241	3.1475619	46	3	1976–1998	0.88	M-v	4	Williams	33076	1996 HR ₁₀
1996 HF ₁₁	14.3	0.15	19990122	160.61350	181.51950	79.60513	2.58454	0.1727793	2.9838252	24	3	1992–1998	0.87	M-v	4	Williams	33076	1996 HF ₁₁
1996 HC ₁₂	14.6	0.15	19990122	280.12770	277.05603	220.68271	1.09732	0.0131484	2.8942158	23	3	1971–1998	0.87	M-v	4	Williams	32471	1996 HC ₁₂
1996 HT ₁₅	13.7	0.15	19990122	356.68989	255.15651	161.51409	2.21207	0.0783958	2.9413723	19	2	1996–1998	0.77	M-v	5	Williams	32952	1996 HT ₁₅
1996 HT ₁₆	14.2	0.15	19990122	25.93979	211.41774	181.83558	1.72128	0.0546966	2.9272044	23	2	1996–1998	0.78	M-v	4	Williams	33076	1996 HT ₁₆
1996 HX ₁₆	14.3	0.15	19990122	8.65865	345.08145	63.42187	2.79059	0.1002009	2.9251521	32	2	1996–1998	0.66	M-v	4	Williams	32952	1996 HX ₁₆
1996 HD ₂₂	14.2	0.15	19990122	270.33803	107.48046	40.96422	13.43056	0.1094778	2.6189173	41	2	1996–1998	0.78	M-v	4	Williams	32953	1996 HD ₂₂
1996 HP ₂₃	14.0	0.15	19990122	46.40013	12.38192	58.31750	7.01761	0.0698716	2.4527349	20	3	1986–1998	0.96	M-v	5	Williams	32471	1996 HP ₂₃
1996 HR ₂₄	14.0	0.15	19990122	107.82463	225.46348	85.98033	4.59627	0.1777012	3.1817081	22	4	1991–1998	0.55	M-v	1	Marsden	30690	1996 HR ₂₄
1996 JJ ₁	13.8	0.15	19990122	128.81235	120.71180	176.98301	9.33834	0.0472536	2.9630755	32	5	1972–1998	0.74	M-v	1	Williams	30690	1996 JJ ₁
1996 JS ₅	14.0	0.15	19990122	117.27790	118.79168	168.62777	3.74478	0.1039705	3.1458091	25	4	1995–1998	0.57	M-v	1	Williams	33076	1996 JS ₅
1996 JN ₆	13.2	0.15	19990122	48.41498	251.97379	117.39926	2.96244	0.0494670	2.9265785	34	4	1978–1998	0.72	M-v	3	Williams	33076	1996 JN ₆
1996 KX ₂	13.2	0.15	19990122	137.03090	178.12165	171.81107	12.00905	0.1306406	2.6506956	28	3	1988–1998	0.49	M-v	3	Williams	27563	1996 KX ₂
1996 LJ ₁	14.4	0.15	19990122	202.38001	49.00808	219.32076	14.37333	0.1265485	2.7734343	44	3	1996–1998	0.34	M-v	3	Williams	30902	1996 LJ ₁
1996 OO	12.2	0.15	19990122	164.16837	18.21318	232.21948	10.27067	0.0800807	3.9848049	65	3	1996–1998	0.54	M-v	3	Williams	33076	1996 OO
1996 SO ₈	10.8	0.15	19990122	55.86884	64.01451	303.17623	5.06730	0.1123787	5.2578218	20	3	1996–1998	0.66	M-v	3	Williams	31278	1996 SO ₈
1996 TW	10.9	0.15	19990122	111.94474	314.32054	8.02504	17.97962	0.0897729	5.1878995	36	3	1996–1998	0.37	M-v	3	Williams	30877	1996 TW
1996 TL ₅	15.8	0.15	19990122	121.70481	24.07478	124.56194	5.81457	0.1317061	2.3093068	23	2	1996–1998	0.51	M-v	4	Williams	32954	1996 TL ₅
1996 UX ₃	11.7	0.15	19990122	356.17112	234.30987	211.17768	19.99126	0.1629142	5.1737459	32	3	1996–1998	0.69	M-v	3	Williams	31009	1996 UX ₃
1997 AJ ₁₉	13.9	0.15	19990122	225.29447	156.54070	244.38093	1.92973	0.0450305	2.7996574	23	3	1986–1998	0.67	M-v	5	Williams	32955	1997 AJ ₁₉
1997 BC ₉	14.9	0.15	19990122	36.99652	186.95887	140.73513	4.23863	0.2342720	2.2314273	62	5	1978–1998	0.79	M-v	2	Williams	33076	1997 BC ₉
1997 CJ ₁	15.4	0.15	19990122	126.77061	166.38420	76.74131	3.17402	0.1886749	2.3277582	24	2	1997–1998	0.78	M-v	4	Williams	32956	1997 CJ ₁

1997 CA ₂₂	14.9	0.15	19990122	193.16162	27.64981	156.38039	1.51973	0.0680800	2.1880445	67	3	1995–1998	0.58	M-v	3	Williams	33076	1997 CA ₂₂
1997 CU ₂₆	6.3	0.15	19990122	331.48097	241.94286	300.46376	23.40829	0.1690348	15.7271643	291	3	1997–1998	0.49	M-v	2	Williams	32058	1997 CU ₂₆
1997 EM ₁₅	15.8	0.15	19990122	132.79597	262.66920	1.44097	6.31309	0.1556740	2.2412660	46	2	1997–1998	0.83	M-v	4	Williams	32957	1997 EM ₁₅
1997 EQ ₄₁	13.5	0.15	19990122	106.67639	10.01552	171.27042	10.32764	0.0272510	2.9990427	21	2	1997–1998	0.45	M-v	5	Williams	32957	1997 EQ ₄₁
1997 EB ₅₄	14.2	0.15	19990122	85.15144	298.67126	1.30686	2.31039	0.1989667	2.4198941	47	4	1979–1998	0.78	M-v	1	Williams	33076	1997 EB ₅₄
1997 FY ₂	15.1	0.15	19990122	154.71326	235.84287	355.09921	5.48714	0.0977220	2.3082054	39	2	1997–1998	0.76	M-v	4	Williams	33076	1997 FY ₂
1997 FN ₃	15.1	0.15	19990122	89.17429	275.87797	29.31605	4.88881	0.2117536	2.3708814	50	2	1997–1998	0.71	M-v	4	Williams	32958	1997 FN ₃
1997 FQ ₃	15.1	0.15	19990122	65.40975	332.07570	1.88148	2.45482	0.1612270	2.2524086	72	3	1991–1998	0.69	M-v	3	Williams	33076	1997 FQ ₃
1997 FW ₃	15.7	0.15	19990122	89.74848	322.90396	347.35908	4.14174	0.1152814	2.2476354	36	2	1997–1998	0.69	M-v	4	Williams	32959	1997 FW ₃
1997 GL	16.2	0.15	19990122	56.78720	136.67342	171.75202	0.59005	0.1058466	2.5763257	21	2	1997–1998	0.52	M-v	4	Williams	32959	1997 GL
1997 GM ₆	14.7	0.15	19990122	82.66125	89.77546	208.29144	10.57686	0.1811692	2.6840211	39	2	1997–1998	0.62	M-v	3	Williams	32959	1997 GM ₆
1997 GU ₆	14.8	0.15	19990122	102.23703	269.38499	23.72142	8.08213	0.1099796	2.4403704	54	2	1997–1998	0.69	M-v	3	Williams	32959	1997 GU ₆
1997 GM ₈	15.2	0.15	19990122	25.66692	145.67165	222.71466	5.83953	0.1479304	2.4425619	44	2	1997–1998	0.47	M-v	4	Williams	32959	1997 GM ₈
1997 GJ ₁₃	15.5	0.15	19990122	65.58092	127.64451	206.54596	2.28491	0.2431864	2.3238305	43	2	1997–1998	0.54	M-v	4	Williams	32960	1997 GJ ₁₃
1997 GO ₁₃	16.1	0.15	19990122	100.71660	36.25174	282.85519	0.49159	0.1856498	2.1527001	29	4	1991–1998	0.75	M-v	4	Williams	29948	1997 GO ₁₃
1997 GL ₁₄	15.6	0.15	19990122	108.93448	345.75780	299.85158	2.72834	0.1392291	2.3283491	22	2	1997–1998	0.81	M-v	4	Williams	32960	1997 GL ₁₄
1997 GA ₁₇	15.9	0.15	19990122	39.29105	6.37596	348.03288	2.00593	0.1021985	2.2473619	38	2	1997–1998	0.80	M-v	4	Williams	32960	1997 GA ₁₇
1997 GB ₁₉	14.2	0.15	19990122	134.80411	46.43795	214.24735	7.20478	0.1171124	2.2876586	47	3	1980–1998	0.56	M-v	3	Williams	32961	1997 GB ₁₉
1997 GC ₁₉	15.0	0.15	19990122	67.95209	317.87845	356.30812	6.98560	0.1205972	2.4227433	51	2	1997–1998	0.67	M-v	4	Williams	33077	1997 GC ₁₉
1997 GX ₂₀	15.6	0.15	19990122	30.68655	154.03094	215.16910	3.23254	0.1010677	2.1654070	45	2	1997–1998	0.72	M-v	4	Williams	32961	1997 GX ₂₀
1997 GK ₂₁	15.6	0.15	19990122	157.40236	65.63856	192.92686	2.54132	0.1712105	2.2460702	40	4	1981–1998	0.64	M-v	2	Williams	33077	1997 GK ₂₁
1997 GS ₂₁	14.7	0.15	19990122	57.39650	292.32911	44.01380	8.00747	0.1305935	2.4734731	45	3	1990–1998	0.49	M-v	3	Williams	32961	1997 GS ₂₁
1997 GL ₂₂	14.3	0.15	19990122	22.49821	312.82856	25.75082	3.35795	0.2288725	3.0978636	45	2	1997–1998	0.58	M-v	3	Williams	32752	1997 GL ₂₂
1997 GX ₂₂	15.0	0.15	19990122	135.14592	115.94604	147.62576	1.70536	0.1531965	2.4033775	46	4	1991–1998	0.77	M-v	3	Williams	33077	1997 GX ₂₂
1997 GJ ₂₃	14.5	0.15	19990122	81.11246	265.17775	42.37251	13.14121	0.1753121	2.6050948	58	2	1997–1998	0.57	M-v	3	Williams	32962	1997 GJ ₂₃
1997 GR ₂₄	13.9	0.15	19990122	67.02478	126.37936	195.27047	12.18623	0.1923297	2.6912410	83	2	1997–1998	0.49	M-v	3	Williams	33077	1997 GR ₂₄
1997 GA ₂₆	14.5	0.15	19990122	162.35982	191.64996	51.68270	7.19748	0.1556983	2.2356798	92	2	1997–1998	0.54	M-v	3	Williams	32962	1997 GA ₂₆
1997 GW ₃₂	15.2	0.15	19990122	48.14760	336.99156	336.56452	1.77440	0.1086949	2.6248786	41	4	1960–1998	0.74	M-v	2	Williams	32752	1997 GW ₃₂
1997 GX ₃₅	14.8	0.15	19990122	73.73389	151.01792	180.53842	4.94155	0.1093976	2.3632886	52	2	1997–1998	0.75	M-v	4	Williams	32963	1997 GX ₃₅
1997 GA ₃₈	14.3	0.15	19990122	75.04837	138.12514	175.89222	4.50074	0.2045350	2.4578890	53	3	1993–1998	0.76	M-v	3	Williams	33077	1997 GA ₃₈
1997 GD ₄₂	14.7	0.15	19990122	205.40612	356.60482	177.10106	5.76983	0.0772097	2.3972677	22	2	1997–1998	0.73	M-v	6	Williams	32963	1997 GD ₄₂
1997 HX ₇	14.5	0.15	19990122	70.58069	88.61949	223.57184	14.29881	0.1214913	2.5997256	33	4	1990–1998	0.75	M-v	4	Williams	32963	1997 HX ₇
1997 HJ ₈	15.5	0.15	19990122	27.66208	198.20893	176.64103	2.11700	0.2355945	2.3796742	47	2	1997–1998	0.62	M-v	4	Williams	32964	1997 HJ ₈
1997 HP ₈	15.2	0.15	19990122	316.61020	217.51257	187.80155	3.71737	0.0969000	2.6621198	27	2	1997–1998	0.56	M-v	5	Williams	32964	1997 HP ₈
1997 HM ₁₀	16.4	0.15	19990122	116.68097	84.63359	204.79039	1.90538	0.2241518	2.4447207	22	3	1993–1998	0.60	M-v	4	Williams	29936	1997 HM ₁₀
1997 JL	15.4	0.15	19990122	105.00733	162.92774	127.68302	3.32532	0.0818292	2.4734154	21	2	1997–1998	0.90	M-v	4	Williams	32964	1997 JL
1997 JR	14.2	0.15	19990122	60.04265	280.98701	58.97928	13.68160	0.2590197	2.4213877	36	2	1997–1998	0.74	M-v	4	Marsden	32965	1997 JR
1997 JZ	15.0	0.15	19990122	110.84153	74.03496	217.77951	13.62901	0.1285037	2.3898121	47	2	1997–1998	0.64	M-v	4	Williams	32965	1997 JZ
1997 JT ₃	15.5	0.15	19990122	103.19671	246.08905	70.64725	2.88156	0.2232826	2.4091819	26	3	1990–1998	0.81	M-v	4	Marsden	30282	1997 JT ₃
1997 JZ ₇	13.4	0.15	19990122	116.40638	59.46419	207.13455	12.87098	0.1687866	2.6878053	38	2	1997–1998	0.48	M-v	3	Williams	32965	1997 JZ ₇
1997 JD ₁₂	15.1	0.15	19990122	43.47010	148.95206	220.55855	6.38203	0.1172253	2.2817778	45	3	1991–1998	0.73	M-v	4	Williams	33077	1997 JD ₁₂
1997 JL ₁₃	14.1	0.15	19990122	138.30208	58.71479	195.19517	3.28345	0.1550609	2.4749552	50	4	1989–1998	0.75	M-v	4	Williams	33077	1997 JL ₁₃
1997 JC ₁₄	14.1	0.15	19990122	59.69188	152.94067	195.87983	10.10076	0.2060212	2.5502446	42	3	1996–1998	0.59	M-v	2	Williams	33077	1997 JC ₁₄
1997 JB ₁₅	14.4	0.15	19990122	230.00298	92.92774	80.35781	3.72634	0.0909102	2.2506470	45	2	1997–1998	0.65	M-v	4	Williams	32966	1997 JB ₁₅
1997 JE ₁₅	13.8	0.15	19990122	39.37582	176.38145	145.02602	2.80189	0.0511923	2.9025663	54	3	1996–1998	0.87	M-v	3	Williams	33077	1997 JE ₁₅
1997 JF ₁₆	15.1	0.15	19990122	74.06826	151.31083	185.06839	4.28846	0.0470849	2.3222276	32	2	1997–1998	0.78	M-v	4	Williams	33077	1997 JF ₁₆
1997 JH ₁₆	14.9	0.15	19990122	115.07472	93.78069	202.77824	5.45369	0.1288098	2.3811717	39	3	1993–1998	0.85	M-v	3	Williams	33077	1997 JH ₁₆
1997 JN ₁₆	13.9	0.15	19990122	49.83409	151.23603	196.81382	4.17227	0.1788213	2.6092513	39	2	1997–1998	0.77	M-v	4	Williams	32966	1997 JN ₁₆
1997 JR ₁₇	13.4	0.15	19990122	47.51733	151.34788	161.57925	2.31697	0.0137629	2.9305149	48	4	1979–1998	0.80	M-v	2	Williams	32681	1997 JR ₁₇
1997 JH ₁₈	14.9	0.15	19990122	106.88025	174.06076	121.61284	5.03813	0.1997453	2.5715393	20	3	1981–1998	0.63	M-v	3	Williams	33077	1997 JH ₁₈
1997 KO ₂	14.5	0.15	19990122	8.86545	316.76351	90.40156	6.56262	0.1278464	2.2846027	27	2	1997–1998	0.75	M-v	4	Williams	32966	1997 KO ₂
1997 KE ₃	15.2	0.15	19990122	30.75298	143.84680	221.17735	12.40979	0.2114376	2.6928994	27	2	1997–1998	0.49	M-v	3	Williams	32967	1997 KE ₃
1997 LC	14.8	0.15	19990122	42.83314	156.94221	186.49877	1.75887	0.0967485	2.8660719	35	2	1997–1998	0.65	M-v	4	Marsden	32967	1997 LC

1997 LZ ₄	14.5	0.15	19990122	28.77526	140.49902	227.77667	4.57741	0.1691364	2.6899875	55	2	1997–1998	0.53	M-v	4	Williams	33077	1997 LZ ₄
1997 LL ₆	13.7	0.15	19990122	191.99415	119.56450	137.04514	3.48930	0.2120265	2.1400189	33	8	1956–1998	0.82	M-v	2	Williams	30284	1997 LL ₆
1997 MR ₁	15.0	0.15	19990122	173.22046	349.51147	252.61566	23.65036	0.0942055	2.2992475	38	2	1997–1998	0.50	M-v	3	Williams	33077	1997 MR ₁
1997 ML ₂	15.0	0.15	19990122	302.45693	295.70614	156.72085	3.54866	0.1678091	2.3815773	48	3	1980–1998	0.77	M-v	3	Williams	32753	1997 ML ₂
1997 MZ ₂	14.6	0.15	19990122	110.47232	316.49168	346.87878	2.98373	0.0828569	2.6556842	29	3	1994–1998	0.56	M-v	4	Williams	32967	1997 MZ ₂
1997 MD ₈	14.3	0.15	19990122	280.38418	336.27087	188.63907	1.36044	0.1598832	2.4052665	34	3	1990–1998	0.55	M-v	4	Williams	33077	1997 MD ₈
1997 MB ₉	12.7	0.15	19990122	28.73686	87.68627	302.01884	21.58218	0.1089996	3.1981638	29	4	1986–1998	0.71	M-v	1	Williams	33077	1997 MB ₉
1997 NY	14.7	0.15	19990122	15.66898	176.21398	274.58658	5.31426	0.0819575	2.2104388	39	5	1988–1998	0.55	M-v	2	Williams	30673	1997 NY
1997 NA ₁	14.4	0.15	19990122	77.78855	139.32066	196.29747	1.68443	0.2471554	3.0710455	30	4	1976–1998	0.55	M-v	1	Marsden	30692	1997 NA ₁
1997 NU ₁	14.3	0.15	19990122	48.91471	140.78978	230.12121	1.09796	0.1031290	2.8510975	46	2	1997–1998	0.67	M-v	4	Williams	32968	1997 NU ₁
1997 NQ ₂	13.4	0.15	19990122	230.35027	255.33105	281.61297	29.78618	0.1328452	2.7906097	48	3	1991–1998	0.78	M-v	3	Williams	33077	1997 NQ ₂
1997 NZ ₂	14.7	0.15	19990122	119.48672	232.45046	62.06170	4.37888	0.1635945	2.7230979	48	4	1992–1998	0.83	M-v	2	Williams	30692	1997 NZ ₂
1997 NE ₃	13.9	0.15	19990122	244.27890	247.81099	293.59209	6.55634	0.1547777	2.3966645	53	2	1997–1998	0.54	M-v	4	Williams	33077	1997 NE ₃
1997 NG ₃	12.4	0.15	19990122	90.19939	162.14303	158.54340	10.86668	0.0989868	2.9988635	39	4	1987–1998	0.78	M-v	2	Williams	33077	1997 NG ₃
1997 NU ₆	13.6	0.15	19990122	168.10870	355.58219	237.74742	8.37356	0.0926484	2.8066590	57	2	1997–1998	0.70	M-v	3	Williams	33077	1997 NU ₆
1997 NK ₁₀	13.9	0.15	19990122	28.00130	249.37970	172.96044	15.06187	0.0949564	2.6016889	34	3	1993–1998	0.68	M-v	3	Williams	30674	1997 NK ₁₀
1997 OJ	13.6	0.15	19990122	104.37948	229.55353	58.65796	1.26708	0.1668899	3.1723777	57	2	1997–1998	0.70	M-v	3	Williams	33077	1997 OJ
1997 OY	13.9	0.15	19990122	323.25343	149.09514	318.89174	8.21245	0.1434480	2.7339353	46	3	1986–1998	0.50	M-v	3	Williams	32968	1997 OY
1997 OZ	14.0	0.15	19990122	96.44198	230.86340	83.05398	2.71768	0.1919506	3.0710999	26	5	1976–1998	0.67	M-v	1	Williams	30674	1997 OZ
1997 OC ₁	14.0	0.15	19990122	31.48235	265.15521	154.32993	8.47531	0.1864002	2.7335042	27	4	1993–1998	0.70	M-v	1	Williams	31010	1997 OC ₁
1997 OJ ₁	14.7	0.15	19990122	85.31175	248.10502	97.84348	3.13906	0.0509268	2.9107049	36	3	1996–1998	0.74	M-v	4	Williams	30692	1997 OJ ₁
1997 OZ ₁	13.7	0.15	19990122	193.07738	88.81088	155.69599	14.85237	0.0861507	2.5753029	25	4	1992–1998	0.81	M-v	1	Williams	30675	1997 OZ ₁
1997 OV ₂	13.5	0.15	19990122	233.16227	263.39558	294.92567	9.51482	0.0610138	2.7297377	29	3	1995–1998	0.72	M-v	3	Williams	33077	1997 OV ₂
1997 PE	14.2	0.15	19990122	325.66779	286.73365	202.04113	5.96396	0.0567042	2.3360059	29	3	1990–1997	0.32	M-v	3	Williams	30676	1997 PE
1997 PK ₁	14.2	0.15	19990122	6.24109	294.04891	143.35380	6.90803	0.0787278	2.8022610	33	4	1990–1998	0.40	M-v	1	Marsden	30789	1997 PK ₁
1997 PM ₁	13.5	0.15	19990122	285.64071	7.57834	126.10279	6.67726	0.0906312	3.1633032	55	3	1991–1998	0.48	M-v	4	Williams	33078	1997 PM ₁
1997 PX ₁	14.8	0.15	19990122	188.98446	179.29902	93.82877	5.93303	0.1228235	2.3361479	71	5	1964–1998	0.49	M-v	1	Williams	30903	1997 PX ₁
1997 PU ₂	14.4	0.15	19990122	301.65339	5.62428	150.49299	23.01229	0.1414097	2.2784903	63	2	1997–1998	0.57	M-v	4	Marsden	33078	1997 PU ₂
1997 PG ₃	13.8	0.15	19990122	69.21521	199.10519	148.29332	2.84078	0.1087169	3.1815770	39	3	1995–1998	0.64	M-v	4	Williams	33078	1997 PG ₃
1997 PJ ₄	12.4	0.15	19990122	21.68391	145.88088	282.31295	12.71431	0.1365818	2.6681641	30	2	1997–1998	0.61	M-v	4	Williams	32968	1997 PJ ₄
1997 PU ₄	14.1	0.15	19990122	82.16800	70.38753	289.91606	4.17209	0.0582348	2.7635043	21	4	1993–1998	0.48	M-v	1	Williams	30769	1997 PU ₄
1997 QS	14.7	0.15	19990122	115.82994	279.17594	30.47962	2.49713	0.0816365	2.9335191	48	5	1978–1998	0.75	M-v	1	Williams	30789	1997 QS
1997 QU ₁	14.0	0.15	19990122	259.75724	7.42183	162.72368	2.46659	0.0641030	2.9170136	25	3	1995–1998	0.56	M-v	4	Marsden	32968	1997 QU ₁
1997 QD ₂	12.1	0.15	19990122	196.07550	95.75872	143.10717	10.92266	0.0704685	3.0030025	27	4	1949–1998	0.53	M-v	1	Williams	33078	1997 QD ₂
1997 QZ ₂	14.3	0.15	19990122	316.60140	208.76548	321.08104	4.02329	0.0670047	2.3212832	19	4	1985–1998	0.96	M-v	3	Williams	31010	1997 QZ ₂
1997 QG ₄	12.6	0.15	19990122	160.49164	118.40392	147.93569	12.21375	0.1440677	2.9878315	16	3	1991–1998	0.76	M-v	3	Williams	33078	1997 QG ₄
1997 RY ₂	15.4	0.15	19990122	102.85101	140.42015	200.83015	3.37404	0.1041247	2.7620876	19	3	1996–1998	0.85	M-v	4	Williams	30878	1997 RY ₂
1997 RR ₃	12.8	0.15	19990122	37.64558	283.09651	177.51180	13.68218	0.1299772	2.5800501	28	4	1970–1998	0.59	M-v	2	Williams	30904	1997 RR ₃
1997 RB ₇	12.3	0.15	19990122	176.05200	43.38855	211.59575	8.91546	0.0711146	3.0170897	26	3	1992–1998	0.57	M-v	3	Williams	32520	1997 RB ₇
1997 RO ₇	13.4	0.15	19990122	158.18571	133.21713	138.97106	10.25994	0.0583612	3.1610759	32	3	1991–1998	0.67	M-v	3	Williams	30904	1997 RO ₇
1997 RG ₉	13.1	0.15	19990122	160.27088	328.04447	299.61865	15.57175	0.1684816	3.1211400	33	3	1991–1998	0.50	M-v	4	Williams	31554	1997 RG ₉
1997 RT ₉	13.9	0.15	19990122	65.69654	240.64741	179.72570	5.23883	0.2092984	2.7250156	31	5	1979–1998	0.65	M-v	2	Williams	31145	1997 RT ₉
1997 RJ ₁₀	13.0	0.15	19990122	45.33231	247.80379	169.22555	2.06906	0.0363768	2.9395717	32	3	1977–1998	0.76	M-v	4	Williams	30771	1997 RJ ₁₀
1997 SH	13.8	0.15	19990122	158.26371	357.17973	274.66848	9.07524	0.0733484	2.9670084	45	3	1977–1998	0.62	M-v	3	Williams	33078	1997 SH
1997 SG ₁	13.2	0.15	19990122	6.82618	339.66781	161.02442	13.52478	0.1080877	2.6732946	63	3	1977–1998	0.80	M-v	3	Williams	31280	1997 SG ₁
1997 SN ₃	13.6	0.15	19990122	43.09267	290.22520	149.00817	5.69927	0.1385094	2.7583238	26	4	1992–1998	0.74	M-v	1	Williams	31145	1997 SN ₃
1997 SR ₈	13.4	0.15	19990122	255.56652	182.02818	357.13753	5.24784	0.0966146	3.1605576	34	4	1989–1998	0.80	M-v	2	Williams	33078	1997 SR ₈
1997 SX ₁₅	13.5	0.15	19990122	315.95323	181.12388	23.98250	10.42949	0.1806191	2.4266019	24	3	1993–1998	0.62	M-v	4	Williams	31145	1997 SX ₁₅
1997 SJ ₂₅	12.8	0.15	19990122	141.93923	213.84031	79.85740	2.99866	0.1684110	3.1549558	26	5	1991–1998	0.77	M-v	1	Williams	31012	1997 SJ ₂₅
1997 SE ₃₀	13.5	0.15	19990122	12.16628	246.82903	240.78295	1.95991	0.2158903	3.0719671	21	4	1972–1998	0.75	M-v	2	Williams	31251	1997 SE ₃₀
1997 TY ₇	12.8	0.15	19990122	265.23158	117.38714	80.66731	2.17799	0.1524512	3.2029589	34	5	1977–1998	0.56	M-v	2	Marsden	31114	1997 TY ₇
1997 TB ₁₂	11.7	0.15	19990122	10.87162	194.20662	219.17108	9.89001	0.0702807	5.2377760	49	2	1997–1998	0.43	M-v	3	Williams	32969	1997 TB ₁₂
1997 TS ₂₅	10.4	0.15	19990122	46.85934	159.13704	251.10919	11.59228	0.0662656	5.2227855	29	3	1996–1998	0.59	M-v	3	Williams	31115	1997 TS ₂₅

1997 UX ₇	13.8	0.15	19990122	59.45235	222.45410	226.25422	7.09259	0.1959667	2.7930063	47	4	1969–1998	0.59	M-v	2	Williams	31280	1997 UX ₇
1997 US ₉	17.4	0.15	19990122	237.83077	357.19631	212.30521	20.01731	0.2818837	1.0523828	201	2	1997–1998	0.57	M-v	3	Williams	33078	1997 US ₉
1997 UV ₁₀	12.3	0.15	19990122	341.23227	270.62852	240.68930	7.95771	0.1053560	2.7711750	49	6	1979–1998	0.81	M-v	1	Williams	31147	1997 UV ₁₀
1997 UB ₁₁	12.1	0.15	19990122	48.68126	27.12783	0.59832	21.38346	0.0409454	3.2135210	22	2	1997–1998	0.73	M-v	4	Williams	32969	1997 UB ₁₁
1997 UX ₂₀	13.2	0.15	19990122	96.50276	312.50515	68.29841	1.71716	0.1420109	3.2220931	27	4	1971–1998	0.58	M-v	4	Williams	31148	1997 UX ₂₀
1997 UO ₂₄	14.9	0.15	19990122	137.66053	42.59683	276.23549	1.56765	0.0300722	2.7566957	33	3	1991–1998	0.45	M-v	3	Williams	31393	1997 UO ₂₄
1997 VB ₁	11.6	0.15	19990122	299.69209	165.33230	343.01111	3.85127	0.0747203	5.1972469	37	3	1978–1998	0.58	M-v	3	Marsden	31281	1997 VB ₁
1997 VV ₁	11.5	0.15	19990122	22.00903	12.71645	20.30495	4.67395	0.1423168	5.2246414	54	2	1997–1998	0.57	M-v	3	Williams	33078	1997 VV ₁
1997 VE ₈	13.7	0.15	19990122	193.59234	328.04531	341.68720	3.11374	0.1728072	2.6339566	20	3	1992–1998	0.59	M-v	4	Williams	31117	1997 VE ₈
1997 WZ ₁₆	14.4	0.15	19990122	260.13848	336.60772	247.48225	8.23474	0.1071557	2.7653810	24	4	1991–1998	0.43	M-v	2	Williams	31282	1997 WZ ₁₆
1997 WQ ₃₇	13.6	0.15	19990122	107.04012	283.55126	106.87060	4.20431	0.0592333	2.9688535	47	4	1994–1998	0.61	M-v	1	Williams	31591	1997 WQ ₃₇
1997 YZ	12.5	0.15	19990122	312.87007	301.44922	237.23914	17.13643	0.0954257	3.1118937	43	3	1986–1998	0.75	M-v	3	Williams	31283	1997 YZ
1997 YX ₃	14.3	0.15	19990122	126.47398	86.03801	298.92801	27.97380	0.4203248	2.7841300	84	2	1984–1998	0.60	M-v	3	Williams	31796	1997 YX ₃
1997 YO ₄	12.7	0.15	19990122	16.64538	73.82484	64.74225	11.21467	0.0598547	2.9842349	22	4	1977–1998	0.78	M-v	1	Williams	31425	1997 YO ₄
1998 AL ₇	15.3	0.15	19980107	335.65393	271.57775	242.93612	1.26838	0.1423202	2.4171772	12	1	22 days	0.57			Williams	32059	1998 AL ₇
1998 AN ₈	14.2	0.15	19990122	118.17932	324.41959	44.61224	15.55801	0.0962240	2.6783358	27	2	1997–1998	0.44	M-v	4	Williams	31426	1998 AN ₈
1998 BK ₂	15.0	0.15	19990122	182.31500	255.33421	140.57402	3.18149	0.0378233	2.2877607	21	2	1996–1998	0.52	M-v	4	Williams	32970	1998 BK ₂
1998 BN ₄₈	13.1	0.15	19990122	208.05485	238.61549	133.32907	5.71046	0.1398701	2.2890611	17	3	1988–1998	0.56	M-v	5	Williams	32970	1998 BN ₄₈
1998 EC ₃	16.6	0.15	19990122	62.78249	128.38392	128.37140	8.36350	0.5131916	2.1317177	275	1	231 days	0.62	M-v	3	Williams	33078	1998 EC ₃
1998 FX ₂	18.3	0.15	19990122	90.31573	17.06457	181.25343	9.99441	0.4942025	2.1497369	520	1	120 days	0.54	M-v	3	Williams	32316	1998 FX ₂
1998 FR ₁₁	16.5	0.15	19990122	31.83829	157.77849	130.41822	6.58896	0.7100120	2.8001904	70	2	1998–1998	0.58	M-v	4	Williams	33078	1998 FR ₁₁
1998 FS ₁₄₄	6.5	0.15	19980308	0.00000	298.36875	228.59890	9.89582	0.0000000	41.9796297	6	1	4 days	0.30		E	Marsden		1998 FS ₁₄₄
1998 KU ₂	16.7	0.15	19990122	41.44257	119.14322	206.67054	4.88904	0.5539359	2.2507755	368	1	218 days	0.54	M-v	3	Williams	33078	1998 KU ₂
1998 KD ₆₆	8.9	0.15	19980507	359.95505	357.08715	200.63711	5.09302	0.0507328	43.0816529	3	1	10 days	0.07		E	Marsden		1998 KD ₆₆
1998 KE ₆₆	9.0	0.15	19980507	0.00000	178.58807	19.29801	2.83847	0.0000000	42.0627605	3	1	10 days	0.04		E	Marsden		1998 KE ₆₆
1998 KF ₆₆	9.8	0.15	19980507	359.94859	182.25838	16.25980	6.23824	0.2118625	39.5082533	3	1	10 days	0.06		E	Marsden		1998 KF ₆₆
1998 KG ₆₆	8.9	0.15	19980507	0.00000	358.36234	199.65683	3.50501	0.0000000	45.2007985	3	1	10 days	0.01		E	Marsden		1998 KG ₆₆
1998 MQ	16.5	0.15	19990122	38.59093	138.54180	221.26832	24.21110	0.4082160	1.7831015	208	1	196 days	0.52	M-v	3	Marsden	33078	1998 MQ
1998 MX ₅	18.1	0.15	19990122	31.89875	55.70909	266.61808	9.70881	0.6119050	2.9182246	278	1	142 days	0.55	M-v	3	Williams	33078	1998 MX ₅
1998 MZ ₇	12.6	0.15	19990122	20.68323	93.29019	246.95407	14.16271	0.2907763	3.1029654	47	3	1987–1998	0.69	M-v	2	Williams	32756	1998 MZ ₇
1998 ML ₁₄	17.6	0.15	19990122	35.09184	19.31961	339.38664	2.47078	0.6167122	2.4153547	211	1	158 days	0.58	M-v	3	Williams	33078	1998 ML ₁₄
1998 MR ₁₇	15.8	0.15	19990122	50.93154	347.79803	281.89254	15.60720	0.4810517	2.7019424	198	1	145 days	0.52	M-v	3	Williams	32756	1998 MR ₁₇
1998 MT ₂₄	14.7	0.15	19990122	86.77879	253.68963	310.09562	34.02094	0.6505693	2.4185975	203	1	141 days	0.50	M-v	3	Williams	33078	1998 MT ₂₄
1998 MK ₃₀	15.8	0.15	19990122	30.30995	154.49154	203.74193	5.41268	0.4346669	2.4670624	314	1	152 days	0.55	M-v	3	Williams	33078	1998 MK ₃₀
1998 NA	13.4	0.15	19990122	21.57754	37.82443	334.09768	9.18664	0.1776780	2.5783563	61	2	1992–1998	0.71	M-v	3	Williams	33078	1998 NA
1998 OH	16.1	0.15	19990122	156.60099	321.55086	220.84993	24.50466	0.4062866	1.5417675	97	2	1993–1998	0.47	M-v	4	Williams	32756	1998 OH
1998 ON ₁	14.3	0.15	19990122	2.74821	164.18777	198.13092	7.73733	0.2338284	2.7648851	49	1	146 days	0.33	M-v	3	Williams	32756	1998 ON ₁
1998 OT ₆	15.2	0.15	19990122	81.39482	276.47257	354.91896	1.91551	0.2036855	2.3812619	45	3	1990–1998	0.63	M-v	2	Williams	33078	1998 OT ₆
1998 OC ₇	15.3	0.15	19990122	65.88635	135.35885	162.78825	8.11913	0.1182158	2.4382704	32	1	122 days	0.57	M-v	4	Williams	33079	1998 OC ₇
1998 OU ₇	15.1	0.15	19990122	42.64930	26.44172	297.93625	5.34199	0.1259200	2.3454858	34	3	1991–1998	0.67	M-v	3	Williams	33079	1998 OU ₇
1998 OQ ₁₁	16.2	0.15	19990122	30.27988	206.42830	140.04309	2.72426	0.2286721	2.3462412	23	1	131 days	0.71	M-v	4	Williams	33079	1998 OQ ₁₁
1998 OH ₁₂	14.0	0.15	19990122	9.71016	239.26025	100.86330	11.69640	0.1144324	3.0066763	25	1	136 days	0.45	M-v	4	Williams	33079	1998 OH ₁₂
1998 OM ₁₂	11.9	0.15	19990122	330.02911	324.61643	27.37108	7.48781	0.0377882	5.3274754	29	1	114 days	0.54	M-v	5	Williams	33079	1998 OM ₁₂
1998 ON ₁₂	15.1	0.15	19990122	41.05537	175.30326	153.42755	2.72024	0.2116607	2.3910310	39	1	135 days	0.59	M-v	3	Williams	33079	1998 ON ₁₂
1998 OB ₁₃	12.8	0.15	19990122	284.80280	292.19144	148.93196	14.71325	0.0859669	3.1902819	23	1	62 days	0.69	M-v	6	Williams		1998 OB ₁₃
1998 OD ₁₃	15.8	0.15	19990122	19.61018	323.70714	36.79670	1.25240	0.2112746	2.4244573	52	2	1993–1998	0.65	M-v	3	Williams	33079	1998 OD ₁₃
1998 OR ₁₃	14.5	0.15	19990122	12.10854	221.71554	150.14773	1.55517	0.1950882	2.4082815	68	3	1987–1998	0.71	M-v	3	Williams	33079	1998 OR ₁₃
1998 OU ₁₄	15.4	0.15	19990122	122.50213	256.83435	342.29637	0.36929	0.1034373	2.3132112	36	1	119 days	0.78	M-v	5	Williams	32758	1998 OU ₁₄
1998 OB ₁₅	15.0	0.15	19990122	15.80455	5.62017	343.20183	1.85260	0.0670564	2.8945998	12	1	109 days	0.28	M-v	6	Williams		1998 OB ₁₅
1998 PE	14.9	0.15	19990122	59.32741	120.12799	174.54388	15.50083	0.1839770	2.6524330	35	1	102 days	0.53	M-v	4	Williams		1998 PE
1998 PG	17.1	0.15	19990122	33.30135	155.71161	222.92046	6.48691	0.3919664	2.0150481	436	1	107 days	0.53	M-v	3	Williams	33079	1998 PG
1998 PB ₁	17.3	0.15	19990122	63.86009	350.09628	299.89590	5.97050	0.4315784	2.0287259	170	1	88 days	0.56	M-v	4	Marsden	33079	1998 PB ₁
1998 PG ₁	14.6	0.15	19990122	56.95325	273.64564	22.70406	7.46419	0.2294875	2.2696756	28	1	98 days	0.39	M-v	4	Williams		1998 PG ₁

1998 PL ₁	14.1	0.15	19990122	333.87512	170.11467	244.07313	4.72204	0.1245676	2.4507587	37	1	83 days	0.70	M-v	5	Williams		1998 PL ₁
1998 QZ	13.6	0.15	19990122	119.94380	92.11437	176.20757	1.75583	0.0668728	2.8468687	74	2	1993–1998	0.70	M-v	4	Williams	33080	1998 QZ
1998 QA ₁	18.7	0.15	19990122	67.40983	332.88102	299.22591	8.16306	0.5324036	2.1031943	147	1	90 days	0.49	M-v	4	Williams	33080	1998 QA ₁
1998 QN ₁	13.7	0.15	19990122	24.77850	104.57189	232.47641	1.14254	0.1248929	3.0765810	37	2	1993–1998	0.78	M-v	4	Williams	32759	1998 QN ₁
1998 QP ₁	15.6	0.15	19990122	62.36345	326.77630	338.63761	7.22664	0.1840806	2.2571595	45	2	1997–1998	0.63	M-v	4	Williams	33080	1998 QP ₁
1998 QQ ₁	15.0	0.15	19990122	342.59204	254.30576	156.21414	4.46473	0.1909445	2.4277029	44	1	93 days	0.64	M-v	5	Williams		1998 QQ ₁
1998 QR ₁	14.6	0.15	19990122	189.44562	290.43810	261.12611	5.50008	0.0866702	2.4583015	42	2	1995–1998	0.66	M-v	4	Williams	33080	1998 QR ₁
1998 QD ₂	17.1	0.15	19990122	20.23976	43.40470	314.06027	14.77685	0.4250094	3.0466513	57	1	91 days	0.54	M-v	3	Williams	33080	1998 QD ₂
1998 QU ₂	13.9	0.15	19990122	9.77255	202.80465	162.73644	15.62797	0.2110745	2.5661321	34	2	1994–1998	0.63	M-v	3	Williams	33080	1998 QU ₂
1998 QW ₂	14.0	0.15	19990122	115.10458	261.74564	320.63850	45.80993	0.1815773	2.7522977	19	1	36 days	0.72	M-v	6 D	Williams		1998 QW ₂
1998 QE ₄	14.4	0.15	19990122	37.11725	218.10730	113.43393	10.73467	0.0909096	2.9948291	13	1	85 days	0.49	M-v	4	Williams	33080	1998 QE ₄
1998 QO ₄	13.4	0.15	19990122	356.93254	68.93301	301.68832	13.20219	0.0347346	3.1836860	43	1	96 days	0.62	M-v	5	Williams	33080	1998 QO ₄
1998 QX ₅	13.8	0.15	19990122	104.25239	262.36502	17.58415	11.93172	0.2545858	2.6465258	14	1	66 days	0.52	M-v	7	Williams		1998 QX ₅
1998 QZ ₅	15.7	0.15	19990122	36.52571	5.37549	5.21273	5.13138	0.2685176	2.5343424	14	1	85 days	0.51	M-v	5	Williams		1998 QZ ₅
1998 QG ₆	13.8	0.15	19990122	8.91152	202.85416	202.04490	20.79381	0.1345488	3.1891832	24	1	80 days	0.75	M-v	4	Williams		1998 QG ₆
1998 QK ₆	13.6	0.15	19990122	41.67984	146.97163	206.16404	6.35194	0.1829082	3.9794993	16	1	79 days	0.59	M-v	6	Williams		1998 QK ₆
1998 QL ₆	15.3	0.15	19990122	10.68536	219.99094	193.39274	3.40317	0.1925309	2.6236847	22	1	79 days	0.54	M-v	4	Williams		1998 QL ₆
1998 QN ₆	14.3	0.15	19990122	94.90052	283.36183	26.07957	6.77202	0.1210632	2.5665962	19	1	79 days	0.59	M-v	6	Williams		1998 QN ₆
1998 QO ₆	15.5	0.15	19990122	355.69756	53.59444	24.88793	5.60166	0.2100183	2.5553163	16	1	79 days	0.51	M-v	5	Williams		1998 QO ₆
1998 QP ₆	14.9	0.15	19990122	17.30885	12.26685	31.16855	3.23706	0.1012987	2.5517410	33	1	79 days	0.46	M-v	4	Williams		1998 QP ₆
1998 QR ₆	15.7	0.15	19990122	57.46849	282.08693	62.79710	1.10364	0.1935900	2.6535907	21	1	87 days	0.61	M-v	6	Williams		1998 QR ₆
1998 QV ₇	14.9	0.15	19990122	57.00560	146.36767	145.19055	3.11045	0.1665258	2.4712646	28	1	157 days	0.71	M-v	4	Williams	33080	1998 QV ₇
1998 QH ₈	13.3	0.15	19990122	14.26895	168.91980	165.94738	12.35569	0.1222100	3.0468375	23	3	1982–1998	0.76	M-v	3	Williams	32691	1998 QH ₈
1998 QU ₁₂	16.2	0.15	19990122	27.82495	168.47253	183.94465	3.65635	0.2038252	2.2186423	22	1	109 days	0.35	M-v	4	Williams		1998 QU ₁₂
1998 QR ₁₅	18.0	0.15	19990122	21.33785	54.07367	322.56142	9.65993	0.5651729	2.7544357	224	1	100 days	0.49	M-v	3	Williams	33080	1998 QR ₁₅
1998 QW ₁₅	14.3	0.15	19990122	12.24303	138.50826	224.65228	0.97513	0.1482263	2.9884089	52	3	1978–1998	0.87	M-v	3	Williams	32693	1998 QW ₁₅
1998 QZ ₁₅	13.1	0.15	19990122	63.10098	7.76997	287.29618	12.74620	0.1568403	2.5504810	55	1	145 days	0.56	M-v	4	Williams	32760	1998 QZ ₁₅
1998 QE ₁₇	13.5	0.15	19990122	344.79406	72.05655	338.49323	10.65386	0.3045289	2.6265338	21	1	112 days	0.70	M-v	5	Williams		1998 QE ₁₇
1998 QT ₁₉	13.8	0.15	19990122	76.66511	116.68760	165.16308	5.57632	0.0473251	2.8100602	35	4	1987–1998	0.81	M-v	1	Williams	32694	1998 QT ₁₉
1998 QV ₁₉	14.1	0.15	19990122	67.61438	127.75145	163.26453	4.95672	0.1129980	2.6023538	44	2	1997–1998	0.63	M-v	3	Williams	32694	1998 QV ₁₉
1998 QM ₂₀	12.7	0.15	19990122	229.73828	322.70206	169.70615	11.67475	0.0370797	3.0323525	45	1	106 days	0.51	M-v	4	Williams		1998 QM ₂₀
1998 QG ₂₁	15.2	0.15	19990122	10.03190	202.68267	155.02752	0.12049	0.1975391	3.0422156	24	1	87 days	0.56	M-v	5	Williams		1998 QG ₂₁
1998 QJ ₂₁	13.6	0.15	19990122	47.18613	156.13156	146.55909	1.01354	0.1641465	3.0869070	47	4	1982–1998	0.66	M-v	1	Williams	32695	1998 QJ ₂₁
1998 QL ₂₃	14.1	0.15	19990122	348.92507	33.13572	352.45592	5.17781	0.2007256	3.1450796	51	2	1993–1998	0.61	M-v	4	Williams	33081	1998 QL ₂₃
1998 QW ₂₃	15.1	0.15	19990122	294.64790	286.11222	168.89852	8.46841	0.1328041	2.3023060	14	1	93 days	0.31	M-v	5	Williams		1998 QW ₂₃
1998 QL ₂₄	13.9	0.15	19990122	255.62583	277.30763	201.82937	3.86529	0.0266994	2.4311965	24	2	1982–1998	0.83	M-v	5	Williams	32696	1998 QL ₂₄
1998 QM ₂₄	15.5	0.15	19990122	4.74576	206.53956	170.72176	7.96463	0.2410027	2.8045103	25	1	97 days	0.85	M-v	5	Marsden		1998 QM ₂₄
1998 QT ₂₄	15.1	0.15	19980904	155.44616	230.33656	307.85386	5.06966	0.0762860	2.2511028	23	1	40 days	0.81			Williams		1998 QT ₂₄
1998 QV ₂₄	15.6	0.15	19990122	358.12651	223.51321	169.77125	4.00018	0.1644900	2.3154011	33	1	85 days	0.50	M-v	5	Williams	33081	1998 QV ₂₄
1998 QZ ₂₄	13.2	0.15	19990122	231.12851	339.70694	155.15577	7.10083	0.1491015	3.1761925	23	1	94 days	0.62	M-v	5	Williams		1998 QZ ₂₄
1998 QA ₂₆	13.5	0.15	19990122	4.40684	218.74414	154.68294	5.67685	0.0874454	3.0317204	33	1	60 days	0.65	M-v	5	Williams	33081	1998 QA ₂₆
1998 QM ₂₈	14.7	0.15	19990122	63.65294	264.40967	63.81644	0.29815	0.0815616	2.6478653	47	1	77 days	0.62	M-v	5	Williams		1998 QM ₂₈
1998 QE ₂₉	13.8	0.15	19990122	45.27355	94.90234	292.73985	11.72494	0.1893235	2.6989401	20	1	79 days	0.22	M-v	5	Williams		1998 QE ₂₉
1998 QS ₃₀	15.4	0.15	19990122	16.39981	188.23517	169.77579	13.46649	0.1590992	2.7213297	24	1	87 days	0.71	M-v	4	Williams	33081	1998 QS ₃₀
1998 QX ₃₀	15.8	0.15	19980815	24.15219	115.64071	179.98960	2.22468	0.1856242	2.4091241	19	1	45 days	0.62			Williams		1998 QX ₃₀
1998 QE ₃₁	14.5	0.15	19980904	356.40075	6.84855	333.92112	8.21224	0.1322308	2.9406771	30	1	40 days	0.80			Williams		1998 QE ₃₁
1998 QQ ₃₁	14.6	0.15	19990122	141.09296	220.44374	5.29622	7.19266	0.0607987	2.3485295	18	1	92 days	0.77	M-v	5	Williams		1998 QQ ₃₁
1998 QS ₃₁	12.6	0.15	19990122	63.08065	298.58819	347.79122	13.91865	0.1088282	3.2163099	53	3	1981–1998	0.57	M-v	2	Williams	33082	1998 QS ₃₁
1998 QB ₃₂	13.1	0.15	19990122	349.78301	38.06549	346.23646	10.91843	0.2881393	3.9843447	36	1	105 days	0.47	M-v	4	Williams	33082	1998 QB ₃₂
1998 QG ₃₅	14.2	0.15	19990122	4.37098	29.22791	344.92223	8.71139	0.1791866	2.7643433	18	1	64 days	0.36	M-v	5	Williams	33082	1998 QG ₃₅
1998 QO ₃₅	14.1	0.15	19990122	356.29424	269.45193	103.73544	3.02271	0.0534147	2.8787089	25	1	94 days	0.68	M-v	5	Williams		1998 QO ₃₅
1998 QQ ₃₅	15.2	0.15	19990122	353.56561	5.56634	34.67510	2.58442	0.2022508	2.4153191	15	1	86 days	0.48	M-v	6	Williams		1998 QQ ₃₅
1998 QX ₃₅	14.2	0.15	19990122	271.49742	88.93479	10.34509	2.04966	0.0359853	2.8538713	24	3	1991–1998	0.73	M-v	3	Williams	32700	1998 QX ₃₅

1998 QY ₃₅	15.5	0.15	19980904	349.03354	218.88630	144.13262	7.56502	0.3381892	2.8516364	29	1	40 days	0.55		Williams	1998 QY ₃₅	
1998 QP ₃₆	16.9	0.15	19990122	26.98031	73.19208	283.16509	3.28667	0.3782380	2.5904087	28	1	99 days	0.68	M-v	5	Williams	1998 QP ₃₆
1998 QQ ₃₉	13.6	0.15	19990122	99.65852	257.35840	8.41146	5.49383	0.0947750	2.4241722	35	7	1953-1998	0.71	M-v	2	Williams	32975 1998 QQ ₃₉
1998 QT ₃₉	14.1	0.15	19990122	353.26038	255.43891	142.95174	7.69256	0.1936811	2.5534271	35	2	1992-1998	0.45	M-v	4	Williams	33082 1998 QT ₃₉
1998 QJ ₄₀	14.5	0.15	19990122	26.00446	170.56225	188.58899	6.81814	0.1352123	2.3491025	45	3	1991-1998	0.64	M-v	3	Williams	33082 1998 QJ ₄₀
1998 QM ₄₀	14.2	0.15	19990122	41.81243	16.69865	313.28949	11.22526	0.1887070	2.6580780	27	1	91 days	0.49	M-v	4	Williams	1998 QM ₄₀
1998 QC ₄₂	15.4	0.15	19990122	76.46554	270.50440	11.70429	6.75505	0.2008792	2.4202228	28	1	88 days	0.82	M-v	5	Williams	33083 1998 QC ₄₂
1998 QN ₄₂	14.4	0.15	19990122	35.85473	10.16246	326.36481	8.52102	0.1848134	2.7266791	47	2	1996-1998	0.72	M-v	3	Williams	32765 1998 QN ₄₂
1998 QP ₄₃	12.9	0.15	19990122	266.77386	110.58468	356.89476	16.94543	0.0997504	3.1620662	30	2	1993-1998	0.77	M-v	4	Williams	33083 1998 QP ₄₃
1998 QQ ₄₃	15.1	0.15	19990122	13.37342	5.01235	10.00092	7.38294	0.1363233	2.3008769	36	1	92 days	0.46	M-v	4	Williams	33083 1998 QQ ₄₃
1998 QW ₄₄	16.3	0.15	19980815	342.71793	67.77563	300.12241	3.27988	0.2819643	2.5831112	22	1	32 days	0.80			Williams	1998 QW ₄₄
1998 QF ₄₅	14.5	0.15	19990122	346.46538	223.77440	183.56566	12.86623	0.1644217	2.6304348	28	1	64 days	0.55	M-v	5	Williams	33083 1998 QF ₄₅
1998 QR ₄₅	15.2	0.15	19990122	354.87449	226.09187	178.80212	13.16391	0.1893473	2.4179037	30	1	64 days	0.52	M-v	4	Williams	33083 1998 QR ₄₅
1998 QS ₄₅	15.2	0.15	19980815	5.08044	65.20852	268.56466	3.96490	0.1198099	2.4235918	22	1	32 days	0.74			Williams	1998 QS ₄₅
1998 QK ₄₆	14.6	0.15	19980815	356.20270	188.46281	156.55817	14.49638	0.2418881	3.0807382	21	1	32 days	0.56			Williams	1998 QK ₄₆
1998 QR ₄₆	15.1	0.15	19980815	12.29458	145.16743	180.09435	4.73411	0.1156490	2.7327774	21	1	32 days	0.71			Williams	1998 QR ₄₆
1998 QU ₄₆	14.8	0.15	19980815	311.22765	105.60672	296.32518	5.85822	0.1260459	2.3817798	22	1	32 days	0.53			Williams	1998 QU ₄₆
1998 QL ₄₇	15.9	0.15	19980815	321.46091	190.72221	197.46601	9.40943	0.1087230	2.3872388	20	1	32 days	0.72			Williams	1998 QL ₄₇
1998 QP ₄₇	12.8	0.15	19990122	21.43490	203.14633	149.60182	2.57622	0.0835041	2.8920425	51	4	1974-1998	0.71	M-v	2	Williams	32767 1998 QP ₄₇
1998 QU ₄₇	13.8	0.15	19980815	275.26184	243.09463	189.74555	1.69372	0.0444293	2.8594874	22	1	32 days	0.71			Williams	1998 QU ₄₇
1998 QB ₄₈	14.2	0.15	19980815	78.67031	76.84715	186.50688	9.20578	0.0074140	2.5737504	22	1	32 days	0.55			Williams	1998 QB ₄₈
1998 QS ₄₈	16.0	0.15	19980815	318.88227	56.07644	329.24468	5.42856	0.0619333	2.1587014	23	1	32 days	0.73			Williams	1998 QS ₄₈
1998 QZ ₄₈	15.7	0.15	19980815	3.66523	176.60507	155.22192	2.95606	0.1661429	2.2722670	22	1	32 days	0.42			Williams	1998 QZ ₄₈
1998 QH ₄₉	14.5	0.15	19990122	5.62050	223.30984	151.53055	13.77608	0.1655459	2.9780381	22	1	95 days	0.53	M-v	5	Williams	1998 QH ₄₉
1998 QN ₄₉	14.0	0.15	19980815	57.43146	187.38833	78.78412	3.19819	0.1595390	3.1870120	25	1	32 days	0.83			Williams	1998 QN ₄₉
1998 QB ₅₀	14.9	0.15	19980815	56.49259	258.23568	10.77897	8.10614	0.1078548	2.4189692	22	1	32 days	0.52			Williams	1998 QB ₅₀
1998 QT ₅₀	13.8	0.15	19980815	29.05733	138.93558	146.63057	10.23792	0.3100259	3.1054992	22	1	32 days	0.53			Williams	1998 QT ₅₀
1998 QZ ₅₀	14.8	0.15	19990122	18.53335	216.94588	146.51432	5.72965	0.1747358	2.7718143	35	1	84 days	0.69	M-v	4	Williams	33084 1998 QZ ₅₀
1998 QR ₅₂	18.5	0.15	19990122	320.26641	204.20559	316.32896	17.63642	0.2879171	1.0437973	92	1	82 days	0.57	M-v	4	Williams	33084 1998 QR ₅₂
1998 QS ₅₂	14.1	0.15	19990122	351.11958	242.11210	261.32974	17.70066	0.8588061	2.1997617	236	1	101 days	0.58	M-v	4	Marsden	33084 1998 QS ₅₂
1998 QH ₅₃	15.5	0.15	19990122	24.15167	78.10085	297.12219	3.56657	0.3103637	2.6064678	36	1	70 days	0.63	M-v	4	Williams	1998 QH ₅₃
1998 QL ₅₃	13.7	0.15	19990122	155.58476	32.56955	199.78833	13.77524	0.0986524	2.6231988	42	1	70 days	0.70	M-v	4	Williams	1998 QL ₅₃
1998 QM ₅₃	13.7	0.15	19990122	348.56445	67.02301	342.97161	9.29986	0.0866594	3.0205585	35	1	70 days	0.64	M-v	4	Williams	1998 QM ₅₃
1998 QN ₅₃	12.4	0.15	19990122	123.94297	29.81696	216.45531	11.26650	0.2017512	3.1202172	45	1	67 days	0.63	M-v	5	Williams	1998 QN ₅₃
1998 QO ₅₃	14.4	0.15	19990122	57.45190	111.67556	204.30425	24.11825	0.2700412	2.7347816	40	1	75 days	0.51	M-v	4	Williams	33084 1998 QO ₅₃
1998 QR ₅₃	14.1	0.15	19990122	338.55173	74.99960	335.34103	8.36276	0.1426584	2.7487898	29	1	73 days	0.76	M-v	5	Williams	1998 QR ₅₃
1998 QF ₅₄	15.4	0.15	19990122	28.64901	165.80985	209.00320	6.18223	0.1199888	2.2498401	41	1	76 days	0.64	M-v	4	Williams	1998 QF ₅₄
1998 QG ₅₄	14.9	0.15	19990122	29.02553	140.52519	225.24959	5.95098	0.1740245	2.5421763	42	3	1978-1998	0.69	M-v	3	Williams	32976 1998 QG ₅₄
1998 QT ₅₄	14.8	0.15	19990122	333.51694	225.64201	203.88319	5.58639	0.0651542	2.4004554	27	1	75 days	0.43	M-v	5	Williams	1998 QT ₅₄
1998 QW ₅₄	12.7	0.15	19990122	2.75383	175.70238	210.00397	4.70346	0.0366673	3.2238578	37	4	1964-1998	0.72	M-v	4	Williams	32977 1998 QW ₅₄
1998 QX ₅₄	15.2	0.15	19990122	330.87926	248.20004	192.10923	7.60719	0.1053693	2.2789421	53	2	1981-1998	0.71	M-v	4	Williams	32977 1998 QX ₅₄
1998 QY ₅₄	14.7	0.15	19990122	10.38291	167.36714	220.71788	4.16256	0.1660934	2.7695060	20	2	1979-1998	0.64	M-v	4	Williams	32977 1998 QY ₅₄
1998 QH ₅₅	15.0	0.15	19990122	353.34614	74.35329	340.29948	5.70902	0.0575590	2.2344457	55	2	1991-1998	0.70	M-v	4	Williams	32978 1998 QH ₅₅
1998 QK ₅₅	16.3	0.15	19990122	28.53862	197.24867	192.20341	3.79882	0.1257165	2.3310257	16	1	77 days	0.67	M-v	5	Williams	1998 QK ₅₅
1998 QL ₅₅	14.6	0.15	19990122	33.19561	350.39687	17.65217	0.89294	0.1964916	3.1682504	25	1	77 days	0.58	M-v	5	Williams	33085 1998 QL ₅₅
1998 QM ₅₅	15.4	0.15	19990122	354.98205	265.22393	169.12867	0.65575	0.1013141	2.1758978	21	1	77 days	0.47	M-v	5	Williams	1998 QM ₅₅
1998 QP ₅₅	14.8	0.15	19990122	60.75908	308.85205	27.33474	2.81493	0.2062738	2.6758084	27	1	77 days	0.55	M-v	5	Williams	1998 QP ₅₅
1998 QK ₅₆	17.4	0.15	19990122	16.68492	285.75059	173.38499	13.54868	0.5125865	1.8841112	71	1	79 days	0.59	M-v	4	Williams	33085 1998 QK ₅₆
1998 QN ₆₀	14.2	0.15	19990122	36.55503	6.60527	19.32308	12.45266	0.1642926	2.5494406	35	1	85 days	0.59	M-v	4	Williams	33085 1998 QN ₆₀
1998 QO ₆₀	13.3	0.15	19990122	118.73766	283.65078	7.89072	11.21947	0.1868723	2.6704013	27	1	85 days	0.46	M-v	5	Williams	33085 1998 QO ₆₀
1998 QP ₆₀	15.1	0.15	19990122	8.29768	127.20663	248.38213	5.66595	0.1220997	2.4373059	39	1	97 days	0.50	M-v	4	Williams	33085 1998 QP ₆₀
1998 QK ₆₁	15.1	0.15	19980815	206.38258	337.88055	158.11595	6.82151	0.0358213	2.2861921	21	1	46 days	0.49			Williams	1998 QK ₆₁
1998 QT ₆₂	13.6	0.15	19990122	54.19647	140.84965	181.29810	9.57001	0.2669628	2.7467957	69	1	69 days	0.52	M-v	4	Williams	1998 QT ₆₂

1998 QK ₆₃	16.0	0.15	19990122	12.25550	184.21033	211.01760	5.15144	0.1311932	2.1315251	48	1	85 days	0.54	M-v	4	Williams	1998 QK ₆₃
1998 QL ₆₃	15.9	0.15	19980924	96.66699	344.07050	274.04834	3.81915	0.0692791	2.5793094	21	1	51 days	0.63			Williams	1998 QL ₆₃
1998 QP ₆₃	18.0	0.15	19990122	24.16727	221.44820	159.01010	9.39456	0.4962870	2.6775755	95	1	89 days	0.77	M-v	4	Williams	33085 1998 QP ₆₃
1998 QQ ₆₃	18.8	0.15	19990122	35.12394	265.41700	104.52864	1.66785	0.5479459	2.3653406	37	1	83 days	0.53	M-v	6	Williams	33086 1998 QQ ₆₃
1998 QV ₆₃	13.4	0.15	19990122	17.38604	200.70104	180.91487	4.26827	0.1099662	2.8142336	72	4	1979–1998	0.68	M-v	3	Williams	33086 1998 QV ₆₃
1998 QA ₆₉	15.5	0.15	19990122	4.79489	202.67473	179.69997	12.71741	0.2226791	2.5233571	21	1	77 days	0.50	M-v	4	Williams	33086 1998 QA ₆₉
1998 QB ₆₉	11.7	0.15	19990122	171.42668	248.42507	299.79160	14.03808	0.0228113	3.2099829	25	4	1967–1998	0.64	M-v	2	Williams	32978 1998 QB ₆₉
1998 QC ₇₁	14.8	0.15	19990122	23.97487	112.32855	237.40777	7.23008	0.2845328	2.8513037	32	2	1979–1998	0.74	M-v	3	Williams	32980 1998 QC ₇₁
1998 QJ ₇₃	14.2	0.15	19980904	229.53489	278.59327	204.69862	11.72552	0.1042480	2.6233380	21	1	52 days	1.10			Williams	1998 QJ ₇₃
1998 QD ₇₅	15.1	0.15	19980904	32.97886	91.94410	200.61146	10.14762	0.2511878	2.6881119	22	1	25 days	0.51			Williams	1998 QD ₇₅
1998 QK ₇₅	12.7	0.15	19990122	349.18656	150.66132	244.62379	9.09985	0.1108965	2.9985632	30	3	1978–1998	0.73	M-v	3	Williams	33087 1998 QK ₇₅
1998 QZ ₇₆	15.2	0.15	19990122	10.57319	190.08005	196.77414	13.52658	0.2528243	2.6309618	23	1	78 days	0.60	M-v	4	Williams	1998 QZ ₇₆
1998 QK ₇₇	15.2	0.15	19990122	11.69072	191.39294	191.82520	29.71214	0.2332718	2.7507572	34	2	1989–1998	1.03	M-v	4	Williams	32982 1998 QK ₇₇
1998 QK ₇₈	15.6	0.15	19980904	349.95479	145.44956	214.96629	7.31870	0.1582443	2.6668483	21	1	25 days	0.97			Williams	1998 QK ₇₈
1998 QF ₈₀	13.9	0.15	19990122	36.97706	41.29908	293.87753	11.69536	0.2659458	2.3456216	20	1	71 days	0.43	M-v	5	Williams	1998 QF ₈₀
1998 QM ₈₀	16.2	0.15	19990122	21.43654	173.05508	182.76795	13.97323	0.3293436	2.5879093	35	1	89 days	0.77	M-v	4 D	Williams	1998 QM ₈₀
1998 QZ ₈₄	15.7	0.15	19990122	87.46980	14.36366	271.89567	5.48896	0.0941317	2.2598715	30	1	92 days	0.78	M-v	5	Williams	1998 QZ ₈₄
1998 QL ₈₉	14.9	0.15	19990122	45.87143	106.25549	225.46835	12.63534	0.2455502	2.5938956	33	2	1994–1998	0.79	M-v	4	Williams	32984 1998 QL ₈₉
1998 QP ₉₀	15.3	0.15	19990122	33.22261	353.37302	12.92882	9.50847	0.1684815	2.1646541	64	2	1997–1998	0.75	M-v	4	Williams	33088 1998 QP ₉₀
1998 QJ ₉₁	15.5	0.15	19990122	29.85676	138.65812	233.14353	5.43250	0.3417366	2.5985034	33	1	80 days	0.57	M-v	5	Williams	1998 QJ ₉₁
1998 QR ₉₁	15.2	0.15	19990122	29.65104	284.04755	102.28379	0.58633	0.1953861	2.1872922	32	1	75 days	0.63	M-v	4	Williams	1998 QR ₉₁
1998 QC ₉₂	14.5	0.15	19990122	16.66443	223.48679	183.03128	2.26553	0.1611632	2.3038223	31	1	75 days	0.47	M-v	4	Williams	1998 QC ₉₂
1998 QF ₉₂	15.4	0.15	19990122	106.00526	283.21644	23.16236	21.88474	0.0775761	1.9382921	34	1	74 days	0.72	M-v	5	Williams	33089 1998 QF ₉₂
1998 QG ₉₂	15.6	0.15	19990122	53.43737	226.51852	113.86236	4.50374	0.3138947	2.3732438	25	1	75 days	0.74	M-v	5	Williams	1998 QG ₉₂
1998 QJ ₉₂	15.0	0.15	19990122	25.22249	325.29532	71.63693	3.28211	0.2367228	2.3084184	44	2	1991–1998	0.69	M-v	3	Williams	32985 1998 QJ ₉₂
1998 QN ₉₂	13.0	0.15	19990122	40.10040	1.26170	8.50441	13.80019	0.1680187	2.9674794	38	2	1992–1998	0.66	M-v	4	Williams	32985 1998 QN ₉₂
1998 QP ₉₂	15.1	0.15	19990122	55.89000	254.48864	90.91502	3.41374	0.2530960	2.3216020	38	1	75 days	0.66	M-v	5	Williams	1998 QP ₉₂
1998 QS ₉₂	13.9	0.15	19990122	60.19364	251.86497	91.98208	6.54917	0.2221206	2.2723663	20	1	75 days	0.59	M-v	6	Williams	1998 QS ₉₂
1998 QX ₉₂	13.5	0.15	19990122	10.29487	218.02954	193.38707	8.98771	0.1477169	2.7717763	24	1	75 days	0.86	M-v	4	Williams	1998 QX ₉₂
1998 QB ₉₃	14.5	0.15	19990122	30.34826	279.78180	107.19852	3.54917	0.2089549	2.5716653	37	1	84 days	0.64	M-v	5	Williams	33089 1998 QB ₉₃
1998 QF ₉₃	14.0	0.15	19980904	8.04122	174.92225	198.62197	13.46488	0.2047147	2.6464773	15	1	52 days	1.56			Marsden	1998 QF ₉₃
1998 QH ₉₃	13.5	0.15	19990122	349.11400	212.11919	245.20044	11.20274	0.2255275	2.6622165	28	1	88 days	0.77	M-v	5	Williams	1998 QH ₉₃
1998 QK ₉₃	13.4	0.15	19990122	341.03802	77.44060	21.04412	13.31316	0.1533693	2.6659341	21	1	80 days	0.66	M-v	5	Williams	33089 1998 QK ₉₃
1998 QN ₉₃	13.1	0.15	19990122	16.88463	209.24810	203.40547	14.38030	0.1707503	2.6489742	12	1	82 days	0.70	M-v	5	Williams	1998 QN ₉₃
1998 QP ₉₃	13.4	0.15	19980904	4.82342	268.85572	108.96535	6.96192	0.1224383	2.4180284	15	1	52 days	0.70			Marsden	1998 QP ₉₃
1998 QQ ₉₃	13.4	0.15	19990122	25.35372	340.56981	57.43440	12.97759	0.1527231	2.6044912	25	1	82 days	0.61	M-v	4	Williams	33089 1998 QQ ₉₃
1998 QM ₉₄	14.6	0.15	19990122	18.11770	157.98196	203.75426	2.59500	0.0917025	2.5309913	24	3	1982–1998	0.74	M-v	5	Williams	32986 1998 QM ₉₄
1998 QA ₉₆	15.6	0.15	19990122	13.71638	71.78206	310.18634	25.04378	0.4266876	3.1586172	31	1	98 days	0.57	M-v	3	Williams	33089 1998 QA ₉₆
1998 QF ₉₆	14.9	0.15	19990122	102.76919	31.74429	229.96864	5.86262	0.1671912	2.3393585	20	2	1991–1998	0.67	M-v	5	Williams	32986 1998 QF ₉₆
1998 QG ₉₈	15.6	0.15	19990122	73.65377	117.55263	184.91190	8.35186	0.2711262	2.2278792	40	1	62 days	0.64	M-v	5	Williams	1998 QG ₉₈
1998 QO ₉₈	14.4	0.15	19990122	340.34806	275.59698	197.56635	19.86724	0.3124682	2.2624498	24	1	77 days	0.78	M-v	4	Williams	1998 QO ₉₈
1998 QP ₉₈	14.7	0.15	19990122	32.05924	133.30496	256.20541	6.62578	0.2183963	2.3784422	38	3	1987–1998	0.66	M-v	3	Williams	32987 1998 QP ₉₈
1998 QS ₉₈	14.5	0.15	19990122	71.97321	287.90639	58.61480	3.45734	0.1568557	2.1665747	43	1	90 days	0.72	M-v	5	Williams	33089 1998 QS ₉₈
1998 QN ₁₀₀	15.2	0.15	19990122	3.57344	37.95163	5.02004	5.10545	0.1853470	2.2512163	45	1	73 days	0.56	M-v	5	Williams	1998 QN ₁₀₀
1998 QE ₁₀₁	15.1	0.15	19990122	355.34091	65.90285	348.34109	29.64147	0.3101616	2.6420003	33	1	70 days	0.84	M-v	4	Williams	1998 QE ₁₀₁
1998 QQ ₁₀₁	13.3	0.15	19990122	6.80110	213.07790	165.13894	16.85070	0.1920691	3.0885795	34	3	1971–1998	0.72	M-v	4	Williams	32987 1998 QQ ₁₀₁
1998 QQ ₁₀₃	15.2	0.15	19990122	17.37464	350.35803	31.02827	4.47728	0.1146250	2.2791410	54	2	1991–1998	0.67	M-v	4	Williams	32988 1998 QQ ₁₀₃
1998 QF ₁₀₄	13.7	0.15	19990122	92.07820	272.61216	13.22202	14.94360	0.1002300	2.5375509	44	2	1986–1998	0.75	M-v	4	Williams	33091 1998 QF ₁₀₄
1998 QH ₁₀₄	15.2	0.15	19980904	305.71377	77.44776	359.77574	21.12899	0.2675378	2.2834754	55	1	50 days	0.71			Williams	1998 QH ₁₀₄
1998 QB ₁₀₅	16.5	0.15	19990122	49.14997	232.06432	85.21262	23.36397	0.3682775	2.3393072	22	1	87 days	0.43	M-v	4	Williams	1998 QB ₁₀₅
1998 QU ₁₀₆	13.9	0.15	19990122	356.20818	325.11795	68.80925	4.52593	0.1712807	2.8775690	28	1	80 days	0.65	M-v	5	Marsden	1998 QU ₁₀₆
1998 QM ₁₀₇	10.6	0.15	19990122	23.06798	155.62451	127.15375	9.36777	0.1394220	20.1270120	31	1	99 days	0.23	M-v	5	Tholen	1998 QM ₁₀₇
1998 RE	12.5	0.15	19990122	266.28668	127.63022	58.31935	13.67418	0.0922093	3.1433179	26	3	1939–1998	0.54	M-v	3	Williams	33091 1998 RE

1998 RG	14.5	0.15	19990122	303.46501	326.70333	126.22660	10.08367	0.1242502	2.7663872	18	1	75 days	0.53	M-v	5	Williams	1998 RG
1998 RH	14.6	0.15	19990122	195.46287	89.71344	107.32338	7.41405	0.0569709	2.3496645	21	1	75 days	0.32	M-v	4	Williams	1998 RH
1998 RM	13.7	0.15	19990122	241.15131	271.19832	207.26048	16.59270	0.0901470	2.8046829	19	1	66 days	0.35	M-v	5	Williams	1998 RM
1998 RS	13.5	0.15	19990122	7.92307	193.93986	186.00152	15.87599	0.1073788	3.0715264	55	1	60 days	0.48	M-v	5	Williams	1998 RS
1998 RV	13.8	0.15	19990122	350.70693	4.61653	4.99378	9.85040	0.0972594	2.9891860	45	2	1991–1998	0.51	M-v	3	Williams	1998 RV
1998 RY	15.4	0.15	19990122	18.59589	154.80140	233.41027	3.39351	0.2993408	2.5761036	51	1	70 days	0.70	M-v	4	Williams	1998 RY
1998 RB ₁	14.7	0.15	19980924	7.49770	5.54765	353.60381	9.50604	0.1845636	2.7714964	38	1	47 days	0.75			Williams	1998 RB ₁
1998 RC ₁	13.5	0.15	19980924	59.47792	98.78156	203.31763	9.57518	0.0925944	2.9744431	40	1	47 days	0.66			Williams	1998 RC ₁
1998 RD ₁	13.0	0.15	19980924	11.17049	10.75908	348.12371	8.66803	0.0891454	3.1739476	34	1	59 days	0.63			Williams	1998 RD ₁
1998 RE ₁	14.8	0.15	19990122	44.71016	314.45169	356.36743	17.11263	0.1687027	3.0393176	27	1	63 days	0.54	M-v	4	Williams	1998 RE ₁
1998 RP ₁	15.0	0.15	19981014	39.34404	301.86894	14.98421	1.75889	0.2158022	2.7632379	42	1	57 days	0.58			Marsden	1998 RP ₁
1998 RC ₂	14.2	0.15	19990122	346.76438	28.26051	2.12851	12.76749	0.1485780	3.1698215	29	1	78 days	0.64	M-v	5	Williams	1998 RC ₂
1998 RR ₂	17.3	0.15	19990122	19.42809	29.22014	358.17033	2.98024	0.4126153	2.6590521	73	1	65 days	0.48	M-v	4	Williams	1998 RR ₂
1998 RD ₃	15.2	0.15	19980924	3.21260	349.39767	11.43979	13.66334	0.3133310	2.5759938	45	1	56 days	0.68			Williams	1998 RD ₃
1998 RG ₃	15.8	0.15	19990122	30.23943	131.45095	229.92725	8.06304	0.3523074	2.6770837	44	1	70 days	0.66	M-v	4	Williams	1998 RG ₃
1998 RF ₄	16.7	0.15	19980904	46.85984	128.92363	170.91599	21.83753	0.0541152	1.9256835	16	1	17 days	0.90			Williams	1998 RF ₄
1998 RO ₄	17.9	0.15	19990122	62.08695	111.24761	192.30163	5.33780	0.4272482	2.1380890	75	1	85 days	0.51	M-v	4	Williams	1998 RO ₄
1998 RD ₅	14.4	0.15	19990122	144.11145	169.08832	77.49764	5.93329	0.1048531	2.3860696	66	3	1976–1998	0.73	M-v	3	Williams	1998 RD ₅
1998 RE ₅	16.1	0.15	19990122	57.95891	271.26083	63.06803	4.66966	0.2196875	2.1654271	47	1	73 days	0.60	M-v	4	Williams	1998 RE ₅
1998 RP ₅	13.9	0.15	19990122	209.48503	1.03701	185.60053	13.99289	0.1106321	2.5635405	31	2	1988–1998	0.65	M-v	4	Williams	1998 RP ₅
1998 RU ₅	14.9	0.15	19980924	331.51695	228.89033	176.60569	9.84667	0.0879762	2.5752072	34	1	44 days	0.85			Williams	1998 RU ₅
1998 RY ₅	14.6	0.15	19990122	232.44478	135.00681	22.60859	3.97785	0.0877793	2.2181282	29	3	1987–1998	0.48	M-v	4	Williams	1998 RY ₅
1998 RL ₆	14.6	0.15	19980924	88.07046	265.03862	11.21844	2.65115	0.1023203	2.2962902	32	1	45 days	0.59			Williams	1998 RL ₆
1998 RM ₆	14.4	0.15	19980924	70.32444	110.28433	191.51839	11.44230	0.0918650	2.5686272	29	1	58 days	0.87			Williams	1998 RM ₆
1998 RZ ₇	15.9	0.15	19980924	0.47356	4.61450	351.16008	5.35695	0.2279061	2.2409948	18	1	59 days	0.71			Williams	1998 RZ ₇
1998 RC ₈	14.6	0.15	19980924	339.64312	34.10526	3.93422	5.16060	0.2120555	2.6200711	33	1	47 days	0.61			Williams	1998 RC ₈
1998 RU ₈	14.3	0.15	19990122	277.80384	303.07827	162.62639	10.22911	0.1464290	2.7567715	20	1	66 days	0.68	M-v	6	Williams	1998 RU ₈
1998 RU ₁₅	13.9	0.15	19990122	140.93244	78.40122	175.75188	5.05311	0.1145255	2.2987300	54	2	1983–1998	0.67	M-v	4	Williams	1998 RU ₁₅
1998 RV ₁₅	14.4	0.15	19990122	6.21608	224.21994	179.23207	12.46148	0.1860342	2.6658710	45	1	62 days	0.79	M-v	4	Williams	1998 RV ₁₅
1998 RE ₁₆	13.2	0.15	19980924	55.85658	164.58222	134.13769	5.61374	0.1676908	3.0376600	39	1	44 days	0.91			Williams	1998 RE ₁₆
1998 RG ₁₆	13.2	0.15	19980924	10.25922	96.24011	270.02191	13.72506	0.1740533	2.6694397	20	1	46 days	0.70			Williams	1998 RG ₁₆
1998 RX ₁₆	16.4	0.15	19980924	339.44497	200.60995	174.23180	7.71589	0.2292275	2.5512236	16	1	59 days	0.81			Williams	1998 RX ₁₆
1998 RJ ₁₇	14.5	0.15	19990122	318.51121	261.64967	179.00020	10.55619	0.2306937	2.4257837	26	3	1987–1998	0.57	M-v	3	Williams	1998 RJ ₁₇
1998 RC ₁₈	14.2	0.15	19990122	36.29164	311.79672	1.48681	12.27541	0.3088812	3.0679055	28	1	83 days	0.48	M-v	4	Williams	1998 RC ₁₈
1998 RD ₁₉	16.1	0.15	19980924	339.98776	18.51403	355.19722	14.08252	0.1805499	2.5567090	22	1	38 days	0.67			Williams	1998 RD ₁₉
1998 RP ₂₀	15.7	0.15	19990122	75.32192	81.67178	250.28431	11.05214	0.1999003	2.6729627	14	1	71 days	0.49	M-v	5	Williams	1998 RP ₂₀
1998 RP ₂₂	16.3	0.15	19980904	330.49783	189.04970	194.90918	0.73787	0.1885609	2.4292574	24	1	15 days	0.66			Williams	1998 RP ₂₂
1998 RR ₂₉	15.3	0.15	19980904	334.41818	238.14287	138.72331	4.43917	0.1130458	2.6102268	12	1	12 days	0.77			Williams	1998 RR ₂₉
1998 RB ₄₃	16.1	0.15	19990122	17.03914	62.23349	312.96605	4.24169	0.1449346	2.4740971	30	2	1994–1998	0.68	M-v	5	Williams	1998 RB ₄₃
1998 RD ₄₃	14.9	0.15	19990122	26.88394	46.54162	309.55503	3.89085	0.0833106	2.7345498	30	2	1993–1998	0.87	M-v	5	Williams	1998 RD ₄₃
1998 RD ₄₄	15.1	0.15	19990122	18.65630	337.71740	26.56413	5.86952	0.0997034	2.7378151	26	2	1992–1998	0.67	M-v	5	Williams	1998 RD ₄₄
1998 RP ₄₆	16.0	0.15	19980924	340.20128	164.70803	228.07833	3.32711	0.2462270	2.3291951	27	1	57 days	0.55			Williams	1998 RP ₄₆
1998 RW ₄₆	15.8	0.15	19990122	35.75596	104.72093	249.61429	3.63185	0.2258236	2.3613909	29	3	1969–1998	0.52	M-v	4	Williams	1998 RW ₄₆
1998 RE ₄₇	15.2	0.15	19990122	34.21086	143.23368	214.80117	6.30330	0.1529087	3.3233040	25	3	1984–1998	0.55	M-v	4	Williams	1998 RE ₄₇
1998 RK ₄₇	14.8	0.15	19990122	77.66323	351.79630	311.72390	6.22146	0.1363948	2.3338739	36	2	1987–1998	0.71	M-v	4	Williams	1998 RK ₄₇
1998 RR ₄₇	15.5	0.15	19990122	354.82070	90.83230	317.09691	5.34732	0.1391135	2.4001490	31	2	1996–1998	0.68	M-v	5	Williams	1998 RR ₄₇
1998 RC ₄₈	15.5	0.15	19990122	48.31528	107.61324	217.52130	3.57276	0.2600354	2.5829775	34	2	1997–1998	0.46	M-v	4	Williams	1998 RC ₄₈
1998 RW ₄₈	14.8	0.15	19990122	44.41539	70.27838	263.26278	1.43532	0.1018538	2.9013186	30	3	1983–1998	0.73	M-v	5	Williams	1998 RW ₄₈
1998 RB ₄₉	16.9	0.15	19990122	31.99287	173.06271	180.91922	5.17207	0.2583851	2.5354130	31	2	1994–1998	0.72	M-v	4	Williams	1998 RB ₄₉
1998 RD ₄₉	16.4	0.15	19990122	60.77684	136.17044	184.58464	2.32412	0.1568397	2.3368461	32	2	1997–1998	0.76	M-v	5	Williams	1998 RD ₄₉
1998 RT ₄₉	15.0	0.15	19990122	62.65196	305.52932	3.21667	12.24357	0.1694454	2.6560689	23	1	63 days	0.73	M-v	5	Williams	1998 RT ₄₉
1998 RW ₅₀	14.6	0.15	19990122	239.73013	212.65735	295.07843	2.40658	0.0213934	2.6877331	27	2	1993–1998	1.02	M-v	6	Williams	1998 RW ₅₀
1998 RC ₅₁	14.9	0.15	19990122	136.42965	285.46568	313.88728	4.11567	0.1628060	2.3907583	29	2	1993–1998	0.89	M-v	6	Williams	1998 RC ₅₁

1998 RD ₅₁	13.5	0.15	19990122	109.86855	37.39976	234.24635	5.10267	0.0556512	2.6514061	46	2	1981–1998	0.55	M-v	5	Williams	32995	1998 RD ₅₁
1998 RC ₅₂	16.1	0.15	19980924	14.64425	307.35052	23.57850	5.81527	0.3005373	2.3477622	27	1	57 days	0.63			Williams		1998 RC ₅₂
1998 RF ₅₂	15.0	0.15	19990122	346.85237	40.60502	12.96854	12.71962	0.1677168	2.5713601	30	2	1996–1998	0.60	M-v	5	Williams	32996	1998 RF ₅₂
1998 RW ₅₂	12.7	0.15	19990122	205.06160	162.32953	13.64319	9.71335	0.0385777	3.0384315	43	5	1980–1998	0.57	M-v	2	Williams	32996	1998 RW ₅₂
1998 RZ ₅₂	13.7	0.15	19990122	356.76573	223.84505	162.48757	7.64332	0.0464939	3.0235752	28	2	1977–1998	0.61	M-v	6	Williams	32996	1998 RZ ₅₂
1998 RD ₅₃	13.1	0.15	19990122	250.61488	136.98048	357.60237	9.81755	0.0479209	2.9955169	26	1	69 days	0.63	M-v	5	Williams		1998 RD ₅₃
1998 RF ₅₃	14.0	0.15	19990122	90.92537	123.94759	162.94626	2.21324	0.0419520	2.9178104	32	2	1993–1998	0.89	M-v	6	Williams	32996	1998 RF ₅₃
1998 RQ ₅₃	15.0	0.15	19980904	154.82721	266.26007	289.33256	4.05574	0.1477002	2.3405856	16	1	12 days	1.04			Williams		1998 RQ ₅₃
1998 RR ₅₃	15.5	0.15	19990122	65.06911	100.68517	206.15897	7.27753	0.2003743	2.6103789	30	2	1997–1998	0.69	M-v	4	Williams	32997	1998 RR ₅₃
1998 RD ₅₄	14.8	0.15	19990122	107.30752	49.86426	225.80929	4.91179	0.0858455	2.4136651	29	2	1989–1998	0.73	M-v	5	Williams	32997	1998 RD ₅₄
1998 RM ₅₄	14.7	0.15	19980924	227.60019	213.56655	284.48387	3.86142	0.0399729	2.3231578	27	1	43 days	0.84			Williams		1998 RM ₅₄
1998 RN ₅₄	15.2	0.15	19990122	144.00053	297.40220	306.85969	5.77785	0.0710296	2.3172202	24	2	1977–1998	0.93	M-v	6	Williams	32997	1998 RN ₅₄
1998 RO ₅₄	15.6	0.15	19990122	20.34643	130.76947	250.59941	3.77573	0.1496038	2.2641484	32	1	61 days	0.45	M-v	4	Williams		1998 RO ₅₄
1998 RP ₅₄	15.6	0.15	19990122	17.34563	141.55031	245.62615	3.59583	0.1673499	2.2418803	38	1	61 days	0.58	M-v	4	Williams		1998 RP ₅₄
1998 RZ ₅₄	15.1	0.15	19990122	21.05590	83.92756	300.56980	4.59804	0.1283722	2.1666496	33	2	1989–1998	0.58	M-v	4	Williams	32997	1998 RZ ₅₄
1998 RA ₅₅	15.7	0.15	19990122	47.70893	127.96123	200.91137	12.53180	0.2452970	2.6949328	15	1	68 days	0.87	M-v	5	Williams		1998 RA ₅₅
1998 RF ₅₅	15.5	0.15	19980924	339.78449	56.15846	331.59705	5.99871	0.1269643	2.2937800	28	1	31 days	0.60			Williams		1998 RF ₅₅
1998 RR ₅₅	14.8	0.15	19980924	86.29074	16.68615	235.85626	4.22947	0.2098414	2.5549852	33	1	43 days	1.05			Williams		1998 RR ₅₅
1998 RU ₅₅	15.8	0.15	19980924	305.08269	133.68703	295.12835	3.12979	0.1108443	2.2673553	20	1	38 days	0.79			Williams		1998 RU ₅₅
1998 RV ₅₅	14.4	0.15	19980924	340.69711	182.54302	207.40048	7.32581	0.1644373	2.6362401	24	1	57 days	0.56			Williams		1998 RV ₅₅
1998 RY ₅₅	15.7	0.15	19990122	39.38139	37.79619	319.72943	3.87513	0.1266198	2.2194644	40	2	1997–1998	0.46	M-v	4	Williams	32997	1998 RY ₅₅
1998 RC ₅₆	14.5	0.15	19990122	342.45289	216.98839	204.97735	6.04119	0.1003779	2.3746392	35	4	1989–1998	0.51	M-v	3	Williams	32998	1998 RC ₅₆
1998 RL ₅₆	15.0	0.15	19990122	67.99882	328.66439	348.58035	11.39130	0.0907945	2.4671415	26	2	1994–1998	0.73	M-v	6	Williams	32998	1998 RL ₅₆
1998 RR ₅₆	15.2	0.15	19980924	62.89551	24.47995	255.06318	1.69744	0.1702245	2.4279465	27	1	43 days	0.85			Williams		1998 RR ₅₆
1998 RU ₅₆	13.6	0.15	19990122	270.93623	272.35731	211.73559	3.26160	0.0666060	2.7001701	45	3	1980–1998	0.74	M-v	4	Williams	32998	1998 RU ₅₆
1998 RY ₅₆	14.1	0.15	19980924	32.85791	83.16147	223.44472	2.09618	0.2554618	3.0562557	36	1	36 days	0.61			Williams		1998 RY ₅₆
1998 RA ₅₇	15.5	0.15	19990122	11.33516	174.02331	216.35895	1.42616	0.1222489	2.2396364	31	3	1978–1998	0.55	M-v	4	Williams	32998	1998 RA ₅₇
1998 RB ₅₇	14.9	0.15	19990122	273.95657	163.48321	326.48679	2.13659	0.1336193	2.4126807	24	2	1994–1998	0.75	M-v	6	Williams	32998	1998 RB ₅₇
1998 RC ₅₇	15.6	0.15	19990122	101.61742	175.66184	111.45036	1.89991	0.0320512	2.3906822	29	2	1997–1998	0.76	M-v	5	Williams	32999	1998 RC ₅₇
1998 RJ ₅₈	13.2	0.15	19990122	112.83383	115.69014	139.43887	1.72948	0.1193300	3.1577366	45	3	1982–1998	0.59	M-v	3	Williams	32999	1998 RJ ₅₈
1998 RM ₅₈	16.5	0.15	19980924	328.58077	244.42479	166.40053	1.84117	0.2425832	2.3259398	36	1	57 days	0.60			Williams		1998 RM ₅₈
1998 RQ ₅₈	14.2	0.15	19990122	74.34742	319.66771	350.27905	1.66770	0.0121693	2.8721059	30	2	1993–1998	0.86	M-v	6	Williams	32999	1998 RQ ₅₈
1998 RR ₅₈	13.5	0.15	19980924	91.75536	80.98701	185.71871	10.00922	0.0245535	3.2168681	30	1	31 days	0.56			Williams		1998 RR ₅₈
1998 RS ₅₈	16.6	0.15	19980924	7.25295	16.16125	333.31141	2.30368	0.2291542	2.4597452	20	1	30 days	0.98			Williams		1998 RS ₅₈
1998 RU ₅₈	14.8	0.15	19980924	296.14892	100.85806	346.15720	3.14549	0.1923573	2.6580728	31	1	35 days	0.60			Williams		1998 RU ₅₈
1998 RA ₅₉	16.6	0.15	19980924	55.52166	71.31989	213.14997	1.30756	0.2018984	2.3581971	24	1	31 days	0.71		D	Williams		1998 RA ₅₉
1998 RC ₅₉	14.3	0.15	19990122	165.94884	13.09548	210.41430	4.35000	0.0781356	2.3116585	50	3	1990–1998	0.54	M-v	4	Williams	33000	1998 RC ₅₉
1998 RL ₅₉	16.0	0.15	19980924	22.55236	348.36555	344.89136	7.09666	0.1359915	2.3307034	28	1	33 days	0.63			Williams		1998 RL ₅₉
1998 RU ₅₉	14.0	0.15	19990122	327.89529	223.70357	205.81764	3.43167	0.0829089	2.8019201	34	3	1989–1998	0.61	M-v	5	Williams	33000	1998 RU ₅₉
1998 RA ₆₀	14.8	0.15	19990122	93.12717	296.38812	346.77207	11.50214	0.1645825	2.4604099	29	2	1994–1998	0.56	M-v	5	Williams	33000	1998 RA ₆₀
1998 RF ₆₀	13.4	0.15	19990122	248.87170	156.70125	344.13553	9.22364	0.0185685	2.9585275	32	2	1996–1998	0.59	M-v	4	Williams	33000	1998 RF ₆₀
1998 RG ₆₀	15.4	0.15	19990122	346.58259	107.17307	319.68680	3.39688	0.2230843	2.6206972	25	2	1991–1998	0.70	M-v	5	Williams	33000	1998 RG ₆₀
1998 RH ₆₁	16.4	0.15	19990122	25.61348	157.12236	212.93336	4.18160	0.2697414	2.5656916	31	2	1994–1998	0.66	M-v	4	Williams	33001	1998 RH ₆₁
1998 RI ₆₁	14.9	0.15	19990122	123.45476	284.29270	336.24890	5.25547	0.1356910	2.3234421	33	3	1987–1998	0.60	M-v	2	Williams	33001	1998 RI ₆₁
1998 RJ ₆₁	13.6	0.15	19990122	349.82204	164.25375	238.44545	2.92655	0.1322494	3.4682581	28	1	76 days	0.59	M-v	5	Williams		1998 RJ ₆₁
1998 RK ₆₂	14.9	0.15	19990122	238.65013	184.62367	338.50642	3.45941	0.0815695	2.3057349	24	2	1991–1998	0.71	M-v	6	Williams	33001	1998 RK ₆₂
1998 RL ₆₂	15.0	0.15	19990122	17.98304	196.89855	175.54441	13.56360	0.1873443	2.7894990	28	2	1997–1998	0.72	M-v	4	Williams	33001	1998 RL ₆₂
1998 RM ₆₂	15.5	0.15	19990122	35.25242	297.46554	54.61858	3.19936	0.1990617	2.4513702	30	2	1993–1998	0.59	M-v	4	Williams	33001	1998 RM ₆₂
1998 RN ₆₄	15.2	0.15	19990122	112.96948	98.73132	163.39466	5.46823	0.1747247	2.3213541	30	3	1990–1998	0.72	M-v	2	Williams	33002	1998 RN ₆₄
1998 RO ₆₄	14.3	0.15	19990122	25.15536	187.49709	170.29416	1.97379	0.2388925	3.0570220	29	2	1997–1998	0.67	M-v	4	Williams	33002	1998 RO ₆₄
1998 RP ₆₄	15.3	0.15	19990122	335.23820	247.01759	189.03451	2.29149	0.1512127	2.3944105	35	2	1983–1998	0.79	M-v	5	Williams	33003	1998 RP ₆₄
1998 RQ ₆₅	14.0	0.15	19980924	60.43509	305.72548	352.44314	2.54087	0.0607138	2.6766614	27	1	57 days	0.44			Williams		1998 RQ ₆₅
1998 RS ₆₅	14.1	0.15	19990122	8.97138	37.13011	345.70449	1.38136	0.0786453	2.8825237	29	2	1993–1998	0.67	M-v	5	Williams	33003	1998 RS ₆₅

1998 RM ₆₅	15.6	0.15	19990122	3.33829	225.22573	184.43030	1.90284	0.3078808	2.6499250	34	1	62 days	0.59	M-v	5	Williams		1998 RM ₆₅
1998 RR ₆₅	14.2	0.15	19990122	260.82360	141.04558	353.67863	5.01083	0.0551555	2.7965434	26	2	1977–1998	0.63	M-v	5	Williams	33003	1998 RR ₆₅
1998 RH ₆₆	14.6	0.15	19990122	335.05114	243.95232	189.92145	15.39289	0.1526428	2.6506513	29	1	61 days	0.60	M-v	5	Williams	33100	1998 RH ₆₆
1998 RT ₆₆	13.4	0.15	19980924	12.01667	138.42271	215.47353	7.30523	0.0825225	3.0353381	34	1	58 days	0.70			Williams		1998 RT ₆₆
1998 RD ₆₇	14.6	0.15	19980924	82.17308	60.52607	202.21108	13.98088	0.2021694	2.3831575	29	1	45 days	0.81			Williams		1998 RD ₆₇
1998 RJ ₆₇	13.9	0.15	19980924	278.03170	246.57591	207.62718	11.02429	0.0274993	2.8676102	26	1	45 days	0.84			Williams		1998 RJ ₆₇
1998 RM ₆₇	14.1	0.15	19990122	320.61323	170.00996	291.18172	3.26427	0.1701835	2.2914067	40	3	1981–1998	0.68	M-v	4	Williams	33004	1998 RM ₆₇
1998 RQ ₆₇	16.2	0.15	19980924	353.53784	135.98234	241.44386	2.88124	0.2077474	2.5848503	31	1	45 days	1.15			Williams		1998 RQ ₆₇
1998 RA ₆₈	13.4	0.15	19990122	48.96820	336.60785	357.39073	10.29772	0.1689638	2.8092954	33	3	1979–1998	0.65	M-v	3	Williams	33005	1998 RA ₆₈
1998 RC ₆₈	15.1	0.15	19990122	17.15265	159.00057	227.01514	2.01033	0.0865323	2.3433535	33	1	63 days	0.62	M-v	5	Williams		1998 RC ₆₈
1998 RF ₆₈	14.4	0.15	19980924	349.41948	193.66577	188.61764	11.77058	0.1921997	2.5843155	18	1	45 days	0.45			Williams		1998 RF ₆₈
1998 RN ₆₈	15.0	0.15	19990122	23.16005	22.48728	349.00896	2.31835	0.1297258	2.7134962	37	2	1996–1998	0.65	M-v	5	Williams	33005	1998 RN ₆₈
1998 RV ₆₉	15.5	0.15	19990122	118.42782	213.63982	42.05126	2.82733	0.1783446	2.3786238	35	2	1997–1998	0.71	M-v	4	Williams	33006	1998 RV ₆₉
1998 RW ₇₀	15.2	0.15	19990122	26.81093	243.47560	131.70650	4.48724	0.1472311	2.1979988	31	3	1990–1998	0.68	M-v	4	Williams	33006	1998 RW ₇₀
1998 RF ₇₁	14.2	0.15	19990122	24.36643	261.92431	99.31716	3.08331	0.1183414	3.0010150	35	3	1993–1998	0.61	M-v	4	Williams	33006	1998 RF ₇₁
1998 RJ ₇₁	15.6	0.15	19990122	355.85027	27.87147	25.84534	4.22263	0.1131258	2.1780596	32	3	1971–1998	0.71	M-v	3	Williams	33007	1998 RJ ₇₁
1998 RY ₇₁	15.3	0.15	19980924	357.09146	350.22292	17.70659	6.64947	0.1267166	2.2498536	29	1	57 days	0.70			Williams		1998 RY ₇₁
1998 RC ₇₂	16.3	0.15	19990122	8.03030	343.82425	57.02853	1.35240	0.1144999	2.1541758	33	2	1996–1998	0.56	M-v	5	Williams	33007	1998 RC ₇₂
1998 RJ ₇₂	13.1	0.15	19990122	112.58187	172.20735	88.63085	2.43998	0.1304834	3.2057904	48	3	1979–1998	0.58	M-v	4	Williams	33008	1998 RJ ₇₂
1998 RK ₇₂	12.9	0.15	19990122	82.80021	172.32372	115.96936	2.20550	0.1557527	3.1857793	39	1	96 days	0.48	M-v	5	Williams		1998 RK ₇₂
1998 RS ₇₂	13.7	0.15	19990122	226.74162	12.77892	155.29175	4.21644	0.0322146	2.7894905	39	2	1992–1998	0.66	M-v	4	Williams	33008	1998 RS ₇₂
1998 RX ₇₂	13.9	0.15	19990122	6.12095	211.56405	182.95312	8.64388	0.2485678	3.0594520	42	1	88 days	0.68	M-v	4	Williams	33101	1998 RX ₇₂
1998 RY ₇₂	14.8	0.15	19980924	305.19190	256.97419	177.02782	2.47081	0.1117529	2.6519528	33	1	45 days	0.90			Williams		1998 RY ₇₂
1998 RH ₇₃	14.9	0.15	19990122	14.73440	192.00824	198.38167	6.51388	0.1205539	2.3618378	45	3	1993–1998	0.72	M-v	3	Williams	33008	1998 RH ₇₃
1998 RN ₇₃	15.2	0.15	19980924	17.67697	88.82568	253.25953	2.69343	0.1821301	2.5194322	26	1	44 days	0.52			Williams		1998 RN ₇₃
1998 RR ₇₃	13.5	0.15	19990122	129.50675	50.74270	200.78506	13.23856	0.1449198	2.6774758	42	1	76 days	0.55	M-v	4	Williams		1998 RR ₇₃
1998 RS ₇₃	15.0	0.15	19990122	34.42606	113.97500	243.81499	2.56130	0.2339508	2.5946423	43	3	1977–1998	0.63	M-v	3	Williams	33009	1998 RS ₇₃
1998 RY ₇₃	15.0	0.15	19990122	44.48147	31.21512	322.68142	5.76342	0.1318814	2.3233847	35	1	70 days	0.55	M-v	4	Williams		1998 RY ₇₃
1998 RC ₇₄	14.0	0.15	19980924	10.04242	124.19059	234.44398	6.42155	0.0942636	2.7288649	33	1	57 days	0.91			Williams		1998 RC ₇₄
1998 RE ₇₄	15.4	0.15	19990122	14.08849	86.70345	308.99641	3.96470	0.1587884	2.3200371	37	2	1993–1998	0.75	M-v	4	Williams	33009	1998 RE ₇₄
1998 RH ₇₄	13.3	0.15	19980924	35.26590	48.50879	276.05798	3.79489	0.1526626	3.0406726	37	1	57 days	0.78			Williams		1998 RH ₇₄
1998 RK ₇₄	16.0	0.15	19990122	50.37504	130.86234	200.84466	6.82143	0.3251493	2.3526784	40	1	76 days	0.54	M-v	4	Williams		1998 RK ₇₄
1998 RL ₇₄	13.8	0.15	19990122	50.56175	16.49631	312.06610	3.71558	0.1826995	3.1631059	32	2	1992–1998	0.74	M-v	5	Williams	33009	1998 RL ₇₄
1998 RM ₇₄	16.0	0.15	19980924	4.33958	156.66882	205.64033	7.17851	0.1618989	2.3015633	29	1	45 days	1.25			Williams		1998 RM ₇₄
1998 RP ₇₄	14.8	0.15	19990122	129.71609	283.61482	335.34445	4.58850	0.1374578	2.2746712	37	2	1990–1998	0.65	M-v	5	Williams	33009	1998 RP ₇₄
1998 RQ ₇₄	16.0	0.15	19980924	349.22958	188.43669	197.22777	7.56142	0.2121201	2.5766222	35	1	45 days	0.83			Williams		1998 RQ ₇₄
1998 RS ₇₄	14.7	0.15	19980924	317.43759	70.64176	354.77538	8.83150	0.1460548	2.7741293	31	1	57 days	0.91			Williams		1998 RS ₇₄
1998 RT ₇₄	14.8	0.15	19990122	259.97998	195.44809	314.18354	1.80525	0.1102502	2.4291163	21	3	1987–1998	0.85	M-v	6	Williams	33009	1998 RT ₇₄
1998 RA ₇₅	14.1	0.15	19980924	300.63666	80.42790	4.25215	11.30981	0.1465862	2.6488160	36	1	45 days	0.81			Williams		1998 RA ₇₅
1998 RF ₇₅	13.5	0.15	19980924	100.57433	82.03400	184.29362	9.95204	0.0321420	3.2367869	35	1	45 days	0.84			Williams		1998 RF ₇₅
1998 RG ₇₅	13.9	0.15	19980924	281.94362	279.15294	182.37186	13.04265	0.1296847	2.6206186	33	1	45 days	0.56			Williams		1998 RG ₇₅
1998 RJ ₇₅	15.0	0.15	19990122	224.06494	120.17667	60.12486	1.86721	0.0826697	2.2480321	32	3	1980–1998	0.62	M-v	5	Williams	33010	1998 RJ ₇₅
1998 RK ₇₅	13.3	0.15	19980924	212.18144	149.41791	13.85123	11.48753	0.1057350	2.6688668	37	1	58 days	0.52			Williams		1998 RK ₇₅
1998 RW ₇₅	13.2	0.15	19990122	239.64554	77.94751	80.40917	2.56711	0.1241387	3.0490227	30	2	1996–1998	0.65	M-v	6	Williams	33010	1998 RW ₇₅
1998 RZ ₇₅	13.6	0.15	19980924	57.60968	132.25609	170.28561	9.84844	0.0634879	2.9931038	42	1	45 days	0.94			Williams		1998 RZ ₇₅
1998 RA ₇₇	16.3	0.15	19990122	68.03192	271.59222	33.40733	4.77571	0.2856610	2.2927550	27	1	62 days	0.59	M-v	5	Williams		1998 RA ₇₇
1998 RE ₇₇	15.3	0.15	19980924	335.74881	9.04661	34.29810	6.29317	0.2260505	2.5714045	33	1	45 days	0.76			Williams		1998 RE ₇₇
1998 RP ₇₇	14.1	0.15	19980924	19.99290	307.17133	30.25758	8.19411	0.1912135	3.1805837	26	1	45 days	1.01			Williams		1998 RP ₇₇
1998 RY ₇₇	14.4	0.15	19980924	158.63461	52.28466	152.25821	5.26417	0.1101843	2.2966264	31	1	45 days	0.95			Williams		1998 RY ₇₇
1998 RZ ₇₇	15.4	0.15	19990122	47.59897	221.39779	128.94920	3.25070	0.1769684	2.1642232	38	2	1995–1998	0.66	M-v	4	Williams	33011	1998 RZ ₇₇
1998 RO ₇₈	14.8	0.15	19990122	62.55752	228.45458	90.16168	3.47392	0.2184197	2.3789103	31	2	1994–1998	0.63	M-v	5	Williams	33011	1998 RO ₇₈
1998 RY ₇₈	13.8	0.15	19980924	282.75345	342.55691	111.40742	6.28993	0.0804507	3.1621149	34	1	45 days	0.79			Williams		1998 RY ₇₈
1998 RC ₇₉	15.3	0.15	19980924	331.57506	273.20099	134.41158	5.10400	0.1870175	2.4242323	34	1	45 days	0.54			Williams		1998 RC ₇₉

1998 RD ₇₉	14.6	0.15	19990122	150.57046	186.60514	52.82818	6.18169	0.1325206	2.2143487	38	3	1977–1998	0.76	M-v	4	Williams	33011	1998 RD ₇₉
1998 RF ₇₉	14.9	0.15	19980924	304.41763	21.76559	51.39748	5.85067	0.1072076	2.2254296	17	1	45 days	0.71			Williams		1998 RF ₇₉
1998 RL ₇₉	14.6	0.15	19990122	49.23476	229.02045	115.21370	3.78080	0.1785228	2.3142165	42	5	1977–1998	0.70	M-v	2	Williams	33012	1998 RL ₇₉
1998 RM ₇₉	15.7	0.15	19990122	50.28274	290.48947	55.69251	3.81412	0.2093325	2.1540807	41	2	1995–1998	0.47	M-v	4	Williams	33012	1998 RM ₇₉
1998 RY ₇₉	14.2	0.15	19980924	356.09622	160.66355	217.70265	10.65182	0.1272556	2.9894895	28	1	45 days	0.92			Williams		1998 RY ₇₉
1998 RZ ₇₉	13.2	0.15	19990122	313.08918	357.00412	92.51195	4.97477	0.0639734	2.7902221	55	2	1997–1998	0.51	M-v	5	Williams	33012	1998 RZ ₇₉
1998 RE ₈₀	15.1	0.15	19990122	15.90296	340.68899	44.57243	8.08587	0.2444886	2.7518489	32	1	62 days	0.69	M-v	4	Williams		1998 RE ₈₀
1998 RF ₈₀	15.6	0.15	19980924	339.14796	340.00173	59.72265	6.13103	0.2020374	2.4026567	16	1	45 days	1.05			Williams		1998 RF ₈₀
1998 RG ₈₀	14.9	0.15	19980924	335.43108	319.16364	85.35687	5.75212	0.1808095	2.5922372	16	1	45 days	0.76			Williams		1998 RG ₈₀
1998 RH ₈₀	13.0	0.15	19990122	42.93544	294.87390	44.98090	5.95188	0.1808601	3.1103922	42	2	1987–1998	0.58	M-v	4	Williams	33012	1998 RH ₈₀
1998 RK ₈₀	15.2	0.15	19980924	284.74620	344.01385	114.52100	2.75569	0.1176729	2.2547210	25	1	44 days	0.88			Williams		1998 RK ₈₀
1998 RL ₈₀	15.0	0.15	19980924	231.19307	84.24509	56.00319	4.12180	0.0198072	2.1650527	36	1	53 days	0.72			Williams		1998 RL ₈₀
1998 RM ₈₀	13.4	0.15	19980924	9.19971	344.45046	16.64255	9.33804	0.1353222	3.1774973	37	1	57 days	0.60			Williams		1998 RM ₈₀
1998 RN ₈₀	15.7	0.15	19980924	333.30340	221.86542	183.55857	5.95407	0.1226085	2.4664564	27	1	45 days	0.93			Williams		1998 RN ₈₀
1998 RO ₈₀	14.9	0.15	19990122	215.21787	183.81099	7.43954	6.66366	0.0961811	2.3527181	30	2	1994–1998	0.73	M-v	5	Williams	33012	1998 RO ₈₀
1998 RP ₈₀	12.9	0.15	19980924	45.28414	122.88533	198.65551	8.87947	0.0887286	3.1655897	45	1	58 days	0.65			Williams		1998 RP ₈₀
1998 SA	14.2	0.15	19980924	34.17650	129.83387	197.09003	4.28558	0.2462386	2.5252086	32	1	55 days	0.90			Williams		1998 SA
1998 SC	13.6	0.15	19990122	154.86351	174.55945	46.55010	10.00502	0.2132014	2.7433884	35	1	63 days	0.63	M-v	5	Williams		1998 SC
1998 SD	14.7	0.15	19990122	263.78150	204.65578	314.51867	19.36844	0.0175723	1.9351961	34	3	1987–1998	0.67	M-v	4	Williams	33104	1998 SD
1998 SP	14.1	0.15	19980924	32.20862	318.71514	19.38157	4.98648	0.1484377	3.1638316	41	1	58 days	0.78			Williams		1998 SP
1998 SQ	11.5	0.15	19980924	318.41894	253.57625	182.23900	0.98841	0.0984458	5.2628598	44	1	58 days	0.77			Williams		1998 SQ
1998 SX	16.2	0.15	19980924	27.29754	327.66553	22.90977	6.83674	0.0317418	2.2641880	24	1	43 days	0.66			Williams		1998 SX
1998 SY	15.5	0.15	19981014	353.02567	6.95512	28.77142	4.51770	0.1477094	2.6026160	40	1	56 days	1.08			Williams		1998 SY
1998 SA ₁	13.8	0.15	19981014	7.96271	210.55754	164.57091	1.36981	0.1996160	3.1816831	30	1	58 days	0.81			Williams		1998 SA ₁
1998 SK ₁	13.5	0.15	19990122	320.56395	36.09139	64.03779	1.60256	0.1375676	3.1376671	33	2	1992–1998	0.79	M-v	5	Williams	33013	1998 SK ₁
1998 SN ₁	14.2	0.15	19980924	135.36571	48.91118	191.71198	7.05252	0.1025447	2.5304795	18	1	43 days	0.59			Williams		1998 SN ₁
1998 SO ₁	14.6	0.15	19981014	294.12885	319.64665	149.00817	1.48596	0.1396786	2.3932024	36	1	56 days	0.80			Williams		1998 SO ₁
1998 SR ₁	15.0	0.15	19990122	43.06264	254.00652	95.93038	4.56107	0.1961362	2.3192705	35	3	1991–1998	0.48	M-v	3	Williams	33104	1998 SR ₁
1998 SV ₁	14.4	0.15	19980924	311.50460	338.63845	82.92894	6.50084	0.0731852	2.7632857	19	1	41 days	0.44			Williams		1998 SV ₁
1998 SX ₁	14.9	0.15	19980924	12.65493	318.16674	29.42534	13.46226	0.1676243	2.6556076	29	1	42 days	0.61			Williams		1998 SX ₁
1998 SB ₂	16.8	0.15	19981014	45.91373	134.80813	182.45863	4.69915	0.1382458	2.1234996	31	1	56 days	0.57			Marsden		1998 SB ₂
1998 SF ₂	15.7	0.15	19990122	48.54789	232.87410	105.87248	5.39684	0.2163154	2.1867068	21	1	60 days	0.22	M-v	4	Williams		1998 SF ₂
1998 SG ₂	19.7	0.15	19990122	31.69047	219.56314	152.45006	2.50311	0.4587047	2.2461472	153	1	94 days	0.58	M-v	4	Williams	33104	1998 SG ₂
1998 SJ ₂	18.0	0.15	19990122	43.08284	332.12393	9.11203	10.33577	0.5004052	2.3299852	122	1	69 days	0.54	M-v	4	Williams	33104	1998 SJ ₂
1998 SL ₂	14.2	0.15	19990122	8.66726	67.37095	328.90806	6.10990	0.2695339	2.5465528	64	2	1990–1998	0.70	M-v	4	Williams	33013	1998 SL ₂
1998 SM ₂	16.5	0.15	19981014	316.24478	65.49264	27.18786	20.46391	0.1231482	1.9727626	14	1	59 days	0.72			Williams		1998 SM ₂
1998 SO ₂	14.6	0.15	19990122	31.37493	328.40194	73.76967	14.25686	0.1705148	2.5605339	11	1	63 days	0.49	M-v	5	Williams		1998 SO ₂
1998 SS ₂	13.4	0.15	19990122	74.02435	57.54459	259.25417	12.34225	0.1823803	2.5761636	49	1	64 days	0.55	M-v	4	Williams		1998 SS ₂
1998 ST ₂	14.7	0.15	19990122	34.69723	71.05767	295.62906	12.64829	0.0787590	2.5539238	28	1	61 days	0.75	M-v	4	Williams		1998 ST ₂
1998 SU ₂	14.9	0.15	19990122	32.81969	7.60849	356.16691	1.69702	0.0414454	2.6789175	25	1	69 days	0.62	M-v	5	Williams		1998 SU ₂
1998 SA ₃	16.0	0.15	19981014	14.49405	278.17169	63.41503	12.14109	0.3029311	2.7910170	37	1	54 days	0.89		D	Williams		1998 SA ₃
1998 SR ₃	16.3	0.15	19980924	48.80370	287.00324	19.62602	6.65896	0.2204165	2.3514858	30	1	41 days	1.11			Williams		1998 SR ₃
1998 SU ₃	16.4	0.15	19981014	351.52981	15.56798	22.97738	2.40783	0.2118984	2.3697474	23	1	54 days	0.58			Williams		1998 SU ₃
1998 SA ₄	16.1	0.15	19980924	334.23829	15.26670	39.58618	2.14121	0.1604673	2.3966243	27	1	41 days	1.00			Williams		1998 SA ₄
1998 SB ₄	15.5	0.15	19980924	15.97514	155.73056	193.50078	10.30366	0.3117908	3.0401828	21	1	41 days	0.82			Williams		1998 SB ₄
1998 SC ₄	14.2	0.15	19980924	117.48610	223.68536	29.35755	11.99550	0.1438486	2.6372053	30	1	41 days	0.83			Williams		1998 SC ₄
1998 SD ₄	18.7	0.15	19990122	94.58823	143.94937	181.89057	13.67254	0.1254018	1.5149208	90	1	46 days	0.68	M-v	5	Williams	33105	1998 SD ₄
1998 SE ₄	13.8	0.15	19990122	19.82225	9.28378	6.38252	10.81076	0.1143142	2.9794599	43	1	71 days	0.53	M-v	4	Williams		1998 SE ₄
1998 SJ ₄	15.7	0.15	19981014	321.62882	29.85833	29.31003	1.71714	0.2156167	2.4248971	24	1	53 days	0.53			Williams		1998 SJ ₄
1998 SL ₄	15.0	0.15	19990122	94.50455	307.16052	347.99347	2.08188	0.1552867	2.1685575	46	2	1997–1998	0.56	M-v	4	Williams	33014	1998 SL ₄
1998 SM ₄	14.9	0.15	19981014	359.06694	174.42303	203.96847	1.75540	0.2164479	2.4215411	28	1	54 days	0.71			Marsden		1998 SM ₄
1998 SN ₄	16.3	0.15	19980924	19.89676	280.72786	56.87955	2.16117	0.1980728	2.3866559	39	1	45 days	0.95			Williams		1998 SN ₄
1998 SR ₄	15.6	0.15	19990122	321.65363	244.89797	213.24973	5.93364	0.1819584	2.3195990	56	2	1989–1998	0.79	M-v	4	Williams	33014	1998 SR ₄

1998 ST ₄	16.6	0.15	19990122	355.88490	206.98800	239.39611	9.28960	0.5969798	2.8183244	57	1	92 days	0.58	M-v	4	Williams	33105	1998 ST ₄
1998 SW ₄	15.2	0.15	19980924	346.30353	354.28392	33.03346	5.85080	0.1527039	2.1852392	46	1	58 days	0.58			Williams		1998 SW ₄
1998 SX ₄	13.5	0.15	19990122	25.77481	192.83569	174.04626	11.87566	0.1185089	3.1813444	41	2	1992–1998	0.58	M-v	4	Williams	33014	1998 SX ₄
1998 SO ₈	16.5	0.15	19990122	34.28251	171.56284	185.39917	8.13142	0.3098574	2.5454385	41	1	61 days	0.83	M-v	4	Williams		1998 SO ₈
1998 SU ₈	16.2	0.15	19980924	66.69821	252.29284	24.89156	1.54372	0.2301407	2.3687895	15	1	28 days	0.15			Williams		1998 SU ₈
1998 SF ₉	13.8	0.15	19980924	35.95231	255.08289	62.65370	0.66129	0.2170514	3.0565044	44	1	41 days	0.87			Williams		1998 SF ₉
1998 SJ ₉	16.5	0.15	19980924	5.58921	353.41365	5.96562	1.85500	0.2264210	2.1735900	37	1	44 days	0.82			Williams		1998 SJ ₉
1998 SM ₉	14.4	0.15	19990122	1.10810	208.89442	199.06970	8.97423	0.1615954	2.7291573	41	1	60 days	0.63	M-v	5	Williams		1998 SM ₉
1998 SO ₉	14.1	0.15	19981014	346.60747	193.35215	202.34643	5.35194	0.1029330	2.8078283	39	1	54 days	0.72			Williams		1998 SO ₉
1998 SW ₉	13.7	0.15	19980924	26.43317	205.39044	125.97108	1.40976	0.2113071	3.1796118	53	1	44 days	0.68			Williams		1998 SW ₉
1998 SA ₁₀	13.2	0.15	19990122	27.06865	131.24201	213.98850	34.33130	0.2120912	2.8584077	38	2	1997–1998	0.88	M-v	3	Williams	33015	1998 SA ₁₀
1998 SF ₁₀	15.7	0.15	19990122	19.68914	3.46635	33.97999	5.48466	0.1740197	2.6067242	28	2	1996–1998	0.79	M-v	4	Williams	33015	1998 SF ₁₀
1998 SH ₁₀	13.4	0.15	19990122	3.57062	351.37481	60.32882	0.95116	0.0638548	2.7905773	39	2	1991–1998	0.52	M-v	4	Williams	33016	1998 SH ₁₀
1998 SL ₁₀	14.9	0.15	19981014	301.36604	256.01782	216.93398	13.11207	0.1169291	2.7375690	14	1	53 days	0.55			Williams		1998 SL ₁₀
1998 SO ₁₀	15.4	0.15	19990122	78.96842	22.04088	199.92431	41.82580	0.7731571	2.3036546	54	1	53 days	0.52	M-v	5	Williams		1998 SO ₁₀
1998 SP ₁₀	16.0	0.15	19990122	18.17103	208.52596	171.64865	15.74395	0.2148349	2.6825943	41	2	1997–1998	0.77	M-v	3	Williams	33016	1998 SP ₁₀
1998 SU ₁₀	13.9	0.15	19980904	323.06671	195.23269	201.16713	0.54570	0.1539911	3.1409222	43	1	51 days	0.77			Williams		1998 SU ₁₀
1998 SW ₁₀	16.1	0.15	19990122	58.90867	152.11705	183.38865	12.45130	0.3022429	2.5709392	20	1	62 days	0.42	M-v	5	Williams		1998 SW ₁₀
1998 SL ₁₂	13.8	0.15	19990122	89.42532	146.49828	153.74586	2.29873	0.0728682	2.8428438	44	2	1993–1998	0.65	M-v	5	Williams	33016	1998 SL ₁₂
1998 SA ₁₃	13.8	0.15	19990122	231.00665	326.02119	292.25752	14.52751	0.0811636	2.6472751	16	1	63 days	0.33	M-v	6	Williams		1998 SA ₁₃
1998 SB ₁₃	15.7	0.15	19990122	85.63093	150.29341	148.01685	6.45945	0.2141432	2.2362140	29	1	63 days	0.52	M-v	5	Williams		1998 SB ₁₃
1998 SD ₁₃	16.1	0.15	19981014	92.09384	126.44032	146.41799	7.09172	0.1118399	2.3631436	13	1	51 days	0.38			Williams		1998 SD ₁₃
1998 SE ₁₃	14.0	0.15	19990122	290.97211	104.37567	25.61624	14.57638	0.0488861	2.5323016	31	1	62 days	0.59	M-v	5	Williams		1998 SE ₁₃
1998 SS ₁₄	16.0	0.15	19980924	0.24435	286.59067	82.51557	4.15883	0.2835040	2.6556746	30	1	41 days	0.58			Williams		1998 SS ₁₄
1998 ST ₁₄	16.5	0.15	19980924	17.89906	229.06517	114.08029	2.98476	0.2362546	2.2217119	31	1	41 days	0.63			Williams		1998 ST ₁₄
1998 SU ₁₄	15.3	0.15	19980924	24.14270	261.49999	79.99038	4.44488	0.1802595	2.5665655	34	1	41 days	0.70			Williams		1998 SU ₁₄
1998 SV ₁₄	14.0	0.15	19990122	166.74104	147.09168	93.74124	4.89930	0.0782393	2.2215734	56	3	1980–1998	0.61	M-v	3	Williams	33017	1998 SV ₁₄
1998 SY ₁₄	20.6	0.15	19990122	12.22536	21.72079	40.25059	3.51799	0.6647336	2.8472347	59	1	48 days	0.50	M-v	5	Williams	33106	1998 SY ₁₄
1998 SB ₁₅	20.8	0.15	19990122	29.74496	67.52549	6.87383	15.63056	0.1612685	1.2261778	80	1	51 days	0.50	M-v	5	Marsden	33106	1998 SB ₁₅
1998 SX ₁₆	14.8	0.15	19990122	140.96683	75.61680	176.53011	5.08621	0.0523399	2.3645233	47	2	1997–1998	0.72	M-v	4	Williams	33017	1998 SX ₁₆
1998 SG ₁₇	14.9	0.15	19980924	44.51460	215.85090	90.34213	2.28334	0.2007930	3.1704586	29	1	42 days	1.08			Williams		1998 SG ₁₇
1998 SO ₂₁	16.3	0.15	19980924	56.89963	313.32344	346.02284	2.52267	0.2064796	2.2118014	42	1	38 days	0.94			Williams		1998 SO ₂₁
1998 SX ₂₁	14.7	0.15	19990122	56.70868	186.40999	148.90063	2.63028	0.1847112	2.4194910	42	2	1993–1998	0.57	M-v	4	Williams	33018	1998 SX ₂₁
1998 SZ ₂₁	15.0	0.15	19980924	312.28658	50.12487	18.52153	2.34464	0.0817694	2.3303067	28	1	36 days	1.06			Williams		1998 SZ ₂₁
1998 SA ₂₂	14.4	0.15	19980924	255.32623	116.58314	9.32203	7.10597	0.0669254	2.2749549	27	1	32 days	0.75			Williams		1998 SA ₂₂
1998 SE ₂₂	15.0	0.15	19990122	67.49316	111.35985	206.70065	2.85399	0.1931146	2.5721274	44	3	1994–1998	0.71	M-v	4	Williams	33018	1998 SE ₂₂
1998 SO ₂₂	14.8	0.15	19980924	34.16324	326.92103	351.27120	2.99732	0.1994116	2.5987363	40	1	45 days	0.88			Williams		1998 SO ₂₂
1998 SP ₂₂	12.8	0.15	19980924	130.65010	231.25806	2.28775	6.77617	0.0665853	2.7341186	45	1	58 days	0.80			Williams		1998 SP ₂₂
1998 SQ ₂₂	14.8	0.15	19990122	18.98728	17.84171	1.05065	8.03323	0.2420950	2.7957952	43	1	88 days	0.54	M-v	3	Williams	33107	1998 SQ ₂₂
1998 SR ₂₂	13.6	0.15	19980924	356.26378	14.53823	0.04085	6.78975	0.1250042	3.1578979	38	1	45 days	1.16			Williams		1998 SR ₂₂
1998 SS ₂₂	15.3	0.15	19980924	351.55951	20.53134	358.88710	6.81179	0.1290315	2.4237962	52	1	45 days	1.12			Williams		1998 SS ₂₂
1998 ST ₂₂	13.8	0.15	19981014	25.54594	318.00167	45.59711	14.39409	0.1919113	2.6145805	38	1	48 days	0.59			Williams		1998 ST ₂₂
1998 SV ₂₂	14.8	0.15	19990122	6.83305	206.09190	205.32495	5.90903	0.1050674	2.3872738	58	2	1994–1998	0.64	M-v	4	Williams	33107	1998 SV ₂₂
1998 SW ₂₂	14.3	0.15	19990122	36.74066	226.77793	160.95621	12.03295	0.1243963	2.7052889	39	2	1993–1998	0.48	M-v	4	Williams	33019	1998 SW ₂₂
1998 SY ₂₂	14.9	0.15	19981014	37.98827	133.71411	207.41489	10.23952	0.1131035	2.9733198	18	1	57 days	0.44			Williams		1998 SY ₂₂
1998 ST ₂₄	15.5	0.15	19980924	326.81655	302.64766	109.13082	4.67884	0.1291545	2.2164392	28	1	42 days	0.49			Williams		1998 ST ₂₄
1998 SU ₂₄	14.3	0.15	19990122	325.70434	17.77195	72.41656	5.08584	0.1017794	2.2796981	41	2	1981–1998	0.65	M-v	5	Williams	33020	1998 SU ₂₄
1998 SV ₂₄	15.2	0.15	19980924	328.06740	322.76029	91.05968	4.37012	0.1465322	2.5685451	31	1	42 days	0.81			Williams		1998 SV ₂₄
1998 SZ ₂₄	14.7	0.15	19981014	53.68390	163.19179	153.14422	7.19681	0.1563061	2.5349257	18	1	59 days	0.52			Williams		1998 SZ ₂₄
1998 SA ₂₅	14.3	0.15	19990122	324.51030	316.52848	138.39021	5.93790	0.0495290	2.2954352	31	2	1993–1998	0.58	M-v	4	Williams	33020	1998 SA ₂₅
1998 SD ₂₅	15.3	0.15	19980924	46.97773	274.30901	32.45955	6.23141	0.1749325	2.2364595	31	1	40 days	0.56			Williams		1998 SD ₂₅
1998 SH ₂₅	12.9	0.15	19990122	122.10725	208.79852	71.88897	6.33409	0.0208623	2.7424399	48	2	1997–1998	0.54	M-v	4	Williams	33021	1998 SH ₂₅
1998 SJ ₂₅	15.1	0.15	19980924	274.15026	4.73948	109.40477	5.67092	0.0964936	2.2509144	21	1	37 days	0.62			Williams		1998 SJ ₂₅

1998 SL ₂₅	14.5	0.15	19980924	2.59365	310.12551	64.10310	8.47164	0.1962408	3.0324552	15	1	37 days	0.57		Williams		1998 SL ₂₅
1998 SN ₂₅	13.6	0.15	19990122	311.46879	319.26521	140.01315	5.51564	0.0784882	2.7828003	32	2	1993–1998	0.54	M-v 5	Williams	33021	1998 SN ₂₅
1998 SO ₂₅	15.6	0.15	19981014	359.12647	335.62377	46.88718	6.32624	0.2386553	2.3927757	36	1	50 days	0.57		Williams		1998 SO ₂₅
1998 SP ₂₅	16.5	0.15	19981014	28.11673	278.67412	56.95923	4.56412	0.2384691	2.1778533	38	1	50 days	0.67		Williams		1998 SP ₂₅
1998 SR ₂₅	15.4	0.15	19981014	15.95705	283.11176	72.42841	5.07329	0.2338611	2.6007403	40	1	50 days	0.72		Williams		1998 SR ₂₅
1998 SS ₂₅	15.2	0.15	19981014	338.20164	347.62733	63.96943	6.21979	0.1619656	2.3268833	41	1	50 days	0.59		Williams		1998 SS ₂₅
1998 SU ₂₅	15.3	0.15	19981014	27.85174	280.45734	56.61902	5.38216	0.2131563	2.4481417	40	1	50 days	0.46		Williams		1998 SU ₂₅
1998 SV ₂₅	16.2	0.15	19980924	29.66702	261.79807	68.50661	4.54650	0.1760616	2.2653427	28	1	37 days	0.76		Williams		1998 SV ₂₅
1998 SW ₂₅	14.5	0.15	19990122	49.10201	175.38985	155.02852	5.53368	0.2206930	3.0331941	35	2	1997–1998	0.69	M-v 4	Williams	33021	1998 SW ₂₅
1998 SA ₂₆	15.6	0.15	19980924	288.25978	43.23932	56.48131	5.51655	0.1420252	2.3052753	32	1	37 days	0.67		Williams		1998 SA ₂₆
1998 SB ₂₆	13.9	0.15	19981014	29.05371	305.24044	28.65831	13.20841	0.2024407	2.6960414	21	1	50 days	0.45		Williams		1998 SB ₂₆
1998 SD ₂₆	16.2	0.15	19980924	12.44603	247.79106	107.02901	4.91980	0.1667284	2.2327514	25	1	37 days	0.83		Williams		1998 SD ₂₆
1998 SJ ₂₆	13.2	0.15	19981014	314.76991	38.69337	46.34177	14.95341	0.1900494	3.1356920	28	1	50 days	0.77		Williams		1998 SJ ₂₆
1998 SS ₂₆	13.7	0.15	19990122	358.08669	64.28235	17.10884	13.91855	0.1494375	2.5299191	24	1	61 days	0.33	M-v 4	Williams		1998 SS ₂₆
1998 SU ₂₆	13.8	0.15	19990122	10.30315	141.16717	308.31673	16.62855	0.1107467	3.1406595	13	1	61 days	0.33	M-v 6	Williams		1998 SU ₂₆
1998 SV ₂₆	13.6	0.15	19990122	300.84399	294.27062	265.14443	12.23137	0.1473143	2.6327611	16	1	61 days	0.26	M-v 6	Williams		1998 SV ₂₆
1998 SB ₂₇	15.8	0.15	19980924	13.95902	307.61795	40.13265	1.34878	0.1946991	2.2115646	31	1	38 days	0.56		Williams		1998 SB ₂₇
1998 SD ₂₇	16.3	0.15	19980924	358.11238	158.32314	215.56817	1.84120	0.2463289	2.4330152	21	1	36 days	0.54		Williams		1998 SD ₂₇
1998 SG ₂₇	12.3	0.15	19990122	339.78133	115.91481	270.04026	12.08234	0.2533632	3.9434854	45	3	1976–1998	0.51	M-v 2	Williams	33021	1998 SG ₂₇
1998 SH ₂₇	16.2	0.15	19990122	26.85604	299.08993	97.12485	6.01520	0.2091291	2.4062147	23	1	60 days	1.03	M-v 5	Williams		1998 SH ₂₇
1998 SO ₂₇	14.7	0.15	19981014	7.36030	321.09403	50.43307	23.39845	0.2359439	2.2754760	12	1	50 days	0.68		Williams		1998 SO ₂₇
1998 SP ₂₇	15.2	0.15	19981014	275.98139	57.46500	64.12897	23.36052	0.1026493	1.9341332	10	1	50 days	0.44		Williams		1998 SP ₂₇
1998 SA ₂₈	13.7	0.15	19990122	93.49960	278.08702	27.48202	4.35106	0.0651147	2.7522840	58	2	1996–1998	0.64	M-v 4	Williams	33021	1998 SA ₂₈
1998 SB ₂₈	13.7	0.15	19981014	59.07547	286.49869	24.57755	10.46223	0.1398925	3.0467610	57	1	57 days	0.75		D Williams		1998 SB ₂₈
1998 SC ₂₈	14.4	0.15	19990122	64.14866	163.81934	159.62654	0.77202	0.1668376	3.0977192	26	2	1992–1998	0.60	M-v 5	Marsden	33022	1998 SC ₂₈
1998 SF ₂₈	17.5	0.15	19981014	5.63505	350.04659	14.67178	5.52184	0.2517994	2.3555376	29	1	56 days	0.70		Williams		1998 SF ₂₈
1998 SN ₃₃	16.1	0.15	19990122	36.12420	337.67078	13.73478	14.85322	0.2692411	2.3672439	26	2	1997–1998	0.58	M-v 4	Williams	33022	1998 SN ₃₃
1998 SP ₃₃	15.2	0.15	19990122	342.07258	99.76554	347.38765	4.87200	0.3020442	2.2612502	26	1	100 days	0.52	M-v 4	Williams		1998 SP ₃₃
1998 SS ₃₄	16.3	0.15	19980924	345.61620	18.31494	14.32010	13.33595	0.2745400	2.5746943	39	1	45 days	0.85		Williams		1998 SS ₃₄
1998 SB ₃₅	16.2	0.15	19981014	346.11585	197.85103	198.85373	21.87258	0.0619558	1.9595429	32	1	51 days	1.16		Williams		1998 SB ₃₅
1998 SE ₃₅	18.9	0.15	19990122	20.52167	43.43809	334.52299	14.82956	0.5948405	3.0032910	70	1	55 days	0.55	M-v 5	Williams		1998 SE ₃₅
1998 SF ₃₅	17.5	0.15	19990122	340.53115	253.71128	218.70120	35.19238	0.2732806	1.6852378	50	1	63 days	0.61	M-v 4	Williams	33109	1998 SF ₃₅
1998 SK ₃₅	14.6	0.15	19990122	55.90006	312.67016	4.57329	6.52591	0.1160269	2.6741354	35	1	81 days	0.59	M-v 4	Williams		1998 SK ₃₅
1998 SL ₃₅	15.7	0.15	19990122	354.52646	244.82546	164.64053	4.99529	0.1690198	2.2676707	37	1	66 days	0.55	M-v 5	Williams		1998 SL ₃₅
1998 SO ₃₅	14.7	0.15	19981014	117.72438	70.17565	205.91443	2.31891	0.0331410	2.7081948	14	1	58 days	0.42		Williams		1998 SO ₃₅
1998 SQ ₃₅	13.7	0.15	19990122	222.60878	160.33165	39.52433	15.97709	0.0901381	3.0680743	21	1	63 days	0.67	M-v 5	Williams		1998 SQ ₃₅
1998 SR ₃₅	16.3	0.15	19981014	299.22971	69.93298	40.17084	3.47258	0.1194732	2.2333043	12	1	58 days	0.50		Williams		1998 SR ₃₅
1998 SU ₃₅	15.3	0.15	19990122	27.22745	343.64890	21.96658	11.95577	0.1982197	2.5799608	34	1	65 days	0.63	M-v 4	Williams		1998 SU ₃₅
1998 SZ ₃₅	15.4	0.15	19981014	12.34170	316.42363	41.98409	8.57538	0.2224604	2.5778589	43	1	49 days	0.47		Marsden		1998 SZ ₃₅
1998 SB ₃₆	14.2	0.15	19981014	83.58252	112.52010	170.53245	13.86788	0.1037949	3.1343622	29	1	48 days	0.75		Marsden		1998 SB ₃₆
1998 SF ₃₆	18.8	0.15	19990122	181.55736	160.11406	71.61864	1.71649	0.2800047	1.3248020	47	1	46 days	0.73	M-v 6	Williams		1998 SF ₃₆
1998 SG ₃₆	16.1	0.15	19990122	194.75736	29.54813	186.70194	24.84830	0.3373937	1.6458160	72	1	60 days	0.66	M-v 5	Williams	33109	1998 SG ₃₆
1998 SK ₃₆	16.3	0.15	19990122	24.38284	308.31394	87.16341	6.17079	0.2931148	2.5716696	17	1	62 days	0.28	M-v 4	Williams		1998 SK ₃₆
1998 SF ₃₇	15.0	0.15	19981014	337.36551	199.21328	216.52166	5.04468	0.1445401	2.4202209	37	1	51 days	0.58		D Williams		1998 SF ₃₇
1998 SN ₃₇	15.9	0.15	19981014	294.20773	123.30011	347.40411	2.39771	0.1609141	2.3402798	32	1	56 days	0.60		Williams		1998 SN ₃₇
1998 SP ₃₇	14.8	0.15	19990122	334.10229	233.13690	218.59744	3.75211	0.1081474	2.3187670	34	2	1989–1998	0.70	M-v 5	Williams	33023	1998 SP ₃₇
1998 SQ ₃₇	14.4	0.15	19990122	55.98940	356.65470	345.71941	2.27456	0.1196424	2.9738200	37	2	1977–1998	0.60	M-v 5	Williams	33023	1998 SQ ₃₇
1998 SR ₃₇	14.2	0.15	19980924	27.97643	133.13003	216.27445	5.35849	0.0844396	2.6256727	39	1	58 days	0.66		Williams		1998 SR ₃₇
1998 SM ₄₁	14.6	0.15	19980924	274.61498	108.78674	359.43502	9.95468	0.1901830	2.4567525	36	1	43 days	0.73		Williams		1998 SM ₄₁
1998 SC ₄₂	16.6	0.15	19980924	338.10511	28.77367	19.85777	6.52150	0.0976358	2.4201615	14	1	33 days	0.75		Williams		1998 SC ₄₂
1998 SL ₄₂	14.5	0.15	19990122	359.64388	61.87136	332.50744	1.16259	0.0806310	2.6008265	48	2	1977–1998	0.55	M-v 6	Williams	33024	1998 SL ₄₂
1998 SP ₄₂	14.8	0.15	19990122	343.57607	71.56779	351.34321	2.09353	0.1211237	2.3156935	53	3	1989–1998	0.71	M-v 4	Williams	33024	1998 SP ₄₂
1998 SQ ₄₂	15.8	0.15	19990122	331.27156	95.30563	350.10375	4.12876	0.1509164	2.4246715	28	2	1994–1998	0.77	M-v 5	Williams	33024	1998 SQ ₄₂

1998 SA ₄₃	13.1	0.15	19990122	17.87301	255.28481	126.23999	1.64918	0.0859467	2.7428107	78	4	1980–1998	0.61	M-v	4	Williams	33110	1998 SA ₄₃
1998 SC ₄₃	14.7	0.15	19990122	61.83700	293.53462	33.36982	4.25773	0.1345933	2.6316179	44	2	1992–1998	0.64	M-v	5	Williams	33024	1998 SC ₄₃
1998 SD ₄₃	14.8	0.15	19980924	192.09434	165.85757	17.65299	7.30678	0.1615655	2.2453559	31	1	35 days	0.91			Williams		1998 SD ₄₃
1998 SE ₄₃	14.2	0.15	19980924	177.26949	187.30585	8.44769	7.02887	0.0408871	2.2863895	45	1	44 days	0.76			Williams		1998 SE ₄₃
1998 SF ₄₃	15.1	0.15	19990122	90.86354	287.76479	6.98398	6.13012	0.1953223	2.2760980	49	2	1991–1998	0.69	M-v	5	Williams	33025	1998 SF ₄₃
1998 SG ₄₃	14.1	0.15	19990122	29.75654	288.79415	84.01780	3.60974	0.0295390	2.3250534	47	2	1997–1998	0.62	M-v	5	Williams	33025	1998 SG ₄₃
1998 SH ₄₃	14.2	0.15	19981014	313.92639	52.81076	20.76230	16.42358	0.1018533	3.1388150	34	1	48 days	0.61			Williams		1998 SH ₄₃
1998 SJ ₄₃	14.7	0.15	19980924	350.66696	55.01673	331.18927	1.83741	0.1632856	2.5646843	37	1	35 days	0.65			Williams		1998 SJ ₄₃
1998 SL ₄₃	15.7	0.15	19980924	339.67982	181.91977	222.05144	1.78791	0.2286027	2.3395113	12	1	33 days	0.22			Williams		1998 SL ₄₃
1998 SM ₄₃	14.3	0.15	19980924	11.62532	349.98913	9.43144	14.59340	0.1173587	2.6489259	25	1	34 days	0.98			Williams		1998 SM ₄₃
1998 SN ₄₃	14.6	0.15	19980924	327.89828	359.59266	52.10843	5.16945	0.0876091	2.7246575	41	1	35 days	0.71			Williams		1998 SN ₄₃
1998 SQ ₄₃	15.5	0.15	19980924	9.42287	164.29663	192.45172	5.22020	0.1560645	2.3896502	29	1	33 days	0.74			Williams		1998 SQ ₄₃
1998 SR ₄₃	13.6	0.15	19990122	328.24692	68.99090	4.19106	1.76607	0.0551384	2.9427022	63	3	1976–1998	0.69	M-v	4	Williams	33025	1998 SR ₄₃
1998 SS ₄₃	14.5	0.15	19990122	35.74726	175.64398	183.77260	9.74727	0.1519306	2.7349095	60	3	1989–1998	0.76	M-v	3	Williams	33110	1998 SS ₄₃
1998 ST ₄₃	14.9	0.15	19980924	358.22585	233.81987	139.81875	2.87489	0.2286144	2.3944865	40	1	41 days	0.65			Williams		1998 ST ₄₃
1998 SW ₄₃	12.6	0.15	19990122	2.80175	137.88219	240.79372	5.25040	0.1773681	3.9595140	50	2	1990–1998	0.64	M-v	4	Williams	33025	1998 SW ₄₃
1998 SP ₄₄	15.8	0.15	19980924	15.61295	320.93714	22.43671	4.12080	0.1842787	2.2596693	42	1	45 days	0.89			Williams		1998 SP ₄₄
1998 SY ₄₅	14.3	0.15	19980924	329.99008	209.61469	208.61456	10.33117	0.0718040	3.2099588	21	1	34 days	0.50			Williams		1998 SY ₄₅
1998 SG ₄₆	14.7	0.15	19981014	348.82094	32.14061	12.62512	3.23887	0.2237079	2.6203252	45	1	54 days	0.56			Williams		1998 SG ₄₆
1998 SM ₄₆	12.8	0.15	19990122	64.94630	25.25775	299.76092	0.26459	0.1751895	3.1054332	49	4	1976–1998	0.69	M-v	1	Williams	33025	1998 SM ₄₆
1998 SU ₄₆	16.1	0.15	19980924	296.07862	89.19266	24.59363	2.94662	0.2441001	2.3189839	34	1	34 days	0.70			Williams		1998 SU ₄₆
1998 SE ₄₇	13.4	0.15	19990122	329.40686	53.71683	33.60173	5.76505	0.0675169	3.0016865	27	2	1993–1998	0.77	M-v	5	Williams	33026	1998 SE ₄₇
1998 SP ₄₈	15.0	0.15	19990122	222.02253	325.72411	225.36519	4.08407	0.0365045	2.5417538	29	2	1992–1998	0.59	M-v	5	Williams	33026	1998 SP ₄₈
1998 SR ₄₈	14.7	0.15	19980924	25.06215	334.86877	4.40310	4.16774	0.2345683	2.5773200	32	1	58 days	0.71			Williams		1998 SR ₄₈
1998 SF ₄₉	12.7	0.15	19980924	266.26928	108.86664	19.65389	2.39106	0.0710632	3.3390332	59	1	58 days	1.11			Williams		1998 SF ₄₉
1998 SG ₄₉	12.7	0.15	19990122	333.88878	234.26839	213.52336	8.14421	0.1224129	2.7903816	42	3	1989–1998	0.65	M-v	4	Williams	33026	1998 SG ₄₉
1998 SH ₄₉	14.3	0.15	19990122	80.17031	102.96835	201.79954	12.74772	0.1886609	2.5577182	50	2	1990–1998	0.49	M-v	4	Williams	33026	1998 SH ₄₉
1998 SO ₄₉	13.6	0.15	19990122	105.32815	114.82069	180.32300	1.61435	0.0409653	2.8337876	65	3	1988–1998	0.66	M-v	4	Williams	33026	1998 SO ₄₉
1998 SP ₄₉	16.8	0.15	19990122	65.81294	122.84619	189.04586	4.96392	0.3375916	2.3165292	42	1	68 days	0.66	M-v	5	Williams		1998 SP ₄₉
1998 SR ₄₉	17.3	0.15	19990122	16.26453	54.43130	21.61251	29.20751	0.5345497	2.4778938	49	1	47 days	0.57	M-v	6	Williams	33111	1998 SR ₄₉
1998 SS ₄₉	15.9	0.15	19990122	8.20007	102.25461	41.72763	10.75983	0.6393007	1.9239186	90	1	54 days	0.44	M-v	5	Williams	33111	1998 SS ₄₉
1998 SK ₅₀	15.4	0.15	19981014	345.55895	355.74575	47.25289	4.30978	0.2490094	2.5412223	32	1	53 days	0.62			Williams		1998 SK ₅₀
1998 SL ₅₀	16.3	0.15	19990122	354.90577	53.11468	16.35037	6.29992	0.1635225	2.4294565	29	2	1960–1998	0.53	M-v	5	Williams	33027	1998 SL ₅₀
1998 SR ₅₀	16.7	0.15	19980924	356.80010	20.47473	2.44604	2.68575	0.1907107	2.4206940	15	1	33 days	0.59			Williams		1998 SR ₅₀
1998 ST ₅₀	13.6	0.15	19980924	218.09141	168.47891	9.73397	3.79112	0.1687452	3.1413111	26	1	33 days	0.57			Williams		1998 ST ₅₀
1998 SV ₅₀	17.8	0.15	19980924	19.06792	356.99430	353.88121	1.56537	0.1923269	2.4918194	9	1	33 days	0.36			Williams		1998 SV ₅₀
1998 SK ₅₁	15.9	0.15	19981014	21.39485	339.84875	13.82189	12.29830	0.2000734	2.6255569	32	1	46 days	0.92			Williams		1998 SK ₅₁
1998 SQ ₅₂	15.0	0.15	19980924	146.35101	215.01783	356.68939	5.53310	0.0551382	2.3906373	27	1	30 days	0.77			Williams		1998 SQ ₅₂
1998 ST ₅₂	15.0	0.15	19981014	264.86822	264.21252	237.17173	3.58666	0.1802790	2.5323954	24	1	42 days	0.83			Williams		1998 ST ₅₂
1998 SU ₅₂	11.4	0.15	19990122	332.65743	148.69241	285.12706	2.28111	0.1138005	5.1404527	52	1	62 days	0.84	M-v	5	Williams		1998 SU ₅₂
1998 SZ ₅₃	14.6	0.15	19980924	356.06187	44.21651	321.60003	3.76699	0.1230380	2.3320688	35	1	43 days	0.50			Williams		1998 SZ ₅₃
1998 SB ₅₄	15.5	0.15	19990122	10.21241	165.52338	227.53609	2.80235	0.1396496	2.2906956	72	2	1997–1998	0.64	M-v	4	Williams	33027	1998 SB ₅₄
1998 SL ₅₄	14.7	0.15	19990122	60.40904	90.77268	228.03061	1.77737	0.1783987	2.4254683	42	2	1997–1998	0.78	M-v	4	Williams	33028	1998 SL ₅₄
1998 SN ₅₄	14.1	0.15	19990122	194.76118	216.27971	341.00776	6.74384	0.0510204	2.3299150	47	2	1991–1998	0.67	M-v	5	Williams	33028	1998 SN ₅₄
1998 SP ₅₄	15.0	0.15	19990122	324.59886	261.64383	188.81147	4.21419	0.2238462	2.5442256	34	2	1996–1998	0.79	M-v	4	Williams	33028	1998 SP ₅₄
1998 SQ ₅₄	15.3	0.15	19980924	46.52326	68.28098	229.14803	2.39255	0.1781589	2.4567842	27	1	43 days	0.57			Williams		1998 SQ ₅₄
1998 SS ₅₄	13.2	0.15	19980924	228.58171	133.46201	1.63755	15.93949	0.0270785	3.0407483	34	1	43 days	0.61			Williams		1998 SS ₅₄
1998 ST ₅₄	14.7	0.15	19990122	66.11994	305.61127	11.28717	6.48806	0.1399414	2.3600698	40	4	1980–1998	0.80	M-v	2	Williams	33028	1998 ST ₅₄
1998 SU ₅₄	16.9	0.15	19980924	25.59687	321.88911	2.86569	4.79325	0.1784271	2.2373740	27	1	30 days	0.65			Williams		1998 SU ₅₄
1998 SY ₅₄	15.0	0.15	19980924	345.02141	18.70575	6.82974	9.65250	0.2228523	2.5994529	31	1	45 days	0.59			Williams		1998 SY ₅₄
1998 SB ₅₅	15.8	0.15	19980924	2.28410	167.57806	188.89913	1.93452	0.2113122	2.3744129	36	1	57 days	0.61			Williams		1998 SB ₅₅
1998 SC ₅₅	15.0	0.15	19990122	347.40517	252.73458	172.81780	9.06614	0.2164392	2.3786111	26	2	1987–1998	0.52	M-v	4	Williams	33029	1998 SC ₅₅
1998 SO ₅₆	15.7	0.15	19990122	58.79440	311.34226	10.68385	2.69457	0.2111256	2.3817959	51	2	1997–1998	0.57	M-v	4	Williams	33030	1998 SO ₅₆

1998 SD ₅₈	12.8	0.15	19990122	295.31454	277.51853	178.79991	9.68707	0.0451701	3.0211487	49	2	1993–1998	0.71	M-v	4	Williams	33031	1998 SD ₅₈
1998 SR ₅₈	14.9	0.15	19990122	309.63417	273.94555	182.18683	6.44947	0.0527964	2.3058516	32	2	1997–1998	0.64	M-v	4	Williams	33032	1998 SR ₅₈
1998 ST ₅₈	15.1	0.15	19990122	83.01712	128.99835	172.61676	3.53459	0.1829816	2.1678999	38	1	88 days	0.59	M-v	5	Williams	33113	1998 ST ₅₈
1998 SA ₅₉	14.4	0.15	19980924	353.66628	348.38253	27.41203	5.60189	0.1472185	2.7642320	43	1	53 days	0.62			Williams		1998 SA ₅₉
1998 SB ₅₉	14.8	0.15	19990122	23.80174	198.62012	168.10800	4.21292	0.1428229	3.0073106	30	2	1977–1998	0.64	M-v	5	Williams	33032	1998 SB ₅₉
1998 SD ₅₉	14.4	0.15	19980924	0.27282	204.17711	164.43512	2.26575	0.1004780	2.9327345	29	1	42 days	0.80			Williams		1998 SD ₅₉
1998 SE ₅₉	13.3	0.15	19980924	129.46527	133.18620	99.63682	2.83288	0.0936564	3.2418688	31	1	45 days	0.99			Williams		1998 SE ₅₉
1998 SF ₅₉	13.6	0.15	19990122	132.82582	78.39210	177.32395	10.64415	0.0414925	2.9780852	35	2	1993–1998	0.78	M-v	5	Williams	33032	1998 SF ₅₉
1998 SG ₅₉	15.2	0.15	19980924	332.28701	225.57622	180.36128	10.55692	0.1420882	2.8030574	29	1	42 days	0.79			Williams		1998 SG ₅₉
1998 SN ₅₉	14.7	0.15	19980924	125.05469	199.27241	41.55996	5.17373	0.0287046	2.3475638	34	1	45 days	0.81			Williams		1998 SN ₅₉
1998 SO ₅₉	14.1	0.15	19980924	234.81748	116.77193	24.70994	9.78718	0.0797250	2.4399200	40	1	45 days	0.66			Williams		1998 SO ₅₉
1998 SP ₅₉	14.4	0.15	19990122	287.50749	0.61523	116.00105	3.01330	0.0538552	2.6038847	30	2	1971–1998	0.84	M-v	5	Williams	33033	1998 SP ₅₉
1998 SQ ₅₉	12.9	0.15	19990122	101.28262	178.07715	96.95080	2.43196	0.1539860	3.1011157	43	3	1976–1998	0.75	M-v	4	Williams	33033	1998 SQ ₅₉
1998 SS ₅₉	14.7	0.15	19980924	11.31239	299.87697	55.51438	7.42016	0.1438028	3.1089691	19	1	28 days	0.50			Williams		1998 SS ₅₉
1998 SV ₅₉	15.4	0.15	19990122	2.48673	302.97759	102.74714	3.36090	0.2081650	2.6522723	39	2	1996–1998	0.74	M-v	4	Williams	33033	1998 SV ₅₉
1998 SX ₅₉	14.5	0.15	19980924	20.21048	275.58051	57.48061	5.30958	0.2724280	3.1133667	25	1	42 days	0.66			Williams		1998 SX ₅₉
1998 SK ₆₀	15.7	0.15	19980924	1.07213	349.68138	12.33137	5.75467	0.3170944	2.5568927	33	1	58 days	0.47			Williams		1998 SK ₆₀
1998 SN ₆₀	14.3	0.15	19980924	6.57075	235.32503	122.44278	2.85943	0.0992414	3.0705763	26	1	42 days	0.72			Williams		1998 SN ₆₀
1998 SR ₆₀	13.0	0.15	19990122	119.12448	145.20892	109.95463	2.69573	0.1261275	3.1805898	53	4	1990–1998	0.71	M-v	1	Williams	33034	1998 SR ₆₀
1998 SX ₆₀	14.2	0.15	19990122	5.21656	11.38749	14.58982	10.73585	0.1178725	2.9715773	38	2	1993–1998	0.63	M-v	4	Williams	33034	1998 SX ₆₀
1998 SD ₆₁	15.8	0.15	19980924	18.47363	123.21714	218.20268	11.64412	0.1855469	2.6544166	21	1	42 days	0.75			Williams		1998 SD ₆₁
1998 SM ₆₁	15.5	0.15	19980924	46.76482	330.56065	329.84792	4.42396	0.2277410	2.3538145	20	1	41 days	0.61			Williams		1998 SM ₆₁
1998 SO ₆₁	13.6	0.15	19990122	104.38988	13.27660	274.83353	3.25791	0.0363941	2.7865243	42	2	1994–1998	0.72	M-v	5	Williams	33035	1998 SO ₆₁
1998 SS ₆₁	13.9	0.15	19990122	346.06920	210.78746	209.08873	12.46615	0.1157621	2.6074244	57	2	1994–1998	0.66	M-v	4	Williams	33035	1998 SS ₆₁
1998 ST ₆₁	13.7	0.15	19990122	8.33898	173.60039	211.98913	12.83265	0.1105708	3.0906112	39	2	1960–1998	0.86	M-v	5	Williams	33035	1998 ST ₆₁
1998 SY ₆₂	16.4	0.15	19980924	328.66992	215.56009	194.54490	6.35698	0.1221210	2.4171519	12	1	24 days	0.36			Williams		1998 SY ₆₂
1998 SZ ₆₂	15.6	0.15	19990122	29.32759	5.30469	4.53647	3.16030	0.2198364	2.5330519	38	2	1990–1998	0.63	M-v	4	Williams	33036	1998 SZ ₆₂
1998 SD ₆₃	14.4	0.15	19980924	329.52215	213.58104	225.71370	6.56699	0.0928527	2.3370615	24	1	32 days	0.37			Williams		1998 SD ₆₃
1998 SH ₆₃	14.9	0.15	19980924	309.10780	71.19546	355.14537	8.69736	0.1374999	2.7153484	21	1	23 days	0.78			Williams		1998 SH ₆₃
1998 SJ ₆₃	14.3	0.15	19981014	354.59869	97.01231	297.32880	3.51919	0.3222006	2.4688741	34	1	45 days	0.53			Williams		1998 SJ ₆₃
1998 SK ₆₃	12.8	0.15	19980924	269.49994	35.33688	79.46477	3.88527	0.1062156	3.0429590	52	1	53 days	0.67			Williams		1998 SK ₆₃
1998 SR ₆₃	14.2	0.15	19990122	47.68913	224.57184	105.79120	1.97513	0.2537405	3.0398103	45	2	1976–1998	0.61	M-v	4	Williams	33036	1998 SR ₆₃
1998 ST ₆₃	13.9	0.15	19980924	323.86920	200.94635	211.98878	3.17152	0.2068742	2.6071655	42	1	57 days	0.51			Williams		1998 ST ₆₃
1998 SU ₆₃	16.6	0.15	19981014	349.47336	95.00881	282.50552	12.15551	0.2196808	2.5414666	21	1	49 days	0.29			Marsden		1998 SU ₆₃
1998 SY ₆₃	13.4	0.15	19981014	186.47155	145.40216	54.13534	6.96815	0.0929801	2.3155846	33	1	54 days	0.74			Williams		1998 SY ₆₃
1998 SA ₆₄	14.8	0.15	19980924	97.77179	101.63503	179.02103	8.78761	0.0216825	2.4673914	21	1	39 days	0.70			Williams		1998 SA ₆₄
1998 SJ ₆₄	13.7	0.15	19981014	226.28638	105.57644	59.29526	4.63510	0.0711464	2.2951146	29	1	54 days	0.80			Williams		1998 SJ ₆₄
1998 SL ₆₄	14.5	0.15	19981014	179.08262	97.46664	108.48634	4.51964	0.0669389	2.2874773	26	1	54 days	1.02			Williams		1998 SL ₆₄
1998 ST ₆₄	15.8	0.15	19981014	353.14911	302.53907	92.55526	3.53681	0.1711752	2.3747900	27	1	57 days	0.65			Williams		1998 ST ₆₄
1998 SV ₆₄	14.7	0.15	19990122	275.83963	73.46726	76.77605	5.04098	0.1169267	2.2470266	27	2	1978–1998	0.87	M-v	5	Williams	33036	1998 SV ₆₄
1998 SW ₆₄	14.6	0.15	19980924	34.27349	168.06390	167.83976	8.99511	0.1567485	3.1139990	21	1	39 days	0.76			Williams		1998 SW ₆₄
1998 SY ₆₄	15.6	0.15	19980924	345.76932	252.34990	147.15349	3.21818	0.1907256	2.4444672	15	1	39 days	0.78			Williams		1998 SY ₆₄
1998 SB ₆₅	13.6	0.15	19981014	169.66784	150.84132	62.70187	8.59464	0.1444838	2.5655524	26	1	54 days	0.89			Williams		1998 SB ₆₅
1998 SK ₆₅	13.9	0.15	19981014	66.99909	152.33806	146.63584	5.20380	0.1818899	2.7331922	34	1	54 days	0.62			Williams		1998 SK ₆₅
1998 SL ₆₅	14.5	0.15	19981014	5.62809	253.76352	126.30557	4.09408	0.0359071	2.4239289	24	1	59 days	0.50			Williams		1998 SL ₆₅
1998 SM ₆₅	16.0	0.15	19980924	352.54865	282.14440	104.99464	4.33376	0.1636652	2.2307318	14	1	39 days	0.81			Williams		1998 SM ₆₅
1998 SO ₆₅	15.7	0.15	19981014	30.45388	254.39774	88.71470	4.70478	0.1641985	2.3166200	29	1	59 days	0.76			Williams		1998 SO ₆₅
1998 SP ₆₅	16.2	0.15	19980924	35.05793	236.24567	88.86260	4.53548	0.2062439	2.2619842	19	1	41 days	0.61			Williams		1998 SP ₆₅
1998 SQ ₆₅	13.7	0.15	19981014	189.82450	120.46082	79.14143	3.50232	0.1385799	2.4297790	27	1	52 days	0.87			Williams		1998 SQ ₆₅
1998 SR ₆₅	14.8	0.15	19980924	15.58151	256.62078	98.99091	2.79502	0.1910850	2.4764071	15	1	39 days	0.50			Williams		1998 SR ₆₅
1998 SS ₆₅	15.1	0.15	19981014	10.01985	238.30137	130.66843	3.74724	0.2467722	2.5927580	30	1	52 days	0.45			Williams		1998 SS ₆₅
1998 SU ₆₅	14.1	0.15	19981014	187.28869	119.72153	80.92744	4.66306	0.1485067	2.2271223	26	1	52 days	0.75			Williams		1998 SU ₆₅
1998 SY ₆₅	13.9	0.15	19981014	49.69923	225.70825	102.77347	4.69156	0.0920730	2.7852759	28	1	54 days	1.00			Williams		1998 SY ₆₅

1998 SA ₆₆	15.9	0.15	19980924	47.33643	173.26543	134.08068	4.19102	0.2351210	2.3179720	24	1	41 days	0.73		Williams	1998 SA ₆₆
1998 SB ₆₆	14.6	0.15	19981014	30.99207	258.55326	78.07320	4.99794	0.2347144	2.5787188	34	1	54 days	0.56		Williams	1998 SB ₆₆
1998 SC ₆₆	14.8	0.15	19981014	35.38316	200.92654	132.64654	3.18680	0.2071145	2.3777221	28	1	52 days	0.57		Williams	1998 SC ₆₆
1998 SE ₆₆	14.6	0.15	19981014	69.91575	258.72861	41.36674	11.14129	0.1409558	2.3975216	30	1	57 days	0.53		Williams	1998 SE ₆₆
1998 SJ ₆₆	13.2	0.15	19980924	0.24763	259.07643	124.28641	6.07760	0.0631775	3.1436288	13	1	39 days	0.55		Williams	1998 SJ ₆₆
1998 ST ₆₆	13.5	0.15	19980924	78.11780	102.21016	181.19030	7.77545	0.1995227	2.7831333	21	1	39 days	0.93		Williams	1998 ST ₆₆
1998 SV ₆₆	13.9	0.15	19980924	89.29969	196.23454	90.14125	5.20999	0.0690327	2.7641521	15	1	39 days	0.80		Williams	1998 SV ₆₆
1998 SY ₆₆	14.9	0.15	19980924	39.92374	200.97473	123.86934	4.94059	0.1841133	2.5900282	15	1	39 days	0.80		Williams	1998 SY ₆₆
1998 SZ ₆₆	14.8	0.15	19981014	42.27668	266.81691	62.13416	6.59855	0.1656845	2.3555832	23	1	52 days	0.70		Williams	1998 SZ ₆₆
1998 SB ₆₇	14.4	0.15	19981014	17.41925	284.34583	79.03001	4.32754	0.1536788	2.5478953	24	1	52 days	0.67		Williams	1998 SB ₆₇
1998 SD ₆₇	14.7	0.15	19990122	56.17981	298.68692	48.58847	5.93878	0.1925589	2.2282925	48	2	1988–1998	0.69	M-v 5	Williams	33037 1998 SD ₆₇
1998 SE ₆₇	14.5	0.15	19981014	46.13409	207.63137	114.49656	4.92036	0.1881328	2.3911904	27	1	52 days	0.60		Williams	1998 SE ₆₇
1998 SH ₆₇	15.5	0.15	19980924	48.12983	146.46185	169.35206	5.82876	0.1735403	2.3439468	22	1	39 days	0.79		Williams	1998 SH ₆₇
1998 SO ₆₇	15.2	0.15	19980924	51.09602	169.78421	141.22503	5.43364	0.1727359	2.2137679	15	1	39 days	0.68		Williams	1998 SO ₆₇
1998 SS ₆₇	14.9	0.15	19990122	80.35596	238.29758	76.96343	5.38119	0.2040251	2.1922795	33	2	1991–1998	0.77	M-v 4	Williams	33037 1998 SS ₆₇
1998 ST ₆₇	14.9	0.15	19980924	91.16554	184.42931	97.99948	5.34773	0.0715115	2.2848438	15	1	39 days	0.70		Williams	1998 ST ₆₇
1998 SU ₆₇	14.0	0.15	19981014	234.95676	88.55984	78.62490	6.97005	0.1620245	2.6138339	17	1	52 days	0.86		Williams	1998 SU ₆₇
1998 SO ₇₀	15.3	0.15	19981014	304.05114	281.64449	178.86496	7.37924	0.2038800	2.3211463	36	1	54 days	1.56		Williams	1998 SO ₇₀
1998 SZ ₇₀	14.4	0.15	19980924	29.38731	298.92716	26.59171	15.90265	0.2842273	3.1158049	15	1	38 days	1.09		Williams	1998 SZ ₇₀
1998 SA ₇₁	14.1	0.15	19981014	286.55819	288.28633	183.55602	9.56177	0.1313499	2.5599740	41	1	51 days	1.14		Williams	1998 SA ₇₁
1998 SB ₇₁	13.2	0.15	19981014	103.87039	239.69405	34.16897	10.70243	0.0529391	2.9902741	43	1	54 days	1.05		D Williams	1998 SB ₇₁
1998 SD ₇₁	15.7	0.15	19980924	28.25481	269.08013	75.56019	2.04169	0.0502129	2.1316869	19	1	38 days	0.85		Williams	1998 SD ₇₁
1998 SH ₇₁	14.9	0.15	19981014	343.41671	262.38291	144.22107	2.89195	0.1682813	2.3931379	36	1	51 days	1.04		Williams	1998 SH ₇₁
1998 SJ ₇₁	15.7	0.15	19981014	24.52354	317.65183	24.81046	6.56906	0.2478076	2.3662441	40	1	51 days	0.98		Williams	1998 SJ ₇₁
1998 SM ₇₁	14.2	0.15	19981014	10.07063	323.44773	45.50531	6.19933	0.1826106	3.1186396	25	1	51 days	1.04		Williams	1998 SM ₇₁
1998 SN ₇₁	13.8	0.15	19980924	291.61366	6.13045	84.09646	3.27019	0.0186019	2.8895994	25	1	38 days	0.96		Williams	1998 SN ₇₁
1998 SP ₇₁	14.3	0.15	19981014	333.62068	306.91509	106.30155	1.60432	0.0508552	2.6691423	21	1	51 days	0.99		Williams	1998 SP ₇₁
1998 SQ ₇₁	15.6	0.15	19980924	358.77740	341.33764	36.40880	4.18019	0.0423709	2.1662785	14	1	38 days	0.86		Williams	1998 SQ ₇₁
1998 SU ₇₁	13.0	0.15	19990122	300.09593	323.27680	150.85781	2.14184	0.1053793	3.2111493	41	4	1981–1998	0.71	M-v 1	Williams	33037 1998 SU ₇₁
1998 SW ₇₁	13.7	0.15	19980924	0.22321	189.59673	190.52835	14.52376	0.1225444	3.1396004	31	1	38 days	1.34		Williams	1998 SW ₇₁
1998 SX ₇₁	14.7	0.15	19980924	181.18182	156.55588	41.73306	4.27003	0.0761551	2.3584810	23	1	38 days	0.98		Williams	1998 SX ₇₁
1998 SB ₇₂	13.6	0.15	19981014	32.70720	254.99478	84.42948	2.60536	0.1692176	3.1067039	37	1	51 days	1.52		D Williams	1998 SB ₇₂
1998 SD ₇₂	14.2	0.15	19990122	31.00117	297.70861	65.98701	2.52229	0.2635181	2.9803339	37	2	1993–1998	0.73	M-v 4	Williams	33037 1998 SD ₇₂
1998 SH ₇₂	15.1	0.15	19981014	0.91339	340.00944	42.76872	3.11455	0.2044431	2.3986768	34	1	51 days	0.64		Williams	1998 SH ₇₂
1998 SL ₇₂	13.5	0.15	19980924	239.42061	357.43365	156.45449	3.53983	0.1342422	2.6179679	15	1	38 days	0.92		Williams	1998 SL ₇₂
1998 SQ ₇₂	14.6	0.15	19981014	31.99660	147.94780	189.35692	13.31799	0.2062821	2.5591621	27	1	58 days	1.45		Williams	1998 SQ ₇₂
1998 SS ₇₂	14.4	0.15	19981014	87.40368	243.93348	40.47689	7.42776	0.1099802	2.3260888	24	1	51 days	1.30		Williams	1998 SS ₇₂
1998 SW ₇₂	14.1	0.15	19980924	181.44547	152.45540	46.87215	6.42470	0.0634213	2.4375773	14	1	38 days	0.96		Williams	1998 SW ₇₂
1998 SX ₇₂	14.6	0.15	19990122	134.09652	222.54113	41.09282	6.08366	0.1571661	2.2469824	29	1	65 days	0.61	M-v 6	Williams	1998 SX ₇₂
1998 SA ₇₃	14.8	0.15	19990122	26.91048	353.36222	33.81671	6.93540	0.1781555	2.2770990	51	2	1991–1998	0.57	M-v 3	Williams	33037 1998 SA ₇₃
1998 SH ₇₃	15.3	0.15	19981014	351.61018	300.72962	94.28471	2.32051	0.1931700	2.3862440	53	1	54 days	0.85		Williams	1998 SH ₇₃
1998 SJ ₇₃	14.6	0.15	19990122	26.40007	248.35003	132.77114	3.41604	0.1870778	2.4623349	40	2	1997–1998	0.60	M-v 4	Williams	33037 1998 SJ ₇₃
1998 SM ₇₃	14.2	0.15	19990122	312.22490	301.43377	165.11309	5.38818	0.1212201	2.7234658	40	2	1989–1998	0.91	M-v 5	Williams	33038 1998 SM ₇₃
1998 SN ₇₃	15.5	0.15	19981014	325.61961	352.61644	69.90927	2.45092	0.0794375	2.1945879	36	1	51 days	1.54		Williams	1998 SN ₇₃
1998 SP ₇₃	14.4	0.15	19981014	32.86628	303.84104	27.24681	17.71550	0.2339976	3.0802616	39	1	54 days	1.19		Williams	1998 SP ₇₃
1998 ST ₇₃	14.6	0.15	19990122	168.53764	89.21860	143.41387	4.13169	0.1549092	2.3052330	43	4	1977–1998	0.80	M-v 2	Williams	33038 1998 ST ₇₃
1998 SU ₇₃	14.9	0.15	19981014	45.52172	266.18720	52.65396	4.26571	0.1891284	2.3234176	59	1	54 days	0.85		Williams	1998 SU ₇₃
1998 SV ₇₃	14.9	0.15	19990122	66.53452	287.52474	43.04886	7.10413	0.1598774	2.2998989	48	2	1991–1998	0.74	M-v 5	Williams	33038 1998 SV ₇₃
1998 SW ₇₃	14.5	0.15	19990122	77.86970	283.97476	35.29107	8.06596	0.1386059	2.3066211	43	3	1977–1998	0.73	M-v 5	Williams	33038 1998 SW ₇₃
1998 SA ₇₄	14.3	0.15	19981014	53.04329	274.69941	49.74884	6.50934	0.0593913	2.5584398	51	1	54 days	0.83		Williams	1998 SA ₇₄
1998 SB ₇₄	13.6	0.15	19981014	321.67390	305.55692	130.20234	3.56147	0.1577992	3.1024333	14	1	51 days	1.04		Williams	1998 SB ₇₄
1998 SF ₇₄	15.6	0.15	19980924	317.64056	304.25609	133.91972	3.07080	0.2065543	2.3936792	21	1	38 days	0.59		Williams	1998 SF ₇₄
1998 SG ₇₄	15.2	0.15	19990122	340.45665	16.87733	62.36242	4.63152	0.1051237	2.3767170	37	2	1996–1998	0.93	M-v 5	Williams	33038 1998 SG ₇₄

1998 SH ₇₄	15.1	0.15	19981014	322.44981	30.11746	55.07858	5.35563	0.2659017	2.5484441	31	1	54 days	0.66		Williams		1998 SH ₇₄
1998 SJ ₇₄	14.5	0.15	19980924	21.26941	265.99415	86.17840	4.01617	0.1002449	2.6799383	31	1	38 days	0.74		Williams		1998 SJ ₇₄
1998 SK ₇₄	14.0	0.15	19990122	328.29408	331.98129	119.92856	4.56185	0.1506198	2.7842169	25	2	1993–1998	0.69	M-v	5	Williams	33038 1998 SK ₇₄
1998 SL ₇₄	13.6	0.15	19990122	278.18660	95.90570	37.07222	12.29471	0.0509425	2.7383658	37	2	1996–1998	0.72	M-v	4	Williams	33039 1998 SL ₇₄
1998 SM ₇₄	14.5	0.15	19981014	309.11172	328.63409	123.09402	3.32921	0.1695727	2.4015441	42	1	54 days	0.70		Williams		1998 SM ₇₄
1998 SN ₇₄	13.5	0.15	19981014	241.92500	49.06415	96.35661	4.79163	0.0349956	2.7327346	33	1	54 days	0.67		Williams		1998 SN ₇₄
1998 SO ₇₄	15.3	0.15	19981014	1.10568	217.06172	165.05886	5.98863	0.2637571	2.7300491	42	1	54 days	0.76		Williams		1998 SO ₇₄
1998 SR ₇₄	13.9	0.15	19981014	260.45753	81.28250	47.54139	7.61471	0.0473721	2.5908503	41	1	54 days	0.70		Williams		1998 SR ₇₄
1998 SU ₇₄	13.8	0.15	19981014	159.12566	154.92318	64.81867	5.75875	0.1435917	2.4437410	34	1	54 days	0.88		Williams		1998 SU ₇₄
1998 SV ₇₄	13.9	0.15	19980924	325.59080	10.92115	54.63988	6.05182	0.1442602	3.1095159	28	1	38 days	0.99		Williams		1998 SV ₇₄
1998 SW ₇₄	14.2	0.15	19990122	335.25225	34.78772	50.90911	7.35958	0.1061285	2.3583751	44	2	1971–1998	0.60	M-v	5	Williams	33039 1998 SW ₇₄
1998 SA ₇₅	14.9	0.15	19981014	2.99570	290.86460	89.45188	4.92606	0.1146011	2.6962976	41	1	54 days	0.86		Williams		1998 SA ₇₅
1998 SG ₇₅	15.5	0.15	19980924	4.31699	243.04289	128.16468	3.50161	0.1697672	2.5214007	15	1	38 days	0.76		Williams		1998 SG ₇₅
1998 SJ ₇₅	15.2	0.15	19981014	324.78694	49.93487	34.54171	15.42159	0.2853566	2.7408857	26	1	51 days	1.05		Williams		1998 SJ ₇₅
1998 SN ₇₅	15.5	0.15	19981014	21.91746	213.24414	134.27254	3.29502	0.2503796	2.3705403	30	1	54 days	0.62		Williams		1998 SN ₇₅
1998 SV ₇₅	15.6	0.15	19981014	15.51245	316.00112	41.56493	5.50136	0.2260768	2.5434527	43	1	46 days	0.97		Williams		1998 SV ₇₅
1998 SX ₇₅	14.7	0.15	19980924	80.75433	131.01210	149.51403	3.77020	0.1489168	2.5419250	36	1	36 days	1.18		Williams		1998 SX ₇₅
1998 SH ₇₉	14.9	0.15	19980924	19.91404	254.01766	76.61803	4.73695	0.1523861	2.2913468	16	1	16 days	0.33		Williams		1998 SH ₇₉
1998 SB ₈₀	15.8	0.15	19980924	12.98607	20.64484	324.18422	4.72603	0.1051265	2.5450679	12	1	22 days	0.94		Williams		1998 SB ₈₀
1998 SA ₈₁	16.5	0.15	19980924	337.08965	191.44587	204.17199	2.92983	0.1987357	2.4372976	20	1	19 days	0.84		Williams		1998 SA ₈₁
1998 ST ₈₁	13.6	0.15	19980924	101.75460	330.17946	261.95282	0.85290	0.2769036	2.7237035	12	1	4 days	0.76		D Williams		1998 ST ₈₁
1998 SU ₈₁	16.4	0.15	19980924	30.11502	339.93067	340.84825	2.45488	0.1573980	2.1866871	13	1	4 days	0.50		Williams		1998 SU ₈₁
1998 SS ₈₅	16.0	0.15	19981014	48.61537	298.90337	14.09658	8.32119	0.0757189	2.4126114	15	1	50 days	0.56		Williams		1998 SS ₈₅
1998 SK ₉₂	16.1	0.15	19980924	359.44843	142.98571	224.83652	2.54992	0.1699127	2.2927575	22	1	33 days	0.68		Williams		1998 SK ₉₂
1998 SZ ₉₆	15.1	0.15	19981014	114.78671	232.53898	12.72888	15.44195	0.0887917	2.5861581	14	1	53 days	0.62		Williams		1998 SZ ₉₆
1998 SP ₉₇	15.8	0.15	19990122	3.73284	25.33325	15.20232	6.65364	0.1016296	2.3408631	20	2	1993–1998	0.62	M-v	5	Williams	33039 1998 SP ₉₇
1998 SQ ₉₇	13.5	0.15	19990122	12.45417	195.10805	182.10915	17.38476	0.1160778	3.1330662	30	2	1987–1998	0.67	M-v	4	Williams	33039 1998 SQ ₉₇
1998 SZ ₉₉	13.7	0.15	19980924	264.44961	261.62088	216.42013	12.35143	0.1096692	2.5708007	18	1	33 days	0.94		Williams		1998 SZ ₉₉
1998 SK ₁₀₀	14.0	0.15	19981014	46.53876	20.43644	305.83280	4.38298	0.0585499	2.4084802	26	1	45 days	0.57		Williams		1998 SK ₁₀₀
1998 SA ₁₀₁	15.0	0.15	19980924	99.80973	268.58243	341.50777	6.12018	0.2019202	2.2028663	30	1	42 days	0.65		Williams		1998 SA ₁₀₁
1998 SE ₁₀₂	15.3	0.15	19981014	312.81805	52.59126	18.51914	4.68622	0.0993796	2.2580848	23	1	46 days	0.80		Williams		1998 SE ₁₀₂
1998 SO ₁₀₂	13.6	0.15	19980924	175.28932	170.93605	22.82388	8.34070	0.1041648	2.7248823	18	1	33 days	0.76		Williams		1998 SO ₁₀₂
1998 SG ₁₀₅	15.0	0.15	19980924	261.81170	314.38756	152.97556	7.02822	0.0218271	2.2415329	19	1	33 days	0.87		Williams		1998 SG ₁₀₅
1998 SH ₁₀₅	14.8	0.15	19980924	173.22063	55.02950	137.83741	4.80190	0.0708664	2.1687338	19	1	33 days	1.00		Williams		1998 SH ₁₀₅
1998 SD ₁₀₆	14.4	0.15	19980924	320.01127	239.98809	182.41515	12.85963	0.1500556	2.6331670	18	1	33 days	0.67		Williams		1998 SD ₁₀₆
1998 SH ₁₀₆	13.4	0.15	19980924	17.66263	320.69654	22.67031	11.51514	0.1980555	3.1942860	29	1	42 days	0.56		Williams		1998 SH ₁₀₆
1998 SJ ₁₀₆	16.0	0.15	19980924	0.99848	185.77370	181.74001	12.05712	0.2318114	2.7333767	39	1	44 days	0.73		Williams		1998 SJ ₁₀₆
1998 SM ₁₀₆	15.6	0.15	19981014	262.17227	109.12701	20.47912	5.15554	0.1561432	2.2138243	22	1	47 days	0.66		Williams		1998 SM ₁₀₆
1998 SO ₁₀₆	16.4	0.15	19980924	14.55575	166.80310	178.57872	5.33187	0.2047829	2.2258597	35	1	44 days	0.82		Williams		1998 SO ₁₀₆
1998 SZ ₁₀₆	14.2	0.15	19990122	325.43661	239.25765	199.41785	2.75150	0.0605623	2.7090461	30	2	1996–1998	0.71	M-v	4	Williams	33040 1998 SZ ₁₀₆
1998 SG ₁₀₇	15.6	0.15	19980924	326.45241	117.50878	301.56556	1.03593	0.2027501	2.4366815	18	1	33 days	0.74		Williams		1998 SG ₁₀₇
1998 SM ₁₀₇	14.0	0.15	19990122	62.34283	356.21171	333.80210	2.67165	0.0968814	2.5731021	30	2	1994–1998	0.55	M-v	5	Williams	33040 1998 SM ₁₀₇
1998 SR ₁₀₇	14.7	0.15	19981014	202.86154	185.66773	351.43933	3.98620	0.0860356	2.2761351	26	1	45 days	1.24		Williams		1998 SR ₁₀₇
1998 SV ₁₀₇	14.0	0.15	19980924	13.40685	356.85516	354.87252	7.93027	0.1918755	3.1951907	19	1	33 days	0.81		Williams		1998 SV ₁₀₇
1998 SQ ₁₀₈	13.0	0.15	19981014	62.29890	328.98749	329.92398	4.59307	0.1551548	3.1580010	29	1	54 days	0.46		Williams		1998 SQ ₁₀₈
1998 SR ₁₀₈	15.7	0.15	19980924	18.56968	97.74330	246.87837	3.28374	0.1715437	2.3479690	19	1	33 days	0.62		Williams		1998 SR ₁₀₈
1998 SZ ₁₀₈	16.3	0.15	19980924	19.11966	119.30257	224.14988	5.67190	0.1718524	2.2490283	25	1	33 days	0.65		Williams		1998 SZ ₁₀₈
1998 SC ₁₀₉	16.8	0.15	19980924	8.80264	134.95125	219.09403	4.93774	0.2631317	2.3030522	12	1	24 days	0.52		Williams		1998 SC ₁₀₉
1998 SJ ₁₀₉	14.4	0.15	19990122	339.91460	226.42964	211.56069	14.68255	0.1853235	2.6859394	34	2	1996–1998	0.66	M-v	4	Williams	33040 1998 SJ ₁₀₉
1998 SQ ₁₀₉	14.7	0.15	19981014	325.79063	180.43827	248.07920	5.67360	0.1893087	2.5341097	35	1	51 days	0.62		Williams		1998 SQ ₁₀₉
1998 SA ₁₁₀	14.7	0.15	19980924	38.83709	339.85931	343.15364	6.93727	0.1340243	2.3081628	22	1	32 days	0.67		Williams		1998 SA ₁₁₀
1998 SC ₁₁₀	15.5	0.15	19980924	355.89065	108.35855	269.10864	3.18819	0.1115427	2.2380017	19	1	33 days	0.73		Williams		1998 SC ₁₁₀
1998 SD ₁₁₀	14.0	0.15	19990122	213.77888	329.97348	224.87246	8.34441	0.0357819	2.2757118	32	2	1997–1998	0.75	M-v	4	Williams	33040 1998 SD ₁₁₀

1998 SJ ₁₁₀	15.6	0.15	19981014	331.04617	176.67936	246.96770	2.89868	0.2174958	2.3438461	40	1	54 days	0.57	Williams	1998 SJ ₁₁₀
1998 SL ₁₁₀	15.5	0.15	19980924	353.68903	101.77908	277.79313	2.12890	0.1144420	2.2531148	20	1	33 days	0.78	Williams	1998 SL ₁₁₀
1998 SQ ₁₁₀	15.2	0.15	19980924	72.67430	287.36573	353.36499	5.47173	0.1637796	2.1758707	17	1	33 days	0.82	Williams	1998 SQ ₁₁₀
1998 SV ₁₁₀	14.6	0.15	19980924	265.88115	114.05686	2.53270	6.87196	0.0826730	2.3005049	27	1	35 days	0.79	D Williams	1998 SV ₁₁₀
1998 SB ₁₁₁	15.0	0.15	19980924	353.75644	180.68409	200.41490	10.21692	0.1983887	3.1011246	19	1	23 days	0.67	Williams	1998 SB ₁₁₁
1998 SC ₁₁₁	14.3	0.15	19980924	39.37767	99.62920	218.96783	3.53691	0.1682687	3.0917181	16	1	33 days	1.09	Williams	1998 SC ₁₁₁
1998 SF ₁₁₁	15.6	0.15	19980924	12.79509	112.32983	235.67790	1.12479	0.2405530	2.3802571	23	1	56 days	0.50	Williams	1998 SF ₁₁₁
1998 SH ₁₁₁	15.1	0.15	19990122	47.91050	145.21086	196.91074	12.40366	0.1894790	2.5880250	35	2	1997–1998	0.72	M-v 4 Williams	33040 1998 SH ₁₁₁
1998 SN ₁₁₁	14.2	0.15	19980924	323.03043	26.86856	27.51529	1.19609	0.0610620	3.1959331	19	1	26 days	0.71	D Williams	1998 SN ₁₁₁
1998 SQ ₁₁₁	16.4	0.15	19980924	358.98185	352.93410	17.83865	8.05819	0.1496573	2.2686418	30	1	44 days	0.74	Williams	1998 SQ ₁₁₁
1998 SR ₁₁₁	13.5	0.15	19990122	288.49879	103.80499	16.98230	13.42888	0.1008015	2.6753046	44	2	1996–1998	0.45	M-v 4 Williams	33040 1998 SR ₁₁₁
1998 SX ₁₁₁	14.1	0.15	19980924	17.89155	177.54635	167.91235	8.07386	0.1624314	3.1940663	28	1	42 days	0.79	Williams	1998 SX ₁₁₁
1998 SZ ₁₁₁	15.1	0.15	19980924	25.51163	301.15383	29.07668	8.02850	0.2065461	2.5925774	16	1	33 days	0.54	Williams	1998 SZ ₁₁₁
1998 SA ₁₁₂	13.7	0.15	19980924	306.89895	282.30651	156.04737	6.00577	0.1396563	3.1759379	22	1	32 days	0.63	Williams	1998 SA ₁₁₂
1998 SC ₁₁₂	14.8	0.15	19980924	180.07078	152.45597	37.75010	7.06175	0.0676257	2.4119562	28	1	42 days	0.77	Williams	1998 SC ₁₁₂
1998 SD ₁₁₂	15.7	0.15	19980924	359.52807	239.95477	129.41983	2.90521	0.1860237	2.3989852	28	1	42 days	0.85	Williams	1998 SD ₁₁₂
1998 SX ₁₁₂	14.3	0.15	19980924	24.10090	305.05718	24.67814	14.30319	0.1968693	2.6294232	18	1	33 days	0.46	Williams	1998 SX ₁₁₂
1998 SC ₁₁₄	16.2	0.15	19980924	359.62760	299.66137	68.48618	3.52871	0.2490880	2.3618806	28	1	33 days	0.64	Williams	1998 SC ₁₁₄
1998 SD ₁₁₄	16.4	0.15	19980924	338.72028	356.61771	45.18097	6.27644	0.2277508	2.3789627	18	1	33 days	1.46	Williams	1998 SD ₁₁₄
1998 SF ₁₁₄	13.8	0.15	19980924	16.38121	311.78984	38.52938	9.66311	0.0993782	2.9774869	19	1	33 days	1.07	Williams	1998 SF ₁₁₄
1998 SN ₁₁₄	13.9	0.15	19990122	18.51248	260.44718	117.47954	3.66595	0.1767564	2.8790413	32	2	1978–1998	0.41	M-v 4 Williams	33041 1998 SN ₁₁₄
1998 SP ₁₁₄	15.4	0.15	19980924	38.57910	255.21099	49.16149	4.79321	0.2845773	2.6007088	13	1	7 days	0.89	Williams	1998 SP ₁₁₄
1998 SS ₁₁₄	14.6	0.15	19980924	0.96030	298.11209	72.40393	3.19140	0.0859597	2.9110611	16	1	19 days	0.73	Williams	1998 SS ₁₁₄
1998 SV ₁₁₄	14.7	0.15	19980924	355.90021	257.01928	121.46325	1.91082	0.1872422	3.1680195	28	1	44 days	0.79	Williams	1998 SV ₁₁₄
1998 SG ₁₁₅	15.3	0.15	19980924	352.22270	14.16492	9.25591	13.91660	0.1790318	2.6608798	17	1	33 days	1.08	Williams	1998 SG ₁₁₅
1998 SJ ₁₁₅	14.2	0.15	19980924	324.29133	102.72721	314.92415	1.00998	0.1037492	2.9477489	31	1	33 days	0.82	Williams	1998 SJ ₁₁₅
1998 SK ₁₁₅	13.3	0.15	19980924	269.14032	107.19522	12.94093	12.72027	0.1333028	2.6604107	36	1	56 days	0.54	Williams	1998 SK ₁₁₅
1998 SN ₁₁₅	15.1	0.15	19980924	47.22591	299.40366	13.62423	14.21083	0.1425084	2.5967520	18	1	24 days	0.69	Williams	1998 SN ₁₁₅
1998 SO ₁₁₅	15.9	0.15	19980924	33.67530	312.49715	5.27943	3.09494	0.2541570	2.5771327	16	1	15 days	0.66	Williams	1998 SO ₁₁₅
1998 SP ₁₁₅	13.3	0.15	19981014	17.09127	68.38657	283.34803	1.47336	0.2305005	3.0561422	41	1	54 days	0.64	Williams	1998 SP ₁₁₅
1998 SS ₁₁₅	15.5	0.15	19980924	7.55333	1.30803	359.19771	6.37871	0.1832926	2.3223288	20	1	33 days	0.73	Williams	1998 SS ₁₁₅
1998 SX ₁₁₅	14.4	0.15	19980924	234.27722	161.94218	343.16447	2.62890	0.0478388	2.5244687	25	1	33 days	0.95	Williams	1998 SX ₁₁₅
1998 SB ₁₁₆	13.9	0.15	19981014	354.99886	170.33265	217.71318	5.41027	0.2323646	3.0915679	35	1	54 days	0.65	Williams	1998 SB ₁₁₆
1998 SJ ₁₁₆	14.5	0.15	19980924	316.00252	237.85321	203.74365	27.12531	0.2303434	3.1945917	32	1	32 days	1.08	Williams	1998 SJ ₁₁₆
1998 SL ₁₁₆	15.9	0.15	19980924	16.53220	353.12840	355.50198	7.43788	0.2016997	2.6066063	17	1	33 days	1.02	Williams	1998 SL ₁₁₆
1998 SM ₁₁₆	13.5	0.15	19980924	320.95523	193.54044	229.60872	5.41977	0.1055474	2.7990304	26	1	42 days	0.39	Williams	1998 SM ₁₁₆
1998 SS ₁₁₆	14.9	0.15	19980924	39.12651	37.95848	275.21880	4.26861	0.2403570	2.5712958	17	1	33 days	0.88	Williams	1998 SS ₁₁₆
1998 ST ₁₁₆	15.2	0.15	19980924	16.44144	101.79170	244.62575	4.51037	0.2327770	2.5444633	14	1	32 days	0.68	Williams	1998 ST ₁₁₆
1998 SX ₁₁₆	15.8	0.15	19980924	39.35825	45.93591	265.14341	4.54267	0.2511420	2.3670786	18	1	33 days	0.82	Williams	1998 SX ₁₁₆
1998 SZ ₁₁₆	15.2	0.15	19981014	328.78627	205.78795	218.63745	12.22926	0.1671003	2.6599247	21	1	45 days	0.68	Williams	1998 SZ ₁₁₆
1998 SB ₁₁₇	14.4	0.15	19980924	39.62023	69.99061	246.44250	6.57106	0.2225502	2.7965752	19	1	33 days	0.82	Williams	1998 SB ₁₁₇
1998 SG ₁₁₇	15.4	0.15	19980924	28.24648	60.07905	268.44044	3.07943	0.2241467	2.2061423	15	1	32 days	0.42	Williams	1998 SG ₁₁₇
1998 SH ₁₁₇	15.6	0.15	19981014	345.84201	178.34793	228.61664	5.74882	0.2668644	2.5959204	22	1	45 days	0.49	Williams	1998 SH ₁₁₇
1998 SM ₁₁₇	13.3	0.15	19980924	86.71660	270.70747	6.92422	15.96228	0.1210339	3.1062123	16	1	33 days	0.88	Williams	1998 SM ₁₁₇
1998 SN ₁₁₇	15.9	0.15	19980924	354.48822	40.75617	340.77830	4.21508	0.2306299	2.3896188	18	1	33 days	0.80	Williams	1998 SN ₁₁₇
1998 SV ₁₁₇	15.1	0.15	19981014	343.05289	77.15022	327.52485	2.33089	0.1657230	2.4569217	23	1	45 days	0.62	Williams	1998 SV ₁₁₇
1998 SW ₁₁₇	14.9	0.15	19980924	66.10858	299.06754	0.88316	6.67825	0.0796299	2.2785302	13	1	32 days	0.57	Williams	1998 SW ₁₁₇
1998 SY ₁₁₇	15.2	0.15	19990122	335.44689	139.19832	314.27380	1.87907	0.2002199	2.3743626	34	3	1991–1998	0.69	M-v 4 Williams	33041 1998 SY ₁₁₇
1998 SZ ₁₁₇	13.8	0.15	19980924	53.66827	309.41586	4.15572	6.66974	0.0847509	2.7401558	19	1	33 days	0.60	Williams	1998 SZ ₁₁₇
1998 SD ₁₁₈	14.6	0.15	19980924	13.93441	92.11553	262.35942	1.60171	0.1608299	2.5239748	31	1	57 days	0.59	Williams	1998 SD ₁₁₈
1998 SK ₁₁₈	13.5	0.15	19980924	103.39319	249.72220	10.84330	7.04526	0.1049690	2.3446838	29	1	33 days	0.42	Williams	1998 SK ₁₁₈
1998 SL ₁₁₈	15.3	0.15	19981014	340.02954	52.07477	1.97256	1.39027	0.2452655	3.0177283	21	1	45 days	0.84	Williams	1998 SL ₁₁₈
1998 SP ₁₁₈	15.9	0.15	19980924	7.98749	160.35289	199.14050	1.85146	0.2449496	2.6842295	19	1	33 days	0.68	Williams	1998 SP ₁₁₈

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1998 SQ ₁₁₈	14.5	0.15	19981014	41.94796	122.77169	194.32329	7.41751	0.2237322	2.5652353	23	1	46 days	0.69	Williams	1998 SQ ₁₁₈
1998 ST ₁₁₈	14.5	0.15	19980924	228.72724	128.76168	31.72046	3.52399	0.1949014	2.3155836	12	1	32 days	0.58	Williams	1998 ST ₁₁₈
1998 SX ₁₁₈	14.8	0.15	19980924	14.18816	338.73273	16.59909	12.88673	0.1336309	3.0914283	11	1	20 days	0.68	Williams	1998 SX ₁₁₈
1998 SZ ₁₁₈	14.7	0.15	19980924	354.31118	7.26063	14.03823	5.78167	0.1847581	2.7589857	31	1	44 days	0.57	Williams	1998 SZ ₁₁₈
1998 SE ₁₁₉	15.5	0.15	19980924	353.68979	359.68250	21.79067	3.40630	0.0881171	2.7166704	20	1	33 days	0.78	Williams	1998 SE ₁₁₉
1998 SQ ₁₁₉	15.2	0.15	19980924	20.22902	284.78657	57.96091	2.72668	0.1767871	2.5352257	30	1	33 days	0.71	Williams	1998 SQ ₁₁₉
1998 SR ₁₁₉	15.0	0.15	19990122	1.73259	235.39260	174.50292	8.16824	0.2285713	2.7897408	38	2	1993–1998	0.64	M-v 4 Williams	33041 1998 SR ₁₁₉
1998 ST ₁₁₉	14.6	0.15	19980924	289.76792	40.87790	56.74436	4.83065	0.1296823	2.5990813	31	1	37 days	0.80	Williams	1998 ST ₁₁₉
1998 SU ₁₁₉	15.9	0.15	19981014	351.79517	9.74094	21.44583	14.93172	0.2150182	2.5569033	32	1	45 days	0.85	Williams	1998 SU ₁₁₉
1998 SO ₁₂₀	15.6	0.15	19980924	355.98593	179.11637	197.29807	4.98641	0.1752031	3.1329705	14	1	22 days	0.75	Williams	1998 SO ₁₂₀
1998 SF ₁₂₁	13.9	0.15	19980924	218.99059	226.68543	297.08289	4.22143	0.0787025	2.3154577	20	1	33 days	0.80	Williams	1998 SF ₁₂₁
1998 SK ₁₂₁	13.1	0.15	19990122	219.75748	317.80738	227.68911	9.22131	0.1028392	3.0437741	39	2	1996–1998	0.59	M-v 4 Williams	33041 1998 SK ₁₂₁
1998 SM ₁₂₁	14.8	0.15	19980924	245.01666	237.48413	259.01356	3.92922	0.0458667	2.2906679	20	1	33 days	0.95	Williams	1998 SM ₁₂₁
1998 SN ₁₂₁	14.8	0.15	19980924	341.88902	113.92391	289.46552	3.68458	0.1505908	3.1418142	23	1	33 days	0.84	Williams	1998 SN ₁₂₁
1998 SP ₁₂₁	15.9	0.15	19980924	4.00499	24.44807	343.35032	5.00864	0.1785008	2.2780942	19	1	33 days	0.57	Williams	1998 SP ₁₂₁
1998 ST ₁₂₁	16.5	0.15	19980924	358.47220	50.77348	325.81001	2.95546	0.2717868	2.5461379	32	1	45 days	0.78	Williams	1998 ST ₁₂₁
1998 SW ₁₂₁	16.2	0.15	19980924	14.56795	26.15725	326.50252	2.70631	0.1809174	2.3297858	17	1	33 days	0.65	Williams	1998 SW ₁₂₁
1998 SX ₁₂₁	15.9	0.15	19980924	38.45193	98.33019	217.79223	5.36704	0.2167097	2.2356894	19	1	33 days	0.83	Williams	1998 SX ₁₂₁
1998 SB ₁₂₂	15.5	0.15	19980924	13.61778	50.42685	309.83289	2.21483	0.0813898	2.4603488	17	1	33 days	0.95	Williams	1998 SB ₁₂₂
1998 SC ₁₂₂	14.7	0.15	19980924	329.87160	65.70662	351.07015	4.35374	0.1544084	2.5340099	20	1	33 days	0.57	Williams	1998 SC ₁₂₂
1998 SE ₁₂₂	13.9	0.15	19980924	9.86808	2.07658	354.36704	5.34807	0.3336953	3.9617370	19	1	33 days	0.54	Williams	1998 SE ₁₂₂
1998 SG ₁₂₂	14.3	0.15	19980924	287.17773	248.76991	228.16751	3.73027	0.2367660	2.6383834	20	1	33 days	0.92	Williams	1998 SG ₁₂₂
1998 SH ₁₂₂	14.1	0.15	19981014	9.91455	148.04708	220.12589	5.03048	0.1575239	3.1982937	23	1	45 days	0.87	Williams	1998 SH ₁₂₂
1998 SJ ₁₂₂	14.0	0.15	19981014	347.23462	181.83292	217.06716	5.68955	0.1385240	3.1697644	26	1	45 days	0.66	Williams	1998 SJ ₁₂₂
1998 SL ₁₂₂	16.4	0.15	19981014	12.25310	152.14568	208.67297	4.49470	0.2455426	2.3488789	38	1	46 days	0.61	Williams	1998 SL ₁₂₂
1998 SQ ₁₂₂	17.0	0.15	19980924	8.22362	143.76349	214.54444	3.63831	0.2801822	2.5767525	20	1	33 days	0.85	Williams	1998 SQ ₁₂₂
1998 SZ ₁₂₂	13.9	0.15	19990122	71.96121	294.08495	11.36813	1.31297	0.1981234	3.1726687	36	2	1992–1998	0.71	M-v 5 Williams	33041 1998 SZ ₁₂₂
1998 SA ₁₂₃	15.2	0.15	19980924	4.60885	35.48529	333.30729	0.46331	0.1935512	3.0873721	20	1	33 days	1.06	Williams	1998 SA ₁₂₃
1998 SD ₁₂₃	15.0	0.15	19990122	6.55652	36.13692	13.26693	4.62332	0.1211014	2.2638463	30	3	1981–1998	0.62	M-v 4 Williams	33042 1998 SD ₁₂₃
1998 SE ₁₂₃	14.5	0.15	19981014	38.38063	133.82073	201.88656	6.67421	0.0924600	2.7351307	23	1	45 days	0.66	Williams	1998 SE ₁₂₃
1998 SF ₁₂₃	13.9	0.15	19981014	50.49959	306.74014	14.42299	10.42176	0.1047412	2.9674581	23	1	45 days	0.56	Williams	1998 SF ₁₂₃
1998 SJ ₁₂₃	14.6	0.15	19980924	130.34115	227.38603	13.74119	6.22759	0.0565871	2.3456745	16	1	33 days	0.79	Williams	1998 SJ ₁₂₃
1998 SK ₁₂₃	13.8	0.15	19990122	18.11111	4.97627	15.37690	1.97866	0.2036133	3.2036457	47	4	1981–1998	0.62	M-v 1 Williams	33042 1998 SK ₁₂₃
1998 SM ₁₂₃	14.0	0.15	19990122	100.81756	254.36980	21.80600	5.57373	0.2383609	2.5596112	32	3	1993–1998	0.66	M-v 3 Williams	33042 1998 SM ₁₂₃
1998 SN ₁₂₃	14.3	0.15	19990122	51.51858	327.42266	14.77611	2.84694	0.1739003	2.5560883	46	3	1986–1998	0.64	M-v 3 Williams	33042 1998 SN ₁₂₃
1998 SQ ₁₂₃	15.6	0.15	19981014	2.40210	191.06706	186.31502	3.27543	0.2354877	2.6224465	32	1	54 days	0.69	Williams	1998 SQ ₁₂₃
1998 SS ₁₂₃	13.4	0.15	19981014	11.66275	175.59511	190.96661	8.44487	0.0917339	2.9972887	32	1	46 days	0.64	Williams	1998 SS ₁₂₃
1998 SU ₁₂₃	16.1	0.15	19980924	1.10854	349.55713	20.40169	3.75740	0.1722326	2.1592363	18	1	33 days	0.88	Williams	1998 SU ₁₂₃
1998 SW ₁₂₃	16.8	0.15	19980924	358.95541	197.35285	175.35795	2.85231	0.3024963	2.3971121	18	1	33 days	0.69	Williams	1998 SW ₁₂₃
1998 SD ₁₂₄	14.6	0.15	19980924	124.62246	67.44699	172.07522	4.84478	0.1234292	2.3084805	19	1	33 days	0.95	Williams	1998 SD ₁₂₄
1998 SE ₁₂₄	15.3	0.15	19980924	298.92922	264.46900	179.92246	6.42570	0.0863534	2.3882153	18	1	33 days	0.96	Williams	1998 SE ₁₂₄
1998 SG ₁₂₄	14.3	0.15	19981014	321.50694	57.58419	22.02316	16.62852	0.2313736	3.1630933	21	1	45 days	0.87	Williams	1998 SG ₁₂₄
1998 SH ₁₂₄	14.7	0.15	19980924	330.44026	25.20809	28.35289	6.18111	0.1612583	2.3612290	20	1	33 days	0.53	Williams	1998 SH ₁₂₄
1998 SK ₁₂₄	15.7	0.15	19981014	295.71660	61.34728	37.45226	3.97464	0.1287918	2.3614304	16	1	46 days	0.58	Williams	1998 SK ₁₂₄
1998 SL ₁₂₄	15.2	0.15	19980924	164.73552	31.40885	176.30775	5.85508	0.1179564	2.2078850	16	1	33 days	0.89	Williams	1998 SL ₁₂₄
1998 SM ₁₂₄	15.8	0.15	19980924	317.39994	7.08653	57.64067	1.35704	0.1198888	2.1838937	18	1	33 days	0.88	Williams	1998 SM ₁₂₄
1998 SU ₁₂₄	14.1	0.15	19981014	316.54400	284.73033	141.63640	2.80484	0.0493624	2.8353026	31	1	54 days	0.61	Williams	1998 SU ₁₂₄
1998 SC ₁₂₅	13.7	0.15	19980924	12.34187	309.89413	43.95186	6.48700	0.2551065	3.9975085	28	1	35 days	0.69	Williams	1998 SC ₁₂₅
1998 SD ₁₂₅	13.7	0.15	19980924	288.15533	64.17088	30.94607	11.38578	0.0745331	2.9971929	17	1	33 days	0.88	Williams	1998 SD ₁₂₅
1998 SN ₁₂₅	14.1	0.15	19980924	253.11610	72.16623	54.66366	6.66484	0.0626848	2.5107184	18	1	33 days	0.76	Williams	1998 SN ₁₂₅
1998 SP ₁₂₅	15.6	0.15	19980924	353.24050	223.26537	157.14430	6.06478	0.1470277	2.2776928	19	1	33 days	0.70	Williams	1998 SP ₁₂₅
1998 SA ₁₂₆	14.2	0.15	19990122	7.94105	285.96208	103.19821	4.81998	0.0991826	2.9963093	38	2	1993–1998	0.84	M-v 5 Williams	33042 1998 SA ₁₂₆
1998 SE ₁₂₇	15.4	0.15	19980924	346.07989	344.08513	48.25411	6.46272	0.2082708	2.5567643	18	1	33 days	0.64	Williams	1998 SE ₁₂₇

1998 SF ₁₂₇	12.9	0.15	19981014	272.26619	68.60564	39.85699	12.26740	0.0261352	3.1322278	29	1	46 days	0.49	Williams	1998 SF ₁₂₇
1998 SJ ₁₂₇	15.3	0.15	19980924	312.54267	6.63854	60.09089	6.53900	0.0737538	2.3869408	17	1	33 days	1.08	Williams	1998 SJ ₁₂₇
1998 SK ₁₂₇	15.4	0.15	19980924	19.26045	186.57455	149.77785	5.27042	0.2693133	2.3119915	18	1	33 days	0.52	Williams	1998 SK ₁₂₇
1998 SL ₁₂₇	15.6	0.15	19981014	358.70463	346.81803	34.94756	10.17021	0.2906093	2.6942064	32	1	48 days	0.52	Williams	1998 SL ₁₂₇
1998 SQ ₁₂₇	16.5	0.15	19981014	348.10174	316.91868	82.26106	3.39667	0.2327643	2.3191443	28	1	43 days	0.67	Williams	1998 SQ ₁₂₇
1998 SR ₁₂₇	13.5	0.15	19981014	304.96200	270.85634	171.24225	10.94479	0.0733465	3.0939984	29	1	48 days	0.67	Williams	1998 SR ₁₂₇
1998 ST ₁₂₇	16.3	0.15	19980924	8.51451	219.34762	135.59573	4.01413	0.2734230	2.3699390	18	1	33 days	0.67	Williams	1998 ST ₁₂₇
1998 SU ₁₂₇	15.2	0.15	19980924	238.98930	333.20579	174.50059	14.41831	0.1118930	2.8884431	17	1	21 days	0.84	Williams	1998 SU ₁₂₇
1998 SX ₁₂₇	14.9	0.15	19981014	306.76751	343.05821	104.35568	3.03885	0.1472274	2.2275030	23	1	46 days	0.74	Williams	1998 SX ₁₂₇
1998 SY ₁₂₇	14.1	0.15	19980924	315.16889	268.81384	155.62612	5.76415	0.0562027	2.7715062	31	1	35 days	0.61	Williams	1998 SY ₁₂₇
1998 SC ₁₂₈	15.3	0.15	19980924	5.78457	301.51251	62.59542	4.74436	0.1917258	2.6472764	19	1	33 days	0.71	Williams	1998 SC ₁₂₈
1998 SD ₁₂₈	13.4	0.15	19990122	318.68864	341.03141	113.39984	3.01696	0.1086548	2.7635103	41	5	1980–1998	0.54	M-v 1 Williams	33043 1998 SD ₁₂₈
1998 SE ₁₂₈	16.0	0.15	19981014	334.59318	291.98005	125.41160	2.88419	0.1932555	2.3769773	29	1	46 days	0.90	Williams	1998 SE ₁₂₈
1998 SU ₁₂₈	13.8	0.15	19981014	65.82143	238.02559	70.72507	3.02034	0.0547656	2.8781942	23	1	46 days	0.96	Williams	1998 SU ₁₂₈
1998 SW ₁₂₈	15.8	0.15	19981014	338.67097	297.25577	113.76314	2.19336	0.1739259	2.3944801	22	1	46 days	0.71	Williams	1998 SW ₁₂₈
1998 SY ₁₂₈	14.4	0.15	19980924	219.56573	119.81298	38.17362	6.72604	0.0301296	2.3494255	17	1	33 days	0.75	Williams	1998 SY ₁₂₈
1998 SA ₁₂₉	15.4	0.15	19981014	330.56756	250.71805	184.69125	15.28164	0.3035937	2.7785385	25	1	52 days	0.62	Williams	1998 SA ₁₂₉
1998 SB ₁₂₉	14.1	0.15	19981014	129.30847	77.12705	166.59994	6.55509	0.0993227	2.4355613	37	1	54 days	0.75	Williams	1998 SB ₁₂₉
1998 SD ₁₂₉	13.7	0.15	19980924	110.25332	61.66869	188.51333	13.44249	0.1730751	2.6113218	17	1	33 days	0.76	Williams	1998 SD ₁₂₉
1998 SF ₁₂₉	14.0	0.15	19980924	308.13202	78.28899	22.58267	21.60804	0.2942996	3.1058970	19	1	33 days	0.85	Williams	1998 SF ₁₂₉
1998 SM ₁₂₉	14.5	0.15	19980924	44.19064	152.76595	172.95628	2.46786	0.0767632	2.6830958	18	1	33 days	0.65	Williams	1998 SM ₁₂₉
1998 SN ₁₂₉	14.7	0.15	19980924	35.98686	174.99162	156.57132	1.71407	0.1109250	2.6448926	19	1	33 days	0.73	Williams	1998 SN ₁₂₉
1998 SR ₁₂₉	14.7	0.15	19980924	304.71248	29.00372	49.33604	3.32214	0.0658886	2.6426106	17	1	33 days	0.96	Williams	1998 SR ₁₂₉
1998 SU ₁₂₉	13.0	0.15	19981014	94.62149	146.88392	125.53638	1.80139	0.1384479	3.0975477	38	1	54 days	0.61	Williams	1998 SU ₁₂₉
1998 SY ₁₂₉	16.0	0.15	19980924	7.85740	343.00574	20.57059	7.79984	0.1411920	2.2937894	22	1	33 days	0.98	Williams	1998 SY ₁₂₉
1998 SE ₁₃₀	13.6	0.15	19981014	84.47477	100.90677	191.39975	1.86706	0.0488094	2.9360344	25	1	46 days	0.79	Williams	1998 SE ₁₃₀
1998 SF ₁₃₀	16.0	0.15	19980924	326.74629	51.32657	14.82348	4.30622	0.2218281	2.5293862	18	1	33 days	1.08	Williams	1998 SF ₁₃₀
1998 SH ₁₃₀	15.0	0.15	19980924	42.17755	302.50546	18.41308	15.17083	0.1487866	2.5760776	16	1	33 days	0.94	Williams	1998 SH ₁₃₀
1998 SJ ₁₃₀	14.8	0.15	19980924	133.26398	42.62009	195.15535	5.38826	0.0863629	2.4473715	17	1	33 days	0.90	Williams	1998 SJ ₁₃₀
1998 SK ₁₃₀	15.2	0.15	19990122	93.81554	283.06723	11.16540	6.89188	0.1966330	2.2705569	38	2	1991–1998	0.69	M-v 4 Williams	33043 1998 SK ₁₃₀
1998 SM ₁₃₀	13.9	0.15	19980924	20.70944	122.24815	219.44612	1.64161	0.2862649	4.0117618	19	1	33 days	0.95	Williams	1998 SM ₁₃₀
1998 SP ₁₃₀	16.4	0.15	19980924	20.00366	142.16324	205.98301	5.65475	0.1379420	2.2728890	29	1	45 days	0.70	Williams	1998 SP ₁₃₀
1998 ST ₁₃₀	14.4	0.15	19980924	216.26763	319.46746	204.02282	12.68361	0.0204729	2.7083694	33	1	58 days	0.86	Williams	1998 ST ₁₃₀
1998 SV ₁₃₀	15.0	0.15	19980924	289.64748	98.22389	12.54927	9.20777	0.1894341	2.7322167	18	1	33 days	1.18	Williams	1998 SV ₁₃₀
1998 SY ₁₃₀	16.1	0.15	19980924	330.70153	219.71336	203.41577	13.04745	0.2406302	2.6429894	17	1	33 days	0.77	Williams	1998 SY ₁₃₀
1998 SB ₁₃₁	14.2	0.15	19980924	8.58453	80.48054	288.44151	1.72529	0.0544695	2.7338856	35	1	58 days	0.70	Williams	1998 SB ₁₃₁
1998 SC ₁₃₁	16.6	0.15	19980924	344.50736	182.93725	214.01071	4.33965	0.1826698	2.2573327	20	1	33 days	0.79	Williams	1998 SC ₁₃₁
1998 SD ₁₃₁	13.4	0.15	19990122	266.72398	147.42170	356.52809	4.86084	0.0844665	3.1471800	75	2	1995–1998	0.61	M-v 4 Williams	33043 1998 SD ₁₃₁
1998 SH ₁₃₁	16.2	0.15	19981014	343.25821	65.44124	351.49332	4.79460	0.3197828	2.5785466	30	1	46 days	0.59	Williams	1998 SH ₁₃₁
1998 SK ₁₃₁	16.0	0.15	19981014	341.29605	128.01690	285.34352	2.95328	0.2296469	2.5891033	30	1	46 days	1.04	Williams	1998 SK ₁₃₁
1998 SL ₁₃₁	16.3	0.15	19980924	24.91363	114.23561	227.41762	4.70394	0.1538247	2.2543892	18	1	33 days	1.20	Williams	1998 SL ₁₃₁
1998 SN ₁₃₁	13.2	0.15	19980924	290.16150	118.25957	340.48675	6.89683	0.0777001	2.7617688	32	1	34 days	0.56	Williams	1998 SN ₁₃₁
1998 SP ₁₃₁	14.8	0.15	19980924	334.40769	198.29627	219.54145	13.45227	0.2023600	3.1812449	17	1	33 days	0.97	Williams	1998 SP ₁₃₁
1998 SS ₁₃₁	15.1	0.15	19980924	30.79525	329.19074	359.42695	12.92844	0.2349086	2.5200850	22	1	27 days	0.34	Williams	1998 SS ₁₃₁
1998 ST ₁₃₁	14.0	0.15	19990122	229.54401	257.02440	292.26205	4.92102	0.1231523	2.1829362	37	4	1985–1998	0.81	M-v 3 Williams	33043 1998 ST ₁₃₁
1998 SZ ₁₃₁	14.8	0.15	19981014	78.27373	7.61272	275.00736	5.06887	0.2123140	2.2540920	26	1	46 days	1.02	Williams	1998 SZ ₁₃₁
1998 SC ₁₃₂	15.1	0.15	19980924	63.21546	347.97980	304.60356	4.03830	0.1960289	2.2192288	33	1	33 days	0.88	Williams	1998 SC ₁₃₂
1998 SD ₁₃₂	14.3	0.15	19981014	39.21466	14.54795	317.80453	4.38324	0.1646433	2.5964234	31	1	46 days	0.47	Williams	1998 SD ₁₃₂
1998 SG ₁₃₂	13.8	0.15	19990122	171.66967	255.57484	338.90748	5.42481	0.1291103	2.2474979	45	3	1990–1998	0.59	M-v 4 Williams	33043 1998 SG ₁₃₂
1998 SJ ₁₃₂	14.2	0.15	19981014	297.16775	137.10062	316.59351	4.44375	0.0491936	2.7347120	23	1	46 days	0.85	Williams	1998 SJ ₁₃₂
1998 SL ₁₃₂	15.6	0.15	19980924	40.48499	344.93837	336.60537	4.95987	0.1732596	2.2405360	17	1	33 days	0.99	Williams	1998 SL ₁₃₂
1998 SO ₁₃₂	14.7	0.15	19980924	328.97313	190.92102	230.95251	6.98496	0.1539781	2.7995592	19	1	33 days	0.67	Williams	1998 SO ₁₃₂
1998 SS ₁₃₂	14.6	0.15	19990122	340.41282	84.30729	353.91958	7.36356	0.0838167	2.3957983	38	2	1994–1998	0.64	M-v 5 Williams	33043 1998 SS ₁₃₂

1998 SU ₁₃₂	15.2	0.15	19981014	358.24099	151.24894	235.23905	4.45100	0.1031487	2.4876706	44	1	46 days	0.58	Williams	1998 SU ₁₃₂
1998 SV ₁₃₂	13.4	0.15	19981014	12.05255	136.91713	234.52587	6.46428	0.0681356	3.0010411	36	1	46 days	0.48	Williams	1998 SV ₁₃₂
1998 SX ₁₃₂	14.8	0.15	19980924	147.13989	260.33560	330.42233	3.11358	0.0257176	2.5188597	27	1	45 days	0.91	Williams	1998 SX ₁₃₂
1998 SA ₁₃₃	14.3	0.15	19990122	110.86600	279.09811	6.44783	8.88075	0.1458812	2.2620710	42	4	1981–1998	0.55	M-v 1 Williams	33044 1998 SA ₁₃₃
1998 SE ₁₃₃	16.2	0.15	19980924	43.25778	36.54502	279.97178	1.71502	0.1842216	2.3647698	18	1	33 days	0.92	Williams	1998 SE ₁₃₃
1998 SF ₁₃₃	14.8	0.15	19981014	349.70541	98.13513	302.35343	1.93699	0.2050283	3.1801132	27	1	46 days	1.06	Williams	1998 SF ₁₃₃
1998 SH ₁₃₃	12.9	0.15	19981014	217.16045	324.35616	209.51133	13.45881	0.0974852	3.1514118	31	1	46 days	0.81	Williams	1998 SH ₁₃₃
1998 SJ ₁₃₃	15.9	0.15	19980924	1.03575	35.37920	339.05259	1.99956	0.1732560	2.3904670	26	1	41 days	0.99	Williams	1998 SJ ₁₃₃
1998 SK ₁₃₃	15.1	0.15	19981014	4.79067	163.81309	214.26147	4.96742	0.1347283	2.7567317	34	1	56 days	0.81	Williams	1998 SK ₁₃₃
1998 SL ₁₃₃	16.2	0.15	19981014	330.11690	192.79603	235.53941	1.95728	0.2113002	2.3890436	39	1	46 days	0.73	Williams	1998 SL ₁₃₃
1998 SN ₁₃₃	14.3	0.15	19981014	320.16721	231.23664	212.19202	4.62342	0.2139603	3.1248105	28	1	46 days	0.70	Williams	1998 SN ₁₃₃
1998 SS ₁₃₃	14.3	0.15	19981014	300.82735	76.97756	13.06869	3.60555	0.0722789	2.6536528	27	1	46 days	0.86	Williams	1998 SS ₁₃₃
1998 SU ₁₃₃	15.7	0.15	19980924	2.01948	7.90787	6.36608	2.75089	0.1762413	2.7269724	16	1	33 days	1.08	Williams	1998 SU ₁₃₃
1998 SY ₁₃₃	14.2	0.15	19980924	314.58780	232.15263	204.72360	4.53913	0.1210587	3.2052510	17	1	33 days	0.67	Williams	1998 SY ₁₃₃
1998 SB ₁₃₄	15.4	0.15	19980924	323.34053	224.77931	192.79491	5.87787	0.0658488	2.3059508	19	1	33 days	0.74	Williams	1998 SB ₁₃₄
1998 SC ₁₃₄	15.7	0.15	19981014	336.38716	234.36423	184.48544	2.28974	0.2136180	2.3500550	36	1	54 days	0.52	Williams	1998 SC ₁₃₄
1998 SE ₁₃₄	14.5	0.15	19981014	13.94540	168.71562	196.71362	4.14442	0.1177747	2.6454596	42	1	54 days	0.65	Williams	1998 SE ₁₃₄
1998 SG ₁₃₄	14.7	0.15	19980924	357.63669	0.27269	19.62127	13.56308	0.1285473	2.5681752	35	1	41 days	1.04	Williams	1998 SG ₁₃₄
1998 SH ₁₃₄	13.3	0.15	19981014	314.15179	286.82170	154.11347	0.91128	0.1217118	3.2402491	35	1	54 days	0.86	Williams	1998 SH ₁₃₄
1998 SN ₁₃₄	14.4	0.15	19981014	342.62805	12.55727	29.98189	5.08539	0.0804262	2.4360141	22	1	46 days	0.55	Williams	1998 SN ₁₃₄
1998 SP ₁₃₄	15.0	0.15	19981014	352.97368	5.10914	26.56242	3.39694	0.1318416	2.4281437	38	1	46 days	0.66	Williams	1998 SP ₁₃₄
1998 SR ₁₃₄	15.0	0.15	19981014	330.26710	241.78964	186.10220	4.55531	0.2148730	2.4788230	32	1	54 days	0.73	Williams	1998 SR ₁₃₄
1998 SS ₁₃₄	16.3	0.15	19980924	20.95333	152.62158	182.59729	4.01937	0.2837063	2.3679555	18	1	33 days	0.72	Williams	1998 SS ₁₃₄
1998 ST ₁₃₄	14.4	0.15	19981014	331.55047	255.63600	160.31677	2.12437	0.0810453	2.6747563	26	1	46 days	0.99	Williams	1998 ST ₁₃₄
1998 SU ₁₃₄	14.9	0.15	19980924	78.99201	245.70588	26.56405	8.18116	0.2182481	2.3395478	18	1	33 days	0.69	Williams	1998 SU ₁₃₄
1998 SW ₁₃₄	14.6	0.15	19981014	359.92375	200.15602	182.42146	7.69751	0.0804028	2.7461930	29	1	46 days	0.75	Williams	1998 SW ₁₃₄
1998 SX ₁₃₄	14.2	0.15	19981014	4.51612	350.25311	25.86742	9.77801	0.1693493	2.7597890	25	1	46 days	0.46	Williams	1998 SX ₁₃₄
1998 SZ ₁₃₄	12.9	0.15	19980924	116.47132	66.78177	186.88212	12.35891	0.0933474	3.1029583	19	1	33 days	0.62	Williams	1998 SZ ₁₃₄
1998 SB ₁₃₅	14.6	0.15	19980924	345.24774	258.65430	139.32099	3.22999	0.1705095	3.0747892	23	1	33 days	0.52	Williams	1998 SB ₁₃₅
1998 SD ₁₃₅	13.9	0.15	19981014	61.06757	108.74599	181.73857	8.96110	0.2723898	3.0589933	39	1	46 days	0.96	Williams	1998 SD ₁₃₅
1998 SH ₁₃₅	13.5	0.15	19981014	16.08727	181.00338	182.90030	10.75037	0.0633688	3.1111981	38	1	54 days	0.68	Williams	1998 SH ₁₃₅
1998 SJ ₁₃₅	14.4	0.15	19980924	45.99231	148.49752	163.85797	5.17455	0.1792377	2.5240290	19	1	33 days	0.53	Williams	1998 SJ ₁₃₅
1998 SM ₁₃₅	15.0	0.15	19981014	328.14059	4.09391	63.73802	3.28202	0.1912312	2.3758237	35	1	46 days	0.39	Williams	1998 SM ₁₃₅
1998 SO ₁₃₅	13.8	0.15	19990122	347.91389	22.64059	38.06021	11.05604	0.1427052	3.2196880	41	4	1981–1998	0.70	M-v 2 Williams	33044 1998 SO ₁₃₅
1998 SP ₁₃₅	16.0	0.15	19981014	42.09542	248.30947	70.14697	3.15651	0.2147046	2.1680355	23	1	46 days	0.76	Williams	1998 SP ₁₃₅
1998 SR ₁₃₅	13.7	0.15	19981014	22.88088	253.28187	96.41959	3.95314	0.1636467	3.1027300	25	1	46 days	0.62	Williams	1998 SR ₁₃₅
1998 SV ₁₃₅	14.3	0.15	19980924	63.68680	249.46808	33.87024	12.49670	0.2555897	2.6341721	20	1	33 days	0.62	Williams	1998 SV ₁₃₅
1998 SW ₁₃₅	14.7	0.15	19981014	18.37287	286.52292	75.82524	3.94512	0.0155404	2.2595043	34	1	46 days	0.64	Williams	1998 SW ₁₃₅
1998 SZ ₁₃₅	15.8	0.15	19980924	355.82707	254.90046	123.65187	3.08892	0.1940669	2.3884779	19	1	33 days	0.92	Williams	1998 SZ ₁₃₅
1998 SA ₁₃₆	14.5	0.15	19981014	55.14706	260.29866	40.79119	6.71457	0.2178396	2.3575152	31	1	48 days	0.50	Williams	1998 SA ₁₃₆
1998 SB ₁₃₆	15.0	0.15	19990122	49.97793	208.95128	137.40709	3.60767	0.1828723	2.4003780	36	2	1993–1998	0.68	M-v 4 Williams	33044 1998 SB ₁₃₆
1998 SE ₁₃₆	16.5	0.15	19980924	3.22122	241.85362	124.31216	2.49352	0.2373697	2.3384381	16	1	33 days	0.91	Williams	1998 SE ₁₃₆
1998 SH ₁₃₆	15.4	0.15	19980924	47.00083	202.59040	103.38811	3.12187	0.2000927	2.2418365	18	1	33 days	0.59	Williams	1998 SH ₁₃₆
1998 SJ ₁₃₆	16.3	0.15	19980924	20.96402	246.96370	94.39558	3.42882	0.1967291	2.3817322	16	1	33 days	0.98	Williams	1998 SJ ₁₃₆
1998 SK ₁₃₆	14.9	0.15	19980924	285.94925	36.36902	70.01990	5.57703	0.1496098	2.5829502	18	1	33 days	0.90	Williams	1998 SK ₁₃₆
1998 SQ ₁₃₆	14.9	0.15	19981103	135.51358	189.97531	53.54850	7.57943	0.0767457	2.3601630	16	1	46 days	0.50	Nakano	1998 SQ ₁₃₆
1998 SR ₁₃₆	14.6	0.15	19980924	20.51752	255.80740	88.25782	4.50058	0.1541776	2.3388890	20	1	33 days	0.44	Williams	1998 SR ₁₃₆
1998 SU ₁₃₆	15.2	0.15	19981014	3.24983	277.84620	96.95310	4.59575	0.2138316	2.5961856	34	1	46 days	0.67	Williams	1998 SU ₁₃₆
1998 SV ₁₃₆	14.2	0.15	19980924	353.99846	321.14831	59.82246	8.24944	0.0596517	2.6584652	20	1	33 days	1.14	Williams	1998 SV ₁₃₆
1998 SX ₁₃₆	15.7	0.15	19981014	341.33640	274.44614	127.86237	5.22142	0.0898183	2.2903606	24	1	46 days	0.57	Williams	1998 SX ₁₃₆
1998 SC ₁₃₇	14.1	0.15	19980924	103.43191	223.82259	37.84388	15.42027	0.0719042	2.6158077	18	1	33 days	0.82	Williams	1998 SC ₁₃₇
1998 SJ ₁₃₇	14.9	0.15	19980924	19.80467	282.24843	66.73063	7.48265	0.1569920	3.2047825	28	1	33 days	0.85	Williams	1998 SJ ₁₃₇
1998 SP ₁₃₇	15.5	0.15	19981014	317.64079	345.30205	95.14702	4.98822	0.1801432	2.6935777	27	1	50 days	0.94	Williams	1998 SP ₁₃₇

1998 SQ ₁₃₇	14.0	0.15	19981014	79.86751	216.46986	80.43767	5.51144	0.0454083	2.7978267	20	1	46 days	0.94	Williams	1998 SQ ₁₃₇
1998 SR ₁₃₇	13.7	0.15	19980924	26.27665	273.15691	70.50821	6.21051	0.1285333	3.0645552	19	1	33 days	0.60	Williams	1998 SR ₁₃₇
1998 SV ₁₃₇	15.6	0.15	19981014	305.37321	57.04854	30.40704	7.07322	0.1026699	2.2406692	40	1	54 days	1.07	D Williams	1998 SV ₁₃₇
1998 SX ₁₃₇	13.5	0.15	19981014	300.99074	15.90303	68.93919	3.18055	0.0221445	2.8656551	31	1	46 days	0.74	Williams	1998 SX ₁₃₇
1998 SZ ₁₃₇	13.8	0.15	19981014	330.66252	35.44098	25.23997	12.72912	0.1188809	3.0690604	37	1	54 days	0.71	Williams	1998 SZ ₁₃₇
1998 SA ₁₃₈	15.7	0.15	19981014	24.70220	161.58863	186.37078	5.67025	0.1734109	2.3664489	22	1	54 days	1.28	Williams	1998 SA ₁₃₈
1998 SD ₁₃₈	15.6	0.15	19980924	47.85585	277.91660	31.94499	2.69394	0.1863316	2.2458585	24	1	41 days	0.87	Williams	1998 SD ₁₃₈
1998 SE ₁₃₈	13.9	0.15	19981014	65.60821	293.74329	15.69547	5.62696	0.0846079	2.7436365	36	1	56 days	1.14	Williams	1998 SE ₁₃₈
1998 SF ₁₃₈	12.7	0.15	19981014	103.60405	233.82896	32.92247	1.23695	0.1379198	3.1613753	41	1	54 days	0.76	D Williams	1998 SF ₁₃₈
1998 SH ₁₃₈	14.7	0.15	19980924	23.19852	166.53566	173.47968	0.66764	0.2498526	3.0856883	23	1	41 days	0.67	Williams	1998 SH ₁₃₈
1998 SK ₁₃₈	15.7	0.15	19981014	358.97306	8.31188	17.45400	2.68061	0.2184497	2.3709842	34	1	54 days	0.96	Williams	1998 SK ₁₃₈
1998 SO ₁₃₈	14.9	0.15	19981014	339.04563	216.25799	200.07332	11.24484	0.2030467	2.6287295	26	1	46 days	0.86	Williams	1998 SO ₁₃₈
1998 SS ₁₃₈	14.8	0.15	19981014	12.26657	160.32360	201.83077	12.12932	0.2705684	2.6953000	43	1	46 days	0.67	Williams	1998 SS ₁₃₈
1998 ST ₁₃₈	15.6	0.15	19981014	13.44075	358.22271	8.20042	7.62164	0.1388086	2.4083742	47	1	55 days	1.12	Williams	1998 ST ₁₃₈
1998 SV ₁₃₈	14.5	0.15	19981014	38.54476	330.40875	6.87235	9.54639	0.1184630	2.5742352	31	1	46 days	0.53	Williams	1998 SV ₁₃₈
1998 SW ₁₃₈	15.4	0.15	19980924	306.90994	109.43067	334.17825	2.34082	0.1061786	2.6225411	19	1	33 days	1.05	Williams	1998 SW ₁₃₈
1998 SX ₁₃₈	14.8	0.15	19980924	27.55161	136.71846	207.38755	17.15977	0.1280319	2.6954080	19	1	33 days	0.85	Williams	1998 SX ₁₃₈
1998 SY ₁₃₈	14.8	0.15	19980924	136.69272	229.50389	9.01055	7.29249	0.0777578	2.3928228	35	1	41 days	0.87	Williams	1998 SY ₁₃₈
1998 SZ ₁₃₈	15.9	0.15	19981014	66.63697	53.49699	228.56034	4.99728	0.3028652	2.1179118	71	1	46 days	0.75	Williams	1998 SZ ₁₃₈
1998 SB ₁₃₉	14.4	0.15	19980924	10.12861	116.52062	252.17710	3.33670	0.0865393	2.7860495	38	1	58 days	0.77	Williams	1998 SB ₁₃₉
1998 SC ₁₃₉	15.4	0.15	19980924	81.02543	48.67809	236.08066	4.16400	0.1210076	2.3221451	31	1	33 days	0.66	Williams	1998 SC ₁₃₉
1998 SE ₁₃₉	15.1	0.15	19980924	315.86481	219.69628	215.90912	12.29909	0.1256546	2.6953497	24	1	33 days	0.91	Williams	1998 SE ₁₃₉
1998 SF ₁₃₉	16.0	0.15	19980924	33.92029	43.34379	279.44325	2.88257	0.2454575	2.3397548	17	1	33 days	0.85	Williams	1998 SF ₁₃₉
1998 SK ₁₃₉	13.7	0.15	19981014	288.28373	241.91911	220.84471	14.53482	0.0358262	3.1699329	29	1	46 days	0.92	Williams	1998 SK ₁₃₉
1998 SN ₁₃₉	15.3	0.15	19980924	14.84105	29.36840	322.94037	4.65615	0.2601275	2.5273776	18	1	33 days	0.55	Williams	1998 SN ₁₃₉
1998 SP ₁₃₉	14.9	0.15	19980924	334.29471	123.14378	289.31515	4.76036	0.1041251	2.4215033	19	1	33 days	0.70	Williams	1998 SP ₁₃₉
1998 SQ ₁₃₉	13.1	0.15	19981014	334.58439	168.18892	250.30455	8.37321	0.0796565	3.0759972	21	1	49 days	0.76	Williams	1998 SQ ₁₃₉
1998 SR ₁₃₉	13.3	0.15	19981014	156.56319	311.90993	275.28384	6.11603	0.1329652	2.7489523	31	1	46 days	0.89	Williams	1998 SR ₁₃₉
1998 SU ₁₃₉	14.9	0.15	19981014	355.77665	139.35900	253.25316	4.98868	0.1266468	2.2344138	30	1	46 days	0.84	Williams	1998 SU ₁₃₉
1998 SY ₁₃₉	12.2	0.15	19981014	107.12042	42.28431	236.99115	10.16857	0.0213820	3.0995891	36	1	49 days	0.74	Williams	1998 SY ₁₃₉
1998 SA ₁₄₀	14.6	0.15	19981014	62.89510	78.92133	223.94108	12.09139	0.1926761	2.5883787	25	1	46 days	0.91	Williams	1998 SA ₁₄₀
1998 SB ₁₄₀	14.4	0.15	19980924	123.01874	265.59099	345.20780	6.07572	0.0949735	2.4005783	17	1	33 days	0.64	Williams	1998 SB ₁₄₀
1998 SC ₁₄₀	14.0	0.15	19981014	323.86618	217.60275	216.99282	13.60430	0.1473917	2.6162260	34	1	46 days	0.57	Williams	1998 SC ₁₄₀
1998 SD ₁₄₀	16.2	0.15	19980924	358.28526	28.93794	352.72184	6.55391	0.2238394	2.5134474	18	1	33 days	1.04	Williams	1998 SD ₁₄₀
1998 SF ₁₄₀	15.3	0.15	19981014	0.38061	122.54322	263.19126	3.37468	0.1890873	2.6559988	28	1	46 days	0.72	Williams	1998 SF ₁₄₀
1998 SG ₁₄₀	14.9	0.15	19980924	41.36160	106.30320	218.67829	12.17353	0.1696158	2.8172983	16	1	33 days	0.72	Williams	1998 SG ₁₄₀
1998 SH ₁₄₀	15.7	0.15	19981014	4.75972	45.21356	333.94398	3.61738	0.1869971	2.5558987	17	1	46 days	0.91	Williams	1998 SH ₁₄₀
1998 SM ₁₄₀	15.9	0.15	19981014	326.18291	198.45914	229.69251	3.77658	0.1182351	2.2838713	27	1	51 days	0.69	Williams	1998 SM ₁₄₀
1998 SQ ₁₄₀	15.8	0.15	19990122	82.23718	309.89670	358.23063	3.87311	0.2209100	2.2656301	56	2	1991–1998	0.72	M-v 5 Williams	33044 1998 SQ ₁₄₀
1998 SR ₁₄₀	16.7	0.15	19980924	30.53870	109.96309	206.66427	7.49595	0.3322762	2.3077318	17	1	33 days	0.64	Williams	1998 SR ₁₄₀
1998 ST ₁₄₀	15.9	0.15	19990122	15.83585	82.91260	318.85451	1.79939	0.1850491	2.3902031	31	2	1991–1998	0.65	M-v 4 Williams	33044 1998 ST ₁₄₀
1998 SV ₁₄₀	14.7	0.15	19981014	57.01814	289.02943	17.46757	14.89579	0.2036594	2.5400926	37	1	54 days	0.82	Williams	1998 SV ₁₄₀
1998 SW ₁₄₀	13.8	0.15	19980924	45.87796	69.09412	263.83832	0.93988	0.0453815	2.9442520	25	1	41 days	0.73	Williams	1998 SW ₁₄₀
1998 SX ₁₄₀	14.5	0.15	19981014	115.36188	271.47470	342.97076	1.83833	0.1772879	2.4030622	30	1	52 days	0.92	Williams	1998 SX ₁₄₀
1998 SC ₁₄₁	14.4	0.15	19980924	26.77826	138.90040	200.25020	11.17295	0.2002470	2.6781886	40	1	58 days	0.62	Williams	1998 SC ₁₄₁
1998 SD ₁₄₁	13.2	0.15	19990122	83.32393	288.80076	20.85292	10.56445	0.1123758	3.0260313	43	1	63 days	0.57	M-v 5 Williams	1998 SD ₁₄₁
1998 SF ₁₄₁	14.1	0.15	19990122	114.54650	260.77185	27.28429	1.65099	0.0621162	2.5697923	36	2	1992–1998	0.74	M-v 5 Williams	33044 1998 SF ₁₄₁
1998 SJ ₁₄₁	12.9	0.15	19980924	208.60544	156.23999	23.21765	13.51789	0.1075270	2.6802185	38	1	58 days	1.06	Williams	1998 SJ ₁₄₁
1998 SN ₁₄₁	13.5	0.15	19981014	218.50938	141.47729	27.69756	10.53999	0.0286859	2.9860636	27	1	46 days	0.91	Williams	1998 SN ₁₄₁
1998 SU ₁₄₁	15.0	0.15	19980924	46.64632	275.25561	33.04162	13.66302	0.2311643	2.6924759	19	1	33 days	0.77	Williams	1998 SU ₁₄₁
1998 SY ₁₄₁	15.8	0.15	19980924	22.40882	257.56813	82.14725	4.15620	0.2036327	2.1708374	19	1	33 days	0.45	Williams	1998 SY ₁₄₁
1998 SA ₁₄₂	14.6	0.15	19981014	21.83075	269.73028	80.41817	5.93149	0.1759024	2.7394538	19	1	46 days	0.69	Williams	1998 SA ₁₄₂
1998 SG ₁₄₂	14.9	0.15	19980924	87.03158	148.19964	123.78365	5.55460	0.1675826	2.3282295	16	1	33 days	0.95	Williams	1998 SG ₁₄₂

1998 SL ₁₄₂	13.2	0.15	19981014	167.24322	167.55589	48.63230	11.37211	0.0427776	3.0468565	33	1	54 days	0.78		Williams		1998 SL ₁₄₂
1998 SO ₁₄₂	15.7	0.15	19990122	57.39102	286.30672	56.72012	7.10965	0.1413673	2.4121630	28	2	1997–1998	0.75	M-v 4	Williams	33044	1998 SO ₁₄₂
1998 SS ₁₄₂	15.6	0.15	19980924	29.18604	289.18690	46.73690	5.41251	0.1696926	2.3569455	19	1	33 days	0.83		Williams		1998 SS ₁₄₂
1998 SU ₁₄₂	14.0	0.15	19981014	5.12486	3.21030	17.45588	11.48838	0.1303183	3.0418342	26	1	46 days	0.85		Williams		1998 SU ₁₄₂
1998 SX ₁₄₂	13.2	0.15	19980924	117.51373	234.86451	12.97016	16.47941	0.1630331	3.0486206	23	1	33 days	0.85		Williams		1998 SX ₁₄₂
1998 SB ₁₄₃	15.2	0.15	19981014	290.30401	199.01081	268.10610	5.41942	0.1024994	2.4546704	19	1	46 days	0.87		Williams		1998 SB ₁₄₃
1998 SF ₁₄₃	14.7	0.15	19980924	333.22063	212.13912	198.00850	5.71050	0.0605729	2.7844450	20	1	39 days	0.95		Williams		1998 SF ₁₄₃
1998 SL ₁₄₃	14.8	0.15	19980924	358.94754	182.85311	195.56320	9.01575	0.2178126	2.6967587	25	1	43 days	1.05		Williams		1998 SL ₁₄₃
1998 SN ₁₄₃	13.7	0.15	19981014	51.46391	132.74582	192.59289	9.16239	0.0791221	3.0962931	34	1	54 days	1.29		Williams		1998 SN ₁₄₃
1998 ST ₁₄₃	14.3	0.15	19981014	11.32302	127.79518	243.52416	1.91700	0.1096019	2.7999475	22	1	54 days	0.81		Williams		1998 ST ₁₄₃
1998 SY ₁₄₃	15.2	0.15	19990122	80.32627	330.63853	349.04346	2.30727	0.1467854	2.2216460	38	2	1997–1998	0.72	M-v 4	Williams	33045	1998 SY ₁₄₃
1998 SZ ₁₄₃	13.9	0.15	19980924	22.96820	147.42367	207.81594	8.39392	0.0767849	2.9810382	15	1	41 days	0.74		Williams		1998 SZ ₁₄₃
1998 SD ₁₄₄	13.9	0.15	19990122	300.94709	279.07297	199.38527	21.75959	0.0790716	2.5442770	24	2	1990–1998	0.74	M-v 5	Williams	33045	1998 SD ₁₄₄
1998 SK ₁₄₄	15.0	0.15	19981014	311.55063	53.30606	28.16557	5.92180	0.0850797	2.1863483	27	1	54 days	0.79		Williams		1998 SK ₁₄₄
1998 SN ₁₄₄	14.9	0.15	19981014	310.28342	67.20405	25.23376	8.33085	0.1692360	2.3664168	21	1	52 days	0.77		Williams		1998 SN ₁₄₄
1998 SO ₁₄₄	16.3	0.15	19980924	7.03904	351.20718	16.40665	4.44034	0.1557139	2.2071591	14	1	39 days	0.80		Williams		1998 SO ₁₄₄
1998 SP ₁₄₄	13.7	0.15	19981014	2.98853	177.40012	206.30965	4.72839	0.0939946	2.7385472	40	1	52 days	0.54		Williams		1998 SP ₁₄₄
1998 SR ₁₄₄	14.4	0.15	19981014	202.46880	352.22318	194.85485	6.86077	0.0755451	2.2939315	35	1	57 days	0.98		Williams		1998 SR ₁₄₄
1998 SU ₁₄₄	15.5	0.15	19980924	13.44206	328.87928	30.89912	3.68038	0.1565237	2.3374580	27	1	39 days	0.58		Williams		1998 SU ₁₄₄
1998 SV ₁₄₄	13.8	0.15	19990122	150.01075	220.75008	30.06491	3.87511	0.1111316	2.6789086	32	3	1992–1998	0.61	M-v 4	Williams	33045	1998 SV ₁₄₄
1998 SX ₁₄₄	13.9	0.15	19981014	40.70713	212.87972	116.33448	2.32180	0.1913141	3.1013161	23	1	52 days	0.74		Williams		1998 SX ₁₄₄
1998 SA ₁₄₅	13.6	0.15	19980924	24.23106	323.09196	21.47723	15.17894	0.2242071	3.1656667	33	1	58 days	0.75		Williams		1998 SA ₁₄₅
1998 SD ₁₄₅	14.7	0.15	19981014	35.98702	289.50082	50.65389	4.21978	0.1331727	2.6596962	20	1	54 days	0.72		Williams		1998 SD ₁₄₅
1998 SR ₁₄₅	12.5	0.15	19981014	37.68787	293.34294	35.69997	10.27239	0.2445528	3.9635057	27	1	54 days	0.66		Williams		1998 SR ₁₄₅
1998 SW ₁₄₅	14.2	0.15	19990122	275.62530	40.13068	112.47047	1.78055	0.1436895	2.3885274	43	2	1985–1998	0.75	M-v 5	Williams	33045	1998 SW ₁₄₅
1998 SX ₁₄₅	14.0	0.15	19980924	52.54697	268.68093	45.42404	5.76798	0.1531665	2.7570846	32	1	50 days	0.63		Williams		1998 SX ₁₄₅
1998 SY ₁₄₅	14.7	0.15	19990122	87.39947	271.68501	29.85866	2.36728	0.2167109	2.4181706	30	2	1997–1998	0.71	M-v 4	Williams	33045	1998 SY ₁₄₅
1998 SZ ₁₄₅	15.0	0.15	19981014	19.31252	162.50300	194.39962	6.90512	0.2091075	2.3229494	25	1	52 days	0.61		Williams		1998 SZ ₁₄₅
1998 SA ₁₄₆	13.5	0.15	19980924	279.07587	266.67666	204.75551	8.97101	0.0431371	3.0678702	14	1	39 days	0.98		Williams		1998 SA ₁₄₆
1998 SB ₁₄₆	14.9	0.15	19980924	183.33348	183.05542	17.35873	3.63449	0.0941765	2.2892830	37	1	58 days	1.06		Williams		1998 SB ₁₄₆
1998 SD ₁₄₆	15.4	0.15	19980924	343.78546	210.95611	192.51461	9.64301	0.0913781	3.0092580	19	1	39 days	0.89		Williams		1998 SD ₁₄₆
1998 SE ₁₄₆	13.5	0.15	19981014	317.86346	245.76671	203.75884	7.24996	0.2031354	2.8036771	24	1	52 days	1.09		Williams		1998 SE ₁₄₆
1998 SH ₁₄₆	15.4	0.15	19980924	47.13896	115.25821	199.17513	6.70873	0.1891354	2.2700828	29	1	58 days	1.33		Williams		1998 SH ₁₄₆
1998 SK ₁₄₆	13.4	0.15	19980924	326.31562	244.25993	185.57048	5.93550	0.1592453	3.1102831	27	1	58 days	0.66		Williams		1998 SK ₁₄₆
1998 SL ₁₄₆	13.6	0.15	19980924	160.13843	28.72492	193.31758	12.49549	0.0666971	2.6413172	15	1	39 days	0.81		Williams		1998 SL ₁₄₆
1998 SO ₁₄₆	13.9	0.15	19981014	338.76865	329.91594	82.72634	3.12689	0.0753510	2.7158959	20	1	52 days	0.87		Williams		1998 SO ₁₄₆
1998 SR ₁₄₆	15.6	0.15	19990122	24.93026	17.28088	16.84646	5.52330	0.1754735	2.2311570	53	1	62 days	0.53	M-v 4	Williams		1998 SR ₁₄₆
1998 SS ₁₄₆	13.5	0.15	19981014	108.73107	87.22609	190.68546	9.64003	0.0249980	2.9917439	33	1	52 days	0.78		Williams		1998 SS ₁₄₆
1998 SX ₁₄₆	12.6	0.15	19980924	85.73123	110.19241	169.22500	3.11422	0.1904027	3.2141857	15	1	39 days	0.86		Williams		1998 SX ₁₄₆
1998 SZ ₁₄₆	15.0	0.15	19981014	28.48757	313.34150	20.01485	12.74226	0.3200445	2.6003844	37	1	52 days	0.77		Williams		1998 SZ ₁₄₆
1998 SG ₁₄₇	15.7	0.15	19981014	359.62625	4.69181	23.67989	8.19816	0.1744863	2.2915526	32	1	52 days	1.08		Williams		1998 SG ₁₄₇
1998 SJ ₁₄₇	15.5	0.15	19981014	326.70740	261.28186	171.72230	3.73354	0.1548617	2.3697829	20	1	52 days	0.81		Williams		1998 SJ ₁₄₇
1998 SL ₁₄₇	15.9	0.15	19981014	36.48115	246.40763	86.70332	1.82650	0.2046070	2.1631769	17	1	52 days	0.79		Williams		1998 SL ₁₄₇
1998 SO ₁₄₇	14.2	0.15	19980924	126.29688	206.96337	37.66496	9.53482	0.1636438	2.3647009	14	1	39 days	0.96		Williams		1998 SO ₁₄₇
1998 SU ₁₄₇	13.6	0.15	19980924	51.12671	257.37811	71.37315	3.41360	0.0481152	2.6673314	15	1	39 days	0.64		Williams		1998 SU ₁₄₇
1998 SV ₁₄₇	14.6	0.15	19981014	292.06088	86.50563	27.49086	13.42735	0.1440387	2.6798746	35	1	56 days	0.86		Williams		1998 SV ₁₄₇
1998 SY ₁₄₇	15.7	0.15	19981014	15.71161	175.60323	192.08975	6.32236	0.1432688	2.3635862	21	1	52 days	0.83		Williams		1998 SY ₁₄₇
1998 SZ ₁₄₇	14.7	0.15	19980924	348.95325	212.55272	187.38337	8.04794	0.1996965	2.7975617	23	1	58 days	0.73		Williams		1998 SZ ₁₄₇
1998 SD ₁₄₈	16.2	0.15	19980924	306.78759	161.30072	274.74813	3.46654	0.2028248	2.3899152	12	1	6 days	0.89		Williams		1998 SD ₁₄₈
1998 SW ₁₅₂	16.6	0.15	19980924	355.18250	34.30079	341.67713	4.23485	0.2305044	2.3235301	12	1	32 days	0.99		Williams		1998 SW ₁₅₂
1998 SC ₁₅₃	15.5	0.15	19980924	323.84288	111.11557	309.37283	1.70167	0.1852492	2.3441558	14	1	33 days	0.80		Williams		1998 SC ₁₅₃
1998 SQ ₁₅₄	13.9	0.15	19980924	204.81150	229.76388	303.33212	3.03260	0.1026723	2.6885968	14	1	33 days	0.68		Williams		1998 SQ ₁₅₄
1998 SA ₁₅₅	15.2	0.15	19990122	45.40865	127.61053	214.31957	3.09445	0.2287694	2.6625857	38	2	1997–1998	0.78	M-v 4	Williams	33046	1998 SA ₁₅₅

1998 SC ₁₅₅	15.2	0.15	19980924	310.90921	76.69653	351.62663	2.88925	0.0760390	2.7874531	14	1	20 days	0.81		Williams	1998 SC ₁₅₅
1998 SF ₁₅₅	15.1	0.15	19980924	17.25022	320.52419	21.32559	6.99484	0.2447747	2.9297103	11	1	19 days	0.43		Williams	1998 SF ₁₅₅
1998 SN ₁₅₆	14.1	0.15	19980924	69.59862	297.97205	2.49830	2.29394	0.0445748	2.7852177	11	1	6 days	0.68	E	Williams	1998 SN ₁₅₆
1998 SP ₁₅₆	15.4	0.15	19981014	332.09295	146.87530	270.09379	1.83639	0.1496612	2.3341008	33	1	54 days	0.44		Williams	1998 SP ₁₅₆
1998 SW ₁₅₆	14.8	0.15	19980924	37.32306	350.61631	336.98902	6.31731	0.1450162	2.5752326	17	1	33 days	1.07		Williams	1998 SW ₁₅₆
1998 SK ₁₅₇	14.1	0.15	19980924	44.98559	181.81761	125.66830	2.33875	0.2215041	3.2446411	12	1	6 days	0.71		Williams	1998 SK ₁₅₇
1998 SE ₁₆₁	13.8	0.15	19981014	335.82482	190.34489	224.16290	10.17673	0.1016021	3.0595129	29	1	46 days	0.87		Williams	1998 SE ₁₆₁
1998 SG ₁₆₁	17.4	0.15	19980924	350.62903	59.09632	330.84607	2.92196	0.2429696	2.2996683	20	1	33 days	0.91		Williams	1998 SG ₁₆₁
1998 SL ₁₆₁	13.5	0.15	19990122	183.15244	358.00975	219.80701	1.39356	0.1611698	2.6394302	38	3	1988–1998	0.70	M-v 5	Williams	33046 1998 SL ₁₆₁
1998 ST ₁₆₁	15.6	0.15	19981014	36.12109	163.80355	165.33779	6.65873	0.1848543	2.3983435	35	1	48 days	0.95	D	Williams	1998 ST ₁₆₁
1998 SX ₁₆₁	15.5	0.15	19980924	348.93435	243.31896	146.67160	3.99037	0.1726713	2.5226092	26	1	41 days	0.75		Williams	1998 SX ₁₆₁
1998 SC ₁₆₂	13.9	0.15	19981014	314.65329	35.52605	39.75598	16.93893	0.0883163	3.1982803	36	1	48 days	0.98		Williams	1998 SC ₁₆₂
1998 SJ ₁₆₂	16.4	0.15	19980924	348.09501	190.39477	207.26870	4.87257	0.3207479	2.3705989	39	1	58 days	0.70		Williams	1998 SJ ₁₆₂
1998 SK ₁₆₂	16.9	0.15	19980924	356.53201	29.30686	351.94602	2.87937	0.2577986	2.3614600	16	1	33 days	0.75		Williams	1998 SK ₁₆₂
1998 SN ₁₆₂	14.6	0.15	19980924	301.73465	229.27144	236.43260	6.58438	0.2360142	2.8094481	15	1	33 days	0.83		Williams	1998 SN ₁₆₂
1998 SP ₁₆₂	13.3	0.15	19980924	86.40280	59.03830	231.00797	11.54821	0.0659439	2.7930378	25	1	33 days	0.90		Williams	1998 SP ₁₆₂
1998 SQ ₁₆₂	13.6	0.15	19981014	323.50694	188.99044	253.03590	7.37526	0.1946544	3.1613169	17	1	46 days	0.84		Williams	1998 SQ ₁₆₂
1998 SS ₁₆₂	13.8	0.15	19980924	228.14721	149.93847	8.48432	10.32909	0.0265209	2.9773815	16	1	33 days	1.00		Williams	1998 SS ₁₆₂
1998 SU ₁₆₂	15.1	0.15	19980924	357.59088	123.58881	259.87782	1.62899	0.0900849	2.6861170	17	1	33 days	0.73		Williams	1998 SU ₁₆₂
1998 SW ₁₆₂	15.9	0.15	19980924	336.10845	207.25586	206.19390	3.87510	0.1922850	2.5856810	15	1	33 days	0.92		Williams	1998 SW ₁₆₂
1998 SX ₁₆₂	16.4	0.15	19980924	10.40284	357.94651	2.93077	1.11462	0.2012242	2.3818449	17	1	33 days	0.93		Williams	1998 SX ₁₆₂
1998 SY ₁₆₂	17.1	0.15	19980924	18.33449	328.37290	21.80748	2.95976	0.1673000	2.2054624	21	1	33 days	0.81		Williams	1998 SY ₁₆₂
1998 SA ₁₆₃	13.9	0.15	19980924	212.70527	336.93208	198.22982	5.80611	0.0994815	2.6748035	17	1	33 days	0.86		Williams	1998 SA ₁₆₃
1998 SS ₁₆₃	14.9	0.15	19990122	23.36648	346.18626	42.85769	13.33935	0.1691730	2.6893747	16	1	60 days	1.05	M-v 6	Williams	1998 SS ₁₆₃
1998 ST ₁₆₃	16.5	0.15	19981014	1.25050	350.57128	37.18007	8.30492	0.3131433	2.5634320	22	1	54 days	0.65		Williams	1998 ST ₁₆₃
1998 SU ₁₆₃	13.8	0.15	19981014	100.73917	223.77631	51.59705	9.66343	0.1457129	2.5543797	22	1	54 days	0.71	D	Williams	1998 SU ₁₆₃
1998 SA ₁₆₄	16.3	0.15	19981014	135.26848	221.83726	29.34766	21.89410	0.0516276	1.9120365	27	1	53 days	0.86		Williams	1998 SA ₁₆₄
1998 SC ₁₆₄	14.7	0.15	19981014	87.51731	139.01871	149.13427	4.61616	0.1496507	2.3243625	20	1	54 days	0.86		Williams	1998 SC ₁₆₄
1998 SE ₁₆₄	13.6	0.15	19981014	80.63044	245.32978	42.58949	14.29973	0.2207295	2.7086527	25	1	59 days	0.45		Williams	1998 SE ₁₆₄
1998 SF ₁₆₄	14.5	0.15	19990122	24.21218	341.37547	49.75502	11.71365	0.0414323	2.7266442	27	1	68 days	0.48	M-v 5	Marsden	1998 SF ₁₆₄
1998 SG ₁₆₄	12.5	0.15	19981014	173.32586	80.12890	141.25626	7.29794	0.0903269	3.1561824	19	1	54 days	0.47		Williams	1998 SG ₁₆₄
1998 SL ₁₆₄	15.4	0.15	19980924	14.14577	286.78232	71.32976	5.06149	0.2876154	2.5952061	12	1	31 days	0.53		Marsden	1998 SL ₁₆₄
1998 TA	13.9	0.15	19990122	144.56417	258.25419	0.32081	7.34559	0.0892323	2.3152369	59	1	70 days	0.61	M-v 5	Williams	1998 TA
1998 TB	13.8	0.15	19990122	350.20275	352.63741	110.31012	5.95075	0.1154157	2.4356844	27	3	1979–1998	0.50	M-v 2	Williams	33046 1998 TB
1998 TC	13.8	0.15	19990122	8.14132	198.58611	284.12486	11.88006	0.1232899	2.4021878	15	1	60 days	0.66	M-v 6	Williams	1998 TC
1998 TE	14.9	0.15	19981014	332.57656	189.20344	233.32999	5.64103	0.1020218	2.2640233	51	1	48 days	0.53		Williams	1998 TE
1998 TF	13.1	0.15	19981014	270.97113	122.39284	16.88073	7.88845	0.1776134	2.7177572	64	1	36 days	0.50		Williams	1998 TF
1998 TG	15.8	0.15	19990122	68.21739	330.82321	356.19854	2.25726	0.2207843	2.3621967	27	2	1997–1998	0.64	M-v 5	Williams	33046 1998 TG
1998 TH	17.0	0.15	19981014	17.30513	130.39810	228.87427	3.22784	0.2366366	2.3081392	23	1	35 days	0.67		Williams	1998 TH
1998 TJ	15.9	0.15	19980924	41.34949	315.57276	13.69049	5.73761	0.1383260	2.3049918	35	1	58 days	0.84		Williams	1998 TJ
1998 TK	13.6	0.15	19981014	191.16725	341.11381	220.93497	10.13928	0.0696703	3.0460150	24	1	28 days	0.64		Williams	1998 TK
1998 TL	16.0	0.15	19981014	351.54593	40.30790	2.86467	6.46537	0.2370868	2.5291681	33	1	32 days	0.75		Williams	1998 TL
1998 TM	14.2	0.15	19981014	30.90516	115.76544	235.62424	9.10091	0.1350625	3.1017026	32	1	32 days	0.66		Williams	1998 TM
1998 TN	16.2	0.15	19980924	4.42768	310.34278	41.47470	20.96111	0.3724741	3.1187834	16	1	6 days	0.80		Williams	1998 TN
1998 TP	15.0	0.15	19981014	286.47747	69.46870	44.91912	23.01901	0.2620619	2.2625584	23	1	37 days	0.77		Williams	1998 TP
1998 TR ₁	15.2	0.15	19981014	26.75376	180.09023	116.12786	12.67988	0.2269072	2.7112524	15	1	34 days	0.43		Williams	1998 TR ₁
1998 TW ₁	14.0	0.15	19981014	8.54252	331.08192	54.38661	10.06354	0.1487959	2.7362515	25	1	28 days	0.54		Williams	1998 TW ₁
1998 TX ₁	15.9	0.15	19981014	10.67740	205.13916	159.21857	9.75332	0.0755940	2.7257039	18	1	47 days	0.84		Williams	1998 TX ₁
1998 TY ₁	15.9	0.15	19981014	5.63096	287.09370	77.79036	7.14737	0.0750648	2.7321837	9	1	28 days	0.67		Williams	1998 TY ₁
1998 TZ ₁	14.0	0.15	19990122	39.48020	207.09353	171.68025	12.74047	0.0136030	2.5676339	40	3	1973–1998	0.78	M-v 4	Williams	33046 1998 TZ ₁
1998 TC ₂	14.8	0.15	19981014	305.16489	104.22502	349.35949	4.44430	0.1249030	3.2131763	17	1	16 days	0.79		Williams	1998 TC ₂
1998 TD ₂	15.2	0.15	19981014	332.08706	42.82632	17.80502	10.85079	0.0890323	2.9645609	18	1	16 days	0.62		Williams	1998 TD ₂
1998 TL ₂	15.5	0.15	19981014	7.47567	14.00916	3.45778	4.20525	0.1702315	2.2699835	49	1	33 days	0.67		Williams	1998 TL ₂

1998 TN ₂	15.9	0.15	19981014	262.21703	123.19392	13.23902	6.88493	0.0724929	2.3867553	14	1	32 days	0.50	Williams	1998 TN ₂
1998 TP ₂	13.4	0.15	19981014	14.60490	82.01851	283.68286	1.76834	0.2343789	2.6864672	30	1	37 days	0.44	Williams	1998 TP ₂
1998 TT ₂	15.9	0.15	19981014	309.17613	115.55487	342.97076	2.10724	0.1735504	2.3742552	24	1	16 days	0.68	Williams	1998 TT ₂
1998 TH ₃	15.6	0.15	19981014	13.23313	318.54108	32.70154	12.40809	0.3085120	2.5455722	21	1	15 days	0.70	Williams	1998 TH ₃
1998 TL ₃	16.1	0.15	19981014	8.72367	177.69827	189.51128	12.51045	0.2680493	2.4557685	17	1	15 days	0.97	Williams	1998 TL ₃
1998 TN ₃	15.3	0.15	19981014	5.41036	334.03106	41.63089	14.89444	0.1838770	2.5833845	16	1	32 days	0.44	Williams	1998 TN ₃
1998 TO ₃	15.6	0.15	19981014	280.52656	82.69424	31.34609	21.11349	0.0849612	1.9278145	32	1	32 days	0.53	Williams	1998 TO ₃
1998 TQ ₃	14.2	0.15	19981014	354.28902	2.21878	34.87325	13.79343	0.2044059	2.3877300	28	1	53 days	0.59	Williams	1998 TQ ₃
1998 TR ₃	14.1	0.15	19981014	73.82735	277.34113	32.22105	21.70640	0.0869382	1.9323887	35	1	37 days	0.60	Williams	1998 TR ₃
1998 TT ₃	18.6	0.15	19990122	11.43300	48.06440	27.82097	21.72350	0.5016476	2.3253436	107	1	45 days	0.59	M-v 5 Williams	1998 TT ₃
1998 TU ₃	14.9	0.15	19990122	286.54805	84.47904	102.41821	5.40715	0.4837047	0.7871698	115	1	52 days	0.47	M-v 7 Williams	1998 TU ₃
1998 TJ ₄	13.9	0.15	19981014	295.61288	102.92555	353.25798	1.18036	0.0201091	3.0348347	22	1	30 days	0.53	Williams	1998 TJ ₄
1998 TC ₅	13.3	0.15	19990122	50.51772	95.94669	231.18001	14.90366	0.2856997	3.1526590	31	2	1997–1998	0.55	M-v 4 Williams	33047 1998 TC ₅
1998 TD ₅	14.9	0.15	19990122	9.10155	333.75253	80.88599	4.33560	0.1272307	2.4623512	26	2	1992–1998	0.63	M-v 5 Williams	33047 1998 TD ₅
1998 TE ₅	14.3	0.15	19981014	66.88557	255.29688	70.51989	5.52452	0.0220382	2.5489409	41	1	30 days	0.71	Williams	1998 TE ₅
1998 TF ₅	15.4	0.15	19981014	72.73279	235.61640	65.96383	5.59088	0.1665189	2.1985724	17	1	29 days	0.55	Williams	1998 TF ₅
1998 TG ₅	14.6	0.15	19981014	320.23950	29.01890	59.71032	7.51951	0.1733330	2.5439667	38	1	34 days	0.75	Williams	1998 TG ₅
1998 TH ₅	14.2	0.15	19990122	30.34009	241.76602	135.09917	2.85142	0.1914938	3.1198635	34	3	1995–1998	0.54	M-v 4 Williams	33047 1998 TH ₅
1998 TJ ₅	14.2	0.15	19981014	39.92911	276.10761	70.14959	5.62173	0.1128181	2.7921756	29	1	29 days	0.98	Williams	1998 TJ ₅
1998 TK ₅	14.4	0.15	19990122	324.83704	45.61374	59.25384	7.23730	0.0834377	2.4108076	29	2	1977–1998	0.56	M-v 5 Williams	33047 1998 TK ₅
1998 TN ₅	12.5	0.15	19981014	238.83965	315.43955	212.99314	13.20296	0.0947998	3.1191375	36	1	37 days	0.62	Williams	1998 TN ₅
1998 TO ₅	14.1	0.15	19981014	338.74455	212.73776	211.70052	11.13854	0.1630007	2.6253318	28	1	28 days	0.62	Williams	1998 TO ₅
1998 TR ₅	14.3	0.15	19981014	359.33027	3.57794	32.18716	6.11990	0.0611064	2.3465195	41	1	43 days	0.45	Williams	1998 TR ₅
1998 TS ₅	14.3	0.15	19981014	0.73932	342.10723	50.62996	14.36588	0.1577232	2.6101209	24	1	29 days	1.21	Williams	1998 TS ₅
1998 TU ₅	15.7	0.15	19981014	52.03213	271.62356	50.83216	5.65091	0.1873003	2.2781982	25	1	28 days	0.78	Williams	1998 TU ₅
1998 TX ₅	12.6	0.15	19990122	101.05802	26.42202	269.02217	1.89489	0.1265673	2.7854854	52	2	1993–1998	0.60	M-v 5 Williams	33047 1998 TX ₅
1998 TY ₅	15.8	0.15	19981014	8.69839	306.62872	69.53640	4.45035	0.2720266	2.6046702	23	1	27 days	1.03	Williams	1998 TY ₅
1998 TA ₆	13.4	0.15	19990122	299.82310	308.51742	183.92820	12.68173	0.1153951	2.6616035	22	2	1997–1998	0.42	M-v 4 Williams	33048 1998 TA ₆
1998 TC ₆	14.8	0.15	19990122	25.83797	236.05133	160.36937	2.99665	0.0349399	2.3982993	28	2	1990–1998	0.52	M-v 5 Williams	33048 1998 TC ₆
1998 TE ₆	14.4	0.15	19981014	26.68981	302.19117	61.42975	3.39071	0.0830900	2.3160040	24	1	27 days	0.51	Williams	1998 TE ₆
1998 TF ₆	15.1	0.15	19981014	347.33747	343.10516	68.68115	3.07746	0.1424019	2.4407470	32	1	31 days	0.52	Williams	1998 TF ₆
1998 TJ ₆	13.2	0.15	19981103	95.56402	179.45221	103.10469	2.51303	0.1883739	3.1675474	32	1	43 days	0.46	Marsden	1998 TJ ₆
1998 TO ₆	15.9	0.15	19981103	106.93431	60.81077	216.94913	4.20321	0.1721988	2.3502897	18	1	40 days	0.46	Williams	1998 TO ₆
1998 TP ₆	15.9	0.15	19981014	7.86087	208.87257	126.10458	10.29098	0.3040902	2.8511089	11	1	30 days	0.36	Williams	1998 TP ₆
1998 TQ ₆	14.4	0.15	19981103	38.94425	242.44022	113.15318	7.75399	0.1427431	2.3488155	22	1	50 days	0.40	Williams	1998 TQ ₆
1998 TS ₆	16.1	0.15	19990122	28.07061	0.94132	25.92538	22.33919	0.0700887	1.9156931	34	2	1997–1998	0.46	M-v 4 Williams	33048 1998 TS ₆
1998 TT ₆	13.8	0.15	19981014	112.94892	216.74123	57.47280	7.18963	0.0933279	2.3911378	15	1	27 days	0.65	Williams	1998 TT ₆
1998 TU ₆	14.0	0.15	19990122	71.72385	247.47302	84.16811	2.74907	0.1289099	2.9318903	37	2	1997–1998	0.66	M-v 4 Williams	33048 1998 TU ₆
1998 TV ₆	12.8	0.15	19990122	197.85938	3.16518	214.81790	15.59869	0.0456034	3.1864786	43	2	1981–1998	0.64	M-v 5 Williams	33048 1998 TV ₆
1998 TY ₆	14.7	0.15	19981103	52.77828	223.68895	104.06981	8.74585	0.2347315	2.6883436	20	1	42 days	0.78	Williams	1998 TY ₆
1998 TL ₇	16.1	0.15	19981103	34.22677	306.43511	38.44874	3.12354	0.1983828	2.4394547	29	1	51 days	0.86	Marsden	1998 TL ₇
1998 TP ₇	16.4	0.15	19980924	101.94601	63.85011	196.05281	3.43237	0.0894857	2.3356248	12	1	17 days	0.38	Williams	1998 TP ₇
1998 TE ₈	15.9	0.15	19990122	90.45636	88.47036	216.99799	7.78627	0.2418118	2.2885647	26	2	1997–1998	0.54	M-v 5 Williams	33048 1998 TE ₈
1998 TH ₈	15.6	0.15	19990122	34.99969	168.44559	209.11381	1.61537	0.1537858	2.3654860	30	2	1995–1998	0.69	M-v 4 Williams	33048 1998 TH ₈
1998 TQ ₉	14.9	0.15	19981014	337.32609	215.36187	209.26746	5.26486	0.1937400	3.0748910	19	1	30 days	0.90	Williams	1998 TQ ₉
1998 TC ₁₀	13.7	0.15	19981014	330.85529	8.93600	62.45191	1.53632	0.1442874	3.2371308	21	1	30 days	0.80	Williams	1998 TC ₁₀
1998 TJ ₁₀	14.4	0.15	19981014	333.11908	18.64038	50.56134	2.06862	0.1554179	3.0657232	25	1	50 days	0.64	Williams	1998 TJ ₁₀
1998 TL ₁₀	15.7	0.15	19981014	316.35206	273.70793	180.00323	0.15811	0.1751968	2.3708557	21	1	30 days	0.53	Williams	1998 TL ₁₀
1998 TN ₁₀	16.0	0.15	19981014	170.21259	185.76817	37.85147	5.12634	0.0984303	2.2251775	9	1	10 days	0.20	Williams	1998 TN ₁₀
1998 TS ₁₀	14.3	0.15	19981014	214.90054	149.56343	39.80701	13.22446	0.1060166	2.5484144	15	1	38 days	0.45	Williams	1998 TS ₁₀
1998 TD ₁₁	14.8	0.15	19981014	291.58052	61.31769	55.23932	4.56764	0.0691743	2.7992711	17	1	30 days	1.06	Williams	1998 TD ₁₁
1998 TU ₁₂	11.5	0.15	19981103	302.85540	73.19318	41.95136	15.40600	0.1392192	5.1772268	23	1	45 days	0.67	Williams	1998 TU ₁₂
1998 TV ₁₂	15.5	0.15	19981014	222.94399	327.61279	214.36438	2.06590	0.1112506	2.4114270	15	1	37 days	0.19	Williams	1998 TV ₁₂

1998 TJ ₁₃	15.3	0.15	19981014	8.82311	342.00972	41.17800	3.30749	0.1219305	2.2108320	18	1	29 days	0.35	Williams	1998 TJ ₁₃
1998 TN ₁₃	16.2	0.15	19981014	54.33509	119.49257	205.87321	2.80944	0.1589080	2.2433149	15	1	29 days	0.69	Williams	1998 TN ₁₃
1998 TT ₁₃	14.1	0.15	19981014	77.98217	82.62915	216.30540	12.92312	0.1988725	2.7004220	29	1	32 days	1.11	Williams	1998 TT ₁₃
1998 TV ₁₃	15.4	0.15	19981014	33.06594	150.62149	201.00041	2.02080	0.1686872	2.5217158	21	1	29 days	0.70	Williams	1998 TV ₁₃
1998 TB ₁₅	16.5	0.15	19981014	53.74357	295.04624	30.82323	4.24053	0.1532117	2.5444084	8	1	9 days	0.29	Williams	1998 TB ₁₅
1998 TD ₁₅	15.2	0.15	19981014	12.90758	163.74666	216.63034	14.04141	0.0938074	2.5504804	24	1	32 days	0.79	Williams	1998 TD ₁₅
1998 TR ₁₅	15.4	0.15	19981014	256.87857	138.23234	5.15335	5.02377	0.0975522	2.3284666	31	1	35 days	0.87	Williams	1998 TR ₁₅
1998 TB ₁₆	16.0	0.15	19981014	50.77056	67.76143	249.49983	2.18891	0.2140397	2.2365582	21	1	27 days	0.54	Williams	1998 TB ₁₆
1998 TG ₁₆	11.2	0.15	19990122	342.82350	226.97257	204.49727	11.77364	0.0946621	5.2758028	28	3	1971–1998	0.92	M-v 3 Williams	33049 1998 TG ₁₆
1998 TH ₁₆	14.7	0.15	19981014	42.59060	255.82951	93.82116	5.15096	0.0489424	2.3135197	26	1	33 days	0.61	Williams	1998 TH ₁₆
1998 TJ ₁₆	15.6	0.15	19981103	12.57434	328.90427	49.41431	13.66989	0.2977658	2.6439294	27	1	44 days	0.56	Williams	1998 TJ ₁₆
1998 TK ₁₆	14.3	0.15	19990122	338.35329	302.13873	148.24481	7.09042	0.0814848	2.3697910	19	2	1979–1998	0.83	M-v 5 Williams	33049 1998 TK ₁₆
1998 TO ₁₆	16.7	0.15	19980924	339.38079	173.38199	230.10170	5.38057	0.1357572	2.2852876	23	1	33 days	0.97	Williams	1998 TO ₁₆
1998 TR ₁₆	15.2	0.15	19981014	129.29235	343.73645	264.24871	3.09015	0.0996714	2.5786038	13	1	14 days	0.75	Williams	1998 TR ₁₆
1998 TG ₁₇	15.5	0.15	19981014	45.33476	89.23005	225.89780	4.37771	0.2588701	2.4153531	35	1	31 days	0.74	Williams	1998 TG ₁₇
1998 TK ₁₇	16.0	0.15	19981014	200.19326	176.37725	16.54696	5.64392	0.1433419	2.2260095	9	1	7 days	0.28	Williams	1998 TK ₁₇
1998 TQ ₁₇	15.8	0.15	19981014	28.95669	300.31816	54.80027	7.67559	0.1362676	2.2862842	16	1	26 days	0.55	Williams	1998 TQ ₁₇
1998 TW ₁₇	15.5	0.15	19981014	344.64402	326.56910	88.69881	2.63304	0.1643237	2.4206616	22	1	28 days	0.71	Williams	1998 TW ₁₇
1998 TX ₁₇	12.8	0.15	19981103	275.80313	314.31192	176.62695	7.61429	0.0246377	3.2081176	16	1	44 days	1.21	Williams	1998 TX ₁₇
1998 TA ₁₈	13.3	0.15	19990122	39.56565	96.78221	261.74007	6.87111	0.2760599	2.3502396	20	5	1973–1998	0.76	M-v 2 Williams	33049 1998 TA ₁₈
1998 TD ₁₈	12.7	0.15	19981014	59.84471	66.32831	230.42789	13.26008	0.2453895	3.1562129	24	1	28 days	0.69	Williams	1998 TD ₁₈
1998 TE ₁₈	13.8	0.15	19981014	331.06341	200.68317	223.69048	16.70537	0.1651466	3.0865347	21	1	17 days	1.02	Williams	1998 TE ₁₈
1998 TF ₁₈	14.0	0.15	19981014	336.09666	217.24151	204.26782	4.51527	0.1897199	2.5696670	42	1	32 days	0.33	Williams	1998 TF ₁₈
1998 TW ₁₈	15.4	0.15	19981014	9.13578	168.18627	203.93782	4.76445	0.1935810	2.4784561	18	1	15 days	0.58	Williams	1998 TW ₁₈
1998 TD ₁₉	15.8	0.15	19981014	14.27280	104.07594	257.47517	1.55053	0.2657930	2.5679729	26	1	34 days	0.66	Williams	1998 TD ₁₉
1998 TE ₁₉	14.1	0.15	19981014	33.45628	326.37447	21.21644	11.25859	0.1121306	3.0204084	15	1	15 days	0.38	Williams	1998 TE ₁₉
1998 TG ₁₉	15.4	0.15	19981014	23.62545	2.41439	353.02864	3.69684	0.1881447	2.7923516	9	1	4 days	0.43	Williams	1998 TG ₁₉
1998 TO ₁₉	15.5	0.15	19981014	314.05636	223.40894	229.48470	3.07121	0.2073144	2.3447043	26	1	19 days	0.53	Williams	1998 TO ₁₉
1998 TP ₁₉	12.8	0.15	19981014	190.68711	344.89000	214.82355	16.77878	0.0795086	3.1911366	18	1	14 days	0.61	Williams	1998 TP ₁₉
1998 TS ₁₉	14.0	0.15	19981014	341.00914	213.41101	201.33434	1.38760	0.1830583	3.0505285	28	1	13 days	0.69	Williams	1998 TS ₁₉
1998 TE ₂₀	15.1	0.15	19981014	71.25066	283.87633	27.96280	11.39818	0.0674546	2.7173222	14	1	16 days	0.90	Williams	1998 TE ₂₀
1998 TF ₂₀	13.6	0.15	19981014	115.19298	237.27727	30.43385	14.20725	0.0920505	3.2383378	14	1	16 days	0.75	Williams	1998 TF ₂₀
1998 TA ₂₁	17.1	0.15	19981014	328.68807	114.31389	317.20802	0.55241	0.1608664	2.3900770	13	1	16 days	0.40	Williams	1998 TA ₂₁
1998 TF ₂₁	14.7	0.15	19981014	242.65619	129.27884	23.07964	4.60523	0.0433768	2.6147705	15	1	16 days	0.65	Williams	1998 TF ₂₁
1998 TT ₂₂	16.5	0.15	19981014	64.37154	90.14481	221.33334	2.57752	0.1622752	2.3316333	12	1	37 days	0.18	Williams	1998 TT ₂₂
1998 TU ₂₂	15.9	0.15	19981103	12.40041	3.90666	19.43141	1.31025	0.1629913	3.1167107	15	1	41 days	0.59	Williams	1998 TU ₂₂
1998 TX ₂₂	14.4	0.15	19981103	338.78280	29.06280	41.46871	10.43386	0.1150600	3.0696286	12	1	43 days	0.33	Williams	1998 TX ₂₂
1998 TE ₂₃	15.6	0.15	19981014	312.76686	258.38033	187.73948	1.07349	0.2024269	2.6333768	9	1	5 days	0.38	Williams	1998 TE ₂₃
1998 TF ₂₃	16.3	0.15	19981014	286.38664	79.39091	26.70862	2.03243	0.1198989	2.4656674	9	1	5 days	0.32	E Williams	1998 TF ₂₃
1998 TQ ₂₅	15.6	0.15	19981014	74.66917	81.22247	232.33371	2.35970	0.0726744	2.6850260	12	1	38 days	0.14	Williams	1998 TQ ₂₅
1998 TU ₂₅	17.6	0.15	19981014	279.05712	95.50562	29.31137	4.19415	0.0720802	2.3169941	12	1	36 days	0.21	Williams	1998 TU ₂₅
1998 TZ ₂₅	16.7	0.15	19981103	40.07030	115.09252	233.67221	1.07647	0.1520736	2.5868306	12	1	43 days	0.18	Williams	1998 TZ ₂₅
1998 TH ₂₆	16.7	0.15	19981014	328.82426	205.49536	231.12516	2.98462	0.1563086	2.5479862	12	1	38 days	0.16	Williams	1998 TH ₂₆
1998 TN ₂₆	16.5	0.15	19981014	17.35063	345.13107	18.93572	1.76377	0.2569299	2.6256887	12	1	36 days	0.19	Williams	1998 TN ₂₆
1998 TV ₂₆	15.4	0.15	19981014	138.53650	217.61133	31.43030	4.24674	0.1695949	2.4230465	11	1	36 days	0.12	Williams	1998 TV ₂₆
1998 TE ₂₇	14.8	0.15	19981014	355.08692	199.79095	205.20186	0.79649	0.1095594	2.7441742	19	1	28 days	0.82	Williams	1998 TE ₂₇
1998 TR ₂₈	14.5	0.15	19981014	42.98738	93.91788	248.60556	1.56975	0.0867099	2.6675273	19	1	27 days	0.75	Williams	1998 TR ₂₈
1998 TX ₂₈	13.9	0.15	19981014	311.97265	60.60130	32.44302	7.35760	0.1038537	3.2009125	17	1	32 days	0.48	Williams	1998 TX ₂₈
1998 TZ ₂₈	17.0	0.15	19981014	15.36805	339.10392	27.58951	3.17924	0.2067922	2.1797820	13	1	27 days	0.53	Williams	1998 TZ ₂₈
1998 TE ₂₉	13.7	0.15	19981014	245.90751	297.37463	226.27322	7.00615	0.1739937	2.7514493	22	1	29 days	0.66	Williams	1998 TE ₂₉
1998 TJ ₂₉	16.0	0.15	19981014	330.54363	194.42191	239.02149	1.71784	0.1791413	2.4495292	18	1	27 days	0.81	Williams	1998 TJ ₂₉
1998 TS ₂₉	16.3	0.15	19981103	34.24521	335.29660	23.85931	2.10520	0.0919945	2.8328424	12	1	42 days	0.27	Williams	1998 TS ₂₉
1998 TU ₂₉	17.0	0.15	19981014	1.12186	241.37267	147.02583	14.97093	0.3492092	2.7101014	10	1	35 days	0.32	Williams	1998 TU ₂₉

1998 TV ₂₉	15.5	0.15	19981014	85.99116	71.55072	220.30632	6.80327	0.1532987	2.2633079	22	1	34 days	0.92	Williams	1998 TV ₂₉
1998 TK ₃₀	14.6	0.15	19981014	24.65611	149.43076	208.79015	11.32919	0.1514195	2.4108422	19	1	32 days	0.35	Williams	1998 TK ₃₀
1998 TM ₃₀	15.5	0.15	19981014	9.62979	153.44604	223.02464	2.59822	0.2175702	2.5932296	16	1	32 days	0.42	Williams	1998 TM ₃₀
1998 TO ₃₀	15.2	0.15	19981014	333.45728	222.91491	207.24792	3.81150	0.1652316	2.6338159	15	1	32 days	0.51	Williams	1998 TO ₃₀
1998 TU ₃₀	13.7	0.15	19981014	283.87979	97.46057	31.38044	11.43138	0.1110916	3.1457175	15	1	32 days	0.72	Williams	1998 TU ₃₀
1998 TV ₃₀	15.0	0.15	19981014	52.36426	346.10917	345.00130	2.12930	0.1384585	2.5496771	15	1	32 days	0.81	Williams	1998 TV ₃₀
1998 TW ₃₀	13.5	0.15	19981014	353.77353	24.87577	18.12043	9.30575	0.0991531	3.0098880	15	1	32 days	0.61	Williams	1998 TW ₃₀
1998 TX ₃₀	14.5	0.15	19981014	314.17918	77.39158	10.12983	5.98394	0.1004181	2.2197719	15	1	32 days	0.48	Williams	1998 TX ₃₀
1998 TA ₃₁	14.5	0.15	19981014	278.23438	125.48822	14.19426	4.60929	0.1957979	2.5814684	16	1	32 days	0.78	Williams	1998 TA ₃₁
1998 TC ₃₁	12.0	0.15	19981014	323.40426	216.98195	226.24624	24.01341	0.1265730	5.1814222	13	1	32 days	0.63	Williams	1998 TC ₃₁
1998 TJ ₃₁	15.2	0.15	19981014	6.07943	349.22700	26.22398	5.66067	0.1027804	2.6203542	29	1	54 days	0.64	Williams	1998 TJ ₃₁
1998 TL ₃₁	16.6	0.15	19981014	345.92979	61.21829	347.60000	2.23325	0.2937727	2.6145940	23	1	31 days	1.00	Williams	1998 TL ₃₁
1998 TN ₃₁	14.8	0.15	19981014	248.55772	301.15370	203.29148	11.17486	0.1086261	2.5560251	15	1	18 days	0.93	Williams	1998 TN ₃₁
1998 TO ₃₁	15.4	0.15	19981014	326.62700	50.77670	20.55251	7.68350	0.2024079	3.1265145	14	1	18 days	0.70	Williams	1998 TO ₃₁
1998 TQ ₃₁	15.3	0.15	19981014	110.56670	61.18523	200.11749	7.12844	0.0987057	2.2853077	15	1	18 days	0.63	Williams	1998 TQ ₃₁
1998 TS ₃₁	16.7	0.15	19981014	350.13571	229.91374	171.09107	6.87919	0.1769386	2.4524257	15	1	18 days	0.83	Williams	1998 TS ₃₁
1998 TA ₃₂	14.4	0.15	19981014	92.77747	11.87359	280.18192	2.85273	0.0592833	2.6212744	15	1	18 days	0.73	Williams	1998 TA ₃₂
1998 TC ₃₂	14.5	0.15	19981014	247.60437	266.98873	245.92626	4.59727	0.0919043	2.2733830	15	1	18 days	0.39	Williams	1998 TC ₃₂
1998 TE ₃₂	14.1	0.15	19981014	224.28192	254.78594	283.50686	3.48895	0.1370166	2.5486002	15	1	31 days	1.03	Williams	1998 TE ₃₂
1998 TF ₃₂	15.0	0.15	19990122	56.96678	323.98449	19.49808	10.96485	0.1832995	2.6128009	17	1	72 days	0.76	M-v 5 Williams	1998 TF ₃₂
1998 TG ₃₂	15.1	0.15	19981014	347.32413	80.91919	324.04025	2.10563	0.0696850	2.2053784	15	1	31 days	0.28	Williams	1998 TG ₃₂
1998 TH ₃₂	14.9	0.15	19981014	317.39640	225.64775	218.88646	12.65591	0.1363540	2.8116019	15	1	18 days	0.97	Williams	1998 TH ₃₂
1998 TJ ₃₂	15.4	0.15	19981014	351.17979	166.64042	235.94287	4.52550	0.1619363	3.1119916	15	1	18 days	0.63	Williams	1998 TJ ₃₂
1998 TM ₃₂	14.7	0.15	19981014	95.03072	343.25173	297.97314	1.30668	0.1127415	2.4122048	28	1	34 days	0.59	Williams	1998 TM ₃₂
1998 TN ₃₂	14.2	0.15	19981014	356.96983	172.73403	221.11221	11.15958	0.1622787	3.0575815	23	1	31 days	0.61	Williams	1998 TN ₃₂
1998 TW ₃₂	13.3	0.15	19981014	11.53175	169.39822	206.22051	14.84647	0.0870784	2.5790655	15	1	28 days	0.46	Williams	1998 TW ₃₂
1998 TY ₃₂	14.6	0.15	19981014	309.45812	56.52076	38.17560	9.40346	0.1217365	2.7668386	16	1	28 days	0.50	Williams	1998 TY ₃₂
1998 TA ₃₃	15.0	0.15	19981014	357.49968	233.05450	162.95144	1.26249	0.1748140	3.0862174	17	1	50 days	0.56	Williams	1998 TA ₃₃
1998 TB ₃₃	12.9	0.15	19981014	50.81253	271.27237	48.73780	6.99899	0.2245134	3.9825334	14	1	28 days	0.53	Williams	1998 TB ₃₃
1998 TC ₃₃	15.6	0.15	19981014	50.80166	261.15235	63.84965	1.77183	0.1677109	2.8353410	13	1	28 days	0.71	Williams	1998 TC ₃₃
1998 TF ₃₃	15.1	0.15	19981014	234.26046	330.34800	190.59157	6.17570	0.0342639	2.2939174	19	1	32 days	0.52	Williams	1998 TF ₃₃
1998 TG ₃₃	15.8	0.15	19981014	22.54507	148.58040	201.85621	13.26915	0.2844953	2.6291748	14	1	28 days	0.88	Williams	1998 TG ₃₃
1998 TP ₃₃	15.3	0.15	19981014	50.06042	277.32231	51.35178	7.30650	0.1418144	2.2914874	16	1	28 days	0.51	Williams	1998 TP ₃₃
1998 TQ ₃₃	13.1	0.15	19981014	228.73633	136.63267	42.23117	14.65643	0.1453800	2.7628483	28	1	59 days	0.65	Williams	1998 TQ ₃₃
1998 TS ₃₃	14.2	0.15	19981014	332.52152	310.68924	121.46861	2.32876	0.1393877	3.1575103	14	1	28 days	0.66	Williams	1998 TS ₃₃
1998 TT ₃₃	16.4	0.15	19981014	14.10208	303.91746	63.31122	3.86823	0.2497223	2.3525656	18	1	32 days	0.57	Williams	1998 TT ₃₃
1998 TU ₃₃	15.8	0.15	19981014	23.91922	276.83875	80.14390	4.06122	0.2167623	2.5628838	16	1	28 days	0.64	Williams	1998 TU ₃₃
1998 TV ₃₃	11.4	0.15	19981014	327.56393	10.16631	66.31929	9.99238	0.0421776	5.1001351	22	1	33 days	0.68	Williams	1998 TV ₃₃
1998 TW ₃₃	15.4	0.15	19981014	42.81368	133.81695	199.21360	13.59980	0.1894032	2.5335693	15	1	28 days	0.72	Williams	1998 TW ₃₃
1998 TZ ₃₃	16.5	0.15	19981014	345.93435	326.25946	86.87743	3.71073	0.2094506	2.3080131	15	1	28 days	0.46	Williams	1998 TZ ₃₃
1998 TC ₃₄	16.4	0.15	19981014	11.68191	275.17509	95.81726	3.45847	0.2236172	2.3540393	16	1	28 days	0.56	Williams	1998 TC ₃₄
1998 TE ₃₄	15.5	0.15	19981014	91.22942	149.08441	131.51062	3.72888	0.1841674	2.2444842	12	1	28 days	0.69	Williams	1998 TE ₃₄
1998 TJ ₃₄	13.7	0.15	19981014	5.94493	212.23403	173.38697	5.95947	0.1630488	3.0946098	16	1	28 days	0.39	Williams	1998 TJ ₃₄
1998 TN ₃₄	13.6	0.15	19981014	126.17938	211.65077	44.26116	13.06368	0.1107766	2.7126180	19	1	54 days	0.70	Williams	1998 TN ₃₄
1998 TO ₃₄	15.1	0.15	19981014	306.10379	286.61295	173.18295	4.97105	0.1479090	2.5455868	18	1	28 days	0.56	Williams	1998 TO ₃₄
1998 TT ₃₄	15.1	0.15	19981014	12.36165	250.08647	123.27994	3.02554	0.1339462	2.9201322	17	1	28 days	0.69	Williams	1998 TT ₃₄
1998 TY ₃₄	15.2	0.15	19981014	331.28661	249.96480	181.60079	2.27310	0.1927847	2.4181667	16	1	28 days	0.55	Williams	1998 TY ₃₄
1998 TA ₃₅	14.5	0.15	19981014	337.59386	10.58687	47.00564	4.18516	0.0787288	2.7386162	13	1	28 days	0.65	Williams	1998 TA ₃₅
1998 TB ₃₅	15.1	0.15	19981014	17.50184	314.76093	45.45137	5.35253	0.2436466	2.5826001	16	1	28 days	0.39	Williams	1998 TB ₃₅
1998 UL	14.0	0.15	19990122	123.40381	329.93377	284.24936	9.31869	0.0675942	2.9691870	18	1	64 days	0.50	M-v 5 Williams	1998 UL
1998 UP	16.7	0.15	19981014	6.77989	144.65917	228.52892	5.02498	0.2067681	2.3303206	39	1	46 days	0.93	Williams	1998 UP
1998 UQ	16.3	0.15	19990122	40.89525	303.11717	37.58453	9.91321	0.3333704	2.3288268	75	2	1991-1998	0.54	M-v 4 Williams	33049 1998 UQ
1998 US	15.4	0.15	19981014	59.12554	54.77662	226.38881	12.78689	0.2910896	2.3805407	10	1	24 days	0.23	Marsden	1998 US

1998 UU	15.7	0.15	19981014	307.42988	162.76807	286.91429	19.48924	0.0763198	1.9118068	13	1	34 days	0.74	Williams	1998 UU
1998 UX	16.4	0.15	19981014	2.98458	120.49947	254.57289	21.30534	0.2937710	2.3205401	15	1	42 days	0.48	Williams	1998 UX
1998 UA ₁	15.3	0.15	19981103	342.32057	14.38400	49.75523	4.87182	0.1729059	2.3097328	39	1	35 days	0.34	Williams	1998 UA ₁
1998 UB ₁	15.9	0.15	19981103	32.26454	150.07363	202.78498	0.49448	0.2205084	2.8465913	19	1	40 days	0.56	Williams	1998 UB ₁
1998 UC ₁	15.4	0.15	19990122	17.09427	275.02388	139.59686	5.92314	0.1476343	2.3146721	42	2	1991–1998	0.44	Williams	1998 UC ₁
1998 UD ₁	16.2	0.15	19990122	15.37714	67.24259	317.70093	20.34768	0.4230768	3.1449296	45	1	73 days	0.38	Williams	1998 UD ₁
1998 UL ₁	16.5	0.15	19990122	218.88985	353.07504	214.92408	41.97276	0.2142205	1.5268402	66	1	36 days	0.52	Williams	1998 UL ₁
1998 UN ₁	18.2	0.15	19990122	101.23811	87.65743	217.96521	32.42998	0.2208281	1.5135719	84	1	35 days	0.61	Williams	1998 UN ₁
1998 UO ₁	15.9	0.15	19990122	92.91702	252.02926	358.96172	25.57610	0.7631985	1.5961011	108	1	37 days	0.47	Nakano	1998 UO ₁
1998 UQ ₁	16.0	0.15	19990122	11.74167	182.96551	222.54053	64.55013	0.5204848	3.2022594	105	1	38 days	0.64	Nakano	1998 UQ ₁
1998 UW ₁	12.3	0.15	19981014	44.17320	243.06869	102.85885	14.02921	0.1956214	2.6682863	14	1	29 days	0.40	Williams	1998 UW ₁
1998 UX ₁	12.9	0.15	19981014	48.66972	208.97214	142.96347	11.11811	0.1279764	3.0140095	10	1	27 days	0.38	Williams	1998 UX ₁
1998 UA ₂	17.7	0.15	19981014	338.94476	45.76490	14.21602	10.26485	0.2689339	2.4076769	14	1	9 days	0.70	Williams	1998 UA ₂
1998 UF ₂	16.9	0.15	19981014	14.03606	351.84586	10.96600	5.35000	0.2730430	2.6005377	10	1	23 days	0.69	Williams	1998 UF ₂
1998 UG ₂	17.0	0.15	19981014	21.50224	350.62916	359.78855	2.96322	0.2712925	2.4611689	16	1	18 days	0.59	Williams	1998 UG ₂
1998 UQ ₂	15.4	0.15	19981014	11.05524	12.01574	0.69011	2.33119	0.2070331	2.4475623	22	1	33 days	0.44	Williams	1998 UQ ₂
1998 UR ₂	16.2	0.15	19981014	340.62057	193.49687	227.05897	5.46655	0.2175135	2.5293767	21	1	26 days	0.59	Williams	1998 UR ₂
1998 UX ₂	15.6	0.15	19981014	293.14504	242.84970	223.66187	7.22466	0.0673500	2.3638206	13	1	22 days	0.64	Williams	1998 UX ₂
1998 UC ₃	14.4	0.15	19981014	9.79639	54.83555	327.52307	1.27605	0.0695494	2.8616546	32	1	38 days	0.95	Williams	1998 UC ₃
1998 UC ₄	13.3	0.15	19990122	130.22973	66.51996	209.33877	12.24863	0.1680113	2.6259138	35	4	1972–1998	0.62	Williams	1998 UC ₄
1998 UD ₄	14.6	0.15	19981014	72.55709	219.75466	82.80628	7.22282	0.1793119	2.2505313	26	1	28 days	1.11	Williams	1998 UD ₄
1998 UE ₄	14.4	0.15	19981014	29.34401	234.32614	127.15336	9.86571	0.2346615	2.3405804	9	1	22 days	0.26	Williams	1998 UE ₄
1998 UF ₄	14.9	0.15	19981103	62.63232	222.15925	105.15342	11.21938	0.2436759	2.3187254	17	1	26 days	0.42	Williams	1998 UF ₄
1998 UG ₄	14.4	0.15	19981014	348.95572	324.20125	43.35641	12.32860	0.1565570	3.2034480	14	1	59 days	0.61	Williams	1998 UG ₄
1998 UZ ₄	16.2	0.15	19981014	287.26014	37.55099	78.05939	3.69395	0.1284042	2.4736552	13	1	7 days	0.44	Williams	1998 UZ ₄
1998 UD ₅	16.2	0.15	19981014	356.52459	253.98758	139.81985	2.77579	0.2701914	2.7663324	17	1	28 days	0.59	Williams	1998 UD ₅
1998 UT ₅	16.6	0.15	19981014	335.04387	319.82073	105.39939	3.29428	0.1860787	2.3859679	17	1	28 days	0.56	Williams	1998 UT ₅
1998 UY ₅	15.8	0.15	19981014	17.27758	295.07179	61.95891	5.76596	0.2821887	2.5403431	22	1	30 days	0.53	Williams	1998 UY ₅
1998 UH ₆	16.7	0.15	19981014	355.86171	282.02360	113.86335	3.24075	0.2241125	2.3913462	14	1	20 days	0.63	Williams	1998 UH ₆
1998 UL ₆	12.8	0.15	19981103	337.83397	25.23778	111.58933	12.19358	0.0561345	3.0145630	18	1	38 days	0.88	Williams	1998 UL ₆
1998 UM ₆	15.0	0.15	19981103	70.09204	251.51747	57.65196	5.17657	0.1693774	2.6210123	26	1	35 days	0.45	Marsden	1998 UM ₆
1998 UN ₆	15.9	0.15	19981103	48.49852	285.82976	47.06578	7.61286	0.1749820	2.2563268	35	1	42 days	0.34	Marsden	1998 UN ₆
1998 UO ₆	14.5	0.15	19990122	47.21226	225.94411	137.58375	2.74180	0.0880063	2.8446221	28	1	60 days	0.48	Williams	1998 UO ₆
1998 UP ₆	13.0	0.15	19990122	78.77879	299.89180	23.74483	17.56198	0.2555732	2.6026252	35	3	1981–1998	0.82	Williams	1998 UP ₆
1998 UT ₆	13.6	0.15	19981103	20.32100	351.93890	37.32824	1.71946	0.1108209	2.9436173	18	1	36 days	0.34	Williams	1998 UT ₆
1998 UU ₆	12.9	0.15	19981123	67.00609	299.11853	64.71130	14.23410	0.2225849	2.5395958	16	1	38 days	0.25	Nakano	1998 UU ₆
1998 UZ ₆	13.4	0.15	19981103	263.92833	18.65203	148.82760	12.82732	0.0988526	2.6862350	16	1	26 days	0.80	Williams	1998 UZ ₆
1998 UA ₇	12.6	0.15	19981014	46.30451	270.05916	93.20279	22.73289	0.0696356	3.1474805	12	1	22 days	0.36	Williams	1998 UA ₇
1998 UB ₇	14.6	0.15	19981014	19.06249	285.44299	76.69288	7.77731	0.2502668	2.3372527	22	1	29 days	0.60	Williams	1998 UB ₇
1998 UC ₇	13.1	0.15	19981103	337.37319	210.64561	219.42286	11.32276	0.0224327	2.9336457	18	1	41 days	0.56	Williams	1998 UC ₇
1998 UE ₇	15.2	0.15	19990122	47.13275	142.25494	207.76275	13.57399	0.3206527	2.6215700	27	3	1981–1998	0.44	Williams	1998 UE ₇
1998 UF ₇	13.9	0.15	19981103	43.14422	179.70361	186.40996	15.04586	0.1234243	2.6322008	13	1	39 days	0.91	Williams	1998 UF ₇
1998 UG ₇	14.0	0.15	19981103	267.86871	110.72935	24.97725	1.63868	0.0096293	2.9624796	14	1	32 days	0.61	Marsden	1998 UG ₇
1998 UH ₇	15.3	0.15	19981014	340.84277	312.32351	107.68488	5.48636	0.1301223	2.4103599	17	1	32 days	1.03	Williams	1998 UH ₇
1998 UJ ₇	14.2	0.15	19981014	65.81326	229.05687	97.99158	1.78882	0.0652247	2.6929603	19	1	29 days	0.65	Williams	1998 UJ ₇
1998 UK ₇	14.1	0.15	19981014	345.36163	9.77440	46.00666	15.80718	0.0874348	2.5698599	23	1	24 days	0.30	Williams	1998 UK ₇
1998 UL ₇	14.8	0.15	19981103	12.61277	310.30426	74.62730	7.51004	0.1577337	2.3299750	16	1	24 days	0.31	Williams	1998 UL ₇
1998 UN ₇	15.5	0.15	19981014	49.48110	276.22735	50.38371	7.47530	0.2104211	2.2433655	33	1	24 days	0.70	Williams	1998 UN ₇
1998 UO ₇	15.4	0.15	19981014	342.27160	20.21722	43.45048	4.61355	0.1714874	2.5466137	19	1	19 days	0.70	Williams	1998 UO ₇
1998 UP ₇	15.8	0.15	19981014	344.66643	14.20013	43.00504	7.59290	0.0953844	2.3420684	22	1	29 days	0.62	Williams	1998 UP ₇
1998 UQ ₇	14.7	0.15	19981103	305.43101	65.65884	42.77053	13.32689	0.1230082	2.5896679	21	1	24 days	0.62	Williams	1998 UQ ₇
1998 UT ₇	14.3	0.15	19981103	19.41946	153.27227	215.43343	6.23999	0.1300242	2.7569282	32	1	21 days	0.88	Williams	1998 UT ₇
1998 UV ₇	15.3	0.15	19981014	348.82539	5.06966	46.10082	14.39591	0.1599531	2.6719850	16	1	18 days	0.57	Williams	1998 UV ₇

1998 UX ₇	12.9	0.15	19981103	42.24919	151.00586	202.27888	11.41554	0.1217559	3.2112665	13	1	34 days	0.53		Williams		1998 UX ₇
1998 UZ ₇	15.4	0.15	19990122	4.71030	224.25106	205.03581	13.14386	0.2657449	2.6336260	34	2	1996–1998	0.56	M-v 3	Williams	33051	1998 UZ ₇
1998 UB ₈	14.7	0.15	19990122	75.35290	280.24023	50.91345	2.21678	0.1694211	2.6468891	30	2	1996–1998	0.62	M-v 5	Williams	33051	1998 UB ₈
1998 UE ₈	12.9	0.15	19981103	326.10482	281.22776	170.42399	1.76591	0.1363119	3.2200352	22	1	39 days	0.55		Williams		1998 UE ₈
1998 UF ₈	13.6	0.15	19981103	220.41862	141.65463	50.67748	7.27295	0.0860723	2.2585775	21	1	42 days	0.59		Williams		1998 UF ₈
1998 UG ₈	12.5	0.15	19981103	308.14422	236.98218	227.73049	21.16545	0.0491705	3.2387964	17	1	39 days	0.36		Williams		1998 UG ₈
1998 UH ₈	15.2	0.15	19990122	58.64319	308.15656	44.74668	10.82558	0.2487653	2.3434463	34	2	1997–1998	0.58	M-v 5	Williams	33051	1998 UH ₈
1998 UJ ₈	14.9	0.15	19981103	359.64049	210.44365	202.81842	3.73453	0.1540817	2.2784553	21	1	34 days	0.41		Nakano		1998 UJ ₈
1998 UK ₈	14.1	0.15	19981103	292.60344	323.28999	173.48059	4.75737	0.1270031	2.4525786	8	1	30 days	0.47		Nakano		1998 UK ₈
1998 UN ₈	15.8	0.15	19981103	13.99130	197.03243	189.55932	4.09365	0.2963356	2.6084258	7	1	18 days	0.42		Williams		1998 UN ₈
1998 UO ₈	13.4	0.15	19981014	37.86909	93.79468	250.40452	3.32962	0.0859953	2.7887279	36	1	34 days	0.47		Williams		1998 UO ₈
1998 UP ₈	14.3	0.15	19990122	46.75576	77.61811	272.82063	1.75974	0.2084077	2.7024596	47	1	60 days	0.60	M-v 5	Williams		1998 UP ₈
1998 US ₈	16.7	0.15	19981014	4.40883	41.89621	338.21636	2.12973	0.1839035	2.3139883	12	1	12 days	0.29		Williams		1998 US ₈
1998 UV ₈	15.9	0.15	19981014	355.91021	187.17151	204.76698	1.73592	0.2152735	2.3113982	30	1	19 days	0.79		Williams		1998 UV ₈
1998 UW ₈	13.0	0.15	19981014	96.72185	295.28225	346.42611	1.71132	0.0874449	3.1922294	18	1	12 days	0.56		Williams		1998 UW ₈
1998 UX ₈	14.0	0.15	19981014	30.04464	123.40118	224.93481	8.25700	0.1471563	2.8433090	21	1	13 days	0.43		Williams		1998 UX ₈
1998 UY ₈	17.0	0.15	19981014	20.92777	37.20158	314.67481	1.32218	0.2877239	2.3520167	9	1	3 days	0.25		Williams		1998 UY ₈
1998 UZ ₈	11.5	0.15	19981103	332.39592	47.81054	25.50305	8.22882	0.0980266	5.2625432	15	1	40 days	0.27		Williams		1998 UZ ₈
1998 UA ₉	16.0	0.15	19981014	332.67141	85.38120	346.90244	1.75587	0.2021420	2.3303665	22	1	26 days	0.60		Williams		1998 UA ₉
1998 UB ₉	15.4	0.15	19981103	310.07865	235.27523	218.81316	2.05610	0.0397692	2.6379177	18	1	32 days	0.41		Williams		1998 UB ₉
1998 UG ₁₀	14.5	0.15	19981014	333.90624	205.32979	221.56476	15.09110	0.1062177	3.4472801	12	1	34 days	0.20		Williams		1998 UG ₁₀
1998 UF ₁₁	15.7	0.15	19981014	334.74212	19.19615	69.75302	3.83243	0.3632002	3.0761206	16	1	25 days	0.56		Williams		1998 UF ₁₁
1998 UK ₁₁	15.0	0.15	19981014	4.38037	182.09362	204.78200	5.95539	0.1386869	2.4663481	18	1	25 days	0.46		Williams		1998 UK ₁₁
1998 UK ₁₂	16.1	0.15	19981014	354.91013	6.93538	31.36403	4.05619	0.2830317	2.9883446	18	1	15 days	0.57		Williams		1998 UK ₁₂
1998 UF ₁₄	13.4	0.15	19981014	38.80161	280.23280	69.14720	3.09627	0.0925567	2.9380171	19	1	22 days	0.38		Williams		1998 UF ₁₄
1998 UY ₁₄	16.2	0.15	19981014	346.71985	221.63087	193.74996	3.87271	0.2336400	2.6432095	16	1	19 days	0.50		Williams		1998 UY ₁₄
1998 UA ₁₅	14.7	0.15	19981103	283.16184	70.30889	52.63635	6.14591	0.0660659	2.3853783	37	1	35 days	0.51		Marsden		1998 UA ₁₅
1998 UC ₁₅	15.4	0.15	19981103	303.70570	336.03885	139.44994	6.81261	0.1040980	2.4775305	14	1	32 days	0.34		Williams		1998 UC ₁₅
1998 UF ₁₅	14.2	0.15	19981103	358.67657	117.28956	290.23767	5.53890	0.1261977	2.4377029	62	1	42 days	0.66		Williams		1998 UF ₁₅
1998 UG ₁₅	14.6	0.15	19981103	149.75443	104.90240	114.09270	7.50784	0.0537466	2.3341923	12	1	26 days	0.34		Williams		1998 UG ₁₅
1998 UH ₁₅	13.4	0.15	19981103	64.70826	127.05888	193.49279	13.15553	0.2141084	2.6363183	15	1	30 days	0.29		Williams		1998 UH ₁₅
1998 UL ₁₅	15.3	0.15	19981103	341.62808	295.43196	137.99942	4.27390	0.2280890	2.5584499	13	1	35 days	0.92		Williams		1998 UL ₁₅
1998 UM ₁₅	14.7	0.15	19981103	88.63581	235.32142	63.93189	6.06561	0.1691338	2.1754880	14	1	33 days	0.62		Williams		1998 UM ₁₅
1998 UN ₁₅	13.2	0.15	19981014	32.04519	268.27820	88.55087	1.91011	0.1999491	3.1692897	12	1	19 days	0.53		Williams		1998 UN ₁₅
1998 UQ ₁₅	13.5	0.15	19990122	12.29754	324.68673	86.98664	3.55300	0.0754483	2.7800278	19	2	1979–1998	0.47	M-v 4	Williams	33051	1998 UQ ₁₅
1998 UR ₁₅	13.4	0.15	19981103	340.51957	63.33447	10.52833	0.67212	0.1534609	3.1694151	32	1	33 days	0.75		Williams		1998 UR ₁₅
1998 UT ₁₅	12.3	0.15	19990122	253.44894	309.59370	221.93421	14.41406	0.0205495	2.9886496	32	5	1962–1998	0.77	M-v 2	Williams	33051	1998 UT ₁₅
1998 UV ₁₅	15.0	0.15	19981014	45.76630	264.81191	64.24487	2.87662	0.2327270	2.3656737	31	1	24 days	0.53		Williams		1998 UV ₁₅
1998 UW ₁₅	14.8	0.15	19990122	71.69903	297.76385	44.25004	7.78028	0.1355132	2.3911601	27	1	77 days	0.62	M-v 5 D	Williams		1998 UW ₁₅
1998 UY ₁₅	15.6	0.15	19981014	21.47904	328.94828	22.43922	6.60231	0.2439409	2.3655198	27	1	20 days	0.49		Williams		1998 UY ₁₅
1998 UE ₁₆	16.5	0.15	19981103	324.70598	25.22120	63.03144	7.23255	0.1919800	2.3591732	18	1	24 days	0.63		Williams		1998 UE ₁₆
1998 UF ₁₆	17.2	0.15	19981103	6.66994	338.24867	61.36726	2.21925	0.2311043	2.3697835	14	1	32 days	0.61		Williams		1998 UF ₁₆
1998 UK ₁₆	15.2	0.15	19981103	22.64240	239.82477	135.43551	2.47820	0.1062501	2.6365272	17	1	24 days	0.59		Williams		1998 UK ₁₆
1998 UM ₁₆	15.8	0.15	19981014	5.68896	189.96405	199.87561	5.31631	0.2075358	2.4486334	15	1	24 days	1.08		Williams		1998 UM ₁₆
1998 UN ₁₆	13.1	0.15	19981103	313.91590	56.24514	53.45677	14.43504	0.1766203	3.0703172	13	1	39 days	0.41		Williams		1998 UN ₁₆
1998 UO ₁₆	15.2	0.15	19981103	1.55167	264.08829	139.44616	4.39920	0.1235306	2.7678614	13	1	23 days	0.96		Williams		1998 UO ₁₆
1998 UP ₁₆	14.9	0.15	19981103	209.69958	334.01315	221.36785	4.66294	0.0737171	2.2667700	24	1	38 days	0.84		Williams		1998 UP ₁₆
1998 UQ ₁₆	10.4	0.15	19981103	262.50484	91.30485	58.15054	9.24078	0.0394907	5.2632954	12	1	33 days	0.88		Williams		1998 UQ ₁₆
1998 US ₁₆	15.5	0.15	19981103	69.85649	190.37582	124.69052	6.46072	0.1872375	2.2791001	22	1	39 days	0.61		Williams		1998 US ₁₆
1998 UT ₁₆	14.9	0.15	19981103	344.88212	112.46285	309.04979	12.47125	0.2123357	2.6333518	10	1	19 days	0.27		Williams		1998 UT ₁₆
1998 UV ₁₆	17.2	0.15	19981103	13.25351	251.03143	118.15281	13.44956	0.3724026	2.6112262	9	1	15 days	1.00		Williams		1998 UV ₁₆
1998 UW ₁₆	15.2	0.15	19981103	7.34193	205.57273	188.58976	31.29219	0.2157654	2.5866846	10	1	22 days	0.31		Williams		1998 UW ₁₆
1998 UX ₁₆	14.2	0.15	19981103	34.18261	259.83144	88.32832	24.27445	0.2625589	2.3893100	12	1	17 days	0.28		Williams		1998 UX ₁₆

1998 UZ ₁₆	15.6	0.15	19981103	286.86661	350.01018	148.69049	25.91461	0.2108572	2.3353771	11	1	15 days	0.79		Williams		1998 UZ ₁₆
1998 UG ₁₇	14.2	0.15	19990122	32.24690	66.29321	310.11724	4.39543	0.0818093	2.7175475	33	2	1993–1998	0.70	M-v 5	Williams	33051	1998 UG ₁₇
1998 UQ ₁₇	15.8	0.15	19981014	1.21527	68.06181	313.78803	5.91421	0.1642152	2.3328558	12	1	5 days	0.38		Williams		1998 UQ ₁₇
1998 UT ₁₇	15.7	0.15	19981014	32.71656	3.91550	332.59806	1.64846	0.2264508	2.3417736	24	1	34 days	0.41		Williams		1998 UT ₁₇
1998 UX ₁₇	13.8	0.15	19981014	312.69165	87.15403	353.08866	9.25596	0.0894310	2.9777291	17	1	10 days	0.70		Williams		1998 UX ₁₇
1998 UZ ₁₇	15.5	0.15	19981014	347.29881	180.76695	223.53829	12.26411	0.2388031	2.5796764	27	1	22 days	0.76		Williams		1998 UZ ₁₇
1998 UE ₁₈	15.3	0.15	19981014	220.53904	227.67357	300.48331	6.66598	0.0631245	2.2260395	9	1	3 days	0.53		E Williams		1998 UE ₁₈
1998 UF ₁₈	15.0	0.15	19990122	307.43664	328.69346	164.54360	7.78326	0.1036515	2.3501980	23	2	1983–1998	0.67	M-v 5	Williams	33051	1998 UF ₁₈
1998 UL ₁₈	15.7	0.15	19981103	84.68268	219.81063	99.20519	25.24228	0.0746191	1.9648847	7	1	20 days	0.25		Williams		1998 UL ₁₈
1998 UM ₁₈	11.6	0.15	19981103	38.44947	228.47353	150.28707	28.58521	0.1576860	5.2218566	10	1	20 days	0.44		Williams		1998 UM ₁₈
1998 UN ₁₈	13.5	0.15	19981103	344.11985	316.63216	132.75689	27.27125	0.1534562	3.1531243	11	1	20 days	0.69		Williams		1998 UN ₁₈
1998 UO ₁₈	15.6	0.15	19990122	48.14753	13.08090	2.31450	2.24109	0.2202034	2.3691289	23	2	1994–1998	0.73	M-v 4	Williams	33052	1998 UO ₁₈
1998 UQ ₁₈	12.1	0.15	19981103	181.64989	186.60845	55.15859	11.13884	0.0564267	2.9982515	8	1	29 days	0.32		Nakano		1998 UQ ₁₈
1998 UR ₁₈	14.4	0.15	19981103	13.42307	141.19431	255.04723	6.47527	0.2204107	2.5421459	9	1	29 days	0.43		Nakano		1998 UR ₁₈
1998 US ₁₈	20.4	0.15	19981014	7.82319	115.23373	207.61081	9.66263	0.6806581	2.6242214	23	1	14 days	0.63		Nakano		1998 US ₁₈
1998 UT ₁₈	19.5	0.15	19990122	9.29821	49.83522	64.78109	13.58953	0.3296190	1.4055321	70	1	33 days	0.61	M-v 6	Williams		1998 UT ₁₈
1998 UX ₁₈	13.4	0.15	19981014	314.89368	58.53694	35.49800	2.97398	0.0372725	2.8538968	18	1	23 days	0.53		Williams		1998 UX ₁₈
1998 UY ₁₈	14.5	0.15	19981103	316.28435	181.89103	263.21898	3.24228	0.0791534	2.5461283	15	1	19 days	1.35		Williams		1998 UY ₁₈
1998 UA ₁₉	14.4	0.15	19981103	47.93174	325.82526	17.34241	5.88334	0.0330684	2.7626899	8	1	19 days	0.78		Williams		1998 UA ₁₉
1998 UB ₁₉	14.9	0.15	19981014	175.41476	297.80161	275.61698	1.79240	0.1184853	2.2270210	13	1	1 days	1.01		E Williams		1998 UB ₁₉
1998 UE ₁₉	15.9	0.15	19981014	343.15594	256.68306	160.76170	3.50324	0.1490141	2.2259127	15	1	28 days	0.39		Williams		1998 UE ₁₉
1998 UL ₁₉	14.9	0.15	19981103	11.72534	325.99070	39.79866	17.39151	0.3064576	2.7408726	18	1	14 days	0.76		Williams		1998 UL ₁₉
1998 UM ₁₉	16.7	0.15	19981014	332.52374	22.64841	34.29694	22.06412	0.1018114	1.9497400	15	1	21 days	0.74		Williams		1998 UM ₁₉
1998 UO ₁₉	14.6	0.15	19981103	325.88850	221.62681	223.40115	15.40359	0.2124333	2.5468114	18	1	14 days	0.51		Williams		1998 UO ₁₉
1998 US ₁₉	15.3	0.15	19981014	347.57502	0.18614	42.16169	15.63118	0.1582609	2.6392350	18	1	31 days	0.86		Williams		1998 US ₁₉
1998 UV ₁₉	15.2	0.15	19981014	253.35889	112.50562	40.91636	6.78405	0.0594134	2.2456581	23	1	29 days	0.34		Williams		1998 UV ₁₉
1998 UX ₁₉	13.9	0.15	19981014	318.99680	356.63185	96.82607	0.17891	0.1229250	3.1443572	10	1	24 days	0.40		Williams		1998 UX ₁₉
1998 UY ₁₉	12.1	0.15	19981103	172.73357	3.25178	233.35294	16.90926	0.1558600	3.1079477	39	1	38 days	0.87		Williams		1998 UY ₁₉
1998 UA ₂₀	16.5	0.15	19981103	6.33397	336.76517	55.25303	1.56619	0.1839265	2.3982545	19	1	33 days	0.69		Williams		1998 UA ₂₀
1998 UB ₂₀	15.1	0.15	19981103	19.94676	280.70408	96.47565	0.70025	0.0995800	2.6378422	27	1	33 days	0.54		Williams		1998 UB ₂₀
1998 UC ₂₀	15.3	0.15	19981103	60.97626	265.87470	49.70317	2.93473	0.2218292	2.3859764	23	1	27 days	0.72		Williams		1998 UC ₂₀
1998 UJ ₂₀	14.1	0.15	19990122	33.07150	110.14694	265.81938	5.16191	0.2123900	2.4195966	28	3	1979–1998	0.66	M-v 3	Williams	33052	1998 UJ ₂₀
1998 UM ₂₀	13.5	0.15	19990122	349.68214	336.96433	91.43556	2.61780	0.1741055	3.2236568	30	2	1977–1998	0.63	M-v 4	Williams	33052	1998 UM ₂₀
1998 UO ₂₀	13.7	0.15	19981103	289.79834	262.53687	227.34959	12.13505	0.0953815	2.6121034	20	1	23 days	0.79		Williams		1998 UO ₂₀
1998 UP ₂₀	14.3	0.15	19981103	192.77364	171.21702	48.41639	7.62208	0.1420525	2.3793094	15	1	29 days	0.70		Williams		1998 UP ₂₀
1998 UQ ₂₀	16.2	0.15	19981014	21.43727	265.13812	95.91035	0.99965	0.2583236	2.3028372	13	1	24 days	0.37		Williams		1998 UQ ₂₀
1998 UU ₂₀	15.2	0.15	19981103	60.35504	277.33707	48.21583	5.87238	0.1830004	2.2115742	22	1	28 days	0.99		Williams		1998 UU ₂₀
1998 UX ₂₀	14.7	0.15	19981103	5.45408	175.08068	223.75805	12.65138	0.1765782	2.6931181	16	1	30 days	0.67		Williams		1998 UX ₂₀
1998 UC ₂₁	15.3	0.15	19981103	357.26875	191.75179	221.21595	3.88226	0.2330996	2.5893240	17	1	22 days	0.75		Williams		1998 UC ₂₁
1998 UE ₂₁	15.1	0.15	19981103	37.72979	129.69090	230.09630	0.25148	0.1371462	2.3018718	34	1	39 days	0.73		Williams		1998 UE ₂₁
1998 UF ₂₁	11.9	0.15	19981103	133.66908	226.04932	46.56299	11.38840	0.0666432	3.0019373	31	1	33 days	0.73		Williams		1998 UF ₂₁
1998 UG ₂₁	16.2	0.15	19981014	351.73888	131.72545	270.63734	5.42423	0.1937840	2.3631187	9	1	8 days	0.88		Marsden		1998 UG ₂₁
1998 UP ₂₁	14.5	0.15	19981014	312.21529	256.71836	178.76438	9.03493	0.1009178	3.0042062	22	1	57 days	1.07		Williams		1998 UP ₂₁
1998 UZ ₂₁	14.3	0.15	19981014	54.75894	256.95630	53.63395	10.07404	0.1521271	2.7246059	27	1	50 days	0.69		Williams		1998 UZ ₂₁
1998 UN ₂₂	15.7	0.15	19981014	263.83106	273.21742	223.59299	5.64281	0.1038950	2.2655021	22	1	23 days	0.86		Williams		1998 UN ₂₂
1998 UP ₂₂	15.2	0.15	19981103	2.58110	318.74148	70.86152	7.59693	0.1956351	2.5426236	17	1	14 days	0.61		Williams		1998 UP ₂₂
1998 UT ₂₂	15.3	0.15	19981103	14.47646	314.34927	71.32452	14.04910	0.1595199	2.5433624	19	1	31 days	0.75		Williams		1998 UT ₂₂
1998 UU ₂₂	13.9	0.15	19981103	16.69706	153.43095	234.30551	9.67017	0.0918261	2.9756431	34	1	38 days	0.50		Williams		1998 UU ₂₂
1998 UV ₂₂	14.1	0.15	19981103	104.36174	45.10839	232.98161	12.40302	0.2553505	2.5776085	33	1	27 days	0.59		Williams		1998 UV ₂₂
1998 UW ₂₂	15.3	0.15	19981103	14.05588	146.82426	232.91581	23.17638	0.2643329	2.4217721	27	1	43 days	0.94		Williams		1998 UW ₂₂
1998 UA ₂₃	14.3	0.15	19981103	288.87399	82.19852	56.86610	2.93402	0.1541428	2.3917066	23	1	29 days	1.05		Williams		1998 UA ₂₃
1998 UG ₂₃	16.8	0.15	19981103	91.10494	308.99917	318.12918	8.61194	0.1553925	2.0675750	17	1	32 days	1.05		Williams		1998 UG ₂₃
1998 UJ ₂₃	14.4	0.15	19981014	3.78202	90.54627	292.01719	15.13446	0.2437448	3.0959861	17	1	49 days	0.49		Williams		1998 UJ ₂₃

1998 UK ₂₃	15.0	0.15	19981103	34.95539	48.85186	303.59342	13.38594	0.1200431	2.3469535	13	1	16 days	0.55	Williams	1998 UK ₂₃
1998 UM ₂₃	13.9	0.15	19981103	347.51849	201.14234	227.59723	6.08399	0.0860884	2.3949703	18	1	29 days	0.97	Williams	1998 UM ₂₃
1998 UO ₂₃	13.5	0.15	19981103	17.21314	131.43480	249.51210	22.72137	0.2578831	3.1283863	16	1	21 days	0.64	Williams	1998 UO ₂₃
1998 UR ₂₃	15.3	0.15	19981014	110.72295	95.99413	155.66566	6.39673	0.1883573	2.1958072	16	1	12 days	0.74	Williams	1998 UR ₂₃
1998 US ₂₃	14.9	0.15	19981014	355.45478	334.00450	52.06673	10.30703	0.1346692	2.8141670	28	1	48 days	0.81	Williams	1998 US ₂₃
1998 UT ₂₃	15.0	0.15	19981014	169.95406	78.33349	132.62369	6.10885	0.0987202	2.2364441	18	1	48 days	0.77	Williams	1998 UT ₂₃
1998 UL ₂₄	15.4	0.15	19981014	66.86767	283.19685	26.55668	3.10786	0.1621031	2.1724992	15	1	24 days	0.56	Williams	1998 UL ₂₄
1998 UM ₂₄	14.6	0.15	19981014	103.75822	62.23521	222.99441	9.01580	0.1603934	2.5606888	12	1	29 days	0.54	Williams	1998 UM ₂₄
1998 UP ₂₄	16.0	0.15	19981103	23.90758	235.52903	141.51026	2.83177	0.1311723	2.4056523	19	1	31 days	0.64	Williams	1998 UP ₂₄
1998 UT ₂₄	13.1	0.15	19981103	69.04072	269.28216	63.56291	16.13040	0.0830895	3.1952898	18	1	34 days	0.82	Williams	1998 UT ₂₄
1998 UW ₂₄	16.9	0.15	19981014	19.04050	163.00669	193.70452	1.63769	0.2742804	2.3684400	15	1	23 days	0.62	Williams	1998 UW ₂₄
1998 UB ₂₅	14.7	0.15	19981014	37.46577	228.23111	120.20221	5.19562	0.1127346	2.7840427	14	1	24 days	0.66	Williams	1998 UB ₂₅
1998 UL ₂₅	15.1	0.15	19981014	35.41826	156.34337	177.85333	5.86862	0.2694257	2.5163571	16	1	24 days	0.50	Williams	1998 UL ₂₅
1998 UM ₂₅	15.5	0.15	19981014	7.64444	201.38050	182.25165	6.22892	0.1148681	2.2841705	16	1	24 days	0.63	Williams	1998 UM ₂₅
1998 UN ₂₅	16.1	0.15	19981014	37.00825	264.03277	75.77342	4.78844	0.1942357	2.3437540	13	1	24 days	0.85	Williams	1998 UN ₂₅
1998 UO ₂₅	16.6	0.15	19981014	345.84305	263.62845	149.26829	3.48052	0.1736799	2.3130169	18	1	28 days	0.88	Williams	1998 UO ₂₅
1998 UP ₂₅	16.0	0.15	19981014	351.14869	311.35080	92.02259	4.88458	0.0631483	2.2277086	13	1	24 days	0.79	Williams	1998 UP ₂₅
1998 UQ ₂₅	13.9	0.15	19981014	82.77419	175.49467	124.29439	6.01430	0.1213179	2.9788948	19	1	30 days	1.13	Williams	1998 UQ ₂₅
1998 UV ₂₅	14.5	0.15	19981014	20.58152	305.12950	63.10623	10.44819	0.1278866	2.7369915	15	1	24 days	0.50	Williams	1998 UV ₂₅
1998 UX ₂₅	13.5	0.15	19981014	105.82346	82.42503	197.22215	12.17843	0.1235051	3.0134607	16	1	24 days	0.88	Williams	1998 UX ₂₅
1998 UB ₂₆	14.6	0.15	19981014	76.12004	225.33816	78.53634	7.36359	0.1284759	2.3522293	16	1	24 days	0.48	Williams	1998 UB ₂₆
1998 UF ₂₆	16.1	0.15	19981014	352.32421	260.53157	145.35899	3.34080	0.2204453	2.5501000	14	1	24 days	0.89	Williams	1998 UF ₂₆
1998 UN ₂₆	14.6	0.15	19981014	336.89321	344.03626	79.44859	6.84307	0.0950914	2.6435452	15	1	24 days	0.64	Williams	1998 UN ₂₆
1998 UP ₂₆	15.3	0.15	19981014	355.01535	351.44108	50.70300	14.63155	0.2580453	2.7325516	22	1	28 days	0.79	Williams	1998 UP ₂₆
1998 UQ ₂₆	13.5	0.15	19981014	268.88320	61.11554	75.65897	8.52300	0.0634301	3.2451250	19	1	28 days	0.64	Williams	1998 UQ ₂₆
1998 UT ₂₆	16.1	0.15	19981014	344.29698	270.43564	147.64830	3.69037	0.2325576	2.3086398	16	1	24 days	0.40	Williams	1998 UT ₂₆
1998 UV ₂₆	13.3	0.15	19981014	194.68272	135.41160	69.48520	10.30496	0.0329836	3.1626521	19	1	28 days	0.68	Williams	1998 UV ₂₆
1998 UW ₂₆	15.5	0.15	19981014	34.77705	228.53947	114.26343	4.95933	0.2120603	2.5797716	19	1	28 days	0.58	Williams	1998 UW ₂₆
1998 UY ₂₆	13.5	0.15	19981014	133.48382	68.64735	183.63503	8.11476	0.1925333	2.7270688	15	1	24 days	0.93	Williams	1998 UY ₂₆
1998 UZ ₂₆	15.1	0.15	19981014	27.48553	189.52527	157.10875	4.80764	0.2723802	2.5377573	19	1	28 days	0.66	Williams	1998 UZ ₂₆
1998 UD ₂₇	14.8	0.15	19981014	348.92847	326.12376	84.37805	5.99164	0.1134645	2.7258545	16	1	24 days	0.69	Williams	1998 UD ₂₇
1998 UN ₂₇	15.3	0.15	19981014	39.50277	245.89213	84.12132	6.43065	0.2813344	2.8390008	13	1	24 days	0.90	Williams	1998 UN ₂₇
1998 UZ ₂₇	13.6	0.15	19981014	144.33975	109.23138	140.24612	6.19302	0.0842711	2.6440541	14	1	24 days	0.57	Williams	1998 UZ ₂₇
1998 UA ₂₈	14.6	0.15	19981103	264.06102	298.51769	215.36816	21.15470	0.1926653	2.2587459	13	1	13 days	0.68	Williams	1998 UA ₂₈
1998 UX ₂₈	15.2	0.15	19981014	21.89680	187.04920	171.43727	6.41070	0.2839291	2.7953232	14	1	26 days	0.97	Williams	1998 UX ₂₈
1998 UT ₂₉	15.3	0.15	19981014	44.58590	189.21917	152.62882	7.94784	0.1451947	2.5623215	10	1	26 days	0.40	Williams	1998 UT ₂₉
1998 UP ₃₀	16.3	0.15	19981014	359.42668	244.86831	152.75259	5.15411	0.2397623	2.3995365	11	1	32 days	0.71	Nakano	1998 UP ₃₀
1998 UT ₃₀	13.6	0.15	19981123	69.29270	244.44332	90.73438	11.18859	0.0590471	3.0046458	11	1	31 days	0.52	Nakano	1998 UT ₃₀
1998 UA ₃₁	15.3	0.15	19981103	77.98724	202.08155	90.03035	24.27250	0.2024114	2.4210528	8	1	19 days	0.95	Williams	1998 UA ₃₁
1998 UC ₃₁	13.4	0.15	19981103	344.16554	61.60446	6.27417	9.11928	0.1986316	2.7668180	12	1	28 days	0.84	Nakano	1998 UC ₃₁
1998 UX ₃₁	14.7	0.15	19981014	11.48115	338.97813	61.47262	14.66729	0.1680596	2.5703911	9	1	4 days	0.31	Williams	1998 UX ₃₁
1998 UO ₃₂	13.7	0.15	19981103	37.32479	122.64997	230.40134	9.83112	0.1076751	2.9762507	14	1	11 days	0.67	Williams	1998 UO ₃₂
1998 UT ₃₅	13.5	0.15	19981103	313.91269	25.73665	47.53769	9.71431	0.0093888	3.0019249	17	1	14 days	0.68	Williams	1998 UT ₃₅
1998 UA ₃₆	14.4	0.15	19981103	185.10076	182.76402	23.58021	3.29273	0.1767363	2.2891318	17	1	14 days	0.95	Williams	1998 UA ₃₆
1998 UF ₄₀	15.1	0.15	19981103	47.90604	334.51419	349.16686	4.07682	0.2292595	2.2847374	17	1	14 days	0.49	Williams	1998 UF ₄₀
1998 UO ₄₀	14.2	0.15	19981103	246.59404	169.21519	344.71848	6.13927	0.0535534	2.3634110	20	1	19 days	0.86	Williams	1998 UO ₄₀
1998 UF ₄₁	12.8	0.15	19981103	23.49470	166.85203	194.60762	9.78975	0.1460815	2.9964289	18	1	14 days	0.58	Williams	1998 UF ₄₁
1998 UK ₄₁	16.2	0.15	19981103	12.59866	289.51231	82.54215	4.39961	0.2577476	2.2847910	19	1	14 days	0.59	Williams	1998 UK ₄₁
1998 UV ₄₁	14.2	0.15	19981103	11.31960	276.73427	100.25347	2.74703	0.2081090	2.4286629	18	1	14 days	0.39	Williams	1998 UV ₄₁
1998 UW ₄₁	15.2	0.15	19981103	10.32867	320.43431	55.81122	6.51089	0.2694535	2.5443016	17	1	14 days	0.45	Williams	1998 UW ₄₁
1998 UY ₄₁	13.6	0.15	19981103	27.10869	301.05909	41.67697	17.18282	0.3099526	3.1475947	18	1	14 days	0.66	Williams	1998 UY ₄₁
1998 UF ₄₂	13.8	0.15	19981103	95.93122	224.68149	58.67008	2.30733	0.1304680	2.5644031	18	1	14 days	0.96	Williams	1998 UF ₄₂
1998 UE ₄₃	13.4	0.15	19981103	8.11173	126.17553	261.28325	4.55565	0.0486843	2.7874754	17	1	14 days	0.72	Williams	1998 UE ₄₃

1998 UR ₄₃	8.0	0.15	19981103	0.84651	341.05317	53.89064	8.75741	0.1941914	39.5491432	5	1	27 days	0.26	E	Marsden	1998 UR ₄₃	
1998 US ₄₃	7.6	0.15	19981103	359.04312	186.38779	223.76812	10.46322	0.1094837	39.5314890	4	1	27 days	0.18	E	Marsden	1998 US ₄₃	
1998 VA	13.2	0.15	19990122	352.70438	44.37585	41.63282	17.72594	0.1492850	2.5992509	54	1	89 days	0.49	M-v	4	Williams	1998 VA
1998 VB	14.5	0.15	19981123	12.70369	87.17866	316.23439	1.69856	0.2341149	2.2990021	8	1	13 days	0.37			Nakano	1998 VB
1998 VD	16.1	0.15	19981123	15.72382	352.43002	36.55386	3.32110	0.2266150	2.3608933	25	1	22 days	0.29			Nakano	1998 VD
1998 VG	13.6	0.15	19981103	351.22240	355.13423	56.34533	3.80904	0.1942137	3.1563361	30	1	16 days	0.42			Marsden	1998 VG
1998 VJ	14.1	0.15	19981103	333.88644	27.06793	65.95744	15.37751	0.1628086	2.6404405	50	1	21 days	0.42			Williams	1998 VJ
1998 VK	14.7	0.15	19981103	354.11865	91.80507	312.92288	12.10386	0.1823300	2.5225269	12	1	8 days	0.22			Williams	1998 VK
1998 VL	16.0	0.15	19981103	5.33697	297.92113	98.08815	8.01489	0.1406192	2.2444641	12	1	8 days	0.46			Williams	1998 VL
1998 VN	20.5	0.15	19990122	8.42323	245.73079	228.10747	12.00382	0.3438185	1.3858180	85	1	21 days	0.56	M-v	6	Williams	1998 VN
1998 VO	20.0	0.15	19981103	70.33123	75.86460	228.30922	10.06866	0.2268177	1.0736991	107	1	16 days	0.59			Nakano	1998 VO
1998 VP	18.9	0.15	19981103	29.63582	101.34370	226.40812	43.89577	0.4599378	1.8751236	47	1	4 days	0.60			Williams	1998 VP
1998 VQ	19.2	0.15	19981103	7.53571	155.76721	227.03212	20.91635	0.4038359	2.2098728	40	1	7 days	0.60			Williams	1998 VQ
1998 VR	18.3	0.15	19981123	216.62247	170.65450	46.49033	21.83988	0.3185392	0.8758962	185	1	26 days	0.69			Williams	1998 VR
1998 VS	21.9	0.15	19981103	12.84742	147.83125	230.47418	6.82993	0.2781988	1.4012283	47	1	18 days	0.49			Nakano	1998 VS
1998 VT	16.5	0.15	19981103	100.21915	241.98211	59.48346	32.06947	0.0977314	1.8630380	27	1	13 days	0.44			Williams	1998 VT
1998 VU	14.1	0.15	19981103	31.68697	311.54092	47.93359	11.38749	0.1053405	3.0340188	30	1	42 days	0.62	D		Marsden	1998 VU
1998 VW	15.0	0.15	19981103	340.06711	18.74941	56.73442	13.85202	0.2923445	2.6872503	13	1	6 days	0.29			Williams	1998 VW
1998 VG ₁	16.0	0.15	19981103	39.04542	272.85028	61.66883	8.74925	0.3031993	2.3332486	28	1	6 days	0.39			Williams	1998 VG ₁
1998 VJ ₁	14.9	0.15	19981103	11.61935	155.49386	226.67176	16.48680	0.2935541	2.7557074	17	1	19 days	0.58			Williams	1998 VJ ₁
1998 VM ₁	15.9	0.15	19981103	41.29786	309.10397	30.92645	8.38427	0.2934824	2.3052646	11	1	6 days	0.63			Williams	1998 VM ₁
1998 VN ₁	14.0	0.15	19981103	23.32574	327.63796	46.35615	22.05020	0.2367335	3.1346067	15	1	8 days	0.53			Williams	1998 VN ₁
1998 VO ₁	16.6	0.15	19981103	359.99351	174.72578	233.50346	18.82510	0.1103703	1.9287906	14	1	11 days	0.78			Williams	1998 VO ₁
1998 VU ₁	16.5	0.15	19981103	9.98249	160.29990	231.64920	17.21690	0.1702003	3.1003012	9	1	17 days	0.17			Williams	1998 VU ₁
1998 VZ ₁	15.8	0.15	19981103	43.49496	65.79525	289.41133	0.87823	0.0964561	2.6314423	15	1	16 days	0.36			Williams	1998 VZ ₁
1998 VD ₂	14.8	0.15	19981103	336.13389	201.96743	238.15839	1.29233	0.1287555	3.0131037	18	1	33 days	0.58			Williams	1998 VD ₂
1998 VF ₂	15.7	0.15	19981103	182.33954	352.27178	236.06340	2.53622	0.0753606	2.4423344	9	1	16 days	0.25			Williams	1998 VF ₂
1998 VH ₂	16.1	0.15	19981103	252.06559	276.39152	242.47549	4.08894	0.0448877	2.2599893	12	1	3 days	0.24	E		Williams	1998 VH ₂
1998 VM ₂	15.4	0.15	19981103	82.90665	274.83611	32.56799	2.88755	0.1472083	2.5595664	12	1	3 days	0.54	E		Williams	1998 VM ₂
1998 VP ₂	15.2	0.15	19981103	343.12100	197.78923	234.04324	7.01978	0.1888303	2.4698867	15	1	17 days	0.31			Williams	1998 VP ₂
1998 VT ₂	15.7	0.15	19981103	6.63539	357.86915	42.50958	2.19012	0.1403438	2.9002489	11	1	7 days	0.30			Williams	1998 VT ₂
1998 VU ₂	15.9	0.15	19981103	13.48536	348.31129	46.23145	2.75910	0.0629242	2.9361285	11	1	7 days	0.40			Williams	1998 VU ₂
1998 VV ₂	11.9	0.15	19981103	123.31197	44.63819	233.57474	8.81522	0.1137033	3.9669213	23	1	39 days	0.86			Williams	1998 VV ₂
1998 VW ₂	16.5	0.15	19981103	46.19723	297.83689	49.55302	4.06747	0.1564177	2.1840085	11	1	7 days	0.20			Williams	1998 VW ₂
1998 VX ₂	13.6	0.15	19981103	192.73120	171.46817	50.61000	7.85875	0.1464487	3.0554773	9	1	12 days	0.19			Williams	1998 VX ₂
1998 VY ₂	13.7	0.15	19981103	192.59406	174.02279	52.83893	23.36473	0.4455152	2.7585768	9	1	12 days	0.39			Williams	1998 VY ₂
1998 VZ ₂	15.1	0.15	19981103	28.09602	146.80578	233.13564	8.02946	0.0479891	2.9949827	11	1	12 days	0.88	E		Williams	1998 VZ ₂
1998 VA ₃	15.0	0.15	19981103	23.95444	315.30724	54.16835	1.30524	0.2595771	3.3136980	12	1	14 days	0.91			Williams	1998 VA ₃
1998 VB ₃	15.1	0.15	19981103	43.35602	30.16751	326.19195	1.13903	0.0769307	2.9060258	18	1	6 days	0.78	E		Williams	1998 VB ₃
1998 VF ₃	15.7	0.15	19981103	313.90122	75.00407	23.40069	1.59967	0.0571174	2.9963481	9	1	15 days	0.12			Williams	1998 VF ₃
1998 VJ ₃	13.3	0.15	19981103	50.99914	119.91460	234.31341	6.87890	0.0462458	5.1402543	12	1	15 days	0.26			Williams	1998 VJ ₃
1998 VK ₃	17.8	0.15	19981103	358.03052	76.25059	332.47997	0.16772	0.2523172	2.2520883	9	1	9 days	0.57	E		Williams	1998 VK ₃
1998 VL ₃	16.0	0.15	19981103	351.39942	13.83985	43.78595	2.40065	0.0301105	2.8307660	12	1	9 days	0.32			Williams	1998 VL ₃
1998 VM ₃	17.0	0.15	19981103	57.11819	68.74518	261.99749	0.58335	0.1835203	2.3743361	12	1	9 days	0.25			Williams	1998 VM ₃
1998 VN ₃	15.9	0.15	19981103	62.87034	269.31966	47.90852	4.53310	0.2425679	2.3383600	17	1	28 days	0.40			Williams	1998 VN ₃
1998 VQ ₃	16.2	0.15	19981103	72.49229	270.49460	51.74665	3.36042	0.1273840	2.7268484	9	1	7 days	0.18	E		Williams	1998 VQ ₃
1998 VR ₃	18.1	0.15	19981103	355.06557	0.46101	54.14903	2.21324	0.1941366	2.2711205	15	1	15 days	0.35			Williams	1998 VR ₃
1998 VS ₃	17.2	0.15	19981103	21.00905	328.53295	53.30365	3.39223	0.1272068	2.5904252	12	1	9 days	0.86	E		Williams	1998 VS ₃
1998 VU ₃	15.6	0.15	19981103	282.32373	85.59478	56.67976	1.98475	0.1230369	3.0135407	12	1	9 days	0.20			Williams	1998 VU ₃
1998 VV ₃	14.7	0.15	19981103	237.47090	316.71693	230.61570	9.99999	0.1583806	3.0446671	15	1	12 days	0.32			Williams	1998 VV ₃
1998 VW ₃	16.9	0.15	19981103	20.05602	329.25817	54.99219	3.50624	0.1132323	2.5475443	9	1	9 days	0.29	E		Williams	1998 VW ₃
1998 VX ₃	16.8	0.15	19981103	6.31194	332.15820	72.38353	5.89393	0.2252965	2.3881260	9	1	6 days	0.16			Williams	1998 VX ₃
1998 VY ₃	15.4	0.15	19981103	45.00640	250.31653	94.95629	3.07974	0.2792013	2.7961573	12	1	8 days	0.53	E		Williams	1998 VY ₃

1998 VB ₄	14.0	0.15	19981103	137.52695	155.19426	120.31926	2.52424	0.1564378	2.9196688	9	1	5 days	0.53	E	Williams	1998 VB ₄
1998 VC ₄	16.0	0.15	19981103	8.39961	245.73078	158.17056	1.56193	0.2023912	2.4120981	10	1	7 days	0.27		Williams	1998 VC ₄
1998 VE ₄	14.7	0.15	19981103	15.85695	186.97605	213.08996	3.92109	0.1364205	2.5636858	9	1	9 days	0.09		Williams	1998 VE ₄
1998 VH ₄	16.0	0.15	19981103	289.87326	107.05620	39.80227	4.33746	0.2588212	2.4521468	9	1	2 days	0.19	E	Williams	1998 VH ₄
1998 VJ ₄	17.5	0.15	19981103	7.02979	350.96361	42.23442	3.72390	0.2715251	2.7618327	9	1	2 days	0.31	E	Williams	1998 VJ ₄
1998 VK ₄	14.2	0.15	19981103	106.21748	306.57382	347.69769	0.71651	0.0704538	2.9436788	14	1	15 days	0.75		Williams	1998 VK ₄
1998 VL ₄	15.4	0.15	19981103	277.44584	101.17195	46.89842	10.92779	0.1560941	2.5065320	9	1	2 days	0.28	E	Williams	1998 VL ₄
1998 VM ₄	13.7	0.15	19981103	79.12505	267.01531	47.82470	13.03867	0.1236270	3.0386392	9	1	2 days	0.37	E	Williams	1998 VM ₄
1998 VN ₄	14.2	0.15	19981103	357.71540	3.27010	47.60592	9.54060	0.0925848	3.1643207	11	1	14 days	0.21		Williams	1998 VN ₄
1998 VP ₄	14.1	0.15	19981103	251.65359	284.82012	232.80078	8.69987	0.0034602	3.0363674	21	1	16 days	0.64	E	Williams	1998 VP ₄
1998 VQ ₄	15.8	0.15	19981103	167.85133	194.78924	42.94733	1.96448	0.1564364	2.2759364	18	1	15 days	0.34		Williams	1998 VQ ₄
1998 VR ₄	16.5	0.15	19981103	32.42737	131.87665	232.43749	4.92668	0.1567511	2.7007203	15	1	16 days	0.20		Williams	1998 VR ₄
1998 VT ₄	15.5	0.15	19981103	208.92495	308.99273	253.63840	1.03785	0.0559041	2.9058397	9	1	14 days	0.20		Williams	1998 VT ₄
1998 VW ₄	14.2	0.15	19981103	8.05062	63.55457	353.03008	8.36838	0.2298034	3.2001482	8	1	12 days	0.26		Williams	1998 VW ₄
1998 VY ₄	14.9	0.15	19981103	329.34970	135.67130	319.58575	1.45892	0.1378389	2.4513297	26	1	13 days	0.55		Williams	1998 VY ₄
1998 VZ ₄	15.9	0.15	19981103	210.06727	43.58188	161.02208	2.83266	0.1174474	2.1747722	22	1	3 days	0.88		Williams	1998 VZ ₄
1998 VA ₅	13.8	0.15	19981103	247.01466	317.80122	232.99869	2.69025	0.2668115	2.4651092	14	1	12 days	0.88		Williams	1998 VA ₅
1998 VC ₅	14.7	0.15	19981103	284.26390	16.53918	119.50593	1.16269	0.0675500	2.3894004	21	1	18 days	0.87		Williams	1998 VC ₅
1998 VD ₅	13.3	0.15	19981103	341.44435	0.64049	79.15839	2.46391	0.1773589	3.1499523	22	1	15 days	0.69		Williams	1998 VD ₅
1998 VE ₅	15.1	0.15	19981103	15.93658	334.64196	49.05869	10.02856	0.2463093	2.4320638	29	1	32 days	0.71		Williams	1998 VE ₅
1998 VG ₅	14.9	0.15	19981103	60.86916	297.88985	35.29519	3.43083	0.1571381	2.1700561	24	1	14 days	1.07		Williams	1998 VG ₅
1998 VK ₅	15.0	0.15	19981123	9.68663	48.67612	350.03004	3.63934	0.2121876	2.6005520	23	1	11 days	0.64		Nakano	1998 VK ₅
1998 VM ₅	14.6	0.15	19981123	34.00693	341.06246	22.43728	7.81534	0.2066554	2.5867823	23	1	11 days	0.60		Nakano	1998 VM ₅
1998 VN ₅	13.1	0.15	19981123	3.93054	27.16959	21.97499	10.56645	0.1454305	3.1615590	23	1	11 days	0.50		Nakano	1998 VN ₅
1998 VO ₅	16.1	0.15	19981123	43.26261	291.77775	50.21721	8.60616	0.3229602	2.3779117	28	1	17 days	0.46		Nakano	1998 VO ₅
1998 VP ₅	14.6	0.15	19981103	291.58911	118.79698	12.55443	6.33846	0.1068579	2.4050115	14	1	15 days	0.90		Williams	1998 VP ₅
1998 VQ ₅	14.7	0.15	19981123	354.75855	49.58690	15.60427	6.02978	0.2041526	2.5359146	13	1	15 days	0.45		Nakano	1998 VQ ₅
1998 VR ₅	14.7	0.15	19981103	36.04679	350.33125	357.99545	4.87370	0.2857854	2.6218062	13	1	15 days	0.50		Williams	1998 VR ₅
1998 VS ₅	13.4	0.15	19981103	276.01722	101.19332	27.17767	22.62672	0.0158800	2.6527344	10	1	14 days	0.18		Williams	1998 VS ₅
1998 VT ₅	12.8	0.15	19981103	356.99170	186.08542	239.48497	27.25379	0.1488025	3.1182901	34	1	12 days	0.62		Williams	1998 VT ₅
1998 VU ₅	13.9	0.15	19981123	282.98333	179.25716	318.51869	3.49150	0.0703856	2.5263358	16	1	15 days	0.28		Nakano	1998 VU ₅
1998 VZ ₅	15.0	0.15	19981103	89.33380	253.04813	77.93870	7.32186	0.1258304	2.2698803	27	1	13 days	0.87		Williams	1998 VZ ₅
1998 VA ₆	15.0	0.15	19981103	260.42888	268.18085	184.69662	22.86816	0.0797731	1.9030571	9	1	6 days	0.76		Williams	1998 VA ₆
1998 VB ₆	13.6	0.15	19981103	18.46934	65.47528	257.01941	6.36842	0.2151913	2.2608551	12	1	9 days	0.52		Williams	1998 VB ₆
1998 VD ₆	14.0	0.15	19981103	111.60756	241.34768	51.10203	10.57994	0.1011073	2.5371373	21	1	18 days	0.46		Williams	1998 VD ₆
1998 VE ₆	15.8	0.15	19981123	354.08350	34.53558	27.61680	11.80351	0.2264710	2.5736860	25	1	14 days	0.57		Nakano	1998 VE ₆
1998 VG ₆	15.1	0.15	19981123	15.27844	18.44374	9.73628	6.97661	0.2370412	2.4317320	11	1	7 days	0.45		Nakano	1998 VG ₆
1998 VH ₆	15.0	0.15	19981103	320.47929	66.40953	25.35599	9.78742	0.0852337	2.3094598	22	1	8 days	0.59		Williams	1998 VH ₆
1998 VK ₆	14.7	0.15	19981103	339.42322	122.17260	314.60184	4.65724	0.2012286	2.7733692	22	1	14 days	0.53		Williams	1998 VK ₆
1998 VM ₆	12.0	0.15	19981103	341.10110	129.55689	309.27170	6.28964	0.2206916	5.2285627	24	1	29 days	0.58		Nakano	1998 VM ₆
1998 VN ₆	15.5	0.15	19981123	342.41361	55.15667	29.59509	11.40949	0.2581088	2.6180398	18	1	9 days	0.82		Nakano	1998 VN ₆
1998 VO ₆	13.5	0.15	19981123	335.22011	152.42898	289.73883	6.13446	0.0829109	2.7573530	20	1	9 days	0.51		Nakano	1998 VO ₆
1998 VP ₆	15.9	0.15	19981123	8.85190	107.46916	294.90302	3.82463	0.2545543	2.3171076	5	1	8 days	0.28		Nakano	1998 VP ₆
1998 VQ ₆	15.2	0.15	19981103	2.08254	82.89179	323.02079	4.32091	0.2004438	2.3264013	18	1	13 days	0.53		Williams	1998 VQ ₆
1998 VR ₆	13.2	0.15	19981123	126.77920	81.42806	211.50108	5.83206	0.1103496	2.2623734	6	1	8 days	0.45		Nakano	1998 VR ₆
1998 VS ₆	13.4	0.15	19981123	65.60512	111.26971	237.00165	8.01420	0.1420339	2.7004815	6	1	8 days	0.36		Nakano	1998 VS ₆
1998 VT ₆	13.9	0.15	19981123	33.83908	273.42648	109.70382	3.19286	0.1472243	2.2169479	6	1	8 days	0.23		Nakano	1998 VT ₆
1998 VU ₆	10.4	0.15	19981123	275.03934	98.35025	92.96109	8.87968	0.2929714	5.0879189	7	1	8 days	0.49	E	Nakano	1998 VU ₆
1998 VV ₆	14.0	0.15	19981123	45.10300	218.05498	157.49776	1.05890	0.0939719	2.2314986	6	1	8 days	0.29		Nakano	1998 VV ₆
1998 VW ₆	13.7	0.15	19981123	40.63238	135.31374	242.42155	11.57012	0.1399213	2.6908196	6	1	8 days	0.51		Nakano	1998 VW ₆
1998 VX ₆	14.3	0.15	19981103	314.78336	95.38989	33.03225	27.96274	0.3842322	2.7545473	15	1	5 days	0.57		Williams	1998 VX ₆
1998 VY ₆	15.9	0.15	19981103	288.94038	87.47773	39.44399	20.36330	0.0664421	1.9507910	13	1	5 days	1.04		Williams	1998 VY ₆
1998 VZ ₆	16.9	0.15	19981103	11.74463	212.73674	182.54432	2.27490	0.1891592	2.3903372	18	1	11 days	0.61		Williams	1998 VZ ₆

1998 VB ₇	12.5	0.15	19981103	32.26938	305.14549	41.83529	10.78269	0.0867491	3.0476152	18	1	14 days	0.56	Williams	1998 VB ₇
1998 VF ₇	13.6	0.15	19981014	348.81528	176.43700	225.58391	13.00858	0.2494103	2.6040439	34	1	31 days	0.42	Williams	1998 VF ₇
1998 VG ₇	15.3	0.15	19981103	357.90210	63.69955	331.74599	3.43807	0.2811574	2.5619897	19	1	14 days	0.75	Williams	1998 VG ₇
1998 VK ₇	14.7	0.15	19981103	62.18817	47.10152	264.82857	5.35696	0.1636290	2.2776655	18	1	14 days	0.70	Williams	1998 VK ₇
1998 VS ₇	15.4	0.15	19981014	347.24443	14.18536	29.25139	12.52384	0.1857373	2.7040024	24	1	36 days	0.55	Williams	1998 VS ₇
1998 VV ₇	14.3	0.15	19981103	230.27156	197.25747	328.97442	4.67082	0.0402236	2.2516972	17	1	14 days	0.71	Williams	1998 VV ₇
1998 VW ₇	14.7	0.15	19981103	293.38068	130.35469	345.34097	3.91848	0.1474514	2.4392675	17	1	14 days	0.64	Williams	1998 VW ₇
1998 VX ₇	14.8	0.15	19981103	333.90165	214.18420	217.24704	8.35925	0.2047060	2.7942567	20	1	19 days	0.58	Williams	1998 VX ₇
1998 VZ ₇	16.2	0.15	19981103	330.21972	213.86726	234.32430	11.71007	0.1575241	2.6572254	12	1	14 days	0.33	Williams	1998 VZ ₇
1998 VC ₈	14.3	0.15	19981014	347.52067	212.39538	189.59240	10.76782	0.1274209	2.9887195	24	1	36 days	0.61	Williams	1998 VC ₈
1998 VJ ₈	15.1	0.15	19981103	340.65666	271.71289	151.95162	2.14239	0.2306380	2.7401049	12	1	6 days	0.68	E Williams	1998 VJ ₈
1998 VN ₈	14.6	0.15	19981103	336.68913	107.46746	329.45301	2.14927	0.2881105	2.5042973	12	1	5 days	0.47	Williams	1998 VN ₈
1998 VO ₈	14.3	0.15	19981103	322.20521	86.98227	11.90483	4.63779	0.2817176	2.4440176	12	1	5 days	0.59	E Williams	1998 VO ₈
1998 VV ₈	15.9	0.15	19981103	21.20004	52.89629	310.14885	3.90929	0.2373282	2.2890168	17	1	14 days	0.54	Williams	1998 VV ₈
1998 VW ₈	14.8	0.15	19981103	91.18673	325.24668	321.95905	4.07090	0.1641363	2.3107670	18	1	14 days	0.79	Williams	1998 VW ₈
1998 VX ₈	13.8	0.15	19981103	101.96330	20.00138	261.80365	6.08330	0.1189797	2.3503166	18	1	14 days	0.50	Williams	1998 VX ₈
1998 VY ₈	14.1	0.15	19981103	344.58138	187.64372	230.13956	16.52968	0.1810848	3.0317470	18	1	14 days	0.57	Williams	1998 VY ₈
1998 VA ₉	16.6	0.15	19981103	0.59938	117.85904	277.34637	2.17227	0.2314318	2.2394227	11	1	6 days	0.77	Williams	1998 VA ₉
1998 VB ₉	14.8	0.15	19981103	330.05507	212.24681	224.88114	10.84131	0.1831991	2.6936937	18	1	14 days	0.77	Williams	1998 VB ₉
1998 VD ₉	13.1	0.15	19981103	22.00319	153.43597	211.67585	15.41822	0.1228168	2.8571611	18	1	14 days	0.62	Williams	1998 VD ₉
1998 VG ₉	16.5	0.15	19981103	8.50988	324.75678	54.61439	6.41595	0.2393385	2.3517589	20	1	19 days	0.56	Williams	1998 VG ₉
1998 VH ₉	14.9	0.15	19981103	325.95138	9.95147	64.83386	7.97479	0.1144597	2.2185382	18	1	14 days	0.64	Williams	1998 VH ₉
1998 VL ₉	14.0	0.15	19981103	6.03214	322.89973	63.79657	5.33743	0.0759826	2.3945504	19	1	14 days	0.34	Williams	1998 VL ₉
1998 VM ₉	15.6	0.15	19981103	7.11200	210.52111	174.05689	1.04518	0.1944245	2.3733177	17	1	14 days	0.92	Williams	1998 VM ₉
1998 VR ₉	15.4	0.15	19981103	56.57721	290.29196	18.35071	4.99043	0.2386963	2.3158680	16	1	14 days	0.87	Williams	1998 VR ₉
1998 VT ₉	14.5	0.15	19981103	286.85967	83.12666	39.17575	2.82385	0.1313733	2.4168086	17	1	14 days	0.94	Williams	1998 VT ₉
1998 VV ₉	15.5	0.15	19981103	40.39358	26.76855	309.77310	3.87121	0.2292001	2.1638178	17	1	14 days	0.60	Williams	1998 VV ₉
1998 VZ ₁₀	16.3	0.15	19981103	342.21522	206.00141	222.31370	3.58402	0.2522817	2.5405711	13	1	5 days	0.53	Williams	1998 VZ ₁₀
1998 VK ₁₁	16.0	0.15	19981103	308.93093	52.02108	50.28023	6.89836	0.1389975	2.2161195	12	1	5 days	0.54	Williams	1998 VK ₁₁
1998 VQ ₁₂	14.3	0.15	19981103	206.59221	353.49716	203.74570	7.31470	0.1356686	2.1285205	13	1	5 days	0.41	E Williams	1998 VQ ₁₂
1998 VD ₁₃	14.0	0.15	19981103	21.30014	328.41417	45.27650	3.09938	0.0726422	2.8882972	12	1	6 days	0.46	E Williams	1998 VD ₁₃
1998 VH ₁₃	14.5	0.15	19981103	116.74021	34.11916	229.98681	3.06290	0.1956811	2.2856158	12	1	6 days	0.67	E Williams	1998 VH ₁₃
1998 VK ₁₃	14.3	0.15	19981103	184.22310	177.02840	38.12948	11.09036	0.0453686	2.9827187	14	1	11 days	1.09	E Williams	1998 VK ₁₃
1998 VN ₁₃	16.0	0.15	19981103	322.87885	201.75388	241.12751	5.01158	0.0926493	2.2459248	10	1	6 days	0.74	Williams	1998 VN ₁₃
1998 VP ₁₃	16.1	0.15	19981103	6.64963	138.66496	248.96256	3.41132	0.2419501	2.5300902	13	1	6 days	0.60	Williams	1998 VP ₁₃
1998 VR ₁₃	13.7	0.15	19981103	5.40201	25.31152	3.75658	4.47082	0.2588646	3.9843727	13	1	6 days	0.57	E Williams	1998 VR ₁₃
1998 VS ₁₃	15.1	0.15	19981103	63.67140	278.64546	30.23227	11.89305	0.2361507	2.4628385	18	1	17 days	0.63	Williams	1998 VS ₁₃
1998 VU ₁₃	14.4	0.15	19981103	59.27604	85.61287	236.23488	11.45232	0.1648614	2.5482654	13	1	6 days	0.58	Williams	1998 VU ₁₃
1998 VV ₁₄	15.1	0.15	19981014	88.21403	304.41445	349.33374	1.85503	0.1066474	2.2533433	18	1	28 days	0.52	Williams	1998 VV ₁₄
1998 VB ₁₅	16.3	0.15	19981103	356.34000	13.42919	31.62554	2.60533	0.1834518	2.2758573	14	1	13 days	0.53	Williams	1998 VB ₁₅
1998 VH ₁₅	14.9	0.15	19981103	55.00950	294.25087	33.76429	3.48253	0.1621843	2.5996633	12	1	16 days	0.45	Williams	1998 VH ₁₅
1998 VJ ₁₅	15.4	0.15	19981103	23.32655	144.46818	226.92447	5.48322	0.1072938	2.5262552	12	1	15 days	0.97	Williams	1998 VJ ₁₅
1998 VY ₁₅	14.8	0.15	19981103	325.97338	345.31691	99.58187	2.82906	0.1641057	2.9996154	12	1	6 days	0.56	Williams	1998 VY ₁₅
1998 VA ₁₆	15.7	0.15	19981103	3.83640	341.99401	51.21906	14.54064	0.1456851	2.7466200	12	1	6 days	0.42	Williams	1998 VA ₁₆
1998 VM ₁₆	13.8	0.15	19981103	312.67132	45.80169	67.83020	12.04884	0.2896224	3.5244929	13	1	5 days	0.73	Williams	1998 VM ₁₆
1998 VN ₁₆	14.6	0.15	19981103	57.91655	226.48256	96.23208	6.75460	0.1523105	2.7925327	12	1	5 days	0.69	Williams	1998 VN ₁₆
1998 VP ₁₆	14.4	0.15	19981103	167.36667	140.74392	86.22685	9.39093	0.0751133	2.7226939	12	1	5 days	0.49	Williams	1998 VP ₁₆
1998 VT ₁₆	15.4	0.15	19981103	270.92413	51.22986	81.58249	7.09453	0.0414664	2.2865007	13	1	6 days	0.56	Williams	1998 VT ₁₆
1998 VV ₁₆	16.0	0.15	19981103	22.04052	211.60085	153.24518	4.51839	0.2122952	2.6209407	11	1	6 days	0.50	Williams	1998 VV ₁₆
1998 VD ₁₇	15.5	0.15	19981103	326.22283	249.59696	209.88303	12.52112	0.2965056	2.5853723	13	1	6 days	0.46	Williams	1998 VD ₁₇
1998 VH ₁₇	14.8	0.15	19981103	326.42486	244.14066	205.35376	5.28222	0.2010879	2.8240953	11	1	6 days	0.63	E Williams	1998 VH ₁₇
1998 VL ₁₇	16.4	0.15	19981103	18.81573	327.15828	45.49387	3.32124	0.1921826	2.3929580	15	1	11 days	0.49	Williams	1998 VL ₁₇
1998 VM ₁₇	13.4	0.15	19981014	289.64035	252.66555	217.98637	8.59829	0.0306386	3.0598567	18	1	23 days	0.64	Williams	1998 VM ₁₇

1998 VP ₁₇	17.2	0.15	19981103	343.11020	200.20333	226.55385	2.85178	0.2079070	2.0188519	11	1	6 days	0.60	Williams	1998 VP ₁₇
1998 VH ₁₈	15.3	0.15	19981103	29.56585	91.20911	270.25316	5.17597	0.1649850	2.1409327	20	1	33 days	0.97	Nakano	1998 VH ₁₈
1998 VM ₁₈	13.5	0.15	19981103	156.29110	359.98910	242.48938	13.47018	0.0878357	2.4745135	15	1	22 days	0.83	Nakano	1998 VM ₁₈
1998 VA ₁₉	15.4	0.15	19981103	51.53076	108.62580	222.37359	6.56578	0.1872937	2.5338877	16	1	15 days	0.69	Williams	1998 VA ₁₉
1998 VT ₁₉	15.8	0.15	19981103	10.84784	188.05261	196.29628	10.46110	0.1758887	2.4584805	13	1	6 days	0.44	Williams	1998 VT ₁₉
1998 VU ₁₉	15.2	0.15	19981103	41.58855	125.17786	208.03254	21.27718	0.2646041	2.8750183	13	1	6 days	0.66	E Williams	1998 VU ₁₉
1998 VW ₁₉	14.3	0.15	19981103	38.39283	273.80659	77.82154	10.87612	0.1079385	3.1733573	13	1	6 days	0.78	Williams	1998 VW ₁₉
1998 VX ₁₉	15.4	0.15	19981103	278.00234	20.31254	114.81896	5.88518	0.1189115	2.3004667	13	1	6 days	0.65	Williams	1998 VX ₁₉
1998 VN ₂₀	15.7	0.15	19981103	5.39604	340.02886	55.36556	5.94555	0.0859666	2.5977774	10	1	15 days	0.91	Williams	1998 VN ₂₀
1998 VG ₂₁	14.9	0.15	19981103	63.12813	91.07321	241.32063	5.95299	0.0694510	2.7672352	12	1	14 days	0.59	Williams	1998 VG ₂₁
1998 VA ₂₂	16.6	0.15	19981103	28.24552	355.43202	5.62618	6.17885	0.2130990	2.2396335	14	1	8 days	0.91	Williams	1998 VA ₂₂
1998 VB ₂₂	15.4	0.15	19981123	61.06400	324.63250	10.02462	7.09673	0.1433247	2.2911022	14	1	12 days	0.51	Nakano	1998 VB ₂₂
1998 VC ₂₂	14.9	0.15	19981103	251.05914	242.37299	278.91564	6.59365	0.0614643	2.3798000	10	1	8 days	0.73	Nakano	1998 VC ₂₂
1998 VE ₂₂	13.7	0.15	19981103	117.73242	252.79473	28.30054	14.80553	0.0806008	3.0824303	11	1	6 days	0.53	Williams	1998 VE ₂₂
1998 VR ₂₂	13.9	0.15	19981103	43.91368	98.98451	247.21219	4.76611	0.1480852	2.3713651	13	1	15 days	0.20	Williams	1998 VR ₂₂
1998 VW ₂₂	14.3	0.15	19981103	105.75097	310.27652	343.07916	1.38923	0.0397582	2.8788803	11	1	14 days	0.46	E Williams	1998 VW ₂₂
1998 VC ₂₃	17.0	0.15	19981103	353.44261	174.07179	242.88843	2.01385	0.3141045	2.7437052	12	1	17 days	0.44	Williams	1998 VC ₂₃
1998 VG ₂₅	14.9	0.15	19981103	355.54046	343.52903	66.81603	3.12426	0.2081595	2.3610893	12	1	6 days	0.35	Williams	1998 VG ₂₅
1998 VR ₂₅	14.2	0.15	19981103	299.66677	318.83567	156.39567	1.53665	0.0915934	3.1755564	12	1	6 days	0.42	E Williams	1998 VR ₂₅
1998 VY ₂₅	15.2	0.15	19981103	300.43701	70.25145	38.03355	3.22762	0.0378669	2.3290443	15	1	14 days	0.69	Williams	1998 VY ₂₅
1998 VA ₂₆	16.0	0.15	19981103	0.74738	0.16399	43.58241	4.29385	0.1015327	2.3335665	14	1	14 days	0.51	Williams	1998 VA ₂₆
1998 VJ ₂₆	15.6	0.15	19981103	40.15696	47.94876	299.65198	1.63776	0.1938193	2.4998662	16	1	6 days	0.46	Williams	1998 VJ ₂₆
1998 VK ₂₆	18.3	0.15	19981103	355.39852	71.61880	339.31320	1.57272	0.1998476	2.0519327	11	1	6 days	1.04	Williams	1998 VK ₂₆
1998 VM ₂₆	15.9	0.15	19981103	199.26703	305.11472	262.94542	3.97939	0.0586452	2.1587379	11	1	6 days	1.09	E Williams	1998 VM ₂₆
1998 VO ₂₆	16.7	0.15	19981103	353.37104	61.41294	352.92407	2.33994	0.1805575	2.3558687	11	1	6 days	0.67	Williams	1998 VO ₂₆
1998 VP ₂₆	15.0	0.15	19981103	355.51206	22.27784	29.86268	8.00808	0.1663816	3.0253722	11	1	6 days	0.35	Williams	1998 VP ₂₆
1998 VX ₂₆	14.8	0.15	19981103	336.76953	118.53587	320.24924	4.13509	0.1445073	2.7074017	15	1	10 days	0.49	Williams	1998 VX ₂₆
1998 VG ₂₇	15.1	0.15	19981103	37.97824	75.97935	265.81640	8.02104	0.2679702	2.7184573	18	1	7 days	0.51	Williams	1998 VG ₂₇
1998 VM ₂₇	14.1	0.15	19981103	88.87296	31.21070	271.39908	5.20123	0.1330017	2.7499970	12	1	6 days	0.65	E Williams	1998 VM ₂₇
1998 VQ ₂₇	15.6	0.15	19981103	8.20948	50.02323	342.46744	1.27453	0.2028022	2.7766508	14	1	6 days	0.61	E Williams	1998 VQ ₂₇
1998 VR ₂₇	12.7	0.15	19981103	246.62920	288.97142	239.20663	5.55041	0.0840890	3.1227898	16	1	13 days	0.61	Williams	1998 VR ₂₇
1998 VT ₂₇	13.8	0.15	19981103	40.59429	306.57063	50.88817	10.34050	0.1046264	2.9673249	16	1	19 days	0.66	Williams	1998 VT ₂₇
1998 VK ₂₈	15.5	0.15	19981103	348.80245	349.81355	73.29539	4.89875	0.2142710	2.3941529	16	1	19 days	0.69	Williams	1998 VK ₂₈
1998 VO ₂₈	16.3	0.15	19981103	4.18103	334.87194	62.50318	6.37277	0.3303581	2.5884010	18	1	11 days	0.47	Williams	1998 VO ₂₈
1998 VQ ₂₈	12.5	0.15	19981123	178.92392	297.45837	296.84732	1.24885	0.1922417	2.7744961	12	1	7 days	0.53	Nakano	1998 VQ ₂₈
1998 VR ₂₈	15.0	0.15	19981103	352.06619	31.13862	28.74398	4.82103	0.1476145	2.6277207	17	1	11 days	0.93	Williams	1998 VR ₂₈
1998 VS ₂₈	15.1	0.15	19981103	356.18617	66.86158	346.11528	1.88387	0.0743323	2.1868685	19	1	11 days	0.53	Williams	1998 VS ₂₈
1998 VU ₂₈	13.6	0.15	19981103	259.76907	135.11862	32.29679	13.64884	0.1404048	2.4647514	11	1	9 days	0.96	Nakano	1998 VU ₂₈
1998 VX ₂₈	16.3	0.15	19981103	24.60311	110.73856	268.18057	5.88502	0.1258354	2.2665916	21	1	14 days	0.87	Williams	1998 VX ₂₈
1998 VZ ₂₈	13.7	0.15	19981103	61.54458	292.76301	39.25206	10.94153	0.1660502	2.6077325	18	1	11 days	0.57	Williams	1998 VZ ₂₈
1998 VA ₂₉	16.0	0.15	19981103	38.21089	334.35218	14.61680	2.64298	0.2433901	2.3777665	20	1	11 days	0.86	Williams	1998 VA ₂₉
1998 VH ₂₉	13.9	0.15	19981103	349.00685	350.52337	72.42896	13.60762	0.1425209	2.6400635	17	1	11 days	0.65	Williams	1998 VH ₂₉
1998 VK ₂₉	15.4	0.15	19981103	323.78983	26.25248	63.82095	5.43676	0.0517282	2.2212598	11	1	13 days	0.86	E Williams	1998 VK ₂₉
1998 VM ₂₉	14.4	0.15	19981103	334.01223	205.93736	239.03826	12.24219	0.1360192	2.7727894	26	1	14 days	0.72	Williams	1998 VM ₂₉
1998 VN ₂₉	14.9	0.15	19981103	2.71251	165.23058	242.90285	10.85269	0.0529060	2.5281753	22	1	15 days	0.82	Williams	1998 VN ₂₉
1998 VO ₂₉	15.0	0.15	19981103	6.87639	84.54269	313.64581	2.08256	0.2737893	3.0122342	19	1	11 days	0.51	Williams	1998 VO ₂₉
1998 VP ₂₉	14.7	0.15	19981103	23.33763	120.95408	261.24076	5.93672	0.1357812	3.1531395	17	1	14 days	0.81	Williams	1998 VP ₂₉
1998 VQ ₂₉	13.5	0.15	19981103	54.99068	80.79530	256.16920	12.71567	0.1971510	2.6336895	19	1	11 days	0.72	Williams	1998 VQ ₂₉
1998 VU ₂₉	13.0	0.15	19981103	348.44946	168.12336	260.61414	8.96260	0.1485690	2.7992299	23	1	14 days	1.11	Williams	1998 VU ₂₉
1998 VV ₂₉	14.6	0.15	19981103	308.27719	201.62642	270.68993	6.21045	0.0789711	2.3557370	18	1	14 days	0.90	Williams	1998 VV ₂₉
1998 VX ₂₉	15.1	0.15	19981103	4.82729	130.56900	270.67769	4.52435	0.2911680	2.4925871	12	1	9 days	0.66	Nakano	1998 VX ₂₉
1998 VY ₂₉	10.6	0.15	19981103	352.22357	170.73160	257.96998	12.37209	0.1885202	5.1229496	18	1	14 days	0.67	Williams	1998 VY ₂₉
1998 VZ ₂₉	14.6	0.15	19981103	8.39836	5.25936	32.45182	4.16955	0.1946938	2.2554022	23	1	14 days	0.64	Williams	1998 VZ ₂₉

1998 VA ₃₀	15.5	0.15	19981103	347.58091	24.46977	44.09947	6.30814	0.1704340	2.4182974	20	1	14 days	0.84	Williams	1998 VA ₃₀
1998 VB ₃₀	14.9	0.15	19981103	358.31024	148.06062	265.50915	2.45932	0.1153462	2.3731595	16	1	14 days	0.53	Williams	1998 VB ₃₀
1998 VF ₃₀	10.6	0.15	19981103	341.67457	7.73915	66.75739	26.08431	0.1245248	5.2079505	16	1	14 days	0.62	Williams	1998 VF ₃₀
1998 VJ ₃₀	13.7	0.15	19981103	5.21108	329.05031	75.47020	12.75736	0.1440017	3.1684609	20	1	14 days	0.70	Williams	1998 VJ ₃₀
1998 VN ₃₀	14.7	0.15	19981103	39.70940	93.34827	265.02747	6.15286	0.1767100	2.3643039	17	1	14 days	0.62	Williams	1998 VN ₃₀
1998 VT ₃₀	15.0	0.15	19981103	30.69140	92.54019	277.98099	4.44123	0.1710194	2.1839244	19	1	14 days	0.65	Williams	1998 VT ₃₀
1998 VU ₃₀	9.8	0.15	19981103	270.23036	261.94785	252.64337	17.40371	0.0513099	5.0905187	18	1	14 days	0.66	Williams	1998 VU ₃₀
1998 VW ₃₀	15.3	0.15	19981103	32.74225	10.87837	359.81658	1.67401	0.1327825	2.2407611	17	1	14 days	0.78	Williams	1998 VW ₃₀
1998 VX ₃₀	14.2	0.15	19981103	350.03014	169.11741	252.36539	13.87687	0.1401025	2.5605721	10	1	9 days	0.47	Nakano	1998 VX ₃₀
1998 VZ ₃₀	13.1	0.15	19981103	263.19359	100.69072	70.19799	14.02017	0.0997087	2.5629579	13	1	10 days	0.63	Williams	1998 VZ ₃₀
1998 VD ₃₁	19.4	0.15	19981123	346.72752	113.16270	47.98545	10.23172	0.8026698	2.6508107	140	1	25 days	1.16	Marsden	1998 VD ₃₁
1998 VE ₃₁	20.7	0.15	19981103	105.53891	219.43277	57.39076	21.91319	0.1899949	1.0503035	38	1	13 days	0.76	Nakano	1998 VE ₃₁
1998 VF ₃₁	16.7	0.15	19981123	262.58352	310.44257	221.39104	31.32310	0.1002576	1.5247009	59	1	15 days	0.57	Nakano	1998 VF ₃₁
1998 VG ₃₁	14.3	0.15	19981123	73.56401	321.66742	9.15461	6.07873	0.0816577	2.6157807	12	1	17 days	0.32	Nakano	1998 VG ₃₁
1998 VH ₃₁	13.7	0.15	19981123	25.55383	316.10718	61.06455	1.68873	0.3527166	2.5911392	6	1	6 days	0.29	Nakano	1998 VH ₃₁
1998 VJ ₃₁	14.3	0.15	19981123	319.44023	226.85926	280.09730	1.66323	0.3471189	2.3955150	6	1	6 days	0.28	E Nakano	1998 VJ ₃₁
1998 VK ₃₁	13.5	0.15	19981123	213.80902	338.36733	249.79918	8.98560	0.1460814	2.4365848	6	1	6 days	0.53	Nakano	1998 VK ₃₁
1998 VL ₃₁	13.8	0.15	19981103	288.44631	80.93100	74.12464	14.49395	0.1339275	2.5644220	13	1	26 days	0.37	Williams	1998 VL ₃₁
1998 VM ₃₁	12.3	0.15	19981123	38.41191	304.11981	65.05070	17.00107	0.2829412	3.1701774	6	1	6 days	0.14	Nakano	1998 VM ₃₁
1998 VN ₃₁	13.5	0.15	19981103	334.41731	182.30206	239.00617	6.55691	0.0444726	3.1542334	13	1	18 days	1.05	Williams	1998 VN ₃₁
1998 VO ₃₁	12.5	0.15	19981103	87.52957	73.78106	301.45790	21.11298	0.0362315	3.0164217	9	1	15 days	0.70	Williams	1998 VO ₃₁
1998 VP ₃₁	12.5	0.15	19981103	153.37674	349.09812	243.23093	8.20679	0.2114766	2.7380913	23	1	18 days	0.82	Williams	1998 VP ₃₁
1998 VD ₃₂	22.2	0.15	19990122	352.82022	151.88251	1.15420	1.95707	0.3135910	1.1012827	45	1	12 days	0.69	M-v 7 Williams	1998 VD ₃₂
1998 VE ₃₂	15.0	0.15	19981103	37.03099	100.27776	237.74044	26.95521	0.2896677	1.8554928	75	1	15 days	0.56	Marsden	1998 VE ₃₂
1998 VF ₃₂	21.1	0.15	19990122	342.73318	320.76109	236.36709	23.96202	0.4458347	0.8517013	41	1	10 days	1.05	M-v 9 Williams	1998 VF ₃₂
1998 VG ₃₂	15.0	0.15	19981103	329.31065	12.83678	80.95279	4.19523	0.1535734	2.3451153	31	1	38 days	0.66	Williams	1998 VG ₃₂
1998 VH ₃₂	16.7	0.15	19981103	1.11599	307.19326	106.29032	6.15397	0.2454571	2.3523417	8	1	16 days	0.39	Williams	1998 VH ₃₂
1998 VK ₃₂	14.9	0.15	19981103	41.86729	123.52637	225.43943	15.25736	0.3286768	2.6038867	8	1	12 days	0.26	Williams	1998 VK ₃₂
1998 VM ₃₂	13.2	0.15	19981103	155.02758	332.33457	285.15953	8.40451	0.2225470	2.2834622	25	1	14 days	0.59	Williams	1998 VM ₃₂
1998 VN ₃₂	13.6	0.15	19981103	21.25821	295.25211	95.69755	2.84633	0.1559150	2.9493054	18	1	10 days	0.36	Williams	1998 VN ₃₂
1998 VO ₃₂	12.9	0.15	19981103	94.00025	2.89439	304.74376	9.57265	0.1485949	2.6443566	23	1	13 days	0.31	Williams	1998 VO ₃₂
1998 VP ₃₂	15.7	0.15	19981103	315.07854	2.01270	111.61040	25.23336	0.1933877	2.2586259	7	1	8 days	0.26	Williams	1998 VP ₃₂
1998 VR ₃₂	16.6	0.15	19981103	48.42935	234.55195	126.23614	24.21412	0.0900833	1.9516748	8	1	8 days	0.33	Williams	1998 VR ₃₂
1998 VW ₃₂	15.2	0.15	19981103	108.52467	238.42623	54.15973	0.77580	0.1210956	2.4578550	14	1	17 days	0.61	Williams	1998 VW ₃₂
1998 VX ₃₂	15.6	0.15	19981103	52.25746	292.31789	54.67014	3.03422	0.1356123	2.5242326	25	1	17 days	0.72	Williams	1998 VX ₃₂
1998 VZ ₃₂	14.9	0.15	19981103	327.09588	230.23481	232.40061	8.21934	0.2169639	2.7179150	20	1	17 days	1.01	Williams	1998 VZ ₃₂
1998 VA ₃₃	14.5	0.15	19981123	241.15306	317.02851	234.94916	1.31606	0.1621391	2.3689470	21	1	25 days	0.89	Williams	1998 VA ₃₃
1998 VB ₃₃	15.9	0.15	19981103	346.74789	18.78112	55.74539	5.08189	0.2563944	2.6733380	21	1	17 days	0.93	Williams	1998 VB ₃₃
1998 VE ₃₃	14.3	0.15	19981103	136.17876	62.88965	220.96040	13.18834	0.1547780	2.5772865	6	1	11 days	0.42	Williams	1998 VE ₃₃
1998 VG ₃₃	15.5	0.15	19981103	14.87658	283.19772	70.10314	16.25529	0.2649698	2.4467185	9	1	13 days	0.37	Williams	1998 VG ₃₃
1998 VH ₃₃	15.7	0.15	19981103	61.87873	248.86873	76.84047	3.18729	0.1916634	2.2453257	7	1	5 days	0.46	Williams	1998 VH ₃₃
1998 VJ ₃₃	14.3	0.15	19981103	344.19405	199.40576	230.98569	8.31036	0.0594888	2.9709784	21	1	13 days	0.40	Williams	1998 VJ ₃₃
1998 VK ₃₃	13.8	0.15	19981103	90.81628	274.97976	31.53757	4.68121	0.1306033	2.9608718	12	1	2 days	0.51	E Williams	1998 VK ₃₃
1998 VL ₃₃	15.5	0.15	19981103	317.41254	59.33494	57.35993	14.63447	0.2319376	2.6572418	30	1	17 days	0.84	Williams	1998 VL ₃₃
1998 VM ₃₃	14.3	0.15	19981123	2.79534	242.80246	184.89195	1.79135	0.1516863	2.5330776	6	1	11 days	0.33	Nakano	1998 VM ₃₃
1998 VN ₃₃	12.5	0.15	19981123	33.91760	266.04472	114.87246	3.70302	0.2329997	3.3553852	7	1	11 days	0.39	Nakano	1998 VN ₃₃
1998 VO ₃₃	16.9	0.15	19981103	31.14328	209.69422	64.45606	15.02962	0.8105536	1.2513707	111	1	14 days	0.51	Williams	1998 VO ₃₃
1998 VQ ₃₃	17.0	0.15	19981103	345.98997	3.98010	59.37910	22.87051	0.0929967	1.9202430	10	1	13 days	0.54	Williams	1998 VQ ₃₃
1998 VR ₃₃	15.4	0.15	19981103	356.93581	186.84508	229.50332	22.23217	0.0429636	2.6376981	17	1	13 days	1.15	Williams	1998 VR ₃₃
1998 VS ₃₃	16.0	0.15	19981103	289.68127	229.51296	263.29463	17.84352	0.0678277	1.9155473	15	1	13 days	0.44	Williams	1998 VS ₃₃
1998 VT ₃₃	15.0	0.15	19981103	9.55422	94.60592	328.34291	5.04949	0.3499543	2.9336332	11	1	13 days	0.46	Williams	1998 VT ₃₃
1998 VU ₃₃	15.3	0.15	19981103	126.84188	213.91025	58.09705	3.02004	0.1508155	2.7630059	12	1	12 days	0.21	Williams	1998 VU ₃₃
1998 VW ₃₃	16.6	0.15	19981103	58.03955	88.27952	229.25180	2.77877	0.2966256	2.5702103	15	1	14 days	0.33	Williams	1998 VW ₃₃

1998 VX ₃₃	16.5	0.15	19981103	17.54905	160.55960	223.66415	1.76356	0.1560092	2.2119249	9	1	11 days	0.21	Williams	1998 VX ₃₃
1998 VZ ₃₃	15.7	0.15	19981103	32.06899	194.12913	181.48330	3.57283	0.1161594	2.6774311	9	1	9 days	0.21	Williams	1998 VZ ₃₃
1998 VD ₃₄	14.5	0.15	19981123	315.55329	225.38090	240.84570	8.54388	0.0642007	2.7301310	9	1	11 days	0.73	Nakano	1998 VD ₃₄
1998 VE ₃₄	16.5	0.15	19981103	345.50321	140.27471	292.40770	4.42935	0.3198164	2.5989674	18	1	12 days	0.53	Williams	1998 VE ₃₄
1998 VG ₃₄	13.8	0.15	19981103	75.91301	205.32771	108.94101	13.17619	0.2505629	3.0466405	13	1	13 days	0.38	Williams	1998 VG ₃₄
1998 VH ₃₄	12.7	0.15	19981103	36.88201	48.15241	303.30750	6.97438	0.1581177	3.1717163	8	1	11 days	0.09	Williams	1998 VH ₃₄
1998 VK ₃₄	17.3	0.15	19981103	321.39209	115.91811	342.12171	0.60374	0.1495687	2.4388610	9	1	15 days	0.16	Williams	1998 VK ₃₄
1998 VL ₃₄	17.8	0.15	19981103	27.60372	139.15358	233.64560	6.17727	0.1205975	2.3129651	9	1	16 days	0.24	Williams	1998 VL ₃₄
1998 VP ₃₄	15.3	0.15	19981103	100.59628	81.04342	222.21592	1.15442	0.0637066	2.8958294	9	1	12 days	0.13	Williams	1998 VP ₃₄
1998 VQ ₃₄	15.2	0.15	19981103	20.77292	137.36141	240.01120	8.50574	0.2258689	2.8510397	20	1	10 days	0.63	Williams	1998 VQ ₃₄
1998 VR ₃₄	14.0	0.15	19981123	130.39247	327.51384	315.17689	1.13262	0.0367683	2.8720929	9	1	11 days	0.53	Nakano	1998 VR ₃₄
1998 VS ₃₄	15.0	0.15	19981103	18.18747	230.56835	176.90225	14.83735	0.1601383	2.6540783	14	1	4 days	0.48	Williams	1998 VS ₃₄
1998 VX ₃₄	14.3	0.15	19981103	347.59784	208.81292	221.82181	8.37686	0.2744224	2.7896480	24	1	35 days	0.62	Williams	1998 VX ₃₄
1998 VY ₃₄	14.0	0.15	19981123	22.16874	274.91927	108.92086	6.67638	0.1930408	2.3166416	10	1	25 days	0.78	Nakano	1998 VY ₃₄
1998 VB ₃₅	14.0	0.15	19981103	62.49217	246.51518	84.53922	6.61891	0.2614208	2.2534106	9	1	3 days	1.36	E Williams	1998 VB ₃₅
1998 VC ₃₅	12.8	0.15	19981123	296.95081	245.00887	252.39949	11.72114	0.2322755	2.6522187	8	1	10 days	0.56	Nakano	1998 VC ₃₅
1998 VD ₃₅	20.3	0.15	19981103	298.26811	295.54175	227.54968	6.74939	0.4665349	1.5467523	12	1	11 days	0.34	Williams	1998 VD ₃₅
1998 VC ₃₆	17.0	0.15	19981103	24.07429	279.31444	87.58388	3.27807	0.2470272	2.3338366	14	1	7 days	0.85	Williams	1998 VC ₃₆
1998 VD ₃₆	15.4	0.15	19981103	61.31624	205.84137	116.19717	3.14372	0.2235059	2.3756698	12	1	7 days	0.50	Williams	1998 VD ₃₆
1998 VE ₃₆	16.0	0.15	19981103	9.84577	247.27195	146.00315	2.76878	0.1957797	2.7153883	12	1	7 days	0.50	Williams	1998 VE ₃₆
1998 VF ₃₆	16.1	0.15	19981103	15.74105	111.90246	270.81462	1.84316	0.2289128	2.4554684	13	1	8 days	0.50	Williams	1998 VF ₃₆
1998 VM ₃₆	13.6	0.15	19981103	127.97997	38.48414	241.60599	12.97263	0.0404531	3.0825800	13	1	8 days	0.69	E Williams	1998 VM ₃₆
1998 VZ ₃₇	14.7	0.15	19981103	284.40753	73.31480	56.44587	11.37394	0.0974037	2.5879729	12	1	13 days	0.84	Williams	1998 VZ ₃₇
1998 VM ₃₈	16.3	0.15	19981103	35.18309	309.61123	43.93916	5.95791	0.1772517	2.2660884	14	1	9 days	0.55	Williams	1998 VM ₃₈
1998 WB	14.4	0.15	19981103	11.35242	260.52213	127.02007	22.58254	0.1323131	3.1322408	8	1	7 days	0.42	Williams	1998 WB
1998 WD	15.1	0.15	19981103	18.25820	189.17731	205.80780	24.19565	0.2304674	2.2241432	8	1	2 days	0.22	Williams	1998 WD
1998 WE	13.5	0.15	19981103	321.51958	345.86943	119.36619	2.49100	0.1402045	3.2165326	25	1	13 days	0.65	Williams	1998 WE
1998 WF	15.1	0.15	19981103	359.30058	253.24203	129.60868	5.91872	0.3546434	2.8913219	12	1	7 days	0.44	Williams	1998 WF
1998 WG	15.0	0.15	19981123	91.33883	216.85051	99.02738	4.04223	0.1820905	2.4874835	13	1	13 days	0.97	Williams	1998 WG
1998 WH	14.8	0.15	19981103	51.89400	276.66983	80.82590	3.96989	0.1232392	2.4695781	13	1	13 days	0.69	E Williams	1998 WH
1998 WK	15.7	0.15	19981103	30.16476	139.05730	244.64536	2.20734	0.1380085	2.6156699	10	1	9 days	0.14	Marsden	1998 WK
1998 WL	16.7	0.15	19981103	9.98109	304.37538	69.61838	6.53148	0.4454365	2.5980802	38	1	10 days	0.36	Williams	1998 WL
1998 WM	16.3	0.15	19981123	230.78314	172.42993	45.70638	22.50100	0.3153325	1.2243848	48	1	13 days	0.42	Nakano	1998 WM
1998 WN	14.2	0.15	19981103	302.15823	105.58260	25.20610	16.42250	0.1162422	2.5696496	14	1	6 days	0.26	Marsden	1998 WN
1998 WO	15.6	0.15	19981103	357.04311	18.20174	32.73003	14.08245	0.2375707	2.6054908	24	1	10 days	0.88	Williams	1998 WO
1998 WP	13.8	0.15	19981123	51.34038	110.26374	246.62419	10.80038	0.2680290	2.6472311	8	1	13 days	0.76	Williams	1998 WP
1998 WS	12.1	0.15	19981123	350.19483	94.61353	9.23962	27.53570	0.3970602	2.6637122	48	1	12 days	0.35	Nakano	1998 WS
1998 WT	17.4	0.15	19981123	75.13042	324.33386	307.80211	3.21037	0.5707149	1.2194674	51	1	11 days	0.61	Nakano	1998 WT
1998 WU	11.6	0.15	19981123	119.55426	33.15151	270.02324	9.72578	0.1616592	2.4216400	6	1	8 days	0.27	Nakano	1998 WU
1998 WV	12.5	0.15	19981123	335.29268	40.37047	67.86886	12.69746	0.0750248	3.2088906	7	1	8 days	0.46	Nakano	1998 WV
1998 WY	16.2	0.15	19981103	315.78159	282.85158	197.20186	1.99996	0.1489404	2.3349018	9	1	8 days	0.28	Marsden	1998 WY
1998 WC ₁	14.6	0.15	19981103	18.57121	265.55622	112.33849	21.74089	0.2762333	2.3006533	9	1	4 days	0.23	Williams	1998 WC ₁
1998 WF ₁	14.2	0.15	19981103	144.25544	156.02199	105.71895	34.16655	0.1493584	2.6281829	9	1	6 days	0.48	Williams	1998 WF ₁
1998 WG ₁	14.9	0.15	19990122	17.82959	217.53179	203.65574	25.10440	0.2405456	2.3058128	12	1	82 days	0.33	M-v 4 Williams	1998 WG ₁
1998 WH ₁	14.9	0.15	19981103	2.00943	216.78728	206.36175	24.44292	0.2409151	2.3464607	8	1	3 days	0.26	Williams	1998 WH ₁
1998 WJ ₁	15.1	0.15	19981103	39.33056	156.73329	211.54343	25.78329	0.2511521	2.3679552	7	1	3 days	0.28	Williams	1998 WJ ₁
1998 WK ₁	14.7	0.15	19981103	60.06629	344.53143	336.41445	15.33338	0.1597106	2.5427171	19	1	6 days	0.78	Williams	1998 WK ₁
1998 WL ₁	13.7	0.15	19981123	20.63748	311.49508	96.85163	6.69723	0.1225689	2.4415753	6	1	7 days	0.19	Nakano	1998 WL ₁
1998 WM ₁	13.5	0.15	19981123	101.95834	59.13473	255.89643	4.70629	0.1945455	2.5380797	7	1	7 days	0.62	E Nakano	1998 WM ₁
1998 WN ₁	13.4	0.15	19981123	69.44357	124.73931	217.25659	4.33560	0.2129862	2.3837465	6	1	7 days	0.33	Nakano	1998 WN ₁
1998 WO ₁	12.3	0.15	19981123	159.19046	127.79276	148.49752	2.71729	0.0948422	2.9211677	6	1	7 days	0.19	Nakano	1998 WO ₁
1998 WP ₁	13.4	0.15	19981123	18.13994	324.53180	91.69840	10.81584	0.0864616	3.0135705	6	1	7 days	0.44	E Nakano	1998 WP ₁
1998 WQ ₁	13.3	0.15	19981123	21.10056	204.87456	195.48396	1.11558	0.2703030	3.3965093	6	1	7 days	0.38	E Nakano	1998 WQ ₁

1998 WR ₁	12.7	0.15	19981123	259.50396	319.94637	251.11992	5.41377	0.3349115	2.2607048	6	1	7 days	0.33	Nakano	1998 WR ₁
1998 WS ₁	14.8	0.15	19981123	358.62779	217.99745	218.38709	2.02418	0.1808425	2.3756298	7	1	7 days	0.40	Nakano	1998 WS ₁
1998 WT ₁	14.1	0.15	19981123	28.40460	138.88032	253.14656	12.60277	0.2079767	2.4377275	6	1	7 days	0.14	Nakano	1998 WT ₁
1998 WU ₁	13.6	0.15	19981123	100.16120	244.42813	82.90414	11.52171	0.0873908	2.3840816	6	1	7 days	0.43	Nakano	1998 WU ₁
1998 WV ₁	13.4	0.15	19981123	318.60008	45.28942	80.79135	3.75530	0.1100491	2.2452283	6	1	7 days	0.34	E Nakano	1998 WV ₁
1998 WY ₁	21.8	0.15	19981123	11.63017	157.92409	238.71049	24.72995	0.3588215	1.6194967	30	1	12 days	0.81	Nakano	1998 WY ₁
1998 WZ ₁	19.7	0.15	19981123	345.68199	136.50662	345.77300	4.39556	0.5718849	2.2425569	24	1	12 days	0.68	Nakano	1998 WZ ₁
1998 WA ₂	19.2	0.15	19981123	13.67184	125.88831	234.75810	22.36597	0.5994753	2.7061632	42	1	10 days	0.57	Nakano	1998 WA ₂
1998 WB ₂	21.8	0.15	19990122	3.02304	78.09388	52.72922	2.39262	0.5862281	1.9825190	83	1	15 days	0.57	M-v 7 Williams	1998 WB ₂
1998 WC ₂	18.7	0.15	19981103	340.99804	268.97601	209.40940	27.07536	0.5750092	2.6314209	18	1	6 days	0.51	Williams	1998 WC ₂
1998 WD ₂	13.9	0.15	19981123	328.38005	194.25371	298.55501	11.20088	0.2795243	2.9061668	12	1	11 days	0.22	Williams	1998 WD ₂
1998 WG ₂	14.6	0.15	19981123	329.33348	321.53839	150.34873	2.07523	0.1428549	3.2156145	8	1	7 days	0.24	Marsden	1998 WG ₂
1998 WH ₂	15.5	0.15	19981123	161.44142	216.63300	39.01027	14.57503	0.2439960	2.3926195	6	1	8 days	0.37	Williams	1998 WH ₂
1998 WJ ₂	14.2	0.15	19981123	286.84594	230.45267	275.48898	10.93976	0.0845032	3.1129218	6	1	8 days	0.25	Williams	1998 WJ ₂
1998 WK ₂	15.2	0.15	19981123	15.47228	186.32002	213.50903	1.99184	0.1936888	2.4891227	12	1	8 days	0.53	Williams	1998 WK ₂
1998 WL ₂	14.0	0.15	19981103	44.59852	194.75363	166.35849	23.65446	0.1355835	3.1782346	8	1	6 days	0.29	Williams	1998 WL ₂
1998 WM ₂	15.5	0.15	19981103	290.78185	322.60981	188.15552	24.65996	0.2030647	2.3735263	8	1	5 days	0.21	Williams	1998 WM ₂
1998 WP ₂	16.2	0.15	19981103	323.30863	343.25949	120.23239	3.64863	0.2353837	2.5782038	15	1	18 days	0.94	Williams	1998 WP ₂
1998 WQ ₂	14.8	0.15	19981103	328.76162	247.66357	211.04853	9.96357	0.2600113	2.7701743	24	1	18 days	0.84	Williams	1998 WQ ₂
1998 WS ₂	14.9	0.15	19981123	40.63644	130.83139	232.82841	16.37633	0.0944409	3.1073781	9	1	9 days	0.11	Williams	1998 WS ₂
1998 WU ₂	15.6	0.15	19981103	30.51060	142.24787	232.96479	13.73128	0.0621033	3.0912631	9	1	8 days	0.14	Williams	1998 WU ₂
1998 WV ₂	16.8	0.15	19981103	177.12473	2.13931	230.39336	2.11712	0.0279781	2.3087295	9	1	8 days	0.31	E Williams	1998 WV ₂
1998 WW ₂	16.6	0.15	19981103	336.86325	18.83444	59.83514	2.93185	0.1052931	2.7378680	9	1	5 days	0.27	Williams	1998 WW ₂
1998 WY ₂	15.5	0.15	19981103	307.02159	51.80544	66.39455	2.88762	0.1354902	3.0433934	12	1	6 days	0.51	E Williams	1998 WY ₂
1998 WZ ₂	15.5	0.15	19981103	83.44835	237.49654	66.56021	3.33965	0.2078373	2.3640684	15	1	9 days	0.42	Williams	1998 WZ ₂
1998 WD ₃	15.7	0.15	19981123	25.72517	271.71971	92.44500	8.57583	0.3161275	2.7215544	10	1	8 days	0.26	Nakano	1998 WD ₃
1998 WF ₃	14.3	0.15	19981103	358.48739	174.40581	240.98240	17.02338	0.1794009	3.0396018	21	1	6 days	0.58	Williams	1998 WF ₃
1998 WG ₃	12.6	0.15	19981123	253.53695	300.32281	266.55601	3.30310	0.1062120	2.6835643	6	1	9 days	0.27	Nakano	1998 WG ₃
1998 WH ₃	13.6	0.15	19981123	21.96226	144.77246	272.32143	12.15723	0.1327936	2.5983174	6	1	9 days	0.23	Nakano	1998 WH ₃
1998 WJ ₃	12.5	0.15	19981123	314.78547	47.89612	92.89487	13.75187	0.0831016	2.7216947	6	1	9 days	0.27	Nakano	1998 WJ ₃
1998 WK ₃	13.9	0.15	19981123	41.84602	102.77762	271.50284	0.74996	0.3054733	2.8564719	6	1	9 days	0.19	Nakano	1998 WK ₃
1998 WL ₃	13.0	0.15	19981123	18.73500	143.94373	279.91899	7.48490	0.1293034	2.9345952	6	1	9 days	0.50	Nakano	1998 WL ₃
1998 WM ₃	13.1	0.15	19981123	283.42901	124.51511	56.07997	3.43862	0.1419910	2.5351977	6	1	9 days	0.44	Nakano	1998 WM ₃
1998 WN ₃	12.0	0.15	19981123	97.44277	79.34075	265.57256	9.17557	0.0836462	3.1415164	6	1	9 days	0.51	Nakano	1998 WN ₃
1998 WO ₃	13.3	0.15	19981123	50.18060	113.75422	271.64189	8.23821	0.1515202	3.2357333	6	1	9 days	0.44	Nakano	1998 WO ₃
1998 WP ₃	13.6	0.15	19981123	354.81849	348.34648	107.66866	3.34236	0.0512906	2.9410426	6	1	9 days	0.40	Nakano	1998 WP ₃
1998 WQ ₃	11.4	0.15	19981123	206.66737	343.49499	267.63791	12.84169	0.1608509	2.5357523	6	1	9 days	0.33	Nakano	1998 WQ ₃
1998 WR ₃	14.0	0.15	19981103	64.49616	279.25780	57.70298	5.45627	0.1188961	2.2316811	14	1	6 days	0.91	E Williams	1998 WR ₃
1998 WT ₃	13.3	0.15	19981103	24.68486	319.47591	57.69969	10.26474	0.1991069	2.3864056	20	1	23 days	0.77	Williams	1998 WT ₃
1998 WU ₃	14.0	0.15	19981123	39.35581	311.01550	52.72418	6.45763	0.2086395	2.4365603	5	1	7 days	0.35	Nakano	1998 WU ₃
1998 WX ₃	13.9	0.15	19981103	28.21122	285.93753	73.05586	13.42818	0.3092817	2.6417387	18	1	13 days	0.85	Williams	1998 WX ₃
1998 WY ₃	15.4	0.15	19981103	29.15516	125.60545	232.96672	27.75389	0.3086257	2.6335236	14	1	6 days	0.85	Williams	1998 WY ₃
1998 WA ₄	16.8	0.15	19981123	358.52068	288.01516	133.98428	12.43426	0.4834048	2.7136515	28	1	9 days	0.51	Nakano	1998 WA ₄
1998 WB ₄	14.5	0.15	19981123	234.86912	161.24720	34.56744	10.42813	0.0564731	2.5637867	6	1	6 days	0.18	Williams	1998 WB ₄
1998 WC ₄	15.1	0.15	19981123	48.00340	4.52677	9.94723	6.37150	0.0418535	2.7508536	7	1	6 days	0.22	Williams	1998 WC ₄
1998 WE ₄	16.3	0.15	19981123	30.50016	62.40717	310.58536	4.32049	0.1376828	2.2493281	13	1	10 days	0.37	Nakano	1998 WE ₄
1998 WF ₄	13.2	0.15	19981103	30.61724	307.43074	56.41028	2.69218	0.2647514	3.1489563	13	1	6 days	0.54	E Williams	1998 WF ₄
1998 WK ₄	15.3	0.15	19981123	34.19877	309.85165	73.74763	3.11088	0.1847281	2.6499404	8	1	5 days	0.07	Marsden	1998 WK ₄
1998 WL ₄	19.4	0.15	19981103	46.06356	41.22486	226.42965	23.71500	0.7297565	1.7507255	15	1	10 days	0.38	Williams	1998 WL ₄
1998 WN ₄	16.9	0.15	19981103	350.68947	320.85765	100.05806	22.92296	0.0822466	1.8949459	8	1	5 days	0.34	Williams	1998 WN ₄
1998 WO ₄	16.0	0.15	19981123	244.22561	356.13010	190.47396	22.98932	0.0130891	1.9251835	12	1	12 days	0.47	Williams	1998 WO ₄
1998 WP ₄	15.7	0.15	19981103	336.78505	249.07463	202.42587	25.05579	0.0861336	1.9412691	7	1	6 days	0.17	Williams	1998 WP ₄
1998 WR ₄	16.6	0.15	19981103	321.02063	271.61820	204.15847	22.65310	0.1370999	1.9404780	7	1	5 days	0.38	Williams	1998 WR ₄

1998 WT ₄	15.3	0.15	19981103	7.21537	297.78995	109.63970	25.46542	0.3093277	2.7526933	7	1	5 days	0.16	Williams	1998 WT ₄
1998 WV ₄	15.8	0.15	19981103	7.10740	203.30226	188.55392	30.08205	0.2881601	3.2495074	9	1	4 days	0.54	Williams	1998 WV ₄
1998 WW ₄	15.8	0.15	19981103	328.23023	354.90676	97.19808	24.44739	0.2319472	2.3161067	8	1	3 days	0.19	Williams	1998 WW ₄
1998 WD ₅	16.8	0.15	19981103	4.49683	236.69066	166.39211	2.36533	0.2112797	2.3473780	14	1	18 days	0.85	Williams	1998 WD ₅
1998 WE ₅	14.0	0.15	19981123	27.53043	235.01844	153.01558	14.27607	0.1535885	3.1725750	11	1	6 days	0.40	Williams	1998 WE ₅
1998 WG ₅	16.5	0.15	19981103	355.67839	208.36816	218.30777	22.90784	0.2421311	2.4359654	9	1	2 days	0.25	Williams	1998 WG ₅
1998 WL ₅	13.5	0.15	19981123	194.83034	183.80229	40.67169	2.66357	0.0368589	2.8838841	16	1	11 days	0.86	E Williams	1998 WL ₅
1998 WM ₅	14.2	0.15	19981123	165.72235	197.86128	50.66117	5.80091	0.1766836	2.2685832	9	1	9 days	0.26	Nakano	1998 WM ₅
1998 WN ₅	13.9	0.15	19981103	70.59773	334.36233	356.91913	0.91900	0.1115409	2.9664769	21	1	18 days	0.98	Williams	1998 WN ₅
1998 WP ₅	18.6	0.15	19981103	298.22374	97.61290	36.18970	19.45105	0.1945754	1.3723836	46	1	10 days	0.75	Nakano	1998 WP ₅
1998 WQ ₅	14.9	0.15	19981123	262.28118	269.80101	285.73591	27.80291	0.3576295	1.7251322	40	1	9 days	0.69	Nakano	1998 WQ ₅
1998 WR ₅	18.1	0.15	19981123	11.57021	117.55653	257.37057	28.13656	0.5151314	2.5776088	36	1	9 days	0.89	Nakano	1998 WR ₅
1998 WS ₅	17.9	0.15	19981123	15.31084	98.84876	273.09062	25.98370	0.4762328	2.5653612	32	1	9 days	0.68	Nakano	1998 WS ₅
1998 WV ₅	12.1	0.15	19981123	183.00993	334.07715	251.51696	13.12312	0.0830840	3.0492005	9	1	8 days	0.61	Nakano	1998 WV ₅
1998 WW ₅	14.4	0.15	19981123	93.47357	309.23391	357.72856	5.48264	0.1245800	2.3314091	10	1	7 days	0.29	Nakano	1998 WW ₅
1998 WX ₅	14.3	0.15	19981123	219.22383	131.43222	78.72620	2.96300	0.0890856	2.1499258	15	1	9 days	0.38	Williams	1998 WX ₅
1998 WY ₅	13.0	0.15	19981123	15.73647	305.98936	105.82005	2.74573	0.0990706	3.1375535	12	1	11 days	0.31	Williams	1998 WY ₅
1998 WA ₆	14.7	0.15	19981103	13.23653	332.31237	50.28272	5.66636	0.2832560	2.6855578	18	1	19 days	0.60	Williams	1998 WA ₆
1998 WD ₆	12.3	0.15	19981103	74.75372	290.84890	27.44898	6.77116	0.1893699	3.0976454	14	1	3 days	0.93	E Williams	1998 WD ₆
1998 WJ ₆	14.9	0.15	19981123	19.11219	321.88625	61.13955	4.31083	0.3012249	2.6163757	16	1	6 days	0.44	Williams	1998 WJ ₆
1998 WK ₆	14.3	0.15	19981123	2.79761	221.85824	193.58677	2.27870	0.1778880	2.7549699	18	1	6 days	0.62	Williams	1998 WK ₆
1998 WM ₆	16.0	0.15	19981123	89.63500	233.40188	94.82190	2.32911	0.0751839	2.1653354	20	1	2 days	0.22	Marsden	1998 WM ₆
1998 WP ₆	12.7	0.15	19981123	341.38860	43.59122	59.15943	4.72375	0.1441950	2.5234873	6	1	5 days	0.29	Nakano	1998 WP ₆
1998 WQ ₆	13.1	0.15	19981123	19.11625	47.63243	351.95789	1.87233	0.2971370	2.5324136	6	1	5 days	0.19	Nakano	1998 WQ ₆
1998 WR ₆	15.3	0.15	19981123	77.73313	261.33872	83.72373	9.64953	0.0479136	2.2850566	9	1	5 days	0.32	Marsden	1998 WR ₆
1998 WS ₆	16.5	0.15	19981123	35.57648	214.74837	159.04180	0.48385	0.1415308	2.4395378	11	1	5 days	0.46	E Williams	1998 WS ₆
1998 WU ₆	16.8	0.15	19981123	348.94976	216.25388	220.58930	7.85601	0.1915801	2.7175708	20	1	8 days	0.71	Williams	1998 WU ₆
1998 WW ₆	14.8	0.15	19981123	146.91488	34.41008	250.89368	14.25377	0.1192312	2.6357405	9	1	5 days	0.20	Williams	1998 WW ₆
1998 WY ₆	14.2	0.15	19981123	224.40157	219.06468	342.56239	5.96974	0.0271886	2.4031778	10	1	3 days	0.25	E Williams	1998 WY ₆
1998 WZ ₆	17.0	0.15	19981123	298.79344	110.40856	68.90118	24.90147	0.4106351	1.4584716	80	1	6 days	0.58	Williams	1998 WZ ₆
1998 WB ₇	13.3	0.15	19981123	81.25910	356.14149	326.63424	0.93349	0.1096418	2.9457103	18	1	11 days	0.57	Nakano	1998 WB ₇
1998 WC ₇	14.5	0.15	19981103	19.32318	123.19715	263.36191	3.66468	0.1241052	2.3053559	14	1	6 days	0.58	Williams	1998 WC ₇
1998 WD ₇	16.0	0.15	19981123	347.73673	40.19878	35.63516	2.53287	0.1826341	2.3989771	6	1	6 days	0.25	Nakano	1998 WD ₇
1998 WE ₇	13.6	0.15	19981123	200.10518	163.99355	66.54331	18.66696	0.2215592	2.5294839	6	1	3 days	0.10	Nakano	1998 WE ₇
1998 WF ₇	15.6	0.15	19981123	51.01381	290.52732	72.07623	4.73753	0.1015854	2.3653253	6	1	3 days	0.29	E Nakano	1998 WF ₇
1998 WH ₇	15.2	0.15	19981123	15.14643	146.73517	253.73834	6.32905	0.0875310	2.3757138	14	1	5 days	0.52	Williams	1998 WH ₇
1998 WJ ₇	19.0	0.15	19981103	297.04945	89.81899	52.00485	8.21241	0.3172425	1.9640924	8	1	6 days	0.12	Williams	1998 WJ ₇
1998 WK ₇	15.3	0.15	19981123	355.18359	193.11026	274.61001	23.77537	0.2218138	2.2776259	12	1	8 days	0.98	Williams	1998 WK ₇
1998 WN ₇	14.7	0.15	19981103	322.43938	30.33588	72.52990	10.57966	0.1565076	2.7344656	22	1	18 days	0.52	Williams	1998 WN ₇
1998 WO ₇	15.9	0.15	19981123	13.73985	330.76093	78.38732	45.98072	0.3097152	2.1527294	46	1	6 days	0.53	Nakano	1998 WO ₇
1998 WP ₇	20.2	0.15	19981123	66.44180	64.73483	230.97621	21.63270	0.4271987	1.2126411	20	1	4 days	0.45	Williams	1998 WP ₇
1998 WT ₇	18.8	0.15	19981123	321.44567	232.99855	248.48903	41.20566	0.1174057	1.1654922	27	1	4 days	0.84	Williams	1998 WT ₇
1998 WU ₇	14.9	0.15	19981123	28.42673	357.24099	17.98843	8.92402	0.1312242	2.7235895	9	1	2 days	0.65	E Williams	1998 WU ₇
1998 WW ₇	15.5	0.15	19981123	26.23823	151.70549	233.54429	3.16802	0.1819726	2.3498652	15	1	4 days	0.53	Williams	1998 WW ₇
1998 WY ₇	15.9	0.15	19981103	7.63475	330.07221	64.17773	7.10321	0.1841196	2.1699986	13	1	19 days	0.53	Williams	1998 WY ₇
1998 WA ₈	12.4	0.15	19981103	34.28719	314.34173	60.01128	8.56893	0.1076598	3.0722234	14	1	6 days	0.83	E Williams	1998 WA ₈
1998 WB ₈	13.7	0.15	19981103	288.32387	117.70666	21.69634	0.98197	0.1094836	2.2876974	14	1	6 days	0.71	E Williams	1998 WB ₈
1998 WD ₈	12.9	0.15	19981123	40.78079	327.94043	69.82271	6.14290	0.1451944	2.9573404	6	1	3 days	0.42	E Nakano	1998 WD ₈
1998 WE ₈	13.7	0.15	19981123	49.74473	1.91560	30.41206	3.06051	0.0694733	2.3724472	6	1	3 days	0.29	Nakano	1998 WE ₈
1998 WF ₈	14.2	0.15	19981123	30.24853	125.06567	282.78389	5.74315	0.1277812	2.2900473	6	1	3 days	0.30	E Nakano	1998 WF ₈
1998 WG ₈	13.4	0.15	19981123	328.87551	193.47060	290.12339	7.02447	0.1038908	2.1706189	6	1	3 days	0.34	E Nakano	1998 WG ₈
1998 WH ₈	13.5	0.15	19981123	236.88034	164.72096	66.69563	4.90275	0.2002995	2.3171527	6	1	3 days	0.50	E Nakano	1998 WH ₈
1998 WJ ₈	13.0	0.15	19981123	62.82057	258.91781	80.13434	17.14133	0.0789808	3.1246338	9	1	8 days	0.29	Williams	1998 WJ ₈

1998 WK ₈	12.7	0.15	19981123	304.38035	229.72971	251.71931	9.76721	0.0981322	2.9963092	6	1	5 days	0.45	Nakano	1998 WK ₈
1998 WO ₈	16.8	0.15	19981103	2.82290	354.63727	78.21444	3.70971	0.0470433	2.2298862	12	1	2 days	0.18	E Williams	1998 WO ₈
1998 WQ ₈	14.0	0.15	19981123	92.49772	243.39470	73.79897	8.85708	0.0998527	2.4608523	10	1	2 days	0.37	E Williams	1998 WQ ₈
1998 WB ₉	14.0	0.15	19981123	73.81024	266.75375	84.43598	23.40521	0.3491691	2.4478196	12	1	4 days	0.45	Williams	1998 WB ₉
1998 WC ₉	13.5	0.15	19981123	74.80170	292.03795	64.64115	15.72819	0.2977853	2.8150225	19	1	4 days	0.84	Williams	1998 WC ₉
1998 WK ₉	14.8	0.15	19981103	9.16799	299.68435	103.77129	4.78544	0.1036897	2.7958229	20	1	19 days	0.73	Williams	1998 WK ₉
1998 WN ₉	14.8	0.15	19981123	339.37263	18.48751	64.24210	7.37249	0.0821500	2.3918291	19	1	16 days	0.72	Williams	1998 WN ₉
1998 WP ₉	13.1	0.15	19981123	174.10596	103.09840	137.09700	1.11580	0.2329538	2.2475565	14	1	9 days	0.95	E Williams	1998 WP ₉
1998 WQ ₉	15.5	0.15	19981103	2.91823	189.30321	214.39210	5.35251	0.2386258	2.5577248	17	1	19 days	1.00	Williams	1998 WQ ₉
1998 WR ₉	15.5	0.15	19981123	344.99935	235.74223	205.77618	0.68805	0.2205098	2.5464781	13	1	12 days	1.93	E Williams	1998 WR ₉
1998 WS ₉	13.7	0.15	19981103	111.89906	221.66632	69.40915	6.80301	0.1008204	2.3574608	17	1	19 days	0.57	Williams	1998 WS ₉
1998 WJ ₁₀	14.8	0.15	19981103	351.62019	52.29677	10.40339	1.66320	0.0851995	2.9177501	12	1	14 days	0.71	Williams	1998 WJ ₁₀
1998 WL ₁₀	14.6	0.15	19981103	338.47825	252.49774	187.33104	4.29930	0.1479674	3.1075052	11	1	13 days	0.87	Williams	1998 WL ₁₀
1998 WS ₁₀	14.6	0.15	19981103	1.11048	4.06717	44.65690	3.07114	0.2199099	2.6501066	21	1	14 days	0.72	Williams	1998 WS ₁₀
1998 WU ₁₀	14.8	0.15	19981103	81.21461	82.65461	234.77823	1.32626	0.1173446	2.3381527	11	1	12 days	0.86	E Williams	1998 WU ₁₀
1998 WV ₁₀	14.7	0.15	19981103	83.92771	100.13477	225.21606	1.51160	0.0250196	2.3739540	13	1	14 days	0.73	Williams	1998 WV ₁₀
1998 WA ₁₁	15.3	0.15	19981103	14.71462	305.18438	88.14028	4.49650	0.1003583	2.6455605	11	1	13 days	0.43	Williams	1998 WA ₁₁
1998 WE ₁₁	15.0	0.15	19981103	339.34230	336.00361	99.80869	4.76534	0.0823886	2.7857744	11	1	13 days	0.51	Williams	1998 WE ₁₁
1998 WB ₁₂	14.5	0.15	19981103	311.99310	280.59017	184.88143	1.87858	0.0529722	2.5291754	17	1	14 days	0.80	Williams	1998 WB ₁₂
1998 WF ₁₂	14.8	0.15	19981103	13.04317	165.43389	230.15501	6.56333	0.0983176	2.4713677	11	1	12 days	0.89	Williams	1998 WF ₁₂
1998 WJ ₁₂	13.5	0.15	19981103	89.72151	76.15626	237.10042	10.65156	0.0971210	2.9786182	12	1	12 days	0.87	E Williams	1998 WJ ₁₂
1998 WX ₁₂	13.6	0.15	19981103	29.22143	59.93062	318.20647	3.78996	0.0947832	2.7639800	17	1	14 days	0.71	Williams	1998 WX ₁₂
1998 WZ ₁₃	14.6	0.15	19981103	31.44222	122.60876	252.86456	5.94986	0.1043808	2.3894292	17	1	14 days	0.62	Williams	1998 WZ ₁₃
1998 WC ₁₄	14.8	0.15	19981103	116.98115	18.50541	267.03369	0.51619	0.1191595	2.1463967	12	1	8 days	0.72	E Williams	1998 WC ₁₄
1998 WH ₁₄	14.9	0.15	19981103	9.05477	171.27077	228.77048	4.18876	0.1710428	2.7328673	11	1	8 days	0.40	Williams	1998 WH ₁₄
1998 WM ₁₄	15.4	0.15	19981103	58.73137	147.48376	188.60287	1.68580	0.1637396	2.2036303	11	1	8 days	0.49	Williams	1998 WM ₁₄
1998 WT ₁₄	14.9	0.15	19981103	1.59520	221.77663	187.65511	2.17814	0.1682122	2.4250000	12	1	8 days	0.41	Williams	1998 WT ₁₄
1998 WA ₁₅	11.5	0.15	19981103	350.49976	210.70151	218.41387	10.92938	0.1373739	5.2602050	11	1	13 days	0.56	Williams	1998 WA ₁₅
1998 WC ₁₅	17.0	0.15	19981103	9.96717	248.08916	147.73559	2.53272	0.2038845	2.4018557	11	1	13 days	1.10	Williams	1998 WC ₁₅
1998 WD ₁₅	14.8	0.15	19981103	356.51969	286.80434	131.68067	3.02377	0.0874601	2.9266611	11	1	13 days	0.66	Williams	1998 WD ₁₅
1998 WK ₁₅	15.1	0.15	19981103	7.23600	262.42703	138.31710	3.75978	0.2368791	3.1021232	12	1	13 days	0.46	Williams	1998 WK ₁₅
1998 WL ₁₅	15.9	0.15	19981103	334.50670	355.95521	86.24825	7.28340	0.0923625	2.3213322	11	1	13 days	0.77	Williams	1998 WL ₁₅
1998 WM ₁₅	15.1	0.15	19981103	350.93620	335.12553	87.97178	7.31259	0.0902115	2.4758226	12	1	13 days	0.48	Williams	1998 WM ₁₅
1998 WP ₁₅	13.2	0.15	19981103	344.41957	356.81158	74.77150	16.51715	0.0707874	3.1970612	12	1	13 days	0.46	Williams	1998 WP ₁₅
1998 WW ₁₆	15.2	0.15	19981123	335.79861	237.28217	224.68006	3.85436	0.2605700	2.5423976	16	1	5 days	0.68	Nakano	1998 WW ₁₆
1998 WK ₁₉	12.6	0.15	19981103	10.45241	163.13280	278.21685	12.92330	0.1281458	2.5892511	19	1	26 days	0.87	Williams	1998 WK ₁₉
1998 WE ₂₀	16.1	0.15	19981103	326.81934	70.02652	22.41379	3.65203	0.1393311	2.3085541	11	1	11 days	0.62	Williams	1998 WE ₂₀
1998 WG ₂₀	11.5	0.15	19981103	2.96659	3.93511	45.83046	21.86814	0.1228262	5.1865812	12	1	11 days	1.10	E Williams	1998 WG ₂₀
1998 WL ₂₀	13.7	0.15	19981103	188.95314	181.90231	44.92956	8.36981	0.2727926	2.2521142	13	1	11 days	1.05	E Williams	1998 WL ₂₀
1998 WN ₂₀	14.1	0.15	19981103	307.78187	273.17902	208.20335	3.19831	0.1820679	3.0695224	15	1	6 days	0.66	Williams	1998 WN ₂₀
1998 WT ₂₀	14.3	0.15	19981103	175.01005	28.76805	205.61251	4.02338	0.1110112	2.1992471	13	1	10 days	0.51	Williams	1998 WT ₂₀
1998 WU ₂₀	14.6	0.15	19981103	300.27186	256.38164	214.82183	6.33479	0.0138467	2.1945554	13	1	10 days	0.90	E Williams	1998 WU ₂₀
1998 WV ₂₀	15.6	0.15	19981103	286.93766	37.07590	90.91215	2.31698	0.0439745	2.1521211	12	1	10 days	0.72	Williams	1998 WV ₂₀
1998 WW ₂₀	13.6	0.15	19981103	168.73344	177.40709	64.84885	11.35286	0.0620847	2.9892653	14	1	7 days	0.63	E Williams	1998 WW ₂₀
1998 WX ₂₀	13.9	0.15	19981103	240.86752	136.15061	48.87378	1.36167	0.1598173	2.5691282	11	1	11 days	0.90	E Williams	1998 WX ₂₀
1998 WZ ₂₀	15.5	0.15	19981103	10.21364	103.11803	291.37352	2.21559	0.1719563	2.2352401	11	1	11 days	0.46	Williams	1998 WZ ₂₀
1998 WR ₂₁	10.4	0.15	19981103	32.85155	132.35245	241.86539	14.38010	0.1104328	5.3270635	17	1	38 days	0.55	Williams	1998 WR ₂₁
1998 WS ₂₁	14.1	0.15	19981103	321.48790	185.12208	274.41299	2.15569	0.1074038	2.6387947	9	1	9 days	0.47	Williams	1998 WS ₂₁
1998 WV ₂₁	14.3	0.15	19981103	3.20436	180.57795	228.74215	3.76800	0.0086978	3.2482829	11	1	11 days	1.15	E Williams	1998 WV ₂₁
1998 WX ₂₁	16.7	0.15	19981103	39.64547	304.33964	54.67050	3.77043	0.1397974	2.2872784	13	1	8 days	0.83	E Williams	1998 WX ₂₁
1998 WB ₂₂	14.5	0.15	19981103	347.53884	298.85448	127.45911	2.86382	0.0776664	2.9210619	13	1	10 days	0.85	Williams	1998 WB ₂₂
1998 WD ₂₂	15.9	0.15	19981103	350.77811	256.51160	164.79191	3.19127	0.0821978	2.3471354	12	1	10 days	0.62	Williams	1998 WD ₂₂
1998 WF ₂₂	15.9	0.15	19981103	359.21339	233.77349	177.80648	2.65331	0.1670557	2.4675007	11	1	10 days	0.42	Williams	1998 WF ₂₂

1998 WO ₂₂	15.3	0.15	19981103	29.42384	287.24988	75.37503	2.46828	0.2476220	2.2495315	11	1	5 days	0.68	E	Williams	1998 WO ₂₂
1998 WP ₂₂	14.1	0.15	19981103	288.32179	291.90824	224.35868	3.50546	0.2606923	2.6696132	12	1	5 days	0.79	E	Williams	1998 WP ₂₂
1998 WF ₂₃	15.5	0.15	19981103	351.54031	150.15020	270.94395	3.04427	0.1531463	2.3455074	11	1	11 days	0.47		Williams	1998 WF ₂₃
1998 WJ ₂₃	16.6	0.15	19981123	27.75459	54.87899	318.51203	1.24210	0.2342594	2.2738283	11	1	3 days	0.77	E	Nakano	1998 WJ ₂₃
1998 WK ₂₃	14.7	0.15	19981103	158.77875	195.90983	51.86257	5.22301	0.2112244	2.4169144	11	1	11 days	1.21	E	Williams	1998 WK ₂₃
1998 WL ₂₃	14.0	0.15	19981103	197.42804	336.71183	243.58077	1.16352	0.1541032	2.8141751	12	1	11 days	1.05	E	Williams	1998 WL ₂₃
1998 WG ₂₄	6.4	0.15	19981103	11.21101	332.74611	91.20514	1.82025	0.0243392	42.5942204	4	1	1 days	0.04	E	Marsden	1998 WG ₂₄
1998 WH ₂₄	5.0	0.15	19981123	0.00000	6.43947	50.31329	12.66766	0.0000000	42.7816679	29	1	7 days	0.19	E	Marsden	1998 WH ₂₄
1998 WP ₂₄	13.9	0.15	19981103	280.21837	263.75900	262.76960	2.27691	0.1515833	5.2144562	6	1	8 days	0.10	E	Williams	1998 WP ₂₄
1998 WT ₂₄	17.3	0.15	19981123	198.87944	167.34570	82.11957	7.38862	0.4185660	0.7179852	26	1	9 days	0.81		Williams	1998 WT ₂₄
1998 WU ₂₄	15.1	0.15	19981123	1.56948	304.08254	103.08027	42.63666	0.9091509	15.5581113	27	1	9 days	0.89		Marsden	1998 WU ₂₄
1998 WV ₂₄	7.3	0.15	19981123	290.77302	307.53396	182.16979	1.47280	0.1469767	39.5230925	4	1	9 days	0.10	E	Marsden	1998 WV ₂₄
1998 WW ₂₄	7.8	0.15	19981123	0.01996	175.22488	233.94878	13.97488	0.2088185	39.5353824	6	1	9 days	0.14	E	Marsden	1998 WW ₂₄
1998 WX ₂₄	6.5	0.15	19981123	0.00000	353.66155	60.06770	1.02498	0.0000000	45.0041916	4	1	9 days	0.20	E	Marsden	1998 WX ₂₄
1998 WY ₂₄	6.8	0.15	19981123	0.00000	330.85779	104.68479	1.78676	0.0000000	41.9895850	4	1	9 days	0.11	E	Marsden	1998 WY ₂₄
1998 WZ ₂₄	7.9	0.15	19981103	359.93950	355.88060	80.38831	4.41840	0.1801855	39.5406449	4	1	8 days	0.06	E	Marsden	1998 WZ ₂₄
1998 WA ₂₅	7.1	0.15	19981123	0.00000	278.00034	131.60259	1.05563	0.0000000	42.1095330	6	1	8 days	0.08	E	Marsden	1998 WA ₂₅
1998 XA	15.9	0.15	19981123	19.87451	302.84769	88.32404	9.91974	0.2965462	2.2476817	9	1	6 days	0.47		Williams	1998 XA
1998 XB	13.8	0.15	19981123	199.49113	189.55994	83.68606	16.88621	0.3288386	1.0045257	46	1	11 days	0.70		Nakano	1998 XB
2038 P-L	15.2	0.15	19990122	292.47808	268.01670	226.23369	5.95874	0.0575588	2.2782361	30	2	1960-1998	0.80	M-v	Williams	33052 2038 P-L
2048 P-L	14.5	0.15	19990122	137.31887	290.65376	321.13497	3.87733	0.2290055	2.6045626	41	2	1960-1998	0.77	M-v	Williams	33052 2048 P-L
2076 P-L	14.6	0.15	19990122	42.47327	167.54455	213.34011	6.66697	0.2181682	2.2784895	36	2	1960-1998	0.66	M-v	Williams	33128 2076 P-L
2206 P-L	14.4	0.15	19990122	317.19413	286.35943	192.50202	5.28123	0.1220935	2.5981910	33	3	1960-1998	0.64	M-v	Williams	33128 2206 P-L
2228 P-L	15.9	0.15	19990122	138.54398	29.69106	244.69767	4.49776	0.2379378	2.4153265	24	4	1960-1998	0.80	M-v	Williams	25336 2228 P-L
2530 P-L	14.7	0.15	19990122	349.83270	35.38970	22.95294	4.68762	0.1310117	2.2870427	55	3	1960-1998	0.69	M-v	Williams	33128 2530 P-L
2549 P-L	13.8	0.15	19990122	296.21097	283.40199	167.68299	2.13739	0.0349309	2.8340922	57	2	1960-1998	0.68	M-v	Williams	33128 2549 P-L
2564 P-L	14.7	0.15	19990122	1.28772	10.18466	34.78283	2.66333	0.1008537	2.6098588	27	2	1960-1998	0.74	M-v	Williams	33052 2564 P-L
2577 P-L	14.7	0.15	19990122	128.66189	293.74676	348.80548	0.54214	0.1305104	2.4224013	37	4	1960-1998	0.86	M-v	Williams	33129 2577 P-L
2589 P-L	13.7	0.15	19990122	256.80309	18.77166	145.38563	3.23254	0.1521784	2.6008492	41	2	1960-1998	0.73	M-v	Williams	33053 2589 P-L
2621 P-L	16.2	0.15	19990122	75.52738	303.30524	18.87604	7.62308	0.1390411	2.2821980	15	2	1960-1998	0.68	M-v	Williams	33053 2621 P-L
2626 P-L	13.7	0.15	19990122	249.39271	78.23653	154.03640	1.92726	0.0969020	3.0081778	21	5	1954-1997	0.59	M-v	Williams	32785 2626 P-L
2695 P-L	13.8	0.15	19990122	310.96069	116.26852	329.97974	1.07496	0.0986908	3.1004562	18	3	1960-1998	0.89	M-v	Williams	33053 2695 P-L
2808 P-L	15.2	0.15	19990122	309.83811	311.31451	180.30034	2.03993	0.1499408	2.4248549	35	6	1960-1998	0.82	M-v	Williams	33129 2808 P-L
3087 P-L	12.4	0.15	19990122	67.70649	86.99800	261.44204	8.31222	0.1055921	3.0616318	43	3	1960-1998	0.61	M-v	Williams	33129 3087 P-L
3553 P-L	14.0	0.15	19990122	354.92019	192.75339	300.33955	6.60042	0.1704659	2.7767287	28	4	1960-1998	0.70	M-v	Williams	27732 3553 P-L
4026 P-L	13.3	0.15	19990122	106.18787	249.33094	359.75940	13.28399	0.1243842	2.6276993	39	4	1960-1998	0.69	M-v	Williams	32785 4026 P-L
4075 P-L	15.6	0.15	19990122	352.35363	108.82271	326.72270	0.71555	0.0964932	2.4260896	34	3	1960-1998	0.67	M-v	Williams	33129 4075 P-L
4098 P-L	14.2	0.15	19990122	326.11415	248.73478	208.36199	8.34564	0.1207206	2.8134428	35	3	1960-1998	0.85	M-v	Williams	33129 4098 P-L
4139 P-L	10.9	0.15	19990122	28.51868	55.62802	3.31090	17.34276	0.0146736	5.2833323	23	4	1960-1998	0.59	M-v	Williams	24409 4139 P-L
4157 P-L	15.1	0.15	19990122	311.38317	186.79338	304.91517	2.17962	0.1577214	2.2738237	26	3	1960-1998	0.81	M-v	Williams	24764 4157 P-L
4200 P-L	15.6	0.15	19990122	92.12368	128.91903	194.06671	4.90115	0.2132427	2.2725449	18	4	1953-1998	0.62	M-v	Williams	30088 4200 P-L
4602 P-L	14.2	0.15	19990122	15.80481	249.56828	150.02052	0.92584	0.1824654	3.0761748	57	2	1960-1998	0.57	M-v	Williams	33129 4602 P-L
4646 P-L	12.7	0.15	19990122	293.47692	288.59798	186.08040	10.83150	0.1211086	3.0878024	72	2	1960-1998	0.68	M-v	Williams	33129 4646 P-L
4655 P-L	10.1	0.15	19990122	322.81301	91.13442	6.50080	17.03857	0.0325143	5.3180838	26	3	1960-1998	0.65	M-v	Williams	33129 4655 P-L
4812 P-L	15.0	0.15	19990122	14.89705	349.79297	59.85472	0.85821	0.2125725	3.0758530	22	3	1960-1998	0.70	M-v	Williams	25224 4812 P-L
4858 P-L	14.1	0.15	19990122	324.91057	263.14241	182.15606	11.03173	0.1100415	3.0860511	21	2	1960-1998	0.90	M-v	Williams	33054 4858 P-L
4882 P-L	14.0	0.15	19990122	201.42752	191.54394	20.56044	10.03200	0.0519093	2.5992847	45	3	1960-1998	0.73	M-v	Williams	33129 4882 P-L
6100 P-L	16.1	0.15	19990122	31.17385	178.62283	191.96475	7.05471	0.1283003	2.2834889	25	2	1960-1998	0.69	M-v	Williams	33054 6100 P-L
6105 P-L	14.5	0.15	19990122	21.01913	150.78809	198.94056	11.97947	0.1121815	2.8347402	32	2	1960-1998	0.61	M-v	Williams	33129 6105 P-L
6184 P-L	15.7	0.15	19990122	32.64497	174.00502	205.02093	5.88283	0.1089282	2.2798663	18	2	1960-1998	0.59	M-v	Williams	33054 6184 P-L
6328 P-L	14.5	0.15	19990122	234.87867	180.81841	9.29676	3.04271	0.0906843	2.5916732	49	4	1960-1998	0.68	M-v	Williams	33129 6328 P-L
6513 P-L	13.9	0.15	19990122	164.04099	246.00242	2.32856	12.70572	0.1589584	2.5884497	20	3	1960-1998	0.66	M-v	Williams	23786 6513 P-L
6519 P-L	13.2	0.15	19990122	340.27298	94.30658	29.39233	3.42469	0.1799615	3.0401557	18	3	1960-1998	0.60	M-v	Williams	22274 6519 P-L

6556 P-L	14.3	0.15	19990122	70.68716	170.94172	173.27508	9.85894	0.1838303	2.8000102	19	4	1960-1998	0.64	M-v	2	Williams	28892	6556 P-L
6607 P-L	13.8	0.15	19990122	193.34649	75.11199	134.41600	3.84784	0.1414933	2.4262083	53	3	1960-1998	0.74	M-v	5	Williams	33129	6607 P-L
6608 P-L	15.9	0.15	19990122	351.73346	43.76889	12.94585	6.05318	0.3085628	2.6173016	61	4	1960-1998	0.90	M-v	3	Williams	32786	6608 P-L
6631 P-L	15.7	0.15	19990122	11.23855	250.47663	151.33539	5.15218	0.1570628	2.2820907	24	2	1960-1998	0.79	M-v	4	Williams	33055	6631 P-L
6645 P-L	16.0	0.15	19990122	32.44331	339.90196	19.10590	9.27907	0.2352375	2.4349389	47	2	1960-1998	0.63	M-v	3	Williams	33129	6645 P-L
6761 P-L	13.2	0.15	19990122	281.65859	316.94140	174.80975	9.73572	0.0569428	3.0693784	43	3	1960-1998	0.71	M-v	4	Williams	33129	6761 P-L
6773 P-L	15.9	0.15	19990122	351.72576	345.57651	90.95191	3.24372	0.1747507	2.4275565	25	2	1960-1998	0.72	M-v	5	Williams	33055	6773 P-L
7061 P-L	15.2	0.15	19990122	13.11163	178.73607	213.48310	5.56140	0.1285218	2.4328377	55	3	1960-1998	0.64	M-v	3	Williams	33129	7061 P-L
7639 P-L	14.5	0.15	19990122	287.66156	79.04439	93.20277	4.38555	0.1837765	2.5763656	16	6	1960-1998	0.85	M-v	1	Williams	27457	7639 P-L
9062 P-L	13.9	0.15	19990122	85.00227	141.19062	240.69568	2.47309	0.1899847	2.5748058	15	4	1960-1998	0.62	M-v	2	Williams	30696	9062 P-L
9072 P-L	13.9	0.15	19990122	193.57574	25.65266	213.14876	5.98589	0.0585065	2.7898250	16	3	1960-1998	0.70	M-v	5	Williams	27321	9072 P-L
9104 P-L	14.7	0.15	19990122	42.88372	146.59140	183.03786	13.06206	0.1436537	3.0855899	36	2	1960-1998	0.73	M-v	4	Williams	33055	9104 P-L
1217 T-1	13.7	0.15	19990122	52.13073	90.48902	335.66215	2.46323	0.1127690	2.5461477	27	6	1969-1998	0.73	M-v	1	Williams	28892	1217 T-1
2175 T-1	14.6	0.15	19990122	301.21522	302.92685	177.14663	5.79495	0.0887659	2.3579453	59	3	1971-1998	0.80	M-v	4	Williams	33129	2175 T-1
2198 T-1	14.1	0.15	19990122	338.53138	27.78234	83.68683	2.85886	0.1452069	3.2176846	23	3	1971-1998	0.83	M-v	5	Williams	23867	2198 T-1
2214 T-1	14.6	0.15	19990122	68.61666	150.15214	178.69077	4.13237	0.0945984	2.3803792	38	2	1971-1998	0.83	M-v	4	Williams	33056	2214 T-1
3290 T-1	14.8	0.15	19990122	134.09949	272.47405	353.87170	6.24491	0.0902671	2.3832213	35	2	1971-1998	0.83	M-v	4	Williams	33056	3290 T-1
3300 T-1	15.6	0.15	19990122	177.64032	344.54863	327.98910	2.33193	0.1937313	2.1574825	20	4	1971-1998	0.96	M-v	3	Williams	30914	3300 T-1
3306 T-1	15.2	0.15	19990122	105.94243	136.22006	167.87321	2.46101	0.2113748	2.3846996	46	4	1971-1998	0.77	M-v	2	Williams	33129	3306 T-1
4355 T-1	13.9	0.15	19990122	57.81692	240.11925	147.31722	4.31708	0.1642763	2.3475616	22	5	1969-1998	0.71	M-v	2	Williams	25652	4355 T-1
1004 T-2	15.0	0.15	19990122	32.34248	18.25108	356.98311	6.92244	0.0462756	2.5756839	38	3	1973-1998	0.95	M-v	4	Williams	33130	1004 T-2
1093 T-2	15.7	0.15	19990122	351.01078	70.96649	0.97757	6.32739	0.1116932	2.3263862	39	2	1973-1998	0.84	M-v	5	Williams	33057	1093 T-2
1187 T-2	16.4	0.15	19990122	26.62744	31.70564	346.94627	3.36960	0.2467141	2.5819474	52	2	1973-1998	0.92	M-v	4	Williams	33057	1187 T-2
1242 T-2	14.1	0.15	19990122	139.66215	33.58497	184.14913	13.88229	0.1941157	2.6079473	27	3	1973-1998	0.87	M-v	4	Williams	33057	1242 T-2
1343 T-2	15.1	0.15	19990122	214.67940	184.30216	357.01724	2.99497	0.0997532	2.3390610	29	2	1973-1998	0.99	M-v	6	Williams	33057	1343 T-2
2049 T-2	15.4	0.15	19990122	115.01898	274.90994	341.50627	1.59135	0.1997941	2.3393355	46	2	1973-1998	0.88	M-v	5	Williams	33130	2049 T-2
2078 T-2	15.0	0.15	19990122	58.77458	177.68822	186.13520	4.51176	0.1665117	2.3206038	31	4	1973-1998	0.96	M-v	2	Williams	33130	2078 T-2
2084 T-2	15.0	0.15	19990122	305.51616	317.86551	187.61426	21.51732	0.0788147	1.9610631	34	4	1973-1998	0.89	M-v	2	Williams	30294	2084 T-2
2266 T-2	14.6	0.15	19990122	104.71846	129.39398	173.90690	5.51741	0.0385773	2.3289476	43	2	1973-1998	1.08	M-v	5	Williams	33058	2266 T-2
2314 T-2	14.3	0.15	19990122	259.38226	96.43967	161.31009	3.51257	0.0647761	2.2640351	29	5	1973-1998	1.05	M-v	2	Williams	27322	2314 T-2
3020 T-2	13.5	0.15	19990122	71.84528	334.18374	5.44022	14.19005	0.2215699	2.8831925	27	4	1973-1998	0.84	M-v	3	Williams	22972	3020 T-2
3178 T-2	13.5	0.15	19990122	52.56124	344.94492	29.85874	3.17481	0.0680568	2.8806490	38	3	1971-1998	0.88	M-v	4	Williams	27323	3178 T-2
3181 T-2	14.2	0.15	19990122	42.23068	299.32006	95.35559	3.36723	0.0296601	2.8704898	33	7	1971-1998	0.99	M-v	1	Williams	30294	3181 T-2
3182 T-2	14.6	0.15	19990122	152.93375	86.73745	150.23121	6.93836	0.1751549	2.3287595	28	2	1973-1998	0.78	M-v	6	Williams	33058	3182 T-2
3335 T-2	14.6	0.15	19990122	2.77573	339.98616	66.08567	3.59179	0.1668003	2.5827399	55	2	1973-1998	0.57	M-v	5	Williams	33130	3335 T-2
4081 T-2	15.4	0.15	19990122	80.93266	284.81852	31.75981	6.39569	0.1995938	2.5722899	27	2	1973-1998	0.87	M-v	5	Williams	33058	4081 T-2
4129 T-2	14.4	0.15	19990122	216.39111	199.38526	29.77449	5.20844	0.1459693	2.2995793	44	7	1973-1998	0.97	M-v	2	Williams	27732	4129 T-2
4174 T-2	14.3	0.15	19990122	82.14177	181.02630	136.47436	2.99770	0.0357258	2.9090001	21	3	1973-1998	1.18	M-v	6	Williams	33058	4174 T-2
5049 T-2	15.3	0.15	19990122	240.19788	283.03929	280.98332	8.25573	0.1044438	2.3059795	30	3	1973-1998	0.84	M-v	5	Williams	30467	5049 T-2
5124 T-2	14.0	0.15	19990122	81.46751	323.14081	236.77300	11.90900	0.1190890	2.6791955	28	3	1973-1998	0.84	M-v	4	Williams	33059	5124 T-2
5137 T-2	14.6	0.15	19990122	247.49847	351.32994	213.20986	14.20173	0.1007916	2.5404022	23	3	1973-1998	0.91	M-v	4	Williams	20833	5137 T-2
5211 T-2	12.9	0.15	19990122	355.47707	207.55491	228.67710	9.18997	0.2098157	2.9043579	43	3	1973-1998	0.65	M-v	3	Williams	33130	5211 T-2
1014 T-3	15.9	0.15	19990122	23.30175	8.03255	346.97941	11.58994	0.1902669	2.6189024	28	2	1977-1998	0.96	M-v	4	Williams	32734	1014 T-3
1084 T-3	14.0	0.15	19990122	49.86031	125.15208	248.68496	8.38040	0.0977796	2.9839118	28	3	1977-1998	0.72	M-v	3	Williams	31411	1084 T-3
1140 T-3	14.2	0.15	19990122	38.06133	108.42013	263.70893	6.89444	0.1333626	3.0025197	32	3	1977-1998	0.75	M-v	4	Williams	33130	1140 T-3
1144 T-3	14.1	0.15	19990122	25.46459	75.92216	336.89179	8.66824	0.0569018	2.9726285	25	3	1977-1998	0.96	M-v	4	Williams	22088	1144 T-3
1158 T-3	13.2	0.15	19990122	136.61117	326.71421	259.87582	9.98751	0.1049869	3.0726438	23	2	1977-1998	0.83	M-v	5	Williams	33060	1158 T-3
2078 T-3	13.1	0.15	19990122	228.85097	227.76371	344.30318	7.26808	0.1466690	2.5641928	59	8	1977-1998	0.70	M-v	1	Williams	30696	2078 T-3
2151 T-3	14.3	0.15	19990122	210.91351	230.06058	357.87138	9.37085	0.0361195	2.2818511	20	3	1977-1998	0.94	M-v	4	Williams	23681	2151 T-3
2272 T-3	15.0	0.15	19990122	359.88786	66.23918	2.49871	4.78517	0.1481698	2.2993642	39	4	1977-1998	0.79	M-v	3	Williams	33130	2272 T-3
2288 T-3	15.1	0.15	19990122	40.53517	7.41126	351.92725	5.07907	0.1977793	2.3062923	62	4	1977-1998	0.70	M-v	3	Williams	33130	2288 T-3
2369 T-3	15.2	0.15	19990122	296.50788	221.49873	276.05548	3.02624	0.0914311	2.2949804	24	3	1977-1998	1.00	M-v	5	Williams	33130	2369 T-3
3101 T-3	14.8	0.15	19990122	79.91279	285.36147	39.65528	8.49725	0.0974076	2.3014659	58	3	1977-1998	0.91	M-v	5	Williams	33130	3101 T-3

3268 T-3	16.1	0.15	19990122	242.65696	319.91446	205.58214	5.88412	0.0427711	2.3080859	30	4	1977–1998	0.67	M-v	4	Williams	32787	3268 T-3
3424 T-3	15.2	0.15	19990122	42.69872	174.91074	152.38151	2.29473	0.0323511	2.6336277	66	5	1971–1998	0.88	M-v	2	Williams	32787	3424 T-3
3495 T-3	15.8	0.15	19990122	84.59073	281.50903	36.49087	2.90443	0.2672099	2.5792117	27	3	1977–1998	0.85	M-v	3	Williams	30089	3495 T-3
4046 T-3	14.6	0.15	19990122	145.57706	166.87222	112.17469	5.13603	0.1532925	2.2798550	49	4	1977–1998	1.01	M-v	2	Williams	30294	4046 T-3
4052 T-3	14.5	0.15	19990122	233.38051	152.08860	55.02402	7.68808	0.0529363	2.2807448	27	3	1977–1998	0.76	M-v	4	Williams	24758	4052 T-3
4071 T-3	14.9	0.15	19990122	6.17776	18.04975	62.67584	4.98068	0.1444795	2.2873701	27	7	1977–1998	1.02	M-v	2	Williams	33130	4071 T-3
4203 T-3	13.9	0.15	19990122	222.69028	5.12408	185.61508	13.01565	0.1048627	2.5958697	47	4	1960–1998	0.75	M-v	3	Williams	33130	4203 T-3
4234 T-3	14.6	0.15	19990122	330.67564	280.85805	193.46060	22.42854	0.2620748	2.3020587	39	2	1977–1998	0.90	M-v	4	Williams	33062	4234 T-3
4310 T-3	14.4	0.15	19990122	198.40405	167.33806	65.72437	5.67589	0.0957169	2.2852645	45	4	1977–1998	0.85	M-v	4	Williams	33130	4310 T-3
4327 T-3	14.1	0.15	19990122	240.61668	138.89515	56.07573	9.28691	0.1103854	2.5738939	36	3	1977–1998	0.93	M-v	4	Williams	33130	4327 T-3
5046 T-3	15.1	0.15	19990122	322.39035	356.07763	117.10718	6.17093	0.1143167	2.2953190	28	3	1977–1998	0.82	M-v	4	Williams	26577	5046 T-3
5111 T-3	14.4	0.15	19990122	93.60267	278.67693	48.99396	14.99075	0.1341223	2.5749757	27	3	1977–1998	0.94	M-v	3	Williams	16040	5111 T-3

1998 QW₂ = 1998 RT₂₀ (G. V. Williams)
 1998 QM₈₀ = 1998 UB₄ (G. V. Williams)
 1998 RU₅₈ = 1998 SY₄₃ (G. V. Williams)
 1998 SA₃ = 1998 SX₂₇ (G. V. Williams, *MPC* 33130)
 1998 SB₂₈ = 1998 TG₃₁ (G. V. Williams)
 1998 SF₃₇ = 1998 SP₁₄₀ (G. V. Williams)
 1998 SB₇₁ = 1998 SE₁₆₂ (G. V. Williams)
 1998 SB₇₂ = 1998 SQ₁₄₁ (G. V. Williams)
 1998 ST₈₁ = 1998 SP₁₆₄ (G. V. Williams)
 1998 SV₁₁₀ = 1998 SN₁₆₄ (G. V. Williams, *MPC* 33130)
 1998 SN₁₁₁ = 1998 SV₂₁ (G. V. Williams)
 1998 SV₁₃₇ = 1998 SU₇₀ (G. V. Williams)
 1998 SF₁₃₈ = 1998 SO₁₄₃ = 1998 TF₃₁ (G. V. Williams)
 1998 ST₁₆₁ = 1998 SO₁₆₄ (G. V. Williams)
 1998 SU₁₆₃ = 1998 TQ₃₄ (G. V. Williams)
 1998 UW₁₅ = 1998 QL₁₀₇ (G. V. Williams)
 1998 VU = 1998 TK₃₃ (B. G. Marsden)

NEW NAMES OF MINOR PLANETS

(4440) Tchanchhès = 1984 YV

Discovered 1984 Dec. 23 by F. Dossin at Haute Provence.

Named in honor of the folklore character Tchanchhès (Walloon dialect for François), the typical Walloon hero of the region of the discoverer. Tchanchhès is obstinate but has a great heart.

(5775) Inuyama = 1989 SP

Discovered 1989 Sept. 29 by Y. Mizuno and T. Furuta at Kani.

Named for a city in the northern part of Aichi Prefecture. Rich in natural beauty and featuring the Hida-Kiso River National Park, Inuyama is also known for its traditional events, such as the Nihon-Rhine Rapid Ride and Inuyama cormorant fishing. It also boasts some historically valuable architecture, including Japan's oldest donjon (in the Inuyama Castle) and the Tea Arbor JO-AN. Both are national treasures. Name proposed by the discoverers following a suggestion by their teacher, T. Yamada.

(5908) Aichi = 1989 UF

Discovered 1989 Oct. 20 by Y. Mizuno and T. Furuta at Kani.

Named for the prefecture, Japan's fourth largest by population, in which both discoverers were born and raised. It is the main industrial prefecture. In olden times

it nurtured the Karakuri (intricate puppet). Nowadays the making of clocks and cars, as well as the robotic and aerospace industries, thrive there.

(5909) Nagoya = 1989 UT

Discovered 1989 Oct. 23 by Y. Mizuno and T. Furuta at Kani.

Named for Japan's fourth largest city, where the first discoverer was born and raised. From the time of the Tokugawa period, when the first shogun Tokugawa Ieyasu built a castle in this region, Nagoya has been an important area for land and sea travel, connecting Tokyo with Kyoto and Osaka. It is blessed with a rich cultural history and many cultural attractions, such as Nagoya Castle and the Tokugawa Art Museum, which displays artifacts of the Samurai warrior.

(6077) Messner = 1980 TM

Discovered 1980 Oct. 3 by Z. Vávrová at Kleť.

Named in honor of Reinhold Messner (b. 1944), Italian mountaineer, adventurer and writer.

(6100) Kunitomoikkansai = 1991 VK₄

Discovered 1991 Nov. 9 by A. Sugie at the Dync Astronomical Observatory.

Named in memory of Ikkanisai Kunitomo (1778–1840). Born into a family of famous gun makers in the Edo period in Japan, he made several Gregorian reflecting telescopes entirely of his own design and observed the sun, moon and planets. For 14 months during 1835–1836 he made a continuous series of observations of sunspots. Name proposed by the discoverer, endorsed by S. Murayama, K. Sato and A. Fujii.

(6383) Tokushima = 1988 XU₁

Discovered 1988 Dec. 12 by M. Iwamoto and T. Furuta at Tokushima.

Named for the first discoverer's observatory and the prefecture in which he lives.

(6446) Lomberg = 1990 QL

Discovered 1990 Aug. 18 by E. F. Helin at Palomar.

Named in honor of Jon Lomberg (b. 1948), graphic arts virtuoso, who has excelled in his renditions of space and astronomical subjects. One of the world's leading astronomical artists, he worked with Carl Sagan and on many television documentaries about space science, including the *Cosmos* series. He was also the design director for the Voyager Interstellar Record. His works can be found in museums and science centers all over the world. His technical research, artistic interpretation and precision in the planning of each painting is characteristic of this dedicated, accomplished artist in portraying space as it is, to the extent we know it.

(6539) Nohavica = 1982 QG

Discovered 1982 Aug. 19 by Z. Vávrová at Kleť.

Named in honor of Jaromír Nohavica (b. 1945), Czech singer, poet and composer.

(6718) Beiglböck = 1990 TT₁₂

Discovered 1990 Oct. 14 by L. D. Schmadel and F. Börngen at Tautenburg.

Named in honor of Wolf D. Beiglböck (b.1939), German mathematician and professor at the University of Heidelberg. His main research as a mathematical physicist ranges from the theory of Lie groups and harmonic analysis to a discussion of the equations of motion of extended bodies in the framework of Einstein's gravitation theory. For 30 years, Beiglböck has served as scientific advisor to Springer-Verlag in Heidelberg. He is the founder and co-editor of the well-known series "Lecture Notes in Physics" and "Texts and Monographs in Physics". His persistent support made it possible to realize the publication of the *Dictionary of Minor Planet Names*. Name proposed and citation prepared by the first discoverer.

(6817) Pest = 1982 BP₂

Discovered 1982 Jan. 20 by A. Mrkos at Kleť.

Named for the largest of the three towns, Buda, Pest and Óbuda, that form the modern capital of Hungary. The 125th anniversary of the establishment of Budapest as Hungary's political, cultural and scientific center is being celebrated this year. The University Observatory played a major part in the life of both Pest and Buda, with its buildings dominating the panorama for three-quarters of a century after it was founded in 1780. Since 1921 the headquarters of the Konkoly Observatory has also been located in the city, which provided support for the construction of its large dome.

(6950) Simonek = 1982 YQ

Discovered 1982 Dec. 22 by F. Dossin at Haute Provence.

Named in honor of Simone Ek, wife of the discoverer, in acknowledgment of the patience and understanding of a dedicated astronomer's wife. Name proposed by the late discoverer in 1996. Citation prepared by J. Denoyelle.

(7035) Gomi = 1995 BD₃

Discovered 1995 Jan. 28 by K. Endate and K. Watanabe at Kitami.

Named in honor of Kazuaki Gomi (b.1911), amateur astronomer and long-time observer of variable stars. In 1936 he discovered the nova CP Lac. Although there were several earlier novae independently discovered by Japanese observers, this was the first nova of which a Japanese observer was the first discoverer. Name proposed by the discoverers following a suggestion by T. Sato and A. Fujii.

(7100) Martin Luther = 1360 T-2

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Martin Luther (1483–1546), German theologian and religious reformer. After studying law, he became an Augustinian monk and priest in 1507 and a professor of biblical exegesis in Wittenberg in 1508. On 1517 Oct. 31 he posted his famous 95 theses at the door of the university church. These theses were against the misuse of indulgences by the Catholic Church, and here the Reformation started. Luther also influenced the German language through his translations of the Old and the New Testaments into German.

(7192) Cieleespace = 1993 RY₁

Discovered 1993 Sept. 12 by K. Endate and K. Watanabe at Kitami.

Named for the monthly astronomical magazine edited in Paris by Alain Cirou and published by the Association Française d'Astronomie. Created in 1947 by a small group of amateurs under the name *Le ciel normand*, *Ciel et Espace* is one of the leading magazines of astronomy and space science in Europe. Scientists, journalists and amateurs all write for the magazine, and important celestial phenomena, such

as eclipses and comets, provide an opportunity for the editorial staff to invite their readers to observe the sky. Name proposed by the discoverers following a suggestion by A. Fujii.

(7193) Yamaoka = 1993 SE₂

Discovered 1993 Sept. 19 by K. Endate and K. Watanabe at Kitami.

Named in honor of Hitoshi Yamaoka (b.1965), astrophysicist at Kyushu University who specializes in the study of supernovae and novae. He promotes a supernova search project at public observatories in Japan.

(7251) Kuwabara = 1992 SF₁₃

Discovered 1992 Sept. 30 by K. Endate and K. Watanabe at Kitami.

Named in honor of Syoji Kuwabara (b.1927). A retired school teacher in Japan, he was superintendent of the board of education in Himeji City (1981–1993) and director of the city's Science Museum (1993–1996). An amateur astronomer, he was once an enthusiastic observer of occultations; now he studies local names and legends of stars and asterisms. Name proposed by the discoverers following a suggestion by T. Sato, A. Fujii and K. Kitao.

(7254) Kuratani = 1993 TN₁

Discovered 1993 Oct. 15 by K. Endate and K. Watanabe at Kitami.

Named in honor of Hiroshi Kuratani (b.1934), astronomer and educator at Toyama Observatory since 1956. He played an important role in establishing Toyama Science Museum, which opened in 1979 and from which he retired in 1998. In the 1960s he was a pioneer in improving observational techniques, such as the application of TV and development of cooled emulsion cameras. Currently he is developing a new generation space simulator. Name proposed by the discoverers following a suggestion by T. Sato and A. Fujii.

(7260) Metelli = 1994 FN

Discovered 1994 Mar. 18 at Stroncone.

Named in memory of Orneore Metelli (1872–1938). He is internationally acknowledged as the founder of the school of naïve painting. He started painting well past the age of 50 in the back of his shoemaker's shop. In his more than 200 works, he represented a town that is a mirror of the world, a reflection of thousands of aspects of daily life.

(7306) Panizon = 1994 EH

Discovered 1994 Mar. 6 at Stroncone.

Named in honor of Franco Panizon (b.1925). Head of the pediatric department of the University of Trieste, he is one of the key figures in Italian pediatrics, endowed with a deep knowledge of all scientific disciplines focusing on human beings, a true master of science and life. From Trieste he has influenced pediatricians all over the country and has founded a pediatric school that teaches care for children through mind and heart.

(7356) Casagrande = 1995 SK₅

Discovered 1995 Sept. 27 at Stroncone.

Named in memory of Alessandro Casagrande (1922–1964). Composer and orchestra conductor, he skillfully headed the music school in Terni and served as artistic manager of the city's symphonic bureau "S. Falchi". He was also a painter. In 1965 an international piano competition was named for him.

(7390) Kundera = 1983 QE

Discovered 1983 Aug. 31 at Kleť.

Named in honor of Milan Kundera (b.1929), Czech novelist, playwright and poet. He has written various works combining the comedy of living with political

criticism. His novel *The Unbearable Lightness of Being* is well known and received wide international exposure as a very successful movie. Since 1975 he has lived in France. Name proposed by J. Tichá following a suggestion by M. Šidlichovský.

(7496) Miroslavholub = 1995 WN₆

Discovered 1995 Nov. 27 by M. Tichý at Kleť.

Named in memory of Miroslav Holub (1923–1998), Czech immunologist, poet and essayist. His research resulted in the monograph *Immunology of Nude Mice*. His fine poetry combines the world of science and the world of everyday human experience, as shown, for example, in his book *Supposed to Fly*. Name proposed by the discoverer following a suggestion by J. Tichá.

(7545) Smaklösa = 1978 OB

Discovered 1978 July 28 by C. -I. Lagerkvist at Mount Stromlo.

Named after the music group Smaklösa, which performs mainly on the island of Gotland off the Swedish coast during the summer. Celebrating 25 years together in 1998, they made at the beginning of their career the now-famous statement that only towards rehearsal before a performance. The lyrics of their songs are very intelligently written and are even more enjoyable to those more accustomed to the lifestyle and humor of Gotland. The live performances of the group are unforgettable, and the discoverer is very thankful for those he was able to attend during the summer of 1998.

(7686) Wolfernst = 2024 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in honor of Wolfgang Ernst (b. 1947), amateur astronomer who initiated the astrometric program at the Starkenburg Observatory in Heppenheim. Since 1995, the major part of his work has consisted of making follow-up observations of objects discovered in the course of the 1990–1993 KSO-ARI minor planet surveys at Tautenburg. Name proposed by L. D. Schmadel.

(7687) Matthias = 2099 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in honor of Matthias Busch (b. 1968), amateur astronomer at the Starkenburg Observatory in Heppenheim who has made a substantial contribution to the astrometry of minor planets. He is an ardent follow-up observer of near-earth objects and a keen developer of astronomical software. Name proposed by L. D. Schmadel.

(7714) Briccialdi = 1996 CC₁

Discovered 1996 Feb. 9 at Stroncone.

Named in memory of Giulio Briccialdi (1818–1881). Flutist and composer, he became a famous concert musician at the age of 15. He taught in Milan and Vienna and gave concerts in Europe and America. He invented a particular kind of flute and created the musical scales for it.

(7790) Miselli = 1995 DK₂

Discovered 1995 Feb. 28 at Stroncone.

Named in memory of Furio Miselli (1867–1949). Poet, singer, songwriter and singing master in Terni, he promoted “Cantamaggio”, a folk style that is currently a popular tourist draw. He also founded a humor magazine, *Sborbottu*, which parodied city life at the end of the nineteenth century.

(7851) Azumino = 1996 YW₂

Discovered 1996 Dec. 29 by N. Sato at Chichibu.

Named for an area in Nagano prefecture, Azumino is the rice field area east of the Japanese Northern Alps. In various places, natural spring water surfaces to form clear mountain streams. Azumino is famous throughout Japan for its beautiful scenery year-round.

(7895) Kaseda = 1995 DK₁

Discovered 1995 Feb. 22 by F. Uto at Kashiara.

Named for a city in the southwest of Kagoshima prefecture, where the discoverer was born. This town is fully blessed with natural beauty and is relatively free of light pollution. It once won the highest commendation for the most beautiful starry sky in Japan.

(7908) Zwingli = 4192 T-1

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Ulrich Zwingli (1484–1531), Swiss reformer of the church. He was originally a Catholic priest, but under the influence of the books of Erasmus and Luther he felt the need for reform. In 1523 he broke with the bishop, married and became a fervent puritan. For him the holy communion was only a symbolic celebration, and in this respect he did not agree with Luther. Zwingli died in a fight against the catholic cantons as a clergyman of the reformed soldiers.

(7963) Falcinelli = 1995 CA

Discovered 1995 Feb. 1 at Stroncone.

Named in memory of Amleto Falcinelli (1921–1996), Italian bantam-weight boxing champion, who fought from 1936 to 1956 in Italian, European and international rings. Legendary are his five matches against the Spanish champion Romero for the European title, which he won several times.

(7970) Lichtenberg = 6065 P-L

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Georg Christoph Lichtenberg (1742–1799). In his time he was one of Europe’s best-known experimental physicists. He worked in Göttingen, Germany, and in Brighton, England. Even today, he is known for his aphorisms, such as: “it is almost impossible to carry the torch of the truth through a crowd without singeing someone’s beard”, “the healthy scholar is the man for whom thinking is not an illness” and “I always feel pain when a gifted person dies—the world has a greater need for these than the heavens”. Name proposed by K.-O. Groeneveld.

(7971) Meckbach = 9002 P-L

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Wolfgang Meckbach (1919–1998), microwave spectroscopist who emigrated from Germany to Argentina in 1951, where he became the co-founder of the Centro Atómico Bariloche and founder of the Bariloche school of atomic collision physics. In spite of difficult times, he excelled as a teacher and researcher in atomic collision physics using ion penetration through matter. By sad coincidence, the name was proposed just as Meckbach suffered a fatal heart attack while skiing. Name proposed and citation prepared by K.-O. Groeneveld.

(7972) Mariotti = 1174 T-1

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named in memory of Jean-Marie Mariotti (1955–1998), French astronomer, most recently in Garching at the European Southern Observatory. He led the pioneering project to establish optical interferometry with the new Very Large Telescope as a breakthrough new astronomical instrument for the next century. His interest was in the area of high angular resolution, and he was involved in interferometric projects both on the ground (e.g., FLUOR and VLTI) and in space (DARWIN). He hoped with these techniques to find low-mass companions, and ultimately planets, outside our solar system. He had an extraordinarily effective mix of technical expertise and scientific eagerness. Name proposed and citation prepared by R. Le Poole.

(8041) Masumoto = 1993 VR₂

Discovered 1993 Nov. 15 by F. Uto at Kashiara.

Named in honor of Takeji Masumoto, who built the discoverer's observatory. Initially, he had to make a great effort to secure the land for the observatory.

(8112) Cesi = 1995 JJ

Discovered 1995 May 3 at Stroncone.

Named in memory of Federico Cesi (1585–1630), a scientist and humanist of the Italian Renaissance who devoted his life and property to the Academy of the Lincei, which he founded at the age of eighteen and of which Galileo was a member. He published numerous works about nature, including Galileo's "History and evidence about sunspots" and tables of classification for the animal, vegetable and mineral kingdoms.

(8192) Tonucci = 1993 RB

Discovered 1993 Sept. 10 at Stroncone.

Named in memory of Giuseppe Tonucci (1938–1988), Italian road and track cycling champion. During his long career he won numerous competitions throughout Europe, distinguishing himself in the Rome Olympic Games in 1960 and in the World Championship in the Netherlands.

(8193) Ciaurro = 1993 SF

Discovered 1993 Sept. 17 at Stroncone.

Named in memory of Ilario Ciaurro (1889–1992), an art teacher and ceramist, but most famous as a painter. His favorite subject was Terni, his adopted town, and he loved using etchings, poems and stories to explore its innermost aspects.

(8230) Perona = 1997 TW₁₆

Discovered 1997 Oct. 8 at Stroncone.

Named in memory of Renato Perona (1927–1984), a track cycling champion who for more than a decade was the undisputed ruler in national and international competitions. He won the gold medal in the London Olympic Games in 1948.

(8234) Nobeoka = 1997 VK₈

Discovered 1997 Nov. 3 by T. Seki at Geisei.

Named for a town in Miyazaki prefecture, at the mouth of the Gokase River. Although it is the site of one of the largest chemical factories in Japan, it remains rich in natural beauty. The sound of the bell at the top of the castle hill is described in a poem by Bokusui Wakayama. Name proposed by the discoverer following a suggestion by T. Sato and R. Ukishima.

(8313) Christiansen = 1996 YU₁

Discovered 1996 Dec. 19 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Named in honor of Wilbur N. Christiansen (b.1913), foreign member of the Chinese Academy of Sciences and unfailing friend of Chinese astronomers. A pioneer

in radio astronomy, he invented and developed a series of radio telescopes that in their time provided the highest angular resolution. These were the "grating telescope", the "grating cross" and the "rotational synthesis telescope". His textbook on radio telescopes, with Högbom, was translated into Russian and Chinese. Immediately after the discovery of the 21-cm hydrogen line in space, he confirmed this and went on to make the first map that showed we live in a spiral galaxy. He served as a vice president of the IAU and as president of URSI, and he is now an honorary president of URSI.

(8367) Bokusui = 1990 UL₂

Discovered 1990 Oct. 23 by T. Seki at Geisei.

Named in memory of Bokusui (Shigeru) Wakayama (1885–1928), one of the most beloved of Japanese poets. Born in a village in Miyazaki Prefecture, he graduated from the nearby Nobeoka Middle School and later from Waseda University. Fond of both travel and sake, he wrote many poems about the joys and sorrows of life and nature. After his death, his complete works were published in 13 volumes. Name proposed by the discoverer following a suggestion by R. Ukishima and T. Sato.

(8375) Kenzokohno = 1992 AP₁

Discovered 1992 Jan. 12 by T. Seki at Geisei.

Named in honor of Kenzo Kohno (b. 1934), staff member of Akashi Planetarium since 1960 and its director from 1982 to 1995. He served as president of the Japan Planetarium Society from 1983 to 1984. In 1981, he was awarded the Minister's Prize by the Japanese Ministry of Education. Name proposed by the discoverer following a suggestion by T. Sato and A. Fujii.

(8387) Fujimori = 1993 DO

Discovered 1993 Feb. 19 by T. Seki at Geisei.

Named in honor of Kenichi Fujimori (b.1934), an amateur astronomer who observes sunspots, faculae and prominences. A formal observer designated by the Sunspot Index Data Center, he served as director of the solar section of the Oriental Astronomical Association from 1971 to 1978. Name proposed by the discoverer following a suggestion by T. Sato and A. Fujii.

(8496) Jandlsmith = 1990 QO₃

Discovered 1990 Aug. 16 at the Oak Ridge Observatory.

Named in honor of Jim and Laurie Smith in recognition of their generosity and wisdom in the support of forefront tools to explore the heavens to the benefit of all of humanity. Most especially, their support was crucial for Harvard University's participation in the Magellan Project.

(8555) Mirimao = 1995 LD

Discovered 1995 June 3 at Stroncone.

Named in memory of Guido Mirimao (1909–1990), internationally known painter and draftsman. A graphic artist who contributed regularly to newspapers and magazines, from 1931 to 1940 he received a great number of prizes in national exhibitions. He also created art works and murals on sacred subjects in Italy and abroad.

(8581) Johnen = 1996 YO₂

Discovered 1996 Dec. 28 by N. Sato at Chichibu.

Named for a mountain in Nagano prefecture, part of the Japanese Northern Alps. Popular with climbers, the 2857-m peak is especially famous because an Englishman, Walter Weston (1861–1940), climbed it in 1894 and spread the word of its beauty all over the world.

(8786) Belskaya = 1978 RA₈

Discovered 1978 Sept. 2 by C.-I. Lagerkvist at the European Southern Observatory.

Named in honor of Irina N. Belskaya, senior astronomer at the Kharkov Astronomical Observatory and a friend of the discoverer. Her research focuses on the spin and surface properties of main-belt minor planets, in particular, objects of the taxonomic type M. She has made important contributions in this field by combining photometric and polarimetric observations with optical laboratory measurements of the analogous asteroidal materials. Citation prepared by A. Erikson.

(8793) Thomasmüller = 1979 QX

Discovered 1979 Aug. 22 by C.-I. Lagerkvist at the European Southern Observatory.

Named in honor of Thomas G. Müller for his contribution to the study of minor planets in the thermal infrared. His observational work includes mid- to far-infrared photometry, spectroscopy and polarimetry with the Infrared Space Observatory. He has developed and applied various thermophysical models and techniques, in order to derive physical properties of minor planets. Because of the great accuracy he achieved, future telescope projects in the infrared will also benefit from these efforts, since minor planets are well suited as calibration targets, Name proposed and citation prepared by J. S. V. Lagerros.

(8832) Altenrath = 1989 EC₃

Discovered 1989 Mar. 2 by E. W. Elst at the European Southern Observatory.

Named in memory of Henricus Hubertus Altenrath (1832–1892), initiator and first director of the “Nijverheidsschool”, a well-known Antwerp school for the teaching of technical professions. Under his direction, the school began teaching in Flemish, which was not common at that time. His name is still honored by the Association “Henric Altenrath”. The discoverer has taught for many years at this school.

(8853) Gerdlehmman = 1991 GC₁₀

Discovered 1991 Apr. 9 by F. Börngen at Tautenburg.

Named in honor of Gerhard Lehmann (b.1960), an amateur astronomer who with Jens Kandler measured some 70 precise positions of minor planets and comets from photographic plates obtained at Drebach. Among the 1500 positions he has derived after switching to CCD equipment in 1994 are some for the 1998 opposition of this object. The Drebach positions have made more than 30 Tautenburg objects appropriate for numbering. A teacher of physics and astronomy, Lehmann is also a popularizer of astronomy and since 1997 the head of the minor planets section of the Vereinigung der Sternfreunde.

(8861) Jenskandler = 1991 TF₇

Discovered 1991 Oct. 3 by F. Börngen and L. D. Schmadel at Tautenburg.

Named in honor of Jens Kandler (b.1973), who has been an observer at Drebach since the age of 14. Beginning in 1993, he has been observing minor planets and comets, at first photographically and then using a CCD. Among the Drebach observations are many from both the 1996 and 1998 oppositions of this object. A skilled industrial mechanic and tile setter, Kandler is an enthusiastic proponent of astronomy. Name proposed by the first discoverer.

(9076) Shinsaku = 1994 JT

Discovered 1994 May 8 by A. Nakamura at Kuma Kogen.

Named in memory of Shinsaku Takasugi (1839–1867), Japanese revolutionary, who though a lower-ranking samurai, attracted many followers with his innovative

ideas and extraordinary drive to modernize Japan. As a primary leader of anti-shogunate forces, he played the most important role in the success of the Meiji Restoration.

(9090) Chirottenmondai = 1995 UW₈

Discovered 1995 Oct. 28 by K. Endate and K. Watanabe at Kitami.

Named for Chiro Astronomical Observatory (Chiro tenmondai) in Western Australia. Founded in 1995 by the joint efforts of Australian and Japanese amateur astronomers, it is also operated by the two groups. It is a considered a sister observatory to the Japanese amateurs' Shirakawa Observatory, the two sites being at approximately at the same latitude in opposite hemispheres. Name proposed by the discoverers following a suggestion by L. Taylor and T. Sato.

(9115) Battisti = 1997 DG

Discovered 1997 Feb. 27 by P. Sicoli and F. Manca at Sormano.

Named in memory of Lucio Battisti (1943–1998), innovative Italian composer and singer. He wrote many songs for himself and other singers, among them “Emozioni” and “I giardini di marzo”. Beginning in 1973, he lived in a small village in the neighborhood of the observatory where this minor planet was discovered.

(9142) Rhesus = 5191 T-3

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named for the king of the Thracians and ally of the Trojans. He and his twelve companions were stealthily assassinated in their sleep by Odysseus and Diomedes.

(9349) Lucas = 1991 SX

Discovered 1991 Sept. 30 by R. H. McNaught at Siding Spring.

Named in memory of François Edouard Anatole Lucas (1842–1891), French number theorist, best known for his test for Mersenne primes and the demonstration that $2^{127} - 1$ is prime. His interests included magic squares and Fibonacci numbers, and while studying the latter he devised the similar sequence 2, 1, 3, 4, 7, ..., now known as Lucas numbers. The number of this minor planet is the twentieth member of this sequence. Name proposed by the discoverer following a suggestion by B. G. Marsden.

EPOCHMERIDES

C/1998 W2 (Hergenrother)						Elements MPC 33189			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03		21 43.69	−08 41.1	1.475	1.542	74.7	38.1	17.2	
1998 12 13		22 08.33	−03 42.4	1.540	1.553	72.1	37.1	17.3	
1998 12 23		22 33.39	+01 10.6	1.616	1.575	69.8	35.9	17.5	
1999 01 02		22 58.79	+05 53.8	1.703	1.609	67.6	34.4	17.7	
1999 01 12		23 24.45	+10 23.3	1.801	1.653	65.4	32.7	18.0	
1999 01 22		23 50.35	+14 36.2	1.909	1.707	63.1	31.0	18.2	
1999 02 01		00 16.46	+18 30.2	2.027	1.769	60.8	29.1	18.5	
1999 02 11		00 42.73	+22 04.0	2.154	1.838	58.3	27.2	18.8	
1999 02 21		01 09.11	+25 16.7	2.290	1.913	55.5	25.2	19.1	
1999 03 03		01 35.55	+28 08.3	2.432	1.993	52.6	23.3	19.4	
1999 03 13		02 01.97	+30 38.9	2.580	2.076	49.5	21.3	19.7	
1999 03 23		02 28.29	+32 49.3	2.732	2.164	46.1	19.4	20.0	
1999 04 02		02 54.40	+34 40.3	2.885	2.254	42.6	17.5	20.3	
1999 04 12		03 20.21	+36 12.9	3.039	2.346	39.0	15.6	20.6	
1999 04 22		03 45.62	+37 28.6	3.191	2.439	35.2	13.7	20.9	
1999 05 02		04 10.50	+38 28.5	3.340	2.535	31.4	11.9	21.2	

1998 VR		$a, e, i = 0.88, 0.32, 22$				Elements		MPC	33374
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		23 46.01	+39 37.7	0.210	1.097	117.0	53.2	17.1	
1998 12 13		23 01.51	+39 20.7	0.259	1.065	101.1	65.1	17.8	
1998 12 23		22 37.14	+39 01.6	0.307	1.027	89.2	73.4	18.4	
1999 01 02		22 21.72	+38 55.2	0.348	0.981	79.5	80.1	18.8	
1999 01 12		22 09.10	+38 41.4	0.379	0.930	70.7	86.7	19.1	
1999 01 22		21 55.97	+37 47.3	0.398	0.873	62.3	93.9	19.4	
1999 02 01		21 40.75	+35 22.3	0.408	0.813	53.7	102.5	19.7	
1999 02 11		21 24.70	+30 17.9	0.412	0.752	44.6	112.7	20.1	
1999 02 21		21 12.64	+21 40.8	0.423	0.693	36.0	123.0	20.7	
1999 03 03		21 11.19	+10 07.6	0.457	0.642	30.7	127.9	21.1	
1999 03 13		21 25.11	-01 28.6	0.529	0.608	31.4	121.7	20.8	
1999 03 23		21 53.89	-10 00.2	0.638	0.597	34.8	107.5	20.2	
1999 04 02		22 32.23	-14 24.6	0.770	0.612	37.7	91.9	19.9	
1999 04 12		23 13.71	-15 23.6	0.907	0.649	39.3	78.3	19.9	
1999 04 22		23 53.90	-14 08.8	1.034	0.701	40.2	67.7	20.0	

1998 UO ₁		$a, e, i = 1.60, 0.76, 26$				Elements		MPC	33370
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		00 04.06	+29 22.6	1.332	2.006	119.1	25.4	19.2	
1998 12 13		00 08.36	+28 03.5	1.517	2.081	110.8	26.2	19.6	
1998 12 23		00 15.35	+27 14.8	1.708	2.152	102.8	26.5	19.9	
1999 01 02		00 24.28	+26 51.2	1.902	2.218	95.1	26.2	20.2	
1999 01 12		00 34.65	+26 47.5	2.097	2.281	87.8	25.5	20.5	
1999 01 22		00 46.12	+26 59.8	2.288	2.339	80.6	24.5	20.7	
1999 02 01		00 58.45	+27 25.0	2.475	2.393	73.7	23.3	20.9	
1999 02 11		01 11.47	+28 00.2	2.655	2.444	67.0	21.8	21.0	
1999 02 21		01 25.07	+28 43.3	2.826	2.491	60.4	20.2	21.1	

1998 UL ₁		$a, e, i = 1.53, 0.21, 42$				Elements		MPC	33370
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		00 30.95	+01 34.3	1.178	1.848	117.1	28.3	19.4	
1998 12 13		00 36.67	-01 15.9	1.295	1.843	107.1	30.7	19.7	
1998 12 23		00 45.05	-03 12.1	1.418	1.836	98.1	32.0	19.9	
1999 01 02		00 55.60	-04 26.0	1.541	1.827	89.9	32.6	20.1	
1999 01 12		01 07.90	-05 07.8	1.661	1.816	82.5	32.5	20.3	
1999 01 22		01 21.68	-05 25.1	1.775	1.803	75.6	31.9	20.4	
1999 02 01		01 36.73	-05 24.5	1.880	1.789	69.4	31.0	20.5	
1999 02 11		01 52.87	-05 10.8	1.976	1.773	63.6	29.9	20.5	

1998 VN		$a, e, i = 1.39, 0.34, 12$				Elements		MPC	33374
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		01 16.23	-63 49.7	0.082	0.983	85.8	89.5	18.2	
1998 12 13		01 20	-86 04.0	0.114	0.949	68.9	104.7	19.5	
1998 12 23		13 43.0	-81 40.1	0.154	0.925	63.3	108.2	20.3	
1999 01 02		14 00.9	-73 52.1	0.194	0.912	63.0	106.1	20.7	
1999 01 12		14 23.58	-68 19.0	0.233	0.910	65.1	101.4	20.8	
1999 01 22		14 47.75	-64 03.0	0.269	0.921	68.7	95.5	20.9	
1999 02 01		15 11.38	-60 30.4	0.298	0.943	73.2	89.2	20.9	
1999 02 11		15 32.88	-57 22.5	0.320	0.975	78.6	82.7	20.9	
1999 02 21		15 50.30	-54 25.7	0.334	1.015	84.9	76.0	20.8	
1999 03 03		16 02.08	-51 26.4	0.339	1.061	92.4	69.0	20.7	
1999 03 13		16 06.94	-48 12.7	0.338	1.111	101.3	61.3	20.6	

1999 03 23	16 03.62	-44 27.4	0.332	1.163	112.1	52.6	20.4	
1999 04 02	15 52.07	-39 50.3	0.326	1.216	124.9	42.4	20.1	
1999 04 12	15 33.86	-34 09.1	0.326	1.269	140.0	30.5	19.9	
1999 04 22	15 12.37	-27 35.6	0.338	1.322	156.5	17.7	19.7	
1999 05 02	14 52.13	-20 58.5	0.368	1.374	172.9	5.2	19.4	
1999 05 12	14 36.33	-15 15.9	0.417	1.423	170.6	6.6	19.9	
1999 05 22	14 26.30	-11 00.2	0.485	1.471	157.1	15.5	20.6	
1999 06 01	14 21.91	-08 12.5	0.568	1.516	145.4	22.3	21.2	
1999 06 11	14 22.26	-06 37.0	0.664	1.559	135.3	27.2	21.8	

1998 WT		$a, e, i = 1.22, 0.57, 3$				Elements		MPC	33379
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		01 24.67	+16 55.1	0.618	1.487	134.8	28.1	18.5	
1998 12 13		01 29.37	+16 02.2	0.756	1.552	125.6	31.1	19.1	
1998 12 23		01 37.22	+15 46.0	0.902	1.610	117.2	32.9	19.6	
1999 01 02		01 47.35	+15 55.1	1.054	1.663	109.4	33.9	20.0	
1999 01 12		01 59.17	+16 21.4	1.209	1.711	102.1	34.2	20.4	
1999 01 22		02 12.35	+16 59.3	1.366	1.753	95.1	34.0	20.7	
1999 02 01		02 26.64	+17 45.0	1.522	1.790	88.4	33.4	21.0	
1999 02 11		02 41.83	+18 35.0	1.676	1.822	82.0	32.4	21.2	
1999 02 21		02 57.84	+19 27.0	1.825	1.850	75.7	31.2	21.4	
1999 03 03		03 14.56	+20 18.9	1.969	1.872	69.7	29.8	21.5	
1999 03 13		03 31.91	+21 09.0	2.104	1.890	63.9	28.2	21.6	

1998 VE ₃₁		$a, e, i = 1.05, 0.19, 22$				Elements		MPC	33378
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		01 47.01	+21 58.7	0.265	1.203	140.9	31.1	19.5	
1998 12 13		01 28.71	+28 11.2	0.334	1.219	128.1	39.4	20.3	
1998 12 23		01 23.14	+32 21.7	0.410	1.232	118.3	44.6	20.9	
1999 01 02		01 26.52	+35 30.8	0.488	1.242	110.5	47.9	21.4	
1999 01 12		01 36.26	+38 07.6	0.566	1.248	104.0	49.9	21.8	

1998 UR ₄₃		$a, e, i = 39.55, 0.19, 9$				Elements		MPC	33374
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		02 16.74	+10 50.4	31.060	31.871	144.9	1.0	23.1	
1998 12 13		02 16.01	+10 47.9	31.172	31.871	134.6	1.3	23.2	
1998 12 23		02 15.44	+10 46.2	31.307	31.871	124.2	1.5	23.2	
1999 01 02		02 15.04	+10 45.6	31.459	31.871	114.0	1.6	23.2	
1999 01 12		02 14.85	+10 46.0	31.623	31.871	103.8	1.7	23.2	
1999 01 22		02 14.86	+10 47.5	31.795	31.871	93.6	1.8	23.2	
1999 02 01		02 15.08	+10 50.0	31.968	31.872	83.5	1.8	23.3	
1999 02 11		02 15.50	+10 53.6	32.138	31.872	73.5	1.7	23.3	
1999 02 21		02 16.12	+10 58.2	32.300	31.872	63.6	1.6	23.3	
1999 03 03		02 16.92	+11 03.6	32.448	31.872	53.8	1.4	23.3	
1999 03 13		02 17.88	+11 09.7	32.579	31.872	44.0	1.2	23.3	
1999 03 23		02 18.97	+11 16.3	32.690	31.873	34.4	1.0	23.2	

1998 WR ₅		$a, e, i = 2.58, 0.52, 28$				Elements		MPC	33381
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		02 29.20	+38 18.2	0.463	1.401	148.3	21.7	18.2	
1998 12 13		02 48.14	+28 06.4	0.528	1.451	145.6	22.6	18.6	
1998 12 23		03 04.64	+20 23.5	0.620	1.505	138.4	25.7	19.1	
1999 01 02		03 20.11	+15 01.6	0.734	1.562	130.4	28.7	19.7	
1999 01 12		03 35.22	+11 28.5	0.864	1.622	122.6	30.7	20.2	
1999 01 22		03 50.35	+09 12.5	1.007	1.684	115.4	31.9	20.6	

1999 02 01	04 05.71	+07 48.9	1.160	1.747	108.8	32.3	21.0
1999 02 11	04 21.34	+06 59.7	1.320	1.811	102.5	32.2	21.4
1999 02 21	04 37.27	+06 32.6	1.485	1.875	96.5	31.6	21.7

1998 VP							
$a, e, i = 1.88, 0.46, 44$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	02 33.30		-09 47.8	0.637	1.511	136.2	26.9
1998 12 13	02 33.39		-13 27.9	0.787	1.576	125.3	30.7
1998 12 23	02 36.96		-15 10.6	0.947	1.640	116.3	32.5
1999 01 02	02 43.24		-15 43.5	1.111	1.703	108.6	33.2
1999 01 12	02 51.59		-15 34.4	1.278	1.765	101.8	33.1

1998 VO							
$a, e, i = 1.07, 0.23, 10$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	02 35.89		-02 21.9	0.205	1.154	141.8	31.9
1998 12 13	02 43.26		-03 34.8	0.269	1.185	133.4	37.1
1998 12 23	02 52.85		-03 21.1	0.337	1.214	126.3	40.8
1999 01 02	03 04.62		-02 19.7	0.410	1.240	119.9	43.4
1999 01 12	03 18.28		-00 52.5	0.485	1.262	114.1	45.3
1999 01 22	03 33.69		+00 48.4	0.562	1.280	108.7	46.7
1999 02 01	03 50.70		+02 34.7	0.639	1.295	103.7	47.7
1999 02 11	04 09.10		+04 20.3	0.717	1.306	98.9	48.3
1999 02 21	04 28.82		+06 01.5	0.793	1.314	94.3	48.6

1998 VD ₃₅							
$a, e, i = 1.55, 0.47, 7$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	02 41.97		+09 08.3	0.372	1.321	149.7	22.1
1998 12 13	02 19.87		+04 28.3	0.349	1.248	132.8	35.4
1998 12 23	02 02.55		+00 10.2	0.337	1.175	117.0	48.2
1999 01 02	01 51.12		-03 33.2	0.326	1.103	102.9	60.3
1999 01 12	01 44.42		-06 53.9	0.313	1.033	90.3	72.1
1999 01 22	01 39.89		-10 18.3	0.293	0.968	78.3	84.4
1999 02 01	01 33.16		-14 25.0	0.265	0.911	66.2	98.4

1998 WV ₂₄							
$a, e, i = 39.52, 0.15, 1$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	02 44.34		+14 51.1	37.379	38.257	152.6	0.7
1998 12 13	02 43.62		+14 47.9	37.469	38.253	142.3	0.9
1998 12 23	02 43.02		+14 45.3	37.584	38.248	131.9	1.1
1999 01 02	02 42.56		+14 43.4	37.720	38.244	121.6	1.3
1999 01 12	02 42.25		+14 42.2	37.871	38.240	111.4	1.4
1999 01 22	02 42.12		+14 41.8	38.034	38.236	101.1	1.4
1999 02 01	02 42.16		+14 42.2	38.202	38.232	91.0	1.5
1999 02 11	02 42.39		+14 43.5	38.372	38.228	80.9	1.5
1999 02 21	02 42.78		+14 45.5	38.536	38.224	70.9	1.4
1999 03 03	02 43.34		+14 48.3	38.691	38.220	61.0	1.3
1999 03 13	02 44.05		+14 51.7	38.831	38.216	51.2	1.2
1999 03 23	02 44.89		+14 55.7	38.953	38.212	41.5	1.0
1999 04 02	02 45.85		+15 00.1	39.054	38.208	31.8	0.8

1998 WW ₂₄							
$a, e, i = 39.54, 0.21, 14$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	03 03.74		+18 30.9	30.363	31.280	158.1	0.7
1998 12 13	03 02.83		+18 26.0	30.443	31.280	147.7	1.0
1998 12 23	03 02.06		+18 21.6	30.549	31.280	137.3	1.2
1999 01 02	03 01.44		+18 17.8	30.678	31.280	127.0	1.4

1999 01 12	03 01.02	+18 14.8	30.826	31.280	116.7	1.6	22.9
1999 01 22	03 00.80	+18 12.6	30.987	31.280	106.5	1.7	22.9
1999 02 01	03 00.81	+18 11.3	31.157	31.280	96.3	1.8	23.0
1999 02 11	03 01.03	+18 11.0	31.330	31.280	86.2	1.8	23.0
1999 02 21	03 01.48	+18 11.5	31.501	31.280	76.2	1.8	23.0
1999 03 03	03 02.14	+18 13.0	31.665	31.280	66.3	1.7	23.0
1999 03 13	03 02.99	+18 15.3	31.817	31.280	56.5	1.5	23.0
1999 03 23	03 04.01	+18 18.3	31.954	31.280	46.8	1.3	23.0
1999 04 02	03 05.19	+18 22.0	32.070	31.280	37.2	1.1	23.0

1998 US ₄₃							
$a, e, i = 39.53, 0.11, 10$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	03 04.95		+16 21.2	34.290	35.204	157.8	0.6
1998 12 13	03 04.12		+16 17.3	34.370	35.204	147.4	0.9
1998 12 23	03 03.42		+16 14.0	34.477	35.204	137.1	1.1
1999 01 02	03 02.85		+16 11.3	34.607	35.204	126.7	1.3
1999 01 12	03 02.45		+16 09.3	34.755	35.204	116.4	1.4
1999 01 22	03 02.23		+16 08.2	34.917	35.204	106.2	1.5
1999 02 01	03 02.20		+16 07.8	35.087	35.204	96.0	1.6
1999 02 11	03 02.37		+16 08.3	35.260	35.204	85.9	1.6
1999 02 21	03 02.74		+16 09.5	35.431	35.204	75.9	1.6
1999 03 03	03 03.29		+16 11.6	35.595	35.204	66.0	1.5
1999 03 13	03 04.01		+16 14.3	35.747	35.204	56.2	1.3
1999 03 23	03 04.88		+16 17.6	35.883	35.204	46.5	1.2
1999 04 02	03 05.89		+16 21.4	35.998	35.204	36.8	1.0

1998 WA ₂₅							
$a, e, i = 42.11, 0.00, 1$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	03 07.99		+16 28.9	41.191	42.110	158.5	0.5
1998 12 13	03 07.27		+16 26.1	41.270	42.110	148.2	0.7
1998 12 23	03 06.65		+16 23.8	41.375	42.110	137.8	0.9
1999 01 02	03 06.13		+16 21.9	41.503	42.110	127.5	1.1
1999 01 12	03 05.76		+16 20.6	41.650	42.110	117.3	1.2
1999 01 22	03 05.53		+16 19.9	41.811	42.110	107.0	1.3
1999 02 01	03 05.47		+16 19.9	41.981	42.110	96.8	1.3
1999 02 11	03 05.57		+16 20.6	42.154	42.110	86.7	1.3
1999 02 21	03 05.84		+16 22.0	42.326	42.110	76.7	1.3
1999 03 03	03 06.26		+16 23.9	42.491	42.110	66.8	1.2
1999 03 13	03 06.82		+16 26.5	42.644	42.110	56.9	1.1
1999 03 23	03 07.52		+16 29.6	42.781	42.110	47.1	1.0
1999 04 02	03 08.34		+16 33.0	42.899	42.110	37.4	0.8

1998 WP ₅							
$a, e, i = 1.37, 0.19, 19$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	03 17.8		+70 31.4	0.309	1.209	130.2	38.6
1998 12 13	01 41.7		+75 22.2	0.324	1.184	121.0	45.5
1998 12 23	00 08.3		+76 17.3	0.344	1.162	113.0	51.2
1999 01 02	23 12.8		+75 50.4	0.365	1.143	106.7	55.5
1999 01 12	22 47.7		+75 45.6	0.382	1.127	102.1	58.6
1999 01 22	22 41.4		+76 36.9	0.394	1.115	98.9	60.7
1999 02 01	22 49.4		+78 32.8	0.399	1.108	97.1	61.9
1999 02 11	23 17.6		+81 31.6	0.398	1.105	96.5	62.5
1999 02 21	00 55		+85 13.4	0.391	1.107	97.1	62.4
1999 03 03	06 22		+85 28.2	0.380	1.114	98.8	61.6

1999 03 13	08 41.3	+78 55.3	0.367	1.125	101.3	60.0	18.8
1999 03 23	09 24.65	+69 40.7	0.358	1.140	104.5	57.8	18.7
1999 04 02	09 49.21	+58 36.9	0.355	1.159	107.8	55.2	18.7
1999 04 12	10 07.88	+46 28.5	0.365	1.180	110.4	52.7	18.7
1999 04 22	10 24.56	+34 17.1	0.391	1.205	111.6	50.9	18.8
1999 05 02	10 40.71	+23 01.8	0.432	1.231	111.1	49.8	19.1
1999 05 12	10 56.90	+13 14.7	0.487	1.259	109.4	49.2	19.4
1999 05 22	11 13.54	+04 59.9	0.554	1.287	106.9	48.8	19.7
1999 06 01	11 30.83	-01 53.7	0.630	1.316	103.9	48.4	20.0
1999 06 11	11 48.84	-07 41.4	0.714	1.345	100.7	47.9	20.3
1999 06 21	12 07.71	-12 37.9	0.802	1.374	97.5	47.2	20.6
1999 07 01	12 27.51	-16 54.7	0.894	1.402	94.2	46.3	20.8
1999 07 11	12 48.26	-20 40.0	0.988	1.430	90.9	45.3	21.1
1999 07 21	13 10.09	-23 59.9	1.085	1.456	87.7	44.2	21.3
1999 07 31	13 33.02	-26 58.1	1.181	1.481	84.4	43.0	21.5
1999 08 10	13 57.10	-29 36.8	1.278	1.504	81.1	41.8	21.6
1999 08 20	14 22.42	-31 57.2	1.374	1.526	77.9	40.4	21.8
1999 08 30	14 48.95	-33 59.5	1.469	1.546	74.6	39.0	21.9

1998 WX₂₄		$a, e, i = 45.00, 0.00, 1$				Elements <i>MPC</i> 33383		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	03 24.13	+18 30.6	44.062	45.004	162.8	0.4	23.1	
1998 12 13	03 23.41	+18 28.0	44.129	45.004	152.4	0.6	23.1	
1998 12 23	03 22.77	+18 25.7	44.224	45.004	142.1	0.8	23.1	
1999 01 02	03 22.23	+18 23.7	44.343	45.004	131.8	0.9	23.1	
1999 01 12	03 21.82	+18 22.2	44.483	45.004	121.5	1.1	23.2	
1999 01 22	03 21.54	+18 21.3	44.638	45.004	111.2	1.2	23.2	
1999 02 01	03 21.41	+18 20.8	44.805	45.004	101.0	1.2	23.2	
1999 02 11	03 21.44	+18 21.0	44.978	45.004	90.9	1.3	23.2	
1999 02 21	03 21.63	+18 21.8	45.151	45.004	80.9	1.2	23.2	
1999 03 03	03 21.97	+18 23.1	45.319	45.004	70.9	1.2	23.2	
1999 03 13	03 22.45	+18 24.9	45.478	45.004	61.0	1.1	23.2	
1999 03 23	03 23.06	+18 27.3	45.622	45.004	51.2	1.0	23.2	
1999 04 02	03 23.79	+18 30.0	45.748	45.004	41.5	0.8	23.2	
1999 04 12	03 24.62	+18 33.1	45.852	45.004	31.8	0.7	23.2	

139P/Väisälä-Oterma		Elements <i>MPC</i> 33190							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03	03 30.68	+19 11.6	2.436	3.396	164.4	4.5	16.7	18.5	
1998 12 13	03 25.24	+18 45.8	2.494	3.400	152.9	7.6	16.8	18.7	
1998 12 23	03 21.35	+18 25.5	2.578	3.405	141.8	10.3	16.9	18.9	
1999 01 02	03 19.35	+18 12.5	2.683	3.411	131.1	12.6	17.0	19.1	
1999 01 12	03 19.38	+18 07.6	2.807	3.417	120.9	14.3	17.1	19.2	
1999 01 22	03 21.43	+18 10.8	2.943	3.424	111.2	15.5	17.2	19.4	
1999 02 01	03 25.40	+18 21.4	3.089	3.432	102.0	16.3	17.3	19.5	
1999 02 11	03 31.10	+18 38.2	3.240	3.440	93.2	16.6	17.4	19.6	
1999 02 21	03 38.37	+19 00.0	3.393	3.448	84.9	16.6	17.5	19.7	
1999 03 03	03 47.00	+19 25.2	3.545	3.457	76.9	16.2	17.6	19.8	
1999 03 13	03 56.82	+19 52.4	3.692	3.467	69.2	15.5	17.7	19.9	
1999 03 23	04 07.65	+20 20.3	3.834	3.477	61.9	14.6	17.8	19.9	
1999 04 02	04 19.35	+20 47.7	3.968	3.488	54.8	13.5	17.9	20.0	
1999 04 12	04 31.77	+21 13.4	4.092	3.499	47.8	12.3	18.0	20.0	
1999 04 22	04 44.80	+21 36.7	4.206	3.511	41.1	10.8	18.1	20.0	
1999 05 02	04 58.31	+21 56.7	4.307	3.523	34.5	9.3	18.1	20.0	

1998 WH₂₄		$a, e, i = 42.78, 0.00, 13$				Elements <i>MPC</i> 33383		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	03 34.51	+20 44.1	41.826	42.782	165.6	0.3	21.3	
1998 12 13	03 33.72	+20 41.8	41.885	42.782	155.3	0.6	21.4	
1998 12 23	03 33.01	+20 39.6	41.973	42.782	145.0	0.8	21.4	
1999 01 02	03 32.39	+20 37.7	42.085	42.782	134.6	0.9	21.4	
1999 01 12	03 31.91	+20 36.2	42.219	42.782	124.3	1.1	21.4	
1999 01 22	03 31.57	+20 35.2	42.371	42.782	114.1	1.2	21.5	
1999 02 01	03 31.38	+20 34.7	42.535	42.782	103.9	1.3	21.5	
1999 02 11	03 31.37	+20 34.8	42.706	42.782	93.7	1.3	21.5	
1999 02 21	03 31.52	+20 35.4	42.879	42.782	83.7	1.3	21.5	
1999 03 03	03 31.84	+20 36.6	43.049	42.782	73.7	1.3	21.5	
1999 03 13	03 32.31	+20 38.4	43.211	42.782	63.8	1.2	21.5	
1999 03 23	03 32.92	+20 40.6	43.360	42.782	54.0	1.1	21.5	
1999 04 02	03 33.67	+20 43.4	43.491	42.782	44.3	0.9	21.5	
1999 04 12	03 34.52	+20 46.5	43.602	42.782	34.7	0.8	21.5	

1998 WQ₅		$a, e, i = 1.73, 0.36, 28$				Elements <i>MPC</i> 33381		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	03 38.35	+54 34.1	1.065	1.960	145.7	16.5	17.4	
1998 12 13	03 17.68	+51 08.6	1.038	1.920	143.4	17.8	17.3	
1998 12 23	03 03.63	+46 54.8	1.036	1.880	137.1	20.9	17.4	
1999 01 02	02 56.91	+42 24.2	1.055	1.837	128.6	24.7	17.5	
1999 01 12	02 56.73	+38 03.5	1.092	1.793	119.5	28.5	17.6	
1999 01 22	03 01.93	+34 08.6	1.142	1.748	110.4	31.9	17.8	
1999 02 01	03 11.41	+30 45.5	1.199	1.701	101.8	34.5	17.9	
1999 02 11	03 24.23	+27 52.9	1.260	1.653	93.9	36.6	18.0	
1999 02 21	03 39.75	+25 26.1	1.322	1.604	86.7	38.0	18.1	
1999 03 03	03 57.45	+23 18.8	1.380	1.554	80.1	38.9	18.1	
1999 03 13	04 16.96	+21 24.4	1.432	1.504	74.2	39.5	18.1	
1999 03 23	04 38.05	+19 37.0	1.478	1.454	68.8	39.7	18.1	
1999 04 02	05 00.50	+17 51.3	1.516	1.404	64.1	39.8	18.1	

1998 WA₂		$a, e, i = 2.71, 0.60, 22$				Elements <i>MPC</i> 33380		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	03 44.62	+04 27.0	0.431	1.396	158.4	15.0	18.9	
1998 12 13	03 46.92	+00 17.4	0.539	1.469	147.9	20.9	19.7	
1998 12 23	03 51.08	-01 42.4	0.661	1.545	139.0	24.7	20.4	
1999 01 02	03 57.21	-02 22.3	0.796	1.622	131.2	27.1	21.0	
1999 01 12	04 05.12	-02 14.2	0.942	1.701	124.0	28.6	21.5	
1999 01 22	04 14.61	-01 37.9	1.097	1.779	117.3	29.4	21.9	

P/1998 U4 (Spahr)		Elements <i>MPC</i> 33189							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03	03 50.11	-15 26.6	3.049	3.864	140.9	9.3	16.3		
1998 12 13	03 45.17	-15 38.4	3.101	3.859	134.9	10.4	16.3		
1998 12 23	03 41.25	-15 29.8	3.174	3.855	127.7	11.6	16.4		
1999 01 02	03 38.72	-15 03.1	3.264	3.851	120.0	12.8	16.4		
1999 01 12	03 37.76	-14 21.3	3.368	3.848	112.1	13.7	16.5		
1999 01 22	03 38.48	-13 27.9	3.482	3.845	104.3	14.4	16.6		
1999 02 01	03 40.87	-12 26.4	3.603	3.843	96.6	14.8	16.6		
1999 02 11	03 44.84	-11 19.6	3.727	3.842	89.2	14.9	16.7		
1999 02 21	03 50.26	-10 10.3	3.853	3.841	81.9	14.8	16.8		
1999 03 03	03 57.00	-09 00.7	3.976	3.841	75.0	14.4	16.8		

1999 03 13	04 04.91	−07 52.6	4.095	3.841	68.4	13.9	16.9
1999 03 23	04 13.84	−06 47.5	4.208	3.843	62.0	13.2	17.0
1999 04 02	04 23.65	−05 46.7	4.314	3.844	55.9	12.4	17.0
1999 04 12	04 34.21	−04 51.1	4.411	3.847	50.2	11.5	17.1
1999 04 22	04 45.42	−04 01.6	4.498	3.850	44.8	10.6	17.1
1999 05 02	04 57.15	−03 18.9	4.574	3.853	39.7	9.6	17.2
1999 05 12	05 09.30	−02 43.4	4.639	3.858	35.2	8.7	17.2
1999 05 22	05 21.77	−02 15.6	4.692	3.862	31.3	7.8	17.2

1998 WC ₂		$a, e, i = 2.63, 0.58, 27$				Elements <i>MPC</i> 33380		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		04 00.46	−35 36.4	0.454	1.284	121.7	40.8	19.1
1998 12 13		04 00.17	−43 40.7	0.468	1.231	110.7	48.4	19.3
1998 12 23		04 03.12	−49 38.2	0.487	1.186	102.1	54.2	19.5
1999 01 02		04 11.18	−53 51.1	0.505	1.151	96.0	58.1	19.6
1999 01 12		04 25.55	−56 44.3	0.516	1.129	92.3	60.5	19.7
1999 01 22		04 47.24	−58 31.6	0.519	1.119	90.8	61.6	19.7
1999 02 01		05 17.09	−59 15.7	0.513	1.122	91.5	61.3	19.7
1999 02 11		05 55.11	−58 45.0	0.500	1.139	94.3	59.7	19.6
1999 02 21		06 40.05	−56 33.5	0.482	1.169	99.4	56.6	19.5
1999 03 03		07 28.62	−52 11.3	0.466	1.209	106.5	51.8	19.4
1999 03 13		08 16.17	−45 21.6	0.458	1.259	115.1	45.6	19.2
1999 03 23		08 59.22	−36 28.5	0.468	1.316	123.8	39.0	19.2
1999 04 02		09 36.43	−26 49.9	0.503	1.379	130.2	33.6	19.3
1999 04 12		10 08.05	−17 58.0	0.566	1.446	132.4	30.8	19.6
1999 04 22		10 35.17	−10 50.2	0.656	1.516	130.5	30.2	20.0
1999 05 02		10 58.93	−05 37.6	0.770	1.588	126.2	30.8	20.5
1999 05 12		11 20.19	−02 04.5	0.902	1.662	120.6	31.5	20.9
1999 05 22		11 39.69	+00 11.3	1.050	1.737	114.7	32.0	21.4
1999 06 01		11 57.93	+01 29.7	1.209	1.811	108.8	32.0	21.8

1998 WM		$a, e, i = 1.22, 0.32, 23$				Elements <i>MPC</i> 33379		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		04 01.36	+48 16.3	0.550	1.496	152.9	17.5	16.8
1998 12 13		03 16.31	+50 31.8	0.552	1.466	143.6	23.5	16.9
1998 12 23		02 37.16	+50 58.5	0.575	1.432	131.8	30.8	17.2
1999 01 02		02 10.71	+50 27.0	0.610	1.396	120.5	37.4	17.5
1999 01 12		01 57.24	+49 46.3	0.651	1.355	110.4	42.9	17.7
1999 01 22		01 54.48	+49 22.5	0.691	1.312	101.7	47.3	17.9
1999 02 01		02 00.04	+49 24.4	0.726	1.266	94.2	50.9	18.0
1999 02 11		02 12.17	+49 50.3	0.752	1.218	87.8	54.0	18.1
1999 02 21		02 30.00	+50 34.1	0.767	1.168	82.4	57.0	18.1
1999 03 03		02 53.06	+51 27.9	0.769	1.117	77.7	60.1	18.1
1999 03 13		03 21.21	+52 19.8	0.756	1.065	73.6	63.5	18.1
1999 03 23		03 54.45	+52 55.7	0.728	1.015	70.1	67.4	18.0
1999 04 02		04 32.32	+52 56.6	0.686	0.967	67.0	72.2	17.9
1999 04 12		05 13.57	+51 57.2	0.630	0.923	64.2	77.9	17.8

P/1998 W1 (Spahr)		Elements <i>MPC</i> 33189						
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 12 03	04 19.44	−07 16.7	0.854	1.779	150.4	15.9	15.7	
1998 12 13	04 10.75	−03 59.5	0.845	1.759	148.1	17.2	15.6	
1998 12 23	04 03.96	+00 03.2	0.857	1.744	142.6	20.0	15.6	
1999 01 02	04 00.51	+04 32.5	0.889	1.733	135.5	23.4	15.6	

1999 01 12	04 01.10	+09 08.4	0.939	1.727	127.8	26.7	15.7
1999 01 22	04 05.94	+13 35.6	1.006	1.727	120.3	29.5	15.9
1999 02 01	04 14.88	+17 43.8	1.086	1.731	113.3	31.5	16.1
1999 02 11	04 27.50	+21 27.1	1.177	1.740	106.7	32.9	16.3
1999 02 21	04 43.40	+24 42.7	1.277	1.755	100.7	33.6	16.5
1999 03 03	05 02.11	+27 29.5	1.385	1.774	95.2	33.8	16.7
1999 03 13	05 23.14	+29 47.1	1.498	1.797	90.0	33.6	16.9
1999 03 23	05 46.06	+31 35.6	1.616	1.825	85.1	33.0	17.2
1999 04 02	06 10.39	+32 55.7	1.737	1.856	80.5	32.1	17.4
1999 04 12	06 35.68	+33 48.4	1.862	1.891	76.1	31.0	17.6
1999 04 22	07 01.52	+34 15.2	1.989	1.929	71.9	29.7	17.8
1999 05 02	07 27.51	+34 18.0	2.117	1.970	67.7	28.3	18.1
1999 05 12	07 53.31	+33 58.9	2.246	2.013	63.7	26.7	18.3
1999 05 22	08 18.67	+33 20.4	2.375	2.059	59.7	25.1	18.5
1999 06 01	08 43.38	+32 25.1	2.504	2.106	55.7	23.4	18.7
1999 06 11	09 07.32	+31 15.8	2.631	2.155	51.7	21.7	18.9
1999 06 21	09 30.43	+29 54.8	2.756	2.205	47.8	20.0	19.1
1999 07 01	09 52.69	+28 24.6	2.877	2.257	43.8	18.2	19.3
1999 07 11	10 14.10	+26 47.5	2.996	2.309	39.8	16.4	19.5
1999 07 21	10 34.71	+25 05.3	3.109	2.362	35.9	14.6	19.7
1999 07 31	10 54.56	+23 20.1	3.217	2.415	31.9	12.8	19.9

1998 WY ₂₄		$a, e, i = 41.99, 0.00, 2$				Elements <i>MPC</i> 33383		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		04 58.34	+21 47.3	41.008	41.990	174.8	0.1	23.0
1998 12 13		04 57.46	+21 46.0	41.009	41.990	174.6	0.1	23.0
1998 12 23		04 56.59	+21 44.8	41.042	41.990	164.3	0.4	23.1
1999 01 02		04 55.77	+21 43.7	41.104	41.990	153.9	0.6	23.1
1999 01 12		04 55.04	+21 42.7	41.194	41.990	143.6	0.8	23.1
1999 01 22		04 54.41	+21 42.0	41.309	41.990	133.3	1.0	23.1
1999 02 01		04 53.93	+21 41.4	41.445	41.990	123.0	1.1	23.2
1999 02 11		04 53.59	+21 41.2	41.598	41.990	112.8	1.2	23.2
1999 02 21		04 53.42	+21 41.2	41.762	41.990	102.6	1.3	23.2
1999 03 03		04 53.43	+21 41.4	41.933	41.990	92.6	1.4	23.2
1999 03 13		04 53.61	+21 42.0	42.105	41.990	82.6	1.3	23.2
1999 03 23		04 53.96	+21 42.8	42.274	41.990	72.8	1.3	23.2
1999 04 02		04 54.47	+21 43.9	42.434	41.990	63.0	1.2	23.2
1999 04 12		04 55.13	+21 45.1	42.581	41.990	53.3	1.1	23.2
1999 04 22		04 55.92	+21 46.6	42.710	41.990	43.7	0.9	23.2
1999 05 02		04 56.82	+21 48.2	42.819	41.990	34.2	0.8	23.2

1998 WG ₂₄		$a, e, i = 42.59, 0.02, 2$				Elements <i>MPC</i> 33383		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		04 59.26	+22 12.5	40.597	41.579	174.6	0.1	22.6
1998 12 13		04 58.37	+22 11.3	40.598	41.579	175.0	0.1	22.6
1998 12 23		04 57.49	+22 10.1	40.630	41.579	164.6	0.4	22.6
1999 01 02		04 56.67	+22 08.9	40.692	41.579	154.2	0.6	22.7
1999 01 12		04 55.92	+22 07.9	40.781	41.579	143.9	0.8	22.7
1999 01 22		04 55.29	+22 07.1	40.896	41.579	133.5	1.0	22.7
1999 02 01		04 54.80	+22 06.5	41.031	41.579	123.2	1.1	22.7
1999 02 11		04 54.46	+22 06.1	41.184	41.580	113.0	1.3	22.7
1999 02 21		04 54.29	+22 06.1	41.348	41.580	102.9	1.3	22.8
1999 03 03		04 54.29	+22 06.3	41.519	41.580	92.8	1.4	22.8
1999 03 13		04 54.47	+22 06.7	41.692	41.580	82.9	1.4	22.8

1999 03 23	04 54.82	+22 07.5	41.861	41.580	73.0	1.3	22.8
1999 04 02	04 55.34	+22 08.4	42.021	41.580	63.2	1.2	22.8
1999 04 12	04 56.01	+22 09.6	42.168	41.580	53.5	1.1	22.8
1999 04 22	04 56.81	+22 11.0	42.298	41.581	43.9	1.0	22.8
1999 05 02	04 57.73	+22 12.5	42.408	41.581	34.4	0.8	22.8

1998 WZ ₂₄		$a, e, i = 39.54, 0.18, 4$			Elements <i>MPC</i> 33383		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	05 01.68	+22 26.4	31.435	32.416	174.1	0.2	23.0
1998 12 13	05 00.56	+22 25.1	31.434	32.416	175.5	0.1	23.0
1998 12 23	04 59.47	+22 23.9	31.465	32.416	165.1	0.4	23.0
1999 01 02	04 58.44	+22 22.7	31.525	32.416	154.6	0.7	23.1
1999 01 12	04 57.52	+22 21.6	31.613	32.416	144.2	1.0	23.1
1999 01 22	04 56.74	+22 20.8	31.726	32.416	133.9	1.3	23.1
1999 02 01	04 56.14	+22 20.2	31.861	32.416	123.6	1.5	23.2
1999 02 11	04 55.74	+22 20.0	32.012	32.416	113.4	1.6	23.2
1999 02 21	04 55.55	+22 20.1	32.176	32.416	103.2	1.7	23.2
1999 03 03	04 55.60	+22 20.5	32.346	32.416	93.2	1.7	23.2
1999 03 13	04 55.86	+22 21.2	32.519	32.416	83.2	1.7	23.2
1999 03 23	04 56.35	+22 22.3	32.687	32.416	73.4	1.7	23.2
1999 04 02	04 57.05	+22 23.7	32.848	32.416	63.7	1.6	23.2
1999 04 12	04 57.94	+22 25.4	32.995	32.417	54.0	1.4	23.2
1999 04 22	04 59.00	+22 27.3	33.126	32.417	44.5	1.2	23.2
1999 05 02	05 00.20	+22 29.3	33.237	32.417	35.0	1.0	23.2

1998 VS		$a, e, i = 1.40, 0.28, 7$			Elements <i>MPC</i> 33374		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	05 09.84	+01 40.8	0.130	1.108	158.1	19.4	18.7
1998 12 13	05 07.75	-00 27.0	0.171	1.143	156.2	20.3	19.4
1998 12 23	05 07.02	-00 34.1	0.219	1.182	152.3	22.8	20.0
1999 01 02	05 09.13	+00 27.5	0.274	1.222	147.0	26.0	20.7
1999 01 12	05 14.35	+02 04.2	0.337	1.264	141.1	29.2	21.3
1999 01 22	05 22.60	+03 55.4	0.409	1.306	135.1	32.1	21.9

1998 WY ₁		$a, e, i = 1.62, 0.36, 25$			Elements <i>MPC</i> 33380		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	05 26.12	-23 44.8	0.151	1.093	132.6	41.6	19.5
1998 12 13	05 21.47	-32 46.9	0.227	1.127	124.1	46.3	20.6
1998 12 23	05 18.80	-35 37.8	0.306	1.167	120.0	46.9	21.3
1999 01 02	05 18.90	-35 45.5	0.386	1.211	117.6	46.0	21.9
1999 01 12	05 21.94	-34 26.2	0.467	1.259	115.8	44.7	22.4

1998 WZ ₆		$a, e, i = 1.46, 0.41, 25$			Elements <i>MPC</i> 33381		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 12 03	05 48.56	+33 58.6	0.371	1.341	160.1	14.5	16.3
1998 12 13	05 15.14	+46 20.9	0.313	1.278	156.7	17.7	15.9
1998 12 23	04 04.14	+59 30.5	0.288	1.214	138.2	32.7	16.1
1999 01 02	01 57.18	+67 30.2	0.294	1.150	117.7	49.2	16.5
1999 01 12	23 43.77	+67 31.3	0.319	1.087	100.4	62.8	16.9
1999 01 22	22 19.65	+63 49.9	0.349	1.027	87.1	73.1	17.3
1999 02 01	21 29.16	+59 27.7	0.377	0.973	77.0	80.8	17.6
1999 02 11	20 55.60	+54 41.5	0.399	0.926	69.5	86.7	17.9
1999 02 21	20 33.00	+49 09.7	0.413	0.890	64.1	91.2	18.1
1999 03 03	20 19.73	+42 33.5	0.421	0.867	60.7	94.2	18.2

P/1998 U3 (Jäger)					Elements <i>MPC</i> 33189			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1
1998 12 03	06 58.92	+41 00.8	1.446	2.320	144.5	14.3	11.0	
1998 12 13	06 54.10	+40 19.1	1.361	2.286	153.7	11.0	10.8	
1998 12 23	06 46.51	+39 13.1	1.298	2.254	161.8	7.8	10.6	
1999 01 02	06 37.55	+37 39.5	1.261	2.226	165.1	6.5	10.5	
1999 01 12	06 28.95	+35 40.5	1.250	2.201	160.4	8.6	10.4	
1999 01 22	06 22.32	+33 23.2	1.264	2.180	151.5	12.4	10.4	
1999 02 01	06 18.84	+30 57.8	1.301	2.163	141.7	16.4	10.4	
1999 02 11	06 18.95	+28 33.9	1.359	2.150	132.1	19.9	10.5	
1999 02 21	06 22.63	+26 17.4	1.434	2.140	123.1	22.8	10.6	
1999 03 03	06 29.57	+24 10.9	1.521	2.135	114.8	24.9	10.7	
1999 03 13	06 39.26	+22 14.2	1.619	2.135	107.1	26.4	10.8	
1999 03 23	06 51.20	+20 25.5	1.725	2.138	100.1	27.3	11.0	
1999 04 02	07 04.96	+18 42.4	1.837	2.145	93.6	27.7	11.1	
1999 04 12	07 20.09	+17 02.4	1.954	2.157	87.5	27.7	11.3	
1999 04 22	07 36.28	+15 23.3	2.073	2.173	81.9	27.3	11.5	
1999 05 02	07 53.22	+13 43.5	2.195	2.192	76.6	26.6	11.6	
1999 05 12	08 10.67	+12 01.7	2.318	2.215	71.5	25.6	11.8	
1999 05 22	08 28.46	+10 17.0	2.441	2.242	66.7	24.5	11.9	
1999 06 01	08 46.43	+08 29.2	2.565	2.272	62.0	23.2	12.1	
1999 06 11	09 04.45	+06 38.0	2.688	2.306	57.4	21.8	12.3	
1999 06 21	09 22.44	+04 43.4	2.809	2.342	52.9	20.3	12.4	
1999 07 01	09 40.34	+02 45.9	2.929	2.381	48.5	18.7	12.6	
1999 07 11	09 58.10	+00 45.8	3.046	2.422	44.2	17.0	12.8	
1999 07 21	10 15.69	-01 16.4	3.159	2.466	39.8	15.3	12.9	
1999 07 31	10 33.08	-03 20.2	3.268	2.512	35.5	13.6	13.1	
1999 08 10	10 50.27	-05 25.0	3.372	2.559	31.2	11.8	13.2	

1998 WZ ₁		$a, e, i = 2.24, 0.57, 4$			Elements <i>MPC</i> 33380			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	08 26.23	+53 03.5	0.154	1.085	126.8	46.7	17.6	
1998 12 13	11 11.93	+44 55.2	0.132	1.032	107.4	65.5	17.7	
1998 12 23	12 57.81	+25 59.9	0.143	0.992	89.0	82.7	18.4	
1999 01 02	13 52.05	+09 59.2	0.177	0.967	79.6	90.0	19.0	
1999 01 12	14 24.91	-00 45.4	0.220	0.960	77.5	89.5	19.5	
1999 01 22	14 48.31	-08 03.0	0.265	0.972	79.5	84.9	19.7	
1999 02 01	15 06.26	-13 16.9	0.307	1.000	83.8	78.4	19.9	
1999 02 11	15 19.76	-17 12.8	0.343	1.044	89.8	71.0	20.0	
1999 02 21	15 28.32	-20 14.2	0.373	1.099	97.1	63.2	20.0	
1999 03 03	15 31.06	-22 33.3	0.396	1.164	106.0	54.9	20.0	
1999 03 13	15 27.23	-24 14.7	0.415	1.235	116.3	46.1	20.0	
1999 03 23	15 16.51	-25 15.9	0.435	1.311	128.2	36.7	20.0	
1999 04 02	15 00.06	-25 31.9	0.461	1.389	141.2	26.8	19.9	
1999 04 12	14 40.51	-25 02.3	0.499	1.469	154.7	17.0	19.9	
1999 04 22	14 21.31	-23 56.4	0.554	1.549	166.7	8.6	20.0	
1999 05 02	14 05.51	-22 33.8	0.627	1.629	169.8	6.3	20.2	
1999 05 12	13 54.54	-21 13.4	0.721	1.708	161.1	11.1	20.8	
1999 05 22	13 48.56	-20 08.0	0.833	1.786	150.8	16.1	21.4	
1999 06 01	13 47.06	-19 22.8	0.961	1.862	141.0	20.0	22.0	

C/1998 W3 (LINEAR)

		Elements <i>MPC</i> 33189							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03		08 40.30	+31 23.9	4.299	4.935	125.3	9.4	16.1	
1998 12 13		08 30.57	+33 33.1	4.176	4.944	137.1	7.8	16.0	
1998 12 23		08 18.39	+35 44.9	4.088	4.953	148.5	6.0	16.0	
1999 01 02		08 03.98	+37 52.4	4.039	4.964	158.0	4.3	16.0	
1999 01 12		07 47.89	+39 48.4	4.033	4.976	161.6	3.6	16.0	
1999 01 22		07 30.92	+41 26.7	4.072	4.990	156.4	4.5	16.0	
1999 02 01		07 14.11	+42 44.2	4.153	5.004	146.5	6.2	16.1	
1999 02 11		06 58.42	+43 40.7	4.270	5.019	135.2	8.0	16.2	
1999 02 21		06 44.62	+44 18.9	4.419	5.036	123.8	9.4	16.2	
1999 03 03		06 33.22	+44 43.2	4.590	5.054	112.6	10.4	16.3	
1999 03 13		06 24.36	+44 57.9	4.776	5.073	101.8	11.1	16.4	
1999 03 23		06 18.01	+45 07.1	4.970	5.093	91.4	11.3	16.6	
1999 04 02		06 13.97	+45 13.9	5.165	5.114	81.5	11.1	16.7	
1999 04 12		06 11.97	+45 20.5	5.355	5.136	72.1	10.7	16.8	
1999 04 22		06 11.72	+45 28.4	5.535	5.159	63.1	10.0	16.8	
1999 05 02		06 12.95	+45 38.8	5.701	5.183	54.6	9.1	16.9	
1999 05 12		06 15.40	+45 52.1	5.849	5.208	46.7	8.1	17.0	
1999 05 22		06 18.84	+46 08.9	5.977	5.234	39.4	7.0	17.1	
1999 06 01		06 23.05	+46 29.5	6.082	5.261	33.0	6.0	17.1	

1998 WT₇

		Elements <i>MPC</i> 33381							
		$a, e, i = 1.17, 0.12, 41$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		08 47.91	-30 53.6	0.239	1.053	99.7	67.4	18.2	
1998 12 13		08 29.20	-54 19.8	0.301	1.042	92.5	70.7	18.8	
1998 12 23		07 57.83	-67 43.3	0.388	1.035	86.4	71.6	19.3	
1999 01 02		07 09.1	-75 09.4	0.477	1.030	81.8	70.9	19.7	
1999 01 12		06 00.2	-79 06.1	0.560	1.029	78.3	69.4	20.0	
1999 01 22		04 40.0	-80 43.4	0.630	1.031	75.8	67.8	20.2	
1999 02 01		03 28.7	-80 53.5	0.685	1.036	74.2	66.3	20.4	
1999 02 11		02 36.7	-80 21.4	0.722	1.044	73.5	65.0	20.5	
1999 02 21		02 02.2	-79 36.1	0.739	1.055	73.6	64.1	20.5	
1999 03 03		01 39.9	-78 55.3	0.737	1.068	74.7	63.6	20.5	
1999 03 13		01 25.3	-78 28.9	0.715	1.083	76.7	63.3	20.5	
1999 03 23		01 15.7	-78 27.5	0.676	1.100	79.7	63.1	20.4	
1999 04 02		01 08.2	-79 04.8	0.620	1.118	83.8	62.7	20.2	
1999 04 12		00 59.0	-80 41.1	0.550	1.136	89.2	61.9	20.0	
1999 04 22		00 34.0	-83 52.7	0.470	1.155	96.2	59.9	19.6	
1999 05 02		19 04	-88 00.6	0.386	1.174	105.9	55.6	19.1	
1999 05 12		14 32.2	-77 57.9	0.306	1.192	119.8	47.3	18.4	
1999 05 22		14 13.94	-57 53.0	0.249	1.210	138.2	33.9	17.6	
1999 06 01		14 13.65	-30 34.3	0.243	1.226	147.5	26.3	17.4	
1999 06 11		14 18.66	-07 34.3	0.295	1.241	135.0	35.4	18.1	
1999 06 21		14 26.44	+06 14.2	0.382	1.255	120.8	44.1	18.9	
1999 07 01		14 36.09	+13 52.1	0.484	1.268	110.2	48.8	19.6	
1999 07 11		14 47.14	+18 08.0	0.589	1.278	102.2	51.0	20.1	
1999 07 21		14 59.46	+20 31.2	0.692	1.287	95.9	51.8	20.5	
1999 07 31		15 12.98	+21 48.8	0.790	1.294	90.7	51.7	20.8	
1999 08 10		15 27.64	+22 25.9	0.880	1.299	86.3	51.2	21.0	

1998 WU₂₄

		Elements <i>MPC</i> 33383							
		$a, e, i = 15.56, 0.91, 43$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 12 03		09 42.93	+25 40.9	1.436	2.009	110.8	27.3	18.6	
1998 12 13		09 46.71	+30 11.4	1.417	2.099	120.8	23.8	18.6	
1998 12 23		09 46.36	+34 55.8	1.417	2.190	130.8	19.9	18.6	
1999 01 02		09 41.63	+39 37.0	1.441	2.283	139.9	16.1	18.6	
1999 01 12		09 32.77	+43 54.2	1.492	2.376	146.7	13.1	18.6	
1999 01 22		09 20.64	+47 28.2	1.573	2.471	149.3	11.7	18.8	
1999 02 01		09 06.95	+50 07.4	1.682	2.566	147.1	12.0	19.0	
1999 02 11		08 53.74	+51 50.4	1.817	2.661	141.4	13.4	19.3	
1999 02 21		08 42.81	+52 43.9	1.975	2.756	134.1	14.9	19.6	
1999 03 03		08 35.32	+52 58.7	2.151	2.851	126.2	16.3	19.9	
1999 03 13		08 31.62	+52 45.8	2.342	2.946	118.3	17.3	20.2	
1999 03 23		08 31.50	+52 14.1	2.545	3.041	110.5	17.9	20.5	
1999 04 02		08 34.52	+51 30.0	2.755	3.135	103.0	18.1	20.7	
1999 04 12		08 40.07	+50 38.0	2.970	3.229	95.8	18.0	20.9	
1999 04 22		08 47.63	+49 40.7	3.187	3.322	88.9	17.6	21.1	
1999 05 02		08 56.75	+48 40.0	3.403	3.415	82.2	17.0	21.3	
1999 05 12		09 07.00	+47 37.1	3.617	3.507	75.7	16.2	21.5	
1999 05 22		09 18.11	+46 32.9	3.827	3.599	69.5	15.3	21.6	
1999 06 01		09 29.81	+45 28.0	4.029	3.690	63.5	14.2	21.8	

1994 WR₁₂

		Elements <i>MPC</i> 24576							
		$a, e, i = 0.75, 0.41, 7$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation		V	
1998 12 03		10 44.62	+18 47.7	0.311	1.059	-3.18	+26.4	22.0	
1998 12 08		10 59.61	+19 52.6	0.285	1.059	-3.78	+38.0	21.8	
1998 12 13		11 16.60	+21 11.9	0.259	1.056	-4.42	+52.9	21.5	
1998 12 18		11 36.38	+22 48.5	0.233	1.050	-5.08	+72.3	21.3	
1998 12 23		12 00.13	+24 44.6	0.208	1.042	-5.65	+98.0	21.1	
1998 12 28		12 29.67	+26 59.9	0.184	1.030	-5.92	+131.9	20.9	
1999 01 02		13 07.60	+29 26.0	0.163	1.017	-5.39	+175.5	20.7	
1999 01 07		13 56.96	+31 38.2	0.145	1.000	-3.20	+226.4	20.6	
1999 01 12		14 59.24	+32 44.5	0.133	0.981	+1.53	+272.2	20.6	
1999 01 17		16 10.45	+31 37.7	0.128	0.959	+8.03	+291.2	21.0	
1999 01 22		17 20.07	+27 54.4	0.131	0.934	+13.30	+273.9	21.5	

1992 BL₂

		Elements <i>MPC</i> 32744							
		$a, e, i = 1.70, 0.24, 38$							
Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation		V	
1998 12 03		10 45.16	-09 19.5	1.956	2.104	-0.66	+13.4	19.3	
1998 12 08		10 47.94	-11 12.0	1.895	2.104	-0.69	+13.7	19.2	
1998 12 13		10 50.13	-13 06.9	1.833	2.104	-0.74	+14.0	19.2	
1998 12 18		10 51.67	-15 04.3	1.773	2.104	-0.79	+14.3	19.1	
1998 12 23		10 52.49	-17 03.8	1.714	2.103	-0.84	+14.6	19.0	
1998 12 28		10 52.51	-19 05.0	1.657	2.102	-0.90	+14.9	18.9	
1999 01 02		10 51.64	-21 07.5	1.602	2.100	-0.96	+15.3	18.8	
1999 01 07		10 49.81	-23 10.4	1.550	2.098	-1.03	+15.7	18.7	
1999 01 12		10 46.92	-25 12.6	1.501	2.096	-1.10	+16.2	18.7	
1999 01 17		10 42.89	-27 12.8	1.455	2.093	-1.18	+16.7	18.6	
1999 01 22		10 37.65	-29 09.2	1.414	2.090	-1.25	+17.3	18.5	
1999 01 27		10 31.19	-30 59.8	1.378	2.086	-1.32	+18.0	18.4	
1999 02 01		10 23.51	-32 42.3	1.346	2.082	-1.38	+18.8	18.3	
1999 02 06		10 14.70	-34 14.3	1.319	2.078	-1.43	+19.7	18.3	
1999 02 11		10 04.89	-35 33.6	1.298	2.073	-1.46	+20.6	18.2	
1999 02 16		09 54.30	-36 38.1	1.283	2.068	-1.47	+21.5	18.2	

1999 02 21	09 43.25	-37 26.2	1.273	2.063	-1.46	+22.5	18.1
1999 02 26	09 32.10	-37 57.5	1.268	2.057	-1.42	+23.4	18.1
1999 03 03	09 21.20	-38 12.3	1.269	2.050	-1.36	+24.2	18.1
1999 03 08	09 10.92	-38 11.6	1.274	2.044	-1.28	+24.8	18.2
1999 03 13	09 01.54	-37 57.0	1.284	2.037	-1.19	+25.2	18.2
1999 03 18	08 53.31	-37 30.9	1.298	2.029	-1.09	+25.5	18.2
1999 03 23	08 46.39	-36 55.7	1.315	2.021	-0.99	+25.5	18.3
1999 03 28	08 40.85	-36 14.0	1.336	2.013	-0.90	+25.4	18.3
1999 04 02	08 36.71	-35 28.3	1.359	2.005	-0.82	+25.1	18.4
1999 04 07	08 33.93	-34 40.4	1.384	1.996	-0.74	+24.7	18.4
1999 04 12	08 32.45	-33 52.0	1.411	1.987	-0.67	+24.1	18.5
1999 04 17	08 32.20	-33 04.7	1.438	1.977	-0.62	+23.6	18.5
1999 04 22	08 33.10	-32 19.5	1.467	1.967	-0.57	+22.9	18.6
1999 04 27	08 35.06	-31 37.4	1.496	1.957	-0.54	+22.2	18.6
1999 05 02	08 37.98	-30 59.0	1.525	1.946	-0.51	+21.6	18.7
1999 05 07	08 41.79	-30 24.7	1.553	1.935	-0.49	+20.9	18.7
1999 05 12	08 46.42	-29 54.8	1.582	1.924	-0.48	+20.2	18.8
1999 05 17	08 51.81	-29 29.4	1.609	1.912	-0.48	+19.5	18.8
1999 05 22	08 57.90	-29 08.9	1.636	1.900	-0.48	+18.8	18.8

1998 UT ₁₈		$a, e, i = 1.41, 0.33, 14$				Elements <i>MPC</i> 33372		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		10 48.99	+45 35.0	0.065	1.003	103.4	73.0	16.1
1998 12 13		13 56.81	+42 58.7	0.104	0.974	80.9	93.1	17.8
1998 12 23		15 00.46	+36 49.5	0.154	0.953	74.2	96.9	18.8
1999 01 02		15 30.53	+32 25.0	0.205	0.943	72.8	95.2	19.3
1999 01 12		15 50.25	+28 54.0	0.252	0.944	73.6	91.5	19.6
1999 01 22		16 05.75	+25 54.0	0.294	0.956	75.8	86.9	19.8
1999 02 01		16 18.76	+23 16.2	0.327	0.977	79.0	81.8	19.9
1999 02 11		16 29.70	+20 58.0	0.352	1.008	83.2	76.5	19.9
1999 02 21		16 37.97	+18 58.6	0.368	1.045	88.3	71.1	19.9
1999 03 03		16 42.65	+17 13.3	0.375	1.088	94.7	65.2	19.9
1999 03 13		16 42.65	+15 36.0	0.374	1.134	102.4	58.8	19.8
1999 03 23		16 36.50	+13 56.4	0.368	1.183	111.7	51.5	19.6
1999 04 02		16 23.10	+11 58.7	0.362	1.234	122.9	42.8	19.4
1999 04 12		16 02.32	+09 27.6	0.359	1.284	135.8	32.9	19.2
1999 04 22		15 35.92	+06 14.2	0.367	1.335	149.4	22.5	19.0
1999 05 02		15 08.11	+02 27.4	0.392	1.384	160.6	14.0	19.0
1999 05 12		14 43.55	-01 27.7	0.437	1.432	161.9	12.7	19.2
1999 05 22		14 25.29	-05 08.2	0.500	1.477	153.8	17.6	19.8
1999 06 01		14 14.20	-08 24.1	0.580	1.521	143.8	23.2	20.3
1999 06 11		14 09.54	-11 15.3	0.674	1.563	134.3	27.7	20.8
1999 06 21		14 10.21	-13 46.6	0.779	1.602	125.8	31.0	21.3
1999 07 01		14 15.10	-16 02.6	0.893	1.639	118.1	33.2	21.7

1998 XB		$a, e, i = 1.00, 0.33, 17$				Elements <i>MPC</i> 33383		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		10 54.36	+19 35.4	0.810	1.310	93.2	48.7	15.8
1998 12 13		11 23.86	+20 45.8	0.722	1.291	97.1	49.2	15.5
1998 12 23		11 55.91	+22 26.1	0.639	1.267	100.5	49.8	15.2
1999 01 02		12 31.63	+24 40.3	0.562	1.237	103.0	50.8	14.9
1999 01 12		13 12.63	+27 27.5	0.493	1.202	104.0	52.6	14.6
1999 01 22		14 00.74	+30 36.1	0.435	1.161	102.9	55.7	14.3
1999 02 01		14 57.78	+33 34.1	0.390	1.116	99.2	60.6	14.2

1999 02 11	16 04.20	+35 27.3	0.358	1.066	92.8	67.6	14.1
1999 02 21	17 17.02	+35 14.4	0.340	1.012	84.0	76.4	14.2
1999 03 03	18 30.09	+32 16.6	0.337	0.954	73.9	86.3	14.4
1999 03 13	19 37.93	+26 46.5	0.348	0.895	63.6	96.1	14.7
1999 03 23	20 38.56	+19 41.9	0.376	0.836	54.4	104.2	15.1

1998 WT ₂₄		$a, e, i = 0.72, 0.42, 7$				Elements <i>MPC</i> 33383		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		11 15.14	+06 41.3	0.257	0.990	83.6	81.5	17.2
1998 12 13		12 25.35	+04 17.0	0.218	0.958	76.8	90.5	17.1
1998 12 23		13 58.61	+00 17.0	0.200	0.914	64.1	104.6	17.5
1999 01 02		15 38.83	-04 33.8	0.218	0.857	49.3	119.6	18.5
1999 01 12		17 01.86	-08 38.5	0.273	0.788	38.4	129.1	19.6
1999 01 22		18 03.35	-11 38.3	0.362	0.707	32.7	131.3	20.2

1992 BF		$a, e, i = 0.91, 0.27, 7$				Elements <i>MPC</i> 31275		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		11 29.12	+08 02.6	0.776	1.154	80.9	57.5	21.3
1998 12 08		11 41.95	+06 10.9	0.746	1.154	82.3	57.8	21.3
1998 12 13		11 54.94	+04 14.0	0.716	1.151	83.6	58.2	21.2
1998 12 18		12 08.16	+02 11.5	0.685	1.147	84.9	58.7	21.1
1998 12 23		12 21.70	+00 02.7	0.653	1.142	86.0	59.2	21.0
1998 12 28		12 35.67	-02 13.0	0.621	1.135	87.0	59.9	20.9
1999 01 02		12 50.25	-04 36.7	0.590	1.127	87.8	60.7	20.8
1999 01 07		13 05.61	-07 09.1	0.559	1.117	88.4	61.6	20.7
1999 01 12		13 21.97	-09 51.2	0.528	1.106	88.7	62.8	20.6
1999 01 17		13 39.61	-12 43.5	0.499	1.093	88.7	64.1	20.5
1999 01 22		13 58.87	-15 46.0	0.471	1.079	88.4	65.7	20.4
1999 01 27		14 20.16	-18 58.0	0.446	1.064	87.6	67.7	20.3
1999 02 01		14 44.03	-22 17.4	0.422	1.047	86.3	69.9	20.2
1999 02 06		15 11.04	-25 39.6	0.402	1.028	84.5	72.6	20.1
1999 02 11		15 41.75	-28 56.8	0.386	1.009	82.1	75.6	20.1
1999 02 16		16 16.56	-31 57.6	0.374	0.988	79.2	79.0	20.1
1999 02 21		16 55.44	-34 26.9	0.367	0.966	75.8	82.7	20.1
1999 02 26		17 37.71	-36 09.1	0.365	0.944	72.0	86.4	20.2
1999 03 03		18 21.85	-36 52.0	0.369	0.920	68.1	90.0	20.3
1999 03 08		19 05.83	-36 31.0	0.380	0.895	64.2	93.3	20.5
1999 03 13		19 47.66	-35 10.7	0.396	0.870	60.5	96.1	20.6

1998 KD ₆₆		$a, e, i = 43.08, 0.05, 5$				Elements <i>MPC</i> 33346		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		13 11.96	-07 49.8	41.509	40.896	51.1	1.1	25.2
1998 12 13		13 12.60	-07 53.5	41.364	40.896	61.0	1.2	25.2
1998 12 23		13 13.11	-07 56.5	41.205	40.896	71.1	1.3	25.2
1999 01 02		13 13.48	-07 58.5	41.036	40.896	81.2	1.4	25.2
1999 01 12		13 13.69	-07 59.6	40.862	40.896	91.3	1.4	25.2
1999 01 22		13 13.74	-07 59.7	40.689	40.896	101.5	1.4	25.2
1999 02 01		13 13.63	-07 58.9	40.522	40.896	111.7	1.3	25.2
1999 02 11		13 13.37	-07 57.1	40.367	40.896	121.9	1.2	25.2
1999 02 21		13 12.97	-07 54.5	40.227	40.896	132.1	1.0	25.1
1999 03 03		13 12.45	-07 51.2	40.108	40.896	142.3	0.8	25.1
1999 03 13		13 11.83	-07 47.2	40.013	40.896	152.5	0.6	25.1
1999 03 23		13 11.14	-07 42.8	39.944	40.896	162.6	0.4	25.1
1999 04 02		13 10.39	-07 38.0	39.905	40.896	172.7	0.2	25.0

1999 04 12	13 09.62	-07 33.1	39.895	40.896	177.3	0.1	25.0
1999 04 22	13 08.87	-07 28.3	39.916	40.897	167.3	0.3	25.0
1999 05 02	13 08.14	-07 23.6	39.965	40.897	157.3	0.5	25.1
1999 05 12	13 07.48	-07 19.3	40.041	40.897	147.5	0.8	25.1
1999 05 22	13 06.91	-07 15.5	40.142	40.897	137.7	1.0	25.1
1999 06 01	13 06.44	-07 12.4	40.265	40.897	128.0	1.1	25.1
1999 06 11	13 06.10	-07 10.1	40.406	40.897	118.3	1.3	25.2
1999 06 21	13 05.89	-07 08.5	40.560	40.897	108.7	1.3	25.2
1999 07 01	13 05.82	-07 07.9	40.723	40.897	99.1	1.4	25.2
1999 07 11	13 05.91	-07 08.1	40.891	40.897	89.6	1.4	25.2
1999 07 21	13 06.14	-07 09.3	41.059	40.897	80.1	1.4	25.2
1999 07 31	13 06.51	-07 11.3	41.221	40.897	70.7	1.3	25.2
1999 08 10	13 07.02	-07 14.2	41.375	40.897	61.2	1.2	25.2
1999 08 20	13 07.66	-07 17.9	41.515	40.897	51.8	1.1	25.2
1999 08 30	13 08.41	-07 22.2	41.637	40.897	42.4	1.0	25.2
1999 09 09	13 09.25	-07 27.2	41.739	40.897	32.9	0.8	25.2

1998 KG₆₆ $a, e, i = 45.20, 0.00, 4$ Elements *MPC* 33346

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	13 12.55	-07 44.9	45.815	45.201	51.0	1.0	25.6	
1998 12 13	13 13.12	-07 48.3	45.671	45.201	61.0	1.1	25.6	
1998 12 23	13 13.58	-07 50.9	45.511	45.201	71.0	1.2	25.6	
1999 01 02	13 13.90	-07 52.7	45.342	45.201	81.1	1.2	25.6	
1999 01 12	13 14.08	-07 53.7	45.169	45.201	91.3	1.2	25.6	
1999 01 22	13 14.11	-07 53.8	44.995	45.201	101.4	1.2	25.6	
1999 02 01	13 14.00	-07 53.0	44.828	45.201	111.6	1.2	25.6	
1999 02 11	13 13.76	-07 51.5	44.673	45.201	121.8	1.1	25.6	
1999 02 21	13 13.39	-07 49.1	44.533	45.201	132.0	0.9	25.6	
1999 03 03	13 12.91	-07 46.1	44.413	45.201	142.2	0.8	25.5	
1999 03 13	13 12.34	-07 42.5	44.318	45.201	152.4	0.6	25.5	
1999 03 23	13 11.70	-07 38.5	44.249	45.201	162.5	0.4	25.5	
1999 04 02	13 11.02	-07 34.2	44.210	45.201	172.6	0.2	25.5	
1999 04 12	13 10.32	-07 29.8	44.200	45.201	177.4	0.1	25.4	
1999 04 22	13 09.62	-07 25.4	44.219	45.201	167.4	0.3	25.5	
1999 05 02	13 08.96	-07 21.2	44.268	45.201	157.5	0.5	25.5	
1999 05 12	13 08.35	-07 17.4	44.344	45.201	147.7	0.7	25.5	
1999 05 22	13 07.82	-07 14.0	44.445	45.201	137.9	0.9	25.6	
1999 06 01	13 07.38	-07 11.2	44.567	45.201	128.2	1.0	25.6	
1999 06 11	13 07.06	-07 09.0	44.707	45.201	118.5	1.1	25.6	
1999 06 21	13 06.85	-07 07.7	44.861	45.201	108.9	1.2	25.6	
1999 07 01	13 06.78	-07 07.1	45.025	45.201	99.3	1.3	25.6	
1999 07 11	13 06.84	-07 07.3	45.192	45.201	89.8	1.3	25.6	
1999 07 21	13 07.03	-07 08.4	45.360	45.201	80.3	1.3	25.6	
1999 07 31	13 07.36	-07 10.2	45.523	45.201	70.9	1.2	25.6	
1999 08 10	13 07.81	-07 12.9	45.677	45.201	61.4	1.1	25.6	
1999 08 20	13 08.37	-07 16.2	45.817	45.201	52.0	1.0	25.6	
1999 08 30	13 09.04	-07 20.1	45.940	45.201	42.5	0.9	25.6	
1999 09 09	13 09.79	-07 24.6	46.042	45.201	33.0	0.7	25.6	

1998 KE₆₆ $a, e, i = 42.06, 0.00, 3$ Elements *MPC* 33346

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	13 12.74	-07 40.3	42.677	42.063	50.9	1.0	25.4	
1998 12 13	13 13.36	-07 44.1	42.532	42.063	60.9	1.2	25.4	
1998 12 23	13 13.85	-07 47.2	42.373	42.063	71.0	1.3	25.4	

1999 01 02	13 14.19	-07 49.4	42.204	42.063	81.1	1.3	25.4
1999 01 12	13 14.38	-07 50.7	42.031	42.063	91.2	1.3	25.4
1999 01 22	13 14.42	-07 51.0	41.857	42.063	101.4	1.3	25.4
1999 02 01	13 14.31	-07 50.4	41.690	42.063	111.6	1.2	25.4
1999 02 11	13 14.04	-07 48.9	41.535	42.063	121.8	1.1	25.4
1999 02 21	13 13.65	-07 46.7	41.395	42.063	132.0	1.0	25.4
1999 03 03	13 13.13	-07 43.6	41.275	42.063	142.2	0.8	25.3
1999 03 13	13 12.52	-07 40.0	41.180	42.063	152.3	0.6	25.3
1999 03 23	13 11.83	-07 36.0	41.111	42.063	162.5	0.4	25.3
1999 04 02	13 11.09	-07 31.6	41.072	42.063	172.6	0.2	25.2
1999 04 12	13 10.34	-07 27.1	41.062	42.063	177.4	0.1	25.2
1999 04 22	13 09.58	-07 22.7	41.081	42.063	167.4	0.3	25.3
1999 05 02	13 08.87	-07 18.4	41.130	42.063	157.5	0.5	25.3
1999 05 12	13 08.21	-07 14.5	41.206	42.063	147.6	0.7	25.3
1999 05 22	13 07.64	-07 11.1	41.307	42.063	137.8	0.9	25.3
1999 06 01	13 07.17	-07 08.4	41.430	42.063	128.1	1.1	25.4
1999 06 11	13 06.82	-07 06.3	41.570	42.063	118.4	1.2	25.4
1999 06 21	13 06.60	-07 05.1	41.724	42.063	108.8	1.3	25.4
1999 07 01	13 06.52	-07 04.7	41.887	42.063	99.3	1.4	25.4
1999 07 11	13 06.59	-07 05.3	42.055	42.063	89.8	1.4	25.4
1999 07 21	13 06.80	-07 06.6	42.223	42.063	80.3	1.4	25.4
1999 07 31	13 07.15	-07 08.9	42.385	42.063	70.8	1.3	25.4
1999 08 10	13 07.63	-07 12.0	42.539	42.063	61.4	1.2	25.4
1999 08 20	13 08.23	-07 15.8	42.679	42.063	51.9	1.1	25.4
1999 08 30	13 08.95	-07 20.3	42.802	42.063	42.5	0.9	25.4
1999 09 09	13 09.76	-07 25.3	42.904	42.063	33.0	0.7	25.4

1998 KF₆₆ $a, e, i = 39.51, 0.21, 6$ Elements *MPC* 33346

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03	13 17.44	-08 34.8	31.770	31.139	49.5	1.4	25.0	
1998 12 13	13 18.34	-08 40.7	31.628	31.139	59.4	1.6	25.0	
1998 12 23	13 19.06	-08 45.6	31.472	31.139	69.4	1.7	25.0	
1999 01 02	13 19.60	-08 49.4	31.305	31.140	79.5	1.8	25.0	
1999 01 12	13 19.94	-08 52.0	31.132	31.140	89.6	1.8	25.0	
1999 01 22	13 20.06	-08 53.3	30.959	31.140	99.7	1.8	24.9	
1999 02 01	13 19.98	-08 53.4	30.791	31.140	109.9	1.7	24.9	
1999 02 11	13 19.70	-08 52.3	30.634	31.140	120.1	1.6	24.9	
1999 02 21	13 19.23	-08 50.1	30.492	31.140	130.3	1.4	24.9	
1999 03 03	13 18.59	-08 46.8	30.369	31.141	140.5	1.2	24.8	
1999 03 13	13 17.82	-08 42.7	30.270	31.141	150.7	0.9	24.8	
1999 03 23	13 16.93	-08 37.9	30.198	31.141	160.9	0.6	24.8	
1999 04 02	13 15.98	-08 32.7	30.154	31.141	171.1	0.3	24.7	
1999 04 12	13 14.99	-08 27.2	30.139	31.141	178.7	0.0	24.7	
1999 04 22	13 14.00	-08 21.7	30.155	31.142	168.8	0.4	24.7	
1999 05 02	13 13.06	-08 16.4	30.200	31.142	158.8	0.7	24.8	
1999 05 12	13 12.20	-08 11.5	30.273	31.142	148.9	1.0	24.8	
1999 05 22	13 11.45	-08 07.3	30.371	31.142	139.1	1.2	24.9	
1999 06 01	13 10.84	-08 03.9	30.491	31.143	129.3	1.4	24.9	
1999 06 11	13 10.39	-08 01.5	30.629	31.143	119.6	1.6	24.9	
1999 06 21	13 10.12	-08 00.1	30.781	31.143	110.0	1.8	24.9	
1999 07 01	13 10.04	-07 59.9	30.943	31.143	100.4	1.8	24.9	
1999 07 11	13 10.15	-08 00.8	31.111	31.144	90.9	1.9	25.0	
1999 07 21	13 10.45	-08 02.9	31.278	31.144	81.5	1.8	25.0	

1999 07 31	13 10.95	-08 06.2	31.442	31.144	72.1	1.8	25.0
1999 08 10	13 11.62	-08 10.6	31.597	31.144	62.7	1.7	25.0
1999 08 20	13 12.47	-08 15.9	31.739	31.145	53.3	1.5	25.0
1999 08 30	13 13.45	-08 22.2	31.865	31.145	43.9	1.3	25.0
1999 09 09	13 14.57	-08 29.3	31.970	31.145	34.5	1.1	24.9

1994 EV ₃		$a, e, i = 42.65, 0.05, 2$				Elements <i>MPC</i> 32307		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 03		13 32.12	−09 45.8	45.359	44.676	45.7	0.9	23.7
1998 12 13		13 32.76	−09 49.6	45.224	44.676	55.7	1.0	23.7
1998 12 23		13 33.28	−09 52.8	45.072	44.677	65.7	1.2	23.7
1999 01 02		13 33.68	−09 55.1	44.907	44.677	75.8	1.2	23.7
1999 01 12		13 33.93	−09 56.7	44.736	44.677	85.9	1.3	23.7
1999 01 22		13 34.04	−09 57.4	44.562	44.677	96.1	1.3	23.7
1999 02 01		13 34.00	−09 57.3	44.391	44.677	106.3	1.2	23.7
1999 02 11		13 33.82	−09 56.3	44.229	44.677	116.5	1.1	23.6
1999 02 21		13 33.50	−09 54.6	44.080	44.677	126.6	1.0	23.6
1999 03 03		13 33.06	−09 52.1	43.950	44.678	136.8	0.9	23.6
1999 03 13		13 32.52	−09 49.1	43.841	44.678	147.0	0.7	23.6
1999 03 23		13 31.89	−09 45.5	43.758	44.678	157.1	0.5	23.6
1999 04 02		13 31.21	−09 41.6	43.703	44.678	167.2	0.3	23.5
1999 04 12		13 30.49	−09 37.5	43.677	44.678	177.2	0.1	23.5
1999 04 22		13 29.77	−09 33.3	43.681	44.678	172.8	0.2	23.5
1999 05 02		13 29.06	−09 29.2	43.714	44.678	162.9	0.4	23.5
1999 05 12		13 28.40	−09 25.4	43.776	44.679	153.1	0.6	23.6
1999 05 22		13 27.81	−09 22.0	43.863	44.679	143.3	0.8	23.6
1999 06 01		13 27.30	−09 19.0	43.974	44.679	133.5	0.9	23.6
1999 06 11		13 26.90	−09 16.7	44.105	44.679	123.9	1.1	23.6
1999 06 21		13 26.62	−09 15.1	44.252	44.679	114.2	1.2	23.7
1999 07 01		13 26.46	−09 14.2	44.411	44.679	104.7	1.3	23.7
1999 07 11		13 26.44	−09 14.1	44.577	44.679	95.1	1.3	23.7
1999 07 21		13 26.56	−09 14.8	44.746	44.680	85.6	1.3	23.7
1999 07 31		13 26.82	−09 16.3	44.912	44.680	76.1	1.3	23.7
1999 08 10		13 27.20	−09 18.6	45.072	44.680	66.7	1.2	23.7
1999 08 20		13 27.71	−09 21.6	45.220	44.680	57.2	1.1	23.7
1999 08 30		13 28.33	−09 25.3	45.353	44.680	47.7	1.0	23.7
1999 09 09		13 29.05	−09 29.6	45.468	44.680	38.2	0.8	23.7

C/1998 H1 (Stonehouse)					Elements <i>MPC</i> 32168				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03		16 23.66	+63 54.7	3.227	3.307	86.0	17.3	17.7	
1998 12 13		16 59.37	+65 55.5	3.276	3.406	89.1	16.8	17.9	
1998 12 23		17 39.15	+67 48.8	3.341	3.505	91.4	16.3	18.1	
1999 01 02		18 22.89	+69 28.1	3.423	3.603	92.6	15.8	18.2	
1999 01 12		19 09.9	+70 48.0	3.523	3.701	92.6	15.4	18.4	
1999 01 22		19 59.0	+71 45.6	3.641	3.798	91.6	15.0	18.6	
1999 02 01		20 48.3	+72 20.9	3.775	3.895	89.6	14.7	18.8	
1999 02 11		21 35.9	+72 36.8	3.922	3.992	86.8	14.3	19.0	
1999 02 21		22 20.7	+72 38.2	4.081	4.088	83.4	13.9	19.2	
1999 03 03		23 01.8	+72 30.4	4.247	4.183	79.6	13.5	19.4	
1999 03 13		23 39.3	+72 18.0	4.418	4.278	75.5	13.0	19.5	
1999 03 23		00 13.3	+72 04.6	4.589	4.373	71.3	12.5	19.7	
1999 04 02		00 44.3	+71 52.9	4.758	4.467	67.2	11.9	19.9	

131P/Mueller 2		Elements <i>MPC</i> 30244							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 23		09 25.36	+05 21.8	2.633	3.334	128.4	13.4	18.3	22.5
1999 01 02		09 21.64	+05 19.1	2.562	3.367	139.1	11.0	18.3	22.4
1999 01 12		09 16.20	+05 29.1	2.512	3.400	150.1	8.3	18.3	22.2
1999 01 22		09 09.45	+05 51.2	2.488	3.432	160.8	5.4	18.3	22.1
1999 02 01		09 02.03	+06 23.0	2.492	3.465	169.0	3.1	18.4	22.0
1999 02 11		08 54.66	+07 01.7	2.527	3.497	167.4	3.5	18.4	22.1
1999 02 21		08 48.00	+07 43.5	2.592	3.529	158.2	6.0	18.5	22.3
1999 03 03		08 42.66	+08 24.9	2.684	3.561	147.6	8.6	18.7	22.5

134P/Kowal-Vávrová		Elements <i>MPC</i> 31205							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1999 01 02		16 19.92	-19 38.5	3.348	2.601	34.7	12.4	18.3	21.4
1999 01 12		16 39.33	-20 09.3	3.285	2.613	40.3	14.1	18.3	21.5
1999 01 22		16 58.27	-20 29.8	3.215	2.628	46.0	15.6	18.2	21.5
1999 02 01		17 16.55	-20 40.5	3.138	2.646	51.9	17.0	18.2	21.5
1999 02 11		17 34.01	-20 41.9	3.055	2.666	57.9	18.3	18.2	21.5
1999 02 21		17 50.46	-20 34.9	2.966	2.688	64.2	19.3	18.2	21.5
1999 03 03		18 05.69	-20 20.6	2.873	2.712	70.7	20.2	18.1	21.5
1999 03 13		18 19.55	-20 00.3	2.777	2.738	77.4	20.7	18.1	21.4
1999 03 23		18 31.81	-19 35.5	2.678	2.766	84.4	21.0	18.1	21.4
1999 04 02		18 42.29	-19 07.9	2.580	2.796	91.8	20.9	18.0	21.3
1999 04 12		18 50.80	-18 39.1	2.482	2.827	99.6	20.5	18.0	21.2
1999 04 22		18 57.14	-18 10.8	2.389	2.861	107.8	19.5	18.0	21.2
1999 05 02		19 01.18	-17 44.7	2.303	2.896	116.5	18.1	17.9	21.1
1999 05 12		19 02.85	-17 22.2	2.226	2.932	125.6	16.3	17.9	21.0
1999 05 22		19 02.15	-17 04.4	2.164	2.970	135.3	13.9	17.9	20.8
1999 06 01		18 59.26	-16 52.0	2.118	3.009	145.4	11.0	17.9	20.7
1999 06 11		18 54.55	-16 45.4	2.094	3.049	155.8	7.8	17.9	20.6
1999 06 21		18 48.56	-16 44.2	2.094	3.090	166.1	4.5	18.0	20.4
1999 07 01		18 42.01	-16 47.9	2.120	3.132	173.6	2.1	18.1	20.4
1999 07 11		18 35.64	-16 55.5	2.173	3.175	168.5	3.7	18.2	20.5
1999 07 21		18 30.14	-17 06.2	2.252	3.219	158.5	6.6	18.3	20.8
1999 07 31		18 26.08	-17 18.8	2.356	3.264	148.4	9.4	18.5	21.1
1999 08 10		18 23.77	-17 32.7	2.482	3.310	138.4	11.7	18.7	21.3
1999 08 20		18 23.40	-17 46.8	2.627	3.356	128.8	13.6	18.9	21.5
1999 08 30		18 24.96	-18 00.4	2.788	3.402	119.6	15.0	19.0	21.7
1999 09 09		18 28.33	-18 12.6	2.961	3.449	110.8	15.8	19.2	21.9
1999 09 19		18 33.37	-18 22.6	3.143	3.497	102.3	16.3	19.4	22.1
1999 09 29		18 39.89	-18 29.7	3.331	3.545	94.0	16.4	19.6	22.2
1999 10 09		18 47.67	-18 33.3	3.521	3.593	86.1	16.1	19.8	22.4
1999 10 19		18 56.53	-18 32.9	3.711	3.642	78.3	15.5	20.0	22.5

C/1998 M4 (LINEAR)		Elements <i>MPC</i> 32410							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1999 01 22		17 54.37	-27 41.9	5.603	4.808	33.0	6.4	20.1	
1999 02 01		17 57.02	-28 09.3	5.564	4.883	42.6	7.8	20.1	
1999 02 11		17 58.77	-28 38.1	5.501	4.959	52.3	9.1	20.2	
1999 02 21		17 59.44	-29 08.7	5.419	5.034	62.2	10.0	20.2	
1999 03 03		17 58.82	-29 41.2	5.322	5.109	72.3	10.7	20.2	
1999 03 13		17 56.73	-30 15.4	5.216	5.185	82.7	11.0	20.2	
1999 03 23		17 52.98	-30 51.1	5.106	5.260	93.4	10.9	20.3	
1999 04 02		17 47.44	-31 27.3	4.999	5.336	104.4	10.5	20.3	

1999 04 12	17 40.03	-32 02.5	4.902	5.411	115.6	9.6	20.3
1999 04 22	17 30.77	-32 34.9	4.821	5.486	127.1	8.4	20.3
1999 05 02	17 19.83	-33 02.2	4.765	5.562	138.7	6.9	20.3
1999 05 12	17 07.53	-33 22.3	4.738	5.637	150.2	5.1	20.4
1999 05 22	16 54.35	-33 33.3	4.745	5.712	161.0	3.3	20.4
1999 06 01	16 40.88	-33 34.5	4.791	5.787	168.3	2.0	20.5
1999 06 11	16 27.74	-33 26.3	4.874	5.862	165.3	2.5	20.6
1999 06 21	16 15.48	-33 10.4	4.996	5.937	155.8	4.0	20.7
1999 07 01	16 04.57	-32 49.1	5.151	6.012	145.0	5.6	20.8
1999 07 11	15 55.26	-32 25.2	5.336	6.086	134.0	6.9	21.0

OPPOSITION DATA

Planet	Opposition	α_{2000}	δ_{2000}	V	$\dot{\alpha}$	$\dot{\delta}$	ϕ_{MIN}	MPC
1995 DQ ₂	1998 11 08.0	02 51.80	+64 54.7	19.2	-2.61	+10.1	18.9/11.4	30292
4196 T-3	1998 11 08.0	02 51.93	+08 02.8	17.7	-0.90	- 4.5	3.4/06.0	33329
1998 TY ₁₇	1998 11 08.0	02 52.08	+10 53.4	17.6	-0.92	- 4.7	1.9/06.7	33304
6075 P-L (7459)	1998 11 08.1	02 52.18	+08 37.3	17.6	-0.82	- 9.3	4.0/05.8	33325
1993 GN	1998 11 08.1	02 52.28	+18 29.6	16.6	-1.00	- 2.7	0.7/08.6	29079
1998 UC ₄	1998 11 08.1	02 52.45	+16 20.3	17.7	-1.11	- 2.2	0.1/08.1	33234
1996 AW ₄	1998 11 08.1	02 52.59	+11 17.3	17.2	-0.88	- 7.6	1.7/06.8	33370
1978 PA ₃	1998 11 08.2	02 52.53	+13 44.6	18.1	-1.04	- 3.6	1.0/07.6	33342
1978 RH ₉	1998 11 08.2	02 52.89	+12 46.2	17.0	-1.04	- 5.3	1.8/07.4	33332
1992 HD ₄	1998 11 08.3	02 53.08	+09 04.7	17.6	-1.06	- 4.9	3.2/06.6	33332
1981 EW ₁₃	1998 11 08.3	02 53.27	+14 08.7	18.0	-0.91	- 6.2	0.8/07.8	33338
1992 HS ₄	1998 11 08.3	02 53.36	+18 45.3	18.2	-1.01	- 4.9	0.8/08.9	33332
1995 WO ₄₁	1998 11 08.4	02 53.72	+04 18.2	17.4	-0.89	- 2.1	3.9/05.9	33338
1998 US ₇	1998 11 08.5	02 53.88	+24 38.4	18.1	-1.01	- 5.3	2.8/10.5	33250
1996 EJ ₁ (9826)	1998 11 08.6	02 54.22	+11 05.2	17.8	-0.87	- 8.3	1.8/07.1	33309
1991 RK ₂₆ (9764)	1998 11 08.6	02 54.53	+17 51.9	17.1	-1.06	- 3.3	0.5/08.9	33252
(7743)	1998 11 08.7	02 54.63	+14 14.9	17.0	-0.81	- 6.4	0.8/08.1	33217
3222 T-2	1998 11 08.7	02 55.03	+22 49.8	17.5	-1.23	- 1.4	2.7/10.0	33337
1996 HT ₁₆ (9699)	1998 11 08.8	02 55.03	+30 46.1	16.6	-1.09	- 4.9	6.6/12.2	33202
2206 P-L (9744)	1998 11 08.8	02 55.08	-00 59.9	17.1	-0.95	- 5.2	6.2/04.6	30255
1993 FG ₈	1998 11 08.8	02 55.10	+18 28.0	18.0	-1.09	- 2.5	0.8/09.2	33327
1991 VR ₂ (9559)	1998 11 08.8	02 55.28	+14 45.8	17.8	-0.85	- 4.1	0.7/08.4	33343
1995 FV ₁₄	1998 11 08.9	02 55.42	+07 25.6	16.8	-0.89	- 7.4	3.3/06.5	32913
5211 T-2	1998 11 08.9	02 55.62	+11 43.2	17.5	-0.91	- 6.1	1.9/07.7	33383
1997 GK ₂₁	1998 11 08.9	02 55.70	-01 44.6	18.3	-0.90	- 2.2	5.3/05.0	33198
1987 BS ₁	1998 11 08.9	02 55.80	-04 54.2	16.5	-0.80	- 7.9	10.5/02.6	33338
1998 QA ₉₃ (9595)	1998 11 09.0	02 55.94	+17 38.6	16.8	-1.62	+ 8.3	0.4/09.1	33337
1996 KO ₁	1998 11 09.0	02 56.08	+18 05.3	17.1	-0.92	- 4.3	0.4/09.4	32878
1997 JH ₁₆	1998 11 09.0	02 56.11	+19 17.5	17.6	-0.87	- 1.6	0.7/09.6	33342
1984 WJ ₁ (9713)	1998 11 09.0	02 56.17	+17 23.4	15.5	-0.80	- 8.6	0.2/09.3	33384
	1998 11 09.0	02 56.21	+14 24.2	18.7	-1.06	- 5.4	0.9/08.5	33344
	1998 11 09.1	02 56.24	+36 56.7	16.7	-1.06	- 5.6	8.1/14.5	33333
	1998 11 09.1	02 56.43	+17 45.1	14.9	-1.08	- 1.4	0.5/09.3	33269
	1998 11 09.2	02 56.71	+26 09.8	15.4	-1.00	- 5.5	4.7/11.6	32888
	1998 11 09.2	02 56.79	+09 17.9	18.1	-0.96	- 5.1	2.6/07.5	27453
	1998 11 09.3	02 57.22	+13 03.4	17.9	-0.99	- 6.4	1.5/08.4	33344
	1998 11 09.3	02 57.33	+22 14.2	15.5	-1.24	+ 4.9	2.8/10.1	33333
	1998 11 09.3	02 57.34	+11 48.9	17.8	-0.53	- 2.4	0.9/08.1	33190

(9425)	1998 11 09.4	02 57.42	+36 31.0	15.5	-1.14	- 0.4	10.3/13.8	32636
1989 EZ ₂	1998 11 09.4	02 57.50	+24 53.5	17.9	-1.08	- 6.4	3.1/11.4	33334
1997 JR (9770)	1998 11 09.4	02 57.53	+10 28.8	16.2	-1.25	+ 5.1	3.1/08.7	33344
1992 DV ₉	1998 11 09.4	02 57.65	+10 12.7	18.2	-1.04	- 4.5	2.4/08.0	33204
1998 UC ₂₃ (9431)	1998 11 09.4	02 57.78	+14 33.1	19.0	-0.97	- 5.9	1.0/08.9	33338
1994 PH	1998 11 09.5	02 57.93	+25 54.5	16.2	-1.02	- 6.4	4.0/11.8	33313
4655 P-L	1998 11 09.5	02 58.12	+05 36.9	17.0	-0.52	- 4.7	2.2/06.5	32637
1981 EJ ₂₄	1998 11 09.6	02 58.25	+24 12.5	17.5	-1.15	- 3.3	3.2/11.2	33241
1993 FJ ₄₀	1998 11 09.6	02 58.25	+32 24.6	17.1	-0.64	- 0.9	2.8/13.3	33383
1992 SB ₁	1998 11 09.6	02 58.45	+23 17.7	19.0	-1.09	- 2.6	2.3/11.0	26919
1998 UD ₇	1998 11 09.6	02 58.63	+08 11.9	16.4	-0.99	- 6.0	3.7/07.6	33234
1996 FD ₄	1998 11 09.7	02 58.84	+37 33.4	16.3	-1.11	+ 0.1	6.8/14.2	33338
4105 P-L	1998 11 09.8	02 58.98	+18 10.9	17.0	-1.06	- 3.2	0.5/10.1	33309
1998 QM ₉₂	1998 11 09.9	02 59.59	+24 32.9	17.8	-1.14	- 2.8	3.3/11.5	33253
1996 JN ₆	1998 11 09.9	02 59.82	+17 17.0	17.2	-0.84	- 6.8	0.1/10.1	33324
1996 AA ₁₄	1998 11 10.0	03 00.22	+23 05.5	15.9	-0.89	- 5.7	2.9/11.6	33269
1994 YA ₂	1998 11 10.2	03 00.79	+12 36.3	16.9	-0.86	- 3.2	1.5/09.2	33343
1996 GJ ₄	1998 11 10.2	03 00.88	+26 05.4	18.0	-1.14	- 1.1	4.2/12.0	33251
1998 UW ₁₅	1998 11 10.2	03 01.01	+47 35.6	17.4	-1.47	+ 2.2	11.1/16.0	33341
1986 QJ ₂	1998 11 10.3	03 01.01	+06 56.6	17.4	-0.87	- 4.7	3.8/07.9	32952
1997 HH ₃	1998 11 10.3	03 01.13	+18 03.1	17.1	-1.14	- 0.1	0.4/10.5	33371
1989 CB ₃	1998 11 10.3	03 01.30	+21 45.8	17.7	-0.86	- 2.7	1.3/11.4	33066
1994 VQ ₁	1998 11 10.4	03 01.54	+19 27.4	17.5	-1.77	+10.1	1.2/10.6	33259
1996 GO ₂₀	1998 11 10.4	03 01.57	+23 11.1	16.9	-1.06	- 6.7	2.6/11.9	33334
1981 QJ ₃ (9567)	1998 11 10.4	03 01.65	+20 17.4	17.0	-0.87	- 7.0	1.5/11.3	33246
1981 EC ₁₄	1998 11 10.4	03 01.74	+14 41.2	17.3	-0.92	- 5.1	1.0/09.9	33253
3347 T-2	1998 11 10.4	03 01.79	+12 56.2	17.4	-0.84	- 3.5	1.4/09.5	33332
1973 SA ₂	1998 11 10.5	03 01.86	+22 11.4	15.9	-1.01	- 3.0	2.5/11.6	32881
1998 VH ₅ (9609)	1998 11 10.5	03 01.92	+23 53.8	19.5	-1.05	- 4.2	2.4/12.0	22270
1998 UR ₁₆	1998 11 10.5	03 02.05	+13 34.6	16.8	-1.06	- 3.4	1.4/09.8	32537
1998 VJ ₅ (9791)	1998 11 10.5	03 02.16	+13 14.5	17.4	-0.55	- 1.7	0.7/09.6	33332
1990 RT ₈	1998 11 10.5	03 02.16	+25 20.4	17.4	-1.09	- 5.8	3.1/12.5	33317
1998 UE ₇ (7487)	1998 11 10.5	03 02.21	+20 41.5	16.0	-0.84	- 6.3	1.1/11.5	32891
1998 QB ₉₃	1998 11 10.6	03 02.26	+14 57.1	17.6	-0.83	- 2.9	0.7/10.1	33311
1997 JJ ₁₄	1998 11 10.6	03 02.61	+25 49.8	17.5	-1.07	- 0.9	2.9/12.4	33317
1002 T-2	1998 11 10.7	03 02.74	+02 52.2	16.5	-1.05	- 1.7	5.9/07.9	33209
1998 UB ₈	1998 11 10.7	03 03.00	+12 05.2	18.4	-1.01	- 4.4	2.1/09.7	33335
1982 UC ₁₁	1998 11 10.7	03 03.05	+07 59.8	17.2	-0.81	-12.5	4.2/08.0	33370
1993 QN ₃	1998 11 10.8	03 03.06	-04 00.3	15.3	-0.94	+ 1.2	9.0/06.9	29087
1981 EK ₁₇	1998 11 10.8	03 03.15	+11 06.4	16.5	-0.92	- 2.2	2.9/09.6	33349
1998 UW ₇	1998 11 10.8	03 03.23	+13 26.8	20.3	-1.03	- 4.4	1.4/10.0	30293
1998 UR ₂₀	1998 11 10.8	03 03.38	+19 18.3	17.3	-1.06	- 3.5	0.9/11.3	24236
1993 GA	1998 11 10.9	03 03.74	+17 07.8	17.6	-0.99	- 3.0	0.1/10.9	33371
1998 UZ ₂₀	1998 11 10.9	03 03.82	+19 07.9	16.4	-0.91	- 6.3	0.8/11.4	33333
1993 FV ₂₇	1998 11 11.0	03 03.93	+10 05.2	17.4	-0.89	- 4.3	2.5/09.4	33236
	1998 11 11.0	03 04.11	+13 50.7	17.5	-0.96	- 6.0	1.3/10.2	32917
	1998 11 11.0	03 04.22	+05 45.1	17.3	-0.90	- 5.9	4.6/08.2	33309
	1998 11 11.1	03 04.38	+18 45.9	17.9	-0.89	- 3.8	0.5/11.5	33312
	1998 11 11.2	03 04.61	+23 36.7	18.8	-1.13	- 2.3	2.3/12.5	24231
	1998 11 11.2	03 04.65	+18 34.6	17.5	-1.14	- 0.4	0.6/11.4	33313
	1998 11 11.2	03 05.12	+20 19.6	17.5	-1.09	- 4.8	1.2/11.9	33339

(7726)	1998 11 11.3	03 05.12 +26 51.1 17.1	-1.20 - 3.8	3.6/13.4	30251
1993 OP ₃	1998 11 11.3	03 05.43 +24 45.2 16.9	-1.02 - 4.0	3.0/13.0	33235
1988 VP ₃	1998 11 11.3	03 05.43 +20 44.6 16.6	-1.17 + 0.3	1.6/11.9	33334
1992 AO ₂	1998 11 11.3	03 05.44 +04 06.7 17.9	-0.98 - 3.0	4.7/08.5	33337
1998 QK ₉₃	1998 11 11.4	03 05.44 +29 21.4 16.4	-1.19 + 2.1	4.9/13.3	33349
(9542)	1998 11 11.4	03 05.48 +17 18.0 15.4	-1.14 + 0.4	0.1/11.4	32874
1998 UY ₇	1998 11 11.4	03 05.48 +07 58.0 16.2	-0.86 - 7.8	3.8/08.9	33309
1164 T-3	1998 11 11.5	03 05.90 +21 39.9 18.3	-0.84 - 6.4	1.3/12.6	33130
1998 UW ₁₉	1998 11 11.5	03 05.98 +18 49.6 17.9	-0.85 - 2.9	0.4/11.8	33312
1990 EN ₄	1998 11 11.5	03 06.05 +29 25.4 17.6	-0.95 - 2.7	3.8/14.2	33335
1998 UU ₂₈	1998 11 11.5	03 06.07 +09 24.2 17.2	-0.90 - 0.3	2.7/10.0	33315
1993 FX ₁₁	1998 11 11.5	03 06.12 +19 14.1 18.4	-1.11 - 2.3	0.7/11.9	33233
1998 UQ ₂₅	1998 11 11.5	03 06.20 +13 43.0 16.7	-0.92 - 2.5	1.4/10.8	33371
1998 UD ₂₀	1998 11 11.6	03 06.50 +09 03.3 17.7	-0.83 - 2.9	2.9/09.8	33312
1981 ES ₂₈	1998 11 11.6	03 06.70 +24 58.0 17.6	-1.13 - 2.1	3.0/13.0	33220
1981 UA ₂₃	1998 11 11.7	03 06.81 +12 52.0 16.6	-1.03 - 2.3	2.3/10.8	33220
1996 OO	1998 11 11.7	03 06.94 +18 13.9 18.0	-0.64 - 4.1	0.2/11.9	33343
1998 VC	1998 11 11.8	03 07.41 +19 05.6 17.6	-1.04 - 4.5	0.5/12.2	33316
1998 VE	1998 11 11.8	03 07.47 +19 06.6 17.0	-0.96 - 4.6	0.7/12.2	33316
1997 JH ₁₈	1998 11 11.8	03 07.53 +09 35.2 18.5	-0.97 - 3.2	2.8/10.3	33344
1989 TB ₅	1998 11 11.9	03 07.62 +08 10.0 17.9	-0.88 - 4.5	3.2/09.8	33335
(9738)	1998 11 11.9	03 07.78 +36 49.5 17.4	-1.10 - 2.8	6.1/16.3	33196
1998 QP ₉₈	1998 11 12.0	03 07.87 +23 57.7 16.2	-0.89 - 9.3	3.1/13.8	33349
1997 MD ₈	1998 11 12.0	03 07.95 +16 04.6 17.3	-1.03 - 4.7	0.6/11.7	33345
(9748)	1998 11 12.0	03 08.25 +11 55.2 17.2	-0.99 - 6.4	2.2/10.7	33199
1991 RS ₁₃	1998 11 12.1	03 08.33 +24 12.8 16.9	-1.14 - 5.7	2.7/13.6	33337
(7817)	1998 11 12.1	03 08.49 +16 47.3 16.6	-0.91 - 3.6	0.3/12.0	30435
(9747)	1998 11 12.1	03 08.61 +00 25.5 16.4	-0.87 - 0.4	5.9/08.8	33198
1998 WE ₃	1998 11 12.2	03 08.70 +24 41.1 17.6	-0.98 - 3.2	2.5/13.7	33321
1998 UZ ₇	1998 11 12.2	03 08.71 +06 42.0 17.3	-0.71 -13.3	5.0/08.6	33371
1991 PD ₁₁	1998 11 12.2	03 08.87 +06 37.2 17.8	-1.08 - 4.0	4.3/10.0	33227
1997 PL ₅	1998 11 12.2	03 08.87 +27 34.9 17.1	-0.88 - 3.1	3.0/14.5	33262
(9818)	1998 11 12.2	03 09.11 +22 44.7 17.9	-0.57 - 1.5	0.9/13.5	33215
(9754)	1998 11 12.3	03 09.10 +13 47.2 17.9	-1.02 - 4.3	1.4/11.5	33200
1998 UV ₂₀	1998 11 12.3	03 09.17 +15 27.5 16.7	-0.90 - 8.3	0.8/11.7	33313
1998 UD ₈	1998 11 12.3	03 09.22 +15 22.9 16.8	-0.89 - 2.7	0.7/11.8	33309
1992 EW ₁₆	1998 11 12.3	03 09.34 +24 21.8 16.2	-1.03 - 3.8	2.4/13.8	33231
1998 UT ₁₅	1998 11 12.3	03 09.37 +14 47.6 16.4	-0.80 - 7.5	0.9/11.6	33371
1998 SW ₁₀	1998 11 12.3	03 09.44 +01 01.6 18.6	-0.89 - 7.4	7.3/08.3	33354
1992 FV ₁	1998 11 12.4	03 09.71 +18 29.2 16.8	-1.02 - 1.6	0.3/12.6	33338
1996 GL ₁	1998 11 12.4	03 09.81 +20 00.4 16.5	-1.16 + 0.1	1.1/12.8	33343
1994 RV	1998 11 12.4	03 09.87 +27 06.8 16.8	-1.13 - 3.9	3.8/14.5	33340
(9726)	1998 11 12.5	03 10.21 +18 34.9 18.0	-0.89 - 3.8	0.3/12.8	33193
1997 OV ₂	1998 11 12.5	03 10.34 +31 06.9 17.6	-0.99 - 4.7	4.4/15.7	33345
1993 DN	1998 11 12.6	03 10.38 +25 43.3 17.0	-1.15 - 5.4	3.4/14.4	33232
(7901)	1998 11 12.6	03 10.45 +15 38.6 18.0	-0.95 - 3.8	0.7/12.2	30645
1998 TL ₆	1998 11 12.6	03 10.46 +04 03.0 18.5	-0.94 - 2.6	5.7/09.7	33302
1997 SG ₇	1998 11 12.6	03 10.48 +18 39.3 18.9	-0.82 - 3.0	0.3/12.8	33264
1997 QU ₁	1998 11 12.7	03 10.76 +14 16.1 18.1	-0.86 - 3.7	1.1/11.9	33345
1993 YD	1998 11 12.7	03 10.78 -00 06.8 17.6	-0.82 - 0.6	5.3/09.2	33340
1989 SW ₈	1998 11 12.7	03 10.90 +00 18.4 16.5	-0.80 - 7.8	7.3/08.1	33335

1998 VB ₂₈	1998 11 12.8	03 11.12 +24 46.6 17.3	-0.89 - 3.1	2.4/14.3	33319
1998 UN ₂₀	1998 11 12.9	03 11.53 +14 22.4 17.4	-1.07 - 3.6	1.3/12.2	33312
1996 BL ₂	1998 11 12.9	03 11.67 +17 49.3 16.2	-0.95 - 7.3	12.2/03.0	33342
1993 FZ ₆	1998 11 13.0	03 11.94 +16 02.5 18.0	-1.06 - 3.0	0.7/12.6	33338
1995 DZ ₁₁	1998 11 13.0	03 12.38 +13 23.2 17.4	-0.86 - 3.4	1.5/12.1	33342
1998 UL ₁₆	1998 11 13.1	03 12.36 +14 43.0 17.3	-1.07 - 1.1	1.4/12.5	33310
1992 PV ₂	1998 11 13.1	03 12.52 +27 04.3 16.9	-0.89 - 5.6	3.0/15.4	33231
1998 UO ₁₅	1998 11 13.1	03 12.65 +18 24.2 17.4	-1.03 - 4.2	0.2/13.3	33310
1995 FA ₈	1998 11 13.2	03 12.79 +06 04.3 17.9	-0.80 - 2.9	3.8/10.6	33248
(9566)	1998 11 13.2	03 12.95 +19 08.6 15.7	-1.05 - 6.6	0.6/13.5	32880
(9815)	1998 11 13.2	03 12.96 +25 40.3 17.1	-0.97 - 3.0	2.8/14.9	33215
1996 CY	1998 11 13.3	03 13.35 +06 44.8 17.9	-1.04 - 3.3	4.7/11.0	33252
(9742)	1998 11 13.3	03 13.48 +13 05.5 17.3	-0.82 - 2.4	1.5/12.4	33197
1998 SH ₂₇	1998 11 13.3	03 13.50 +08 25.7 17.9	-0.97 + 0.3	4.8/11.7	33355
1990 MR	1998 11 13.4	03 13.59 +21 14.0 18.2	-1.05 - 6.2	1.1/14.2	33335
1998 UP ₁₅	1998 11 13.4	03 13.68 +14 56.4 17.4	-1.03 - 3.0	1.2/12.8	33310
(9554)	1998 11 13.4	03 13.75 -12 59.3 16.5	-1.61 +11.5	15.7/11.9	32877
1981 ED ₁₅	1998 11 13.4	03 13.94 +22 49.0 17.3	-1.03 - 4.9	2.1/14.5	33332
1979 MS ₇	1998 11 13.4	03 13.99 +20 39.0 18.9	-0.93 - 5.3	1.0/14.1	30779
5173 T-3	1998 11 13.5	03 14.08 -14 34.8 18.9	-1.00 -15.1	15.3/01.8	33329
1998 QN ₆₀	1998 11 13.5	03 14.15 +31 12.1 16.7	-1.24 + 2.3	5.9/15.6	33348
1990 WR ₂	1998 11 13.5	03 14.33 +04 33.4 15.8	-0.96 + 1.9	6.7/11.4	33336
1984 SA	1998 11 13.6	03 14.39 +22 29.7 16.1	-1.08 - 8.1	2.0/14.7	33333
1995 CN	1998 11 13.6	03 14.48 +06 13.2 18.0	-0.90 - 2.2	4.5/11.3	33342
1998 QQ ₉₃	1998 11 13.6	03 14.76 +15 07.0 15.7	-1.13 + 3.6	1.3/13.3	33349
9097 P-L	1998 11 13.7	03 14.91 +27 14.4 17.8	-1.07 - 2.3	3.2/15.5	33326
(9820)	1998 11 13.7	03 15.23 +18 23.5 18.2	-1.07 - 4.2	0.1/13.9	33216
(9757)	1998 11 13.8	03 15.19 +19 15.5 17.0	-0.89 - 3.6	0.4/14.1	33201
(9814)	1998 11 13.8	03 15.20 +16 56.9 16.7	-0.94 - 7.6	0.6/13.5	33214
1998 QO ₆₀	1998 11 13.9	03 15.70 +30 49.8 17.4	-1.12 - 1.5	4.2/16.4	33348
(9574)	1998 11 13.9	03 15.85 +16 15.9 16.5	-1.15 - 2.1	0.8/13.6	32882
4327 T-3	1998 11 13.9	03 15.99 +16 50.0 17.7	-1.04 - 0.9	0.4/13.8	33385
1981 UU ₂₉	1998 11 14.0	03 16.11 +18 44.2 17.3	-1.06 - 5.1	0.3/14.2	33332
(9154)	1998 11 14.0	03 16.16 +31 39.9 15.8	-1.02 - 0.9	4.8/16.7	32413
1994 PF ₅	1998 11 14.1	03 16.62 +06 45.7 18.1	-1.01 - 4.0	4.6/11.8	33241
1997 NG ₃	1998 11 14.1	03 16.65 +02 19.0 16.7	-0.80 - 3.8	5.1/10.6	33345
(9558)	1998 11 14.1	03 16.90 +15 28.5 16.4	-0.85 - 2.3	0.9/13.7	32878
(9769)	1998 11 14.2	03 16.86 +06 51.6 17.2	-1.07 - 3.6	4.5/11.9	33203
(9720)	1998 11 14.2	03 16.98 +35 25.7 17.4	-1.05 - 1.6	5.5/17.7	33192
1987 SO ₅	1998 11 14.2	03 17.04 +29 14.2 17.0	-0.96 - 1.9	3.5/16.5	33333
1998 UP ₆	1998 11 14.3	03 17.26 +33 54.7 16.3	-1.37 + 1.8	6.1/16.8	33370
1992 EP ₇	1998 11 14.3	03 17.35 -02 55.0 18.8	-0.91 - 2.5	6.9/10.2	30471
1998 SK ₃₆	1998 11 14.3	03 17.66 +09 59.5 17.6	-0.90 + 2.2	4.4/13.2	33355
1993 TS ₁₆	1998 11 14.4	03 17.66 +13 31.5 17.8	-0.90 - 3.9	1.6/13.4	31538
1991 EJ	1998 11 14.4	03 17.67 +39 38.1 17.3	-0.67 - 4.0	4.2/20.1	33336
1998 VN ₂₈	1998 11 14.4	03 17.83 +14 58.8 16.8	-1.10 - 1.0	1.4/13.9	33319
1998 VW ₃₄	1998 11 14.4	03 17.91 +17 28.4 16.6	-0.89 - 3.9	0.3/14.3	33321
1990 VN ₅	1998 11 14.5	03 18.14 +02 01.2 17.5	-1.11 + 3.7	6.8/12.6	23975
1991 UK ₁	1998 11 14.5	03 18.18 +27 59.0 16.2	-1.18 - 4.1	4.6/16.6	33337
1998 UF ₁₈	1998 11 14.5	03 18.41 +05 26.2 17.9	-0.98 - 5.5	5.3/11.7	33372
1994 AC ₃	1998 11 14.5	03 18.45 +18 35.5 17.8	-0.84 - 3.0	0.1/14.6	33340

(7641)	1998 11 14.6	03 18.60 +25 44.3 16.1	-0.59 - 5.9	1.4/16.6	32737
1998 SN ₂	1998 11 14.6	03 18.78 +17 56.5 17.7	-0.86 - 3.2	0.1/14.6	33276
1997 SR ₈	1998 11 14.6	03 18.82 +24 43.3 18.1	-0.87 - 2.4	1.9/16.0	33345
(7808)	1998 11 14.6	03 18.96 +24 51.4 16.3	-1.00 - 5.3	2.2/16.2	30433
(7828)	1998 11 14.7	03 18.93 +10 26.5 16.5	-0.78 - 6.0	2.4/12.8	30438
1998 UZ ₁₉	1998 11 14.7	03 19.06 +19 57.2 17.3	-0.96 - 2.9	0.7/15.1	33312
1998 VC ₃₄	1998 11 14.7	03 19.33 +19 54.5 18.1	-0.91 - 3.5	0.5/15.1	33321
1998 UW ₁₈	1998 11 14.7	03 19.33 +20 12.5 17.0	-0.90 - 1.1	0.7/15.1	33311
1996 RH ₁₀	1998 11 14.8	03 19.39 -02 41.8 19.5	-0.51 - 2.4	3.8/09.8	31545
1989 DC	1998 11 14.8	03 19.50 +23 48.8 16.4	-1.17 - 1.2	2.2/15.8	33222
(9592)	1998 11 14.8	03 19.55 +18 18.6 16.6	-0.90 - 3.9	0.0/14.8	32887
(9715)	1998 11 14.8	03 19.62 +23 34.5 17.3	-0.92 - 0.7	1.6/15.8	33191
1989 GB	1998 11 14.8	03 19.79 +23 19.4 16.8	-1.22 + 1.1	1.9/15.6	33222
1997 HM ₁₀	1998 11 14.9	03 19.89 +16 55.1 19.7	-1.04 - 4.5	0.5/14.6	33344
1996 HC ₁	1998 11 14.9	03 19.90 +16 29.1 16.5	-1.12 + 1.5	0.7/14.7	33343
1989 SK ₁	1998 11 15.0	03 20.45 +17 44.4 17.8	-1.03 - 1.6	0.3/14.9	33334
(9725)	1998 11 15.1	03 20.60 +17 05.3 18.6	-1.00 - 4.3	0.4/14.8	33193
(8086)	1998 11 15.1	03 20.69 +25 40.5 16.9	-0.80 - 0.9	1.8/16.6	30963
1996 HP ₁	1998 11 15.2	03 21.18 +08 50.7 19.1	-0.89 - 6.3	3.2/13.0	33343
1981 EN ₁₆	1998 11 15.2	03 21.23 +30 52.7 20.1	-1.14 - 3.5	4.5/17.8	30468
4310 T-3	1998 11 15.2	03 21.30 +16 12.2 17.4	-1.12 - 1.9	0.9/14.9	33385
1993 UK	1998 11 15.2	03 21.37 +15 55.5 16.6	-0.92 - 2.4	0.9/14.8	33238
1981 EG ₂₂	1998 11 15.3	03 21.34 +32 37.5 19.6	-1.17 - 2.4	4.7/18.0	26919
1997 JC ₁₄	1998 11 15.3	03 21.41 +07 35.0 16.7	-0.90 - 7.6	4.6/12.7	33344
1996 GG ₁₈	1998 11 15.5	03 22.30 +16 07.7 17.6	-0.89 - 4.9	0.8/15.0	33253
1981 EY ₂₂	1998 11 15.5	03 22.32 +13 42.2 18.8	-1.11 - 4.9	1.9/14.6	26919
1987 GA	1998 11 15.5	03 22.40 +19 32.9 17.1	-1.00 - 1.0	0.3/15.7	33333
1998 TZ ₆	1998 11 15.5	03 22.42 +02 08.8 18.2	-0.87 - 6.3	6.1/11.8	33303
1976 YF ₃	1998 11 15.6	03 22.82 +24 33.9 16.2	-0.84 - 6.7	1.8/17.1	33332
1994 WJ	1998 11 15.6	03 22.95 +18 27.2 16.2	-1.04 + 1.2	0.0/15.7	33341
1992 EZ ₂₈	1998 11 15.7	03 23.08 +00 01.9 18.3	-0.89 - 4.8	6.1/11.6	32928
1998 VA	1998 11 15.7	03 23.23 +25 53.5 15.8	-1.31 + 5.7	3.2/16.5	33374
1988 RY ₁	1998 11 15.8	03 23.43 +11 14.7 17.9	-1.05 - 3.2	3.7/14.4	33221
1998 VC ₂₉	1998 11 15.8	03 23.58 +10 55.1 16.8	-0.81 - 2.8	2.5/14.3	33319
1994 HB	1998 11 15.8	03 23.71 +15 56.9 19.0	-1.16 - 5.0	1.2/15.3	33340
1991 EL	1998 11 15.9	03 23.81 +38 16.2 18.9	-0.61 - 3.2	3.3/20.8	18437
(7741)	1998 11 15.9	03 23.81 -05 28.0 15.6	-0.88 - 5.7	11.0/10.2	30255
1998 UO ₂₄	1998 11 15.9	03 23.93 +12 58.3 16.4	-0.88 - 6.2	2.2/14.6	33314
1998 SS ₂₆	1998 11 15.9	03 24.21 +35 06.2 16.3	-1.30 + 3.3	7.3/18.1	33355
1986 QR ₁	1998 11 15.9	03 24.22 +25 06.5 17.2	-1.10 - 3.1	2.4/17.2	33333
(9773)	1998 11 16.0	03 24.24 +34 06.6 17.7	-1.13 - 7.2	5.0/19.9	33205
1998 WC ₆	1998 11 16.0	03 24.49 +12 53.2 16.8	-1.15 - 1.9	2.6/15.1	33322
1997 NK ₁	1998 11 16.1	03 25.02 +19 22.8 17.7	-0.84 - 3.8	0.2/16.3	33261
1998 UY ₂₂	1998 11 16.2	03 25.10 +20 44.8 17.4	-1.11 - 0.8	1.1/16.6	33313
1981 EF ₂	1998 11 16.2	03 25.40 +28 46.8 17.0	-1.09 - 4.8	3.8/18.4	33332
1993 TQ ₃₆	1998 11 16.2	03 25.45 +14 28.1 16.4	-1.02 + 1.4	1.7/15.7	33238
1998 QS ₉₈	1998 11 16.3	03 25.46 +18 05.8 16.1	-1.18 - 1.6	0.3/16.2	33349
(9655)	1998 11 16.3	03 25.69 +10 11.7 16.6	-1.02 - 2.6	3.7/14.8	32902
1997 NU ₁	1998 11 16.3	03 25.71 +18 36.5 17.5	-0.91 - 3.8	0.0/16.3	33345
1996 FJ ₅	1998 11 16.4	03 25.95 +38 17.1 15.9	-1.33 + 2.4	8.2/19.3	33343
1994 SS ₉	1998 11 16.4	03 26.00 +17 02.8 18.8	-1.07 - 3.9	0.7/16.1	33340

1990 RS ₆	1998 11 16.4	03 26.03 +28 23.0 17.9	-1.15 - 2.7	3.7/18.2	33335
3087 P-L	1998 11 16.4	03 26.11 +24 36.2 16.4	-0.87 - 5.5	1.9/18.0	33383
1998 RP ₂₀	1998 11 16.4	03 26.15 +23 53.4 18.8	-0.97 - 8.3	1.9/18.0	33350
(9532)	1998 11 16.5	03 26.30 +17 52.8 15.7	-0.96 - 7.9	0.3/16.3	32871
1998 UX ₂₂	1998 11 16.5	03 26.33 +17 56.1 17.6	-1.00 - 1.8	0.4/16.4	33313
4812 P-L	1998 11 16.5	03 26.63 +18 37.6 17.7	-0.86 - 2.7	0.1/16.5	33383
(9584)	1998 11 16.5	03 26.79 +27 55.1 16.0	-1.08 - 7.0	4.1/18.8	32885
1998 VV ₂₈	1998 11 16.6	03 26.72 +27 15.0 16.8	-1.05 - 5.9	3.8/18.5	33319
(9753)	1998 11 16.6	03 27.05 +27 46.7 17.1	-1.15 - 3.0	3.5/18.4	33200
1998 UC ₁	1998 11 16.7	03 27.15 +06 38.7 17.3	-0.97 - 2.9	5.9/14.4	33370
1987 UA ₁	1998 11 16.7	03 27.38 +19 27.5 15.6	-0.98 -10.9	0.3/16.9	33334
4817 P-L	1998 11 16.8	03 27.64 +08 17.8 18.3	-0.93 - 6.1	4.6/14.5	15904
1996 GV ₁₇	1998 11 16.8	03 27.66 +11 31.6 18.1	-0.81 - 5.9	2.2/15.2	33253
1998 QR ₉₃	1998 11 16.9	03 28.16 +17 05.6 16.1	-1.14 + 4.1	0.8/16.7	33269
1997 VV ₁	1998 11 16.9	03 28.16 +22 23.7 17.7	-0.61 - 1.6	0.7/17.7	33346
1997 HT ₁₁	1998 11 17.0	03 28.37 +21 24.1 19.5	-1.13 - 2.6	0.9/17.5	30691
(9775)	1998 11 17.0	03 28.39 +20 09.3 17.4	-0.99 - 4.6	0.5/17.3	33205
1981 EV ₄₅	1998 11 17.0	03 28.45 +22 16.1 20.0	-0.90 - 3.5	1.0/17.7	20811
1976 SE ₅	1998 11 17.0	03 28.57 +11 44.9 16.6	-0.91 - 7.4	2.6/15.3	33218
1981 EP ₉	1998 11 17.0	03 28.76 +19 07.5 17.2	-0.97 - 6.8	0.1/17.1	33219
1991 LA	1998 11 17.0	03 28.82 +18 00.0 19.3	-1.19 - 3.6	0.4/16.9	33227
1994 QA	1998 11 17.1	03 28.80 +06 18.6 17.1	-1.27 + 3.4	4.6/15.6	33340
1993 TD ₁₇	1998 11 17.1	03 28.86 +17 21.7 18.3	-0.93 - 2.8	0.5/16.8	33339
1989 AN ₅	1998 11 17.2	03 29.21 +03 17.8 17.7	-0.83 - 1.8	5.5/14.2	33334
1993 FM ₁₄	1998 11 17.2	03 29.51 +21 38.3 16.9	-1.20 - 0.1	1.2/17.7	33339
(9552)	1998 11 17.3	03 29.63 +06 42.3 16.8	-0.73 - 4.1	3.7/14.6	32876
1998 UR ₂₄	1998 11 17.3	03 29.96 +16 23.8 17.6	-0.86 - 2.1	1.0/16.9	33314
1994 YC	1998 11 17.4	03 30.13 +27 13.5 18.5	-1.05 - 3.6	3.2/19.0	33341
1998 UB ₂₃	1998 11 17.4	03 30.27 +21 19.7 16.6	-1.12 0.0	1.2/18.0	33313
1993 TC ₂₀	1998 11 17.5	03 30.54 +20 51.6 18.1	-0.97 - 2.0	0.6/18.0	33237
(9817)	1998 11 17.5	03 30.62 +25 11.8 17.9	-0.59 - 1.1	1.2/18.8	33215
(9513)	1998 11 17.5	03 30.73 +23 26.4 15.5	-1.20 - 0.2	1.9/18.2	32867
(9600)	1998 11 17.5	03 30.80 +18 01.3 15.6	-1.08 + 1.0	0.5/17.4	32889
1996 RD ₁₂	1998 11 17.6	03 31.16 +28 59.7 19.1	-0.63 - 1.3	2.0/19.7	31009
(9785)	1998 11 17.7	03 31.35 +22 25.3 17.2	-0.97 - 2.6	1.1/18.4	33208
(9766)	1998 11 17.8	03 31.99 +19 10.8 16.7	-1.05 - 3.0	10.1/29.0	33203
1994 WR ₃	1998 11 17.9	03 32.12 +07 07.1 15.3	-1.11 + 4.9	5.4/16.7	33247
1990 VK ₄	1998 11 17.9	03 32.25 +08 37.9 16.9	-0.92 - 2.5	4.9/16.0	33336
2228 P-L	1998 11 17.9	03 32.51 +20 15.8 19.5	-1.05 - 5.1	0.4/18.2	33383
(7716)	1998 11 17.9	03 32.51 +10 41.2 15.9	-0.95 - 6.6	3.9/16.1	30073
1981 EE ₄₈	1998 11 18.0	03 32.58 +06 14.0 21.2	-0.82 - 4.7	3.7/15.2	26923
1998 VD ₃₀	1998 11 18.0	03 32.78 +13 43.6 17.2	-0.55 - 5.1	1.1/16.8	33320
2078 T-3	1998 11 18.0	03 32.81 +29 59.4 17.2	-1.08 - 2.6	3.6/20.1	33384
1998 WW ₁₀	1998 11 18.1	03 32.94 +16 09.3 17.1	-1.02 - 1.4	1.2/17.6	33323
1997 TM ₂	1998 11 18.1	03 33.02 +24 08.5 19.5	-0.59 - 1.8	1.0/19.2	32969
1989 CR ₁	1998 11 18.1	03 33.22 +25 16.5 17.9	-1.09 - 6.3	2.2/19.5	33222
1998 VF ₃₅	1998 11 18.2	03 33.49 +07 57.8 16.3	-0.81 - 4.9	3.6/15.8	33321
1998 WO ₉	1998 11 18.2	03 33.75 +17 14.4 17.6	-1.13 - 1.1	0.8/18.0	33322
1996 GU ₈	1998 11 18.3	03 33.73 +16 52.2 17.3	-0.96 - 2.1	0.8/17.9	33343
(7653)	1998 11 18.4	03 34.23 +18 15.2 16.1	-1.11 - 4.7	0.4/18.2	29900
1991 AN ₂	1998 11 18.5	03 34.75 -10 11.1 16.4	-0.93 - 1.7	11.0/13.3	33336

1992 GC ₈	1998 11 18.5	03 34.95 +12 59.4 17.3	-0.98 - 1.6	2.3/17.5	33231
6793 P-L	1998 11 18.5	03 34.99 +20 31.6 18.1	-1.15 - 2.4	0.5/18.8	33326
5030 T-2	1998 11 18.6	03 34.99 +30 35.1 18.4	-0.63 - 2.9	2.4/21.1	15258
2496 T-3	1998 11 18.6	03 34.99 +15 13.7 17.9	-0.83 - 5.4	1.3/17.7	33328
1996 EV	1998 11 18.6	03 35.16 -03 25.0 16.9	-0.91 - 5.1	10.4/13.5	28890
(9819)	1998 11 18.6	03 35.44 +19 14.6 17.5	-1.20 - 2.8	0.0/18.7	33215
(9762)	1998 11 18.7	03 35.43 +26 06.0 17.2	-1.17 - 3.0	3.1/19.9	33202
1998 US ₂₄	1998 11 18.8	03 36.13 +13 40.1 17.5	-0.57 - 1.3	1.1/17.8	33314
1988 RA ₁₃	1998 11 18.8	03 36.22 +14 11.6 17.6	-1.11 - 5.3	2.1/17.9	33221
1991 VG ₃	1998 11 18.9	03 36.22 +03 37.0 16.2	-0.92 -23.6	7.2/13.4	33337
(9690)	1998 11 18.9	03 36.36 +07 16.9 16.2	-0.84 - 6.0	4.8/16.2	32911
1981 EE ₃₂	1998 11 18.9	03 36.55 +18 31.7 18.9	-1.01 - 6.2	0.3/18.8	26921
(9789)	1998 11 18.9	03 36.55 +19 55.2 17.0	-0.85 - 2.4	0.2/19.1	33209
(9755)	1998 11 18.9	03 36.59 +11 06.9 15.6	-0.95 - 5.9	3.6/17.2	33200
1994 RJ ₁₁	1998 11 18.9	03 36.68 +30 45.5 16.2	-1.20 - 2.8	4.9/21.1	33340
1992 JB ₂	1998 11 18.9	03 36.71 +13 46.6 16.1	-0.90 - 7.7	2.1/17.7	33338
1994 XP	1998 11 19.0	03 36.94 +16 45.5 15.8	-0.90 - 8.1	1.2/18.4	33341
1998 WF ₁₁	1998 11 19.1	03 37.08 +14 34.3 17.5	-0.89 - 2.6	1.7/18.2	33323
1994 RP ₁₁	1998 11 19.1	03 37.20 +22 11.4 17.5	-1.03 - 7.0	1.2/19.7	33244
(9749)	1998 11 19.1	03 37.23 +23 32.3 17.2	-1.07 - 4.4	1.6/19.9	33199
1973 SS	1998 11 19.2	03 37.77 +16 43.1 17.9	-0.57 - 1.6	0.5/18.7	33331
1992 ED ₁₄	1998 11 19.2	03 37.90 +06 36.3 15.8	-0.94 - 4.6	5.4/16.8	33231
(8074)	1998 11 19.3	03 37.98 +26 56.7 16.1	-0.94 - 6.3	3.0/21.0	30961
1981 EC ₂₆	1998 11 19.3	03 38.29 +20 53.6 19.9	-1.07 - 3.2	0.5/19.6	27118
1990 SD ₅	1998 11 19.3	03 38.31 +21 19.6 18.4	-1.08 - 2.6	0.6/19.7	33335
1985 PE ₁	1998 11 19.5	03 38.90 +25 11.1 16.7	-1.26 - 5.0	2.6/20.6	33333
1998 UH ₈	1998 11 19.5	03 39.01 +24 27.7 17.0	-1.31 + 3.7	2.4/20.1	33371
1997 NZ ₂	1998 11 19.5	03 39.21 +18 54.0 18.5	-0.98 - 1.9	0.2/19.5	33345
(7852)	1998 11 19.5	03 39.22 +16 16.3 16.7	-1.06 - 1.9	1.3/19.1	30444
1998 QN ₉₃	1998 11 19.6	03 39.20 +05 12.9 15.7	-0.82 - 9.9	6.0/15.9	33349
(9736)	1998 11 19.6	03 39.31 +16 11.1 17.7	-0.85 - 2.6	1.0/19.0	33196
1993 FD ₄₄	1998 11 19.6	03 39.37 +24 29.2 18.0	-1.16 - 3.2	1.9/20.5	27714
(7733)	1998 11 19.6	03 39.58 +15 07.7 19.1	-1.04 - 4.5	1.7/18.9	30253
1998 VM ₃₀	1998 11 19.7	03 39.58 +22 27.2 16.9	-1.11 - 1.9	1.4/20.2	33320
1997 GG ₇	1998 11 19.7	03 39.61 +12 28.0 17.5	-1.03 - 4.8	3.3/18.4	33257
(7687)	1998 11 19.7	03 39.97 +13 22.9 16.9	-1.06 - 5.9	2.5/18.5	29908
1998 VB ₅	1998 11 19.7	03 40.00 +20 12.6 17.3	-0.87 - 2.5	0.2/19.9	33317
3306 T-1	1998 11 19.8	03 40.00 +15 38.1 18.2	-1.07 - 3.8	1.5/19.1	33384
1997 PV ₃	1998 11 19.8	03 40.01 +23 00.2 16.7	-0.86 - 5.0	1.0/20.5	33262
1994 ST ₇	1998 11 19.8	03 40.02 +15 15.2 18.2	-1.06 - 3.7	1.6/19.0	33340
1996 CL ₇	1998 11 19.8	03 40.10 +38 16.4 17.0	-1.28 - 1.3	9.0/22.9	33252
1998 QH ₉₃	1998 11 19.8	03 40.44 +22 23.6 15.7	-0.91 -10.2	1.2/20.6	33349
1997 GX ₂₃	1998 11 19.9	03 40.49 +18 38.5 17.1	-1.17 + 0.7	0.4/19.8	33259
1996 DH ₂	1998 11 19.9	03 40.60 +32 22.6 18.3	-1.10 - 1.6	4.0/22.2	30984
(9582)	1998 11 20.0	03 40.81 +28 12.8 16.4	-1.22 - 3.8	3.8/21.5	32884
(9781)	1998 11 20.0	03 40.86 +24 40.2 17.1	-1.17 - 0.6	1.9/20.8	33207
(7400)	1998 11 20.0	03 40.87 +16 36.1 16.9	-0.88 - 3.1	1.0/19.5	28826
1997 PE ₃	1998 11 20.0	03 40.92 +33 28.8 19.1	-1.07 - 2.5	4.2/22.5	33262
1985 SX ₂	1998 11 20.0	03 41.13 +26 16.5 16.1	-1.02 - 3.4	2.8/21.3	33333
1997 PJ	1998 11 20.0	03 41.23 +11 07.7 18.4	-0.89 - 4.4	2.9/18.4	33077
1995 DZ ₁	1998 11 20.0	03 41.27 +15 34.3 17.9	-0.86 - 1.2	1.2/19.4	33342

1998 VC ₆	1998 11 20.1	03 41.43 +20 49.3 16.9	-0.96 - 4.3	0.6/20.4	33317
(9797)	1998 11 20.1	03 41.55 +18 06.4 18.1	-0.82 - 2.8	0.4/19.9	33210
(7965)	1998 11 20.1	03 41.63 +53 43.7 16.9	-1.51 - 4.0	9.9/27.8	30750
1996 BC ₁	1998 11 20.2	03 41.63 +25 41.8 16.3	-1.14 - 4.3	2.8/21.3	33251
1998 VY ₃₂	1998 11 20.2	03 41.68 +19 50.0 17.1	-1.08 - 1.9	0.1/20.2	33320
(9712)	1998 11 20.2	03 41.72 +10 08.3 17.2	-0.55 - 2.4	2.0/18.3	33190
1997 PG ₃	1998 11 20.2	03 41.77 +15 19.5 17.9	-0.83 - 2.7	1.4/19.4	33345
1998 VK ₃₀	1998 11 20.2	03 42.13 +15 43.1 17.1	-0.92 - 2.2	1.4/19.6	33320
2151 T-3	1998 11 20.3	03 42.05 +34 10.8 17.4	-1.29 - 1.3	5.9/22.6	33384
1994 UC ₁	1998 11 20.3	03 42.38 +20 42.7 16.7	-1.06 - 2.9	0.4/20.5	33341
(9564)	1998 11 20.3	03 42.49 -09 04.8 17.1	-1.03 - 7.0	11.5/14.5	32880
1996 BE ₂	1998 11 20.4	03 42.82 +14 25.0 16.5	-1.15 - 1.0	2.2/19.7	33342
4820 P-L	1998 11 20.4	03 42.88 +28 26.7 18.2	-0.98 - 0.6	2.8/21.9	21121
(9241)	1998 11 20.4	03 42.92 +01 47.4 17.1	-0.85 - 0.5	6.1/17.7	32433
1994 PE ₃₃	1998 11 20.5	03 42.93 +25 24.1 16.7	-1.16 - 4.6	2.3/21.6	33340
1993 FH ₇	1998 11 20.5	03 42.99 +16 43.2 17.9	-1.09 - 2.4	1.1/20.0	33338
1998 VX ₅	1998 11 20.5	03 43.11 +21 42.2 17.0	-0.93 - 2.1	0.7/20.9	33317
1998 WX ₉	1998 11 20.6	03 43.55 +16 22.3 17.6	-0.58 - 1.3	0.7/20.0	33323
1994 PW ₂₇	1998 11 20.6	03 43.68 +25 02.8 16.8	-1.16 - 2.9	2.2/21.6	33340
1993 FK ₁₃	1998 11 20.6	03 43.69 +23 00.9 16.6	-1.19 - 0.5	1.3/21.1	33233
1995 EF	1998 11 20.6	03 43.74 +07 30.3 17.5	-0.89 - 2.2	3.9/18.5	33342
1979 MZ ₅	1998 11 20.7	03 43.85 +20 34.3 17.6	-0.94 - 3.8	0.3/20.9	30778
1991 BV ₁	1998 11 20.7	03 43.90 +08 01.9 19.9	-0.87 - 3.1	3.4/18.6	33336
1996 CG ₉	1998 11 20.7	03 44.03 +10 44.7 16.5	-1.00 - 6.2	4.1/18.9	33343
1992 UM ₉	1998 11 20.8	03 44.39 +12 08.3 17.4	-0.81 - 3.8	2.5/19.4	33338
5049 T-2	1998 11 20.9	03 44.69 +29 05.0 18.5	-1.15 - 5.9	3.5/22.8	33384
3495 T-3	1998 11 20.9	03 44.76 +21 39.6 18.9	-1.09 - 2.4	0.7/21.2	33385
1994 PP ₁₆	1998 11 20.9	03 44.78 +18 03.8 18.5	-1.11 - 3.4	0.7/20.6	33242
(9795)	1998 11 21.0	03 45.00 +17 25.3 17.7	-0.89 - 3.2	0.8/20.6	33210
(8084)	1998 11 21.0	03 45.12 +19 01.6 17.1	-0.91 - 2.3	0.3/20.9	33064
1998 VA ₃₅	1998 11 21.0	03 45.34 +23 57.1 16.5	-1.13 - 2.8	1.9/21.8	33321
(7730)	1998 11 21.0	03 45.43 +07 12.1 17.4	-0.93 - 2.2	4.4/19.0	30252
1994 PC ₂₆	1998 11 21.1	03 45.58 +09 27.9 18.8	-1.07 - 2.2	4.4/19.5	29138
1998 VV ₃₀	1998 11 21.2	03 46.07 +23 33.0 16.5	-1.03 - 2.5	1.8/21.9	33320
1990 DZ	1998 11 21.2	03 46.17 +33 50.8 17.7	-1.01 - 2.3	4.1/23.7	25440
(9683)	1998 11 21.2	03 46.22 +14 54.5 16.8	-0.97 - 6.9	2.5/20.2	32909
1996 HF ₁₁	1998 11 21.2	03 46.28 +18 33.4 19.0	-0.86 - 2.2	0.4/21.1	33343
3229 T-3	1998 11 21.2	03 46.31 +20 30.4 17.3	-0.99 - 1.3	0.3/21.4	33328
1996 DQ ₂	1998 11 21.3	03 46.25 +14 30.8 17.5	-1.01 - 1.7	2.0/20.5	33343
(9750)	1998 11 21.3	03 46.36 +27 26.5 17.6	-1.19 + 0.1	2.6/22.4	33199
1990 ST ₁₅	1998 11 21.3	03 46.51 +29 43.8 16.6	-1.15 - 4.1	3.7/23.2	33335
1981 ED ₁₈	1998 11 21.4	03 46.88 +17 03.9 17.7	-0.90 - 3.4	0.9/20.9	33219
(7812)	1998 11 21.4	03 47.14 +16 33.2 15.5	-0.84 -13.3	1.5/20.6	30434
(9756)	1998 11 21.5	03 47.21 +14 11.1 17.9	-0.91 - 3.6	1.8/20.5	33200
1994 PU ₃₂	1998 11 21.5	03 47.42 +16 09.1 17.3	-1.06 - 5.3	1.6/20.9	33340
3097 P-L	1998 11 21.5	03 47.55 +28 30.3 18.3	-0.99 - 4.1	2.7/23.3	15423
1994 RW ₁₁	1998 11 21.6	03 47.51 +16 20.7 17.6	-1.07 - 5.0	1.4/20.9	33244
(9799)	1998 11 21.6	03 47.64 +33 10.1 16.7	-0.64 - 5.0	2.5/24.7	33211
1994 PE ₂₉	1998 11 21.7	03 48.04 +18 40.3 17.8	-1.03 - 1.9	0.7/21.5	33340
(9776)	1998 11 21.7	03 48.07 +17 05.6 17.2	-0.91 - 1.9	1.0/21.3	33205
1994 UB	1998 11 21.7	03 48.21 +04 43.2 18.5	-1.04 - 3.1	5.7/19.3	33073

1998 DEC. 8

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1981 WJ₉ 1998 11 21.8 03 48.56 +12 51.7 17.0 -0.90 - 5.3 3.1/20.4 33220
 1989 SY₁₃ 1998 11 21.8 03 48.76 +36 11.7 17.4 -1.10 - 5.1 5.8/25.1 33335
 (7799) 1998 11 21.9 03 48.87 +21 02.0 16.3 -1.16 - 1.4 0.4/22.1 30270
 1084 T-3 1998 11 21.9 03 49.14 +22 07.8 17.6 -0.88 - 5.8 0.7/22.4 33384
 4052 T-3 1998 11 21.9 03 49.20 +21 07.3 17.2 -1.20 0.0 0.4/22.1 33385
 1992 AM 1998 11 22.0 03 49.39 -19 07.8 16.9 -1.22 +18.5 21.4/26.4 33337
 1997 JJ₁₅ 1998 11 22.0 03 49.52 +15 41.5 17.2 -1.08 - 5.5 1.7/21.3 33260
 1985 UO₃ 1998 11 22.1 03 49.86 +39 50.0 16.6 -1.45 + 4.5 7.5/24.1 33333
 1981 EJ₃₅ 1998 11 22.2 03 50.27 +11 08.1 19.4 -1.01 - 4.4 4.0/20.6 22271
 4205 T-3 1998 11 22.2 03 50.28 +16 24.5 17.2 -1.04 - 2.0 1.4/21.7 33329
 1169 T-2 1998 11 22.2 03 50.29 +23 23.2 18.3 -0.94 - 2.7 1.0/22.8 22701
 6577 P-L 1998 11 22.3 03 50.55 +17 27.5 17.7 -0.94 - 2.6 0.9/21.9 33325
 1998 SW₂₂ 1998 11 22.4 03 50.88 +00 02.0 17.6 -0.87 - 3.2 7.9/18.7 33354
 9072 P-L 1998 11 22.4 03 51.03 +16 03.8 17.9 -0.89 - 4.4 1.3/21.7 33384
 1990 QN₇ 1998 11 22.4 03 51.36 +21 48.1 17.8 -1.10 - 2.5 0.6/22.8 33335
 1989 UX₇ 1998 11 22.5 03 51.41 +14 53.3 15.7 -0.82 -13.4 2.5/21.1 33335
 (9610) 1998 11 22.5 03 51.69 +16 38.8 17.0 -0.89 - 2.0 1.3/22.0 32891
 (9788) 1998 11 22.6 03 51.70 +19 13.6 17.8 -0.85 - 2.2 0.3/22.4 33208
 1996 KN 1998 11 22.6 03 51.90 +21 19.4 17.2 -0.89 - 1.9 0.4/22.8 33255
 1990 XZ 1998 11 22.6 03 52.06 +27 32.6 15.1 -1.96 +15.8 4.0/22.5 33226
 (9807) 1998 11 22.6 03 52.12 +19 20.6 16.9 -0.59 - 2.6 0.2/22.5 33213
 1998 UL₂₃ 1998 11 22.6 03 52.21 +20 13.6 16.6 -1.06 - 0.5 11.1/03.0 33313
 1984 SO₄ 1998 11 22.7 03 52.12 +26 47.9 16.1 -1.15 - 5.6 2.9/24.0 33333
 3178 T-2 1998 11 22.7 03 52.20 +22 47.6 17.1 -0.96 - 1.9 0.9/23.1 33384
 1973 SN₁ 1998 11 22.7 03 52.25 +16 36.6 18.4 -0.56 - 1.4 0.7/22.1 33332
 1981 ED₃₀ 1998 11 22.7 03 52.27 +25 56.3 18.7 -0.81 - 4.5 1.7/23.9 26920
 (9637) 1998 11 22.7 03 52.32 +18 20.6 15.7 -0.97 - 2.9 1.0/22.4 32897
 1994 PZ₂₉ 1998 11 22.7 03 52.61 +19 51.1 16.9 -1.09 - 5.6 11.0/13.0 33340
 1988 VR₂ 1998 11 22.8 03 52.65 +08 06.0 16.1 -0.99 + 4.2 5.4/21.6 33334
 1998 UL₂₀ 1998 11 22.9 03 53.35 +21 05.8 16.2 -0.87 - 5.2 0.3/23.1 33312
 1998 UN₂₃ 1998 11 22.9 03 53.38 +18 05.6 16.7 -0.86 - 2.0 0.8/22.6 33314
 1991 TO 1998 11 22.9 03 53.39 +11 23.2 17.6 -1.08 - 1.3 4.1/21.7 33337
 1994 SH₁₁ 1998 11 22.9 03 53.39 +27 31.0 17.1 -1.20 - 1.1 2.9/24.0 33340
 (9515) 1998 11 22.9 03 53.47 +47 06.5 16.2 -1.80 + 5.1 11.3/26.0 32867
 (9783) 1998 11 23.0 03 53.39 +22 22.8 16.6 -0.98 - 3.7 0.9/23.4 33207
 1989 OL 1998 11 23.0 03 53.43 +25 33.3 17.6 -1.17 + 1.0 1.9/23.7 33334
 (9782) 1998 11 23.0 03 53.50 +20 12.3 16.8 -1.08 - 0.2 0.0/23.0 33207
 4233 T-2 1998 11 23.0 03 53.54 +13 01.2 19.0 -0.96 - 2.6 3.2/21.9 27117
 1991 DY 1998 11 23.1 03 53.85 +11 31.8 17.0 -0.93 - 4.5 3.0/21.5 33336
 4046 T-3 1998 11 23.1 03 54.10 +13 27.8 17.8 -1.11 - 1.9 2.6/22.2 33385
 2076 P-L 1998 11 23.1 03 54.20 +13 44.9 16.0 -0.94 - 8.0 3.4/21.8 33383
 1994 WP₁ 1998 11 23.1 03 54.22 +24 26.5 17.2 -1.03 - 4.6 1.8/23.9 33341
 3020 T-2 1998 11 23.1 03 54.31 +39 39.8 17.4 -1.21 - 0.4 6.9/26.4 33384
 1997 TB₁₂ 1998 11 23.2 03 54.24 +15 45.7 18.2 -0.55 - 2.8 0.9/22.3 33345
 1993 TK₂₅ 1998 11 23.2 03 54.35 +15 46.0 19.1 -0.92 - 3.3 1.6/22.4 33237
 1998 WW₁₉ 1998 11 23.2 03 54.48 +13 11.3 17.9 -0.85 - 0.7 2.3/22.2 33323
 1996 DE 1998 11 23.2 03 54.51 -06 22.5 17.3 -0.92 - 1.0 10.0/19.3 33343
 1998 WS₃ 1998 11 23.2 03 54.52 +20 42.8 16.4 -1.21 - 1.2 0.2/23.3 33322
 1993 DF₂ 1998 11 23.3 03 54.75 +12 07.2 17.2 -1.08 - 3.3 3.3/22.0 33338
 1988 CU₁ 1998 11 23.3 03 54.96 +23 04.1 17.6 -1.09 - 3.0 1.0/23.8 33334
 (9565) 1998 11 23.3 03 54.98 +15 22.7 16.2 -1.04 - 6.1 2.1/22.4 32880

1997 MQ₁ 1998 11 23.4 03 55.33 +14 46.8 17.7 -1.07 - 5.4 2.2/22.4 33260
 1978 YM 1998 11 23.4 03 55.38 +34 14.1 15.8 -1.29 - 0.7 6.7/25.5 33332
 1996 JT₇ 1998 11 23.4 03 55.44 +16 44.0 17.6 -0.93 + 0.4 1.3/23.0 33254
 1993 TV₁₂ 1998 11 23.4 03 55.47 +25 41.6 16.4 -1.08 + 1.5 2.1/24.1 33339
 1992 LE 1998 11 23.4 03 55.52 -01 01.4 18.3 -0.86 - 2.0 6.3/20.2 20826
 1998 UM₈ 1998 11 23.5 03 55.54 +15 55.3 17.2 -1.13 - 1.8 1.7/22.9 33309
 (9735) 1998 11 23.5 03 55.76 +10 31.3 17.3 -1.07 - 0.8 3.5/22.2 33196
 (7885) 1998 11 23.5 03 55.76 -14 58.4 19.5 -1.02 - 0.3 11.2/17.7 30640
 1993 TL₁₇ 1998 11 23.5 03 55.77 +07 59.2 18.4 -0.90 - 4.4 4.1/21.2 33339
 1996 JJ₁ 1998 11 23.6 03 56.08 +07 52.1 18.1 -0.83 - 3.5 4.0/21.4 33343
 (7349) 1998 11 23.6 03 56.31 +16 11.6 17.0 -0.96 - 2.2 1.6/23.0 28575
 1991 UQ₁ 1998 11 23.6 03 56.34 +27 37.8 15.6 -1.22 + 4.0 3.8/24.3 33229
 1991 XL 1998 11 23.7 03 56.59 +17 46.5 17.0 -1.14 - 1.1 1.1/23.4 33337
 (9771) 1998 11 23.8 03 56.90 +24 20.1 15.7 -1.21 + 2.5 2.0/24.2 33204
 1984 QU 1998 11 23.8 03 57.02 +31 24.6 16.3 -1.15 - 2.0 5.8/25.7 33333
 (9731) 1998 11 23.8 03 57.16 +14 44.8 17.4 -1.01 - 5.4 2.0/22.8 33195
 5111 T-3 1998 11 23.8 03 57.23 +26 13.4 17.7 -1.21 + 2.5 2.2/24.5 33385
 (9619) 1998 11 23.9 03 57.37 +09 08.6 16.6 -1.07 - 1.2 5.2/22.5 32893
 (7455) 1998 11 23.9 03 57.39 +16 47.9 16.8 -0.91 - 2.9 1.3/23.3 29078
 3320 T-3 1998 11 23.9 03 57.43 +19 25.5 17.2 -1.02 - 1.9 0.4/23.8 33328
 (9580) 1998 11 23.9 03 57.56 +27 22.8 15.7 -1.04 - 2.8 2.8/25.1 32884
 1988 RQ₂ 1998 11 24.0 03 57.63 +35 59.2 16.7 -1.06 - 3.7 5.1/26.8 33334
 1994 PE₁₈ 1998 11 24.0 03 57.63 +21 31.8 17.4 -1.14 - 3.4 0.4/24.2 33242
 1973 SJ₁ 1998 11 24.0 03 57.89 +17 27.8 17.8 -0.68 - 2.2 0.7/23.5 33332
 (7695) 1998 11 24.0 03 58.00 +28 43.1 15.3 -1.90 +19.8 4.5/23.6 30068
 1996 HY 1998 11 24.0 03 58.00 +19 57.1 17.9 -1.08 + 1.0 0.2/24.0 33254
 1997 OZ 1998 11 24.0 03 58.01 +18 59.3 18.2 -0.89 - 1.9 0.5/23.8 33345
 (9617) 1998 11 24.0 03 58.04 +08 35.0 16.1 -1.02 - 4.2 5.7/22.0 32893
 (9805) 1998 11 24.0 03 58.11 +33 04.3 16.4 -1.09 - 5.7 4.2/26.6 33212
 1992 DX₈ 1998 11 24.1 03 58.05 +19 14.1 16.7 -1.07 - 1.2 0.5/23.9 33230
 1987 YU₁ 1998 11 24.1 03 58.18 +14 00.2 16.9 -0.57 - 4.6 1.4/22.8 33334
 1995 YN₃ 1998 11 24.3 03 59.03 +26 38.1 17.3 -1.16 - 5.2 2.3/25.4 33342
 1990 VG₆ 1998 11 24.4 03 59.40 +07 29.0 16.7 -0.96 - 3.7 5.0/22.1 33336
 2078 T-2 1998 11 24.4 03 59.49 +13 21.0 17.1 -1.03 - 4.4 3.4/23.2 33384
 1989 WD₃ 1998 11 24.5 03 59.84 +20 34.0 16.5 -0.95 - 5.2 0.0/24.5 33335
 1998 UE₁₅ 1998 11 24.5 04 00.25 +05 34.2 17.3 -1.18 + 1.0 7.1/23.1 33310
 1992 RM₇ 1998 11 24.6 04 00.24 +20 22.5 17.3 -0.90 - 1.6 0.1/24.6 33338
 1998 VU₄ 1998 11 24.6 04 00.28 +16 01.9 16.4 -0.69 - 3.4 1.2/23.8 33316
 1998 UL₈ 1998 11 24.6 04 00.32 +18 48.9 16.4 -0.89 - 1.6 0.6/24.4 33309
 1997 OT 1998 11 24.6 04 00.37 +31 36.1 19.6 -0.94 - 2.7 3.3/26.6 30903
 (7736) 1998 11 24.6 04 00.53 -00 20.3 15.8 -0.93 - 4.0 7.8/21.2 30254
 (7950) 1998 11 24.7 04 01.05 +37 13.7 16.0 -1.04 - 1.5 5.1/27.5 30747
 1997 SH 1998 11 25.0 04 01.88 +27 40.8 18.2 -0.92 - 4.5 2.1/26.3 33345
 1994 VU 1998 11 25.0 04 01.91 +23 10.4 15.7 -1.21 + 4.4 1.1/25.2 33246
 4298 T-1 1998 11 25.0 04 01.92 +15 34.2 18.3 -1.07 - 2.6 1.9/24.3 30095
 1982 TS₁ 1998 11 25.0 04 02.10 +21 37.7 16.6 -0.88 - 5.6 0.3/25.2 33333
 1995 YY₁ 1998 11 25.0 04 02.17 +13 33.9 17.7 -1.11 - 1.4 2.7/24.1 33342
 1998 VY₃₃ 1998 11 25.0 04 02.29 +22 02.7 15.6 -0.94 - 3.6 0.6/25.3 33320
 1997 QS 1998 11 25.1 04 02.28 +22 43.1 18.7 -0.93 - 2.0 0.7/25.4 33345
 1997 RB₇ 1998 11 25.1 04 02.46 +14 04.7 16.8 -0.83 - 4.3 2.0/24.0 33345
 1992 SQ₂₄ 1998 11 25.1 04 02.47 +11 17.4 16.9 -0.83 - 4.8 3.0/23.4 33338

1995 AO ₁	1998 11 25.1	04 02.49 +12 04.5 17.6	-0.99 - 6.8	3.3/23.4	33341	1997 TT ₉	1998 11 27.3	04 11.74 +25 48.1 17.9	-0.64 - 0.4	1.0/28.0	32753
1995 AF	1998 11 25.1	04 02.77 +34 56.8 16.3	-1.11 - 5.6	5.0/28.0	33341	1991 UN ₃	1998 11 27.3	04 11.99 +18 10.2 15.9	-1.13 0.0	1.4/27.0	33337
2084 T-2	1998 11 25.3	04 03.50 -13 30.4 17.4	-1.06 -10.8	15.8/15.8	33384	1991 XN	1998 11 27.3	04 12.02 +21 07.9 15.5	-1.05 + 8.8	0.0/27.4	33337
1981 EQ ₁₀	1998 11 25.4	04 03.67 +26 23.8 17.4	-1.03 - 3.8	2.8/26.4	33332	1993 FA ₂₈	1998 11 27.3	04 12.03 +30 02.5 16.7	-1.20 - 2.6	4.1/28.7	33234
(7898)	1998 11 25.4	04 03.91 +13 39.2 15.0	-1.21 + 1.6	3.4/24.8	30644	1993 RQ ₅	1998 11 27.4	04 12.25 +11 08.4 17.9	-0.92 - 3.7	3.7/25.8	33339
1981 EJ ₃₁	1998 11 25.5	04 04.01 +12 47.0 20.1	-1.01 - 3.4	2.9/24.2	26921	(9752)	1998 11 27.5	04 12.62 +33 55.1 16.7	-1.21 - 1.8	5.5/29.3	33200
1994 BD ₄	1998 11 25.5	04 04.08 +11 40.9 17.6	-0.83 - 2.5	3.0/24.1	33340	1044 T-2	1998 11 27.5	04 12.88 +27 47.9 18.3	-1.19 - 3.2	2.5/28.6	24578
1997 GO ₁₃	1998 11 25.5	04 04.15 +21 21.6 18.2	-1.22 - 3.6	0.3/25.6	33344	1989 TR ₁₁	1998 11 27.5	04 12.88 +38 03.2 16.8	-1.27 + 0.2	6.4/29.8	33335
1997 SZ ₂₃	1998 11 25.6	04 04.57 +34 01.0 19.7	-0.68 - 0.3	2.6/27.7	31012	1997 SV ₁₄	1998 11 27.6	04 12.95 +24 53.2 19.3	-0.61 - 1.9	0.8/28.2	30987
1996 TH ₅₂	1998 11 25.6	04 04.64 +30 55.8 19.6	-0.64 - 1.0	2.0/27.3	32676	1998 WG ₁	1998 11 27.6	04 13.19 -14 34.1 16.7	-0.79 -17.8	17.5/14.3	33379
1994 NF ₁	1998 11 25.6	04 04.79 +12 07.7 16.7	-1.17 + 0.2	3.6/24.7	33340	6020 P-L	1998 11 27.7	04 13.56 +19 47.4 18.6	-0.54 - 1.4	0.2/27.5	26415
1997 GD	1998 11 25.7	04 04.81 +31 13.5 18.3	-1.69 + 2.3	5.2/26.5	33257	(7848)	1998 11 27.7	04 13.56 +25 52.5 17.5	-1.06 - 2.9	1.5/28.4	30443
1992 DW ₇	1998 11 25.7	04 04.84 +20 04.4 16.5	-1.08 - 1.5	0.3/25.6	33230	(7344)	1998 11 27.7	04 13.80 +00 21.4 17.1	-0.91 - 3.9	7.2/24.2	28574
1995 BP ₁₅	1998 11 25.8	04 05.31 -03 58.9 17.4	-0.82 + 0.1	7.0/22.6	31106	4084 P-L	1998 11 27.8	04 14.03 +19 48.6 19.3	-1.01 - 3.1	0.5/27.6	30696
(9768)	1998 11 25.8	04 05.48 +39 56.3 17.1	-1.61 + 6.2	7.5/26.7	33203	(9569)	1998 11 27.9	04 14.61 +12 04.6 16.2	-1.04 - 0.3	4.2/27.0	32881
(7824)	1998 11 25.8	04 05.59 +04 09.3 15.4	-1.02 - 3.1	8.0/23.4	30437	1993 VH ₅	1998 11 28.0	04 14.72 +15 31.9 17.8	-0.96 - 1.3	2.2/27.3	33238
1988 CT ₂	1998 11 25.9	04 05.96 +16 42.7 17.7	-1.03 - 2.2	1.5/25.4	33334	4536 T-2	1998 11 28.0	04 14.95 +03 14.8 19.6	-0.54 - 2.0	3.6/25.1	33059
1973 SF ₁	1998 11 25.9	04 05.99 +25 16.3 17.5	-0.64 - 0.6	0.9/26.6	33331	1993 FX ₂₅	1998 11 28.0	04 15.11 +28 02.3 18.8	-1.18 - 2.9	2.6/29.1	26926
(9824)	1998 11 26.0	04 06.17 +19 54.6 17.1	-0.94 - 1.6	0.3/25.9	33217	(9798)	1998 11 28.1	04 15.12 +12 18.1 15.8	-0.92 + 0.8	3.0/27.2	33211
4281 T-2	1998 11 26.0	04 06.40 +33 24.9 19.7	-1.05 - 0.7	3.7/27.8	32293	1997 QG ₄	1998 11 28.2	04 15.69 +03 55.4 17.6	-0.82 - 1.5	4.9/25.8	33345
1996 DK ₂	1998 11 26.1	04 06.61 +13 29.2 19.3	-0.96 - 2.1	2.3/25.0	30784	1991 EN	1998 11 28.3	04 16.21 +37 47.3 17.3	-0.66 - 2.9	3.0/01.3	33336
1993 TU ₃₈	1998 11 26.1	04 06.98 +15 48.4 17.6	-0.95 - 0.9	1.8/25.5	33339	1997 QD ₂	1998 11 28.4	04 16.32 +05 39.4 16.8	-0.83 - 1.4	4.7/26.3	33345
1993 LW ₁	1998 11 26.1	04 07.01 +21 26.1 17.8	-1.13 + 0.4	0.2/26.3	30782	1991 PG ₃	1998 11 28.4	04 16.40 +19 36.2 18.2	-0.86 - 1.6	0.5/28.2	33336
1994 NQ	1998 11 26.2	04 07.36 -11 47.8 16.7	-1.27 +11.8	15.2/28.0	33241	1988 GF	1998 11 28.4	04 16.75 +14 55.4 16.7	-0.96 - 5.9	2.1/27.4	33334
(9796)	1998 11 26.2	04 07.41 +36 31.2 16.7	-1.27 + 1.5	5.7/28.0	33210	1993 TN ₁₈	1998 11 28.4	04 16.83 +21 44.6 18.1	-0.99 - 1.3	0.1/28.6	32934
4129 T-2	1998 11 26.3	04 07.64 +25 46.7 17.8	-1.18 - 1.5	1.8/27.0	33384	1997 RO ₇	1998 11 28.5	04 16.82 +07 04.6 18.2	-0.80 - 1.2	4.1/26.6	33345
1992 RX ₆	1998 11 26.4	04 07.82 +33 29.8 16.7	-1.03 - 0.6	4.3/28.2	33338	1991 RJ ₇	1998 11 28.5	04 16.88 +25 19.6 17.4	-1.18 - 3.8	1.6/29.1	33337
1990 RE ₂	1998 11 26.4	04 07.95 +15 43.6 16.0	-0.97 - 4.2	2.5/25.6	33335	1998 UO ₁₈	1998 11 28.5	04 17.22 +25 25.1 17.3	-1.11 - 2.1	2.0/29.1	33372
4200 P-L	1998 11 26.4	04 08.11 +14 14.4 18.2	-1.11 - 4.3	2.9/25.4	33383	(9774)	1998 11 28.6	04 17.51 +22 20.3 16.4	-1.03 - 2.5	0.4/28.8	33205
1993 OX ₂	1998 11 26.5	04 08.26 +11 09.7 18.7	-0.93 - 1.8	3.8/25.2	30291	1996 HP	1998 11 28.6	04 17.61 +27 21.6 17.6	-1.20 + 2.9	2.3/29.1	33343
1996 EG ₂	1998 11 26.5	04 08.27 +01 36.1 17.2	-0.93 - 3.2	7.1/23.4	33343	1994 WL ₃	1998 11 28.7	04 17.66 +13 36.2 16.3	-0.98 - 1.6	3.5/27.7	31542
1993 FO ₃₁	1998 11 26.5	04 08.27 +23 56.8 19.0	-1.16 - 2.0	1.2/26.9	27915	1991 RV ₁₆	1998 11 28.7	04 17.80 +31 33.9 16.7	-1.27 + 0.9	5.0/29.8	33337
(7849)	1998 11 26.5	04 08.35 +17 48.0 16.9	-1.00 0.0	1.2/26.1	30443	1979 QT ₁	1998 11 28.7	04 17.81 +19 18.9 18.6	-1.08 - 2.8	0.7/28.5	30468
(9601)	1998 11 26.5	04 08.68 +18 15.5 15.8	-1.18 - 0.3	1.0/26.3	32889	1967 JQ	1998 11 28.7	04 17.99 +25 10.2 17.1	-1.12 - 5.2	1.4/29.4	33217
1997 PY ₁	1998 11 26.6	04 08.79 +35 42.1 18.9	-1.02 - 1.9	4.5/28.9	33261	(7732)	1998 11 28.8	04 18.08 +22 38.2 17.2	-0.92 - 2.4	0.4/29.0	30253
1976 QA	1998 11 26.6	04 08.83 +25 56.2 16.8	-1.17 - 3.5	2.2/28.0	33332	1998 UP ₁₈	1998 11 28.8	04 18.21 +24 03.3 16.1	-1.09 - 6.1	1.2/29.3	33311
1981 DJ ₃	1998 11 26.6	04 08.94 +28 41.6 18.4	-0.98 - 5.0	3.1/28.0	26914	1991 VQ ₁	1998 11 28.9	04 18.48 +19 56.6 15.2	-1.20 + 3.1	0.7/28.8	33337
1993 FL ₄₁	1998 11 26.7	04 09.08 +14 09.9 18.2	-1.09 - 3.0	2.9/25.7	26759	1981 EW ₁₁	1998 11 28.9	04 18.60 +21 40.5 20.0	-1.09 - 3.2	0.1/29.0	26917
1996 HB ₁₂	1998 11 26.7	04 09.19 +29 13.4 16.6	-1.02 + 0.4	2.5/27.7	33076	7639 P-L	1998 11 28.9	04 18.68 +18 09.1 17.8	-1.05 - 1.1	1.2/28.5	33384
4613 T-2	1998 11 26.8	04 09.53 -11 43.3 18.7	-0.52 - 2.2	5.8/20.6	29651	1997 OJ ₁	1998 11 29.0	04 18.89 +18 52.2 18.5	-0.93 - 1.4	0.9/28.7	33345
1996 BS ₁	1998 11 27.0	04 10.73 +24 41.9 16.8	-1.15 - 1.3	1.5/27.5	33342	1975 SE ₁	1998 11 29.0	04 19.27 +33 22.1 17.9	-1.32 + 0.1	4.9/30.5	33332
6556 P-L	1998 11 27.0	04 10.74 +06 02.1 17.9	-0.89 - 3.1	5.5/24.8	33384	1998 UB ₁₇	1998 11 29.2	04 19.88 -05 02.3 16.8	-1.36 +12.7	12.4/30.7	33311
1997 RG ₉	1998 11 27.1	04 10.91 +38 28.9 18.4	-0.98 - 3.8	4.6/30.3	33345	1978 VT ₉	1998 11 29.3	04 20.25 +22 56.2 17.9	-1.23 - 0.5	0.7/29.5	22270
1997 UB ₁₁	1998 11 27.1	04 10.94 +50 16.0 16.9	-1.26 + 0.5	8.8/01.3	33346	(7795)	1998 11 29.3	04 20.37 +08 59.8 17.8	-1.07 - 0.8	5.3/27.9	30269
(9541)	1998 11 27.2	04 11.28 +14 25.3 15.3	-1.14 + 0.8	3.2/26.5	32874	1998 VA ₄	1998 11 29.4	04 20.64 +19 49.8 17.3	-1.21 + 2.8	0.7/29.3	33316
(9761)	1998 11 27.2	04 11.47 +28 31.9 15.9	-1.15 - 3.0	3.7/28.4	33202	1993 FY ₁₁	1998 11 29.4	04 20.78 +26 20.3 18.4	-1.16 - 1.4	1.7/30.0	24393
(9723)	1998 11 27.2	04 11.55 +29 30.0 16.4	-1.27 - 4.6	3.8/28.6	33193	1995 DK	1998 11 29.4	04 20.92 +06 12.0 17.4	-0.87 - 2.4	5.1/27.2	33342
5027 T-3	1998 11 27.2	04 11.63 +12 27.2 19.1	-1.11 - 1.4	3.4/26.2	24579	(9724)	1998 11 29.6	04 21.48 +19 44.2 16.7	-1.02 - 3.6	0.8/29.3	33193
1987 SV ₃	1998 11 27.2	04 11.71 +35 45.8 16.9	-1.33 - 1.1	6.2/29.3	33333	1993 BY ₄	1998 11 29.6	04 21.49 +24 27.1 18.1	-1.20 - 3.1	1.4/30.0	33338
1994 PM ₂₈	1998 11 27.3	04 11.70 +25 49.2 18.7	-1.21 - 1.8	1.9/28.0	33340	5159 T-2	1998 11 29.7	04 22.01 +34 17.3 18.4	-0.64 - 1.6	2.4/01.7	31023
1979 MY ₅	1998 11 27.3	04 11.74 +30 40.9 17.7	-1.03 - 5.3	3.1/29.0	31003	1979 MC ₉	1998 11 29.7	04 22.15 +18 33.6 20.6	-1.08 - 2.9	1.1/29.4	30685

1997 OZ ₁	1998 11 29.7	04 22.15 -01 26.2 17.8	-0.92 - 1.8	7.8/26.7	33345	1994 AU ₆	1998 12 02.1	04 32.47 +18 59.0 17.6	-0.87 - 1.4	0.9/01.8	32233
1990 EF ₂	1998 11 29.7	04 22.36 +22 12.1 17.4	-1.18 - 4.7	0.3/29.9	33224	1978 PW ₃	1998 12 02.2	04 33.15 +11 40.4 17.5	-1.02 - 2.3	3.8/01.1	30468
(9793)	1998 11 29.7	04 22.37 +20 50.5 16.5	-1.11 + 0.7	0.4/29.7	33209	1992 RJ ₅	1998 12 02.4	04 33.62 +20 54.6 18.1	-0.93 - 0.8	0.4/02.3	33338
1996 GD ₁₇	1998 11 29.8	04 22.50 -19 42.4 19.4	-1.01 - 4.2	15.8/20.4	33253	(9759)	1998 12 02.4	04 34.04 +24 25.9 16.9	-0.89 - 3.4	0.8/02.8	33201
1994 RH ₉	1998 11 29.8	04 22.54 +39 02.3 17.4	-1.44 - 2.7	7.6/03.0	33340	1993 TO ₁₅	1998 12 02.5	04 34.40 +19 04.6 17.7	-0.96 - 2.5	1.1/02.2	30291
1994 SQ ₇	1998 11 29.8	04 22.85 +20 58.1 18.9	-1.15 - 2.2	0.2/29.8	24584	1997 GU ₇	1998 12 02.6	04 34.53 +21 42.5 18.7	-1.19 - 0.7	10.0/23.0	30473
1993 XM	1998 11 29.9	04 23.06 +04 15.2 17.2	-0.91 + 1.7	5.8/28.3	33339	1986 QO ₂	1998 12 02.6	04 34.55 +19 52.7 16.9	-0.88 - 1.5	0.6/02.4	27324
1996 CY ₇	1998 11 29.9	04 23.13 +18 43.9 18.6	-1.10 - 1.8	1.0/29.6	33342	1994 AL ₁	1998 12 02.7	04 35.00 -12 39.8 17.6	-1.64 +13.9	17.8/03.0	33340
1994 WH ₁	1998 11 29.9	04 23.21 +23 25.8 16.4	-1.03 - 6.5	0.6/30.3	33247	1994 WJ ₁₂	1998 12 02.8	04 35.49 +28 17.9 15.7	-1.03 - 8.6	2.9/04.0	33247
3230 T-2	1998 11 30.2	04 24.26 +18 30.1 18.3	-0.84 - 1.1	1.0/29.9	25337	(9599)	1998 12 02.8	04 35.50 +20 41.1 16.0	-1.18 + 0.5	11.1/23.0	32888
1992 JQ	1998 11 30.2	04 24.30 +05 31.4 17.9	-0.90 - 3.4	5.0/27.9	33338	1993 TF ₁₆	1998 12 03.0	04 36.24 +09 27.8 20.0	-0.93 - 3.2	4.3/01.5	32933
(9790)	1998 11 30.2	04 24.43 +19 31.1 17.8	-0.56 - 2.0	0.4/30.0	33209	(7971)	1998 12 03.0	04 36.29 +05 23.9 17.9	-0.93 - 4.8	5.7/30.6	30752
1991 RH ₂₇	1998 11 30.2	04 24.48 +13 10.2 17.3	-1.13 - 1.9	3.6/29.3	30078	1989 TC ₄	1998 12 03.0	04 36.32 +18 16.9 18.1	-1.00 - 1.4	1.6/02.6	33223
4302 T-1	1998 11 30.2	04 24.48 +23 53.7 17.8	-1.08 - 0.4	0.8/30.5	29668	1982 SH ₁	1998 12 03.0	04 36.50 -17 38.6 18.6	-1.06 - 7.0	20.3/24.9	8393
(7738)	1998 11 30.3	04 24.53 +21 52.7 17.0	-1.20 - 0.4	0.1/30.3	30254	6186 P-L	1998 12 03.1	04 36.59 +14 55.9 19.2	-1.11 - 3.5	2.8/02.3	30293
1981 EF ₃₂	1998 11 30.3	04 24.61 +28 10.7 19.4	-1.11 - 5.0	2.4/01.3	26921	1995 BJ ₁₁	1998 12 03.1	04 36.76 +16 24.1 18.1	-0.87 - 1.3	1.7/02.5	32943
(7705)	1998 11 30.3	04 24.76 +18 38.2 17.8	-1.14 - 1.1	1.2/30.0	30070	(7814)	1998 12 03.2	04 37.10 +47 20.0 15.7	-1.28 - 5.5	9.8/08.0	30435
1040 T-2	1998 11 30.4	04 25.03 +19 58.4 18.2	-1.12 - 3.1	0.7/30.2	26912	1993 FZ ₁₈	1998 12 03.3	04 37.77 +21 59.6 16.6	-1.16 0.0	0.0/03.4	28588
6541 P-L	1998 11 30.4	04 25.10 +11 22.4 18.2	-0.55 - 1.2	2.0/29.0	29668	1997 SS ₃₁	1998 12 03.4	04 37.95 +20 36.4 17.1	-0.86 - 3.4	0.5/03.2	33264
4572 P-L	1998 11 30.4	04 25.26 +30 47.1 18.6	-0.64 - 0.6	1.8/01.7	31000	1994 XP ₄	1998 12 03.4	04 37.97 +28 31.5 17.8	-1.12 - 1.8	2.7/04.1	24915
1989 WU ₄	1998 11 30.6	04 26.00 +24 21.7 17.2	-0.99 - 3.6	1.0/01.0	33335	1997 SY ₃₂	1998 12 03.4	04 38.18 +28 42.4 19.1	-0.63 - 0.6	1.3/04.2	30881
1996 JF ₉	1998 11 30.6	04 26.05 +11 59.8 21.1	-0.83 - 1.8	2.6/29.4	27562	1987 UT	1998 12 03.4	04 38.22 +27 30.2 16.8	-1.21 - 4.4	2.4/04.2	33334
1995 BF	1998 11 30.6	04 26.22 +15 41.2 18.0	-0.99 - 1.9	2.2/29.9	33248	2127 T-2	1998 12 03.4	04 38.36 +25 12.7 18.8	-1.07 - 2.3	1.2/03.8	22088
1989 SF ₁	1998 11 30.7	04 26.71 +09 26.0 17.6	-0.95 - 2.1	4.1/29.3	33334	(7686)	1998 12 03.5	04 38.43 +30 06.8 16.8	-1.24 - 1.6	3.3/04.3	29908
(7911)	1998 11 30.7	04 26.72 +43 28.8 17.4	-1.14 - 1.7	6.2/03.8	30739	1995 CJ	1998 12 03.5	04 38.61 +05 17.3 18.4	-0.81 - 0.2	4.4/01.9	31008
3181 T-2	1998 11 30.8	04 26.98 +19 18.9 17.9	-0.94 - 1.1	0.8/30.6	33384	1988 RF ₁₃	1998 12 03.6	04 38.88 +39 24.0 18.4	-1.23 + 1.5	5.6/05.1	33334
(9602)	1998 12 01.0	04 27.78 +25 33.4 16.4	-1.20 - 2.3	1.6/01.5	32889	4013 P-L	1998 12 03.6	04 39.03 +13 45.7 18.4	-0.95 - 3.6	3.1/02.6	33324
(8066)	1998 12 01.0	04 27.86 +09 03.7 17.2	-0.79 - 2.9	3.7/29.3	30959	(7801)	1998 12 03.6	04 39.03 +23 11.9 17.2	-1.07 - 2.6	0.4/03.8	30270
1994 WN ₃	1998 12 01.0	04 27.94 +09 31.4 15.5	-0.96 + 0.8	5.9/30.0	33341	1990 SA ₈	1998 12 03.6	04 39.20 +19 01.7 16.8	-1.05 0.0	1.5/03.4	33224
1994 PK ₁₁	1998 12 01.1	04 28.18 +29 03.7 15.9	-1.01 - 5.0	3.8/02.3	33242	1997 TQ ₁₂	1998 12 03.7	04 39.19 +20 55.2 19.5	-0.58 - 1.6	0.2/03.6	30988
1973 SX ₂	1998 12 01.1	04 28.29 +03 24.1 15.5	-0.92 - 6.6	7.5/28.0	33218	1987 DK ₆	1998 12 03.7	04 39.26 +26 04.5 17.7	-1.24 - 2.6	1.5/04.1	29940
1979 MK	1998 12 01.1	04 28.39 +10 47.1 16.7	-1.05 - 2.2	4.5/29.9	33332	1994 LY ₁	1998 12 03.7	04 39.39 +08 31.7 17.8	-1.09 + 1.3	6.4/02.7	26744
1144 T-3	1998 12 01.2	04 28.73 +35 13.1 18.1	-1.04 - 2.1	4.6/03.1	33384	(9612)	1998 12 03.7	04 39.51 +32 46.2 15.6	-0.96 - 3.7	4.1/05.3	32892
1997 PC ₁	1998 12 01.2	04 28.86 +21 55.4 19.2	-0.87 - 1.6	0.0/01.3	30788	1994 TY ₂	1998 12 03.7	04 39.55 +41 48.4 15.0	-1.20 + 5.3	10.7/04.5	33341
1981 EQ ₄₃	1998 12 01.3	04 28.90 +20 05.1 20.5	-1.07 - 2.6	0.6/01.1	24406	1996 GA ₁₈	1998 12 03.8	04 39.72 +14 12.3 18.4	-0.97 - 3.5	2.7/02.8	29140
1996 GG ₂₀	1998 12 01.4	04 29.45 +18 04.7 17.6	-0.93 - 1.6	1.3/01.0	33343	2311 T-3	1998 12 03.8	04 39.90 +13 38.3 18.3	-0.86 - 3.6	2.7/02.7	30683
4100 P-L	1998 12 01.5	04 29.65 +41 18.8 18.6	-1.26 - 1.0	6.6/03.7	25341	1997 PU ₂	1998 12 03.8	04 39.99 -17 12.8 17.7	-1.04 0.0	16.2/28.4	33345
9602 P-L	1998 12 01.5	04 29.73 +13 06.8 18.8	-0.55 - 1.0	1.7/30.4	22274	5137 T-2	1998 12 03.9	04 40.24 +08 25.5 18.4	-0.96 - 5.8	4.9/01.9	33384
4071 T-3	1998 12 01.5	04 29.97 +22 59.2 16.4	-1.14 + 1.6	0.6/01.7	33385	1981 EJ ₁₁	1998 12 03.9	04 40.34 +26 11.5 18.5	-1.12 - 3.1	1.5/04.4	26917
1998 UZ ₂₄	1998 12 01.5	04 29.97 +22 55.2 16.6	-1.04 + 0.9	0.4/01.7	33315	1997 JT ₃	1998 12 04.1	04 41.22 +22 18.0 18.5	-1.15 - 1.0	0.0/04.2	33344
(9531)	1998 12 01.6	04 30.45 +32 24.5 16.1	-1.30 - 1.7	5.0/03.0	32871	(7439)	1998 12 04.2	04 41.85 +22 43.0 16.7	-1.05 0.0	0.2/04.3	28835
1978 PV ₂	1998 12 01.6	04 30.56 +31 00.7 16.5	-1.34 - 4.3	4.0/03.0	10630	1996 BL ₁₇	1998 12 04.3	04 41.78 +20 05.8 16.5	-1.20 + 1.0	0.9/04.2	27568
1996 SO ₈	1998 12 01.7	04 30.68 +26 59.2 17.4	-0.61 - 1.6	1.0/02.4	33343	1990 UC ₂	1998 12 04.3	04 42.04 +19 13.0 16.9	-1.15 + 3.0	1.3/04.2	33225
1993 QE ₁	1998 12 01.7	04 30.91 +02 30.6 16.9	-0.98 + 1.3	6.9/30.3	33339	(7943)	1998 12 04.3	04 42.09 +20 44.6 17.5	-0.85 - 1.6	0.4/04.2	30746
1987 RN ₆	1998 12 01.7	04 30.98 +20 06.5 16.5	-0.94 0.0	0.6/01.6	33333	1990 RF ₂	1998 12 04.3	04 42.30 +21 19.4 17.3	-1.09 - 2.6	0.3/04.3	33335
(8241)	1998 12 01.9	04 31.37 +25 51.7 18.2	-0.59 - 0.9	0.7/02.4	31206	2198 T-1	1998 12 04.4	04 42.20 +21 20.2 17.8	-0.89 - 0.7	0.3/04.3	33384
1998 SO ₂	1998 12 01.9	04 31.39 +19 47.2 16.8	-1.18 + 6.7	1.0/01.9	33353	1990 RN ₃	1998 12 04.4	04 42.61 +14 10.9 17.3	-1.05 - 2.4	2.8/03.6	30686
1996 FJ ₁₈	1998 12 01.9	04 31.44 +26 56.3 17.6	-0.95 - 1.2	1.4/02.5	29114	1993 HH ₁	1998 12 04.5	04 42.81 +23 03.0 17.2	-1.15 - 2.3	0.3/04.6	29944
1997 TK ₁	1998 12 01.9	04 31.86 +28 32.1 18.6	-1.06 - 2.4	2.6/02.8	33264	1998 VR ₃₁	1998 12 04.5	04 43.07 +20 49.9 16.9	-1.11 - 4.8	0.7/04.4	33320
1990 OK ₃	1998 12 02.0	04 31.91 +17 19.0 17.3	-1.11 - 1.4	1.9/01.5	30091	1990 RA ₇	1998 12 04.6	04 43.23 +06 20.9 17.8	-1.05 - 2.3	5.7/02.8	27444
1996 HR ₂₄	1998 12 02.1	04 32.46 +20 03.2 18.6	-0.87 - 0.8	0.5/01.9	33343	1997 NP ₂	1998 12 04.6	04 43.59 +16 00.3 18.3	-1.12 - 3.4	2.4/04.0	30692

1997 QK	1998 12 04.7	04 43.70 +31 42.6 17.9	-0.99 - 3.7	3.0/06.0	33262
1994 TQ ₁	1998 12 04.7	04 43.73 +25 41.1 16.9	-1.19 + 0.4	1.3/05.0	33340
1995 BP ₁₁	1998 12 04.8	04 44.11 +19 20.7 19.6	-0.88 - 1.2	0.9/04.5	32943
1995 GL ₇	1998 12 04.9	04 44.60 +22 45.6 17.9	-0.95 + 0.3	0.2/05.0	33249
1997 SD ₁	1998 12 04.9	04 44.75 +14 04.0 18.1	-0.95 - 4.6	2.7/03.9	31011
1992 OV ₆	1998 12 04.9	04 44.82 +20 25.9 17.1	-0.94 - 2.0	0.7/04.8	30688
1982 TK ₁	1998 12 05.0	04 45.16 +20 04.0 15.8	-0.90 - 5.2	0.8/04.8	33333
1990 XF	1998 12 05.1	04 45.24 +34 31.3 15.1	-1.18 - 5.5	5.0/06.7	33336
1991 ST	1998 12 05.1	04 45.44 +20 52.9 16.7	-1.26 + 0.9	0.6/05.0	33070
(7880)	1998 12 05.2	04 45.68 +25 31.8 16.6	-0.99 - 2.5	1.1/05.6	30638
1998 RE	1998 12 05.2	04 45.75 +27 34.3 17.0	-0.98 + 1.7	1.6/05.6	33339
1987 VR	1998 12 05.2	04 46.08 +13 26.0 17.0	-0.85 - 3.9	3.1/04.1	33334
1996 KL ₁	1998 12 05.2	04 46.09 +02 32.1 19.8	-0.79 + 0.3	4.8/03.7	30902
(9628)	1998 12 05.2	04 46.15 +28 52.1 15.3	-1.09 - 8.6	2.7/06.4	32895
1997 QF	1998 12 05.2	04 46.19 +02 59.1 18.3	-0.87 + 0.1	6.1/03.7	33262
1998 WJ	1998 12 05.3	04 46.40 +18 46.4 17.9	-1.10 - 4.2	1.7/04.9	33321
1182 T-3	1998 12 05.3	04 46.51 +34 49.7 18.4	-1.03 - 2.1	4.0/06.8	22702
1992 SJ ₂	1998 12 05.4	04 46.64 +05 57.8 16.7	-0.84 - 1.8	5.4/03.6	33338
1989 SZ ₃	1998 12 05.5	04 47.12 +18 09.9 17.4	-1.01 - 0.6	1.6/05.2	24562
1993 SU ₆	1998 12 05.5	04 47.38 +23 03.5 17.8	-1.01 - 1.7	0.2/05.6	31139
1995 BW	1998 12 05.5	04 47.44 +25 47.8 16.7	-1.03 - 0.9	1.3/05.9	31008
1982 FJ ₃	1998 12 05.7	04 47.85 +25 02.5 18.5	-1.16 - 1.7	1.0/05.9	27553
1997 NA ₁	1998 12 05.7	04 48.00 +20 17.0 18.4	-0.93 - 1.8	0.7/05.5	33345
1991 GX ₁	1998 12 05.7	04 48.18 +30 50.3 16.9	-0.63 - 1.8	1.6/06.8	33336
1990 OX ₁	1998 12 05.8	04 48.65 +19 59.9 16.4	-1.13 + 1.2	1.1/05.7	33335
1988 PU	1998 12 05.9	04 48.81 +21 49.3 16.4	-0.98 - 4.8	0.2/05.8	33221
1989 UA ₆	1998 12 05.9	04 48.94 +23 40.8 18.1	-0.70 - 0.7	0.3/06.1	30895
1985 PB ₂	1998 12 06.0	04 49.24 -00 41.5 16.5	-0.97 + 1.6	9.5/04.9	33333
1981 EJ ₂₅	1998 12 06.0	04 49.39 +18 51.9 20.7	-1.07 - 2.1	1.3/05.7	22697
1996 DZ	1998 12 06.1	04 49.97 +21 20.2 17.1	-1.08 - 1.2	0.4/06.1	31009
(7864)	1998 12 06.1	04 49.99 +13 22.4 16.2	-0.99 + 1.2	3.4/05.6	30635
1981 EF ₃₃	1998 12 06.3	04 50.54 +15 15.1 21.3	-1.03 - 3.3	2.5/05.5	26921
1990 SC ₃	1998 12 06.3	04 50.66 +16 37.8 17.9	-1.09 - 0.5	2.2/05.9	31005
1997 PK ₁	1998 12 06.4	04 51.33 +11 57.4 17.7	-0.93 - 0.5	4.0/05.6	33345
(9576)	1998 12 06.4	04 51.36 +26 50.2 16.9	-0.94 - 4.4	1.5/07.0	32883
1996 AT	1998 12 06.5	04 51.36 +17 45.1 16.8	-1.15 - 0.9	1.9/06.1	26748
1994 TS ₁₆	1998 12 06.5	04 51.43 +13 19.6 17.2	-1.06 - 2.7	3.7/05.6	33245
1990 YX	1998 12 06.5	04 51.49 +31 13.9 17.0	-1.12 - 0.4	3.9/07.2	33068
1991 PW ₉	1998 12 06.5	04 51.64 +08 25.9 17.9	-0.81 - 0.8	4.2/05.3	33336
1988 XK	1998 12 06.5	04 51.68 +19 14.5 16.5	-0.94 - 4.3	1.2/06.2	22272
1996 OH	1998 12 06.6	04 51.96 +15 10.4 18.4	-0.78 - 0.4	2.1/06.0	30785
1993 TW ₃₃	1998 12 06.7	04 52.33 +19 00.6 17.1	-0.99 + 0.1	1.2/06.5	27557
1993 TB ₁₉	1998 12 06.7	04 52.47 +23 52.4 18.6	-1.03 - 0.4	0.5/06.9	27312
3063 P-L	1998 12 06.7	04 52.67 +28 23.4 17.2	-0.87 - 2.6	1.7/07.4	27724
(7874)	1998 12 06.7	04 52.68 +49 25.0 16.5	-1.49 - 8.0	9.5/11.1	30637
1996 UX ₃	1998 12 06.8	04 52.73 +04 53.7 17.9	-0.58 - 3.2	3.9/04.5	33343
1997 LL ₂	1998 12 06.8	04 52.79 +14 57.1 18.1	-1.10 - 3.7	3.3/06.0	30283
1991 RJ ₁₁	1998 12 06.9	04 53.14 +20 45.2 18.1	-0.87 - 0.9	0.5/06.8	30290
1998 WG ₇	1998 12 06.9	04 53.30 +18 39.9 16.9	-1.15 + 0.5	1.5/06.7	33322
1991 DE	1998 12 06.9	04 53.41 +19 27.5 16.0	-1.15 + 3.8	1.2/06.9	33336
(8169)	1998 12 07.0	04 53.65 +22 15.5 17.0	-0.90 - 0.7	0.1/07.0	31079

1978 VW ₉	1998 12 07.0	04 53.76 +25 10.1 18.2	-1.11 - 0.9	1.0/07.3	27302
1976 UN ₂	1998 12 07.0	04 53.89 +22 46.6 16.7	-1.22 - 3.2	0.1/07.1	29909
1998 VV ₅	1998 12 07.1	04 54.19 +23 14.8 16.0	-0.93 + 0.9	0.2/07.2	33317
1989 SN ₄	1998 12 07.2	04 54.48 +16 03.4 17.3	-0.99 - 1.5	2.3/06.6	33067
1994 UF	1998 12 07.2	04 54.72 +00 00.3 17.3	-0.98 - 3.5	10.9/05.2	33245
(7924)	1998 12 07.2	04 54.73 +21 06.9 17.3	-0.88 - 1.5	0.4/07.1	30742
1986 AA ₂	1998 12 07.2	04 54.80 +16 29.8 16.6	-0.98 - 0.0	2.2/06.8	33066
1996 DF	1998 12 07.2	04 54.91 +13 59.7 15.6	-1.07 + 0.4	3.8/06.7	33343
1996 CW ₈	1998 12 07.4	04 55.68 +33 38.3 18.7	-1.26 - 0.9	4.4/08.3	30784
(7421)	1998 12 07.5	04 55.72 +00 10.3 18.0	-0.90 - 2.8	6.8/05.1	28831
1997 KS	1998 12 07.6	04 56.41 +18 05.4 17.5	-1.05 - 3.3	1.7/07.2	30788
(7873)	1998 12 07.6	04 56.61 +15 13.1 16.4	-1.00 - 0.4	2.9/07.2	30637
1981 DH ₃	1998 12 07.7	04 56.64 +15 57.1 17.9	-1.06 - 4.7	2.5/07.0	26914
1997 QD	1998 12 07.7	04 56.67 +35 49.3 20.2	-1.14 - 3.7	3.9/09.3	30904
1981 EH ₃	1998 12 07.7	04 56.99 +24 25.9 17.1	-1.11 - 5.3	0.7/08.0	33065
1994 NS	1998 12 07.7	04 57.05 +14 27.9 17.9	-1.16 - 3.0	3.1/07.0	33340
1997 LL ₆	1998 12 07.8	04 57.03 +17 39.6 17.0	-1.19 - 1.2	1.9/07.4	33345
1997 UY ₂₀	1998 12 07.8	04 57.14 +10 37.0 18.7	-0.82 - 2.5	3.2/06.6	31148
(7953)	1998 12 07.8	04 57.18 +17 25.8 17.7	-1.06 - 2.0	1.8/07.4	30748
1981 EV ₃	1998 12 07.8	04 57.41 +22 24.9 18.4	-1.09 - 4.0	9.6/28.0	26915
1994 CK ₂	1998 12 07.8	04 57.52 +23 47.3 17.9	-0.91 - 0.6	0.4/08.0	32747
1997 SN ₁₀	1998 12 07.9	04 57.46 +16 57.8 18.0	-0.83 - 1.7	1.6/07.4	30773
1993 FL ₃₉	1998 12 07.9	04 57.57 +25 16.0 18.6	-1.16 - 1.1	0.9/08.1	30688
(7941)	1998 12 08.0	04 58.02 +32 09.7 16.7	-0.96 - 2.9	3.0/09.0	30745
1997 VB ₁	1998 12 08.2	04 58.80 +27 29.7 18.3	-0.61 - 0.9	0.9/08.6	33346
1996 EM ₁₁	1998 12 08.2	04 58.81 +13 04.2 19.8	-1.09 - 1.1	4.1/07.4	32951
1981 EJ ₂	1998 12 08.2	04 59.07 +21 52.2 18.2	-0.97 - 4.4	0.3/08.2	26914
1997 SM ₃	1998 12 08.3	04 59.22 +43 32.2 17.7	-1.26 - 2.8	7.0/10.5	31011
1997 TC	1998 12 08.4	04 59.64 +25 16.4 18.0	-0.95 - 1.0	0.8/08.6	33264
1993 BE ₅	1998 12 08.4	04 59.69 +25 18.4 17.4	-0.80 - 1.4	0.7/08.6	32745
1991 FQ ₂	1998 12 08.4	04 59.71 +29 24.8 18.4	-1.06 - 1.0	2.2/08.9	29098
1981 EO ₂₂	1998 12 08.4	05 00.01 +23 14.2 19.8	-1.11 - 1.9	0.2/08.5	27118
5187 T-2	1998 12 08.6	05 00.69 +19 45.5 17.6	-0.58 - 1.8	0.6/08.3	31023
1993 FV ₇	1998 12 08.6	05 00.76 +31 15.8 16.1	-1.28 + 0.7	3.4/09.1	30291
2620 P-L	1998 12 08.6	05 00.80 +24 39.2 17.4	-1.07 - 1.1	0.7/08.8	27938
1993 TS ₃₁	1998 12 08.7	05 01.12 +16 23.9 18.9	-0.96 - 0.8	2.4/08.3	32935
1996 JK ₃	1998 12 08.7	05 01.35 +28 53.0 17.5	-1.30 + 5.1	2.7/08.8	33254
(7585)	1998 12 08.8	05 01.45 +07 37.3 16.9	-0.83 + 0.8	4.4/07.9	29597
1991 BD ₁	1998 12 08.8	05 01.53 +15 57.7 16.8	-1.03 + 0.5	2.6/08.4	29658
6071 P-L	1998 12 08.8	05 01.63 +10 57.1 17.4	-0.92 - 2.9	4.1/07.7	30696
(9680)	1998 12 08.8	05 01.93 +30 12.6 16.1	-1.19 - 3.3	3.5/09.6	32908
(7970)	1998 12 08.9	05 01.83 +28 51.2 19.0	-1.08 - 1.5	1.9/09.4	30752
4157 T-3	1998 12 08.9	05 01.85 +11 58.6 17.0	-1.09 - 1.6	4.8/08.0	27124
1994 AS	1998 12 08.9	05 01.97 +24 32.7 17.9	-0.88 - 1.0	0.5/09.1	32307
1998 TB	1998 12 08.9	05 02.29 +16 40.2 16.2	-1.07 + 1.5	2.7/08.7	33366
(9729)	1998 12 09.0	05 02.33 +44 34.7 16.7	-1.34 - 3.2	8.8/11.6	33194
2777 P-L	1998 12 09.0	05 02.58 +18 18.0 18.3	-1.07 - 1.4	1.6/08.7	31022
(7919)	1998 12 09.1	05 02.83 +23 21.2 17.5	-1.11 - 1.1	0.2/09.2	30741
1989 TF ₁₄	1998 12 09.1	05 03.06 +23 14.0 17.0	-1.06 - 0.3	0.2/09.2	29611
1990 SK ₈	1998 12 09.1	05 03.10 +18 31.2 18.2	-1.09 + 1.0	2.0/09.0	23859
1985 TU	1998 12 09.2	05 03.29 +21 56.8 16.2	-1.01 - 2.3	0.4/09.2	33333

1993 FD ₁₉	1998 12 09.2	05 03.34 +12 44.3 16.9	-1.13 - 0.1	4.2/08.6	26742
1981 EZ ₂₁	1998 12 09.2	05 03.63 +20 58.5 18.9	-0.95 - 1.6	0.6/09.1	31003
(7543)	1998 12 09.3	05 04.00 +07 21.4 17.3	-0.55 - 1.5	3.1/07.9	33331
2244 T-2	1998 12 09.3	05 04.11 +21 16.5 18.8	-1.05 - 1.4	0.6/09.3	31023
1991 TR ₆	1998 12 09.4	05 04.50 +25 25.1 18.6	-1.24 - 2.3	1.0/09.7	24741
(7810)	1998 12 09.5	05 04.68 +20 36.8 15.8	-1.08 - 4.6	1.0/09.3	30433
1976 QK ₂	1998 12 09.5	05 04.79 +21 56.8 19.0	-1.07 + 0.3	0.3/09.5	30648
1997 SM ₁	1998 12 09.5	05 04.96 +05 34.8 17.1	-0.92 - 3.5	5.9/07.8	33078
1994 PQ ₃₁	1998 12 09.6	05 04.91 +17 18.8 17.0	-1.07 - 2.8	2.7/09.1	33340
(8027)	1998 12 09.6	05 05.03 +22 40.8 17.1	-0.85 - 2.6	0.0/09.6	30858
1993 TH ₁₄	1998 12 09.6	05 05.30 +17 31.9 17.6	-1.00 - 1.2	1.7/09.3	27936
1992 EA ₄	1998 12 09.6	05 05.32 +18 57.7 18.2	-1.09 - 0.6	1.5/09.4	27913
1992 DA ₄	1998 12 09.6	05 05.43 +26 36.7 19.2	-1.16 - 1.5	1.6/10.0	32662
(7928)	1998 12 09.7	05 05.43 +32 47.3 16.6	-0.96 - 3.2	2.8/10.7	30743
2648 P-L	1998 12 09.7	05 05.53 +24 59.0 17.8	-1.08 - 0.3	1.0/09.9	24409
3098 T-3	1998 12 09.7	05 05.60 +14 29.6 18.7	-0.97 - 1.7	3.8/09.1	27565
1979 MS ₂	1998 12 09.7	05 05.86 +20 25.7 19.9	-1.11 - 2.1	0.9/09.6	30778
1997 RJ ₇	1998 12 09.8	05 05.80 +30 07.6 18.8	-0.94 - 1.8	2.1/10.4	30904
1994 QJ	1998 12 09.8	05 05.92 -13 59.2 17.3	-1.14 +10.8	16.6/13.8	25084
1996 TW	1998 12 09.8	05 06.04 +43 45.9 18.1	-0.73 - 0.1	3.7/11.5	33343
(7785)	1998 12 09.8	05 06.16 +10 01.6 16.3	-1.10 + 1.3	5.6/09.4	30266
(7973)	1998 12 09.9	05 06.34 +19 37.7 17.8	-0.95 - 0.8	1.2/09.7	30752
4319 P-L	1998 12 10.0	05 07.13 +22 30.6 18.1	-1.23 - 3.1	0.2/10.1	19875
1987 RL ₁	1998 12 10.1	05 07.43 +21 10.4 18.4	-1.19 - 1.1	0.7/10.0	30469
1995 OU ₂	1998 12 10.2	05 07.66 +10 39.3 18.9	-0.55 - 0.9	2.3/09.3	31542
(9716)	1998 12 10.2	05 07.81 +19 17.3 16.7	-1.11 - 1.5	1.4/10.0	33191
(7862)	1998 12 10.2	05 07.95 +25 33.5 17.6	-1.00 - 0.6	1.0/10.5	30634
2312 T-1	1998 12 10.2	05 07.96 +25 35.4 17.2	-0.99 - 0.5	1.0/10.5	25085
1997 PE	1998 12 10.2	05 08.07 +14 07.8 16.8	-1.07 - 3.3	3.8/09.5	33345
1997 HZ ₁₀	1998 12 10.3	05 08.37 +27 23.6 19.0	-1.25 - 0.8	1.8/10.7	32964
1979 WX ₃	1998 12 10.5	05 09.20 +20 16.7 15.7	-1.07 - 0.3	1.2/10.4	33332
1996 HW ₂₀	1998 12 10.5	05 09.29 +20 13.6 18.4	-0.89 - 0.9	0.8/10.4	27938
3111 T-2	1998 12 10.6	05 09.30 +00 57.7 17.8	-0.95 - 2.4	8.7/08.5	17978
9525 P-L	1998 12 10.6	05 09.46 +25 23.3 16.9	-1.19 + 0.8	1.2/10.7	30474
1972 TE	1998 12 10.6	05 09.74 +17 49.1 15.9	-1.01 - 3.0	2.3/10.3	33331
9538 P-L	1998 12 10.7	05 10.26 +20 15.6 17.2	-1.15 - 1.2	1.1/10.6	30474
1991 PT ₄	1998 12 10.8	05 10.21 +22 13.4 17.9	-0.90 - 1.3	0.2/10.8	31006
1992 ON	1998 12 10.8	05 10.60 +65 11.1 20.1	-2.67 - 2.4	16.5/15.7	21267
1990 RP ₉	1998 12 10.8	05 10.62 +21 12.1 16.7	-1.11 - 3.4	0.7/10.7	30686
1996 AA ₁	1998 12 10.8	05 10.63 +23 54.3 17.3	-1.19 - 1.8	0.4/10.9	33342
1992 BW ₃	1998 12 10.9	05 10.93 +28 00.4 17.9	-1.28 + 1.7	2.3/11.1	21580
1993 KQ	1998 12 10.9	05 10.94 +17 51.3 16.9	-1.17 + 1.7	1.9/10.8	30688
1974 PC	1998 12 10.9	05 11.11 -16 38.1 17.7	-1.15 + 9.7	18.2/16.2	27323
1993 FA ₄₅	1998 12 11.0	05 11.41 +29 16.0 18.5	-1.19 - 0.9	2.1/11.5	23528
1981 EJ ₃₆	1998 12 11.0	05 11.41 +26 45.7 18.1	-1.14 - 1.1	1.8/11.3	27102
1265 T-2	1998 12 11.2	05 12.27 +21 01.6 17.6	-1.05 - 1.7	0.8/11.1	22695
1981 EJ ₄₇	1998 12 11.2	05 12.37 +13 04.6 20.5	-1.04 - 1.2	3.7/10.6	26923
1996 DY ₁	1998 12 11.3	05 12.53 +20 01.0 17.6	-1.17 - 0.2	1.3/11.2	27316
(7956)	1998 12 11.3	05 12.58 +21 53.0 18.4	-0.88 - 0.5	0.3/11.3	30748
1992 RB ₃	1998 12 11.3	05 12.87 +22 49.0 17.5	-0.94 - 1.2	0.1/11.4	33338
1986 RP ₅	1998 12 11.4	05 12.97 +43 39.6 17.2	-1.18 + 1.0	7.6/13.0	33333

1998 QE ₂₉	1998 12 11.5	05 13.42 +34 09.6 16.7	-1.13 - 6.6	4.6/13.0	33347
1993 FY ₃₇	1998 12 11.5	05 13.61 +14 37.7 16.4	-1.09 - 0.8	4.1/11.1	33071
1996 DS ₁	1998 12 11.6	05 13.85 +13 13.7 18.4	-1.10 - 0.4	4.5/11.1	30784
1993 FR ₂₃	1998 12 11.6	05 14.19 +35 31.4 16.0	-1.28 - 1.1	6.2/13.0	33339
1994 PQ ₁₆	1998 12 11.7	05 14.62 +32 55.7 16.8	-1.22 - 2.5	4.8/12.6	33340
1989 AB ₃	1998 12 11.8	05 14.90 +13 03.8 15.8	-0.92 + 2.5	3.6/11.6	29656
1992 CF ₁	1998 12 11.8	05 15.11 +32 30.3 17.4	-1.17 - 0.9	3.3/12.5	29135
1990 QT ₁	1998 12 11.8	05 15.12 +19 05.7 18.0	-1.13 - 0.3	1.6/11.7	30470
1979 SO	1998 12 11.9	05 15.21 +35 41.8 17.0	-1.17 - 0.4	4.9/13.0	33332
1992 RD ₁	1998 12 12.0	05 15.93 +42 54.3 17.7	-1.16 - 0.5	6.3/13.4	33338
1981 EB ₂₄	1998 12 12.1	05 15.91 +29 36.2 17.9	-1.04 - 0.4	2.5/12.5	27726
1993 UT	1998 12 12.2	05 16.40 +38 28.7 18.2	-1.39 + 5.1	4.7/12.3	33238
1997 TY ₇	1998 12 12.2	05 16.73 +23 01.9 17.3	-0.88 - 0.4	0.0/12.3	33345
1988 KA	1998 12 12.2	05 16.89 +22 21.5 15.6	-1.27 + 0.4	0.3/12.3	30288
6274 P-L	1998 12 12.3	05 17.09 +17 57.7 18.6	-1.00 - 1.7	1.7/12.0	30775
1992 EZ ₆	1998 12 12.3	05 17.14 +10 16.6 18.9	-0.99 + 0.9	4.1/11.9	30687
1990 OX ₂	1998 12 12.3	05 17.15 +19 01.4 18.3	-1.15 - 0.1	1.7/12.2	30289
1991 RF ₆	1998 12 12.4	05 17.35 +20 01.3 16.5	-1.19 + 0.7	1.5/13.0	33337
1997 PU ₄	1998 12 12.4	05 17.36 +26 18.8 17.7	-1.02 - 2.4	1.2/12.7	33345
(7620)	1998 12 12.4	05 17.63 +25 03.3 17.4	-1.15 - 1.4	0.8/12.6	29605
1997 SJ ₂₅	1998 12 12.5	05 18.08 +23 07.5 17.6	-0.87 - 0.3	0.0/12.6	33345
1985 UC	1998 12 12.5	05 18.12 +46 27.6 17.9	-1.40 + 0.2	7.6/14.0	33333
(9746)	1998 12 12.5	05 18.14 +20 50.5 16.2	-1.24 + 0.7	1.1/13.0	33198
1993 OS ₁₂	1998 12 12.6	05 18.32 +18 50.4 19.8	-1.07 - 0.5	1.5/12.4	32931
1981 EE ₃₈	1998 12 12.7	05 18.73 +25 58.4 18.0	-1.00 - 1.6	1.1/13.0	21967
1994 YY ₁	1998 12 12.7	05 18.92 +21 36.3 15.2	-1.09 + 2.4	0.6/12.7	24753
1996 CN ₇	1998 12 12.8	05 19.33 +26 28.9 18.1	-1.14 - 0.7	1.2/13.0	33342
(7857)	1998 12 12.8	05 19.33 +05 45.1 15.5	-0.92 + 3.1	7.1/12.7	30633
1992 ER ₁₁	1998 12 12.8	05 19.46 +16 08.6 17.0	-1.04 - 0.5	2.4/12.5	29916
1990 QK ₉	1998 12 12.9	05 19.45 +13 19.2 19.5	-1.08 + 0.4	3.7/12.5	31378
1996 GE ₂₀	1998 12 12.9	05 19.55 +24 42.8 17.1	-1.04 + 0.6	0.6/13.0	27560
1992 DA ₆	1998 12 12.9	05 19.66 +20 29.5 17.0	-1.11 - 0.7	1.0/12.8	27120
(7875)	1998 12 12.9	05 19.87 -02 10.4 15.2	-0.89 + 0.3	11.1/11.9	30637
1990 OY ₃	1998 12 13.0	05 20.34 +32 06.8 17.1	-1.24 - 2.4	3.6/13.7	29657
1979 MQ ₁	1998 12 13.0	05 20.35 +29 39.9 19.2	-1.07 - 4.0	2.1/13.7	30778
1981 EB ₂₃	1998 12 13.1	05 20.60 +27 01.6 16.7	-1.19 - 0.5	1.6/13.3	27118
1137 T-1	1998 12 13.1	05 20.83 +25 26.7 16.4	-1.27 - 2.8	1.0/13.4	26929
1993 FZ ₇	1998 12 13.4	05 21.98 +26 40.2 17.7	-1.23 + 1.1	1.6/13.6	30291
1979 MY ₆	1998 12 13.4	05 22.05 +18 40.3 19.8	-1.11 - 0.9	1.7/13.3	30779
1990 TU ₁₁	1998 12 13.4	05 22.10 +27 17.1 16.9	-1.12 - 1.3	1.9/13.7	33336
1978 VH ₁₀	1998 12 13.5	05 22.09 +22 48.4 18.0	-0.97 + 0.2	0.1/13.5	30287
1991 RZ ₁₆	1998 12 13.5	05 22.29 +24 49.1 16.0	-1.09 + 1.4	0.9/13.6	33228
2678 P-L	1998 12 13.6	05 23.01 +20 56.7 18.5	-1.11 - 0.1	1.0/13.6	27328
1997 SW ₃₀	1998 12 13.7	05 23.13 +09 21.8 18.8	-0.97 - 0.9	4.5/13.0	30881
1992 GH	1998 12 13.8	05 23.90 +62 10.4 16.2	-2.40 - 1.7	19.6/18.0	33070
1981 RR ₃	1998 12 13.8	05 23.91 +12 15.0 16.4	-1.15 - 0.2	5.0/13.5	27118
(7972)	1998 12 13.9	05 24.05 +23 37.8 17.1	-0.90 - 0.9	0.2/14.0	30752
1981 EY ₁₀	1998 12 13.9	05 24.28 +18 54.3 17.1	-1.08 - 1.9	1.8/13.7	30685
1994 WQ	1998 12 14.0	05 24.31 +23 00.1 17.5	-1.10 - 5.9	0.1/14.0	30982
1981 ED ₁₁	1998 12 14.0	05 24.33 +33 26.6 20.6	-1.19 - 2.0	3.4/14.6	22270
1996 HX	1998 12 14.0	05 24.42 +31 59.7 18.7	-1.00 - 0.6	2.7/14.5	33343

1995 AE ₄	1998 12 14.0	05 24.64 +21 09.1 16.2	-1.07 + 2.8	0.9/14.1	33247
1994 CF ₂	1998 12 14.2	05 25.33 +20 56.3 16.6	-0.90 - 0.1	0.8/14.1	30453
1996 CJ ₁	1998 12 14.2	05 25.34 +25 44.2 18.0	-1.24 + 0.9	1.1/14.3	27123
1994 TT ₃	1998 12 14.3	05 25.79 -06 49.4 17.8	-1.05 - 4.5	11.5/12.4	33341
1981 EZ ₆	1998 12 14.3	05 25.90 +22 08.0 16.9	-0.96 - 7.0	0.6/14.2	33219
1978 SD ₃	1998 12 14.3	05 25.95 +30 39.2 17.7	-1.32 - 1.4	2.9/14.8	27118
1991 RN ₁₃	1998 12 14.4	05 26.18 +24 39.8 17.2	-1.25 - 2.9	0.6/14.5	29943
6599 P-L	1998 12 14.4	05 26.37 +21 52.6 16.5	-1.05 - 0.2	0.5/14.4	33325
(7714)	1998 12 14.4	05 26.41 +23 34.3 17.8	-1.20 - 0.3	0.1/14.5	30072
(7843)	1998 12 14.5	05 26.57 +29 16.2 15.1	-1.14 - 6.5	2.5/15.1	30442
1993 JX	1998 12 14.5	05 26.65 +17 59.8 17.5	-1.11 - 3.3	2.3/14.2	22958
1994 YR	1998 12 14.5	05 26.91 +20 46.5 17.6	-1.11 + 1.0	1.0/14.5	33341
1995 DR ₆	1998 12 14.5	05 27.01 +25 07.1 18.2	-0.95 - 0.4	0.6/14.7	28087
(7794)	1998 12 14.6	05 27.19 +17 08.9 16.8	-1.12 - 2.5	2.4/14.3	30269
1994 PR ₂₀	1998 12 14.6	05 27.45 +17 00.4 16.4	-1.08 + 0.5	3.0/14.5	30688
1993 FZ ₄₉	1998 12 14.7	05 27.61 +27 17.5 18.3	-1.21 - 1.0	1.5/14.9	30471
1991 AC ₃	1998 12 14.7	05 27.64 +17 50.6 18.2	-0.98 - 0.1	1.7/14.5	33336
6059 P-L	1998 12 14.7	05 27.72 +19 31.6 16.8	-0.97 - 1.8	1.4/14.6	33325
1993 TZ ₁₆	1998 12 14.7	05 27.76 +15 23.5 18.6	-0.97 - 0.9	2.9/14.4	23240
1996 TN ₄₉	1998 12 14.8	05 28.00 +11 59.5 18.4	-0.58 - 1.3	2.4/14.2	31009
1992 JS ₂	1998 12 14.8	05 28.11 +07 47.9 16.3	-0.97 - 3.6	5.6/13.7	30688
1993 HW ₁	1998 12 14.9	05 28.79 +25 36.3 16.6	-1.22 + 3.0	0.8/15.0	29662
(7729)	1998 12 15.0	05 28.80 +20 48.6 16.4	-1.19 + 1.5	0.9/15.0	30252
(7724)	1998 12 15.0	05 28.91 +23 13.2 17.1	-1.20 + 0.8	0.0/15.0	30251
(7827)	1998 12 15.0	05 29.16 +02 36.9 17.5	-0.88 - 0.6	6.9/14.5	30438
1985 QP ₅	1998 12 15.1	05 29.34 +45 08.2 17.5	-1.35 - 0.5	7.7/16.2	33333
1981 EN ₉	1998 12 15.1	05 29.47 +34 03.7 20.2	-1.24 - 1.2	3.9/15.6	26916
(8060)	1998 12 15.1	05 29.53 +31 58.7 17.1	-0.66 - 0.3	1.8/15.6	30958
1989 TA ₁₆	1998 12 15.1	05 29.61 +21 31.0 18.3	-1.04 - 1.3	0.6/15.1	30470
1989 VS ₂	1998 12 15.1	05 29.65 +31 41.0 16.3	-1.19 + 3.3	3.0/15.2	30870
1996 DN ₂	1998 12 15.2	05 29.71 +26 37.1 16.9	-1.21 + 0.6	1.4/15.3	29630
1996 CJ ₇	1998 12 15.2	05 29.89 +13 35.3 18.1	-1.08 + 0.9	3.7/15.0	33342
(7913)	1998 12 15.2	05 30.10 +21 25.2 16.4	-0.95 - 1.0	0.7/15.2	30740
(7944)	1998 12 15.4	05 30.77 +23 02.4 17.9	-0.88 - 0.7	0.1/15.4	30746
1996 JU	1998 12 15.4	05 31.00 -19 12.1 17.7	-1.02 + 1.2	18.1/12.5	30669
1983 RQ ₃	1998 12 15.6	05 31.46 +30 31.3 16.9	-1.27 - 2.0	3.0/16.0	26923
4258 T-2	1998 12 15.6	05 31.73 +20 28.1 19.0	-1.05 + 0.1	1.0/15.6	27323
1993 SA ₄	1998 12 15.7	05 31.84 +09 41.3 16.2	-0.96 - 0.5	5.0/15.3	31235
5134 T-3	1998 12 15.7	05 31.96 +12 55.7 17.3	-1.06 + 2.7	5.2/15.7	24915
1981 EZ ₉	1998 12 15.8	05 32.70 +03 45.1 19.2	-0.87 - 1.6	5.9/15.0	26916
1991 FW ₃	1998 12 15.9	05 32.85 +15 06.4 17.3	-0.95 - 0.6	2.9/15.6	32447
1992 AN	1998 12 15.9	05 33.02 -02 00.2 15.6	-1.24 +13.1	11.5/19.3	30290
1993 FZ ₅₅	1998 12 16.0	05 33.54 +15 26.0 17.0	-1.12 + 0.8	2.9/15.9	30659
1995 BZ	1998 12 16.1	05 33.78 +15 10.6 18.0	-0.97 + 1.7	2.7/16.0	33248
4139 P-L	1998 12 16.1	05 34.04 +44 22.7 18.0	-0.74 - 0.1	3.9/17.0	33383
(7761)	1998 12 16.1	05 34.06 +28 15.3 17.2	-1.34 + 6.0	1.7/16.0	30260
1998 WO ₆	1998 12 16.1	05 34.12 +30 29.7 16.6	-1.27 +11.7	3.3/15.6	33322
5143 T-2	1998 12 16.2	05 34.05 +32 08.2 20.3	-1.30 - 3.8	3.7/16.8	26912
1992 EB ₁₄	1998 12 16.2	05 34.12 +22 47.5 16.9	-1.12 - 1.0	0.2/16.2	30657
(8010)	1998 12 16.2	05 34.43 +17 45.5 16.3	-0.87 - 1.9	1.9/16.0	30854
(7571)	1998 12 16.3	05 34.86 +21 39.6 17.9	-0.87 - 0.2	0.5/16.3	30777

1989 LT	1998 12 16.4	05 35.17 +25 56.9 17.6	-1.14 - 0.6	0.9/16.5	30894
1995 DW	1998 12 16.4	05 35.40 +22 54.5 17.3	-0.95 + 0.3	0.1/16.5	24909
1991 RZ ₁₁	1998 12 16.7	05 36.52 +25 04.3 19.1	-0.91 - 0.5	0.5/16.8	30977
1996 GP ₉	1998 12 16.9	05 37.39 +18 40.7 19.8	-1.00 - 0.7	1.6/16.8	30762
1992 KF	1998 12 16.9	05 37.58 +30 55.3 17.4	-1.18 + 3.8	2.6/16.9	25441
1981 EY ₄₂	1998 12 17.0	05 37.60 +22 32.3 19.8	-1.12 - 0.7	0.3/17.0	30780
1991 PL ₈	1998 12 17.0	05 37.61 +24 54.9 18.9	-0.90 - 0.3	0.4/17.1	31006
1994 PO ₃₇	1998 12 17.1	05 38.42 +20 15.4 18.7	-1.18 - 0.9	1.4/17.1	29138
1986 GZ	1998 12 17.2	05 38.80 -09 38.7 19.3	-1.06 - 2.6	12.3/16.3	30469
1991 TO ₁₃	1998 12 17.3	05 39.15 +15 13.9 16.8	-1.13 - 2.6	3.3/17.0	33337
(8158)	1998 12 17.3	05 39.32 +18 50.6 17.3	-1.00 - 0.8	1.6/17.2	31077
1996 HY ₁₇	1998 12 17.4	05 39.78 +20 23.1 18.9	-0.91 - 0.1	0.9/17.4	30785
(7960)	1998 12 17.4	05 39.88 +26 04.9 16.9	-1.25 - 2.0	1.2/17.6	30749
1993 KZ ₁	1998 12 17.6	05 40.61 +20 03.2 17.3	-1.24 + 6.8	1.2/17.8	33339
(7811)	1998 12 17.7	05 40.71 +09 56.2 16.0	-1.00 + 4.1	5.2/18.0	30434
(7760)	1998 12 17.7	05 40.84 +25 37.2 16.2	-1.18 - 0.1	0.9/18.0	30260
1997 UJ	1998 12 17.7	05 40.88 +14 05.8 18.9	-0.58 - 1.3	1.9/17.4	33265
(7907)	1998 12 17.8	05 41.34 +26 26.0 17.6	-1.02 - 0.6	1.1/17.9	30646
1987 SR ₁₂	1998 12 17.8	05 41.35 +16 27.2 17.2	-1.13 - 0.5	2.6/17.7	33333
1979 QX ₂	1998 12 17.8	05 41.46 +27 36.9 18.2	-1.18 - 0.9	1.5/18.0	17955
1996 EH	1998 12 17.8	05 41.63 +19 12.8 16.7	-1.12 - 3.2	1.6/17.7	33343
1997 RF ₈	1998 12 17.9	05 41.56 +42 00.1 18.5	-1.23 - 0.3	5.6/18.5	33263
1997 US ₄	1998 12 17.9	05 41.78 +13 41.3 19.5	-0.82 - 0.3	2.5/18.0	30911
1990 QB ₆	1998 12 17.9	05 41.80 +42 50.5 17.3	-1.41 - 0.8	7.1/18.7	22229
2582 P-L	1998 12 17.9	05 41.94 +28 31.3 18.6	-1.14 + 0.7	2.4/18.0	24114
1986 JC	1998 12 17.9	05 42.08 +19 51.4 17.7	-1.12 + 1.8	1.2/18.0	33333
1993 OQ ₄	1998 12 18.0	05 42.36 +19 51.1 19.1	-1.10 0.0	1.3/18.0	30782
(7863)	1998 12 18.0	05 42.41 +24 20.8 17.1	-0.94 - 0.3	0.3/18.1	30634
1991 TC ₃	1998 12 18.0	05 42.43 +29 48.0 17.3	-1.25 - 0.9	3.0/18.3	33337
1997 TV	1998 12 18.1	05 42.59 +36 08.5 18.4	-1.00 - 0.3	3.7/18.4	31012
(8001)	1998 12 18.1	05 42.78 +24 18.7 17.8	-0.89 - 0.3	0.3/18.2	30852
1997 RQ ₅	1998 12 18.1	05 42.80 +22 35.4 18.2	-0.89 - 0.4	0.2/18.2	33263
1996 HJ ₂₀	1998 12 18.1	05 42.83 +23 24.8 18.0	-1.00 + 0.2	0.0/18.2	27720
6519 P-L	1998 12 18.1	05 42.94 +28 01.1 16.5	-0.98 + 0.5	1.8/18.3	33383
1981 QW ₂	1998 12 18.2	05 42.89 +27 49.8 18.0	-1.28 + 0.5	1.8/18.3	29132
2144 T-2	1998 12 18.2	05 42.90 +30 09.9 18.4	-1.13 - 0.4	2.3/18.4	27732
1979 VS ₂	1998 12 18.3	05 43.95 +47 21.9 16.3	-2.01 +11.1	11.6/16.4	32738
(7856)	1998 12 18.4	05 44.01 +23 56.3 16.6	-0.93 + 1.5	0.2/18.4	30633
4216 T-2	1998 12 18.4	05 44.13 +11 26.7 18.6	-0.67 0.0	2.7/18.3	31161
(8125)	1998 12 18.4	05 44.15 +37 05.1 17.8	-0.69 - 1.1	2.7/19.0	31779
(7787)	1998 12 18.4	05 44.31 +20 18.1 18.1	-1.11 + 1.3	1.2/18.5	30267
1994 TQ ₁₆	1998 12 18.5	05 44.25 +32 55.6 18.6	-1.28 + 1.2	3.8/18.6	24902
1993 FS ₁₃	1998 12 18.5	05 44.62 +28 49.6 16.7	-1.24 + 1.4	2.1/18.6	31419
1997 RJ ₁	1998 12 18.6	05 44.70 +17 07.4 17.8	-0.87 + 1.1	2.0/18.6	30904
1993 TO ₂₄	1998 12 18.6	05 45.03 +22 14.4 17.1	-1.04 + 0.9	0.4/18.7	25083
1994 WC	1998 12 18.6	05 45.10 +38 00.1 17.5	-1.44 + 2.1	6.1/18.8	29945
1995 EP ₁	1998 12 18.7	05 45.41 +41 01.3 17.3	-1.17 - 0.6	5.8/19.1	25442
1995 AH	1998 12 19.0	05 46.53 +17 48.1 17.1	-1.01 + 1.1	2.4/19.0	33341
1985 PL	1998 12 19.0	05 46.56 +40 22.5 16.9	-1.33 - 4.2	6.6/20.3	29133
1993 QX ₄	1998 12 19.0	05 46.84 -00 47.8 16.0	-0.95 + 1.5	9.4/19.1	30897
1994 UW	1998 12 19.0	05 46.85 +34 05.5 17.0	-1.26 + 0.2	4.7/19.3	33341

1977 DT ₂	1998 12 19.0	05 46.94 +24 31.4 17.2	-1.01 + 0.1	0.4/19.1	30777
(8000)	1998 12 19.1	05 46.92 +37 00.4 16.8	-1.04 + 0.2	4.1/19.3	30852
(8030)	1998 12 19.1	05 47.01 +33 24.6 16.5	-0.96 + 0.1	3.0/19.3	30859
1997 PJ ₄	1998 12 19.1	05 47.19 +29 17.2 15.1	-1.12 - 6.9	2.5/19.7	33345
1997 NK ₁₀	1998 12 19.1	05 47.24 -01 48.1 17.2	-0.93 + 0.5	10.2/19.0	33345
1993 DD ₁	1998 12 19.1	05 47.38 +31 38.2 15.8	-1.30 + 0.8	3.8/19.2	33071
1991 RA ₁₅	1998 12 19.2	05 47.32 +23 18.5 18.4	-0.86 - 0.3	0.0/19.2	30896
(9449)	1998 12 19.2	05 47.65 +29 08.1 16.6	-0.98 - 2.3	1.8/19.5	32641
2110 T-3	1998 12 19.2	05 47.79 +37 31.2 18.6	-1.22 - 0.3	4.8/19.5	30914
3437 T-3	1998 12 19.3	05 47.91 +27 13.6 18.9	-1.09 - 0.1	1.3/19.4	30798
1990 WD ₂	1998 12 19.3	05 47.92 +19 50.3 17.1	-1.09 + 3.4	1.5/19.4	33336
1992 SY ₂₄	1998 12 19.3	05 48.23 +38 42.6 17.8	-1.10 - 0.8	5.1/19.8	30782
1996 AP ₁₅	1998 12 19.4	05 48.64 +19 04.9 18.1	-1.11 + 0.5	1.5/19.5	31241
1992 WA ₄	1998 12 19.6	05 49.30 +25 49.5 16.4	-0.94 + 1.7	0.8/19.6	28616
1982 VF ₄	1998 12 19.6	05 49.63 +17 37.4 16.7	-1.20 - 1.1	2.9/19.6	30287
(7932)	1998 12 19.6	05 49.63 +19 45.8 18.2	-1.09 + 0.2	1.3/19.7	30744
1981 EB ₁₁	1998 12 19.7	05 49.64 +24 03.2 19.0	-1.12 - 1.1	0.2/19.7	22429
(7995)	1998 12 19.7	05 49.69 +11 36.4 18.1	-0.92 - 0.8	3.6/19.6	30851
1989 SJ ₂	1998 12 19.7	05 49.90 +03 39.2 18.8	-0.95 + 0.3	6.5/19.7	30686
1996 CG ₈	1998 12 19.7	05 50.03 +17 52.2 18.3	-1.16 + 0.5	2.3/19.8	30689
1993 US	1998 12 19.8	05 50.11 +20 35.0 18.1	-1.01 - 0.1	1.0/19.8	30662
1993 HL ₆	1998 12 19.8	05 50.52 +13 02.0 16.4	-1.16 - 2.9	4.5/19.5	33339
1991 OL ₁	1998 12 19.9	05 50.57 +21 38.5 17.1	-0.91 + 0.5	0.6/19.9	33336
1994 TU ₁	1998 12 19.9	05 50.57 +33 37.3 17.8	-1.27 - 1.8	4.0/20.3	33341
(7991)	1998 12 19.9	05 50.59 +21 30.1 16.9	-0.91 + 0.1	0.6/19.9	30850
1989 ET ₁	1998 12 19.9	05 50.60 +32 32.4 16.2	-1.25 + 2.5	4.3/19.8	33067
1986 QU	1998 12 20.0	05 51.00 +28 17.8 17.9	-0.96 0.0	1.5/20.1	31581
1996 GH ₂₀	1998 12 20.0	05 51.01 +23 42.3 16.8	-1.04 + 0.7	0.1/20.0	28863
1993 FP ₇₃	1998 12 20.0	05 51.40 +19 54.1 17.5	-1.17 - 1.2	1.5/20.0	30471
1997 QS ₄	1998 12 20.1	05 51.38 +21 43.3 18.1	-0.92 - 0.3	0.6/20.1	33263
1997 QG ₁	1998 12 20.1	05 51.50 +17 13.9 17.8	-1.07 - 1.8	2.4/20.0	31010
1997 OK	1998 12 20.1	05 51.62 +34 06.4 19.7	-1.15 - 3.1	3.5/20.7	30788
1981 EL ₃₆	1998 12 20.2	05 52.08 +24 21.0 19.7	-1.11 - 0.9	0.3/20.3	22697
1991 TP ₁	1998 12 20.2	05 52.27 +19 53.6 17.3	-1.22 - 1.4	1.4/20.2	33337
1991 PK	1998 12 20.3	05 52.34 +18 44.5 17.0	-1.20 + 0.8	2.2/20.3	30091
1997 GH ₂₂	1998 12 20.3	05 52.50 +34 33.1 18.2	-1.37 + 1.3	4.5/20.4	30474
2546 P-L	1998 12 20.3	05 52.53 -01 25.3 17.3	-0.93 - 1.0	10.1/19.9	27732
1997 MQ ₄	1998 12 20.4	05 52.80 +22 44.9 18.0	-1.15 + 6.9	0.3/20.5	32968
1976 UJ ₄	1998 12 20.4	05 52.84 +23 43.3 15.2	-1.03 + 1.9	0.1/20.4	27323
1997 PR ₃	1998 12 20.4	05 53.08 +22 31.6 19.0	-1.12 + 0.3	0.3/20.5	30677
1997 JN ₁₅	1998 12 20.4	05 53.17 +22 40.7 17.5	-1.19 + 0.6	0.3/20.5	30283
(7894)	1998 12 20.5	05 53.37 +22 10.1 17.2	-1.10 + 4.6	0.5/20.6	30643
1987 QC ₃	1998 12 20.5	05 53.57 +30 08.1 16.3	-1.24 - 3.2	3.1/20.9	33066
1995 EG ₈	1998 12 20.6	05 53.54 +58 00.2 18.7	-1.44 - 0.7	8.7/21.8	30983
1991 VP ₁	1998 12 20.6	05 53.80 +17 50.4 16.1	-1.10 + 3.1	2.8/20.8	33337
1975 SE ₂	1998 12 20.7	05 54.25 +32 20.8 17.9	-1.23 + 2.0	3.8/20.7	33332
1997 RY ₂	1998 12 20.9	05 54.92 +18 38.0 19.2	-0.97 - 0.5	1.7/20.9	33345
1993 FH ₄₃	1998 12 20.9	05 54.95 +23 58.0 18.0	-1.16 0.0	0.2/20.9	25082
1997 PC ₄	1998 12 20.9	05 55.09 +15 51.7 19.7	-1.00 + 0.4	2.4/21.0	31145
1994 YZ	1998 12 20.9	05 55.25 +30 54.8 17.1	-1.19 - 4.9	2.8/21.4	30761
3178 T-3	1998 12 20.9	05 55.28 +23 57.5 18.0	-0.96 + 0.1	0.2/21.0	25337

(8130)	1998 12 21.1	05 55.89 +20 07.9 17.1	-0.71 + 0.7	0.8/21.1	31071
(8095)	1998 12 21.2	05 56.46 +24 50.9 16.9	-0.89 0.0	0.4/21.3	30965
1992 EW ₇	1998 12 21.2	05 56.72 +22 32.4 17.7	-1.08 - 0.4	0.3/21.3	30687
(8061)	1998 12 21.3	05 56.80 +21 55.8 17.2	-0.92 + 0.6	0.5/21.3	30958
1975 SM ₁	1998 12 21.3	05 57.03 +18 26.9 18.3	-1.11 + 0.9	2.3/21.4	30468
4517 T-3	1998 12 21.3	05 57.13 +12 37.8 19.3	-1.11 + 0.7	4.2/21.4	30467
1995 YM ₃	1998 12 21.4	05 57.28 +18 52.8 16.4	-1.21 + 2.8	2.0/21.6	33342
1996 EL	1998 12 21.4	05 57.36 +33 58.8 17.2	-1.27 - 1.2	3.8/21.6	31009
1994 YX	1998 12 21.4	05 57.61 +25 58.1 16.4	-1.08 - 2.5	1.1/21.6	33074
1981 EQ ₅	1998 12 21.5	05 57.72 +22 26.9 17.1	-1.08 - 3.6	0.5/21.5	26915
1994 TU ₂	1998 12 21.6	05 57.99 +18 17.0 17.2	-1.16 - 0.3	2.2/21.6	30900
(7899)	1998 12 21.6	05 58.06 +24 29.7 16.6	-1.17 + 2.2	0.4/21.6	30644
1990 SN ₆	1998 12 21.6	05 58.34 +19 08.1 16.7	-1.11 + 1.6	1.7/21.7	30687
1993 RP ₃	1998 12 21.7	05 58.49 +20 32.9 14.8	-1.03 - 9.2	1.4/21.4	33072
(8150)	1998 12 21.8	05 59.35 +19 10.7 17.0	-0.84 + 1.2	1.2/21.9	31075
(7861)	1998 12 21.8	05 59.35 +25 21.4 18.3	-1.12 - 0.5	0.7/21.9	30634
(7833)	1998 12 21.9	05 59.30 +20 21.4 16.7	-1.17 + 1.1	1.3/21.9	30440
1997 LA ₅	1998 12 22.0	06 00.28 +14 48.7 18.9	-1.08 + 5.8	3.2/22.6	33260
1997 NR ₂	1998 12 22.1	06 00.29 +20 59.9 17.9	-1.03 + 0.4	1.0/22.1	30673
(7918)	1998 12 22.1	06 00.33 +14 45.0 19.6	-1.04 - 0.1	2.9/22.1	30741
1993 FY ₂₇	1998 12 22.1	06 00.49 +24 48.6 17.6	-1.20 - 0.7	0.5/22.2	25651
(7337)	1998 12 22.1	06 00.55 +32 31.4 16.8	-1.24 - 0.7	3.6/22.3	28572
1981 EO ₃₆	1998 12 22.1	06 00.70 +31 51.6 21.2	-1.18 - 1.6	2.8/22.3	30780
1996 PM ₄	1998 12 22.2	06 00.83 +25 10.4 17.0	-0.91 + 0.2	0.5/22.2	29666
1992 OB ₉	1998 12 22.2	06 01.07 +15 49.6 17.6	-0.95 + 2.6	2.3/22.5	31006
1997 RG ₃	1998 12 22.3	06 01.24 +19 42.7 17.9	-1.07 + 0.1	1.3/22.3	30770
1995 DO ₂	1998 12 22.3	06 01.47 +20 33.1 16.5	-1.00 + 1.5	1.2/22.4	33342
1993 OY ₂	1998 12 22.4	06 01.62 +48 35.4 19.0	-1.41 - 1.0	8.1/23.0	26903
(7906)	1998 12 22.6	06 02.68 +13 22.5 16.8	-0.89 - 2.0	3.3/22.5	30646
1990 QB ₂	1998 12 22.7	06 02.86 +20 08.5 17.8	-1.13 + 0.3	1.2/23.0	30289
4195 T-1	1998 12 22.7	06 02.88 +23 00.3 17.8	-0.97 + 1.1	0.1/22.7	30293
1981 DC ₃	1998 12 22.7	06 02.91 +23 01.6 19.7	-1.12 - 1.9	0.2/22.7	26914
1991 RT ₄	1998 12 22.7	06 03.00 +24 37.8 18.2	-1.22 - 1.0	0.5/22.7	24565
1997 SR	1998 12 22.7	06 03.21 +37 46.3 18.5	-1.18 - 2.1	4.7/23.1	33263
2157 T-3	1998 12 22.7	06 03.23 +19 30.4 17.0	-1.12 - 2.3	1.9/22.7	22432
(8106)	1998 12 22.8	06 03.48 +29 57.2 17.2	-1.21 - 2.5	2.3/23.0	30968
2016 P-L	1998 12 22.8	06 03.55 +13 55.6 17.6	-0.94 - 0.4	3.2/23.0	28891
1994 TN ₃	1998 12 22.8	06 03.70 +26 41.2 17.4	-1.12 + 0.7	1.6/22.8	33341
1981 EG ₃₄	1998 12 22.9	06 03.79 +10 58.9 19.3	-1.04 - 0.6	5.4/23.0	23857
5482 T-2	1998 12 23.0	06 04.73 +31 23.5 17.8	-1.28 - 2.0	3.1/23.2	15259
1985 CU ₁	1998 12 23.0	06 04.75 +64 31.3 16.2	-2.10 -12.6	20.9/31.5	33333
1994 PC ₁₀	1998 12 23.1	06 05.10 +24 32.0 19.4	-1.23 + 0.4	0.4/23.2	24914
1988 CH ₅	1998 12 23.1	06 05.14 +23 21.3 17.8	-1.12 - 2.9	0.0/23.2	30780
1984 HO ₁	1998 12 23.3	06 06.04 +28 50.9 17.8	-1.30 + 0.8	2.3/23.3	30468
1997 TW ₁₅	1998 12 23.3	06 06.05 +21 46.4 18.1	-1.02 - 0.2	0.5/23.4	30883
1990 QO ₅	1998 12 23.4	06 05.98 +24 13.7 18.2	-1.16 + 0.8	0.3/23.4	30470
1997 RA ₁	1998 12 23.4	06 06.16 +36 23.4 18.2	-1.04 - 0.2	4.1/23.4	33263
1992 EM ₆	1998 12 23.4	06 06.21 +26 08.6 17.7	-1.16 + 2.4	1.2/23.4	27308
1990 TM ₅	1998 12 23.4	06 06.35 +19 07.1 17.3	-1.12 - 2.0	1.7/23.4	33335
(7813)	1998 12 23.5	06 06.92 +03 12.7 16.3	-0.97 - 0.5	8.0/23.9	30434
(7750)	1998 12 23.6	06 07.00 +14 39.4 17.1	-1.01 - 2.8	2.7/23.5	30257

1991 RB ₃	1998 12 23.6	06 07.15 +21 47.3 15.9	-1.17 - 1.9	0.8/23.6	33337	2159 T-2	1998 12 25.7	06 16.21 +23 54.7 18.0	-1.08 + 0.8	0.2/25.7	27322
(7909)	1998 12 23.7	06 07.33 +24 49.7 16.7	-0.94 + 0.9	0.5/23.7	30739	1994 FQ	1998 12 25.7	06 16.26 +01 03.7 18.3	-0.84 + 2.6	7.6/26.8	33340
1997 NA	1998 12 23.7	06 07.60 +15 44.5 18.7	-1.17 - 1.3	3.3/23.8	30464	1992 JP ₃	1998 12 25.8	06 16.77 +32 51.4 19.5	-1.16 + 2.0	3.2/25.4	27309
(7576)	1998 12 23.7	06 07.82 +09 25.8 16.1	-0.93 + 2.0	5.3/24.2	29595	1031 T-2	1998 12 25.9	06 17.14 +11 24.6 18.9	-1.09 + 1.0	5.1/26.3	24236
1994 BJ ₄	1998 12 23.8	06 08.09 +24 21.1 17.7	-0.94 - 2.1	0.3/23.9	28888	(7747)	1998 12 25.9	06 17.19 +25 33.9 16.8	-1.23 - 1.2	0.8/25.9	30256
1995 DG ₁	1998 12 23.9	06 08.27 +17 14.2 18.5	-0.97 - 0.8	2.4/23.9	33342	1975 LY	1998 12 25.9	06 17.40 +35 25.1 17.1	-1.23 - 4.2	4.5/26.3	31002
1979 MV ₁	1998 12 23.9	06 08.35 +16 03.8 18.2	-1.10 + 2.3	2.9/24.2	30778	1993 FZ ₄₀	1998 12 26.0	06 17.60 +28 31.3 16.5	-1.25 + 1.5	2.2/25.9	27915
1981 EA ₂₁	1998 12 23.9	06 08.39 +24 18.4 18.1	-1.00 0.0	0.3/23.9	26919	1982 SW ₃	1998 12 26.0	06 17.74 +12 14.7 16.3	-1.17 0.0	5.6/26.4	33065
1997 JB ₈	1998 12 23.9	06 08.54 +16 48.8 19.2	-1.18 - 0.7	2.6/24.0	30788	1993 NB ₂	1998 12 26.2	06 18.47 +24 25.8 16.3	-1.09 - 0.4	0.5/26.2	30688
4161 T-1	1998 12 24.1	06 09.38 +00 47.2 17.1	-0.95 + 0.5	7.9/24.7	30474	(7897)	1998 12 26.2	06 18.57 +18 02.0 19.1	-0.85 + 0.6	1.4/26.4	30644
1996 GZ ₂	1998 12 24.1	06 09.48 +27 37.3 17.9	-1.21 + 0.7	1.7/24.1	28595	2723 P-L	1998 12 26.2	06 18.82 +16 08.3 19.0	-1.13 + 0.6	3.2/26.5	31022
1988 RV ₁₂	1998 12 24.2	06 09.59 +00 58.2 17.2	-0.70 - 0.2	6.3/24.4	29656	1981 ET ₁₉	1998 12 26.2	06 18.91 +21 23.1 20.0	-1.10 + 1.0	0.7/26.4	21967
7066 P-L	1998 12 24.2	06 09.82 +08 07.9 17.4	-0.84 - 0.7	4.4/24.4	33129	4124 T-3	1998 12 26.3	06 18.96 +20 46.4 19.7	-0.93 + 1.2	0.8/26.4	25540
1997 NQ	1998 12 24.3	06 10.18 +06 52.7 17.8	-0.97 - 1.4	5.9/24.4	33261	4355 T-1	1998 12 26.3	06 19.14 +17 01.0 16.2	-1.10 + 2.4	2.9/26.7	33384
1993 PY ₅	1998 12 24.3	06 10.23 +29 21.8 17.5	-1.19 - 1.7	2.2/24.4	23981	1997 RQ ₃	1998 12 26.3	06 19.21 +21 11.9 17.7	-0.87 + 0.8	0.6/26.4	30904
1996 DW	1998 12 24.4	06 10.51 +35 42.2 18.8	-1.34 + 0.1	4.8/24.2	30901	1997 SK ₁	1998 12 26.3	06 19.28 +29 12.6 17.5	-1.10 - 0.3	2.3/26.3	32753
1987 WF ₁	1998 12 24.4	06 10.95 -03 32.9 15.8	-1.18 - 7.6	11.9/23.4	33334	1997 PX ₁	1998 12 26.3	06 19.35 +23 27.5 18.0	-1.15 + 2.7	0.0/26.4	33345
1997 UC ₁₁	1998 12 24.5	06 10.89 +57 43.1 18.3	-1.82 + 0.7	11.2/23.8	31147	1981 EJ ₂₆	1998 12 26.5	06 19.76 +25 44.7 16.9	-1.29 + 0.9	1.0/26.4	26919
(7954)	1998 12 24.5	06 11.04 +02 32.9 17.9	-0.95 + 0.9	6.9/25.2	30748	2030 T-2	1998 12 26.5	06 20.03 +27 29.6 19.2	-1.12 + 0.5	1.7/26.4	17977
1981 QG	1998 12 24.6	06 11.30 +25 05.0 17.5	-0.94 + 0.2	0.5/24.6	31781	1995 FY ₂	1998 12 26.6	06 20.33 +38 29.0 17.7	-1.16 + 0.7	6.1/26.2	30277
1992 OY ₇	1998 12 24.6	06 11.30 +24 44.6 17.2	-1.02 - 1.9	0.4/24.6	30896	2237 T-2	1998 12 26.6	06 20.37 +16 48.5 18.4	-1.04 + 0.2	2.5/26.8	23988
1994 GX	1998 12 24.6	06 11.45 -15 57.2 18.5	-1.17 + 1.7	17.4/26.3	23785	1993 ST ₃	1998 12 26.6	06 20.56 +32 57.1 16.5	-1.16 + 2.1	3.6/26.3	30275
1996 FG ₁₆	1998 12 24.6	06 11.61 +20 49.9 17.9	-1.11 - 0.2	1.2/24.7	32751	1994 WU ₁	1998 12 26.6	06 20.58 +01 15.3 18.6	-0.98 + 1.5	7.6/27.7	31140
1993 PP ₅	1998 12 24.6	06 11.79 +15 51.4 19.5	-1.02 + 0.8	2.6/24.9	24584	1992 OK ₂	1998 12 26.7	06 20.73 +35 56.0 19.3	-1.11 - 2.1	3.7/26.8	25066
1994 TM ₁₄	1998 12 24.7	06 11.76 +12 48.7 16.4	-1.06 - 0.6	4.7/24.8	33341	(7757)	1998 12 26.7	06 20.97 -00 03.2 17.1	-1.11 - 4.3	8.1/26.4	30259
1993 RQ ₄	1998 12 24.7	06 11.90 +20 05.9 17.3	-1.01 - 0.4	1.4/24.8	30872	1995 CW ₁	1998 12 26.8	06 21.21 -08 07.4 18.1	-0.95 - 4.2	11.0/26.5	30455
1994 PA	1998 12 24.7	06 11.96 +18 52.6 17.2	-1.19 - 3.1	2.1/24.7	30472	1997 LC ₄	1998 12 26.9	06 21.76 +38 57.1 16.0	-1.80 +22.4	8.2/23.6	33260
1990 DA ₃	1998 12 24.7	06 12.07 +21 21.7 17.0	-0.97 + 1.4	0.7/24.8	30686	1988 VK	1998 12 27.0	06 21.94 +20 25.7 15.9	-1.20 + 4.5	1.4/27.2	26419
1992 QA	1998 12 24.7	06 12.21 +56 57.9 17.3	-2.46 +15.3	16.1/18.4	22600	1991 PE ₆	1998 12 27.0	06 22.06 +26 43.6 17.4	-0.92 + 0.7	0.9/26.9	30871
1989 WF ₁	1998 12 24.8	06 12.53 +35 46.4 16.1	-1.18 + 6.5	5.5/23.9	33068	1990 RM ₉	1998 12 27.1	06 22.84 +18 45.8 16.9	-1.17 - 1.2	1.9/27.3	33335
1991 PX ₁₀	1998 12 24.8	06 12.61 +08 14.3 17.7	-1.14 + 0.9	6.7/25.4	30781	(7966)	1998 12 27.3	06 23.53 +23 07.1 18.3	-1.12 + 1.6	0.1/27.4	30751
1982 QA ₂	1998 12 24.8	06 12.72 +26 25.8 18.5	-1.14 - 1.2	1.0/24.9	30755	1981 EU ₂₅	1998 12 27.3	06 23.54 +16 05.1 18.5	-1.04 + 1.0	2.4/27.6	30867
1992 UZ ₅	1998 12 24.9	06 12.81 +33 27.9 16.4	-1.04 + 4.7	3.5/24.3	31232	1997 SN ₁	1998 12 27.3	06 23.57 +39 02.7 18.7	-1.18 - 0.9	4.9/27.1	33264
1996 HM ₁	1998 12 24.9	06 12.81 +27 19.8 18.1	-1.14 + 0.1	1.8/24.9	33343	(8230)	1998 12 27.4	06 24.04 +22 48.6 18.4	-1.20 - 0.2	0.2/27.5	31093
1993 TK ₃₃	1998 12 24.9	06 13.01 +26 30.3 17.4	-1.05 + 2.1	1.2/24.9	32232	1985 PO	1998 12 27.4	06 24.04 +19 07.4 17.3	-1.05 + 1.5	1.6/27.6	31004
1997 UO ₂₄	1998 12 24.9	06 13.03 +23 32.6 18.5	-1.00 - 0.2	0.0/25.0	33346	9070 P-L	1998 12 27.4	06 24.19 +11 58.3 16.4	-0.97 - 0.3	4.3/28.0	28892
4715 P-L	1998 12 24.9	06 13.06 +19 34.4 19.5	-1.10 + 0.9	1.4/25.1	30775	1995 DM ₉	1998 12 27.5	06 24.15 +24 08.0 19.8	-0.90 + 0.9	0.2/27.5	32944
4339 T-1	1998 12 25.0	06 13.34 +31 47.1 18.9	-1.24 + 2.1	3.2/24.7	30682	1991 PJ ₁₇	1998 12 27.5	06 24.35 +22 07.5 19.1	-1.24 - 0.1	0.5/27.6	33228
2541 P-L	1998 12 25.0	06 13.56 +24 57.1 17.8	-1.18 + 0.5	0.6/25.1	21977	1991 RE ₇	1998 12 27.6	06 25.10 +47 07.3 17.0	-1.13 + 0.5	6.2/26.8	30896
1997 QP	1998 12 25.1	06 13.84 +40 57.3 16.9	-1.29 - 2.3	6.3/25.3	33078	1989 CW ₇	1998 12 27.7	06 25.18 +16 40.9 16.7	-1.11 + 0.3	3.2/28.0	33222
1995 CT ₁	1998 12 25.1	06 13.91 +20 47.2 15.9	-1.21 - 8.5	0.9/25.0	27731	1981 EB ₅	1998 12 27.8	06 25.62 +30 26.8 18.5	-1.08 - 2.0	2.7/27.8	26915
1994 AL ₁₆	1998 12 25.1	06 14.00 +08 33.0 17.1	-0.85 + 0.4	5.0/25.5	23676	1996 PF ₁	1998 12 27.8	06 25.85 +30 05.9 18.9	-0.94 + 0.4	1.9/27.6	30902
(7922)	1998 12 25.3	06 14.70 +27 11.6 16.5	-1.03 - 4.7	1.4/25.5	30742	1991 GX ₇	1998 12 27.9	06 26.01 +38 16.9 16.9	-1.17 + 0.2	5.9/27.5	31583
6299 P-L	1998 12 25.4	06 15.20 +01 26.5 17.8	-0.89 - 1.3	8.9/25.5	22087	(8317)	1998 12 27.9	06 26.40 +22 13.5 17.6	-0.57 + 0.3	0.2/28.0	31222
1993 TM ₂₆	1998 12 25.5	06 15.53 +09 35.7 18.6	-0.95 + 0.7	5.2/25.9	30981	1986 PN ₄	1998 12 28.1	06 26.89 +36 02.5 16.4	-1.06 - 2.3	3.7/28.1	30893
1981 EC ₁₂	1998 12 25.5	06 15.68 +21 49.4 19.0	-1.13 - 2.4	0.7/25.6	30779	(7923)	1998 12 28.1	06 27.11 +23 11.2 15.7	-0.97 + 1.9	0.0/28.2	30742
1993 HS ₁	1998 12 25.5	06 15.76 +35 47.5 17.1	-1.35 + 2.2	5.0/25.1	30660	1991 EB	1998 12 28.2	06 27.49 +21 36.0 15.5	-1.03 - 0.8	0.7/28.3	30687
(7912)	1998 12 25.6	06 15.79 +24 45.0 17.6	-1.12 + 0.5	0.5/25.6	30739	1981 EO ₂₁	1998 12 28.3	06 27.88 +25 18.7 17.3	-1.14 - 0.3	1.0/28.3	29132
1990 VV ₁	1998 12 25.6	06 16.00 +08 26.8 16.3	-1.03 - 1.9	6.6/25.8	24761	1979 OG ₈	1998 12 28.6	06 29.21 +02 31.4 18.4	-1.19 +15.5	9.5/02.0	23856
1997 NL ₆	1998 12 25.6	06 16.22 +16 22.6 18.9	-1.16 + 0.2	2.6/25.8	30788	1996 KB	1998 12 28.6	06 29.25 +20 07.9 17.5	-1.05 + 0.1	1.1/28.7	30902
1989 AL ₃	1998 12 25.6	06 16.23 +18 03.8 16.5	-1.12 + 3.3	2.5/26.0	33334	1993 FF ₂₆	1998 12 28.6	06 29.43 +31 06.4 16.8	-1.25 - 0.8	3.9/28.5	29944

1997 LF	1998 12 28.6	06 29.43 +13 39.7 20.8	-1.15 + 2.2	3.8/29.2	32967
1993 RD ₂	1998 12 28.7	06 29.65 +00 22.8 17.1	-0.94 + 1.9	7.9/30.2	31139
(8072)	1998 12 28.8	06 29.92 +27 46.7 17.6	-1.19 + 1.1	2.0/28.6	30960
(7850)	1998 12 28.8	06 30.09 +34 50.0 18.4	-1.25 + 0.5	4.4/28.4	30444
1992 GD ₃	1998 12 28.8	06 30.16 +11 44.0 18.1	-1.01 - 0.5	4.3/29.2	30687
1995 CD ₃	1998 12 28.8	06 30.26 +17 54.7 19.5	-0.99 + 1.1	2.0/29.1	30761
(8052)	1998 12 28.9	06 30.47 +11 37.2 17.6	-0.86 - 0.4	3.6/29.3	30864
1989 GJ ₂	1998 12 28.9	06 30.49 +13 43.0 16.6	-1.09 - 1.7	4.2/29.1	30469
1986 QY ₃	1998 12 28.9	06 30.62 +20 56.1 18.8	-1.12 + 2.1	0.9/29.1	30651
1996 CX ₂	1998 12 29.1	06 31.37 +18 05.0 18.0	-1.17 - 1.3	2.1/29.2	30667
1997 TZ ₇	1998 12 29.1	06 31.66 +40 41.9 17.9	-1.11 + 2.9	5.0/28.1	31012
1991 PO ₅	1998 12 29.1	06 31.76 +22 50.2 18.6	-0.91 + 0.6	0.1/29.2	31138
1997 VM ₂	1998 12 29.2	06 32.12 +08 24.1 17.6	-0.84 + 0.7	4.6/30.0	31017
(7964)	1998 12 29.3	06 32.51 +09 13.7 16.4	-0.91 + 1.9	4.6/30.2	30750
1994 YJ ₂	1998 12 29.3	06 32.59 +24 09.3 15.7	-1.10 + 6.3	0.3/29.3	31277
4528 P-L	1998 12 29.4	06 32.62 +18 59.5 17.6	-1.12 + 0.9	1.8/29.6	29668
1997 QC ₂	1998 12 29.5	06 33.02 +17 43.1 19.1	-0.97 + 2.0	1.7/29.8	31010
1989 UJ ₃	1998 12 29.5	06 33.06 +42 25.6 17.9	-1.28 + 0.2	6.2/28.8	31005
1997 OC ₁	1998 12 29.5	06 33.06 +10 54.9 16.9	-0.93 + 3.6	5.2/30.5	33345
1996 HJ ₁₅	1998 12 29.5	06 33.15 +22 01.3 17.7	-1.07 + 1.2	0.5/29.6	30785
1993 RV ₇	1998 12 29.5	06 33.31 +32 02.7 18.3	-1.13 + 0.4	3.1/29.2	30661
1988 UT	1998 12 29.5	06 33.38 +20 18.8 16.8	-1.16 + 2.4	1.5/29.7	33334
1995 RG	1998 12 29.6	06 33.81 +29 46.1 17.8	-1.65 +17.6	3.2/28.5	26582
1989 TX ₂	1998 12 29.7	06 33.99 -01 56.8 17.4	-0.92 + 1.0	10.0/31.1	33335
1981 EE ₃₄	1998 12 29.7	06 34.01 +25 20.2 19.8	-1.16 0.0	1.0/29.6	26921
1997 RL ₇	1998 12 29.7	06 34.18 +42 21.8 19.3	-1.30 0.0	6.3/29.1	30987
(8025)	1998 12 29.9	06 34.85 +29 30.7 17.4	-1.05 + 0.5	2.1/29.6	30858
(7553)	1998 12 29.9	06 35.18 +25 30.0 16.8	-1.15 + 2.7	1.0/29.8	29590
(7910)	1998 12 30.0	06 35.45 +09 30.9 16.8	-1.11 - 0.3	5.5/30.5	30739
1993 TL ₃₂	1998 12 30.0	06 35.73 +21 57.7 17.4	-1.02 + 1.8	0.4/30.2	27730
(7784)	1998 12 30.1	06 35.84 -08 50.7 17.6	-1.11 - 2.6	11.7/31.2	30266
2164 P-L	1998 12 30.2	06 36.20 +23 56.8 17.6	-1.15 + 0.1	0.3/30.2	22086
1994 XN ₁	1998 12 30.2	06 36.40 +29 08.3 18.7	-1.18 + 2.5	2.5/29.9	27314
1990 OH ₁	1998 12 30.2	06 36.49 -01 07.8 18.5	-0.80 - 2.1	5.7/30.8	31273
1991 RD ₁₆	1998 12 30.3	06 36.74 +15 48.6 18.2	-1.17 + 3.2	3.4/30.9	30470
1997 QY	1998 12 30.3	06 36.86 +09 02.8 18.0	-0.98 + 1.4	4.9/31.2	31010
1993 QU ₄	1998 12 30.4	06 37.11 +08 11.7 18.4	-0.97 + 2.7	5.2/31.5	31788
1252 T-1	1998 12 30.4	06 37.14 +11 59.0 17.4	-1.07 + 0.3	4.7/30.9	30797
1988 SZ ₂	1998 12 30.4	06 37.22 +21 25.9 18.5	-0.72 + 1.1	0.4/30.5	31136
6511 P-L	1998 12 30.4	06 37.54 +23 49.8 19.5	-1.17 + 1.1	0.3/30.5	27116
1996 BR ₁	1998 12 30.6	06 37.90 +22 14.1 16.7	-1.20 + 3.7	0.4/30.7	33251
1993 GN ₁	1998 12 30.6	06 38.02 +20 29.8 17.2	-1.20 - 1.3	1.2/30.7	28887
1995 CH	1998 12 30.6	06 38.11 +09 33.2 17.4	-0.95 + 7.4	5.7/01.4	30277
1991 SN ₁	1998 12 30.6	06 38.24 +12 59.0 17.0	-1.15 + 0.7	4.5/31.2	29135
1997 TM ₁₈	1998 12 30.6	06 38.35 +38 07.1 17.4	-1.19 + 1.8	4.8/29.7	30909
1992 NS	1998 12 30.7	06 38.39 +09 15.0 18.1	-0.93 - 0.4	4.3/31.3	30896
1997 QF ₂	1998 12 30.7	06 38.47 +42 19.2 17.9	-1.14 + 0.3	6.2/29.9	31010
1981 EK ₂₉	1998 12 30.7	06 38.49 +15 13.8 19.2	-0.94 - 0.1	2.9/31.1	26920
1978 WY ₈	1998 12 30.7	06 38.83 +25 09.1 16.8	-0.98 + 2.0	0.7/30.7	23336
(8042)	1998 12 30.7	06 38.86 +28 15.4 17.2	-1.01 - 2.2	1.7/30.7	30862
4658 P-L	1998 12 30.8	06 38.81 +28 14.1 18.2	-1.03 + 1.2	1.6/30.5	28620

1992 CF	1998 12 30.8	06 39.18 +24 37.1 16.0	-1.19 - 3.1	0.6/30.9	33338
1980 FO ₁	1998 12 31.0	06 39.68 +24 14.4 15.7	-0.97 + 0.5	0.4/30.9	33332
1993 QR ₄	1998 12 31.0	06 40.12 +29 09.8 16.4	-1.11 + 1.1	2.5/30.7	30688
1998 SU ₂₆	1998 12 31.0	06 40.16 +36 05.4 17.7	-1.11 - 4.2	4.5/31.1	33355
1997 PR	1998 12 31.0	06 40.21 +31 45.0 19.0	-1.22 - 0.9	3.0/30.8	30903
1997 NR ₁₀	1998 12 31.1	06 40.16 +16 23.9 20.9	-1.07 + 2.0	2.3/31.6	30692
1996 HM ₁₁	1998 12 31.1	06 40.38 +17 22.1 18.2	-1.00 + 1.0	2.0/31.5	30785
(7926)	1998 12 31.1	06 40.46 +28 03.7 17.0	-0.96 + 0.5	1.5/30.9	30742
1990 SK ₆	1998 12 31.2	06 40.61 +35 19.7 17.1	-1.27 + 2.5	5.0/30.3	30781
1993 UL	1998 12 31.3	06 40.99 +04 16.8 18.3	-0.93 + 0.8	6.1/01.5	31007
(9710)	1998 12 31.3	06 41.22 +30 23.4 16.4	-1.15 + 5.2	3.5/30.7	33190
(7759)	1998 12 31.4	06 41.79 +22 12.2 16.9	-1.14 + 1.7	0.3/31.5	30260
(8057)	1998 12 31.5	06 42.11 +17 25.0 16.5	-0.93 + 1.6	1.9/31.9	30865
3005 P-L	1998 12 31.6	06 42.51 +23 10.2 18.3	-0.94 - 1.4	0.0/31.6	22700
3175 T-3	1998 12 31.6	06 42.71 +26 17.0 18.9	-0.97 + 1.1	1.1/31.5	21127
1958 TL ₁	1998 12 31.7	06 42.77 -01 58.0 17.2	-0.83 + 0.1	7.7/02.4	33331
1997 OO ₁	1998 12 31.7	06 43.07 +15 39.2 17.1	-1.09 + 5.8	3.5/01.5	30788
1991 CU	1998 12 31.7	06 43.09 +12 41.5 16.5	-0.99 + 4.1	3.8/01.7	30895
1991 PP ₈	1998 12 31.7	06 43.16 +24 17.8 19.1	-0.90 + 1.4	0.4/31.7	33227
1997 NE ₅	1998 12 31.8	06 43.37 +25 44.2 18.1	-1.26 0.0	1.0/31.7	30692
(7709)	1998 12 31.8	06 43.42 +19 09.7 17.2	-1.18 + 3.2	1.6/01.1	30071
1994 TU ₃	1998 12 31.8	06 43.52 -12 06.2 17.1	-1.10 - 0.9	13.7/03.8	29945
1997 TS ₂₅	1998 12 31.9	06 44.11 +15 51.8 17.1	-0.58 - 0.5	1.4/01.4	33345
(7734)	1998 12 31.9	06 44.15 +19 40.6 17.3	-1.16 - 0.1	1.4/01.2	30253
1997 QA ₂	1999 01 01.0	06 44.57 +21 34.5 18.1	-0.99 - 0.2	0.5/01.2	30904
(8028)	1999 01 01.1	06 44.63 +54 34.4 17.6	-1.37 + 1.3	8.7/30.1	30858
(7809)	1999 01 01.1	06 44.86 +22 03.7 17.7	-1.16 - 1.2	0.4/01.2	30433
1976 UR ₁₅	1999 01 01.2	06 45.10 +35 21.6 17.5	-1.16 + 3.5	4.6/31.2	31003
1988 GL	1999 01 01.2	06 45.14 +36 13.1 17.0	-1.29 + 6.4	4.9/30.6	30894
1994 CV ₁	1999 01 01.4	06 45.86 +26 30.5 16.3	-0.95 + 2.4	1.3/01.1	31140
1996 LG ₄	1999 01 01.4	06 45.92 +23 52.2 17.4	-0.96 + 1.7	0.3/01.4	28863
1993 TS ₁₅	1999 01 01.4	06 46.12 +19 53.5 18.3	-1.02 + 1.8	1.2/02.0	30900
1997 UD ₁₁	1999 01 01.4	06 46.20 +24 57.7 17.4	-0.91 + 1.3	0.6/01.3	31147
1997 TX ₁₈	1999 01 01.4	06 46.31 +21 15.6 17.5	-0.95 + 1.9	0.6/01.6	32969
(7883)	1999 01 01.5	06 46.31 +27 19.5 17.5	-1.21 + 3.2	1.6/01.2	30639
1996 LJ ₁	1999 01 01.5	06 46.40 +04 22.9 19.0	-0.90 - 0.8	5.8/02.4	33343
1994 XB ₅	1999 01 01.5	06 46.69 +09 00.0 18.1	-0.99 - 3.1	6.8/01.8	25084
1995 FU ₂	1999 01 01.6	06 46.89 +22 01.1 19.9	-0.95 + 2.0	0.3/01.7	25442
1994 VM ₇	1999 01 01.7	06 47.18 +27 52.1 16.4	-1.11 + 2.6	2.3/01.3	33073
1992 EF ₂	1999 01 01.8	06 47.70 +07 14.3 17.8	-1.02 + 3.2	5.7/03.1	30290
1996 BR ₃	1999 01 01.8	06 47.70 +30 50.9 16.3	-1.29 + 1.3	3.3/01.4	33075
1997 SL ₁₆	1999 01 01.8	06 47.81 +09 16.0 18.1	-0.97 + 3.7	4.7/03.1	31012
1997 RJ ₁₀	1999 01 02.0	06 48.53 +20 02.4 16.8	-0.93 + 1.4	1.0/02.2	33345
1293 T-1	1999 01 02.0	06 48.81 +29 34.2 17.2	-1.30 + 0.2	3.1/01.7	23533
(8055)	1999 01 02.1	06 49.30 +08 09.8 18.0	-0.85 + 0.5	4.2/03.2	30865
1996 BD ₂	1999 01 02.2	06 49.46 +25 58.4 18.0	-1.24 + 1.5	1.3/02.0	29139
1994 AH	1999 01 02.2	06 49.55 +20 38.2 16.7	-0.92 + 1.7	0.7/02.4	31140
1997 TV ₁₇	1999 01 02.2	06 49.75 +09 13.5 18.8	-0.82 + 0.4	4.0/03.2	31013
1993 FB ₁₈	1999 01 02.2	06 49.81 +23 40.8 17.2	-1.17 + 3.0	0.3/02.2	30471
1997 PC ₂	1999 01 02.2	06 49.91 +24 18.2 17.6	-1.15 + 0.9	0.5/02.2	30903
1990 RA ₈	1999 01 02.2	06 49.91 +27 14.9 18.4	-1.20 + 1.1	1.8/02.0	27103

1997 NY ₆ (7908)	1999 01 02.4	06 50.27 +09 58.0 17.7	-0.99 + 7.1	5.6/04.1	30692	1997 PM ₂ (7951)	1999 01 05.0	07 01.88 +25 26.6 17.0	-1.02 - 0.6	1.1/04.9	31010
1994 WM ₁ (8091)	1999 01 02.4	06 50.35 +27 04.4 17.5	-1.18 + 2.4	1.6/02.1	30646	1981 EV ₁₇	1999 01 05.0	07 01.89 +22 56.9 17.0	-0.92 + 1.5	0.1/05.0	30747
1996 BA	1999 01 02.4	06 50.39 +39 26.3 16.3	-1.29 + 8.3	7.0/31.0	27559	1996 EK ₁ (8045)	1999 01 05.0	07 02.04 +20 29.7 20.0	-1.10 + 1.2	0.8/05.2	22697
1995 EY ₇	1999 01 02.4	06 50.57 +10 53.9 16.4	-1.08 + 4.2	4.9/03.6	30965	1993 FB ₂₆ (7749)	1999 01 05.0	07 02.11 +18 18.0 17.2	-1.15 + 1.3	1.8/05.4	27328
1981 EN ₂₆	1999 01 02.5	06 50.72 +28 48.8 18.1	-1.28 - 0.7	2.3/02.3	26928	1985 HH	1999 01 05.0	07 02.20 +26 44.9 14.9	-1.17 - 3.4	1.6/05.0	30863
1993 OF ₃	1999 01 02.6	06 51.23 +10 12.3 16.4	-0.92 + 0.3	4.9/03.4	30665	1995 KZ ₁	1999 01 05.1	07 02.21 +24 43.1 17.6	-1.23 + 1.2	0.8/04.9	26743
1991 VJ ₂	1999 01 02.6	06 51.40 +10 03.7 17.2	-0.93 + 1.2	4.7/03.5	21967	6309 P-L (7933)	1999 01 05.1	07 02.16 +41 32.5 17.3	-1.39 + 7.6	6.1/02.6	30257
1989 AS ₁	1999 01 02.6	06 51.45 +24 15.2 18.9	-1.12 + 1.1	0.5/02.6	31276	1986 QZ ₁	1999 01 05.1	07 02.30 +19 29.9 17.3	-1.11 + 2.2	1.2/05.4	30893
1990 QN ₂	1999 01 02.7	06 51.66 +15 04.0 16.8	-1.18 + 1.4	3.3/03.3	30290	1996 OJ	1999 01 05.1	07 02.46 +02 41.1 17.1	-0.81 - 0.7	5.7/06.5	31008
1991 SG (7945)	1999 01 02.8	06 52.20 +27 03.1 15.6	-1.20 + 2.7	1.9/02.5	33067	2203 T-2	1999 01 05.2	07 02.74 +12 10.9 19.7	-0.97 + 1.6	3.4/06.2	32730
1991 PC ₁₆	1999 01 02.9	06 52.48 +33 18.5 17.6	-1.26 + 0.1	3.9/02.3	25440	1981 UT ₂₉	1999 01 05.2	07 02.90 +12 08.9 18.0	-1.08 + 1.2	4.1/06.1	30744
1997 LB ₄	1999 01 02.9	06 52.81 +11 18.1 17.7	-0.82 + 2.5	3.4/04.0	29615	1997 OG ₂	1999 01 05.2	07 02.92 +11 27.1 16.6	-0.86 + 3.8	3.7/06.6	30893
1997 SG ₂₅	1999 01 03.0	06 53.35 +23 41.0 17.3	-1.25 - 0.2	0.3/03.0	30746	1998 QT ₆₀ (8104)	1999 01 05.3	07 03.35 +18 12.6 19.1	-1.05 + 1.5	1.4/05.7	30893
1984 SL	1999 01 03.1	06 53.35 +23 05.1 18.1	-0.88 + 1.2	0.1/03.1	30871	1996 OJ	1999 01 05.3	07 03.41 +17 03.4 17.6	-1.05 + 3.8	2.0/06.0	30687
2241 T-3	1999 01 03.2	06 53.77 +23 47.9 19.0	-1.05 + 1.0	0.3/03.1	30788	1314 T-2	1999 01 05.4	07 03.53 +20 30.4 17.6	-1.11 + 0.6	1.0/05.6	30285
1994 TT ₁₆	1999 01 03.2	06 53.92 +25 27.2 17.8	-1.12 + 2.2	0.9/03.0	31145	1994 VZ	1999 01 05.4	07 03.60 +27 15.4 18.8	-1.15 0.0	1.5/05.1	30781
1994 YN	1999 01 03.2	06 53.94 +09 08.7 15.4	-0.98 + 5.0	5.7/05.0	25061	4196 T-2	1999 01 05.4	07 03.71 +19 42.9 17.4	-0.88 + 3.9	1.0/05.8	24112
1997 NY	1999 01 03.2	06 54.01 +24 08.0 19.7	-1.08 + 0.4	0.5/03.2	30286	1989 RB	1999 01 05.4	07 03.72 +21 31.5 19.5	-0.85 + 1.7	0.3/05.6	31009
1992 TW	1999 01 03.4	06 54.69 +27 21.9 19.3	-1.22 + 1.8	1.9/03.1	33245	1997 SF ₁₁	1999 01 05.5	07 04.11 +08 45.3 19.5	-0.97 + 2.2	6.0/07.0	27564
1992 KQ	1999 01 03.4	06 54.77 +23 24.0 16.0	-1.13 +10.1	0.3/03.3	33074	1362 T-2	1999 01 05.5	07 04.33 +11 02.5 17.8	-0.85 + 0.3	3.4/06.5	31272
1979 MW ₃	1999 01 03.4	06 54.98 +21 22.6 16.5	-1.19 - 2.2	0.7/03.5	33345	1979 MM ₆	1999 01 05.6	07 04.55 +19 38.4 20.2	-1.09 + 1.8	1.0/05.9	30788
2082 P-L	1999 01 03.4	06 54.98 +06 48.1 18.2	-0.86 + 1.6	5.3/04.9	31585	1981 ED ₂₀ (8018)	1999 01 05.6	07 04.60 +36 38.6 14.0	-1.64 -25.9	7.9/08.2	33085
1996 EU ₃	1999 01 03.5	06 55.31 +22 27.3 16.6	-1.01 + 5.1	0.1/03.6	30896	(8006)	1999 01 05.6	07 04.79 +27 17.2 17.0	-0.97 - 0.7	1.4/05.4	30967
1979 MF ₃	1999 01 03.5	06 55.49 +19 44.4 19.2	-1.12 + 0.9	1.1/03.8	26913	1992 DJ ₄	1999 01 05.6	07 04.87 +25 29.4 16.5	-1.15 + 3.1	1.1/05.4	29604
1981 EL ₂₉	1999 01 03.7	06 56.11 +19 55.1 18.6	-1.17 + 0.4	1.1/03.9	32502	1993 QA ₉	1999 01 05.7	07 04.80 +27 24.4 17.1	-1.09 + 2.5	1.9/05.2	28892
1996 CY ₂ (7925)	1999 01 03.7	06 56.13 +34 58.6 18.1	-1.27 + 0.5	4.7/03.0	27719	1995 DA	1999 01 05.7	07 05.19 +25 59.7 18.3	-1.08 + 1.5	1.2/05.5	30914
1996 DC	1999 01 03.7	06 56.27 +19 06.6 19.7	-0.98 + 1.3	1.2/04.0	30778	1997 QN ₄	1999 01 05.8	07 05.43 +13 53.2 17.8	-1.11 + 0.9	3.4/06.5	30292
1991 VM	1999 01 03.8	06 56.88 +14 03.8 20.5	-1.05 + 1.3	3.2/04.5	26920	4805 P-L	1999 01 05.8	07 05.49 +24 51.5 17.1	-0.97 + 2.3	0.7/05.6	30914
1979 MK ₆	1999 01 03.9	06 57.05 +23 11.1 15.8	-1.15 + 3.6	0.2/03.9	27112	1991 TD ₆	1999 01 05.9	07 05.87 +51 00.8 18.6	-1.53 - 0.4	8.9/04.3	22081
1996 JK ₁ (7881)	1999 01 03.9	06 57.06 +24 50.6 17.8	-0.93 + 1.0	0.6/03.8	30742	1997 PE ₂	1999 01 06.0	07 06.55 +04 29.8 18.3	-0.84 - 0.1	5.9/07.5	33264
4611 P-L	1999 01 03.9	06 57.30 +16 58.6 16.7	-1.12 + 4.1	2.4/04.6	30668	1996 HW ₈	1999 01 06.0	07 06.62 +34 11.3 18.9	-1.26 + 1.2	5.3/05.1	24237
1975 ST	1999 01 04.1	06 58.14 +24 31.3 15.8	-1.17 + 5.5	0.8/04.0	33070	1985 SM ₃	1999 01 06.1	07 06.69 +17 39.8 18.9	-0.87 + 0.7	1.5/06.5	31003
1994 AP ₁	1999 01 04.1	06 58.24 +19 02.0 17.8	-0.99 + 2.0	1.4/04.5	18804	1984 UD	1999 01 06.1	07 06.76 +32 28.6 16.2	-1.14 + 0.8	5.0/05.3	26918
1992 JR ₃	1999 01 04.2	06 58.41 +05 28.8 17.7	-0.98 - 1.1	6.3/05.2	30690	4064 T-2 (7900)	1999 01 06.1	07 06.81 +09 05.9 17.2	-1.05 + 1.1	5.0/07.3	30856
1981 EP ₁₀ (7979)	1999 01 04.3	06 58.80 +20 41.6 16.9	-0.94 + 2.1	0.7/04.5	30639	1997 UA ₂₁	1999 01 06.1	07 06.88 +06 11.9 17.0	-0.93 + 5.2	5.7/08.4	30853
(7914)	1999 01 04.4	06 59.24 +45 53.1 17.2	-1.41 + 1.1	10.3/02.3	33129	1987 SM ₁₂	1999 01 06.2	07 06.98 +33 22.4 17.8	-1.24 + 1.5	4.2/05.2	31138
1978 RB ₁₀	1999 01 04.4	06 59.42 +06 57.1 18.9	-0.90 + 1.6	4.6/05.8	31002	1996 FB ₅	1999 01 06.2	07 07.47 +19 45.7 18.3	-1.06 + 2.5	0.9/06.6	30897
1978 TR ₂ (8007)	1999 01 04.5	06 59.70 +41 17.1 15.9	-1.31 - 5.4	7.2/04.2	31008		1999 01 06.3	07 07.75 +33 55.1 16.8	-1.11 + 3.5	4.4/05.1	29138
1996 HT	1999 01 04.5	06 59.72 +21 41.0 16.9	-1.07 + 0.8	0.4/04.6	30872		1999 01 06.4	07 07.90 +19 13.0 17.2	-0.93 + 2.0	1.2/06.7	30769
1992 EH ₂₄	1999 01 04.5	06 59.98 +27 11.1 19.8	-1.18 - 0.3	1.7/04.3	22696		1999 01 06.4	07 08.02 +26 21.4 18.1	-1.17 + 2.0	1.5/06.1	30797
1992 CD ₁	1999 01 04.5	07 00.02 +31 47.5 16.9	-1.06 + 0.2	3.1/04.0	30847		1999 01 06.4	07 08.16 +20 51.8 17.5	-1.21 + 0.4	0.8/06.6	24390
4800 P-L	1999 01 04.6	07 00.04 +06 24.8 17.6	-1.00 + 0.2	5.3/05.8	30740		1999 01 06.5	07 08.63 +05 56.0 19.0	-0.96 + 5.5	5.2/08.9	30789
1995 BS ₃	1999 01 04.7	07 00.42 +29 33.3 19.0	-1.32 + 0.4	2.8/04.3	21099		1999 01 06.5	07 08.70 +10 43.1 17.6	-0.96 + 1.1	4.0/07.7	28863
3039 P-L	1999 01 04.7	07 00.52 +22 51.0 16.7	-0.97 + 1.1	0.0/04.7	30648		1999 01 06.8	07 09.74 +25 19.9 15.8	-1.27 - 0.6	1.4/07.0	33066
	1999 01 04.7	07 00.58 +19 53.5 17.2	-1.02 + 1.4	1.0/05.0	30854		1999 01 06.8	07 10.11 +16 51.9 19.2	-1.16 + 1.5	2.4/07.4	32459
	1999 01 04.7	07 00.61 +23 10.8 16.5	-1.10 0.0	0.2/04.7	31009		1999 01 06.9	07 10.30 +38 25.8 16.3	-1.17 + 1.9	6.9/05.5	30893
	1999 01 04.7	07 00.77 +18 38.1 18.8	-1.09 + 4.4	1.6/05.2	30757		1999 01 06.9	07 10.34 +08 09.1 17.2	-1.05 + 3.2	6.2/08.5	31269
	1999 01 04.7	07 00.86 +17 13.5 15.6	-1.06 + 1.7	2.5/05.2	33070		1999 01 06.9	07 10.55 +28 40.6 17.2	-1.22 + 2.7	2.4/06.4	30645
	1999 01 04.8	07 00.95 +19 44.6 19.2	-1.08 + 2.1	1.0/05.1	30681		1999 01 07.0	07 10.69 +07 59.6 18.0	-0.97 + 1.0	5.0/08.4	31148
	1999 01 04.8	07 01.25 +19 10.0 16.8	-0.99 + 2.0	1.3/05.2	30783		1999 01 07.1	07 11.18 +23 58.9 17.2	-0.97 + 1.4	0.5/07.0	30894
	1999 01 04.9	07 01.41 +15 42.8 17.6	-1.00 - 0.8	2.8/05.4	31022		1999 01 07.1	07 11.23 -11 47.7 19.4	-1.05 + 2.3	12.4/10.3	27560