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EDITORIAL NOTICE

Owing to unusual circumstances, this batch of *Minor Planet Circulars* is being dated six days after the official date. There is again a record number of observations (almost 103 500), as well as a record number of new discoveries of minor planets (4745), the late-September designations extending to 1998 SN₁₆₄. The number of new numberings is down some from the record 252 last month.

The 1999 edition of *Efemeridy Malykh Planet (Ephemerides of Minor Planets)* is now available from the Institute of Applied Astronomy, Russian Academy of Sciences, St. Petersburg. It contains 800 pages and is complete for numberings of minor planets through (8058). Copies should be ordered directly from the Institute: e-mail shor@ita.spb.su or FAX +7-812-275-1119.

ERRATA

MPC Line
31464 -31

32570 -11
32789 - 1
32790 -29

For L. V. Zhuravleva read L. I. Chernykh,
N. S. Chernykh
Add E. Elst as a measurer.
For discoverer read discoverers
For 1973 Jan. 29 read 1973 Sept. 29

NEW OBSERVATORY CODES

The following listing is a continuation to that on MPC 32561. The longitudes λ are measured in degrees eastward from Greenwich, and the parallax constants $\rho \cos \phi'$ and $\rho \sin \phi'$ are the product of the geocentric distance (in earth equatorial radii) and the cosine and sine, respectively, of the geocentric latitude.

Obs.	λ	$\rho \cos \phi'$	$\rho \sin \phi'$	
158	7.6033	0.69871	+0.71333	Promiod
159	10.5153	0.72065	+0.69115	Monte Agliale
652	245.9333	0.6291	+0.7749	Sandringham, Calgary
653	237.8678	0.68091	+0.72996	Torus Observatory, Buckley
714	246.8173	0.82444	+0.56439	Bagdad
731	272.6711	0.77290	+0.63244	Rose-Hulman Observatory, Terre Haute
737	275.6633	0.8282	+0.5586	New Bullpen Observatory, Alpharetta
744	273.7633	0.7688	+0.6373	Doyan Rose Observatory, Indianapolis
836	288.5011	0.74708	+0.66252	Furnace Brook Observatory, Cranston

CORRECTED OBSERVATIONS

The following observations correct those previously published.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Mag.	N Obs.
1998 QT ₅₂	1998 09 24.01179		23 44 14.19	+10 41 00.5	MPS 2256	16.7 R	1 116
1998 QT ₅₂	1998 09 24.02005		23 44 13.82	+10 40 56.5	MPS 2256	16.8 R	1 116
1998 QT ₅₂	1998 09 25.03489		23 43 31.58	+10 34 23.0	MPS 2256	17.0 R	1 116
1998 QT ₅₂	1998 09 25.04694		23 43 30.99	+10 34 17.4	MPS 2256	16.8 R	1 116
1998 QT ₅₂	1998 09 25.93574		23 42 54.56	+10 28 27.0	MPS 2256	16.7 R	1 116
1998 QT ₅₂	1998 09 25.94473		23 42 54.12	+10 28 23.9	MPS 2256	16.9 R	1 116
1998 QT ₅₂	1998 09 25.95639		23 42 53.64	+10 28 19.4	MPS 2256	16.8 R	1 116
1998 QT ₅₂	1998 09 26.01540		23 42 51.12	+10 27 56.2	MPS 2256	16.6 R	1 116
1998 QT ₅₂	1998 09 26.02361		23 42 50.78	+10 27 52.5	MPS 2256	16.4 R	1 116
1998 QT ₅₂	1998 09 26.08206		23 42 48.34	+10 27 28.9	MPS 2256	17.1 R	1 116
1998 QT ₅₂	1998 09 26.09039		23 42 47.99	+10 27 26.1	MPS 2256	17.0 R	1 116

Note 1: time changed by -1 hour.

IDENTIFICATION CHANGES

Continuation to MPC 32561.

Object	Date	UT	α_{2000}	δ_{2000}	Originally	Mag.	Obs.
1925 VM	* 1925 11 15.96626		23 20.8	+06 38	1925 VA	16	024
1979 HY ₆	* 1979 04 30.86134		13 37 36.78	-00 43 16.3	1979 HC ₃	17.3	095
1979 OW ₁₆	* 1979 07 26.18819		20 01 14.95	-14 52 53.0	1979 OD ₁₀		675
1987 SN ₃₀	* 1987 09 16.88546		23 43 45.78	-01 01 29.8	1987 QM ₁₂	16.8 V	095
1987 SO ₃₀	* 1987 09 16.88546		23 43 59.16	+00 59 51.5	1987 QL ₁₂	16.8 V	095
1987 TC ₁	* 1987 10 02.96355		01 18 49.86	+11 04 40.9	1987 SN ₂₁	16.3 V	095
1988 RN ₁₄	* 1988 09 12.29097		22 39 22.18	-07 49 23.2	1988 RA ₇		809
1988 RN ₁₄	1988 09 12.29653		22 39 21.91	-07 49 25.9	1988 RA ₇		809
1988 RN ₁₄	1988 09 12.30208		22 39 21.64	-07 49 28.6	1988 RA ₇		809
1989 AF ₁₀	* 1989 01 10.61840		08 53 46.35	+17 42 49.1	1989 AW ₄		413
1989 AF ₁₀	1989 01 10.67396		08 53 43.11	+17 42 59.6	1989 AW ₄		413
1989 AG ₁₀	* 1989 01 12.92144		07 39 10.09	+25 16 01.8	1989 AF ₂		046
1989 AG ₁₀	1989 01 12.93417		07 39 09.53	+25 16 10.5	1989 AF ₂		046
1990 ES ₁₀	* 1990 03 05.19861		10 41 06.67	+08 08 50.5	1990 EV ₇		809
1990 ES ₁₀	1990 03 05.20695		10 41 06.26	+08 08 54.2	1990 EV ₇		809
1990 ES ₁₀	1990 03 05.21528		10 41 05.83	+08 08 57.9	1990 EV ₇		809
1990 SX ₂₉	* 1990 09 22.12500		00 23 02.05	-05 04 47.0	1990 RC ₁₅	18.7	809

1990 SX ₂₉	1990 09 22.13819	00 23 01.23	-05 04 47.9	1990 RC ₁₅	809
1990 SX ₂₉	1990 09 22.15139	00 23 00.42	-05 04 49.7	1990 RC ₁₅	809
1991 FU ₆	* 1991 03 17.20555	10 43 00.62	+07 24 48.0	1991 EG ₅	809
1991 FU ₆	1991 03 17.21806	10 43 00.14	+07 24 50.8	1991 EG ₅	809
1991 FU ₆	1991 03 17.23056	10 42 59.65	+07 24 53.6	1991 EG ₅	809
1991 UK ₅	* 1991 10 31.47928	02 12 05.88	+13 46 05.3	1991 UT ₁	17 399
1991 UK ₅	1991 10 31.49497	02 12 05.10	+13 45 59.2	1991 UT ₁	399
1991 XY ₆	* 1991 12 07.62986	02 17 37.36	+19 41 05.0	1991 XV	17 399
1991 XY ₆	1991 12 07.65116	02 17 36.42	+19 41 01.9	1991 XV	399
1992 EM ₃₆	* 1992 03 10.68542	12 10 40.73	+08 57 00.0	1992 EZ	18 372
1992 EM ₃₆	1992 03 10.69826	12 10 40.23	+08 57 07.1	1992 EZ	372
1993 TM ₄₈	* 1993 10 12.85174	00 12 06.58	+02 58 08.5	1993 RT ₆	16.5 095
1995 UL ₅₃	* 1995 10 27.62083	01 33 33.58	+23 33 19.3	1995 UA ₆	16.8 399
1995 UL ₅₃	1995 10 27.63507	01 33 32.66	+23 33 10.5	1995 UA ₆	399
1997 GB ₄₅	* 1997 04 07.27119	12 01 12.75	+00 13 33.6	1997 EV ₂₆	21.0 V 691
1997 GB ₄₅	1997 04 07.29304	12 01 11.60	+00 13 38.7	1997 EV ₂₆	21.2 V 691
1997 GB ₄₅	1997 04 07.31558	12 01 10.42	+00 13 44.6	1997 EV ₂₆	20.9 V 691
1998 RE ₆₂	* 1998 09 02.75088	22 34 44.07	+01 15 06.3	1998 PR ₁	327
1998 RE ₆₂	1998 09 02.75557	22 34 43.78	+01 15 05.9	1998 PR ₁	17.7 327
1998 RE ₆₂	1998 09 02.76016	22 34 43.50	+01 15 04.9	1998 PR ₁	327
1998 RE ₆₂	1998 09 02.76484	22 34 43.23	+01 15 04.3	1998 PR ₁	327
1998 SZ ₇₅	* 1998 09 16.28075	00 09 26.79	+00 10 57.1	1998 QH ₂₆	18.2 R 699
1998 SZ ₇₅	1998 09 16.30310	00 09 25.71	+00 10 52.1	1998 QH ₂₆	699
1998 SZ ₇₅	1998 09 16.32546	00 09 24.55	+00 10 47.1	1998 QH ₂₆	699
1998 SK ₁₄₃	* 1998 09 24.91056	01 09 33.31	+06 50 42.6	1998 SV ₂₁	18.8 120
1998 SK ₁₄₃	1998 09 24.92824	01 09 32.33	+06 50 38.8	1998 SV ₂₁	18.9 120
1998 SK ₁₄₃	1998 09 24.94619	01 09 31.77	+06 50 34.1	1998 SV ₂₁	120
1998 SP ₁₆₃	* 1998 09 20.79231	01 19 01.01	+00 57 32.1	1998 RB ₁₆	327
1998 SP ₁₆₃	1998 09 20.80273	01 19 00.51	+00 57 28.9	1998 RB ₁₆	18.3 327
1998 SP ₁₆₃	1998 09 20.81328	01 19 00.00	+00 57 24.6	1998 RB ₁₆	327
1998 SQ ₁₆₃	* 1998 09 30.36753	00 31 36.69	+02 57 41.8	1998 SA ₄₅	21.0 V 691
1998 SQ ₁₆₃	1998 09 30.38852	00 31 35.49	+02 57 34.0	1998 SA ₄₅	20.9 V 691
1998 SQ ₁₆₃	1998 09 30.40939	00 31 34.29	+02 57 25.7	1998 SA ₄₅	21.0 V 691
1998 SN ₁₆₄	* 1998 09 23.72852	01 18 30.65	+10 35 09.6	1998 SX ₂₆	18.1 327
1998 SN ₁₆₄	1998 09 23.73593	01 18 30.24	+10 35 09.8	1998 SX ₂₆	327
1998 SN ₁₆₄	1998 09 23.74248	01 18 29.87	+10 35 09.4	1998 SX ₂₆	327

OBSERVATIONS OF COMETS

Observations are published here for the following observatory codes:

046	Kleť. 0.57-m $f/5.2$ reflector + CCD. Observers J. Tichá, M. Tichý and Z. Moravec.
071	Rozhen. 0.5-m $f/1.4$ Schmidt + CCD. Observers V. Redeva, G. Borisov and L. Vasileva.
106	Crni vrh. 0.36-m $f/6.7$ Schmidt-Cassegrain + CCD. Observers H. Mikuz and S. Maticic.
108	Montelupo. 0.30-m $f/5.7$ Schmidt-Cassegrain + CCD. Observers M. Tombelli, D. Guidetti, G. Forti and E. Masotti.
118	Modra. 0.6-m $f/5.5$ reflector + CCD. Observers A. Galád, D. Kalmančok, L. Kornoš, P. Kolény and J. Tóth.
120	Višňjan. 0.41-m $f/4.3$ reflector + CCD. Observers K. Korlević and A. Ritosa. Measured by K. Korlević.

143	Gnosca. 0.20-m $f/6.3$ reflector + CCD. Observer S. Sposetti.
144	Bray et Lu. 0.21-m $f/11.5$ reflector + CCD. Observer L. Parmeggiani.
154	Cortina. 0.50-m $f/3.8$ reflector + CCD. Observer A. Dimai. Measured by V. Goretti.
158	CAM-Promiod. 0.30-m Schmidt-Cassegrain + CCD. Observer G. A. Sala.
294	Staten Island. 0.41-m $f/4.7$ Schmidt-Cassegrain + CCD. Observer I. Robbins. Measured by S. Parello.
351	Sakamoto. 0.15-m $f/7.0$ lens + CCD. Observer Y. Kitamura.
355	Hadano. 0.28-m $f/5.0$ reflector + CCD. Observer A. Asami.
360	Kuma Kogen. 0.60-m $f/6.0$ Ritchey-Chrétien + CCD. Observer A. Nakamura.
367	Yatsuka. 0.26-m $f/4.8$ reflector. Observer H. Abe.
372	Geisei. 0.21-m $f/3.0$ reflector. Observer T. Seki.
400	Kitami. 0.25-m $f/3.4$ hyperboloid astrocamera + CCD. Observer K. Endate.
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.
422	Loomberah. 0.25-m $f/4.1$ reflector + CCD. Observer G. J. Garradd.
426	Woomera. 0.30-m $f/3.3$ Schmidt-Cassegrain + CCD. Observer F. B. Zoltowski.
428	Reedy Creek. 0.25-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer J. Broughton.
470	Ceccano. 0.15-m $f/5$ reflector + CCD. Observer G. Masi.
476	Bussoleno. 0.30-m $f/4.0$ reflector. Observer P. Pognant.
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.
557	Ondřejov. 0.65-m $f/3.6$ reflector + CCD. Observers P. Pravec and L. Šarounová.
560	Madonna di Dossobuono. 0.40-m $f/3.5$ reflector + CCD. Observer L. Lai.
561	Piszkéstető. 0.60-m Schmidt + CCD. Observer J. Kelemen.
587	Sormano. 0.5-m reflector + CCD. Observers F. Manca, A. Testa, P. Sicoli, P. Ghezzi, V. Giuliani and M. Cavagna.
596	Colleverde di Guidonia. 0.31-m $f/2.8$ Baker-Schmidt + CCD. Observer V. S. Casulli.
605	Marl. 0.2-m $f/10$ Schmidt-Cassegrain + CCD. Observer E. Jung.
611	Starkenbug. 0.45-m $f/4.4$ reflector + CCD. Observers E. Schwab, M. Busch and R. Stoss. Measured by M. Busch and R. Stoss.
615	St. Veran. 0.62-m $f/3.0$ Cassegrain + CCD. Observers B. Zeller, F. Papon and J. Bourgeois. Measured by M. Wilmet.
620	Mallorca. 0.25-m $f/6.3$ reflector + CCD. Observer J. Rodriguez.
627	Blauvac. 0.26-m $f/4.7$ reflector + CCD. Observer R. Roy.
629	Szeged. 0.28-m Schmidt-Cassegrain + CCD. Observers K. Sárneczky and B. Csák. Measured by L. Kiss and K. Sárneczky.
658	Dominion Astrophysical Observatory. 1.82-m Plaskett telescope + CCD. Observers D. D. Balam and G. C. L. Aikman.
670	Camarillo. 0.25-m Schmidt-Cassegrain + CCD. Observer J. E. Rogers.
673	Table Mountain, Wrightwood. 0.6-m reflector + CCD. Observer D. L. Rabinowitz.
675	Palomar. 1.2-m Oschin Schmidt. Observers J. Mueller, K. Rykoski and M. Brown. Reduction by G. V. Williams.
681	Calgary. 0.24-m $f/3.3$ Schmidt-Cassegrain + CCD. Observer G. W. Billings.

683	Goodricke-Pigott Observatory. 0.36-m $f/11$ reflector + CCD. Observer R. A. Tucker.	C/1995 O1	1998 10 13.66811	07 29 43.20	-65 28 12.1	16.2 N	422
691	Kitt Peak. 0.91-m Spacewatch telescope. Observers J. V. Scotti, J. Larsen, J. Montani, A. Gleason and N. Danzl.	C/1995 O1	1998 10 14.19370	07 29 40.71	-65 33 43.8	12.0 T	844
693	University of Arizona, Catalina Station. 1.5-m reflector + CCD. Observer C. W. Hergenrother.	C/1995 O1	1998 10 14.20765	07 29 40.65	-65 33 52.9	12.1 T	844
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.	C/1995 O1	1998 10 14.21920	07 29 40.61	-65 34 00.8	12.0 T	844
703	Catalina Sky Survey. 0.41-m $f/3$ Schmidt + CCD. Observer T. B. Spahr.	C/1995 O1	1998 10 18.13780	07 29 08.00	-66 15 08.2		844
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.	C/1995 O1	1998 10 18.15318	07 29 07.90	-66 15 18.6		844
713	Thornton. 0.20-m $f/10$ Schmidt-Cassegrain + CCD. Observer R. A. Koff.	C/1995 O1	1998 10 18.16635	07 29 07.77	-66 15 26.3		844
714	Bagdad. 0.30-m $f/10$ Schmidt-Cassegrain. Observer J. Bruton.	C/1995 O1	1998 10 19.27773	07 28 53.96	-66 27 00.6	12.1 T	844
725	Fair Oaks Ranch. 0.46-m $f/4.5$ reflector + CCD. Observer J. V. McClusky.	C/1995 O1	1998 10 19.29214	07 28 53.74	-66 27 09.5	12.0 T	844
734	Eskridge. 0.30-m Schmidt-Cassegrain + CCD. Observers G. Hug and G. Bell.	C/1995 O1	1998 10 19.31012	07 28 53.51	-66 27 20.9	11.9 T	844
739	Olathe. 0.25-m $f/4.1$ Schmidt-Cassegrain + CCD. Observer L. Robinson.	C/1995 O1	1998 10 31.16652	07 24 12.64	-68 26 51.2	12.0 T	844
750	Hobbs Observatory, Fall Creek. 0.6-m $f/5$ telescope + CCD. Observer R. Elliott.	C/1995 O1	1998 10 31.18663	07 24 12.06	-68 27 02.5	12.2 T	844
755	Optec Observatory. 0.25-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer G. Persha.	C/1995 O1	1998 10 31.21025	07 24 11.26	-68 27 16.3	12.0 T	844
758	Cocoa. 0.3-m reflector + CCD. Observer I. Griffin.	C/1995 O1	1998 10 31.22314	07 24 10.71	-68 27 23.9	12.1 T	844
761	Zephyrhills. 0.18-m $f/9.4$ reflector + CCD. Observer R. A. Kowalski.	C/1995 O1	1998 11 01.13741	07 23 38.10	-68 36 12.0		844
834	Buenos Aires-AAAA. 0.25-m $f/6.3$ reflector + CCD. Observers R. Caprio, R. Mackintosh, H. Ruggiu and A. Macedo. Measured by R. Mackintosh.	C/1995 O1	1998 11 01.14909	07 23 37.52	-68 36 19.5		844
844	Los Molinos. 0.35-m $f/6.4$ reflector + CCD. Observer R. Salvo.	C/1995 O1	1998 11 01.16736	07 23 37.00	-68 36 29.0		844
860	Valinhos. 0.20-m $f/3.3$ reflector + CCD. Observer P. R. Holvorcem.	C/1995 O1	1998 11 08.74449	07 18 01.83	-69 46 51.9	13.4 N	426
867	Saji Observatory. 1.03-m $f/4.8$ reflector + CCD. Observers M. Yamanishi, A. Miyamoto, M. Aimoto and T. Oribe.	C/1995 O1	1998 11 08.74729	07 18 01.67	-69 46 53.4	13.4 N	426
871	Akou. 0.33-m $f/3.3$ reflector + CCD. Observer K. Kawanishi.	C/1995 O1	1998 11 08.75073	07 18 01.47	-69 46 55.3	13.4 N	426
886	Susono. 0.25-m $f/6.3$ reflector + CCD. Observer M. Akiyama.						
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.						
908	Toyama. 0.43-m reflector $f/6$ + CCD. Observer M. Aoki.						
952	Marxuquera. 0.25-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer J. J. Gomez D.						
958	Dax. 0.20-m $f/10$ Schmidt-Cassegrain + CCD. Observer P. Dupouy.						
966	Church Stretton. 0.25-m Schmidt-Cassegrain + CCD. Observer S. P. Laurie.						
970	Chelmsford. 0.30-m $f/5.25$ reflector + CCD. Observer N. D. James.						
978	Conder Brow. 0.33-m $f/3$ reflector + CCD. Observer D. Buczynski.						
Object	Date	UT	α_{2000}	δ_{2000}	Mag.	N Obs.	
C/1995 O1 (Hale-Bopp)							
C/1995 O1	1998 09 26.21957	07 27 36.75	-62 22 24.2	11.9 T		844	
C/1995 O1	1998 09 26.24039	07 27 37.05	-62 22 38.1	11.7 T		844	
C/1995 O1	1998 09 26.26067	07 27 37.54	-62 22 51.3	11.8 T		844	
C/1995 O1	1998 09 30.25172	07 28 39.41	-63 05 20.3	11.5 T		844	
C/1995 O1	1998 09 30.26523	07 28 39.50	-63 05 29.6	11.4 T		844	
C/1995 O1	1998 09 30.28267	07 28 39.74	-63 05 40.3	11.4 T		844	
C/1995 O1	1998 10 09.23447	07 29 48.76	-64 41 10.4	11.0 T		844	
C/1995 O1	1998 10 09.25198	07 29 48.71	-64 41 22.1	10.6 T		844	
C/1995 O1	1998 10 09.26812	07 29 48.78	-64 41 33.7	10.2 T		844	
C/1995 O1	1998 10 13.66489	07 29 43.21	-65 28 09.9	16.1 N		422	
C/1995 O1	1998 10 13.66539	07 29 43.19	-65 28 10.4	16.3 N		422	
C/1997 G2 (Montani)							
C/1997 G2	1998 10 01.19012	04 49 44.21	-71 30 31.7	15.6 T		844	
C/1997 G2	1998 10 01.20446	04 49 41.90	-71 30 35.9	15.2 T		844	
C/1997 G2	1998 10 01.21638	04 49 39.23	-71 30 42.4	15.4 T		844	
C/1997 G2	1998 10 09.14933	04 27 13.27	-71 49 23.0	13.5 T		844	
C/1997 G2	1998 10 09.15535	04 27 12.87	-71 49 26.1	13.8 T		844	
C/1997 G2	1998 10 09.17235	04 27 09.46	-71 49 28.4	13.6 T		844	
C/1997 G2	1998 10 18.10249	03 58 24.39	-71 42 48.2			844	
C/1997 G2	1998 10 18.12639	03 58 19.21	-71 42 43.7			844	
C/1997 J2 (Meunier-Dupouy)							
C/1997 J2	1998 01 06.76159	19 35 04.26	+39 47 35.4	14.7 T		958	
C/1997 J2	1998 01 06.77154	19 35 05.48	+39 47 28.9	13.8 T		958	
C/1997 J2	1998 01 08.74296	19 39 24.39	+39 25 39.0	14.4 T		958	
C/1997 J2	1998 01 08.76056	19 39 26.69	+39 25 27.4	14.4 T		958	
C/1997 J2	1998 01 08.77542	19 39 28.64	+39 25 17.4	13.9 T		958	
C/1997 J2	1998 01 08.78924	19 39 30.42	+39 25 08.0	14.4 T		958	
C/1997 J2	1998 01 08.80222	19 39 32.09	+39 24 59.4	14.3 T		958	
C/1997 J2	1998 03 20.20851	21 38 44.14	+32 01 14.4	15.2 T		958	
C/1997 J2	1998 03 20.21395	21 38 44.52	+32 01 13.5	15.2 T		958	
C/1997 J2	1998 03 21.17866	21 39 56.02	+31 58 51.5	15.0 T		958	
C/1997 J2	1998 03 21.18716	21 39 56.64	+31 58 50.4	15.4 T		958	
C/1997 J2	1998 03 21.19451	21 39 57.18	+31 58 49.5	15.1 T		958	
C/1997 J2	1998 03 21.20299	21 39 57.80	+31 58 48.2	15.1 T		958	
C/1997 J2	1998 04 25.14538	22 14 46.24	+31 03 39.5	15.2 T		958	
C/1997 J2	1998 04 25.15784	22 14 46.67	+31 03 37.8	14.7 T		958	
C/1997 J2	1998 05 07.05789	22 22 34.37	+30 48 49.1	14.2 T		958	
C/1997 J2	1998 05 07.07132	22 22 34.89	+30 48 48.6	13.9 T		958	
C/1997 J2	1998 05 09.12233	22 23 41.27	+30 45 54.1	15.5 T		958	
C/1997 J2	1998 05 09.13509	22 23 41.69	+30 45 52.7	14.3 T		958	
C/1997 J2	1998 05 24.07252	22 29 30.07	+30 17 44.4	14.2 T		958	
C/1997 J2	1998 05 24.12454	22 29 30.87	+30 17 37.0	14.0 T		958	
C/1997 J2	1998 05 24.13898	22 29 31.05	+30 17 34.6	13.9 T		958	

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C/1997 J2	1998 06 04.12321	22 31 00.06	+29 44 22.5	14.3 T	958
C/1997 J2	1998 06 13.01911	22 30 19.23	+29 05 21.2	14.1 T	958
C/1997 J2	1998 06 13.03110	22 30 19.06	+29 05 17.5	14.3 T	958
C/1997 J2	1998 06 15.08711	22 29 54.50	+28 54 21.2	14.4 T	958
C/1997 J2	1998 06 15.13404	22 29 53.86	+28 54 06.1	14.5 T	958
C/1997 J2	1998 06 16.99094	22 29 26.71	+28 43 28.9	14.8 T	958
C/1997 J2	1998 06 17.06228	22 29 25.52	+28 43 04.0	14.2 T	958
C/1997 J2	1998 06 18.00839	22 29 09.77	+28 37 22.3	13.9 T	958
C/1997 J2	1998 06 18.06620	22 29 08.70	+28 37 01.5	13.9 T	958
C/1997 J2	1998 06 18.13388	22 29 07.53	+28 36 37.4	14.1 T	958
C/1997 J2	1998 06 20.07927	22 28 30.82	+28 24 16.6	14.0 T	958
C/1997 J2	1998 06 20.09014	22 28 30.60	+28 24 12.8	14.0 T	958
C/1997 J2	1998 06 28.01807	22 25 06.23	+27 24 42.1	14.5 T	958
C/1997 J2	1998 06 28.09245	22 25 03.83	+27 24 05.2	14.0 T	958
C/1997 J2	1998 07 05.99484	22 20 13.50	+26 07 50.8	14.3 T	958
C/1997 J2	1998 07 06.04615	22 20 11.37	+26 07 16.7	14.9 T	958
C/1997 J2	1998 07 06.09679	22 20 09.14	+26 06 44.8	14.5 T	958
C/1997 J2	1998 07 12.05322	22 15 36.05	+24 56 27.0	14.5 T	958
C/1997 J2	1998 07 12.06633	22 15 35.36	+24 56 17.0	14.8 T	958
C/1997 J2	1998 07 13.02929	22 14 47.13	+24 43 49.0	14.4 T	958
C/1997 J2	1998 07 13.07300	22 14 44.88	+24 43 14.3	14.4 T	958
C/1997 J2	1998 07 14.00392	22 13 57.28	+24 30 52.8	14.5 T	958
C/1997 J2	1998 07 14.04977	22 13 54.85	+24 30 16.1	14.5 T	958
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C/1997 J2	1998 07 19.10042	22 09 18.90	+23 17 53.4	14.3 T	958
C/1997 J2	1998 07 30.02786	21 58 01.06	+20 10 19.1	14.2 T	958
C/1997 J2	1998 07 30.03829	21 58 00.35	+20 10 07.3	13.9 T	958
C/1997 J2	1998 08 02.09703	21 54 36.04	+19 10 08.5	14.2 T	958
C/1997 J2	1998 08 02.12405	21 54 34.23	+19 09 35.7	13.9 T	958
C/1997 J2	1998 08 02.96558	21 53 37.47	+18 52 32.1	14.0 T	958
C/1997 J2	1998 08 02.99867	21 53 35.17	+18 51 52.6	14.1 T	958
C/1997 J2	1998 08 03.02236	21 53 33.51	+18 51 23.9	14.1 T	958
C/1997 J2	1998 08 03.03958	21 53 32.34	+18 51 02.5	14.2 T	958
C/1997 J2	1998 08 03.05478	21 53 31.27	+18 50 44.0	14.3 T	958
C/1997 J2	1998 08 13.91093	21 41 03.79	+14 51 50.3	14.4 T	958
C/1997 J2	1998 08 13.92539	21 41 02.80	+14 51 30.1	14.3 T	958
C/1997 J2	1998 08 13.95464	21 41 00.74	+14 50 48.7	14.2 T	958
C/1997 J2	1998 08 14.01321	21 40 56.61	+14 49 25.8	14.1 T	958
C/1997 J2	1998 08 14.03252	21 40 55.31	+14 48 59.6	14.1 T	958
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C/1997 J2	1998 08 16.94109	21 37 35.83	+13 39 57.4	14.2 T	958
C/1997 J2	1998 08 16.97266	21 37 33.63	+13 39 12.1	14.2 T	958
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C/1997 J2	1998 08 17.02863	21 37 29.76	+13 37 51.0	14.1 T	958
C/1997 J2	1998 08 18.91878	21 35 21.57	+12 52 05.8	14.0 T	958
C/1997 J2	1998 08 18.97155	21 35 17.94	+12 50 49.0	14.1 T	958
C/1997 J2	1998 08 19.02910	21 35 14.00	+12 49 24.9	13.9 T	958
C/1997 J2	1998 08 19.07437	21 35 10.87	+12 48 18.7	14.1 T	958
C/1997 J2	1998 08 19.10731	21 35 08.60	+12 47 30.2	14.1 T	958
C/1997 J2	1998 08 20.88777	21 33 09.50	+12 03 51.9	14.0 T	958
C/1997 J2	1998 08 20.91939	21 33 07.36	+12 03 05.1	14.0 T	958

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C/1997 J2	1998 08 23.88707	21 29 52.21	+10 49 27.4	14.4 T	958
C/1997 J2	1998 08 25.99701	21 27 36.73	+09 56 38.5	14.6 T	958
C/1997 J2	1998 08 26.00903	21 27 35.95	+09 56 20.5	14.7 T	958
C/1997 J2	1998 08 27.95753	21 25 33.96	+09 07 18.3	14.3 T	958
C/1997 J2	1998 08 27.96876	21 25 33.24	+09 07 01.3	14.7 T	958
C/1997 J2	1998 08 28.85118	21 24 39.08	+08 44 47.9	14.2 T	958
C/1997 J2	1998 08 28.86339	21 24 38.32	+08 44 28.6	14.0 T	958
C/1997 J2	1998 08 29.89802	21 23 35.51	+08 18 25.4	14.5 T	958
C/1997 J2	1998 08 29.90875	21 23 34.83	+08 18 08.8	14.3 T	958
C/1997 J2	1998 09 09.86284	21 13 34.93	+03 45 08.6	14.4 T	958
C/1997 J2	1998 09 09.87044	21 13 34.55	+03 44 57.3	14.4 T	958
C/1997 J2	1998 09 10.88740	21 12 45.57	+03 20 14.1	14.4 T	958
C/1997 J2	1998 09 10.91411	21 12 44.27	+03 19 35.4	14.5 T	958
C/1997 J2	1998 09 14.11447	21 10 18.22	+02 02 53.9	15.1 N	294
C/1997 J2	1998 09 14.13404	21 10 17.40	+02 02 27.5	15.3 N	294
C/1997 J2	1998 09 16.87549	21 08 22.51	+00 58 13.2	15.2 T	958
C/1997 J2	1998 09 16.89287	21 08 21.77	+00 57 49.1	15.0 T	958
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C/1997 J2	1998 09 24.05473	21 04 07.60	-01 42 13.8	15.6 N	294
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C/1997 J2	1998 09 29.11561	21 01 48.80	-03 27 37.5		834
C/1997 J2	1998 10 04.55163	20 59 57.29	-05 13 20.7		900
C/1997 J2	1998 10 04.55619	20 59 57.23	-05 13 26.0		900
C/1997 J2	1998 10 06.06636	20 59 33.07	-05 41 18.9		834
C/1997 J2	1998 10 07.03411	20 59 19.16	-05 58 55.9	14.4 T	758
C/1997 J2	1998 10 07.03672	20 59 19.17	-05 58 59.3	14.3 T	758
C/1997 J2	1998 10 07.04009	20 59 19.12	-05 59 02.3	14.1 T	758
C/1997 J2	1998 10 07.04334	20 59 19.11	-05 59 06.3	14.4 T	758
C/1997 J2	1998 10 13.15828	20 58 17.57	-07 44 05.6	16.6 T	750
C/1997 J2	1998 10 13.17108	20 58 17.43	-07 44 18.3	16.5 T	750
C/1997 J2	1998 10 13.90708	20 58 13.17	-07 56 15.3	15.4 T	958
C/1997 J2	1998 10 13.91810	20 58 13.08	-07 56 26.3	15.4 T	958
C/1997 J2	1998 10 14.85277	20 58 08.74	-08 11 23.5	15.4 T	958
C/1997 J2	1998 10 14.87692	20 58 08.57	-08 11 46.5	15.2 T	958
C/1997 J2	1998 10 15.82675	20 58 05.11	-08 26 44.0	14.2 T	605
C/1997 J2	1998 10 15.83927	20 58 05.05	-08 26 56.8	14.3 T	605
C/1997 J2	1998 10 16.02369	20 58 04.55	-08 29 47.8	16.3 N	294
C/1997 J2	1998 10 16.07655	20 58 04.14	-08 30 37.1	16.2 N	294
C/1997 J2	1998 10 16.81200	20 58 02.58	-08 41 58.6	15.5 T	958
C/1997 J2	1998 10 16.85486	20 58 02.50	-08 42 38.3	15.4 T	958
C/1997 J2	1998 10 18.08017	20 58 00.99	-09 01 14.4	15.8 T	739
C/1997 J2	1998 10 18.08312	20 58 00.97	-09 01 17.9	15.7 T	739
C/1997 J2	1998 10 18.08572	20 58 00.91	-09 01 19.6	15.9 T	739
C/1997 J2	1998 10 18.09068	20 58 00.88	-09 01 24.6	15.7 T	739
C/1997 J2	1998 10 18.11292	20 58 00.91	-09 01 43.7	17.7 N	691
C/1997 J2	1998 10 18.13067	20 58 00.85	-09 01 59.5	13.3 T	691
C/1997 J2	1998 10 18.49012	20 58 00.85	-09 07 22.2	14.3 T	351
C/1997 J2	1998 10 18.49256	20 58 00.86	-09 07 25.0		351
C/1997 J2	1998 10 18.49488	20 58 00.87	-09 07 27.6		351

1998 NOV. 10

M.P.C. 32823

C/1997 J2	1998 10 19.02723	20 58 01.02	-09 15 16.8		834
C/1997 J2	1998 10 19.07906	20 58 01.04	-09 16 07.2	16.4 T	750
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C/1997 J2	1998 10 19.81031	20 58 01.84	-09 26 51.3	14.2 T	071
C/1997 J2	1998 10 19.81149	20 58 01.76	-09 26 51.6	14.2 T	071
C/1997 J2	1998 10 19.81269	20 58 01.78	-09 26 53.4	14.2 T	071
C/1997 J2	1998 10 19.81387	20 58 01.78	-09 26 54.1	14.1 T	071
C/1997 J2	1998 10 19.81505	20 58 01.80	-09 26 55.7	14.3 T	071
C/1997 J2	1998 10 19.81624	20 58 01.82	-09 26 56.4	14.2 T	071
C/1997 J2	1998 10 19.81742	20 58 01.81	-09 26 56.9	14.2 T	071
C/1997 J2	1998 10 19.85663	20 58 01.87	-09 27 30.6	15.8 T	958
C/1997 J2	1998 10 19.90622	20 58 01.95	-09 28 14.4	15.3 T	958
C/1997 J2	1998 10 20.82772	20 58 03.89	-09 41 32.3	15.6 T	958
C/1997 J2	1998 10 20.85001	20 58 03.93	-09 41 51.1		504
C/1997 J2	1998 10 20.85404	20 58 03.93	-09 41 54.4		504
C/1997 J2	1998 10 20.85611	20 58 03.95	-09 41 56.3	15.7 T	958
C/1997 J2	1998 10 20.85751	20 58 03.94	-09 41 57.9		504
C/1997 J2	1998 10 20.86068	20 58 03.95	-09 42 00.2		504
C/1997 J2	1998 10 20.92774	20 58 04.11	-09 42 59.1	15.6 T	958
C/1997 J2	1998 10 21.45365	20 58 05.72	-09 50 25.8	12.9 T	360
C/1997 J2	1998 10 21.45590	20 58 05.73	-09 50 27.6		360
C/1997 J2	1998 10 21.79770	20 58 06.98	-09 55 17.3	15.7 T	958
C/1997 J2	1998 10 21.82042	20 58 06.99	-09 55 36.5	15.6 T	958
C/1997 J2	1998 10 22.79199	20 58 11.04	-10 09 07.1	14.4 T	071
C/1997 J2	1998 10 22.79281	20 58 11.00	-10 09 10.1	14.6 T	071
C/1997 J2	1998 10 22.79362	20 58 11.01	-10 09 11.2	14.4 T	071
C/1997 J2	1998 10 23.73354	20 58 16.10	-10 22 02.2	14.7 T	071
C/1997 J2	1998 10 23.73472	20 58 16.13	-10 22 03.5	15.0 T	071
C/1997 J2	1998 10 23.73591	20 58 16.15	-10 22 04.4	14.8 T	071
C/1997 J2	1998 10 23.73709	20 58 16.13	-10 22 05.3	14.5 T	071
C/1997 J2	1998 10 23.73828	20 58 16.10	-10 22 05.8	14.7 T	071
C/1997 J2	1998 10 25.89650	20 58 31.30	-10 50 50.6	15.3 T	958
C/1997 J2	1998 10 25.91219	20 58 31.26	-10 51 02.0	14.8 T	958
C/1997 J2	1998 10 27.99692	20 58 50.36	-11 17 40.7	14.9 N	758
C/1997 J2	1998 10 28.01293	20 58 50.50	-11 17 52.0	14.9 N	758
C/1997 J2	1998 11 02.02350	20 59 54.08	-12 17 45.0	14.3 T	860
C/1997 J2	1998 11 02.02774	20 59 54.16	-12 17 48.1	14.2 T	860
C/1997 J2	1998 11 02.03866	20 59 54.28	-12 17 55.0	14.1 T	860
C/1997 J2	1998 11 03.08143	21 00 10.64	-12 29 42.9	15.2 T	750
C/1997 J2	1998 11 03.08381	21 00 10.70	-12 29 44.9	16.4 T	750
C/1997 J2	1998 11 03.09323	21 00 10.78	-12 29 51.5	14.4 T	750
C/1997 J2	1998 11 03.10914	21 00 11.10	-12 30 01.6	16.5 T	750
C/1997 J2	1998 11 08.44874	21 01 49.84	-13 26 31.6		355
C/1997 J2	1998 11 08.45156	21 01 49.88	-13 26 32.8		355
C/1997 J2	1998 11 08.45249	21 01 49.91	-13 26 34.0		355

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C/1998 K2	1998 09 26.04009	15 14 18.81	-61 01 05.8		844
C/1998 K2	1998 09 26.05267	15 14 20.87	-61 01 16.0		844
C/1998 K2	1998 09 26.07273	15 14 23.09	-61 01 30.5		844
C/1998 K2	1998 10 01.03882	15 24 01.22	-62 05 23.1	15.4 T	844
C/1998 K2	1998 10 01.04470	15 24 01.84	-62 05 28.5	14.9 T	844
C/1998 K2	1998 10 01.06730	15 24 04.36	-62 05 47.9	14.7 T	844

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C/1998 K5	1998 08 16.73056	03 35 37.38	+32 53 58.6	12.5 T	372
C/1998 K5	1998 08 17.78177	03 37 05.46	+32 35 17.7	12.6 T	372
C/1998 K5	1998 08 30.68507	03 49 04.03	+28 59 44.3	13.0 T	372
C/1998 K5	1998 08 30.70910	03 49 04.68	+28 59 21.8	13.0 T	372
C/1998 K5	1998 09 01.76858	03 49 58.49	+28 26 24.9	13.0 T	372
C/1998 K5	1998 09 13.63125	03 50 06.88	+25 17 46.6	12.9 T	372
C/1998 K5	1998 09 15.71042	03 49 16.56	+24 44 31.7	12.8 T	372
C/1998 K5	1998 09 16.80851	03 48 43.84	+24 26 54.4	13.9 T	372
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C/1998 K5	1998 10 11.16792	03 23 06.33	+17 47 13.3	13.4 T	758
C/1998 K5	1998 10 11.17161	03 23 06.01	+17 47 09.6	13.4 T	758
C/1998 K5	1998 10 11.17439	03 23 05.80	+17 47 07.1	13.4 T	758
C/1998 K5	1998 10 14.06215	03 18 57.97	+17 00 46.8		046
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C/1998 K5	1998 10 19.26346	03 11 24.90	+15 40 04.9	13.4 T	739
C/1998 K5	1998 10 19.26468	03 11 24.77	+15 40 03.7	13.4 T	739
C/1998 K5	1998 10 19.26588	03 11 24.67	+15 40 02.8	13.6 T	739
C/1998 K5	1998 10 19.26770	03 11 24.49	+15 40 01.4	13.1 T	739
C/1998 K5	1998 10 24.67865	03 03 38.50	+14 21 10.6	14.0 T	360
C/1998 K5	1998 10 24.68142	03 03 38.26	+14 21 08.3		360
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C/1998 K5	1998 10 25.65434	03 02 16.62	+14 07 38.7		402
C/1998 K5	1998 10 25.65573	03 02 16.51	+14 07 37.5		402
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C/1998 K5	1998 11 07.49931	02 46 09.08	+11 33 35.2	14.6 T	351
C/1998 K5	1998 11 07.50146	02 46 09.03	+11 33 33.9		351
C/1998 K5	1998 11 07.50378	02 46 08.70	+11 33 32.1		351

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C/1998 M2	1998 09 13.50556	17 30 44.90	+19 43 23.1	14.9 T	372
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C/1998 M2	1998 10 07.04694	17 49 07.52	+20 27 47.3	16.1 T	758
C/1998 M2	1998 10 07.04949	17 49 07.73	+20 27 47.7	14.7 T	758
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C/1998 M2	1998 10 15.76720	17 58 22.76	+20 45 47.7	16.7 T	143
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C/1998 M2	1998 10 19.83848	18 03 05.29	+20 55 19.5	15.6 T	071
C/1998 M2	1998 10 19.84040	18 03 05.41	+20 55 19.5	15.7 T	071
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C/1998 M2	1998 10 19.85140	18 03 06.22	+20 55 22.1	15.4 T	071
C/1998 M2	1998 10 19.85332	18 03 06.34	+20 55 22.6	15.5 T	071
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C/1998 M2	1998 10 23.76490	18 07 50.95	+21 05 19.8	15.6 T	071
C/1998 M2	1998 10 23.76891	18 07 51.48	+21 05 21.6	15.9 T	071
C/1998 M2	1998 10 23.77082	18 07 51.68	+21 05 21.2	15.8 T	071
C/1998 M2	1998 10 23.77274	18 07 51.78	+21 05 21.5	15.6 T	071
C/1998 M2	1998 11 01.77331	18 19 32.13	+21 32 03.1	16.1 T	143
C/1998 M2	1998 11 01.78115	18 19 32.74	+21 32 04.0	16.0 T	143
C/1998 M2	1998 11 01.78897	18 19 33.38	+21 32 04.7	15.9 T	143
C/1998 M2	1998 11 05.40778	18 24 31.18	+21 44 30.1	15.2 T	402
C/1998 M2	1998 11 05.40917	18 24 31.30	+21 44 29.8		402
C/1998 M2	1998 11 05.41056	18 24 31.44	+21 44 30.7		402

C/1998 M5 (LINEAR)

C/1998 M5	1998 08 02.76250	22 32 42.49	+30 02 51.1	13.2 T	372
C/1998 M5	1998 08 04.72118	22 28 46.58	+30 47 11.7		372
C/1998 M5	1998 08 05.75590	22 26 36.52	+31 10 26.0		372
C/1998 M5	1998 08 11.53177	22 13 20.87	+33 16 33.6		372
C/1998 M5	1998 08 11.53576	22 13 20.25	+33 16 38.5		372
C/1998 M5	1998 08 16.71177	21 59 46.89	+35 01 59.6	13.8 T	372
C/1998 M5	1998 08 17.73264	21 56 55.97	+35 21 36.7	14.3 T	372
C/1998 M5	1998 08 20.64722	21 48 30.08	+36 15 03.9		372
C/1998 M5	1998 08 22.64757	21 42 28.46	+36 49 22.0	13.6 T	372
C/1998 M5	1998 08 25.50746	21 33 33.88	+37 34 35.3		372
C/1998 M5	1998 08 25.51181	21 33 33.01	+37 34 39.0		372
C/1998 M5	1998 08 26.61962	21 30 00.68	+37 50 53.4	13.5 T	372
C/1998 M5	1998 08 27.55556	21 26 59.78	+38 04 01.9	13.7 T	372
C/1998 M5	1998 09 02.66545	21 06 45.26	+39 15 55.7	13.5 T	372
C/1998 M5	1998 09 07.43733	20 50 40.39	+39 54 35.1	13.0 T	372
C/1998 M5	1998 09 07.45278	20 50 37.33	+39 54 41.7		372
C/1998 M5	1998 09 13.51399	20 30 29.84	+40 21 36.3	12.8 T	372
C/1998 M5	1998 09 15.60590	20 23 45.56	+40 25 26.5	12.9 T	372
C/1998 M5	1998 09 16.62500	20 20 32.13	+40 26 23.7	13.1 T	372
C/1998 M5	1998 09 17.50069	20 17 47.82	+40 26 44.9	12.9 T	372
C/1998 M5	1998 09 18.77882	20 13 51.53	+40 26 28.0	11.3 T	154
C/1998 M5	1998 09 18.78229	20 13 50.90	+40 26 27.7		154
C/1998 M5	1998 09 18.78576	20 13 50.27	+40 26 27.4		154
C/1998 M5	1998 09 18.78924	20 13 49.65	+40 26 27.1		154
C/1998 M5	1998 09 20.58385	20 08 24.75	+40 24 38.9	13.2 T	372

C/1998 M5	1998 09 22.86329	20 01 46.33	+40 20 05.5	12.8 T	605
C/1998 M5	1998 09 22.88124	20 01 43.26	+40 20 02.8	12.8 T	605
C/1998 M5	1998 09 22.89203	20 01 41.28	+40 20 01.9	11.3 T	154
C/1998 M5	1998 09 22.90206	20 01 39.60	+40 20 00.1	12.8 T	605
C/1998 M5	1998 09 23.87211	19 58 54.72	+40 17 23.1	11.3 T	154
C/1998 M5	1998 09 23.87905	19 58 53.62	+40 17 21.3		154
C/1998 M5	1998 09 23.88252	19 58 53.07	+40 17 20.4		154
C/1998 M5	1998 09 27.91111	19 48 02.79	+40 02 29.3		154
C/1998 M5	1998 09 27.91620	19 48 02.00	+40 02 28.3		154
C/1998 M5	1998 10 01.60712	19 38 56.23	+39 44 24.5	13.2 T	372
C/1998 M5	1998 10 04.52880	19 32 19.36	+39 27 53.5		900
C/1998 M5	1998 10 04.54007	19 32 17.79	+39 27 50.0		900
C/1998 M5	1998 10 09.11176	19 22 58.92	+38 59 20.3	12.5 T	758
C/1998 M5	1998 10 09.11459	19 22 58.67	+38 59 20.0	12.8 T	758
C/1998 M5	1998 10 09.11770	19 22 58.27	+38 59 18.9	13.1 T	758
C/1998 M5	1998 10 09.43681	19 22 22.20	+38 57 16.8	12.0 T	360
C/1998 M5	1998 10 09.43958	19 22 21.88	+38 57 15.7		360
C/1998 M5	1998 10 09.47869	19 22 17.38	+38 56 59.3	12.1 T	351
C/1998 M5	1998 10 09.48203	19 22 17.03	+38 56 58.1		351
C/1998 M5	1998 10 09.50278	19 22 14.64	+38 56 50.4		351
C/1998 M5	1998 10 13.12239	19 15 49.81	+38 33 05.2	15.1 T	750
C/1998 M5	1998 10 13.14282	19 15 47.75	+38 32 56.8	14.9 T	750
C/1998 M5	1998 10 14.85903	19 13 01.50	+38 21 35.2	12.1 T	476
C/1998 M5	1998 10 14.86668	19 13 00.66	+38 21 31.5	12.1 T	476
C/1998 M5	1998 10 14.87500	19 12 59.94	+38 21 28.3	12.1 T	476
C/1998 M5	1998 10 14.87986	19 12 59.63	+38 21 26.3	12.1 T	476
C/1998 M5	1998 10 14.88334	19 12 59.20	+38 21 24.8	12.1 T	476
C/1998 M5	1998 10 15.79280	19 11 34.92	+38 15 27.2	12.1 T	605
C/1998 M5	1998 10 15.79838	19 11 34.33	+38 15 26.4	14.2 T	143
C/1998 M5	1998 10 15.80621	19 11 33.57	+38 15 23.1	14.2 T	143
C/1998 M5	1998 10 15.80650	19 11 33.68	+38 15 21.9	12.3 T	605
C/1998 M5	1998 10 15.81796	19 11 32.49	+38 15 18.6	14.2 T	143
C/1998 M5	1998 10 16.87120	19 09 58.59	+38 08 23.7	12.1 T	504
C/1998 M5	1998 10 16.87306	19 09 58.44	+38 08 23.1	12.1 T	504
C/1998 M5	1998 10 16.87463	19 09 58.29	+38 08 22.9	12.0 T	504
C/1998 M5	1998 10 16.87780	19 09 58.00	+38 08 21.3	12.0 T	504
C/1998 M5	1998 10 16.87941	19 09 57.85	+38 08 20.7	11.9 T	504
C/1998 M5	1998 10 17.70363	19 08 47.05	+38 03 00.3		118
C/1998 M5	1998 10 17.71043	19 08 46.49	+38 02 57.7	11.9 T	118
C/1998 M5	1998 10 17.80572	19 08 38.31	+38 02 21.1	12.4 T	540
C/1998 M5	1998 10 17.80676	19 08 38.16	+38 02 19.8		540
C/1998 M5	1998 10 17.80775	19 08 38.20	+38 02 19.5		540
C/1998 M5	1998 10 18.14288	19 08 09.95	+38 00 10.9	12.5 T	670
C/1998 M5	1998 10 18.15746	19 08 08.71	+38 00 05.4		670
C/1998 M5	1998 10 18.17222	19 08 07.51	+37 59 59.4		670
C/1998 M5	1998 10 18.51281	19 07 39.27	+37 57 47.3	12.3 T	351
C/1998 M5	1998 10 18.51531	19 07 39.06	+37 57 46.4		351
C/1998 M5	1998 10 18.52046	19 07 38.63	+37 57 45.6		351
C/1998 M5	1998 10 19.11744	19 06 50.20	+37 53 55.2	14.4 T	750
C/1998 M5	1998 10 19.12474	19 06 49.62	+37 53 52.6	14.3 T	750
C/1998 M5	1998 10 19.77811	19 05 57.89	+37 49 44.2	13.2 T	071
C/1998 M5	1998 10 19.77928	19 05 57.81	+37 49 43.3	13.0 T	071
C/1998 M5	1998 10 19.78028	19 05 57.74	+37 49 43.2	12.9 T	071

C/1998 M5	1998 10 19.78119	19 05 57.71	+37 49 42.9	12.9 T	071	C/1998 M5	1998 10 31.48600	18 53 59.49	+36 45 01.5		351
C/1998 M5	1998 10 19.78287	19 05 57.52	+37 49 41.9	12.8 T	071	C/1998 M5	1998 11 02.71019	18 52 23.79	+36 35 26.7		118
C/1998 M5	1998 10 19.78458	19 05 57.45	+37 49 41.8	12.7 T	071	C/1998 M5	1998 11 02.72196	18 52 23.33	+36 35 24.0	12.4 T	118
C/1998 M5	1998 10 19.78578	19 05 57.30	+37 49 41.5	12.5 T	071	C/1998 M5	1998 11 03.12323	18 52 06.88	+36 33 46.0	14.6 T	750
C/1998 M5	1998 10 19.78698	19 05 57.29	+37 49 40.2	12.6 T	071	C/1998 M5	1998 11 03.13674	18 52 06.29	+36 33 41.8	16.6 T	750
C/1998 M5	1998 10 20.73267	19 04 44.74	+37 43 44.7	12.2 T	118	C/1998 M5	1998 11 03.45951	18 51 53.62	+36 32 27.1	12.4 T	351
C/1998 M5	1998 10 20.73877	19 04 44.27	+37 43 43.1		118	C/1998 M5	1998 11 03.46409	18 51 53.51	+36 32 25.8		351
C/1998 M5	1998 10 20.84149	19 04 36.32	+37 43 05.5	12.7 T	476	C/1998 M5	1998 11 05.37608	18 50 43.24	+36 25 22.2	12.0 T	402
C/1998 M5	1998 10 20.84583	19 04 36.12	+37 43 04.2	12.7 T	476	C/1998 M5	1998 11 05.37747	18 50 43.20	+36 25 21.9		402
C/1998 M5	1998 10 20.85000	19 04 35.69	+37 43 02.1	12.7 T	476	C/1998 M5	1998 11 05.37885	18 50 43.15	+36 25 21.5		402
C/1998 M5	1998 10 20.85521	19 04 35.38	+37 42 59.9	12.7 T	476	C/1998 M5	1998 11 05.71329	18 50 31.66	+36 24 11.1		118
C/1998 M5	1998 10 20.85868	19 04 35.05	+37 42 58.5	12.7 T	476	C/1998 M5	1998 11 05.71773	18 50 31.55	+36 24 10.0	12.8 T	118
C/1998 M5	1998 10 21.44635	19 03 51.66	+37 39 21.8	11.6 T	360	C/1998 M5	1998 11 07.02433	18 49 49.04	+36 19 56.1	12.8 T	758
C/1998 M5	1998 10 21.44878	19 03 51.48	+37 39 20.9		360	C/1998 M5	1998 11 07.02580	18 49 48.98	+36 19 55.4	12.7 T	758
C/1998 M5	1998 10 22.74494	19 02 19.40	+37 31 28.1	12.1 T	118	C/1998 M5	1998 11 07.02733	18 49 48.97	+36 19 55.1	12.8 T	758
C/1998 M5	1998 10 22.75792	19 02 18.42	+37 31 23.3		118	C/1998 M5	1998 11 07.81667	18 49 24.88	+36 17 30.3	12.2 T	540
C/1998 M5	1998 10 22.82190	19 02 14.00	+37 31 00.4		504	C/1998 M5	1998 11 07.81772	18 49 24.84	+36 17 30.4		540
C/1998 M5	1998 10 22.82308	19 02 13.87	+37 30 59.4		504	C/1998 M5	1998 11 07.81868	18 49 24.83	+36 17 30.5		540
C/1998 M5	1998 10 22.82647	19 02 13.68	+37 30 58.7		504	C/1998 M5	1998 11 08.43326	18 49 07.00	+36 15 46.7	12.4 T	355
C/1998 M5	1998 10 22.82775	19 02 13.56	+37 30 58.4		504	C/1998 M5	1998 11 08.43670	18 49 06.94	+36 15 46.0		355
C/1998 M5	1998 10 23.10002	19 01 54.84	+37 29 21.0	14.7 T	750	C/1998 M5	1998 11 08.43740	18 49 06.90	+36 15 45.8		355
C/1998 M5	1998 10 23.11832	19 01 53.55	+37 29 14.3	14.6 T	750	C/1998 M6 (Montani)					
C/1998 M5	1998 10 23.74111	19 01 11.79	+37 25 34.2	11.9 T	118	C/1998 M6	1998 10 16.09880	19 46 33.76	-10 41 53.6	22.0 N	691
C/1998 M5	1998 10 23.74189	19 01 11.74	+37 25 34.4	12.7 T	071	C/1998 M6	1998 10 16.10924	19 46 33.72	-10 41 51.7	19.4 T	691
C/1998 M5	1998 10 23.74402	19 01 11.64	+37 25 34.0	12.2 T	071	C/1998 M6	1998 10 16.11825	19 46 33.69	-10 41 48.3	19.7 T	691
C/1998 M5	1998 10 23.74634	19 01 11.46	+37 25 32.7	12.1 T	071	C/1998 P1 (Williams)					
C/1998 M5	1998 10 23.74755	19 01 11.36	+37 25 32.6	12.5 T	071	C/1998 P1	1998 09 04.97705	13 43 48.34	-42 07 30.0		834
C/1998 M5	1998 10 23.75789	19 01 10.65	+37 25 28.1		118	C/1998 P1	1998 09 05.01651	13 43 46.04	-42 06 08.9		834
C/1998 M5	1998 10 24.09780	19 00 48.24	+37 23 29.2	14.5 T	750	C/1998 P1	1998 09 07.98055	13 41 17.30	-40 28 19.4		834
C/1998 M5	1998 10 24.10435	19 00 47.80	+37 23 26.7	14.6 T	750	C/1998 P1	1998 09 13.96355	13 37 33.42	-37 36 26.7		834
C/1998 M5	1998 10 24.12890	19 00 46.20	+37 23 18.4	16.8 T	750	C/1998 P1	1998 09 24.95525	13 33 24.22	-33 26 34.0		834
C/1998 M5	1998 10 24.45213	19 00 25.28	+37 21 27.6		900	C/1998 Q1 (LINEAR)					
C/1998 M5	1998 10 24.45781	19 00 24.89	+37 21 25.4		900	C/1998 Q1	1998 09 13.53924	22 17 03.87	-13 07 03.7	17.5 T	372
C/1998 M5	1998 10 25.37557	18 59 27.14	+37 16 12.6	11.5 T	402	C/1998 Q1	1998 09 13.55035	22 17 04.14	-13 07 25.2		372
C/1998 M5	1998 10 25.37696	18 59 27.07	+37 16 12.2		402	C/1998 Q1	1998 09 16.53924	22 18 29.50	-14 38 11.8		372
C/1998 M5	1998 10 25.37835	18 59 26.98	+37 16 11.8		402	C/1998 Q1	1998 09 20.57535	22 20 33.90	-16 28 09.5	17.5 T	372
C/1998 M5	1998 10 25.72683	18 59 05.72	+37 14 14.2	14.0 T	143	P/1998 QP₅₄ (LONEOS-Tucker)					
C/1998 M5	1998 10 25.73624	18 59 05.12	+37 14 10.8	14.0 T	143	P/1998 QP ₅₄	1998 09 20.55764	00 15 46.60	+17 02 33.1	17.3 T	372
C/1998 M5	1998 10 25.74800	18 59 04.36	+37 14 06.8	13.9 T	143	P/1998 QP ₅₄	1998 10 01.69098	00 04 42.22	+19 23 26.4	15.3 T	372
C/1998 M5	1998 10 26.80972	18 58 01.41	+37 08 17.1	12.4 T	540	P/1998 QP ₅₄	1998 10 02.74375	00 03 39.56	+19 34 54.5	15.5 T	372
C/1998 M5	1998 10 26.81073	18 58 01.28	+37 08 16.7		540	P/1998 QP ₅₄	1998 10 08.44103	23 58 15.68	+20 31 21.2	16 T	372
C/1998 M5	1998 10 26.81179	18 58 01.24	+37 08 16.4		540	P/1998 QP ₅₄	1998 10 08.63310	23 58 04.65	+20 33 05.5		900
C/1998 M5	1998 10 28.01595	18 56 53.79	+37 01 56.2	12.5 N	758	P/1998 QP ₅₄	1998 10 08.64072	23 58 04.19	+20 33 10.1		900
C/1998 M5	1998 10 28.03575	18 56 52.61	+37 01 49.8	12.6 N	758	P/1998 QP ₅₄	1998 10 09.44097	23 57 21.95	+20 40 17.7	16 T	372
C/1998 M5	1998 10 29.50451	18 55 35.18	+36 54 23.0		867	P/1998 QP ₅₄	1998 10 09.66439	23 57 09.29	+20 42 13.4	15.5 T	355
C/1998 M5	1998 10 29.50729	18 55 35.02	+36 54 22.1		867	P/1998 QP ₅₄	1998 10 09.67365	23 57 08.81	+20 42 18.8		355
C/1998 M5	1998 10 29.51424	18 55 34.67	+36 54 20.2		867	P/1998 QP ₅₄	1998 10 09.86216	23 56 59.29	+20 43 56.4		046
C/1998 M5	1998 10 29.54273	18 55 33.26	+36 54 12.3	13.2 T	351	P/1998 QP ₅₄	1998 10 09.86311	23 56 59.26	+20 43 56.3		046
C/1998 M5	1998 10 29.54493	18 55 33.13	+36 54 09.4		351	P/1998 QP ₅₄	1998 10 09.86402	23 56 59.17	+20 43 57.3		046
C/1998 M5	1998 10 29.54726	18 55 33.05	+36 54 10.0		351	P/1998 QP ₅₄	1998 10 09.86479	23 56 59.14	+20 43 57.2		046
C/1998 M5	1998 10 31.47379	18 54 00.15	+36 45 04.2	12.7 T	351	P/1998 QP ₅₄	1998 10 10.17037	23 56 43.31	+20 46 36.6		683
C/1998 M5	1998 10 31.48116	18 53 59.75	+36 45 02.3		351						
C/1998 M5	1998 10 31.48340	18 53 59.68	+36 45 01.8		351						

P/1998 QP ₅₄	1998 10 10.17884	23 56 42.84	+20 46 40.8		683
P/1998 QP ₅₄	1998 10 10.18653	23 56 42.43	+20 46 44.3		683
P/1998 QP ₅₄	1998 10 11.17718	23 55 51.28	+20 55 04.6		683
P/1998 QP ₅₄	1998 10 11.18506	23 55 50.88	+20 55 09.1		683
P/1998 QP ₅₄	1998 10 11.19314	23 55 50.44	+20 55 12.8		683
P/1998 QP ₅₄	1998 10 14.51788	23 53 08.99	+21 21 18.4		360
P/1998 QP ₅₄	1998 10 14.52049	23 53 08.88	+21 21 19.7		360
P/1998 QP ₅₄	1998 10 14.52257	23 53 08.79	+21 21 20.5		360
P/1998 QP ₅₄	1998 10 16.00789	23 52 02.15	+21 31 58.6		118
P/1998 QP ₅₄	1998 10 16.01965	23 52 01.60	+21 32 03.9	15 T	118
P/1998 QP ₅₄	1998 10 16.88995	23 51 25.10	+21 38 04.1		504
P/1998 QP ₅₄	1998 10 16.89260	23 51 24.96	+21 38 05.6	14.8 T	504
P/1998 QP ₅₄	1998 10 16.89751	23 51 24.77	+21 38 07.5	14.8 T	504
P/1998 QP ₅₄	1998 10 16.90279	23 51 24.52	+21 38 09.0	14.7 T	504
P/1998 QP ₅₄	1998 10 18.10551	23 50 36.27	+21 46 11.5		704
P/1998 QP ₅₄	1998 10 18.12545	23 50 35.44	+21 46 19.3		704
P/1998 QP ₅₄	1998 10 18.14566	23 50 34.52	+21 46 27.2		704
P/1998 QP ₅₄	1998 10 18.16562	23 50 33.53	+21 46 35.9		704
P/1998 QP ₅₄	1998 10 18.56910	23 50 17.64	+21 49 13.1	15.7 T	372
P/1998 QP ₅₄	1998 10 18.59100	23 50 16.71	+21 49 19.2	15.0 T	355
P/1998 QP ₅₄	1998 10 18.59269	23 50 16.68	+21 49 20.5		355
P/1998 QP ₅₄	1998 10 18.59591	23 50 16.49	+21 49 21.2		355
P/1998 QP ₅₄	1998 10 19.86934	23 49 29.47	+21 57 17.8	15.6 T	071
P/1998 QP ₅₄	1998 10 19.87126	23 49 29.40	+21 57 18.1	15.5 T	071
P/1998 QP ₅₄	1998 10 19.87317	23 49 29.35	+21 57 18.2	15.3 T	071
P/1998 QP ₅₄	1998 10 19.87508	23 49 29.31	+21 57 18.6	15.3 T	071
P/1998 QP ₅₄	1998 10 19.87699	23 49 29.24	+21 57 19.8	15.3 T	071
P/1998 QP ₅₄	1998 10 19.87890	23 49 29.10	+21 57 21.0	15.5 T	071
P/1998 QP ₅₄	1998 10 19.88081	23 49 29.06	+21 57 21.6	15.4 T	071
P/1998 QP ₅₄	1998 10 19.88272	23 49 28.99	+21 57 21.8	15.3 T	071
P/1998 QP ₅₄	1998 10 22.49857	23 48 02.68	+22 12 40.5	15.0 T	402
P/1998 QP ₅₄	1998 10 22.49995	23 48 02.65	+22 12 41.0		402
P/1998 QP ₅₄	1998 10 22.50134	23 48 02.61	+22 12 41.4		402
P/1998 QP ₅₄	1998 10 22.83960	23 47 52.61	+22 14 31.8		504
P/1998 QP ₅₄	1998 10 22.84566	23 47 52.42	+22 14 33.6		504
P/1998 QP ₅₄	1998 10 23.78395	23 47 25.88	+22 19 38.0	15.9 T	071
P/1998 QP ₅₄	1998 10 23.78586	23 47 25.85	+22 19 38.5	15.8 T	071
P/1998 QP ₅₄	1998 10 23.78778	23 47 25.80	+22 19 39.4	15.8 T	071
P/1998 QP ₅₄	1998 10 23.78968	23 47 25.72	+22 19 40.5	15.8 T	071
P/1998 QP ₅₄	1998 10 23.79160	23 47 25.59	+22 19 41.4	15.9 T	071
P/1998 QP ₅₄	1998 10 25.57015	23 46 40.47	+22 28 53.1	15.0 T	867
P/1998 QP ₅₄	1998 10 25.57536	23 46 40.34	+22 28 54.0		867
P/1998 QP ₅₄	1998 10 25.58300	23 46 40.17	+22 28 56.3		867
P/1998 QP ₅₄	1998 10 28.86076	23 45 37.14	+22 44 31.1		587
P/1998 QP ₅₄	1998 10 28.88706	23 45 36.64	+22 44 38.2		587
P/1998 QP ₅₄	1998 10 29.56458	23 45 26.66	+22 47 42.0	15.8 T	360
P/1998 QP ₅₄	1998 10 29.56701	23 45 26.61	+22 47 42.5		360
P/1998 QP ₅₄	1998 10 30.91429	23 45 10.52	+22 53 31.5		587
P/1998 QP ₅₄	1998 10 30.91846	23 45 10.44	+22 53 32.7		587
P/1998 QP ₅₄	1998 11 05.42168	23 44 50.47	+23 15 30.7	15.8 T	402
P/1998 QP ₅₄	1998 11 05.42307	23 44 50.37	+23 15 32.0		402
P/1998 QP ₅₄	1998 11 05.42584	23 44 50.45	+23 15 31.6		402
P/1998 QP ₅₄	1998 11 08.47538	23 45 10.57	+23 26 40.9	15.8 T	355

P/1998 QP ₅₄	1998 11 08.48759	23 45 10.69	+23 26 43.4	355
P/1998 QP ₅₄	1998 11 08.50107	23 45 10.79	+23 26 46.0	355

P/1998 S1 (LINEAR-Mueller)

P/1998 S1	1998 09 17.45211	01 18 40.61	+12 19 01.4	17.3 N	699
P/1998 S1	1998 09 17.47197	01 18 39.72	+12 19 04.8		699
P/1998 S1	1998 09 17.49113	01 18 39.13	+12 19 08.1		699
P/1998 S1	1998 09 26.21764	01 13 33.81	+12 41 12.7	18.1 N	704
P/1998 S1	1998 09 26.23435	01 13 33.04	+12 41 15.3	18.4 N	704
P/1998 S1	1998 09 26.25103	01 13 32.39	+12 41 16.6	18.6 N	704
P/1998 S1	1998 09 26.26770	01 13 31.71	+12 41 19.6	18.3 N	704
P/1998 S1	1998 09 26.28434	01 13 30.82	+12 41 21.7	18.3 N	704
P/1998 S1	1998 09 27.37957	01 12 47.13	+12 43 30.3	18.1 N	704
P/1998 S1	1998 09 27.39681	01 12 46.39	+12 43 33.7	18.6 N	704
P/1998 S1	1998 09 27.41408	01 12 45.61	+12 43 35.4	18.6 N	704
P/1998 S1	1998 09 27.44855	01 12 43.94	+12 43 38.4	18.6 N	704
P/1998 S1	1998 10 11.25493	01 02 32.61	+13 00 38.6	16.1 T	699
P/1998 S1	1998 10 11.27481	01 02 31.47	+13 00 40.3		699
P/1998 S1	1998 10 11.29468	01 02 30.51	+13 00 41.0		699
P/1998 S1	1998 10 14.25694	01 00 13.71	+13 02 14.8	17 T	675
P/1998 S1	1998 10 17.25208	00 57 57.88	+13 03 15.8		675
P/1998 S1	1998 10 17.82343	00 57 31.05	+13 03 21.8	16.2 N	046
P/1998 S1	1998 10 17.82468	00 57 31.01	+13 03 21.9		046
P/1998 S1	1998 10 17.82581	00 57 30.94	+13 03 21.8		046
P/1998 S1	1998 10 17.82778	00 57 30.85	+13 03 21.9		046
P/1998 S1	1998 10 17.82906	00 57 30.79	+13 03 21.7		046
P/1998 S1	1998 10 17.83131	00 57 30.68	+13 03 21.9		046
P/1998 S1	1998 10 17.83515	00 57 30.52	+13 03 21.9		046
P/1998 S1	1998 10 17.83743	00 57 30.41	+13 03 22.0		046
P/1998 S1	1998 10 18.24454	00 57 11.95	+13 03 27.6		734
P/1998 S1	1998 10 18.25282	00 57 11.59	+13 03 27.9		734
P/1998 S1	1998 10 18.26151	00 57 11.17	+13 03 28.3		734
P/1998 S1	1998 10 18.29497	00 57 09.74	+13 03 28.9	16.0 T	670
P/1998 S1	1998 10 18.30781	00 57 09.08	+13 03 28.9	15.9 T	670
P/1998 S1	1998 10 18.32813	00 57 08.15	+13 03 29.2		670
P/1998 S1	1998 10 18.46006	00 57 02.08	+13 03 30.0	17.0 T	658
P/1998 S1	1998 10 18.46622	00 57 01.83	+13 03 29.7		658
P/1998 S1	1998 10 18.46905	00 57 01.68	+13 03 29.8		658
P/1998 S1	1998 10 18.47414	00 57 01.85	+13 03 37.0	16.4 T	422
P/1998 S1	1998 10 18.47487	00 57 01.85	+13 03 37.1	16.7 T	422
P/1998 S1	1998 10 18.48606	00 57 01.30	+13 03 37.1	16.6 T	422
P/1998 S1	1998 10 18.48830	00 57 01.20	+13 03 37.2	16.6 T	422
P/1998 S1	1998 10 18.76336	00 56 49.07	+13 03 31.5	15.8 T	046
P/1998 S1	1998 10 18.76657	00 56 48.86	+13 03 33.5		046
P/1998 S1	1998 10 18.76763	00 56 48.81	+13 03 33.1		046
P/1998 S1	1998 10 18.76975	00 56 48.71	+13 03 33.5		046
P/1998 S1	1998 10 19.04122	00 56 36.71	+13 03 37.5	15.1 T	758
P/1998 S1	1998 10 19.05186	00 56 36.21	+13 03 37.1	15.4 T	758
P/1998 S1	1998 10 19.05839	00 56 35.90	+13 03 38.1	15.3 T	758
P/1998 S1	1998 10 19.07245	00 56 35.28	+13 03 38.8	15.4 T	758
P/1998 S1	1998 10 19.13662	00 56 32.13	+13 03 43.3		844
P/1998 S1	1998 10 19.13957	00 56 32.16	+13 03 38.5		734
P/1998 S1	1998 10 19.14552	00 56 31.81	+13 03 44.6		844

1998 NOV. 10

M.P.C. 32827

P/1998 S1	1998 10 19.14674	00 56 31.84	+13 03 38.5		734
P/1998 S1	1998 10 19.15573	00 56 31.47	+13 03 38.5		734
P/1998 S1	1998 10 19.16042	00 56 31.07	+13 03 45.9		844
P/1998 S1	1998 10 19.17921	00 56 30.46	+13 03 37.9		704
P/1998 S1	1998 10 19.19094	00 56 29.89	+13 03 38.6	15.7 T	713
P/1998 S1	1998 10 19.19609	00 56 29.55	+13 03 38.2	17.0 T	750
P/1998 S1	1998 10 19.19948	00 56 29.50	+13 03 39.9		704
P/1998 S1	1998 10 19.21565	00 56 28.66	+13 03 38.8	17.7 T	750
P/1998 S1	1998 10 19.21989	00 56 28.63	+13 03 39.1		704
P/1998 S1	1998 10 19.22954	00 56 28.14	+13 03 39.3	15.6 T	713
P/1998 S1	1998 10 19.24018	00 56 27.67	+13 03 39.3		704
P/1998 S1	1998 10 19.26052	00 56 26.60	+13 03 39.4		704
P/1998 S1	1998 10 19.26962	00 56 26.26	+13 03 39.1	17.0 T	750
P/1998 S1	1998 10 19.46204	00 56 17.94	+13 03 47.2	16.1 T	428
P/1998 S1	1998 10 19.46983	00 56 17.56	+13 03 47.1	16.1 T	428
P/1998 S1	1998 10 19.51234	00 56 15.60	+13 03 47.3	16.1 T	428
P/1998 S1	1998 10 19.61887	00 56 10.81	+13 03 49.1	15.7 N	426
P/1998 S1	1998 10 19.62700	00 56 10.43	+13 03 49.5	15.7 N	426
P/1998 S1	1998 10 19.63271	00 56 10.17	+13 03 49.2	15.7 N	426
P/1998 S1	1998 10 21.50191	00 54 48.94	+13 03 56.0	15.5 T	402
P/1998 S1	1998 10 21.50330	00 54 48.87	+13 03 56.0		402
P/1998 S1	1998 10 21.50469	00 54 48.82	+13 03 56.1		402
P/1998 S1	1998 10 21.53941	00 54 47.31	+13 03 57.1	15.7 T	360
P/1998 S1	1998 10 21.54201	00 54 47.19	+13 03 57.2		360
P/1998 S1	1998 10 21.54462	00 54 47.07	+13 03 57.2		360
P/1998 S1	1998 10 22.52436	00 54 05.32	+13 04 00.7	15.4 T	402
P/1998 S1	1998 10 22.52575	00 54 05.26	+13 04 00.8		402
P/1998 S1	1998 10 22.52714	00 54 05.20	+13 04 00.7		402
P/1998 S1	1998 10 22.85807	00 53 51.30	+13 04 00.5	15.8 T	504
P/1998 S1	1998 10 22.86058	00 53 51.22	+13 04 00.3	15.9 T	504
P/1998 S1	1998 10 22.86286	00 53 51.12	+13 04 00.4		504
P/1998 S1	1998 10 22.87065	00 53 50.78	+13 04 00.3	15.5 T	504
P/1998 S1	1998 10 22.87541	00 53 50.58	+13 04 00.3	15.6 T	504
P/1998 S1	1998 10 22.87735	00 53 50.49	+13 04 00.4	15.7 T	504
P/1998 S1	1998 10 24.55990	00 52 40.77	+13 04 05.4	15.7 T	360
P/1998 S1	1998 10 24.56233	00 52 40.66	+13 04 05.5		360
P/1998 S1	1998 10 24.60827	00 52 38.70	+13 04 05.7	16.0 T	886
P/1998 S1	1998 10 24.63086	00 52 37.62	+13 04 06.9		886
P/1998 S1	1998 10 24.66232	00 52 36.35	+13 04 04.7	15.6 T	355
P/1998 S1	1998 10 24.66441	00 52 36.26	+13 04 04.6		355
P/1998 S1	1998 10 24.67232	00 52 35.94	+13 04 04.7		355
P/1998 S1	1998 10 25.46325	00 52 04.50	+13 04 05.9		355
P/1998 S1	1998 10 25.46486	00 52 04.47	+13 04 06.0	15.6 T	355
P/1998 S1	1998 10 25.50854	00 52 02.58	+13 04 05.4	15.3 T	900
P/1998 S1	1998 10 25.52123	00 52 02.11	+13 04 05.5		900
P/1998 S1	1998 10 25.54549	00 52 01.10	+13 04 05.5	14.6 T	367
P/1998 S1	1998 10 25.54896	00 52 00.95	+13 04 05.5		367
P/1998 S1	1998 10 25.55243	00 52 00.80	+13 04 05.4		367
P/1998 S1	1998 10 25.55630	00 52 00.63	+13 04 05.9	15.3 T	402
P/1998 S1	1998 10 25.55770	00 52 00.57	+13 04 05.9		402
P/1998 S1	1998 10 25.55909	00 52 00.51	+13 04 05.9		402
P/1998 S1	1998 10 26.93639	00 51 06.42	+13 04 04.0	15.9 T	118
P/1998 S1	1998 10 26.94189	00 51 06.18	+13 04 04.6		118

P/1998 S1	1998 10 26.94613	00 51 06.01	+13 04 04.1		118
P/1998 S1	1998 10 28.17005	00 50 19.85	+13 04 05.5	16.9 T	704
P/1998 S1	1998 10 28.18568	00 50 19.28	+13 04 04.4	17.0 T	704
P/1998 S1	1998 10 28.20137	00 50 18.64	+13 04 05.2	17.4 T	704
P/1998 S1	1998 10 28.21713	00 50 17.96	+13 04 05.4	16.8 T	704
P/1998 S1	1998 10 28.23278	00 50 17.06	+13 04 04.8	16.8 T	704
P/1998 S1	1998 10 29.09358	00 49 45.95	+13 04 03.9	17.8 T	704
P/1998 S1	1998 10 29.11360	00 49 45.09	+13 04 04.6	18.1 T	704
P/1998 S1	1998 10 29.13365	00 49 44.39	+13 04 03.9	17.9 T	704
P/1998 S1	1998 10 29.15377	00 49 43.62	+13 04 05.2		704
P/1998 S1	1998 10 29.17377	00 49 42.77	+13 04 03.9		704
P/1998 S1	1998 10 29.59497	00 49 27.47	+13 04 05.9	15.7 T	360
P/1998 S1	1998 10 29.59740	00 49 27.38	+13 04 05.9		360
P/1998 S1	1998 10 30.48815	00 48 56.07	+13 04 12.0		426
P/1998 S1	1998 10 30.50088	00 48 55.62	+13 04 12.1		426
P/1998 S1	1998 10 30.51338	00 48 55.17	+13 04 11.8	15.8 T	426
P/1998 S1	1998 10 30.89629	00 48 41.85	+13 04 05.7		587
P/1998 S1	1998 10 30.90202	00 48 41.63	+13 04 05.5		587
P/1998 S1	1998 11 01.86280	00 47 36.59	+13 04 09.9	15.9 T	143
P/1998 S1	1998 11 01.87064	00 47 36.37	+13 04 08.8	15.8 T	143
P/1998 S1	1998 11 01.87847	00 47 36.21	+13 04 10.5	16.0 T	143
P/1998 S1	1998 11 05.42851	00 45 50.40	+13 04 36.1	15.0 T	402
P/1998 S1	1998 11 05.42990	00 45 50.40	+13 04 36.5		402
P/1998 S1	1998 11 05.43128	00 45 50.34	+13 04 36.0		402
P/1998 S1	1998 11 08.87355	00 44 23.70	+13 05 27.0	15.3 T	504
P/1998 S1	1998 11 08.87860	00 44 23.60	+13 05 27.4	15.3 T	504

C/1998 T1 (LINEAR)

C/1998 T1	1998 10 02.28667	01 54 23.56	+23 12 36.5	17.6 T	704
C/1998 T1	1998 10 02.30183	01 54 21.82	+23 12 28.7	18.2 T	704
C/1998 T1	1998 10 02.31694	01 54 20.00	+23 12 21.4	18.2 T	704
C/1998 T1	1998 10 02.33208	01 54 18.17	+23 12 13.0	17.7 T	704
C/1998 T1	1998 10 02.34729	01 54 16.34	+23 12 06.1	17.9 T	704
C/1998 T1	1998 10 03.67615	01 51 38.95	+23 00 17.2	15.8 T	900
C/1998 T1	1998 10 03.68532	01 51 37.83	+23 00 12.8		900
C/1998 T1	1998 10 03.82525	01 51 21.21	+22 58 54.7		046
C/1998 T1	1998 10 03.82752	01 51 20.97	+22 58 53.7		046
C/1998 T1	1998 10 03.82894	01 51 20.86	+22 58 51.2		046
C/1998 T1	1998 10 03.83007	01 51 20.70	+22 58 52.5		046
C/1998 T1	1998 10 03.83118	01 51 20.57	+22 58 51.8		046
C/1998 T1	1998 10 03.83236	01 51 20.38	+22 58 51.3		046
C/1998 T1	1998 10 03.85810	01 51 17.46	+22 58 42.1		108
C/1998 T1	1998 10 03.86201	01 51 16.94	+22 58 36.3		108
C/1998 T1	1998 10 03.89909	01 51 12.52	+22 58 15.2	16.5 T	108
C/1998 T1	1998 10 05.08372	01 48 49.07	+22 47 11.2		758
C/1998 T1	1998 10 05.09505	01 48 47.58	+22 47 04.3		758
C/1998 T1	1998 10 05.09990	01 48 46.95	+22 47 02.0		758
C/1998 T1	1998 10 05.27413	01 48 25.70	+22 45 23.5		670
C/1998 T1	1998 10 05.28472	01 48 24.38	+22 45 15.7		670
C/1998 T1	1998 10 05.29844	01 48 22.67	+22 45 09.0		670
C/1998 T1	1998 10 05.31927	01 48 19.96	+22 44 57.0	16.7 T	670
C/1998 T1	1998 10 08.16781	01 42 24.82	+22 16 13.8	17.0 T	725
C/1998 T1	1998 10 08.17441	01 42 23.97	+22 16 09.6	17.1 T	725

C/1998 T1	1998 10 08.22179	01 42 17.92	+22 15 39.7	17.1 T	725	C/1998 T1	1998 10 20.07470	01 15 48.20	+19 47 39.8		046
C/1998 T1	1998 10 08.22638	01 42 17.27	+22 15 37.2	17.0 T	725	C/1998 T1	1998 10 20.07591	01 15 48.02	+19 47 39.0	16.1 T	046
C/1998 T1	1998 10 08.59315	01 41 30.59	+22 11 43.4	15.5 T	900	C/1998 T1	1998 10 20.07735	01 15 47.88	+19 47 37.5		046
C/1998 T1	1998 10 08.60596	01 41 28.85	+22 11 34.3		900	C/1998 T1	1998 10 20.08022	01 15 47.45	+19 47 34.2		046
C/1998 T1	1998 10 09.53559	01 39 29.63	+22 01 28.9	15.9 T	908	C/1998 T1	1998 10 20.08128	01 15 47.31	+19 47 33.7		046
C/1998 T1	1998 10 09.54948	01 39 27.83	+22 01 19.4		908	C/1998 T1	1998 10 20.25515	01 15 23.32	+19 45 04.1		658
C/1998 T1	1998 10 09.56337	01 39 25.99	+22 01 10.5		908	C/1998 T1	1998 10 20.25949	01 15 22.72	+19 45 00.5		658
C/1998 T1	1998 10 09.61309	01 39 19.49	+22 00 37.4	16.1 T	355	C/1998 T1	1998 10 20.26348	01 15 22.16	+19 44 57.1		658
C/1998 T1	1998 10 09.62431	01 39 18.04	+22 00 30.2		355	C/1998 T1	1998 10 20.87487	01 13 57.12	+19 36 07.4	15.5 T	504
C/1998 T1	1998 10 11.59307	01 35 01.21	+21 38 07.3	16.0 T	886	C/1998 T1	1998 10 20.87557	01 13 56.97	+19 36 06.6	15.6 T	504
C/1998 T1	1998 10 11.60455	01 34 59.60	+21 37 58.3		886	C/1998 T1	1998 10 20.87806	01 13 56.66	+19 36 04.7	15.5 T	504
C/1998 T1	1998 10 11.61596	01 34 58.17	+21 37 51.4		886	C/1998 T1	1998 10 20.87910	01 13 56.49	+19 36 03.8	15.5 T	504
C/1998 T1	1998 10 13.86091	01 29 59.60	+21 10 48.2	16.5 T	120	C/1998 T1	1998 10 20.88609	01 13 55.51	+19 35 57.1	15.3 T	504
C/1998 T1	1998 10 13.87200	01 29 58.10	+21 10 40.3	16.4 T	120	C/1998 T1	1998 10 20.88868	01 13 55.13	+19 35 54.7		504
C/1998 T1	1998 10 13.88331	01 29 56.57	+21 10 31.8	16.4 T	120	C/1998 T1	1998 10 20.88953	01 13 55.01	+19 35 54.5	15.5 T	504
C/1998 T1	1998 10 14.01426	01 29 38.81	+21 08 53.5		046	C/1998 T1	1998 10 21.51087	01 12 28.43	+19 26 49.3	15.8 T	402
C/1998 T1	1998 10 14.01646	01 29 38.51	+21 08 51.8		046	C/1998 T1	1998 10 21.51226	01 12 28.22	+19 26 48.2		402
C/1998 T1	1998 10 14.01860	01 29 38.22	+21 08 50.0		046	C/1998 T1	1998 10 21.51365	01 12 28.02	+19 26 47.2		402
C/1998 T1	1998 10 14.58021	01 28 22.66	+21 01 48.2		360	C/1998 T1	1998 10 21.56563	01 12 20.72	+19 26 01.4		360
C/1998 T1	1998 10 14.60243	01 28 19.62	+21 01 31.3		1 360	C/1998 T1	1998 10 21.57726	01 12 19.07	+19 25 51.2		360
C/1998 T1	1998 10 14.60694	01 28 19.03	+21 01 27.9		360	C/1998 T1	1998 10 21.58299	01 12 18.26	+19 25 46.0		360
C/1998 T1	1998 10 15.87332	01 25 27.26	+20 45 11.6	16.4 T	120	C/1998 T1	1998 10 22.51803	01 10 07.75	+19 11 52.8	15.3 T	402
C/1998 T1	1998 10 15.88572	01 25 25.59	+20 45 02.6	16.4 T	120	C/1998 T1	1998 10 22.52081	01 10 07.35	+19 11 50.3		402
C/1998 T1	1998 10 16.91155	01 23 05.36	+20 31 28.1	15.7 T	504	C/1998 T1	1998 10 22.52220	01 10 07.15	+19 11 48.9		402
C/1998 T1	1998 10 16.91314	01 23 05.16	+20 31 27.1	15.8 T	504	C/1998 T1	1998 10 22.77419	01 09 31.99	+19 08 01.3	16.6 T	120
C/1998 T1	1998 10 16.91589	01 23 04.75	+20 31 25.1	15.7 T	504	C/1998 T1	1998 10 22.77618	01 09 31.71	+19 07 59.4	16.5 T	120
C/1998 T1	1998 10 16.91691	01 23 04.65	+20 31 24.0	15.9 T	504	C/1998 T1	1998 10 22.78491	01 09 30.48	+19 07 51.7	16.4 T	120
C/1998 T1	1998 10 16.91795	01 23 04.47	+20 31 23.7	15.7 T	504	C/1998 T1	1998 10 22.78674	01 09 30.25	+19 07 49.7	16.4 T	120
C/1998 T1	1998 10 16.91927	01 23 04.31	+20 31 22.4	15.7 T	504	C/1998 T1	1998 10 24.56597	01 05 21.18	+18 40 39.8	16.1 T	360
C/1998 T1	1998 10 16.93708	01 23 01.79	+20 31 08.0		118	C/1998 T1	1998 10 24.56840	01 05 20.84	+18 40 37.4		360
C/1998 T1	1998 10 16.94149	01 23 01.20	+20 31 04.4		118	C/1998 T1	1998 10 24.57083	01 05 20.50	+18 40 35.2		360
C/1998 T1	1998 10 16.94314	01 23 01.01	+20 31 03.8	16.0 T	118	C/1998 T1	1998 10 24.61202	01 05 14.55	+18 39 56.8	16.0 T	886
C/1998 T1	1998 10 18.19957	01 20 08.24	+20 14 00.5	17.8 T	704	C/1998 T1	1998 10 24.62338	01 05 12.93	+18 39 48.0		886
C/1998 T1	1998 10 18.21969	01 20 05.46	+20 13 43.6		704	C/1998 T1	1998 10 24.69480	01 05 02.97	+18 38 39.7	16.0 T	355
C/1998 T1	1998 10 18.23978	01 20 02.63	+20 13 26.8	18.2 T	704	C/1998 T1	1998 10 24.70117	01 05 02.06	+18 38 33.5		355
C/1998 T1	1998 10 18.25988	01 19 59.85	+20 13 10.9		704	C/1998 T1	1998 10 24.70396	01 05 01.68	+18 38 30.8		355
C/1998 T1	1998 10 18.28087	01 19 56.97	+20 12 52.9		704	C/1998 T1	1998 10 25.54925	01 03 03.62	+18 25 18.5	15.8 T	402
C/1998 T1	1998 10 18.54005	01 19 21.22	+20 09 18.0	15.7 T	367	C/1998 T1	1998 10 25.55064	01 03 03.43	+18 25 17.2		402
C/1998 T1	1998 10 18.54352	01 19 20.74	+20 09 15.1		367	C/1998 T1	1998 10 25.55202	01 03 03.23	+18 25 15.8		402
C/1998 T1	1998 10 18.54699	01 19 20.23	+20 09 11.8		367	C/1998 T1	1998 10 25.58786	01 02 58.18	+18 24 42.5	15.6 T	867
C/1998 T1	1998 10 18.59851	01 19 13.04	+20 08 29.6	16.0 T	900	C/1998 T1	1998 10 25.59203	01 02 57.57	+18 24 38.6		867
C/1998 T1	1998 10 18.61114	01 19 11.26	+20 08 19.1		900	C/1998 T1	1998 10 25.59654	01 02 56.94	+18 24 34.3		867
C/1998 T1	1998 10 18.62162	01 19 09.79	+20 08 10.3	16.0 T	355	C/1998 T1	1998 10 29.58819	00 53 40.88	+17 20 05.2	16.1 T	360
C/1998 T1	1998 10 18.62557	01 19 09.25	+20 08 07.0		355	C/1998 T1	1998 10 29.59063	00 53 40.56	+17 20 02.6		360
C/1998 T1	1998 10 18.63177	01 19 08.39	+20 08 01.6		355	C/1998 T1	1998 10 31.54868	00 49 10.62	+16 47 21.2	15.7 T	402
C/1998 T1	1998 10 19.02838	01 18 13.53	+20 02 30.8	17.8 T	739	C/1998 T1	1998 10 31.55007	00 49 10.42	+16 47 19.9		402
C/1998 T1	1998 10 19.03411	01 18 12.70	+20 02 26.6	18.0 T	739	C/1998 T1	1998 10 31.55146	00 49 10.21	+16 47 18.7		402
C/1998 T1	1998 10 19.94034	01 16 07.04	+19 49 36.2	15.8 T	966	C/1998 T1	1998 11 05.45238	00 38 08.49	+15 23 16.2	15.3 T	402
C/1998 T1	1998 10 19.94492	01 16 06.40	+19 49 31.0		966	C/1998 T1	1998 11 08.56101	00 31 22.37	+14 29 00.3	16.0 T	355
C/1998 T1	1998 10 19.95722	01 16 04.67	+19 49 22.1		966	C/1998 T1	1998 11 08.56650	00 31 21.66	+14 28 54.1		355
C/1998 T1	1998 10 20.04207	01 15 52.76	+19 48 07.0		557	C/1998 T1	1998 11 08.57027	00 31 21.18	+14 28 49.7		355
C/1998 T1	1998 10 20.04370	01 15 52.56	+19 48 06.0		557						
C/1998 T1	1998 10 20.04534	01 15 52.33	+19 48 04.9	16.5 T	557						

1998 NOV. 10

M.P.C. 32829

C/1998 U1 (LINEAR)						P/1998 U2					
C/1998 U1	1998 10 18.40062	03 56 57.57	+33 36 22.5	19.2 T	704	P/1998 U2	1998 10 21.35069	01 24 56.34	+12 27 56.2	18 T	675
C/1998 U1	1998 10 18.42061	03 56 55.43	+33 36 15.5	18.7 T	704	P/1998 U2	1998 10 22.21458	01 24 29.86	+12 26 16.5		675
C/1998 U1	1998 10 18.44068	03 56 53.03	+33 36 06.5	19.5 T	704	P/1998 U2	1998 10 22.84000	01 24 10.61	+12 25 02.1	16 T	557
C/1998 U1	1998 10 18.48092	03 56 48.29	+33 35 52.4	19.3 T	704	P/1998 U2	1998 10 22.85669	01 24 10.05	+12 25 00.4		106
C/1998 U1	1998 10 20.07972	03 53 43.74	+33 24 51.8		2 557	P/1998 U2	1998 10 22.87714	01 24 09.43	+12 24 58.0		106
C/1998 U1	1998 10 20.08161	03 53 43.41	+33 24 51.2		2 557	P/1998 U2	1998 10 22.88941	01 24 09.00	+12 24 56.6	16.0 T	118
C/1998 U1	1998 10 20.12917	03 53 37.96	+33 24 31.2		046	P/1998 U2	1998 10 22.89471	01 24 08.82	+12 24 55.8		557
C/1998 U1	1998 10 20.13323	03 53 37.53	+33 24 29.9		046	P/1998 U2	1998 10 22.89615	01 24 08.79	+12 24 55.7		118
C/1998 U1	1998 10 20.13512	03 53 37.28	+33 24 27.6		046	P/1998 U2	1998 10 22.89738	01 24 08.80	+12 24 55.8		106
C/1998 U1	1998 10 20.13894	03 53 36.79	+33 24 27.3	18.2 T	046	P/1998 U2	1998 10 22.89756	01 24 08.73	+12 24 55.6		557
C/1998 U1	1998 10 20.41799	03 53 04.29	+33 22 28.3		658	P/1998 U2	1998 10 22.90765	01 24 08.47	+12 24 53.8		106
C/1998 U1	1998 10 20.42170	03 53 03.83	+33 22 26.7		658	P/1998 U2	1998 10 22.90795	01 24 08.37	+12 24 54.0		118
C/1998 U1	1998 10 20.42725	03 53 03.13	+33 22 24.6		658	P/1998 U2	1998 10 22.90847	01 24 08.33	+12 24 54.9		046
C/1998 U1	1998 10 20.94932	03 52 02.18	+33 18 38.9		557	P/1998 U2	1998 10 22.90995	01 24 08.31	+12 24 54.5		046
C/1998 U1	1998 10 20.95164	03 52 01.90	+33 18 38.6	18.6 T	557	P/1998 U2	1998 10 22.91245	01 24 08.22	+12 24 54.4		046
C/1998 U1	1998 10 20.95397	03 52 01.67	+33 18 36.9		557	P/1998 U2	1998 10 22.91406	01 24 08.24	+12 24 53.5		587
C/1998 U1	1998 10 20.96719	03 52 00.05	+33 18 30.9		557	P/1998 U2	1998 10 22.92998	01 24 07.66	+12 24 53.6		587
C/1998 U1	1998 10 20.96951	03 51 59.80	+33 18 29.7		557	P/1998 U2	1998 10 22.94032	01 24 07.30	+12 24 51.2		046
C/1998 U1	1998 10 20.97185	03 51 59.51	+33 18 29.2		557	P/1998 U2	1998 10 22.94255	01 24 07.32	+12 24 50.2	16 T	046
C/1998 U1	1998 10 21.10700	03 51 43.52	+33 17 29.3		557	P/1998 U2	1998 10 23.12786	01 24 01.84	+12 24 29.0	16.6 T	755
C/1998 U1	1998 10 21.11343	03 51 42.76	+33 17 27.1	18.2 T	046	P/1998 U2	1998 10 23.14582	01 24 01.30	+12 24 27.7		734
C/1998 U1	1998 10 21.11611	03 51 42.33	+33 17 26.4		046	P/1998 U2	1998 10 23.14973	01 24 01.19	+12 24 27.3		734
C/1998 U1	1998 10 21.11716	03 51 42.20	+33 17 25.5		046	P/1998 U2	1998 10 23.15485	01 24 01.08	+12 24 26.9		734
C/1998 U1	1998 10 21.11939	03 51 41.99	+33 17 23.8		046	P/1998 U2	1998 10 23.25493	01 23 57.77	+12 24 14.7	16.6 T	755
C/1998 U1	1998 10 21.12096	03 51 41.77	+33 17 23.0	18.3 T	046	P/1998 U2	1998 10 23.26538	01 23 57.39	+12 24 15.2	17.1 T	725
C/1998 U1	1998 10 21.37060	03 51 12.71	+33 15 35.6	18.9 T	673	P/1998 U2	1998 10 23.27464	01 23 57.08	+12 24 14.0	17.0 T	725
C/1998 U1	1998 10 21.38078	03 51 11.48	+33 15 31.2		673	P/1998 U2	1998 10 23.31769	01 23 55.79	+12 24 07.0		658
C/1998 U1	1998 10 21.41222	03 51 07.65	+33 15 15.3		658	P/1998 U2	1998 10 23.32464	01 23 55.55	+12 24 06.0		658
C/1998 U1	1998 10 21.41704	03 51 07.06	+33 15 13.3		658	P/1998 U2	1998 10 23.33105	01 23 55.35	+12 24 05.6		658
C/1998 U1	1998 10 21.41963	03 51 06.72	+33 15 12.2		658	P/1998 U2	1998 10 23.73182	01 23 43.59	+12 23 18.8	16 T	046
C/1998 U1	1998 10 22.50894	03 48 58.14	+33 07 02.9	19.3 T	402	P/1998 U2	1998 10 23.74481	01 23 43.24	+12 23 16.0		046
C/1998 U1	1998 10 22.51052	03 48 58.01	+33 07 02.0		402	P/1998 U2	1998 10 23.74594	01 23 43.21	+12 23 15.9		046
C/1998 U1	1998 10 22.51212	03 48 57.73	+33 07 01.1		402	P/1998 U2	1998 10 23.74700	01 23 43.20	+12 23 15.6		046
C/1998 U1	1998 10 24.65226	03 44 41.18	+32 50 08.2	18.4 T	360	P/1998 U2	1998 10 23.74809	01 23 43.11	+12 23 16.2		046
C/1998 U1	1998 10 24.65642	03 44 40.67	+32 50 06.3		360	P/1998 U2	1998 10 23.79199	01 23 41.81	+12 23 10.8	17.3 T	120
C/1998 U1	1998 10 24.66059	03 44 40.17	+32 50 04.0		360	P/1998 U2	1998 10 23.81402	01 23 41.17	+12 23 08.1	17.5 T	120
C/1998 U1	1998 10 25.63022	03 42 43.05	+32 42 04.6	18.4 T	867	P/1998 U2	1998 10 23.85001	01 23 39.91	+12 23 03.4	16.0 T	118
C/1998 U1	1998 10 25.63647	03 42 42.20	+32 42 01.5		867	P/1998 U2	1998 10 23.85524	01 23 39.73	+12 23 03.2		118
C/1998 U1	1998 10 25.64098	03 42 41.68	+32 41 58.9		867	P/1998 U2	1998 10 23.85926	01 23 39.61	+12 23 02.9		118
C/1998 U1	1998 10 29.68958	03 34 25.70	+32 05 59.9	18.8 T	360	P/1998 U2	1998 10 24.01782	01 23 34.59	+12 22 44.3		620
C/1998 U1	1998 10 29.69358	03 34 25.22	+32 05 58.3		360	P/1998 U2	1998 10 24.02673	01 23 34.30	+12 22 43.3		620
C/1998 U1	1998 10 29.70417	03 34 23.90	+32 05 52.1		360	P/1998 U2	1998 10 24.04004	01 23 33.87	+12 22 41.8		620
C/1998 U1	1998 11 07.98197	03 15 12.85	+30 29 11.4		046	P/1998 U2	1998 10 24.05648	01 23 33.34	+12 22 40.0	16.4 T	620
C/1998 U1	1998 11 07.98426	03 15 12.62	+30 29 10.3		046	P/1998 U2	1998 10 24.10938	01 23 32.37	+12 22 34.5	15.7 N	761
C/1998 U1	1998 11 07.98547	03 15 12.37	+30 29 09.0		046	P/1998 U2	1998 10 24.12326	01 23 31.82	+12 22 32.8	15.6 N	761
C/1998 U1	1998 11 07.98666	03 15 12.31	+30 29 07.7		046	P/1998 U2	1998 10 24.25575	01 23 27.61	+12 22 16.8	16.7 N	681
C/1998 U1	1998 11 07.98778	03 15 12.14	+30 29 07.1		046	P/1998 U2	1998 10 24.30459	01 23 26.05	+12 22 10.9	17.5 N	681
P/1998 U2 (Mueller)						P/1998 U2	1998 10 24.30884	01 23 25.91	+12 22 10.7	17.1 N	681
P/1998 U2	1998 09 14.41154	01 37 47.29	+12 32 24.3	17.2 T	699	P/1998 U2	1998 10 24.53865	01 23 19.38	+12 21 46.1	16.5 T	402
P/1998 U2	1998 09 14.43634	01 37 47.26	+12 32 27.8		699	P/1998 U2	1998 10 24.54024	01 23 19.31	+12 21 46.1		402
P/1998 U2	1998 09 14.47083	01 37 47.23	+12 32 33.0		699	P/1998 U2	1998 10 24.54183	01 23 19.27	+12 21 45.8		402
						P/1998 U2	1998 10 24.61584	01 23 16.92	+12 21 36.4	16.0 T	886
						P/1998 U2	1998 10 24.62344	01 23 16.54	+12 21 35.4	16.1 T	360

P/1998 U2	1998 10 24.62478	01 23 16.57	+12 21 34.2	16.0 T	867	P/1998 U3	1998 10 24.99035	06 44 17.00	+41 32 57.7		118
P/1998 U2	1998 10 24.62865	01 23 16.37	+12 21 34.7		360	P/1998 U3	1998 10 25.00209	06 44 17.62	+41 32 58.4		118
P/1998 U2	1998 10 24.63010	01 23 16.39	+12 21 33.8		867	P/1998 U3	1998 10 25.18361	06 44 28.40	+41 33 04.6	13.8 N	758
P/1998 U2	1998 10 24.63466	01 23 16.09	+12 21 31.7		886	P/1998 U3	1998 10 25.18531	06 44 28.54	+41 33 05.4	13.9 N	758
P/1998 U2	1998 10 24.63472	01 23 16.16	+12 21 34.0		360	P/1998 U3	1998 10 25.18633	06 44 28.56	+41 33 05.5	13.9 N	758
P/1998 U2	1998 10 24.71575	01 23 13.59	+12 21 23.0		355	P/1998 U3	1998 10 25.18817	06 44 28.53	+41 33 05.1	13.9 N	758
P/1998 U2	1998 10 24.71751	01 23 13.50	+12 21 23.2	16.1 T	355	P/1998 U3	1998 10 25.19145	06 44 28.88	+41 33 05.5	13.8 N	758
P/1998 U2	1998 10 24.72454	01 23 13.27	+12 21 22.9		355	P/1998 U3	1998 10 25.19254	06 44 28.91	+41 33 05.2	13.9 N	758
P/1998 U2	1998 10 24.79046	01 23 12.06	+12 21 12.2	15.8 T	540	P/1998 U3	1998 10 25.32943	06 44 36.96	+41 33 10.7		734
P/1998 U2	1998 10 24.79901	01 23 11.79	+12 21 12.4		540	P/1998 U3	1998 10 25.35451	06 44 38.14	+41 33 12.4	13.3 T	761
P/1998 U2	1998 10 24.80633	01 23 11.56	+12 21 11.3		540	P/1998 U3	1998 10 25.35865	06 44 38.54	+41 33 11.7	13.9 T	734
P/1998 U2	1998 10 24.81929	01 23 11.11	+12 21 09.4		540	P/1998 U3	1998 10 25.36528	06 44 38.72	+41 33 12.8	13.4 T	761
P/1998 U2	1998 10 24.83347	01 23 10.68	+12 21 08.0		557	P/1998 U3	1998 10 25.36658	06 44 39.00	+41 33 12.3		734
P/1998 U2	1998 10 24.85303	01 23 10.06	+12 21 05.7		557	P/1998 U3	1998 10 25.37969	06 44 39.66	+41 33 13.2	13.6 T	761
P/1998 U2	1998 10 24.88870	01 23 08.91	+12 21 02.0		106	P/1998 U3	1998 10 25.54384	06 44 49.63	+41 33 16.8	13.3 T	355
P/1998 U2	1998 10 24.90674	01 23 08.28	+12 21 00.1		106	P/1998 U3	1998 10 25.54473	06 44 49.59	+41 33 16.3		355
P/1998 U2	1998 10 24.91735	01 23 07.97	+12 20 59.2		106	P/1998 U3	1998 10 25.54564	06 44 49.66	+41 33 16.4		355
P/1998 U2	1998 10 24.93286	01 23 07.43	+12 20 57.3		106	P/1998 U3	1998 10 25.55625	06 44 50.39	+41 33 17.0	12.9 T	367
P/1998 U2	1998 10 25.58693	01 22 48.35	+12 19 42.0	16.2 T	402	P/1998 U3	1998 10 25.55868	06 44 50.56	+41 33 17.0		367
P/1998 U2	1998 10 25.58832	01 22 48.32	+12 19 41.9		402	P/1998 U3	1998 10 25.56111	06 44 50.75	+41 33 17.1		367
P/1998 U2	1998 10 25.58971	01 22 48.26	+12 19 41.7		402	P/1998 U3	1998 10 25.58280	06 44 51.92	+41 33 17.9	12.8 T	897
P/1998 U2	1998 10 25.59197	01 22 48.22	+12 19 50.6	16.6 T	426	P/1998 U3	1998 10 25.58730	06 44 52.21	+41 33 18.1		897
P/1998 U2	1998 10 25.59832	01 22 48.02	+12 19 49.7	16.4 T	426	P/1998 U3	1998 10 25.58866	06 44 52.26	+41 33 18.2	14.1 N	908
P/1998 U2	1998 10 25.60091	01 22 47.93	+12 19 40.5	16.2 T	900	P/1998 U3	1998 10 25.59294	06 44 52.54	+41 33 18.6		897
P/1998 U2	1998 10 25.60480	01 22 47.80	+12 19 49.0	16.4 T	426	P/1998 U3	1998 10 25.60255	06 44 53.00	+41 33 18.9		908
P/1998 U2	1998 10 25.61355	01 22 47.52	+12 19 38.6		900	P/1998 U3	1998 10 25.61644	06 44 53.83	+41 33 19.5		908
P/1998 U2	1998 10 26.86171	01 22 12.12	+12 17 10.7		118	P/1998 U3	1998 10 25.66742	06 44 56.72	+41 33 21.8	14.2 T	871
P/1998 U2	1998 10 26.88023	01 22 11.54	+12 17 08.8	16.3 T	118	P/1998 U3	1998 10 25.67726	06 44 57.26	+41 33 22.4		871
P/1998 U2	1998 10 29.60226	01 20 58.08	+12 11 58.2	16.3 T	360	P/1998 U3	1998 10 25.68014	06 44 57.51	+41 33 22.9		900
P/1998 U2	1998 10 29.60469	01 20 58.01	+12 11 58.0		360	P/1998 U3	1998 10 25.68134	06 44 57.69	+41 33 23.5	13.1 T	402
P/1998 U2	1998 11 07.84024	01 17 49.39	+11 56 53.3		046	P/1998 U3	1998 10 25.68273	06 44 57.77	+41 33 23.6		402
P/1998 U2	1998 11 07.84181	01 17 49.39	+11 56 53.4		046	P/1998 U3	1998 10 25.68412	06 44 57.84	+41 33 23.6		402
P/1998 U2	1998 11 07.84295	01 17 49.36	+11 56 53.5		046	P/1998 U3	1998 10 25.68551	06 44 57.91	+41 33 23.7		402
P/1998 U2	1998 11 07.84412	01 17 49.38	+11 56 53.3		046	P/1998 U3	1998 10 25.69653	06 44 58.48	+41 33 23.4		867
P/1998 U3 (Jäger)						P/1998 U3	1998 10 25.70000	06 44 58.66	+41 33 23.4		867
P/1998 U3	1998 10 24.85103	06 44 08.66	+41 32 51.0	14.1 T	540	P/1998 U3	1998 10 25.70081	06 44 58.73	+41 33 23.2	12.9 T	900
P/1998 U3	1998 10 24.85213	06 44 08.71	+41 32 51.0		540	P/1998 U3	1998 10 25.70451	06 44 58.94	+41 33 23.5		867
P/1998 U3	1998 10 24.85314	06 44 08.77	+41 32 50.9		540	P/1998 U3	1998 10 25.82890	06 45 06.16	+41 33 25.4	13.8 T	540
P/1998 U3	1998 10 24.85424	06 44 08.82	+41 32 51.0		540	P/1998 U3	1998 10 25.82988	06 45 06.13	+41 33 25.5		540
P/1998 U3	1998 10 24.85591	06 44 08.98	+41 32 51.1	12 T	557	P/1998 U3	1998 10 25.83091	06 45 06.20	+41 33 25.0		540
P/1998 U3	1998 10 24.85885	06 44 09.18	+41 32 51.1	15 N	557	P/1998 U3	1998 10 25.83183	06 45 06.23	+41 33 25.4		540
P/1998 U3	1998 10 24.86650	06 44 09.51	+41 32 51.5		540	P/1998 U3	1998 10 25.83945	06 45 06.80	+41 33 25.1	15.0 N	046
P/1998 U3	1998 10 24.86760	06 44 09.65	+41 32 51.6		540	P/1998 U3	1998 10 25.84121	06 45 06.95	+41 33 24.9		046
P/1998 U3	1998 10 24.86882	06 44 09.69	+41 32 51.6		540	P/1998 U3	1998 10 25.84214	06 45 07.00	+41 33 24.8		046
P/1998 U3	1998 10 24.89144	06 44 11.13	+41 32 53.6		046	P/1998 U3	1998 10 25.84342	06 45 07.06	+41 33 25.6		046
P/1998 U3	1998 10 24.89279	06 44 11.20	+41 32 52.8		557	P/1998 U3	1998 10 25.91887	06 45 11.56	+41 33 27.2		587
P/1998 U3	1998 10 24.89390	06 44 11.27	+41 32 53.1		046	P/1998 U3	1998 10 25.93553	06 45 12.44	+41 33 30.1		587
P/1998 U3	1998 10 24.89547	06 44 11.39	+41 32 53.1	13.0 T	046	P/1998 U3	1998 10 25.93699	06 45 12.51	+41 33 29.3		046
P/1998 U3	1998 10 24.90154	06 44 11.73	+41 32 53.2		557	P/1998 U3	1998 10 25.93785	06 45 12.55	+41 33 29.2		046
P/1998 U3	1998 10 24.95534	06 44 14.95	+41 32 55.9	16 T	106	P/1998 U3	1998 10 25.93897	06 45 12.60	+41 33 29.5		046
P/1998 U3	1998 10 24.95764	06 44 15.14	+41 32 55.6		106	P/1998 U3	1998 10 25.94225	06 45 12.81	+41 33 29.3		046
P/1998 U3	1998 10 24.98812	06 44 16.86	+41 32 57.8	13.3 T	118	P/1998 U3	1998 10 25.94699	06 45 13.12	+41 33 29.8	13.2 T	118
						P/1998 U3	1998 10 25.99262	06 45 15.55	+41 33 31.7	14.0 T	627

1998 NOV. 10

M.P.C. 32831

P/1998 U3	1998 10 26.00214	06 45 16.24	+41 33 31.2		970	P/1998 U3	1998 10 30.17252	06 49 03.16	+41 35 22.6	13.4 T	758
P/1998 U3	1998 10 26.00675	06 45 16.43	+41 33 32.0	14.0 T	627	P/1998 U3	1998 10 30.17461	06 49 03.21	+41 35 23.0	13.4 T	758
P/1998 U3	1998 10 26.00742	06 45 16.57	+41 33 31.3		970	P/1998 U3	1998 10 30.28160	06 49 08.56	+41 35 26.2	13.6 N	761
P/1998 U3	1998 10 26.01061	06 45 16.67	+41 33 30.8		970	P/1998 U3	1998 10 30.35868	06 49 12.39	+41 35 28.5	13.7 N	761
P/1998 U3	1998 10 26.02405	06 45 17.22	+41 33 32.7		143	P/1998 U3	1998 10 31.59717	06 50 14.19	+41 35 48.2	12.0 T	886
P/1998 U3	1998 10 26.02797	06 45 17.57	+41 33 32.8		143	P/1998 U3	1998 10 31.61266	06 50 14.82	+41 35 48.3		886
P/1998 U3	1998 10 26.03190	06 45 17.76	+41 33 32.9		143	P/1998 U3	1998 11 01.04828	06 50 35.53	+41 35 54.6		978
P/1998 U3	1998 10 26.03582	06 45 17.96	+41 33 33.5		143	P/1998 U3	1998 11 01.05863	06 50 36.03	+41 35 54.9		978
P/1998 U3	1998 10 26.03975	06 45 18.22	+41 33 33.8		143	P/1998 U3	1998 11 01.06199	06 50 36.05	+41 35 53.5		978
P/1998 U3	1998 10 26.04209	06 45 18.39	+41 33 34.2	14.0 T	627	P/1998 U3	1998 11 01.06455	06 50 36.39	+41 35 53.8		978
P/1998 U3	1998 10 26.04368	06 45 18.47	+41 33 34.1		143	P/1998 U3	1998 11 01.59265	06 51 01.59	+41 36 01.6		355
P/1998 U3	1998 10 26.09911	06 45 21.67	+41 33 37.4	15.2 N	561	P/1998 U3	1998 11 01.60068	06 51 01.98	+41 36 02.1		355
P/1998 U3	1998 10 26.10297	06 45 21.85	+41 33 37.0		561	P/1998 U3	1998 11 02.25410	06 51 31.81	+41 36 13.9	12.7 T	860
P/1998 U3	1998 10 26.10679	06 45 22.11	+41 33 36.3		561	P/1998 U3	1998 11 02.25998	06 51 32.22	+41 36 13.9	12.8 T	860
P/1998 U3	1998 10 26.19221	06 45 27.16	+41 33 38.5	13.9 T	758	P/1998 U3	1998 11 02.26534	06 51 32.48	+41 36 14.5	12.7 T	860
P/1998 U3	1998 10 26.19340	06 45 27.23	+41 33 38.4	14.1 T	758	P/1998 U3	1998 11 02.84135	06 51 58.55	+41 36 13.0	13.1 T	540
P/1998 U3	1998 10 26.19690	06 45 27.40	+41 33 38.9	13.8 T	758	P/1998 U3	1998 11 02.84253	06 51 58.66	+41 36 12.9		540
P/1998 U3	1998 10 26.20036	06 45 27.57	+41 33 39.0	13.8 T	758	P/1998 U3	1998 11 02.84358	06 51 58.69	+41 36 12.1		540
P/1998 U3	1998 10 26.20383	06 45 27.79	+41 33 39.1	13.8 T	758	P/1998 U3	1998 11 02.84475	06 51 58.76	+41 36 12.5		540
P/1998 U3	1998 10 26.31181	06 45 33.93	+41 33 44.2	13.9 T	761	P/1998 U3	1998 11 03.54889	06 52 29.87	+41 36 18.3	12.5 T	367
P/1998 U3	1998 10 26.32570	06 45 34.62	+41 33 44.8	13.9 T	761	P/1998 U3	1998 11 03.55163	06 52 29.96	+41 36 18.3		367
P/1998 U3	1998 10 26.96901	06 46 11.45	+41 34 02.7	14.9 N	596	P/1998 U3	1998 11 03.55437	06 52 30.09	+41 36 18.5		367
P/1998 U3	1998 10 26.97512	06 46 11.65	+41 34 02.7		596	P/1998 U3	1998 11 03.67916	06 52 35.30	+41 36 21.0		900
P/1998 U3	1998 10 26.98493	06 46 12.15	+41 34 02.8		596	P/1998 U3	1998 11 03.68841	06 52 35.70	+41 36 20.9	12.2 T	900
P/1998 U3	1998 10 27.14804	06 46 21.44	+41 34 06.3	13.8 T	758	P/1998 U3	1998 11 03.73887	06 52 37.77	+41 36 22.5	12.4 T	402
P/1998 U3	1998 10 27.15618	06 46 21.86	+41 34 07.2	13.8 T	758	P/1998 U3	1998 11 03.74025	06 52 37.81	+41 36 22.5		402
P/1998 U3	1998 10 27.18681	06 46 23.53	+41 34 09.3	14.4 T	758	P/1998 U3	1998 11 03.74164	06 52 37.88	+41 36 22.5		402
P/1998 U3	1998 10 27.58454	06 46 45.62	+41 34 18.8	15.2 T	400	P/1998 U3	1998 11 06.24743	06 54 19.91	+41 36 23.0	13.0 T	758
P/1998 U3	1998 10 27.59626	06 46 46.39	+41 34 20.7		400	P/1998 U3	1998 11 06.24896	06 54 19.92	+41 36 23.0	12.9 T	758
P/1998 U3	1998 10 27.59897	06 46 46.46	+41 34 20.6		400	P/1998 U3	1998 11 06.25015	06 54 19.97	+41 36 23.4	13.0 T	758
P/1998 U3	1998 10 28.10087	06 47 13.78	+41 34 35.3	13.5 T	158	P/1998 U3	1998 11 06.26777	06 54 20.67	+41 36 23.2	13.1 T	758
P/1998 U3	1998 10 28.13549	06 47 15.57	+41 34 35.9	13.5 T	158	P/1998 U3	1998 11 06.27396	06 54 20.89	+41 36 22.9	13.3 T	761
P/1998 U3	1998 10 28.14444	06 47 16.10	+41 34 36.1	13.5 T	158	P/1998 U3	1998 11 06.28542	06 54 21.42	+41 36 23.2	13.7 T	761
P/1998 U3	1998 10 28.24899	06 47 21.97	+41 34 38.0	15.6 T	750	P/1998 U3	1998 11 07.28484	06 54 58.52	+41 36 16.4	13.2 T	761
P/1998 U3	1998 10 28.27824	06 47 23.57	+41 34 39.1	15.8 T	750	P/1998 U3	1998 11 07.30289	06 54 59.26	+41 36 17.1	13.2 T	761
P/1998 U3	1998 10 28.99895	06 48 01.99	+41 34 56.7		143	P/1998 U3	1998 11 07.65123	06 55 12.03	+41 36 13.1		411
P/1998 U3	1998 10 29.02277	06 48 03.25	+41 34 57.2		143	P/1998 U3	1998 11 07.65450	06 55 12.12	+41 36 13.0		411
P/1998 U3	1998 10 29.05056	06 48 04.61	+41 34 58.7		143	P/1998 U3	1998 11 07.65774	06 55 12.23	+41 36 12.8		411
P/1998 U3	1998 10 29.55925	06 48 31.60	+41 35 06.5	13.6 T	351	P/1998 U3	1998 11 07.79332	06 55 16.97	+41 36 08.3	12.2 T	540
P/1998 U3	1998 10 29.56207	06 48 31.52	+41 35 08.1		351	P/1998 U3	1998 11 07.79605	06 55 17.04	+41 36 08.4		540
P/1998 U3	1998 10 29.56568	06 48 31.79	+41 35 07.9		351	P/1998 U3	1998 11 07.79711	06 55 17.12	+41 36 08.5		540
P/1998 U3	1998 10 29.63669	06 48 35.62	+41 35 12.0	12.8 T	355	P/1998 U3	1998 11 07.95904	06 55 22.89	+41 36 08.4		046
P/1998 U3	1998 10 29.63795	06 48 35.68	+41 35 12.0		355	P/1998 U3	1998 11 07.96059	06 55 22.96	+41 36 08.5		046
P/1998 U3	1998 10 29.64703	06 48 36.15	+41 35 12.3		355	P/1998 U3	1998 11 07.96219	06 55 23.00	+41 36 08.5		046
P/1998 U3	1998 10 29.73160	06 48 40.45	+41 35 14.9	12.9 T	360	P/1998 U3	1998 11 07.96456	06 55 23.07	+41 36 08.5		046
P/1998 U3	1998 10 29.73403	06 48 40.57	+41 35 14.9		360	P/1998 U3	1998 11 07.96661	06 55 23.15	+41 36 08.5		046
P/1998 U3	1998 10 29.73646	06 48 40.71	+41 35 15.0		360	P/1998 U3	1998 11 08.81667	06 55 52.28	+41 35 55.7		046
P/1998 U3	1998 10 29.86725	06 48 47.43	+41 35 14.4		504	P/1998 U3	1998 11 08.81750	06 55 52.30	+41 35 55.3		046
P/1998 U3	1998 10 29.87007	06 48 47.59	+41 35 14.4	12.9 T	504	P/1998 U3	1998 11 08.81899	06 55 52.38	+41 35 55.6		046
P/1998 U3	1998 10 29.87660	06 48 47.92	+41 35 14.5	12.9 T	504	P/1998 U3	1998 11 08.82046	06 55 52.38	+41 35 56.3		046
P/1998 U3	1998 10 29.87969	06 48 48.07	+41 35 14.5	12.8 T	504	P/1998 U3	1998 11 08.89550	06 55 54.91	+41 35 54.6		504
P/1998 U3	1998 10 30.16834	06 49 02.92	+41 35 22.6	13.3 T	758	P/1998 U3	1998 11 08.90921	06 55 55.33	+41 35 54.9	13.3 T	504
P/1998 U3	1998 10 30.17044	06 49 03.08	+41 35 22.9	13.5 T	758						

P/1998 U4 (Spahr)						C/1998 U5					
P/1998 U4	1998 10 27.37800	04 08 45.61	-11 54 13.0	17.2 T	703	C/1998 U5	1998 11 01.02392	06 46 54.86	+31 18 55.1	14.6 T	958
P/1998 U4	1998 10 27.38600	04 08 45.40	-11 54 17.4		703	C/1998 U5	1998 11 01.04856	06 46 48.17	+31 21 10.4	14.4 T	958
P/1998 U4	1998 10 27.39420	04 08 45.23	-11 54 21.0		703	C/1998 U5	1998 11 01.05884	06 46 45.42	+31 22 06.3	14.7 T	958
P/1998 U4	1998 10 28.28339	04 08 25.09	-12 02 00.5		703	C/1998 U5	1998 11 01.11303	06 46 30.58	+31 27 02.7	14.7 T	958
P/1998 U4	1998 10 28.29100	04 08 24.95	-12 02 03.9		703	C/1998 U5	1998 11 01.12358	06 46 27.62	+31 28 00.9	14.7 T	958
P/1998 U4	1998 10 28.35567	04 08 23.37	-12 02 37.5	17 T	703	C/1998 U5	1998 11 01.22306	06 46 00.57	+31 37 17.2	12.4 T	860
P/1998 U4	1998 10 28.37736	04 08 22.73	-12 02 47.4	17.4 T	691	C/1998 U5	1998 11 01.23282	06 45 57.75	+31 38 12.5	12.3 T	860
P/1998 U4	1998 10 29.26596	04 08 01.96	-12 10 20.8		703	C/1998 U5	1998 11 01.24088	06 45 55.41	+31 38 57.7	12.4 T	860
P/1998 U4	1998 10 29.26990	04 08 01.82	-12 10 23.3		703	C/1998 U5	1998 11 01.24822	06 45 53.37	+31 39 39.3	12.6 T	860
P/1998 U4	1998 10 29.31271	04 08 00.86	-12 10 44.9	16.6 T	713	C/1998 U5	1998 11 01.62437	06 44 07.62	+32 14 31.1		355
P/1998 U4	1998 10 29.46145	04 07 57.17	-12 11 59.9		703	C/1998 U5	1998 11 01.62481	06 44 07.38	+32 14 30.8	11.5 T	886
P/1998 U4	1998 10 30.28532	04 07 37.35	-12 18 54.3		734	C/1998 U5	1998 11 01.62640	06 44 06.98	+32 14 43.0		355
P/1998 U4	1998 10 30.29293	04 07 37.17	-12 18 58.1		734	C/1998 U5	1998 11 01.63269	06 44 05.01	+32 15 20.3		886
P/1998 U4	1998 10 30.30088	04 07 36.94	-12 19 01.9		734	C/1998 U5	1998 11 01.93795	06 42 34.81	+32 44 25.8	13.7 N	143
P/1998 U4	1998 10 30.39319	04 07 34.62	-12 19 48.8		658	C/1998 U5	1998 11 01.93951	06 42 34.38	+32 44 35.0	13.8 N	143
P/1998 U4	1998 10 30.39801	04 07 34.50	-12 19 51.2		658	C/1998 U5	1998 11 01.94693	06 42 31.97	+32 45 19.1		611
P/1998 U4	1998 10 30.96910	04 07 20.35	-12 24 35.3		587	C/1998 U5	1998 11 01.95006	06 42 31.07	+32 45 37.4		611
P/1998 U4	1998 10 30.98356	04 07 20.00	-12 24 42.0	17.4 T	587	C/1998 U5	1998 11 01.95075	06 42 30.88	+32 45 41.2		611
P/1998 U4	1998 10 31.58590	04 07 04.85	-12 29 37.2	17.8 T	402	C/1998 U5	1998 11 01.95835	06 42 28.60	+32 46 24.7	13.7 N	143
P/1998 U4	1998 10 31.58730	04 07 04.86	-12 29 37.5		402	C/1998 U5	1998 11 01.95992	06 42 28.19	+32 46 34.2	13.8 N	143
P/1998 U4	1998 11 03.69044	04 05 42.75	-12 54 22.4	17.7 T	402	C/1998 U5	1998 11 01.98021	06 42 21.90	+32 48 33.3	12.9 T	046
P/1998 U4	1998 11 03.69183	04 05 42.67	-12 54 23.0		402	C/1998 U5	1998 11 01.98083	06 42 21.70	+32 48 37.0		046
P/1998 U4	1998 11 03.69322	04 05 42.61	-12 54 23.0		402	C/1998 U5	1998 11 01.98177	06 42 21.41	+32 48 42.5		046
P/1998 U4	1998 11 07.92575	04 03 41.56	-13 25 58.2		046	C/1998 U5	1998 11 02.22830	06 41 05.00	+33 13 09.4	12.3 T	860
P/1998 U4	1998 11 07.93198	04 03 41.44	-13 26 00.5		046	C/1998 U5	1998 11 02.23580	06 41 02.54	+33 13 54.6	12.5 T	860
P/1998 U4	1998 11 07.93684	04 03 41.26	-13 26 02.7		046	C/1998 U5	1998 11 02.24036	06 41 01.16	+33 14 21.7	12.8 T	860
P/1998 U4	1998 11 07.93846	04 03 41.18	-13 26 03.9		046	C/1998 U5	1998 11 02.24626	06 40 59.22	+33 14 57.5	12.4 T	860
C/1998 U5 (LINEAR)						C/1998 U5					
C/1998 U5	1998 10 30.37456	06 53 34.08	+28 57 57.5	14.0 T	704	C/1998 U5	1998 11 02.84324	06 37 43.77	+34 14 57.6	11.6 T	367
C/1998 U5	1998 10 30.38514	06 53 32.32	+28 58 58.5		704	C/1998 U5	1998 11 02.84462	06 37 43.25	+34 15 06.2		367
C/1998 U5	1998 10 30.39590	06 53 29.51	+28 59 50.6		704	C/1998 U5	1998 11 02.84598	06 37 42.80	+34 15 14.7		367
C/1998 U5	1998 10 30.40675	06 53 27.55	+29 00 40.7		704	C/1998 U5	1998 11 02.84736	06 37 42.30	+34 15 23.2		367
C/1998 U5	1998 10 30.41759	06 53 24.83	+29 01 36.5		704	C/1998 U5	1998 11 02.84874	06 37 41.85	+34 15 32.1		367
C/1998 U5	1998 10 30.98976	06 51 15.61	+29 48 38.5		587	C/1998 U5	1998 11 03.54042	06 33 36.42	+35 28 29.6	11.6 T	367
C/1998 U5	1998 10 30.99595	06 51 14.09	+29 49 11.4		587	C/1998 U5	1998 11 03.54179	06 33 35.87	+35 28 39.0		367
C/1998 U5	1998 10 31.07056	06 50 56.18	+29 55 29.9	14.3 T	958	C/1998 U5	1998 11 03.54317	06 33 35.34	+35 28 47.5		367
C/1998 U5	1998 10 31.07340	06 50 55.38	+29 55 44.2	14.5 T	958	C/1998 U5	1998 11 03.54454	06 33 34.85	+35 28 56.7		367
C/1998 U5	1998 10 31.07608	06 50 54.75	+29 55 57.8	14.3 T	958	C/1998 U5	1998 11 03.54591	06 33 34.32	+35 29 05.9		367
C/1998 U5	1998 10 31.07862	06 50 54.19	+29 56 10.5	14.1 T	958	C/1998 U5	1998 11 03.63333	06 33 01.32	+35 38 39.4	11.3 T	900
C/1998 U5	1998 10 31.08992	06 50 51.39	+29 57 08.4	14.4 T	958	C/1998 U5	1998 11 03.64055	06 32 58.50	+35 39 26.7		900
C/1998 U5	1998 10 31.11426	06 50 45.56	+29 59 13.0	13.9 T	958	C/1998 U5	1998 11 03.64920	06 32 55.22	+35 40 23.3	11.6 T	402
C/1998 U5	1998 10 31.11666	06 50 44.95	+29 59 24.2	14.0 T	958	C/1998 U5	1998 11 03.65059	06 32 54.69	+35 40 32.5		402
C/1998 U5	1998 10 31.20729	06 50 22.74	+30 07 07.7	14.6 T	958	C/1998 U5	1998 11 03.65198	06 32 54.15	+35 40 41.6		402
C/1998 U5	1998 10 31.20854	06 50 22.36	+30 07 14.7	14.0 T	958	C/1998 U5	1998 11 06.25171	06 13 01.80	+40 49 14.5	12.5 T	758
C/1998 U5	1998 10 31.30463	06 49 59.38	+30 15 30.8	12.3 N	761	C/1998 U5	1998 11 06.25307	06 13 00.69	+40 49 24.1	12.7 T	758
C/1998 U5	1998 10 31.31233	06 49 57.58	+30 16 10.1	12.5 N	761	C/1998 U5	1998 11 06.25410	06 13 00.17	+40 49 32.5	12.7 T	758
C/1998 U5	1998 10 31.31852	06 49 55.94	+30 16 42.3	12.5 N	761	C/1998 U5	1998 11 06.26947	06 12 51.56	+40 51 30.7	12.6 T	758
C/1998 U5	1998 10 31.69449	06 48 21.52	+30 49 29.2		355	C/1998 U5	1998 11 07.51976	06 00 09.76	+43 37 10.3	11.2 T	351
C/1998 U5	1998 10 31.69657	06 48 20.97	+30 49 40.0	12.6 T	355	C/1998 U5	1998 11 07.52370	06 00 07.58	+43 37 36.9		351
C/1998 U5	1998 10 31.69832	06 48 20.50	+30 49 49.4		355	C/1998 U5	1998 11 07.52638	06 00 05.79	+43 37 58.8		351
C/1998 U5	1998 10 31.70481	06 48 18.80	+30 50 24.1		355	C/1998 U5	1998 11 07.80436	05 56 54.66	+44 16 02.9	10.9 T	540
						C/1998 U5	1998 11 07.80539	05 56 53.90	+44 16 11.6		540
						C/1998 U5	1998 11 07.80637	05 56 53.26	+44 16 19.6		540
						C/1998 U5	1998 11 07.80734	05 56 52.58	+44 16 27.7		540

1998 NOV. 10

M.P.C. 32833

C/1998 U5	1998 11 07.94822	05 55 12.36	+44 36 03.7		046	21P	1998 10 09.05428	17 41 15.50	+06 42 48.4	11.9 T	758
C/1998 U5	1998 11 07.95045	05 55 10.71	+44 36 22.5		046	21P	1998 10 09.05613	17 41 15.71	+06 42 45.9	11.9 T	758
C/1998 U5	1998 11 07.95109	05 55 10.26	+44 36 28.0		046	21P	1998 10 09.43125	17 42 17.29	+06 33 37.0	10.9 T	360
C/1998 U5	1998 11 07.95186	05 55 09.70	+44 36 34.5		046	21P	1998 10 09.43264	17 42 17.52	+06 33 34.9		360
C/1998 U5	1998 11 07.95266	05 55 09.11	+44 36 41.1		046	21P	1998 10 09.44389	17 42 19.40	+06 33 18.4	10.9 T	351
C/1998 U5	1998 11 07.95344	05 55 08.56	+44 36 47.8		046	21P	1998 10 09.44550	17 42 19.60	+06 33 15.7		351
C/1998 U5	1998 11 07.95440	05 55 07.87	+44 36 55.6		046	21P	1998 10 09.45687	17 42 21.53	+06 32 59.3		351
C/1998 U5	1998 11 08.58632	05 47 09.96	+46 05 39.1	10.4 T	355	21P	1998 10 10.71796	17 45 52.16	+06 02 00.0	11.1 T	118
C/1998 U5	1998 11 08.58774	05 47 08.88	+46 05 51.9		355	21P	1998 10 10.72544	17 45 53.44	+06 01 48.7		118
C/1998 U5	1998 11 08.58980	05 47 07.16	+46 06 09.4		355	21P	1998 10 10.86934	17 46 17.53	+05 58 16.1		620
C/1998 U5	1998 11 08.88516	05 43 06.44	+46 48 05.2	10.2 T	504	21P	1998 10 10.87256	17 46 18.12	+05 58 11.4		620
C/1998 U5	1998 11 08.88539	05 43 06.24	+46 48 06.8	10.2 T	504	21P	1998 10 10.87577	17 46 18.66	+05 58 06.7		620
C/1998 U5	1998 11 08.88565	05 43 06.00	+46 48 09.3	10.2 T	504	21P	1998 10 11.04306	17 46 47.20	+05 53 57.8	12.7 T	739
C/1998 U5	1998 11 08.88588	05 43 05.85	+46 48 10.9	10.3 T	504	21P	1998 10 11.05102	17 46 48.49	+05 53 46.7	12.6 T	739
C/1998 U5	1998 11 08.88633	05 43 05.50	+46 48 14.8	10.3 T	504	21P	1998 10 11.06063	17 46 50.01	+05 53 31.1	12.7 T	739
C/1998 U5	1998 11 08.88656	05 43 05.27	+46 48 16.4	10.0 T	504	21P	1998 10 11.06719	17 46 51.12	+05 53 22.0	12.6 T	739
C/1998 U5	1998 11 08.88679	05 43 05.09	+46 48 19.2	10.3 T	504	21P	1998 10 11.07179	17 46 52.12	+05 53 15.1	12.8 T	739
C/1998 U5	1998 11 08.88852	05 43 03.61	+46 48 33.1	10.5 T	504	21P	1998 10 11.09003	17 46 55.03	+05 52 48.3	12.6 T	739
C/1998 U5	1998 11 08.88874	05 43 03.45	+46 48 35.6		504	21P	1998 10 11.76550	17 48 50.54	+05 35 57.5		629
C/1998 U5	1998 11 08.88897	05 43 03.23	+46 48 37.2		504	21P	1998 10 11.77315	17 48 51.85	+05 35 46.2		629
C/1998 U5	1998 11 08.88920	05 43 03.06	+46 48 39.3		504	21P	1998 10 11.77859	17 48 52.68	+05 35 37.7		629
C/1998 U5	1998 11 08.88987	05 43 02.48	+46 48 45.8		504	21P	1998 10 12.82902	17 51 55.19	+05 09 14.7		620
C/1998 U5	1998 11 08.89013	05 43 02.26	+46 48 47.5		504	21P	1998 10 12.82971	17 51 55.29	+05 09 13.7		620
4P/Faye							21P	1998 10 12.83042	17 51 55.42	+05 09 12.8	620
4P	1998 10 09.45486	19 35 50.92	-12 13 38.6	16.0 T	360	21P	1998 10 12.83314	17 51 55.88	+05 09 08.4		620
4P	1998 10 09.45729	19 35 51.01	-12 13 39.1		360	21P	1998 10 13.10668	17 52 43.95	+05 02 12.6	13.5 T	750
4P	1998 10 15.10198	19 39 51.38	-12 28 26.2	19.0 N	691	21P	1998 10 13.11345	17 52 45.14	+05 02 02.2	13.6 T	750
4P	1998 10 15.10658	19 39 51.57	-12 28 27.0	15.6 T	691	21P	1998 10 13.41516	17 53 38.40	+04 54 33.0	13.9 N	422
4P	1998 10 15.11372	19 39 51.89	-12 28 28.0	15.6 T	691	21P	1998 10 13.41561	17 53 38.48	+04 54 32.3	13.8 N	422
4P	1998 10 17.76498	19 42 01.02	-12 34 24.7		118	21P	1998 10 13.72544	17 54 33.70	+04 46 27.6		118
4P	1998 10 17.77106	19 42 01.29	-12 34 25.4	17.0 T	118	21P	1998 10 13.72860	17 54 34.27	+04 46 22.3		118
4P	1998 10 21.42188	19 45 15.07	-12 41 30.0	15.8 T	360	21P	1998 10 13.73359	17 54 35.16	+04 46 15.2	11.0 T	118
4P	1998 10 21.42448	19 45 15.22	-12 41 30.3		360	21P	1998 10 13.76778	17 54 41.19	+04 45 23.2	11.2 T	560
4P	1998 10 21.71704	19 45 31.64	-12 42 02.0	17.2 T	118	21P	1998 10 13.77887	17 54 43.14	+04 45 06.2	11.1 T	560
4P	1998 10 21.72468	19 45 32.02	-12 42 02.6		118	21P	1998 10 14.83702	17 57 53.59	+04 17 59.0		620
4P	1998 10 25.42611	19 49 08.61	-12 47 44.2	16.7 T	900	21P	1998 10 14.84024	17 57 54.15	+04 17 54.0		620
4P	1998 10 25.43871	19 49 09.34	-12 47 45.0		900	21P	1998 10 14.84346	17 57 54.76	+04 17 49.1		620
4P	1998 11 02.75453	19 58 20.22	-12 55 18.4		118	21P	1998 10 14.84668	17 57 55.34	+04 17 44.1		620
4P	1998 11 02.76523	19 58 21.01	-12 55 18.0	17.0 T	118	21P	1998 10 15.75395	18 00 41.35	+03 54 10.1		470
21P/Giacobini-Zinner							21P	1998 10 15.75560	18 00 41.61	+03 54 07.2	470
21P	1998 09 08.83906	16 40 01.65	+17 15 26.0	14.9 T	615	21P	1998 10 16.11950	18 01 49.34	+03 44 41.6	11.7 T	714
21P	1998 09 08.84081	16 40 01.81	+17 15 24.3	14.8 T	615	21P	1998 10 16.12561	18 01 50.49	+03 44 31.6	11.7 T	714
21P	1998 09 08.84135	16 40 01.86	+17 15 23.7	14.7 T	615	21P	1998 10 17.11975	18 04 56.74	+03 18 25.7	11.3 T	714
21P	1998 09 28.96767	17 16 11.49	+10 35 35.5		834	21P	1998 10 17.13883	18 05 00.29	+03 17 54.9	11.4 T	714
21P	1998 09 29.96319	17 18 26.97	+10 13 41.3		3 834	21P	1998 10 17.71706	18 06 50.05	+03 02 31.9		118
21P	1998 10 05.97558	17 33 05.30	+07 56 32.8		4 834	21P	1998 10 17.72104	18 06 50.79	+03 02 25.6		118
21P	1998 10 06.98817	17 35 43.62	+07 32 28.1	12.4 T	758	21P	1998 10 17.73089	18 06 52.66	+03 02 09.9	11.2 T	118
21P	1998 10 06.99059	17 35 44.01	+07 32 24.3	12.4 T	758	21P	1998 10 17.79282	18 07 04.35	+03 00 32.6		952
21P	1998 10 06.99755	17 35 45.08	+07 32 15.1	12.4 T	758	21P	1998 10 17.80111	18 07 05.99	+03 00 19.6		952
21P	1998 10 07.00998	17 35 47.00	+07 31 56.7	12.4 T	758	21P	1998 10 18.03648	18 07 51.17	+02 54 03.7	11.3 T	739
21P	1998 10 08.95346	17 40 58.87	+06 45 25.0		4 834	21P	1998 10 18.03906	18 07 51.57	+02 53 58.4	11.1 T	739
21P	1998 10 09.05256	17 41 15.22	+06 42 52.1	11.9 T	758	21P	1998 10 18.05509	18 07 54.68	+02 53 32.4	12.1 T	739
						21P	1998 10 18.05649	18 07 54.95	+02 53 29.8	12.3 T	739

21P	1998 10 18.05792	18 07 55.36	+02 53 28.6	11.8 T	739	21P	1998 10 29.45938	18 48 01.90	-02 27 03.3		867
21P	1998 10 18.49909	18 09 20.01	+02 41 43.4	11.4 T	351	21P	1998 10 31.38546	18 55 32.76	-03 24 12.4	10.9 T	402
21P	1998 10 18.50101	18 09 20.37	+02 41 39.0		351	21P	1998 10 31.38824	18 55 33.42	-03 24 17.3		402
21P	1998 10 18.50404	18 09 21.04	+02 41 33.3		351	21P	1998 10 31.39102	18 55 34.09	-03 24 22.1		402
21P	1998 10 19.76497	18 13 27.99	+02 07 36.2	11.8 T	071	21P	1998 10 31.45093	18 55 48.26	-03 26 10.1	12.0 T	351
21P	1998 10 19.76616	18 13 28.18	+02 07 34.9	11.8 T	071	21P	1998 10 31.45303	18 55 48.68	-03 26 12.9		351
21P	1998 10 19.76736	18 13 28.41	+02 07 32.1	12.0 T	071	21P	1998 10 31.45478	18 55 49.14	-03 26 16.5		351
21P	1998 10 19.76856	18 13 28.70	+02 07 30.8	12.0 T	071	21P	1998 11 02.73380	19 05 00.19	-04 34 47.9	11.1 T	118
21P	1998 10 19.76977	18 13 28.85	+02 07 28.6	12.0 T	071	21P	1998 11 02.74117	19 05 01.99	-04 35 00.4		118
21P	1998 10 19.77097	18 13 29.16	+02 07 25.9	11.9 T	071	21P	1998 11 02.99532	19 06 04.28	-04 42 44.6	13.6 T	750
21P	1998 10 19.77218	18 13 29.45	+02 07 24.4	11.8 T	071	21P	1998 11 03.00321	19 06 06.22	-04 42 58.9	14.1 T	750
21P	1998 10 20.71915	18 16 37.81	+01 41 34.2	11.5 T	118	21P	1998 11 03.02667	19 06 11.94	-04 43 41.6	13.9 T	750
21P	1998 10 20.72635	18 16 39.21	+01 41 22.2		118	21P	1998 11 03.06315	19 06 20.88	-04 44 47.7	13.7 T	750
21P	1998 10 20.79705	18 16 53.35	+01 39 26.8		587	21P	1998 11 03.42532	19 07 50.44	-04 55 45.8	10.9 T	351
21P	1998 10 20.80052	18 16 54.03	+01 39 21.2		587	21P	1998 11 03.42684	19 07 50.81	-04 55 48.7		351
21P	1998 10 20.82839	18 16 59.63	+01 38 36.3		620	21P	1998 11 03.44086	19 07 54.34	-04 56 13.9		351
21P	1998 10 20.83160	18 17 00.27	+01 38 31.1		620	21P	1998 11 04.80076	19 13 34.92	-05 37 39.1	12.7 T	144
21P	1998 10 20.83476	18 17 00.92	+01 38 24.7		504	21P	1998 11 04.80206	19 13 35.36	-05 37 41.7	12.8 T	144
21P	1998 10 20.83481	18 17 00.92	+01 38 25.7		620	21P	1998 11 04.80328	19 13 35.66	-05 37 43.4	12.9 T	144
21P	1998 10 20.83581	18 17 01.08	+01 38 22.9		504	21P	1998 11 05.36977	19 15 59.61	-05 55 04.0	11.7 T	402
21P	1998 10 20.83669	18 17 01.29	+01 38 22.2		504	21P	1998 11 05.37116	19 15 59.94	-05 55 06.6		402
21P	1998 10 20.83731	18 17 01.42	+01 38 20.9		504	21P	1998 11 05.37255	19 16 00.30	-05 55 09.2		402
21P	1998 10 20.83802	18 17 01.53	+01 38 20.4		620	21P	1998 11 05.73716	19 17 33.43	-06 06 21.3	12.7 T	118
21P	1998 10 20.83819	18 17 01.57	+01 38 19.3		504	21P	1998 11 05.74144	19 17 34.56	-06 06 28.9		118
21P	1998 10 20.83991	18 17 01.92	+01 38 16.9		504	21P	1998 11 07.00131	19 23 00.30	-06 45 07.7	12.1 T	758
21P	1998 10 20.84061	18 17 02.05	+01 38 15.5		504	21P	1998 11 07.02015	19 23 05.17	-06 45 46.3	11.6 T	758
21P	1998 10 20.84132	18 17 02.18	+01 38 14.0		504	21P	1998 11 07.02219	19 23 05.38	-06 45 47.7	11.7 T	758
21P	1998 10 20.84207	18 17 02.39	+01 38 13.5		504	52P/Harrington-Abell					
21P	1998 10 21.41042	18 18 57.26	+01 22 37.7	10.0 T	360	52P	1998 08 16.71944	04 27 29.50	+31 02 11.9	15.6 T	372
21P	1998 10 21.41198	18 18 57.58	+01 22 35.1		360	52P	1998 09 23.04672	05 41 41.03	+35 14 17.6	14.2 T	605
21P	1998 10 22.70891	18 23 23.86	+00 46 37.1		561	52P	1998 09 23.05293	05 41 41.78	+35 14 19.9	14.2 T	605
21P	1998 10 22.71494	18 23 24.96	+00 46 25.5		561	52P	1998 09 23.07145	05 41 44.10	+35 14 24.8	14.1 T	605
21P	1998 10 22.75838	18 23 34.48	+00 45 17.2	12.1 T	071	52P	1998 10 01.65833	05 58 27.26	+36 02 33.4		372
21P	1998 10 22.75920	18 23 34.36	+00 45 14.8	12.5 T	071	52P	1998 10 02.71007	06 00 28.22	+36 08 13.8	15.2 T	372
21P	1998 10 23.08103	18 24 41.16	+00 36 13.9	14.4 T	750	52P	1998 10 06.42441	06 07 30.81	+36 27 54.1	13.9 T	758
21P	1998 10 23.08761	18 24 42.53	+00 36 03.2	14.0 T	750	52P	1998 10 06.42711	06 07 31.11	+36 27 54.6	13.9 T	758
21P	1998 10 23.70019	18 26 51.36	+00 18 55.0	11.6 T	071	52P	1998 10 06.42963	06 07 31.43	+36 27 55.3	14.0 T	758
21P	1998 10 23.70262	18 26 51.84	+00 18 49.8	12.6 T	071	52P	1998 10 06.43378	06 07 31.93	+36 27 56.8	13.9 T	758
21P	1998 10 23.70424	18 26 52.18	+00 18 46.4	12.5 T	071	52P	1998 10 18.66806	06 29 48.35	+37 29 06.8	15.3 T	372
21P	1998 10 23.70692	18 26 52.82	+00 18 43.3	12.5 T	071	52P	1998 10 18.68148	06 29 49.60	+37 29 08.9		900
21P	1998 10 23.70769	18 26 52.79	+00 18 39.0	10.7 T	118	52P	1998 10 18.68972	06 29 50.46	+37 29 12.7	13.0 T	900
21P	1998 10 23.70774	18 26 52.80	+00 18 40.2	12.7 T	071	52P	1998 10 25.93255	06 42 01.60	+38 03 18.5		046
21P	1998 10 23.70856	18 26 53.10	+00 18 39.6	12.4 T	071	52P	1998 10 25.93402	06 42 01.75	+38 03 19.1		046
21P	1998 10 23.70939	18 26 53.28	+00 18 38.5	12.5 T	071	52P	1998 10 25.93472	06 42 01.80	+38 03 19.2		046
21P	1998 10 23.71021	18 26 53.37	+00 18 36.4	12.6 T	071	52P	1998 10 25.93559	06 42 01.87	+38 03 19.5		046
21P	1998 10 23.72876	18 26 57.18	+00 18 02.9		118	52P	1998 10 29.00216	06 46 53.96	+38 17 23.4	14.4 N	143
21P	1998 10 24.07588	18 28 10.50	+00 08 18.2	13.5 T	750	52P	1998 10 29.02594	06 46 56.11	+38 17 30.0	14.4 N	143
21P	1998 10 24.08221	18 28 11.82	+00 08 07.4	13.7 T	750	52P	1998 10 29.05378	06 46 58.67	+38 17 38.6	14.3 N	143
21P	1998 10 25.38667	18 32 51.40	-00 28 54.4	13.9 T	402	52P	1998 10 29.57554	06 47 47.67	+38 19 59.4	13.2 T	351
21P	1998 10 25.38807	18 32 51.70	-00 28 57.0		402	52P	1998 10 29.57912	06 47 47.73	+38 19 59.7		351
21P	1998 10 25.38946	18 32 52.00	-00 28 59.1		402	52P	1998 10 29.75052	06 48 03.54	+38 20 50.3	13.0 T	360
21P	1998 10 29.45347	18 48 00.54	-02 26 53.1		867	52P	1998 10 29.75330	06 48 03.81	+38 20 51.1		360
21P	1998 10 29.45660	18 48 01.23	-02 26 58.8		867						

1998 NOV. 10

M.P.C. 32835

52P	1998 10 29.91484	06 48 18.87	+38 21 30.2	12.4 T	504	93P	1998 10 20.25700	06 01 36.03	+43 39 11.2	15.3 T	714
52P	1998 10 29.91639	06 48 19.04	+38 21 30.4	12.4 T	504	93P	1998 10 20.26102	06 01 36.54	+43 39 13.7	15.2 T	714
52P	1998 10 29.91806	06 48 19.16	+38 21 30.9	12.3 T	504	93P	1998 10 23.17802	06 06 59.49	+44 07 01.1	16.1 T	750
52P	1998 10 29.92394	06 48 19.67	+38 21 33.1	12.1 T	504	93P	1998 10 23.22121	06 07 04.08	+44 07 25.6	16.5 T	750
52P	1998 10 29.92722	06 48 19.97	+38 21 33.8	12.2 T	504	93P	1998 10 23.24233	06 07 06.37	+44 07 38.5	16.7 T	750
52P	1998 10 29.92868	06 48 20.11	+38 21 34.4	12.3 T	504	93P	1998 10 24.24169	06 08 52.54	+44 16 52.8	16.2 T	750
52P	1998 11 03.74610	06 55 29.16	+38 43 15.7	12.0 T	402	93P	1998 10 24.25929	06 08 54.24	+44 17 03.3	16.2 T	750
52P	1998 11 03.74750	06 55 29.26	+38 43 15.9		402	93P	1998 10 24.27190	06 08 55.45	+44 17 10.4	16.9 T	750
52P	1998 11 03.74889	06 55 29.39	+38 43 16.4		402	93P	1998 10 25.71215	06 11 23.72	+44 30 18.4		867
65P/Gunn						93P	1998 10 25.71632	06 11 24.16	+44 30 21.0		867
65P	1998 10 24.68733	03 36 23.63	+15 01 36.5	17.9 T	360	93P	1998 10 25.72326	06 11 24.83	+44 30 24.6		867
65P	1998 10 24.69253	03 36 23.42	+15 01 36.2		360	93P	1998 10 28.21185	06 15 29.19	+44 52 16.1	16.1 T	750
68P/Klemola						93P	1998 10 28.23482	06 15 31.19	+44 52 28.7	16.4 T	750
68P	1998 10 02.75590	03 47 08.55	+08 12 52.7	18.5 T	372	93P	1998 10 28.25939	06 15 33.49	+44 52 42.5	16.7 T	750
68P	1998 10 02.76701	03 47 08.46	+08 12 49.0	18.5 T	372	93P	1998 10 28.99580	06 16 42.42	+44 59 01.3		143
68P	1998 10 16.93034	03 41 36.92	+06 21 31.6	16.7 T	504	93P	1998 10 29.01940	06 16 44.56	+44 59 14.5		143
68P	1998 10 16.93981	03 41 36.63	+06 21 26.4	16.6 T	504	93P	1998 10 29.74236	06 17 50.60	+45 05 23.9	13.9 T	360
68P	1998 10 25.64725	03 35 50.32	+05 16 00.4	16.8 T	867	93P	1998 10 29.74635	06 17 50.96	+45 05 26.1		360
68P	1998 10 25.65523	03 35 49.97	+05 15 57.0		867	93P	1998 10 29.89027	06 18 04.39	+45 06 32.0		504
68P	1998 10 25.66565	03 35 49.49	+05 15 52.5		867	93P	1998 10 29.89212	06 18 04.56	+45 06 32.6		504
68P	1998 10 29.39586	03 32 58.91	+04 49 53.5	18.0 T	699	93P	1998 10 29.89587	06 18 04.90	+45 06 34.4		504
68P	1998 10 29.41390	03 32 58.08	+04 49 45.1		699	93P	1998 10 29.89707	06 18 05.02	+45 06 36.0	13.6 T	504
68P	1998 10 29.43130	03 32 57.07	+04 49 38.8		699	93P	1998 10 29.90051	06 18 05.37	+45 06 37.5	13.6 T	504
68P	1998 10 29.67778	03 32 45.65	+04 47 58.9	18.0 T	360	93P	1998 10 29.90479	06 18 05.75	+45 06 39.9	13.6 T	504
68P	1998 10 29.68299	03 32 45.41	+04 47 57.1	18.8 N	360	93P	1998 10 29.90706	06 18 05.91	+45 06 41.4	13.4 T	504
74P/Smirnova-Chernykh						117P/Helin-Roman-Alu 1					
74P	1998 10 18.37330	03 54 23.31	+16 43 59.6	17.4 T	699	117P	1998 10 24.58264	00 18 52.58	-10 04 27.7	16.5 T	360
74P	1998 10 18.39743	03 54 22.72	+16 43 58.6		699	117P	1998 10 24.58681	00 18 52.48	-10 04 27.8		360
74P	1998 10 18.42620	03 54 21.89	+16 43 56.2		699	124P/Mrkos					
74P	1998 10 20.47249	03 53 28.19	+16 41 52.7	17.7 T	699	124P	1998 09 16.35669	23 06 53.71	-21 21 06.9		693
74P	1998 10 20.49235	03 53 27.55	+16 41 51.4		699	124P	1998 09 16.36083	23 06 53.53	-21 21 07.1		693
74P	1998 10 20.51221	03 53 27.01	+16 41 49.2		699	124P	1998 09 16.36488	23 06 53.35	-21 21 07.6		693
74P	1998 10 25.68231	03 50 56.32	+16 36 05.7	16.7 T	867	124P	1998 09 16.36892	23 06 53.08	-21 21 07.4	21.4 T	693
74P	1998 10 25.68926	03 50 56.09	+16 36 05.1		867	130P/McNaught-Hughes					
74P	1998 10 29.71146	03 48 45.56	+16 31 10.9	17.8 T	360	130P	1998 10 24.61111	02 11 13.06	+02 48 01.0	18.6 T	360
74P	1998 10 29.72049	03 48 45.23	+16 31 10.5		360	130P	1998 10 24.61632	02 11 12.78	+02 48 00.1		360
88P/Howell						130P	1998 10 25.62815	02 10 21.44	+02 45 32.7	18.9 T	402
88P	1998 10 09.41896	17 21 14.26	-26 52 42.4	14.4 T	351	130P	1998 10 25.63046	02 10 21.31	+02 45 31.9		402
88P	1998 10 09.42120	17 21 14.88	-26 52 42.2		351	130P	1998 10 25.63278	02 10 21.15	+02 45 31.8		402
88P	1998 10 09.43685	17 21 18.20	-26 52 44.0		351	130P	1998 10 29.28922	02 07 17.70	+02 37 33.8	19.1 T	704
88P	1998 11 03.40716	18 55 44.45	-26 42 48.3	12.5 T	351	130P	1998 10 29.30918	02 07 16.67	+02 37 29.5	19.4 T	704
88P	1998 11 03.41079	18 55 45.33	-26 42 48.2		351	130P	1998 10 29.32922	02 07 15.63	+02 37 27.2	19.1 T	704
93P/Lovas 1						130P	1998 10 29.34921	02 07 14.59	+02 37 25.1	19.1 T	704
93P	1998 09 22.99907	05 00 11.24	+38 23 34.0	15.3 T	605	130P	1998 10 29.36925	02 07 13.25	+02 37 23.0	20.0 T	704
93P	1998 09 23.01390	05 00 13.36	+38 23 44.8	15.0 T	605	136P/Mueller 3					
93P	1998 10 01.63750	05 21 11.47	+40 14 37.6	16.5 T	372	136P	1998 10 15.11951	21 05 59.73	-19 12 03.3	22.2 N	691
93P	1998 10 02.70039	05 23 42.27	+40 27 34.0	16.5 T	372	136P	1998 10 15.12411	21 05 59.88	-19 12 02.8	19.1 T	691
93P	1998 10 18.27279	05 57 45.62	+43 19 37.4	14.7 T	714	136P	1998 10 15.12822	21 05 59.92	-19 12 02.7	19.1 T	691
93P	1998 10 18.28438	05 57 47.01	+43 19 44.4	14.7 T	714	136P	1998 10 21.46250	21 08 40.87	-19 10 22.2	18.7 T	360
93P	1998 10 18.65397	05 58 30.43	+43 23 27.3		900	136P	1998 10 21.46736	21 08 40.97	-19 10 22.7		360
93P	1998 10 18.66662	05 58 31.83	+43 23 34.9	13.7 T	900	136P	1998 10 21.47257	21 08 41.14	-19 10 22.8		360

Note 1: poor sky. 2: weak image. 3: poor distribution of reference stars. 4: bad seeing.

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.

010 Caussols

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C. Pollas, Observatoire de la Côte d'Azur, Avenue Copernic, F-06130 Grasse, France [pollas@ocar01.obs-azur.fr]

Observers C. Pollas, D. Albanese

Measurer E. W. Elst

0.9-m Schmidt telescope

1993 CS, 3, 1, 0; [3, 1, 0*, 1993/01/27]

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

1994 PX₃₁, 3, 1, 0; 1998 SH₄₉, 3, 1, 0; 1998 SZ₁₂₂, 6, 2, 6; 1998 SN₁₂₃, 6, 2, 6; 1998 SJ₁₅₉, 6, 2, 6; (297), 6, 2, 1; [30, 6, 0*, 1998/10/12–1998/10/20]

033 Tautenburg

F. Börngen, Thüringer Landessternwarte, Sternwarte 5, D-07778 Tautenburg, Germany [boerg@tls.tautenburg.de]

1.3-m Schmidt telescope

PPM

1992 OW₁₀ *, 3, 3, 2; 1992 SB₂₇ *, 4, 3, 5; 1992 SC₂₇ *, 4, 3, 5; 1992 SD₂₇ *, 6, 4, 21; (272), 2, 1, 0; (1527), 2, 1, 0; (2815), 3, 3, 2; (4075), 2, 1, 0; (4302), 4, 3, 5; (5312), 6, 4, 21; (5840), 2, 1, 0; (8883), 2, 1, 0; [40, 12, 4*, 1992/07/27–1992/09/27]

046 Kleť

J. Tichá, Hvězdárna Kleť, Zátkovo nábreží 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

1981 EW₂₄, 8, 2, 1; 1982 UM₂, 6, 2, 3; 1985 UJ, 6, 2, 2; 1985 UY, 6, 2, 2; 1988 GQ, 4, 1, 0; 1989 BW₁, 6, 2, 3; 1996 LA, 6, 2, 3; 1997 TB₁₂, 8, 2, 2; 1997 US₉, 4, 1, 0; 1998 KU₂, 12, 3, 7; 1998 MX₅, 4, 1, 0; 1998 PJ, 6, 2, 3; 1998 QS₅₂, 4, 1, 0; 1998 QV₉₈, 6, 2, 3; 1998 RO₄, 2, 1, 0; 1998 RB₄₃, 15, 3, 4; 1998 SX₁₄, 12, 4, 18; 1998 SB₁₅, 5, 1, 0; 1998 SC₁₅, 7, 2, 4; 1998 SD₁₅, 4, 1, 0; 1998 SN₂₆, 6, 2, 14; 1998 SO₂₆, 14, 4, 21; 1998 SP₂₆, 9, 3, 21; 1998 SQ₂₆, 9, 3, 21; 1998 ST₂₇, 7, 2, 4; 1998 SU₂₇, 4, 1, 0; 1998 SZ₃₅, 11, 4, 7; 1998 SB₃₆, 6, 2, 7; 1998 SG₃₆, 4, 1, 0; 1998 SH₃₆, 9, 2, 4; 1998 SS₄₉, 8, 2, 6; 1998 SJ₇₀, 12, 3, 7; 1998 SJ₁₁₀, 14, 3, 4; 1998 SC₁₂₇, 9, 2, 4; 1998 SZ₁₃₈, 4, 1, 0; 1998 SG₁₅₂, 10, 2, 3; 1998 SG₁₅₇, 9, 2, 1; 1998 TS₃, 4, 1, 0; 1998 TT₃,

4, 1, 0; 1998 TU₃, 5, 1, 0; 1998 TG₆ *, 11, 2, 3; 1998 TH₆ *, 13, 3, 7; 1998 TJ₆ *, 20, 5, 11; 1998 TM₁₅, 9, 2, 4; 1998 UQ, 10, 2, 1; 1998 UR, 3, 1, 0; 1998 UD₁, 4, 1, 0; 1998 UJ₁ *, 18, 4, 22; 1998 UL₁, 4, 1, 0; 1998 UM₁, 8, 2, 2; 1998 UN₁, 8, 2, 1; 1998 UO₁, 16, 4, 19; 1998 UP₁, 5, 1, 0; 1998 UQ₁, 12, 3, 3; 1998 UM₆ *, 18, 4, 18; 1998 UN₆ *, 20, 5, 18; 1998 UO₆ *, 13, 3, 4; 1998 UA₁₅ *, 16, 3, 14; 1998 UT₁₈, 5, 1, 0; 1998 UP₂₃ *, 5, 2, 1; 1998 VA, 16, 2, 1; 1998 VG *, 11, 2, 1; 9534 P-L, 9, 3, 4; 4140 T-3, 3, 1, 0; (453), 3, 1, 0; (4306), 3, 1, 0; (5347), 3, 1, 0; [555, 67, 10*, 1998/09/25–1998/11/08]

056 Skalnaté Pleso

L. Neslusan, Astronomical Institute, Slovak Academy of Sciences, SK-05960

Tatranská Lomnicá, Slovakia [ne@ta3.sk]

Observers G. Červák, P. Rychtarčík, J. Svoreň

0.3-m $f/5$ astrograph

SAOC

(22), 12, 6, 26; (55), 18, 9, 28; (69), 4, 2, 7; (110), 10, 5, 9; (136), 4, 2, 4; (216), 2, 1, 0; (224), 9, 5, 8; (259), 14, 7, 10; (368), 2, 1, 0; (387), 10, 5, 4; (422), 2, 1, 0; (441), 2, 1, 0; (476), 4, 2, 4; (491), 10, 5, 7; (893), 2, 1, 0; [105, 15, 0*, 1996/01/12–1996/12/31]

071 Bulgarian National Observatory

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Observers V. Radeva, G. Borisov

0.50-m $f/1.4$ Schmidt

GSC

1998 MX₅, 7, 1, 0; 1998 QH₂, 7, 1, 0; 1998 QR₁₅, 18, 3, 28; 1998 QK₅₆, 6, 1, 0; 1998 QT₆₀, 7, 1, 0; 1998 RR₂, 11, 2, 4; 1998 SG₂, 7, 1, 0; 1998 SJ₂, 9, 1, 0; [72, 8, 0*, 1998/09/25–1998/10/23]

097 Wise Observatory, Mitzpeh Ramon

E. O. Ofek, Wise Observatory, Tel-Aviv University, IL-69978 Tel-Aviv, Israel

[eran@wise1.tau.ac.il]

1.0-m $f/7$ reflector + CCD

USNO-A1.0

1997 NU, 8, 4, 6; [8, 1, 0*, 1998/09/08–1998/09/14]

098 Asiago Observatory, Cima Ekar

U. Munari, Osservatorio Astronomico di Padova, Sede di Asiago, I-36012 Asiago (VI), Italy [munari@astras.pd.astro.it]

Observers U. Munari, F. Castellani, M. Tombelli, P. Antolini

Measurers F. Castellani, M. Tombelli, G. Forti

0.67-m $f/3.2$ Schmidt

1985 PE₁, 2, 1, 0; 1985 SX₂, 2, 1, 0; 1987 WT₁, 2, 1, 0; 1991 RG, 3, 2, 1; 1991 RE₁₁, 2, 1, 0; 1991 UF, 3, 2, 1; 1994 PW₂₇, 2, 1, 0; 1994 RV, 2, 1, 0; 1994 UM₁, 3, 2, 1; 1995 DZ₁₁, 2, 1, 0; 1995 YH₁, 3, 2, 1; 1998 QB₉₃, 2, 1, 0; 1998 QK₉₃, 2, 1, 0; 1998 QP₉₈, 2, 1, 0; 1998 SE₁₃₂, 3, 2, 1; 1998 SG₁₃₂, 3, 2, 1; 1998 TA₃₀ *, 4, 2, 7; 1998 UW₂₂ *, 2, 1, 0; 1998 UC₂₃ *, 2, 1, 0; 1998 UD₂₃ *, 2, 1, 0; 1998 UE₂₃ *, 2, 1, 0; 1998 UO₂₃ *, 2, 1, 0; 2079 P-L, 2, 1, 0; (517), 2, 1, 0; (588), 2, 1, 0; (802), 2, 1, 0; (1586), 2, 1, 0; (1596), 2, 1, 0; (2876), 2, 1, 0; (3093), 2, 1, 0; (3116), 2, 1, 0; (3316), 2, 1, 0; (3542), 2, 1, 0; (3564), 2, 1, 0; (3588), 2, 1, 0; (3750), 2, 1, 0; (3910), 2, 1, 0; (4160), 2, 1, 0; (4282), 2, 1, 0; (4339), 2, 1, 0; (4358), 2, 1, 0; (5108), 2, 1, 0; (5650), 2, 1, 0; (6096), 2, 1, 0; (6309), 2, 1, 0; (6817), 2, 1, 0; (6888), 2, 1, 0; (7641), 2, 1, 0; (8074), 2, 1, 0; [106, 49, 6*, 1998/09/23–1998/10/26]

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]

Observer L. Tesi

Measurers G. Forti, L. Tesi

0.40-m $f/5$ reflector + CCD

GSC

1984 SD₆, 4, 1, 0; 1989 TD₁₆, 4, 1, 0; 1996 AJ, 4, 1, 0; 1997 ES₂, 11, 3, 4; 1997 NJ₁₀, 3, 1, 0; 1998 PG, 4, 1, 0; 1998 PA₁, 4, 1, 0; 1998 QR₁₅, 4, 1, 0; 1998 RL₆₆, 3, 1, 0; 1998 SJ₃₅, 8, 3, 10; 1998 SS₇₅, 7, 2, 1; 1998 SY₁₂₂, 4, 1, 0; 1998 SD₁₃₅, 14, 3, 4; 1998 TA₂ *, 18, 5, 13; 1998 TT₃, 3, 1, 0; 1998 TU₃, 4, 1, 0; 1998 UN₁, 3, 1, 0; 1998 UO₁, 4, 1, 0; 1998 UQ₁, 4, 1, 0; (6254), 3, 1, 0; [113, 20, 1*, 1998/10/12–1998/10/27]

106 Crni vrh

H. Mikuž, Kersnikova 11, SI-61000 Ljubljana, Slovenia [herman.mikuz@uni-lj.si]
Observers H. Mikuž, B. Dintinjana, J. Skvarc, S. Maticic
0.2-m $f/2.1$ Baker Schmidt + CCD, 0.36-m $f/6.7$ Schmidt-Cassegrain + CCD + V filter

GSC 1.1, USNO-SA1.0

1998 QU₁₅, 3, 1, 0; 1998 SZ₁₃₈, 4, 1, 0; 1998 TT₃, 8, 1, 0; 1998 UN₁, 4, 1, 0; 1998 UO₁, 4, 1, 0; 1998 UQ₁, 3, 1, 0; (14), 2, 1, 0; (15), 2, 1, 0; (286), 2, 1, 0; (295), 2, 1, 0; (345), 2, 1, 0; (600), 2, 1, 0; (683), 2, 1, 0; (1036), 2, 1, 0; (1147), 2, 1, 0; (1284), 2, 1, 0; [46, 16, 0*, 1998/10/13–1998/10/24]

107 Cavezzo

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

Observers M. Nicolini, M. Facchini

Measurer M. Nicolini

0.40-m $f/5.5$ reflector + CCD

GSC

1995 DZ₁, 12, 4, 15; [12, 1, 0*, 1998/10/13–1998/10/29]

108 Montelupo

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

[iau@arcetri.astro.it]

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

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

GSC

1995 DZ₁₁, 4, 1, 0; 1996 CX₈, 3, 1, 0; 1998 PG, 4, 1, 0; 1998 SL₂, 7, 3, 5; (7022), 2, 1, 0; (7152), 2, 1, 0; [22, 6, 0*, 1998/10/22–1998/10/27]

112 Osservatorio Pleiade

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Observers P. Antolini, F. Castellani

0.60-m $f/3.0$ reflector + CCD

GSC

1998 QK₉₃, 2, 1, 0; 1998 QP₉₈, 2, 1, 0; 1998 SQ₁₀₉, 6, 2, 3; 1998 SA₁₁₀, 7, 2, 1; 1998 SE₁₃₂, 4, 2, 12; 1998 TU₁ *, 15, 3, 5; 1998 UW₂₂, 4, 2, 2; 1998 UC₂₃, 2, 1, 0; 1998 UD₂₃, 2, 1, 0; 1998 UE₂₃, 2, 1, 0; 1998 UO₂₃, 2, 1, 0; [48, 11, 1*, 1998/09/28–1998/10/31]

113 Volkssternwarte Drebach, Schönbrunn

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Observers G. Lehmann, J. Kandler

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

USNO-A1.0

1989 AJ₆, 2, 1, 0; 1989 AK₆, 2, 1, 0; 1989 CE₅, 3, 1, 0; 1989 GH₈, 2, 1, 0; 1990 TB₄, 2, 1, 0; 1991 RS₂, 2, 1, 0; 1991 RT₃, 2, 1, 0; 1993 HA₆, 2, 1, 0; 1995 AO₄, 2, 1, 0; 1998 QO₃₉, 2, 1, 0; 1998 SG₁₅, 3, 1, 0; 1998 SY₃₅, 3, 1, 0; (3593), 2, 1, 0; (4738), 2, 1, 0; [31, 14, 0*, 1998/10/20]

116 Giesing

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Observers J.-L. Dighaye, P. Sala

Measurers P. Sala, H. Beuchat

0.20-m reflector + CCD

(3445), 9, 2, 2; [9, 1, 0*, 1998/11/05–1998/11/07]

118 Modra

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

0.6-m $f/5.5$ reflector + CCD

GSC, USNO-SA1.0

1986 QL₂, 3, 1, 0; 1986 TV₆, 4, 2, 1; 1989 UR, 4, 2, 13; 1990 FK₁, 4, 2, 1; 1991 PO₁₂, 6, 3, 2; 1991 RS₂, 4, 2, 1; 1991 RK₁₅, 4, 2, 1; 1995 RC, 3, 1, 0; 1996 ER₂, 8, 4, 16; 1997 MB₉, 4, 2, 1; 1997 US₉, 2, 1, 0; 1998 KU₂, 6, 3, 18; 1998 KH₁₇, 4, 2, 2; 1998 MQ, 10, 5, 26; 1998 MK₃₀, 4, 2, 14; 1998 PG, 9, 4, 17; 1998 QR₁₅, 11, 5, 19; 1998 QS₅₂, 11, 5, 19; 1998 QK₅₆, 3, 1, 0; 1998 RA, 6, 2, 4; 1998 SG₂, 6, 3, 23; 1998 SJ₂, 11, 5, 23; 1998 SB₁₅, 2, 1, 0; 1998 ST₂₇, 2, 1, 0; 1998 SU₂₇, 3, 1, 0; 1998 SF₃₅, 4, 2, 15; 1998 SH₃₆, 5, 2, 3; 1998 SS₄₉, 2, 1, 0; 1998 SJ₇₀, 5, 2, 8; 1998 SD₁₃₁, 11, 3, 2; 1998 SZ₁₃₈, 3, 1, 0; 1998 TT₃, 16, 6, 23; 1998 TG₁₆, 2, 1, 0; 1998 UL₁, 6, 3, 16; 1998 UN₁, 14, 5, 18; 1998 UO₁, 11, 5, 18; 1998 UP₁, 3, 1, 0; 1998 UQ₁, 10, 4, 19; 1998 VF *, 6, 2, 1; (107), 5, 2, 1; (250), 6, 3, 14; (1865), 2, 1, 0; (3200), 4, 2, 18; (4055), 2, 1, 0; (4503), 2, 1, 0; (5164), 2, 1, 0; (5732), 2, 1, 0; (5738), 2, 1, 0; (6047), 4, 2, 11; (6053), 9, 4, 23; (6338), 2, 1, 0; (6390), 2, 1, 0; (7017), 2, 1, 0; (7050), 2, 1, 0; (7099), 2, 1, 0; (7172), 2, 1, 0; (7344), 2, 1, 0; (7358), 9, 4, 20; (7480), 2, 1, 0; [297, 59, 1*, 1998/10/10–1998/11/08]

120 Višnjan

K. Korlević, Istarska 5, HR-51463 Višnjan, Croatia [kkorlevic@x400.srce.hr]

Observers K. Korlević, A. Ritosa, P. Fatorič, M. Jurič, P. Radovan

Measurers K. Korlević, M. Jurič

0.41-m $f/4.3$ reflector + CCD

USNO-SA1.0

1973 SP₁, 4, 2, 8; 1978 PA₃, 2, 1, 0; 1981 EQ₄₇, 8, 3, 9; 1981 RQ₂, 3, 1, 0; 1983 TU₁, 5, 2, 3; 1986 QL₂, 2, 1, 0; 1986 QB₃, 5, 2, 10; 1987 DH₆, 3, 1, 0; 1987 DN₆, 9, 3, 10; 1988 DE, 4, 1, 0; 1988 VY, 7, 5, 14; 1988 XB₅, 2, 1, 0; 1989 CS₂, 6, 3, 5; 1990 QM, 6, 3, 17; 1990 SG₁₁, 12, 6, 24; 1990 UU₁, 2, 1, 0; 1990 VN₄, 2, 1, 0; 1991 GP₃, 4, 2, 29; 1991 GA₆, 2, 1, 0; 1991 QJ, 2, 1, 0; 1991 RK₁₅, 5, 2, 2; 1991 UR, 3, 1, 0; 1992 DZ₂, 3, 1, 0; 1993 FQ₈, 2, 1, 0; 1993 FH₂₅, 5, 2, 3; 1993 OH₁₂, 6, 2, 1; 1993 TH₁₉, 2, 1, 0; 1994 VL, 4, 2, 22; 1996 AK₁₀, 12, 4, 15; 1996 BK, 10, 3, 9; 1996 HT₁₆, 2, 1, 0; 1996 OO, 5, 2, 7; 1997 CC₁₇, 4, 1, 0; 1997 DC, 2, 1, 0; 1997 JR, 5, 2, 4; 1997 JS₁₄, 5, 2, 12; 1997 JJ₁₆, 3, 1, 0; 1997 NU₁, 3, 1, 0; 1998 QZ₂₅, 2, 1, 0; 1998 QA₂₆, 2, 1, 0; 1998 QC₂₆, 4, 1, 0; 1998 QD₂₆, 8, 2, 11; 1998 QO₄₅, 7, 3, 4; 1998 QR₄₈, 3, 1, 0; 1998 QT₄₈, 3, 1, 0; 1998 QY₅₀, 3, 1, 0; 1998 QK₅₁, 5, 1, 0; 1998 QW₅₃, 11, 4, 28; 1998 QR₅₄, 3, 1, 0; 1998 QV₅₅, 4, 1, 0; 1998 QY₅₅, 8, 3, 11; 1998 QJ₉₂, 4, 2, 1; 1998 QP₉₂, 7, 3, 13; 1998 QX₉₂, 5, 2, 1; 1998 QB₉₃, 8, 4, 7; 1998 QQ₉₃, 4, 2, 1; 1998 QS₉₈, 5, 2, 1; 1998 QN₁₀₀, 6, 1, 0; 1998 RL, 2, 1, 0; 1998 RG₁, 3, 1, 0; 1998 RJ₁, 13, 2, 11; 1998 RM₄, 3, 1, 0; 1998 RA₅, 4, 1, 0; 1998 RB₅, 5, 2, 12; 1998 RC₅, 3, 1, 0; 1998 RZ₃₅, 3, 1, 0; 1998 RO₃₈, 5, 2, 2; 1998 RV₅₀, 2, 1, 0; 1998 RE₅₅, 2, 1, 0; 1998 RD₅₇, 4, 1, 0; 1998 RZ₅₇, 4, 2, 1; 1998 RV₆₁, 2, 1, 0; 1998 RM₆₅, 2, 1, 0; 1998 RO₆₉, 3, 1, 0; 1998 RH₇₁, 4, 1, 0; 1998 RR₇₁, 3, 1, 0; 1998 RQ₇₃, 7, 3, 4; 1998 RR₇₃, 2, 1, 0; 1998 RA₇₅, 7, 3, 4; 1998 RC₇₅, 3, 1, 0; 1998 SK₉, 2, 1, 0; 1998 SM₉, 1, 1, 0; 1998 SN₉, 9, 3, 4; 1998 SV₉, 5, 2, 21; 1998 SW₉, 4, 2, 5; 1998 SX₉, 6, 3, 9; 1998 SY₉, 2, 1, 0; 1998 SL₁₀, 2, 1, 0; 1998 SJ₁₂, 4, 1, 0; 1998 SK₁₂, 2, 1, 0; 1998 SM₁₂, 2, 1, 0; 1998 SN₁₂, 4, 2, 5; 1998 SO₁₂, 1, 1, 0; 1998 SU₂₁, 3, 1, 0; 1998 SX₂₁, 2, 1, 0; 1998 SY₂₁, 6, 3, 8; 1998 SA₂₂, 5, 2, 13; 1998 SB₂₂, 4, 2, 13; 1998 SC₂₂, 6, 3, 13; 1998 SE₂₂, 8, 4, 8; 1998 SF₂₂, 3, 1, 0; 1998 SJ₂₂, 5, 2, 14; 1998 SK₂₂, 2, 1, 0; 1998 SL₂₂, 2, 1, 0; 1998 SO₂₂, 5, 2, 4; 1998 SP₂₂, 4, 2, 4; 1998 SQ₂₂, 7, 3, 4; 1998 SR₂₂, 5, 2, 4; 1998 SS₂₂, 7, 3, 4; 1998 ST₂₂, 10, 4, 29; 1998 SD₂₄, 6, 2, 1; 1998 SB₂₅, 2, 1, 0; 1998 SF₂₆, 2, 1, 0; 1998 SF₂₇, 6, 1, 0; 1998 SX₃₃, 2, 1, 0; 1998 SM₃₄, 2, 1, 0; 1998 SA₄₃, 1, 1, 0; 1998 SE₄₃, 4, 2, 5; 1998 SF₄₃, 7, 3, 12; 1998 SD₄₄, 2, 1, 0; 1998 SM₄₆, 9, 4, 29; 1998 SU₄₆, 10, 3, 5; 1998 SC₄₉, 3, 1, 0; 1998 SF₄₉, 15, 7, 20; 1998 SG₄₉, 13, 6, 16; 1998 SF₅₆, 4, 2, 14; 1998 SQ₅₆, 2, 1, 0; 1998 SH₅₈, 6, 2, 12; 1998 SA₆₁, 3, 1, 0; 1998 SX₆₂, 2, 1, 0; 1998 ST₆₃, 8, 2, 3; 1998 SN₁₁₀, 2, 1, 0; 1998 SS₁₁₀, 2, 1, 0; 1998 SN₁₁₁, 2, 1, 0; 1998 SO₁₁₁, 6, 2, 13; 1998 SK₁₁₅, 4, 2, 7; 1998 SM₁₁₅, 8, 3, 10; 1998 SD₁₁₆, 2, 1, 0; 1998 SJ₁₁₆, 3, 1, 0; 1998 SU₁₁₉, 2, 1, 0; 1998 SQ₁₂₄, 4, 2, 1; 1998 SR₁₄₆, 11, 5, 14; 1998 SG₁₄₇, 2, 1, 0; 1998 SV₁₄₇, 2, 1, 0; 1998 TF, 21, 9, 24; 1998 TG, 2, 1, 0; 1998 TT₁ *, 10, 4, 5; 1998 TV₁ *, 15, 4, 13; 1998 TW₁ *, 7, 4, 14; 1998 TC₅ *, 11, 3, 9; 1998 TD₅ *, 10, 4, 13; 1998 TE₅ *, 13, 5, 8; 1998 TF₅ *, 7, 3, 7; 1998 TG₅ *, 13, 4, 7; 1998 TH₅ *, 9, 4, 8; 1998 TJ₅ *, 17, 7, 24; 1998 TK₅ *, 14, 6, 17; 1998 TL₅ *, 12, 6, 15; 1998 TM₅ *, 6, 3, 7; 1998 TN₅ *, 13, 6, 15; 1998 TO₅ *, 18, 9, 24; 1998 TP₅ *, 12, 6, 24; 1998 TQ₅ *, 15, 7, 15; 1998 TR₅ *, 7, 3, 7; 1998 TS₅ *, 7, 3, 7; 1998 TT₅ *, 9, 3, 7; 1998 TU₅ *, 8, 4, 7; 1998 TV₅ *, 8, 4, 7; 1998 TW₅ *,

12, 6, 24; 1998 TX₅ *, 22, 8, 24; 1998 TY₅ *, 8, 3, 5; 1998 TZ₅ *, 10, 5, 22; 1998 TA₆ *, 9, 5, 13; 1998 TB₆ *, 6, 3, 5; 1998 TC₆ *, 8, 4, 12; 1998 TD₆ *, 13, 7, 13; 1998 TE₆ *, 6, 3, 5; 1998 TF₆ *, 12, 5, 13; 1998 TT₆ *, 12, 6, 13; 1998 TU₆ *, 6, 3, 17; 1998 TV₆ *, 17, 8, 15; 1998 TO₁₅ *, 7, 3, 10; 1998 TR₁₅ *, 3, 1, 0; 1998 TG₁₆ *, 8, 3, 14; 1998 TH₁₆ *, 5, 3, 7; 1998 TJ₁₆ *, 11, 6, 15; 1998 TK₁₆ *, 8, 4, 13; 1998 TQ₁₇ *, 6, 3, 14; 1998 TR₁₇ *, 7, 3, 7; 1998 TW₁₇ *, 4, 2, 11; 1998 TX₁₇ *, 5, 3, 11; 1998 TY₁₇ *, 6, 3, 13; 1998 TV₂₉ *, 8, 4, 13; 1998 UW₁ *, 8, 3, 13; 1998 UX₁ *, 8, 3, 13; 1998 UC₄ *, 12, 6, 17; 1998 UD₄ *, 7, 3, 8; 1998 UE₄ *, 7, 3, 9; 1998 UF₄ *, 12, 5, 9; 1998 UZ₆ *, 11, 4, 9; 1998 UA₇ *, 10, 4, 9; 1998 UB₇ *, 7, 3, 6; 1998 UC₇ *, 11, 4, 8; 1998 UD₇ *, 7, 3, 7; 1998 UE₇ *, 6, 3, 2; 1998 UF₇ *, 8, 3, 7; 1998 UH₇ *, 6, 3, 7; 1998 UJ₇ *, 5, 3, 4; 1998 UK₇ *, 7, 3, 6; 1998 UL₇ *, 6, 3, 5; 1998 UM₇ *, 5, 2, 2; 1998 UN₇ *, 12, 6, 7; 1998 UO₇ *, 9, 4, 7; 1998 UP₇ *, 7, 3, 4; 1998 UQ₇ *, 9, 4, 7; 1998 UR₇ *, 11, 4, 6; 1998 US₇ *, 9, 3, 6; 1998 UT₇ *, 11, 5, 14; 1998 UU₇ *, 4, 2, 1; 1998 UV₇ *, 6, 3, 5; 1998 UW₇ *, 8, 4, 6; 1998 UX₇ *, 8, 4, 7; 1998 UY₇ *, 7, 3, 5; 1998 UZ₇ *, 13, 5, 7; 1998 UA₈ *, 5, 2, 1; 1998 UB₈ *, 7, 3, 7; 1998 UC₈ *, 5, 2, 1; 1998 UD₈ *, 7, 3, 6; 1998 UE₈ *, 6, 3, 6; 1998 UF₈ *, 11, 4, 7; 1998 UG₈ *, 7, 3, 6; 1998 UE₁₅ *, 14, 4, 13; 1998 UL₁₅ *, 9, 4, 6; 1998 UM₁₅ *, 7, 3, 7; 1998 UN₁₅ *, 9, 4, 8; 1998 UO₁₅ *, 7, 3, 6; 1998 UP₁₅ *, 6, 3, 7; 1998 UQ₁₅ *, 7, 3, 7; 1998 UR₁₅ *, 9, 4, 7; 1998 US₁₅ *, 7, 3, 5; 1998 UT₁₅ *, 7, 3, 6; 1998 UU₁₅ *, 7, 4, 4; 1998 UV₁₅ *, 11, 5, 5; 1998 UW₁₅ *, 6, 3, 5; 1998 UX₁₅ *, 6, 3, 5; 1998 UK₁₆ *, 7, 2, 5; 1998 UL₁₆ *, 8, 3, 8; 1998 UM₁₆ *, 9, 4, 8; 1998 UN₁₆ *, 7, 3, 7; 1998 UO₁₆ *, 6, 3, 4; 1998 UP₁₆ *, 8, 3, 2; 1998 UQ₁₆ *, 6, 3, 2; 1998 UR₁₆ *, 7, 4, 4; 1998 UU₁₈ *, 4, 2, 6; 1998 UV₁₈ *, 4, 2, 6; 1998 UW₁₈ *, 4, 2, 2; 1998 UX₁₈ *, 4, 2, 2; 1998 UY₁₈ *, 7, 2, 1; 1998 UZ₁₈ *, 7, 2, 1; 1998 UA₁₉ *, 6, 2, 1; 1998 UB₁₉ *, 5, 2, 1; 1998 UC₁₉ *, 4, 2, 1; 1998 UD₁₉ *, 6, 2, 1; 1998 UE₁₉ *, 6, 2, 1; 1998 UF₁₉ *, 6, 3, 10; 1998 UV₁₉ *, 5, 2, 6; 1998 UW₁₉ *, 5, 3, 7; 1998 UX₁₉ *, 4, 2, 5; 1998 UY₁₉ *, 4, 2, 2; 1998 UZ₁₉ *, 4, 2, 2; 1998 UA₂₀ *, 4, 2, 1; 1998 UB₂₀ *, 4, 2, 1; 1998 UC₂₀ *, 6, 3, 9; 1998 UD₂₀ *, 6, 3, 2; 1998 UE₂₀ *, 4, 2, 1; 1998 UF₂₀ *, 6, 2, 1; 1998 UG₂₀ *, 5, 2, 1; 1998 UN₂₀ *, 5, 2, 8; 1998 UO₂₀ *, 4, 2, 2; 1998 UP₂₀ *, 4, 2, 2; 1998 UQ₂₀ *, 4, 2, 2; 1998 UR₂₀ *, 4, 2, 1; 1998 US₂₀ *, 4, 2, 1; 1998 UT₂₀ *, 4, 2, 1; 1998 UU₂₀ *, 4, 2, 1; 1998 UV₂₀ *, 4, 2, 1; 1998 UW₂₀ *, 4, 2, 1; 1998 UX₂₀ *, 4, 2, 1; 1998 UY₂₀ *, 4, 2, 1; 1998 UZ₂₀ *, 4, 2, 1; 1998 UA₂₁ *, 4, 2, 1; 1998 UB₂₁ *, 5, 2, 1; 1998 UC₂₁ *, 5, 2, 1; 1998 UD₂₁ *, 5, 2, 1; 1998 UE₂₁ *, 5, 2, 1; 1998 UF₂₁ *, 5, 2, 1; 1998 UX₂₂ *, 5, 2, 1; 1998 UY₂₂ *, 5, 2, 1; 1998 UZ₂₂ *, 5, 2, 1; 1998 UA₂₃ *, 5, 2, 1; 1998 UB₂₃ *, 5, 2, 1; 4602 P-L, 8, 4, 9; 4882 P-L, 9, 4, 13; 6547 P-L, 7, 3, 15; 3036 T-1, 7, 3, 7; 1196 T-2, 3, 1, 0; 4136 T-2, 2, 1, 0; 3226 T-3, 2, 1, 0; 4327 T-3, 4, 2, 2; (645), 2, 1, 0; (1030), 6, 3, 5; (1143), 3, 1, 0; (1188), 3, 1, 0; (1226), 3, 1, 0; (1292), 3, 1, 0; (1393), 2, 1, 0; (1413), 2, 1, 0; (1586), 5, 2, 2; (1647), 3, 1, 0; (1650), 2, 1, 0; (1680), 3, 1, 0; (1738), 3, 1, 0; (1824), 9, 3, 4; (1869), 5, 2, 1; (1956), 16, 7, 15; (1969), 9, 5, 15; (2110), 3, 1, 0; (2158), 5, 2, 3; (2371), 2, 1, 0; (2405), 4, 1, 0; (2524), 7, 3, 3; (2534), 3, 1, 0; (2626), 3, 1, 0; (2862), 4, 2, 4; (2863), 5, 2, 9; (3016), 3, 2, 14; (3116), 2, 1, 0; (3254), 2, 1, 0; (3316), 3, 1, 0; (3595), 2, 1, 0; (3832), 3, 1, 0; (3869), 3, 1, 0; (3909), 2, 1, 0; (4027), 2, 1, 0; (4160), 7, 3, 5; (4173), 5, 2, 9; (4468), 8, 4, 6; (4537), 5, 2, 1; (4719), 2, 1, 0; (4849), 6, 2, 2; (4866), 3, 1, 0; (5030), 2, 1, 0; (5284), 6, 2, 5; (5375), 10, 5, 17; (5400), 7, 3, 7; (5631), 3, 1, 0; (5791), 5, 2, 1; (5854), 6, 3, 8; (5919), 2, 1, 0; (6004), 2, 1, 0; (6049), 8, 3, 6; (6097), 4, 2, 5; (6197), 2, 1, 0; (6208), 3, 1, 0; (6365), 5, 3, 13; (6852), 5, 2, 9; (6878), 7, 3, 10; (6995), 3, 1, 0; (7067), 3, 1, 0; (7205), 11, 3, 3; (7768), 4, 2, 1; (7807), 4, 2, 5; (7817), 6, 3, 7; (7935), 1, 1, 0; [2155, 374, 153*, 1998/09/29–1998/11/06]

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0.70-m $f/4$ reflector + CCD

GSC

(20), 10, 2, 4; (119), 19, 5, 12; (1103), 7, 2, 4; (1251), 12, 3, 39; [48, 4, 0*, 1998/07/31–1998/10/26]

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; 1987 SH₇, 2, 1, 0; 1989 TH₁, 2, 1, 0; 1990 VS₄, 2, 1, 0; 1991 TH₁, 2, 1, 0; 1998 RG₁₆, 2, 1, 0; (2926), 2, 1, 0; (3289), 2, 1, 0; (9143), 2, 1, 0; (9261), 2, 1, 0; (9262), 2, 1, 0; [22, 11, 0*, 1998/10/15]

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

1998 KU₂, 3, 1, 0; 1998 QR₁₅, 2, 1, 0; 1998 SA, 3, 1, 0; 1998 SH₁₀, 2, 1, 0; 1998 TP₂, 3, 1, 0; 1998 TO₁₅, 3, 1, 0; [16, 6, 0*, 1998/10/28–1998/11/06]

143 Gnosca

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

0.20-m $f/7.1$ reflector + CCD

GSC, USNO-SA1.0

1987 UA₁, 9, 3, 4; 1989 SW₈, 6, 2, 1; 1989 UR, 3, 1, 0; 1998 KU₂, 9, 2, 10; 1998 MK₃₀, 6, 2, 13; 1998 PG, 6, 2, 10; 1998 QR₁₅, 3, 1, 0; 1998 QS₅₂, 2, 1, 0; 1998 SS₄₉, 3, 1, 0; 1998 TT₃, 3, 1, 0; 1998 UQ₁, 3, 1, 0; (435), 3, 1, 0; (783), 3, 1, 0; (956), 3, 1, 0; (1373), 3, 1, 0; (1508), 6, 1, 0; (5164), 3, 1, 0; (5738), 2, 1, 0; (9262), 3, 1, 0; [79, 19, 0*, 1998/10/15–1998/10/29]

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, 2; 1994 UJ₁, 3, 1, 0; 1998 KU₂, 8, 3, 13; 1998 MK₃₀, 2, 1, 0; 1998 PG, 14, 5, 32; 1998 QR₁₅, 5, 2, 7; 1998 UQ₁, 4, 2, 14; (1036), 7, 3, 24; (1373), 6, 3, 16; (1508), 7, 3, 27; (3352), 2, 1, 0; [62, 11, 0*, 1998/10/06–1998/11/07]

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

1997 ER₁₁, 3, 1, 0; 1998 MK₃₀, 3, 1, 0; [6, 2, 0*, 1998/09/23]

158 Promiod

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

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

USNO-SA1.0

1991 EG₁₁, 3, 1, 0; 1998 TP₁₇ *, 17, 5, 14; (2309), 2, 2, 1; (2567), 1, 1, 0; (5700), 2, 2, 1; (7071), 2, 2, 1; [27, 6, 1*, 1998/10/14–1998/10/28]

159 Monte Agliale

M. M. M. Santangelo, Monte Agliale Astronomical Observatory, Luzza, Italy

[ilra@comune.lucca.it]

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

USNO-A1.0

1998 SG₁₃₉, 12, 4, 6; [12, 1, 0*, 1998/10/20–1998/10/26]

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

1991 RO₂₄, 6, 2, 9; 1995 WO₇, 3, 1, 0; 1997 BR₃, 3, 1, 0; 1998 QH₅₅, 3, 1, 0; 1998 RH₆₇, 12, 4, 13; 1998 RM₆₇, 3, 1, 0; 1998 SS₆₁, 3, 1, 0; 1998 SZ₉₁, 8, 3, 10; [41, 8, 0*, 1998/09/02–1998/10/15]

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, K. Rowan, J. Zito

0.41-m $f/4.7$ Schmidt-Cassegrain + CCD GSC, USNO-SA1.0

1990 VP₆, 4, 2, 1; 1991 FL₂, 6, 2, 2; 1991 RL₈, 5, 2, 1; (1990), 6, 3, 11; (4582), 7, 3, 24; (5949), 6, 3, 11; [34, 6, 0*, 1998/04/29–1998/10/28]

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. Zhou, H. T. Zhang, B. Zhao, S. J. Xue, X. S. Liu,
Z. Y. Zheng, Y. J. Chen, X. Y. Li, X. M. Teng

Measurers X. Y. Li, X. M. Teng, Y. J. Chen, J. Zhu

0.60-m Schmidt + CCD

1975 SU₁, 3, 1, 0; 1978 PG₄, 9, 3, 25; 1981 DS₆, 6, 2, 1; 1981 DV₂, 6, 2, 1; 1981 EN₂₁, 6, 2, 4;
1981 EH₂₃, 9, 3, 3; 1987 WD₆, 6, 2, 1; 1988 CN₄, 3, 1, 0; 1988 RR₅, 3, 1, 0; 1990 QY₂, 3, 1,
0; 1990 SK₂₈, 6, 2, 1; 1990 YX₄, 4, 1, 0; 1991 BK₃, 3, 1, 0; 1991 OO₉, 9, 3, 30; 1991 TK₃, 3, 1, 0;
1991 UR₆, 6, 2, 1; 1993 BJ₂, 3, 1, 0; 1993 BQ₄, 6, 2, 13; 1993 FC₄₆, 6, 2, 3; 1993 FE₇₆, 9, 3,
5; 1993 ST₁, 3, 1, 0; 1994 UQ₁, 6, 2, 1; 1995 BY₉, 9, 3, 4; 1995 TZ₄, 1, 0; 1995 UR₃, 3, 1, 0;
1995 WW₁₇, 3, 1, 0; 1996 AS₉, 3, 3; 1996 BX₄, 1, 0; 1996 DG₂, 3, 1, 0; 1997 FM₁, 3, 1, 0;
1997 GQ₂₃, 3, 1, 0; 1997 HW₇, 3, 1, 0; 1997 MG₁, 4, 1, 0; 1998 MY₇, 6, 2, 8; 1998 OH₂, 3, 1,
0; 1998 OX₆, 3, 1, 0; 1998 OY₆, 3, 1, 0; 1998 OZ₆, 6, 2, 30; 1998 OA₇, 3, 1, 0; 1998 OC₇, 6, 2,
13; 1998 OE₇, 6, 2, 6; 1998 OF₇, 3, 1, 0; 1998 OG₇, 3, 1, 0; 1998 OH₇, 3, 1, 0; 1998 OJ₇, 3, 1,
0; 1998 OU₁₂, 6, 2, 1; 1998 ON₁₃, 3, 1, 0; 1998 PL₁, 3, 1, 0; 1998 PP₁, 3, 1, 0; 1998 QD₃, 3, 1,
0; 1998 QZ₁, 3, 1, 0; 1998 QB₃, 3, 1, 0; 1998 QV₄, 9, 2, 5; 1998 QZ₄, 3, 1, 0; 1998 QA₅, 3, 1, 0;
1998 QM₁₇, 3, 1, 0; 1998 QV₁₇, 3, 1, 0; 1998 QD₁₈, 4, 1, 0; 1998 QS₁₈, 3, 1, 0; 1998 QW₁₈, 3, 1, 0;
1998 QO₁₉, 3, 1, 0; 1998 QB₂₀, 3, 1, 0; 1998 QJ₂₀, 3, 1, 0; 1998 QK₂₀, 3, 1, 0; 1998 QL₂₀, 3, 1, 0;
1998 QM₂₀, 7, 2, 1; 1998 QY₂₀, 3, 1, 0; 1998 QA₂₂, 3, 1, 0; 1998 QA₂₃, 3, 1, 0;
1998 QA₂₄, 3, 1, 0; 1998 QD₂₄, 3, 1, 0; 1998 QS₂₈, 10, 3, 13; 1998 QK₂₉, 3, 1, 0; 1998 QQ₂₉, 3, 1,
0; 1998 QU₂₉, 3, 1, 0; 1998 QW₂₉, 3, 1, 0; 1998 QC₃₃, 3, 1, 0; 1998 QV₄₁, 3, 1, 0; 1998 QP₅₅, 6, 2,
3; 1998 QT₆₂, 9, 2, 5; 1998 QV₆₃, 3, 1, 0; 1998 QL₆₆, 7, 2, 4; 1998 QB₆₉, 6, 1, 0; 1998 QD₆₉, 3, 1,
0; 1998 QX₆₉, 9, 3, 29; 1998 QB₇₇, 6, 2, 2; 1998 QU₇₇, 6, 2, 3; 1998 QT₈₂, 3, 1, 0; 1998 QN₈₅, 3,
1, 0; 1998 QX₈₆, 6, 2, 2; 1998 QN₉₁, 6, 2, 2; 1998 QO₉₃, 3, 1, 0; 1998 QB₉₄, 6, 2, 9; 1998 QR₁₀₄,
6, 2, 1; 1998 QW₁₀₅, 6, 2, 3; 1998 QX₁₀₆, 3, 1, 0; 1998 QE₁₀₇, 7, 2, 6; 1998 QF₁₀₇, 6, 2, 2,
1; 1998 QG₁₀₇, 6, 2, 1; 1998 QH₁₀₇, 6, 2, 5; 1998 QJ₁₀₇, 6, 2, 5; 1998 QK₁₀₇, 6, 2, 8;
1998 RV₁₅, 3, 1, 0; 1998 RY₁₅, 3, 1, 0; 1998 RD₁₆, 3, 1, 0; 1998 RK₁₇, 7, 2, 8; 1998 RL₄₇, 3, 1, 0;
1998 RY₅₀, 6, 2, 3; 1998 RD₅₁, 12, 4, 4; 1998 RO₅₃, 9, 3, 3; 1998 RD₅₄, 6, 2, 3; 1998 RP₅₄, 6, 2,
2; 1998 RR₅₄, 6, 2, 3; 1998 RN₅₅, 6, 2, 3; 1998 RQ₅₅, 6, 2, 3; 1998 RW₅₅, 6, 2, 3; 1998 RY₅₅, 6,
2, 2; 1998 RJ₅₆, 9, 3, 6; 1998 RT₅₆, 6, 2, 2; 1998 RU₅₆, 6, 2, 2; 1998 RY₅₆, 12, 3, 2; 1998 RC₅₇,
6, 2, 8; 1998 RH₅₈, 3, 1, 0; 1998 RK₅₈, 3, 1, 0; 1998 RN₅₈, 9, 3, 3; 1998 RS₅₈, 9, 3, 2; 1998 RA₅₉,
6, 2, 3; 1998 RC₅₉, 6, 2, 3; 1998 RM₆₂, 6, 2, 3; 1998 RP₆₀, 6, 2, 1; 1998 SB₁, 12, 4, 4; 1998 SL₁,
12, 4, 4; 1998 SZ₃, 12, 4, 4; 1998 SC₄, 9, 3, 4; 1998 SE₄, 3, 1, 0; 1998 SF₄, 3, 1, 0; 1998 SX₈, 9,
3, 26; 1998 SH₉, 6, 1, 0; 1998 SK₉, 12, 4, 5; 1998 SL₉, 6, 2, 4; 1998 SM₉, 3, 1, 0; 1998 SN₉, 3, 1,
0; 1998 SR₉, 3, 1, 0; 1998 SS₉, 6, 2, 2; 1998 SW₉, 6, 2, 21; 1998 SX₉, 3, 1, 0; 1998 SL₁₂, 3, 1, 0;
1998 SN₁₂, 12, 4, 3; 1998 SG₂₁, 3, 1, 0; 1998 SK₂₁, 3, 1, 0; 1998 SX₂₂, 6, 2, 5; 1998 SR₂₄, 3, 1, 0;
1998 SS₂₄, 6, 2, 5; 1998 SU₂₄, 6, 2, 5; 1998 SA₂₇, 6, 2, 3; 1998 SS₃₀, 3, 1, 0; 1998 SU₃₀, 6, 2, 5;
1998 SE₃₄, 3, 1, 0; 1998 SZ₃₆, 4, 1, 0; 1998 SQ₃₇, 6, 2, 1; 1998 SM₄₁, 6, 2, 1; 1998 SV₄₂, 12, 4,
5; 1998 SY₄₂, 3, 1, 0; 1998 SB₄₃, 12, 2, 4; 1998 SC₄₃, 3, 1, 0; 1998 SD₄₃, 3, 1, 0; 1998 SE₄₃, 9, 3,
2; 1998 SF₄₃, 6, 2, 2; 1998 SJ₄₃, 9, 3, 3; 1998 SK₄₃, 12, 4, 5; 1998 SO₄₃, 6, 2, 27; 1998 SY₄₅, 6,
2, 1; 1998 SP₄₈, 6, 2, 1; 1998 ST₅₀, 6, 2, 1; 1998 SW₅₀, 9, 3, 3; 1998 SB₅₄, 12, 4, 6; 1998 SK₅₄,
6, 2, 1; 1998 SS₅₄, 12, 4, 6; 1998 SB₅₅, 3, 1, 0; 1998 SD₅₅, 6, 2, 8; 1998 SH₅₅, 6, 2, 2; 1998 SK₅₅,
3, 1, 0; 1998 SG₅₆, 6, 2, 2; 1998 SZ₅₉, 3, 1, 0; 1998 SP₆₂, 9, 3, 24; 1998 SQ₆₂, 6, 2, 1; 1998 ST₆₂,
3, 1, 0; 1998 SU₆₂, 3, 1, 0; 1998 SV₆₂, 3, 1, 0; 1998 SW₆₂, 9, 3, 5; 1998 SX₆₂, 6, 2, 2; 1998 SZ₆₂,
6, 2, 3; 1998 SA₆₃, 3, 1, 0; 1998 SB₆₃, 3, 1, 0; 1998 SD₆₃, 9, 3, 8; 1998 SE₆₃, 6, 2, 3; 1998 SJ₆₃,
12, 4, 6; 1998 SK₆₃, 9, 3, 6; 1998 SN₆₃, 3, 1, 0; 1998 SP₆₃, 3, 1, 0; 1998 SR₆₃, 6, 2, 1; 1998 SS₆₃,
6, 2, 3; 1998 SQ₇₅, 6, 2, 8; 1998 SR₇₅, 6, 2, 8; 1998 SS₇₅, 6, 2, 5; 1998 ST₇₅, 6, 2, 3;
1998 SC₈₀, 6, 2, 3; 1998 SY₈₀, 6, 2, 1; 1998 SC₈₁, 9, 3, 4; 1998 SF₈₁, 9, 3, 4; 1998 SJ₁₀₆, 9, 3, 2;
1998 SA₁₀₇, 6, 2, 1; 1998 SL₁₀₈, 6, 2, 2; 1998 SN₁₀₈, 9, 3, 3; 1998 SW₁₀₈, 6, 2, 2; 1998 SP₁₁₀, 9,
3, 2; 1998 SS₁₁₀, 9, 3, 5; 1998 ST₁₁₀, 9, 3, 2; 1998 SU₁₁₀, 6, 2, 1; 1998 SV₁₁₀, 6, 2, 2; 1998 SE₁₁₁,
6, 2, 3; 1998 SF₁₁₁, 3, 1, 0; 1998 SN₁₁₁, 3, 1, 0; 1998 SR₁₁₁, 6, 2, 1; 1998 SC₁₁₄, 6, 2, 1;
1998 SN₁₁₄, 6, 2, 1; 1998 SR₁₁₄, 3, 1, 0; 1998 SF₁₁₅, 6, 2, 2; 1998 SJ₁₁₅, 6, 2, 5; 1998 SK₁₁₅, 6, 2,
5; 1998 SL₁₁₅, 6, 2, 1; 1998 SN₁₁₅, 6, 2, 3; 1998 SP₁₁₅, 9, 3, 3; 1998 SU₁₁₅, 9, 3, 4; 1998 SV₁₁₅,
6, 2, 2; 1998 SW₁₁₅, 6, 2, 1; 1998 SX₁₁₅, 6, 2, 1; 1998 SZ₁₁₅, 6, 2, 2; 1998 SB₁₁₆, 6, 2, 2;
1998 SD₁₁₆, 12, 4, 5; 1998 SD₁₁₈, 6, 2, 2; 1998 SZ₁₁₈, 6, 2, 2; 1998 SC₁₁₉, 6, 2, 4; 1998 SD₁₁₉,
6, 2, 5; 1998 SQ₁₁₉, 9, 3, 13; 1998 SA₁₂₆, 12, 4, 5; 1998 ST₁₂₆, 9, 3, 5; 1998 SQ₁₃₁, 6, 2, 6;
1998 SR₁₃₁, 12, 4, 9; 1998 SS₁₃₁, 9, 3, 5; 1998 ST₁₃₁, 6, 2, 1; 1998 SC₁₃₂, 9, 3, 3; 1998 SY₁₃₉,

6, 2, 2; 1998 SM₁₄₄, 6, 2, 1; 1998 SP₁₄₄, 15, 5, 5; 1998 SU₁₄₄, 9, 3, 3; 1998 SV₁₄₄, 9, 3, 3;
1998 SY₁₄₅, 9, 3, 3; 1998 SF₁₄₆, 12, 3, 3; 1998 SS₁₅₄, 12, 4, 4; 1998 SA₁₅₅, 6, 2, 1; 1998 SO₁₅₆,
9, 3, 4; 1998 SP₁₅₆, 12, 4, 5; 1998 SR₁₅₆, 6, 2, 4; 1998 SP₁₆₂, 9, 3, 5; 1998 SH₁₆₃, 6, 2, 2;
1998 TE₆, 6, 2, 3; 1998 TA₂, 6, 2, 13; 1998 TL₂, 6, 2, 1; 1998 TA₃, 12, 4, 6; 1998 TS₆,
15, 5, 5; 1998 TB₁₈, 6, 2, 13; 1998 TC₁₈, 6, 2, 12; 1998 TD₁₈, 6, 2, 2; 1998 TE₁₈,
6, 2, 1; 1998 TF₁₈, 15, 5, 5; 1998 TG₁₈, 6, 2, 3; 1998 TH₁₈, 6, 2, 3; 1998 TJ₁₈, 6,
2, 3; 1998 TK₁₈, 6, 2, 3; 1998 TL₁₈, 6, 2, 4; 1998 TM₁₈, 10, 3, 3; 1998 TN₁₈, 7, 2, 3;
1998 TO₁₈, 7, 2, 3; 1998 TP₁₈, 9, 3, 6; 1998 TQ₁₈, 12, 4, 8; 1998 TR₁₈, 6, 2, 1; 1998 TS₁₈,
6, 2, 1; 1998 TT₁₈, 6, 2, 1; 1998 TU₁₈, 6, 2, 1; 1998 TV₁₈, 6, 2, 1; 1998 TW₁₈, 9, 3, 3;
1998 TX₁₈, 6, 2, 4; 1998 TY₁₈, 6, 2, 1; 1998 TZ₁₈, 6, 2, 4; 1998 TA₁₉, 6, 2, 1; 1998 TB₁₉,
6, 2, 1; 1998 TC₁₉, 9, 3, 3; 1998 TD₁₉, 9, 3, 3; 1998 TE₁₉, 12, 4, 4; 1998 TF₁₉, 9, 3, 4;
1998 TG₁₉, 6, 2, 1; 1998 TH₁₉, 6, 2, 2; 1998 TJ₁₉, 9, 3, 3; 1998 TK₁₉, 7, 2, 2; 1998 TL₁₉,
10, 3, 7; 1998 TM₁₉, 6, 2, 2; 1998 TN₁₉, 9, 3, 3; 1998 TO₁₉, 9, 3, 3; 1998 TP₁₉, 6, 2,
2; 1998 TQ₁₉, 6, 2, 2; 1998 TR₁₉, 15, 4, 5; 1998 TS₁₉, 9, 3, 3; 1998 TW₂₉, 6, 2, 5;
1998 TX₂₉, 6, 2, 5; 1998 TY₂₉, 6, 2, 5; 1998 UZ₁₂, 4, 5; 1998 UO₈, 15, 4, 4; 1998 UP₈,
15, 4, 4; 1998 UQ₈, 6, 2, 1; 1998 UR₈, 9, 2, 1; 1998 US₈, 9, 2, 1; 1998 UT₈, 6, 2, 1;
1998 UU₈, 6, 2, 1; 1998 UV₈, 6, 2, 1; 1998 UW₈, 6, 2, 1; 1998 UX₈, 9, 3, 3; 1998 UY₈, 6, 2,
1; 1998 UZ₈, 6, 2, 1; 1998 UA₉, 6, 2, 1; 1998 UB₉, 9, 3, 5; 1998 UC₁₇, 6, 2, 5; 1998 UD₁₇,
6, 2, 2; 1998 UE₁₇, 6, 2, 2; 1998 UF₁₇, 6, 2, 3; 1998 UG₁₇, 6, 2, 3; 1998 UH₁₇, 6, 2, 2;
1998 UJ₁₇, 6, 2, 2; 1998 UK₁₇, 6, 2, 2; 1998 UL₁₇, 6, 2, 5; 1998 UM₁₇, 6, 2, 5; 1998 UN₁₇,
6, 2, 1; 1998 UO₁₇, 6, 2, 1; 1998 UP₁₇, 6, 2, 1; 1998 UQ₁₇, 6, 2, 1; 1998 UR₁₇, 15, 4, 4;
1998 US₁₇, 6, 2, 2; 1998 UT₁₇, 6, 2, 2; 1998 UU₁₇, 6, 2, 1; 1998 UV₁₇, 6, 2, 1; 1998 UW₁₇,
6, 2, 1; 1998 UX₁₇, 6, 2, 1; 1998 UY₁₇, 6, 2, 3; 1998 UZ₁₇, 6, 2, 1; 1998 UA₁₈, 6, 2,
3; 1998 UB₁₈, 12, 3, 3; 1998 UC₁₈, 9, 3, 3; 1998 UD₁₈, 6, 2, 1; 1998 UE₁₈, 6, 2, 1;
1998 UH₁₈, 6, 2, 2; 1998 UJ₁₈, 6, 2, 2; 1998 UK₁₈, 6, 2, 2; 4646 P-L, 6, 2, 4; 4665 P-L, 9, 2,
12; 3335 T-2, 9, 3, 6; (165), 4, 1, 0; (307), 6, 1, 0; (490), 3, 1, 0; (561), 3, 1, 0; (848), 3, 1, 0; (948),
6, 2, 1; (1101), 9, 3, 3; (1225), 24, 5, 24; (1292), 6, 2, 2; (1338), 4, 1, 0; (1354), 6, 2, 1; (1451),
6, 2, 25; (1828), 3, 1, 0; (1899), 8, 1, 0; (2029), 3, 1, 0; (2056), 3, 1, 0; (2069), 3, 1, 0; (2158),
3, 1, 0; (2641), 3, 1, 0; (2645), 3, 1, 0; (2739), 9, 3, 3; (2776), 3, 1, 0; (2990), 6, 2, 27; (3026),
6, 2, 2; (3187), 3, 1, 0; (3193), 3, 1, 0; (3325), 3, 1, 0; (3375), 3, 1, 0; (3470), 6, 2, 2; (3595), 6,
2, 2; (3756), 3, 1, 0; (3804), 3, 1, 0; (3955), 9, 3, 10; (3998), 3, 1, 0; (4259), 6, 2, 14; (4457), 3,
1, 0; (4562), 7, 2, 35; (4646), 9, 3, 4; (4843), 3, 1, 0; (4866), 12, 4, 7; (4897), 3, 1, 0; (4984), 12,
4, 5; (5199), 6, 2, 2; (5232), 3, 1, 0; (5500), 6, 2, 5; (5706), 3, 1, 0; (6016), 3, 1, 0; (6210), 3, 1,
0; (6707), 6, 2, 19; (6764), 3, 1, 0; (6789), 3, 1, 0; (6800), 6, 1, 0; (6955), 12, 4, 5; (6989), 3, 1,
0; (7179), 3, 1, 0; (7361), 6, 2, 1; (7655), 3, 1, 0; (7685), 3, 1, 0; (7721), 9, 3, 13; (7798), 6, 1,
0; (7824), 3, 1, 0; (7841), 6, 2, 7; (8425), 3, 1, 0; (9183), 4, 1, 0; (9257), 3, 1, 0; (9298), 9, 3, 3;
(9338), 6, 2, 11; (9428), 3, 1, 0; [2659, 434, 102*, 1998/07/08–1998/10/22]

343 Youchun

T. H. Lee, #1401, Life-Officetel, Yoido-Dong, Seoul 150-010, South Korea

0.21-m $f/4.0$ reflector + CCD

1998 SG₅, 2, 1, 0; [2, 1, 0*, 1998/10/01]

355 Hadano

A. Asami, 28-1 Nishitawara, Hadano, Kanagawa-Ken, 257 Japan

[asami@st.rim.or.jp]

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

GSC

1998 PG, 3, 1, 0; [3, 1, 0*, 1998/10/18]

358 Nanyou

T. Okuni, 158-28, Mitsuma-dori, Nanyou, Yamagata-Ken, 999-22 Japan

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

GSC

1998 UL₂₀, 8, 3, 3; 1998 UL₂₃, 6, 3, 6; 1998 UM₂₃, 9, 4, 6; 1998 UN₂₃, 6, 3, 6; [29, 4, 4*, 1998/10/26–1998/11/01]

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0.60-m $f/5.8$ Ritchey-Chrétien + CCD

GSC, USNO-A2.0

1989 UR, 3, 1, 0; 1995 YF, 3, 1, 0; 1996 DD₃, 5, 2, 7; 1997 FQ₁, 9, 3, 37; 1997 GR₂₄, 2, 1, 0; 1997 GZ₂₅, 2, 1, 0; 1997 OY, 4, 2, 7; 1997 US₉, 3, 1, 0; 1998 EC₃, 3, 1, 0; 1998 KU₂, 3, 1, 0; 1998 MQ, 6, 2, 20; 1998 PG, 3, 1, 0; 1998 PB₁, 3, 1, 0; 1998 QR₁₅, 3, 1, 0; 1998 QS₅₂, 3, 1, 0; 1998 RP₇₄, 3, 1, 0; 1998 SJ₂, 3, 1, 0; 1998 ST₄, 3, 1, 0; 1998 SB₁₅, 6, 2, 7; 1998 SC₁₅, 3, 1, 0; 1998 SD₁₅, 3, 1, 0; 1998 ST₂₇, 3, 1, 0; 1998 SR₄₉, 3, 1, 0; 1998 SS₄₉, 3, 1, 0; 1998 SJ₇₀, 3, 1, 0; 1998 SD₁₃₁, 6, 2, 1; 1998 TU₃, 6, 2, 3; 1998 TC₅, 6, 2, 4; 1998 UL₁, 3, 1, 0; 1998 UO₁, 3, 1, 0; 1998 UP₁, 3, 1, 0; 1998 US₁₈, 4, 1, 0; 1296 T-2, 3, 1, 0; (6047), 2, 1, 0; (6053), 2, 1, 0; (6973), 2, 1, 0; (7358), 2, 1, 0; [130, 37, 0*, 1998/09/17–1998/10/29]

367 Yatsuka

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

0.26-m $f/6.0$ reflector + CCD

GSC

1995 YH₁, 2, 1, 0; [2, 1, 0*, 1998/10/18]

369 Chichibu

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

[mx05524@niftyserve.or.jp]

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

GSC

1995 OK₈, 3, 1, 0; [3, 1, 0*, 1998/10/24]

376 Uenohara

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

0.30-m reflector + CCD

GSC

1998 SN₁₀, 3, 1, 0; [3, 1, 0*, 1998/10/02]

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

1990 VH₃, 4, 1, 0; 1993 DG₂, 5, 2, 6; 1993 EE, 5, 2, 6; 1995 EF, 5, 2, 6; 1996 AL₂, 2, 1, 0; 1997 QD₂, 2, 1, 0; 1997 QG₄, 2, 1, 0; 1997 UB₁₁, 1, 1, 0; 1998 SS₂, 3, 1, 0; (9387), 3, 1, 0; [32, 10, 0*, 1998/10/02–1998/10/31]

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

1997 VC₄, 4, 2, 2; 1998 TZ₁₇ *, 8, 4, 16; 1998 TA₁₈ *, 8, 4, 16; 1998 TZ₂₉ *, 8, 4, 16; 1998 UJ₂₀ *, 6, 3, 8; 1998 UK₂₀ *, 6, 3, 8; [40, 6, 5*, 1997/10/23–1998/10/28]

402 Dynic Astronomical Observatory

A. Sugie, Dynic Astronomical Observatory, Taga 283-1, Taga, Inukami-Gun, Shiga-Ken 522-03, Japan [sugiea@mx.biwa.or.jp]

0.60-m $f/5.0$ reflector + CCD

GSC

1989 UR, 3, 1, 0; 1998 MQ, 3, 1, 0; 1998 QR₁₅, 3, 1, 0; 1998 QS₅₂, 9, 3, 14; 1998 QP₆₃, 3, 1, 0; 1998 QA₉₆, 6, 2, 14; 1998 RE, 7, 2, 9; 1998 RR₂, 3, 1, 0; 1998 RQ₇₅, 4, 1, 0; 1998 SG₂, 3, 1, 0; 1998 SJ₂, 6, 2, 11; 1998 SY₂, 4, 1, 0; 1998 SD₄, 5, 2, 6; 1998 ST₄, 3, 1, 0; 1998 SF₃₅, 3, 1, 0; 1998 SG₃₆, 3, 1, 0; 1998 SR₄₃, 3, 1, 0; 1998 SS₄₉, 3, 1, 0; 1998 SJ₇₀, 3, 1, 0; 1998 SU₁₀₅, 4, 1, 0; 1998 SD₁₃₁, 8, 2, 1; 1998 SZ₁₃₈, 8, 2, 1; 1998 TT₃, 12, 4, 15; 1998 TX₆, 3, 1, 0; 1998 UD₁, 3, 1, 0; 1998 UL₁, 9, 3, 10; 1998 UM₁, 3, 1, 0; 1998 UN₁, 15, 5, 15; 1998 UO₁, 3, 1, 0; 1998 UP₁, 6, 2, 3; 1998 UQ₁, 6, 2, 6; [157, 31, 0*, 1998/09/19–1998/11/05]

411 Oizumi

T. Kobayashi, 1717-2 Shimo-Koizumi, Oizumi-machi, Ora-gun, Gunma-ken, 370-0515 Japan [kobataka@sannet.ne.jp]

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

GSC

1994 UY, 2, 1, 0; 1996 HP, 4, 2, 4; 1998 BR₇, 2, 1, 0; 1998 RW, 2, 1, 0; 1998 SM₄₉, 2, 1, 0; 1998 SO₄₉, 2, 1, 0; 1998 SZ₁₃₃, 2, 1, 0; 1998 SE₁₃₈, 2, 1, 0; 1998 SR₁₃₈, 2, 1, 0; 1998 ST₁₃₈, 2, 1, 0; 1998 SL₁₄₃, 2, 1, 0; 1998 TD *, 10, 4, 29; 1998 TE, 4, 2, 1; 1998 TF *, 6, 3, 28; 1998 TG *, 6, 3, 14; 1998 TH *, 6, 3, 14; 1998 TJ *, 6, 3, 28; 1998 TK *, 9, 4, 28; 1998 TL *, 9, 4, 28; 1998 TM *, 8, 4, 28; 1998 UJ₈ *, 6, 3, 14; 1998 UK₈ *, 6, 3, 14; 1998 UL₈ *, 6, 3, 14; 1998 UM₈ *, 6, 3, 14; 1998 UN₈ *, 4, 2, 1; 1998 UO₁₈ *, 7, 3, 13; 1998 UP₁₈ *, 6, 3, 13; 1998 UQ₁₈ *, 6, 3, 13; 1998 UR₁₈ *, 4, 2, 4; 1998 VB *, 4, 2, 1; [143, 30, 18*, 1998/01/31–1998/11/08]

413 Siding Spring

A. Gnädig, c/o Archenhold-Sternwarte, Alt-Treptow 1, D-12435 Berlin, Germany [doppler@mind.de] (5)

Measurer A. Gnädig

1.2-m U.K. Schmidt

(5) 1988 RQ₈, 4, 2, 1617; 1989 SQ₄, 2, 1, 0; 1990 SH₃, 2, 1, 0; 1990 SR₈, 2, 1, 0; 1993 TQ₂₉, 4, 3, 101; 1994 SN₉, 4, 2, 1055; 1997 QV, 2, 1, 0; 1997 UZ₁₄, 2, 1, 0; 1997 VS₃, 2, 1, 0; 1998 DL₁₃, 2, 1, 0; 1998 EZ₂, 2, 1, 0; 1998 FC₆₅, 2, 1, 0; 1998 HX₈₈, 2, 1, 0; 1998 QJ₈, 3, 2, 2138; 1998 QS₃₇, 2, 1, 0; 1998 QQ₃₉, 4, 2, 3928; 1998 QP₄₁, 2, 1, 0; 1998 QQ₁₀₃, 2, 1, 0; 6520 P-L, 2, 1, 0; 4164 T-1, 2, 1, 0; [49, 20, 0*, 1976/06/29–1994/07/03]

422 Loomberah

G. J. Garradd, P.O. Box 157, Tamworth, NSW 2340, Australia

[loomberah@ozemail.com.au]

0.45-m $f/5.4$ reflector + CCD, 0.25-m $f/4.1$ reflector + CCD

ACT, GSC, USNO-A1.0

1989 YG₅, 3, 1, 0; 1994 UJ₁, 6, 2, 2; 1995 UB₉, 7, 2, 1; 1997 US₉, 3, 1, 0; 1998 FR₁₁, 5, 2, 2; 1998 KU₂, 3, 1, 0; 1998 KH₁₇, 5, 2, 1; 1998 MQ, 1, 1, 0; 1998 MK₃₀, 4, 1, 0; 1998 PF, 2, 1, 0; 1998 PB₁, 3, 1, 0; 1998 QH₂, 3, 1, 0; 1998 QO₅₂, 3, 1, 0; 1998 QS₅₂, 3, 1, 0; 1998 QH₅₆, 2, 1, 0; 1998 QJ₅₆, 5, 2, 9; 1998 QK₅₆, 3, 1, 0; 1998 QP₆₃, 6, 2, 14; 1998 RO₁, 4, 2, 1; 1998 RR₂, 6, 2, 2; 1998 RO₄, 2, 1, 0; 1998 SG₂, 7, 2, 3; 1998 SJ₂, 1, 1, 0; 1998 SD₄, 3, 1, 0; 1998 SS₄, 2, 1, 0; 1998 ST₄, 5, 2, 8; 1998 SV₄, 4, 2, 2; 1998 SO₁₀, 2, 1, 0; 1998 SY₁₄, 29, 10, 17; 1998 SZ₁₄, 4, 2, 14; 1998 SA₁₅, 2, 1, 0; 1998 SB₁₅, 2, 1, 0; 1998 SD₁₅, 5, 2, 8; 1998 ST₂₇, 5, 3, 7; 1998 SF₃₆, 2, 1, 0; 1998 SG₃₆, 7, 2, 3; 1998 SH₃₆, 7, 2, 1; 1998 SR₄₃, 6, 2, 1; 1998 SJ₇₀, 4, 2, 10; 1998 TS₃, 4, 2, 1; 1998 TT₃, 9, 3, 12; 1998 TU₃, 14, 4, 7; 1998 TL₇, 4, 1, 0; 1998 TM₁₅, 6, 2, 1; 1998 UQ, 8, 2, 1; 1998 UR, 10, 2, 1; 1998 UL₁, 7, 2, 1; 1998 UN₁, 4, 2, 1; 1998 UQ₁, 2, 1, 0; (147), 2, 1, 0; (1225), 6, 2, 1; (1371), 1, 1, 0; (3753), 3, 1, 0; (5676), 3, 1, 0; (9428), 6, 2, 1; [265, 55, 0*, 1998/10/10–1998/10/27]

423 North Ryde

S. McAndrew, 2/32 Twin Rd, North Ryde, NSW 2113, Australia

[mcandrew@trinity.nsw.edu.au]

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

GSC

1985 XA, 6, 3, 11; 1989 RD₁, 4, 2, 1; 1992 EX₈, 6, 2, 1; 1992 EW₉, 6, 2, 1; 1992 OF₁, 6, 2, 1; 1994 RX, 7, 3, 3; 1994 WE₂, 5, 2, 3; 1996 BX₁, 4, 2, 4; 1996 EJ, 4, 2, 10; 1996 FU₁₃, 8, 3, 3; 1997 NR₆, 3, 1, 0; (3753), 12, 4, 8; [71, 12, 0*, 1998/10/11–1998/10/27]

426 Woomera

F. B. Zoltowski, 10 Gundawarra St., P.O. Box 84, Woomera, SA 5720, Australia

[100356.23@CompuServe.com]

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

USNO-SA1.0

1998 FR₁₁, 6, 2, 46; 1998 PL, 4, 2, 4; 1998 PG₁, 4, 2, 4; 1998 QL, 3, 2, 4; 1998 QH₁, 2, 1, 0; 1998 QM₄, 6, 2, 4; 1998 QN₄, 5, 2, 4; 1998 QM₅, 6, 2, 11; 1998 QK₂₆, 6, 2, 1; 1998 QL₂₆, 3, 2, 4; 1998 QM₂₆, 3, 2, 4; 1998 QP₆₃, 3, 1, 0; 1998 QB₁₀₅, 6, 3, 2; 1998 RF, 6, 2, 6; 1998 RG, 5, 2, 6; 1998 RH, 6, 2, 5; 1998 RJ, 6, 2, 5; 1998 RK, 6, 2, 6; 1998 RB₂, 5, 2, 1; 1998 RC₂, 6, 2, 4; 1998 RE₂, 9, 3, 25; 1998 RR₂, 3, 1, 0; 1998 RN₁₃, 6, 2, 5; 1998 RT₇₂, 6, 2, 1; 1998 SC, 7, 3, 23;

1998 SF₂, 9, 3, 23; 1998 SA₄, 6, 2, 5; 1998 SY₁₄, 3, 1, 0; 1998 SA₁₅, 3, 1, 0; 1998 SV₂₂, 6, 2, 1; 1998 SW₂₂, 6, 2, 6; 1998 SX₂₂, 6, 2, 5; 1998 SY₂₂, 5, 2, 1; 1998 SJ₂₇, 5, 2, 1; 1998 SF₂₈, 9, 3, 7; 1998 SJ₇₀, 7, 2, 17; 1998 TU₃, 6, 2, 15; 1998 UQ, 4, 1, 0; 1998 UR, 3, 1, 0; 1998 UK₁ *, 6, 2, 1; 1998 UQ₁, 3, 1, 0; 1998 UG₁₅ *, 6, 2, 5; 1998 US₁₈, 3, 1, 0; 1998 UY₂₄, 1, 1, 0; 1998 UZ₂₄ *, 7, 2, 14; 4543 P-L, 6, 2, 4; (3362), 6, 2, 14; (9200), 6, 2, 7; [250, 48, 3*, 1998/09/14–1998/11/08]

428 Reedy Creek

J. Broughton, 18 Branch Crescent, Reedy Creek, QLD 4228, Australia
[reedyck@yahoo.com]

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

1976 SL₅, 3, 2, 13; 1989 TU₄, 6, 3, 2; 1991 TK, 4, 3, 13; 1994 GN, 2, 1, 0; 1998 MA₄₂, 3, 1, 0; 1998 NF, 2, 1, 0; 1998 OX₁₁, 3, 2, 3; 1998 OY₁₁, 2, 2, 12; 1998 OZ₁₁, 2, 1, 0; 1998 OB₁₂, 2, 1, 0; 1998 OD₁₂, 2, 1, 0; 1998 OE₁₂, 2, 1, 0; 1998 OG₁₂, 2, 1, 0; 1998 OH₁₂, 6, 3, 26; 1998 OK₁₂, 5, 3, 16; 1998 OM₁₂, 3, 1, 0; 1998 OK₁₄, 5, 3, 23; 1998 PM₁, 1, 1, 0; 1998 PN₁, 2, 1, 0; 1998 PO₁, 7, 5, 45; 1998 QA₄, 2, 1, 0; 1998 QD₄, 4, 2, 11; 1998 QE₄, 7, 4, 36; 1998 QJ₄, 6, 3, 21; 1998 QN₂₆, 2, 1, 0; 1998 QQ₄₃, 4, 2, 35; 1998 QG₆₃, 4, 2, 9; 1998 QD₉₉, 2, 1, 0; 1998 QP₁₀₂, 1, 1, 0; 1998 RV, 8, 3, 21; 1998 RE₁, 7, 3, 21; 1998 RD₅, 6, 3, 23; 1998 RE₅, 6, 3, 23; 1998 RA₁₈, 4, 3, 3; 1998 RL₂₀, 2, 1, 0; 1998 SG₂, 3, 1, 0; 1998 SP₁₀, 4, 2, 8; 1998 ST₂₅, 5, 2, 1; 1998 SU₁₂₇, 4, 2, 1; 1998 SV₁₂₇, 4, 2, 1; 1998 SA₁₂₉, 8, 3, 2; 1998 SX₁₃₆, 6, 3, 2; 1998 SJ₁₃₇, 8, 4, 4; 1998 SL₁₃₇, 7, 3, 2; 1998 TR₁ *, 12, 5, 9; 1998 TX₁ *, 4, 2, 1; 1998 TY₁ *, 8, 4, 14; 1998 TZ₁ *, 10, 5, 8; 1998 TU₃, 10, 4, 6; 1998 TP₆ *, 8, 4, 6; 1998 TQ₆ *, 8, 4, 7; 1998 TY₆ *, 7, 4, 12; 1998 TZ₆ *, 6, 3, 12; 1998 UQ, 2, 1, 0; 1998 UG₄ *, 6, 3, 6; 1998 US₁₆ *, 9, 3, 6; 1998 UF₁₈ *, 6, 3, 6; 1998 UT₂₂ *, 5, 2, 3; (1511), 3, 1, 0; (3364), 3, 1, 0; (3718), 2, 1, 0; (4809), 2, 1, 0; (6353), 1, 1, 0; (7847), 2, 1, 0; (9182), 1, 1, 0; (9241), 5, 2, 12; (9401), 4, 2, 1; [302, 67, 12*, 1998/08/27–1998/10/31]

468 Astronomical Observatory, Campo Catino

F. Mallia, Via dei Siculi 37, I-04100 Latina, Italy [pa0115@panservice.it]

Observers F. Rossi, F. Mallia, G. Masi
Measurers F. Mallia, G. Masi, M. Di Sora
0.80-m $f/4$ reflector + CCD
GSC

1998 RH₆₆, 2, 1, 0; 1998 RN₇₂, 3, 1, 0; 1998 SY₂, 7, 2, 8; 1998 UN₁, 3, 1, 0; 1998 UP₁, 3, 1, 0; [18, 5, 0*, 1998/10/13–1998/10/21]

470 Ceccano

G. Masi, Via Madonna de Loco 47, I-03023 Ceccano (FR), Italy
[gianmasi@fr.flashnet.it]

0.28-m $f/3.3$ Schmidt-Cassegrain + CCD
USNO-A1.0

1981 EO₂₆, 3, 1, 0; 1994 PA₁₉, 4, 1, 0; 1998 MK₃₀, 5, 2, 2; 1998 QA₅₅, 2, 1, 0; 1998 RO₄, 5, 2, 2; 1998 RH₆₆, 3, 1, 0; 1998 RN₇₂, 3, 1, 0; 1998 RY₇₄, 2, 1, 0; 1998 SQ, 3, 1, 0; 1998 SY₂, 5, 2, 2; 1998 SR₄₃, 3, 1, 0; 1998 SP₄₄, 2, 1, 0; 1998 TL₇ *, 3, 1, 0; 2600 P-L, 2, 1, 0; 4614 P-L, 3, 1, 0; 7061 P-L, 3, 1, 0; (453), 3, 1, 0; (561), 3, 1, 0; (1225), 2, 1, 0; (4184), 3, 1, 0; (7099), 3, 1, 0; [65, 21, 1*, 1998/10/12–1998/10/15]

491 Yebes

J. F. Lahulla, Centro Astronómico de Yebes, Apartado 148, E-19080 Guadalajara, Spain [lahulla@cay.es]

Observers J. F. Lahulla, A. Martin, J. García
0.40-m $f/5$ astrograph + CCD
GSC

(107), 2, 1, 0; (218), 2, 1, 0; (425), 2, 1, 0; (648), 2, 1, 0; (1036), 13, 2, 3; (1157), 2, 1, 0; (1472), 2, 1, 0; (5569), 1, 1, 0; (6131), 2, 1, 0; (6669), 2, 1, 0; (6765), 1, 1, 0; (6868), 1, 1, 0; [32, 12, 0*, 1998/10/26–1998/10/29]

540 Linz

E. Meyer, F. Marklstrasse 1/62, A-4040 Linz, Austria [erich.meyer@ooenet.at]

Observers E. Meyer, H. Raab, E. Obermair
0.30-m $f/5.2$ Schmidt Cassegrain + CCD
GSC

1986 QL₂, 3, 1, 0; 1989 UR, 6, 2, 13; 1998 MK₃₀, 3, 1, 0; 1998 PG, 6, 2, 9; 1998 QR₁₅, 2, 1, 0; 1998 QT₆₀, 6, 2, 9; 1998 SZ₁₃₈, 4, 1, 0; 1998 TT₃, 6, 2, 13; 1998 UQ₁, 3, 1, 0; [39, 9, 0*, 1998/10/17–1998/11/07]

552 San Vittore

E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy

[ermes.colombini@iol.it]

Observers C. Vacchi, G. Sassi, E. Colombini, R. Di Luca
0.45-m $f/3.3$ reflector + CCD
GSC

1978 RL₇, 3, 1, 0; 1988 DE, 9, 4, 36; 1997 JQ, 7, 3, 16; 1998 RK₃₈, 5, 2, 2; 1998 SY₇₅ *, 9, 4, 34; 1998 TS₁ *, 9, 3, 5; [42, 6, 2*, 1998/09/18–1998/10/26]

557 Ondřejov

P. Pravec, Astronomical Institute, Czech Academy of Sciences, CZ-25165 Ondřejov, Czech Republic [ppravec@asu.cas.cz]

Observers P. Pravec, L. Šarounová

0.65-m $f/3.6$ reflector + CCD
USNO-SA1.0, GSC

1978 VY₃, 2, 1, 0; 1994 UM₁, 4, 1, 0; 1995 EA₈, 3, 1, 0; 1996 CX₈, 2, 1, 0; 1996 OO, 2, 1, 0; 1997 QP, 2, 1, 0; 1997 SH, 4, 2, 1; 1997 SM₁, 2, 1, 0; 1997 TU₉, 4, 2, 3; 1997 TA₁₀, 4, 2, 1; 1997 UM₉, 5, 2, 1; 1997 US₉, 3, 1, 0; 1997 VV₁, 2, 1, 0; 1997 WP₂₈, 2, 1, 0; 1998 MQ, 6, 1, 0; 1998 MX₅, 2, 1, 0; 1998 ML₁₄, 2, 1, 0; 1998 MR₂₄, 2, 1, 0; 1998 MT₂₄, 3, 1, 0; 1998 OZ₄, 2, 1, 0; 1998 PG, 17, 4, 8; 1998 PB₁, 2, 1, 0; 1998 QA₁, 2, 1, 0; 1998 QR₁, 2, 1, 0; 1998 QV₃, 2, 1, 0; 1998 QO₄, 3, 2, 10; 1998 QW₅, 4, 2, 11; 1998 QR₁₅, 10, 2, 28; 1998 QE₂₉, 2, 1, 0; 1998 QR₅₂, 3, 1, 0; 1998 QS₅₂, 2, 1, 0; 1998 QN₆₀, 7, 2, 8; 1998 QO₆₀, 5, 3, 16; 1998 QP₆₀, 5, 2, 10; 1998 QQ₆₀, 3, 2, 11; 1998 QQ₆₃, 3, 1, 0; 1998 QS₇₀, 5, 2, 1; 1998 QE₇₁, 1, 1, 0; 1998 QH₈₃, 7, 2, 3; 1998 RM, 3, 2, 3; 1998 RO₄, 1, 1, 0; 1998 RP₂₀, 2, 1, 0; 1998 SG₂, 2, 1, 0; 1998 SJ₂, 6, 2, 8; 1998 SU₂, 4, 2, 12; 1998 SD₄, 2, 1, 0; 1998 ST₄, 3, 1, 0; 1998 SB₅, 3, 1, 0; 1998 SO₁₀, 2, 1, 0; 1998 SW₁₀, 2, 1, 0; 1998 SA₁₃, 5, 2, 1; 1998 SB₁₃, 2, 1, 0; 1998 SD₁₃, 4, 2, 9; 1998 SB₁₅, 3, 1, 0; 1998 SC₁₅, 3, 1, 0; 1998 SS₂₆, 5, 2, 9; 1998 SU₂₆, 2, 1, 0; 1998 SV₂₆, 4, 2, 4; 1998 SH₂₇, 4, 2, 7; 1998 ST₂₇, 2, 1, 0; 1998 SU₂₇, 3, 1, 0; 1998 SE₃₅, 6, 2, 7; 1998 SF₃₅, 2, 1, 0; 1998 SE₃₆, 3, 1, 0; 1998 SG₃₆, 2, 1, 0; 1998 SH₃₆, 4, 1, 0; 1998 SK₃₆, 8, 3, 17; 1998 SR₄₃, 2, 1, 0; 1998 SR₄₉, 6, 2, 6; 1998 SS₄₉, 3, 1, 0; 1998 ST₄₉, 8, 2, 6; 1998 SJ₇₀, 1, 1, 0; 1998 SD₁₃₁, 4, 2, 1; 1998 SB₁₃₃, 6, 2, 1; 1998 SZ₁₃₈, 2, 1, 0; 1998 TS₃ *, 15, 3, 3; 1998 TT₃, 6, 2, 4; 1998 TH₆, 2, 1, 0; 1998 TK₆ *, 5, 2, 3; 1998 TL₆ *, 6, 3, 7; 1998 TM₆ *, 6, 3, 6; 1998 TN₆ *, 5, 2, 1; 1998 TO₆ *, 10, 4, 10; 1998 TX₆, 5, 2, 1; 1998 TD₁₃, 5, 2, 3; 1998 TM₁₅, 7, 3, 5; 1998 UK, 4, 1, 0; 1998 UL *, 11, 3, 7; 1998 UM *, 4, 2, 1; 1998 UB₁ *, 9, 4, 9; 1998 UC₁ *, 16, 5, 13; 1998 UL₁, 8, 3, 2; 1998 UM₁, 7, 2, 1; 1998 UN₁, 9, 3, 2; 1998 UO₁, 8, 3, 2; 1998 UP₁, 3, 1, 0; 1998 UQ₁, 9, 3, 2; 1998 UB₁₅ *, 8, 2, 5; 1998 UC₁₅ *, 8, 3, 7; 1998 UT₁₈, 4, 1, 0; 1998 UY₂₄, 3, 1, 0; 4611 P-L, 2, 1, 0; (1225), 2, 1, 0; (3151), 3, 1, 0; (3199), 3, 1, 0; (3352), 5, 1, 0; (7783), 2, 1, 0; [467, 107, 12*, 1997/07/12–1998/10/30]

560 Madonna di Dossobuono

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[astrofil@astboi.bo.cnr.it]

Observers L. Lai, I. Rocchetti, G. Vesentini
0.40-m $f/3.5$ reflector + CCD
GSC

1978 SH₃, 3, 1, 0; 1988 DE, 4, 1, 0; 1990 QY₂, 6, 2, 5; 1990 VS₄, 3, 1, 0; 1994 TW₁₅, 9, 3, 21; 1996 AF₂, 9, 3, 2; 1998 UG₂₁ *, 6, 2, 2; 1998 UH₂₁ *, 6, 2, 1; (2099), 3, 1, 0; (2926), 3, 1, 0; (6041), 3, 1, 0; (6254), 3, 1, 0; (9415), 6, 2, 3; [64, 13, 2*, 1998/09/22–1998/10/30]

561 Piskéztető

L. Kiss, Pf. 596, H-6701 Szeged, Hungary [l.kiss@physx.u-szeged.hu]

Observers K. Sárneczky, Gy. Szabó, L. Kiss
Measurers L. Kiss, K. Sárneczky
0.60-m Schmidt telescope + CCD
USNO-A1.0

1972 PA, 4, 1, 0; 1989 UR, 10, 1, 0; 1998 ND, 4, 1, 0; 1998 PG, 19, 4, 4; 1998 UF₂₃ *, 6, 2, 1; 1998 UG₂₃ *, 6, 2, 1; 1998 UH₂₃ *, 4, 2, 1; (1508), 3, 1, 0; (5738), 3, 1, 0; [59, 9, 3*, 1998/10/22–1998/10/27]

565 Bassano Bresciano

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Bresciano (BS), Italy [astrofil@astbo1.bo.cnr.it]

Observers U. Quadri, L. Strabla

0.40-m $f/2.5$ Schmidt + CCD

GSC

(2), 2, 1, 0; (453), 2, 1, 0; [4, 2, 0*, 1998/10/13–1998/10/27]

568 Mauna Kea

C. Veillet, Canada-France-Hawaii Telescope Corporation, P.O. Box 1597, Kamuela,
HI 96743, U.S.A. [veillet@cfht.hawaii.edu]

Observers C. Veillet, S. Banh

CFHT 3.6-m + CCD

USNO-SA1.0

1998 HH₄₉, 3, 1, 0; 1998 KG₆₂, 2, 2, 1; [5, 2, 0*, 1998/10/15–1998/10/16]

587 Sormano

P. Sicoli, Via Valli 9, I-23846 Garbagnate Monastero (Lecco), Italy
[sormano@tin.it]

Observers F. Manca, V. Giuliani, M. Cavagna, P. Chiavenna, P. Sicoli, A. Testa,
G. Ventre, P. Ghezzi

0.5-m reflector + CCD

GSC

1997 FN₁, 5, 2, 2; 1998 MK₃₀, 3, 1, 0; 1998 QR₁₅, 4, 2, 1; 1998 QS₅₂, 5, 2, 13; 1998 QP₆₃, 2, 1, 0; 1998 RR₂, 2, 1, 0; 1998 RF₃, 4, 2, 2; 1998 RX₆₀, 2, 1, 0; 1998 SG₂, 3, 1, 0; 1998 SJ₂, 2, 1, 0; 1998 SB₁₅, 3, 1, 0; 1998 ST₂₇, 2, 1, 0; 1998 SU₂₇, 6, 2, 10; 1998 SF₃₅, 2, 1, 0; 1998 SH₃₆, 3, 1, 0; 1998 SR₄₉, 3, 1, 0; 1998 SS₄₉, 4, 2, 5; 1998 SJ₇₀, 2, 1, 0; 1998 SN₉₃, 2, 1, 0; 1998 SY₁₁₇, 8, 3, 8; 1998 SD₁₃₁, 6, 2, 3; 1998 TT₃, 2, 1, 0; 1998 TU₃, 3, 2, 6; 1998 UL₁, 2, 1, 0; 1998 UN₁, 3, 1, 0; 1998 UO₁, 4, 2, 8; 1998 UQ₁, 4, 2, 8; 1998 UV₆ *, 12, 5, 10; 1998 UT₁₈, 2, 1, 0; 1998 UY₂₄, 2, 1, 0; [107, 30, 1*, 1998/10/12–1998/10/31]

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

1993 SO₂, 6, 2, 3; 1996 DO₁, 3, 1, 0; 1998 QJ₅₄, 6, 2, 1; 1998 QW₆₂, 7, 2, 1; 1998 QE₉₁, 15, 3, 2; 1998 RY₆₈, 9, 2, 1; 1998 SR₄, 11, 4, 14; 1998 SR₂₆, 18, 4, 10; 1998 SK₉₁, 9, 2, 1; 1998 SL₁₆₁, 6, 2, 3; 1998 UB₄ *, 10, 3, 6; 1998 UW₆ *, 9, 3, 6; [109, 12, 2*, 1998/10/11–1998/10/26]

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

1993 MR, 4, 2, 4; 1997 NQ₂, 2, 1, 0; 1998 OJ₁, 4, 2, 2; 1998 QA₄₆, 5, 3, 3; 1998 QS₅₃, 4, 2, 4; 1998 RT, 4, 2, 21; 1998 RA₇₅, 2, 1, 0; 1998 SQ₄₂, 4, 2, 2; 1998 ST₄₂, 2, 1, 0; 1998 SD₇₂, 4, 2, 1; 1998 UX₆ *, 8, 4, 10; 1998 UY₆ *, 9, 4, 10; [52, 12, 2*, 1998/09/24–1998/10/31]

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

1997 FM₁, 2, 1, 0; 1998 QO₅₃, 3, 1, 0; 1998 RG₃, 5, 2, 10; 1998 ST₂, 6, 2, 13; [16, 4, 0*, 1998/10/12–1998/10/26]

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

1971 UQ, 3, 1, 0; 1972 PA, 3, 1, 0; 1977 VL₁, 5, 1, 0; 1985 QP, 3, 1, 0; 1991 RY₈, 3, 1, 0; 1993 FT₂₆, 3, 1, 0; 1994 PS₁₁, 3, 1, 0; 1997 NJ₁₀, 9, 2, 5; 1998 RQ₆₂, 7, 2, 5; 1998 RZ₇₅, 11, 3, 2; 1998 SU₁₀, 25, 5, 17; 1998 SV₁₀, 25, 6, 22; 1998 SF₇₅, 3, 1, 0; 1998 SQ₈₁, 27, 6, 22; (592), 5, 1, 0; (865), 3, 1, 0; (927), 4, 1, 0; (1010), 5, 1, 0; (1508), 4, 1, 0; (1772), 3, 1, 0; (1899), 5, 1, 0; (2309), 4, 1, 0; (2567), 4, 1, 0; (2883), 3, 1, 0; (2892), 5, 1, 0; (3335), 5, 1, 0; (3482), 4, 1, 0; (3807), 3, 1, 0; (3928), 3, 1, 0; (3949), 8, 2, 2; (4259), 8, 2, 4; (4897), 3, 1, 0; (5347), 3, 1, 0; (5569), 2, 1, 0; (5692), 4, 1, 0; (6004), 2, 1, 0; (6230), 8, 2, 2; (6541), 3, 1, 0; (6690), 3, 1, 0; (7363), 8, 2, 4; (7601), 3, 1, 0; (9200), 3, 1, 0; (9232), 4, 1, 0; (9260), 3, 1, 0; (9261), 3, 1, 0; (9262), 4, 1, 0; (9295), 3, 1, 0; (9296), 3, 1, 0; (9387), 6, 2, 4; [274, 49, 0*, 1998/09/28–1998/10/26]

611 Starkenburg Sternwarte, Heppenheim

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

Observers M. Busch, R. Stoss, P. Geffert

Measurers R. Stoss, P. Geffert

0.45-m $f/4.4$ reflector + CCD

USNO-SA1.0

1998 UM₂₀ *, 6, 2, 1; (268), 3, 1, 0; [9, 2, 1*, 1998/10/29–1998/10/30]

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 SJ₆₃, 7, 2, 1; (4942), 6, 2, 1; [13, 2, 0*, 1998/10/12–1998/11/08]

620 Observatorio Astronómico de Mallorca

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

[astroam@dinky.bitel.es]

Observers A. Lopez, R. Pacheco, S. Sanchez, J. Rodriguez, A. Garcia

Measurers A. Lopez, R. Pacheco, J. Rodriguez

0.30-m $f/3.3$ Schmidt-Cassegrain + CCD, 0.25-m $f/4.5$ Schmidt-Cassegrain + CCD

GSC

1986 QL₂, 6, 2, 5; 1998 SJ₇₀, 3, 1, 0; 1998 SG₁₂₇, 5, 2, 5; 1998 TT₃, 7, 2, 9; 1998 UL₁, 3, 1, 0; 1998 UN₁, 4, 1, 0; 1998 UP₁, 2, 1, 0; 1998 UQ₁, 3, 1, 0; 1998 UT₁₈, 4, 1, 0; [37, 9, 0*, 1998/10/09–1998/10/28]

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

1998 QR₂₆, 3, 1, 0; 1998 SJ₂, 3, 1, 0; (5231), 3, 1, 0; [9, 3, 0*, 1998/10/25–1998/11/08]

629 JATE Observatory, Szeged

L. Kiss, H-6725 Szeged, Pf. 596, Hungary [l.kiss@physx.u-szeged.hu]

Observer K. Sárneczky

0.28-m Schmidt-Cassegrain + CCD

GSC

1972 PA, 5, 1, 0; 1998 KU₂, 5, 1, 0; 1998 MK₃₀, 1, 1, 0; (7358), 3, 1, 0; [14, 4, 0*, 1998/10/11]

631 Hamburg-Georgswerder

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

[michael.buck@hamburg.netsurf.de]

0.15-m $f/8$ refractor + CCD

GSC

(453), 4, 2, 4; (5051), 4, 2, 4; (6020), 4, 2, 4; (9143), 4, 2, 4; (9261), 4, 2, 4; [20, 5, 0*, 1998/10/14–1998/10/18]

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, 11, 4, 18; 1998 PG, 15, 6, 23; 1998 QR₁₅, 2, 1, 0; 1998 SS₄₉, 6, 1, 0; (927), 6, 3, 14; (2883), 2, 1, 0; [42, 6, 0*, 1998/10/14–1998/11/06]

636 Essen

A. Knöfel, Saarbrücker Str. 8, D-40476 Düsseldorf, Germany

[aknoefel@mail.ddorf.rhein-ruhr.de]

0.318-m $f/5.7$ reflector + CCD

USNO-A1.0

1991 RT₃, 4, 2, 4; 1998 PG, 8, 3, 5; (4942), 9, 3, 5; [21, 3, 0*, 1998/10/15–1998/10/20]

639 Dresden

S. Gebhard, Duckwitzstrasse 27d, D-01129 Dresden, Germany [Gebhard@t-

online.de]

0.25-m $f/6.0$ reflector + CCD

GSC

1998 PG, 2, 1, 0; [2, 1, 0*, 1998/10/25]

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

(409), 4, 2, 1; (457), 2, 1, 0; (4485), 2, 1, 0; [8, 3, 0*, 1998/10/21–1998/10/28]

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

1990 RR₂, 4, 2, 1; 1992 QL₂, 4, 2, 1; 1994 TK₁₁, 4, 2, 1; 1997 FQ₃, 4, 2, 1; 1998 SQ₂, 4, 2, 1; 1998 SL₁₃₃, 4, 2, 1; (4736), 4, 2, 1; (5234), 4, 2, 1; [32, 8, 0*, 1998/10/06–1998/10/21]

658 Dominion Astrophysical Observatory, Victoria

J. B. Tatum, Dept. of Physics, University of Victoria, P.O. Box 3055, Victoria, BC

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, 3, 1, 0; 1971 UN, 3, 1, 0; 1989 UR, 6, 2, 8; 1991 DG, 3, 1, 0; 1991 EE, 3, 1, 0; 1994 VA₁, 3, 1, 0; 1997 NQ₂, 3, 1, 0; 1998 HJ₄₁, 2, 1, 0; 1998 MQ, 6, 2, 8; 1998 MX₅, 3, 1, 0; 1998 ML₁₄, 4, 1, 0; 1998 MT₂₄, 3, 1, 0; 1998 PB₁, 3, 1, 0; 1998 QA₁, 4, 1, 0; 1998 QD₂, 2, 1, 0; 1998 QR₁₅, 6, 2, 2; 1998 QR₅₂, 6, 2, 1; 1998 QS₅₂, 3, 1, 0; 1998 QQ₆₃, 4, 1, 0; 1998 QA₁₀₅, 6, 2, 9; 1998 SJ₂, 6, 2, 2; 1998 SB₁₅, 3, 1, 0; 1998 ST₂₇, 2, 1, 0; 1998 SF₃₅, 3, 1, 0; 1998 SF₃₆, 4, 1, 0; 1998 SR₄₉, 3, 1, 0; 1998 SS₄₉, 6, 2, 1; 1998 SU₆₃, 9, 3, 9; 1998 SJ₇₀, 12, 3, 8; 1998 SZ₁₃₈, 3, 1, 0; 1998 TT₃,

6, 2, 6; 1998 TX₆, 9, 3, 8; 1998 TK₇, 3, 1, 0; 1998 TM₁₅, 3, 1, 0; 1998 UA, 3, 1, 0; 1998 UC, 3, 1, 0; 1998 UQ, 6, 2, 1; 1998 UR, 3, 1, 0; 1998 UT, 3, 1, 0; 1998 UV, 3, 1, 0; 1998 UD₁, 15, 5, 20; 1998 UE₁, 6, 2, 3; 1998 UF₁, 6, 2, 4; 1998 UG₁, 3, 1, 0; 1998 UH₁, 3, 1, 0; 1998 UL₁, 11, 4, 10; 1998 UM₁, 9, 3, 10; 1998 UN₁, 9, 3, 10; 1998 UO₁, 15, 5, 19; 1998 UP₁, 9, 3, 7; 1998 UQ₁, 6, 2, 10; 1998 UR₁, 6, 2, 1; 1998 US₁, 6, 2, 1; 1998 UT₁, 6, 2, 1; 1998 UU₁, 9, 3, 2; 1998 UQ₆ *, 9, 3, 17; 1998 UU₁₆, 3, 1, 0; 1998 US₁₈, 3, 1, 0; 1998 UT₁₈, 3, 1, 0; 1998 UX₂₄, 5, 2, 9; 1998 UY₂₄, 6, 2, 9; 4602 P-L, 3, 1, 0; (3362), 2, 1, 0; (5587), 2, 1, 0; [324, 64, 1*, 1998/10/18–1998/11/09]

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

1997 US₉, 3, 1, 0; 1998 KU₂, 3, 1, 0; 1998 PG, 3, 1, 0; 1998 QR₁₅, 3, 1, 0; 1998 QH₂₇, 3, 1, 0; 1998 TT₃, 3, 1, 0; 1998 TU₃, 9, 3, 3; 1998 UF, 3, 1, 0; 1998 UQ, 7, 2, 1; (1036), 2, 1, 0; (6047), 3, 1, 0; [42, 11, 0*, 1998/10/05–1998/10/18]

673 Table Mountain Observatory

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[dlr@ipl.jpl.nasa.gov]

W. M. Owen, Jr., Jet Propulsion Laboratory 301-150, 4800 Oak Grove Drive, Pasadena, CA 91109-8099 [wmo@wansor.jpl.nasa.gov]

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

0.6-m reflector + CCD

1998 TU₃, 3, 1, 0; 1998 UQ, 4, 1, 0; 1998 UM₁, 2, 1, 0; 1998 UN₁, 4, 2, 1; 1998 UO₁, 4, 2, 1; 1998 UQ₁, 4, 2, 1; (2), 8, 3, 26; (11), 2, 1, 0; (15), 8, 3, 26; (17), 3, 1, 0; (20), 1, 1, 0; (29), 5, 2, 21; (34), 4, 2, 20; (46), 2, 1, 0; (49), 5, 3, 21; (51), 6, 2, 25; (60), 2, 1, 0; (70), 8, 3, 21; (87), 5, 2, 1; (102), 5, 2, 1; (113), 1, 1, 0; (132), 5, 2, 21; (146), 4, 2, 21; (147), 8, 3, 26; (187), 2, 1, 0; (196), 5, 2, 20; (245), 5, 2, 21; (358), 2, 1, 0; (389), 7, 3, 21; (489), 3, 1, 0; (576), 5, 2, 1; (690), 5, 2, 1; (790), 4, 2, 21; (1036), 1, 1, 0; (1069), 3, 1, 0; [145, 35, 0*, 1998/10/10–1998/11/05]

675 Palomar

D. L. Rabinowitz, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.

[davidr@slam.jpl.nasa.gov] (1)

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

[gshoemaker@iflag2.wr.usgs.gov] (3)

C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands [vanhouten@rnhl11.leidenuniv.nl] (4)

A. Gnädig, c/o Archenholt-Sternwarte, Alt-Treptow 1, D-12435 Berlin, Germany [doppler@mind.de] (5)

E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A. [elgb@lowell.edu] (6)

9 = 6 + 3

Observers T. Gehrels (4, L), H. E. Holt (3, S), C. S. Shoemaker (3, S), E. M. Shoemaker (3, S), K. W. Zeigler (3, S), S. Pravdo (1, H), S. Shaklan (1, H)

Measurers A. Gnädig (5), B. A. Skiff (6), C. J. van Houten (4), I. van Houten-Groeneveld (4), A. Wisse (4), A. Boattini (1), D. L. Rabinowitz (1)

1.2-m Oschin Schmidt (L), 0.46-m Schmidt (S), 5-m Hale reflector + CCD (H)

(1) 1992 KD, 3, 1, 0; [3, 1, 0*, 1998/10/02]

(4) 2038 P-L *, 8, 8, 32; 2048 P-L *, 8, 8, 32; 2564 P-L *, 8, 8, 32; 2565 P-L *, 8, 8, 32; 2589 P-L *, 8, 8, 32; 2602 P-L *, 8, 8, 32; 2621 P-L *, 6, 6, 32; 2695 P-L *, 5, 5, 32; 2794 P-L *, 3, 3, 3; 3018 P-L *, 7, 5, 4; 3101 P-L *, 3, 3, 5; 3529 P-L *, 6, 4, 9; 4080 P-L *, 7, 7, 32; 4091 P-L *, 7, 7, 32; 4224 P-L *, 7, 4, 4; 4525 P-L *, 11, 8, 30; 4758 P-L *, 7, 7, 32; 4761 P-L *, 3, 3, 4; 4787 P-L *, 8, 4, 4; 4858 P-L *, 6, 6, 28; 5017 P-L *, 3, 3, 4; 6062 P-L *, 8, 8, 32; 6100 P-L *, 9, 8, 32; 6184 P-L *, 5, 5, 32; 6202 P-L *, 6, 6, 32; 6276 P-L *, 6, 6, 32; 6520 P-L *, 8, 8, 32; 6631 P-L *, 6, 6, 30; 6708 P-L *, 8, 4, 4; 6773 P-L *, 7, 7, 32; 6842 P-L *, 4, 4, 4; 7645 P-L *, 4, 4, 9; 9088 P-L *, 4, 4, 9; 9091 P-L *, 4, 4, 9; 9093 P-L *, 6, 6, 32; 9104 P-L *, 5, 5, 32; 9532 P-L *, 4,

4, 9; 9610 P-L *, 4, 4, 9; 1062 T-1 *, 5, 4, 3; 1236 T-1 *, 8, 7, 51; 2030 T-1 *, 5, 4, 3; 2153 T-1 *, 8, 6, 23; 2214 T-1 *, 10, 8, 51; 2241 T-1 *, 6, 5, 9; 3290 T-1 *, 13, 9, 53; 4143 T-1 *, 5, 4, 9; 4164 T-1 *, 9, 7, 51; 4290 T-1 *, 11, 8, 53; 4826 T-1 *, 3, 3, 3; 1027 T-2 *, 16, 6, 15; 1093 T-2 *, 15, 8, 16; 1161 T-2 *, 14, 8, 16; 1187 T-2 *, 15, 8, 16; 1242 T-2 *, 15, 8, 16; 1343 T-2 *, 14, 8, 16; 2197 T-2 *, 14, 8, 16; 2266 T-2 *, 21, 7, 15; 3167 T-2 *, 15, 8, 16; 3182 T-2 *, 15, 8, 16; 3210 T-2 *, 15, 8, 16; 3331 T-2 *, 7, 4, 6; 4081 T-2 *, 15, 8, 16; 4087 T-2 *, 15, 8, 16; 4174 T-2 *, 11, 6, 15; 4278 T-2 *, 15, 8, 16; 4536 T-2 *, 15, 8, 16; 4564 T-2 *, 13, 7, 15; 5080 T-2 *, 15, 8, 16; 5112 T-2 *, 14, 7, 15; 5124 T-2 *, 14, 7, 15; 5149 T-2 *, 15, 8, 16; 5415 T-2 *, 14, 7, 15; 1088 T-3 *, 14, 5, 10; 1102 T-3 *, 11, 6, 15; 1158 T-3 *, 11, 6, 15; 1892 T-3 *, 6, 3, 6; 2135 T-3 *, 13, 7, 15; 2140 T-3 *, 13, 7, 15; 2200 T-3 *, 12, 6, 11; 2382 T-3 *, 13, 7, 15; 3042 T-3 *, 21, 7, 15; 3195 T-3 *, 18, 7, 15; 3325 T-3 *, 10, 5, 10; 3382 T-3 *, 13, 7, 15; 3460 T-3 *, 13, 7, 15; 3477 T-3 *, 13, 7, 15; 3650 T-3 *, 6, 3, 5; 4054 T-3 *, 13, 7, 15; 4137 T-3 *, 13, 7, 15; 4234 T-3 *, 12, 6, 11; 4381 T-3 *, 7, 4, 6; 4384 T-3 *, 8, 4, 6; 4672 T-3 *, 6, 3, 5; 5015 T-3 *, 11, 6, 11; [907, 94, 94*, 1960/09/24-1977/10/22]

(5) 1988 RQ₈, 1, 1, 0; 1998 EZ₂, 2, 1, 0; 1998 QJ₈, 2, 2, 1; 1998 QQ₃₉, 1, 1, 0; 1998 QP₄₁, 2, 2, 49; 6062 P-L, 2, 1, 0; [10, 6, 0*, 1949/11/21-1953/12/07]

(9) 1992 EZ₂₈, 2, 1, 0; 1996 AA, 2, 1, 0; 1996 EW, 2, 1, 0; [6, 3, 0*, 1988/03/18-1989/08/02]

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

1972 PA, 9, 3, 33; 1976 YF₃, 4, 2, 2; 1981 TP, 4, 2, 2; 1984 SA, 6, 2, 2; 1990 OL₄, 6, 2, 3; 1991 AS₁, 5, 2, 7; 1993 OB₂, 5, 3, 21; 1997 NZ, 9, 2, 1; 1998 QC₅₆, 5, 2, 3; 1998 UO₁, 4, 1, 0; (285), 2, 1, 0; (1906), 5, 2, 3; (2074), 3, 1, 0; (2937), 6, 2, 1; (3135), 4, 2, 1; (3368), 4, 2, 4; (4416), 4, 2, 2; (6065), 7, 3, 29; [92, 18, 0*, 1998/08/30-1998/10/27]

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

1998 SZ₂, 5, 2, 5; 1998 SA₃, 5, 2, 5; 1998 SB₃, 6, 2, 1; 1998 SY₁₂, 6, 2, 1; 1998 SZ₁₂, 6, 2, 1; 1998 SW₂₇, 12, 4, 29; 1998 TN *, 12, 4, 6; 1998 TO *, 12, 4, 8; 1998 TP *, 12, 4, 8; 1998 TV₃ *, 5, 2, 2; 1998 UT₁₆ *, 4, 2, 1; 1998 UY₁₆, 5, 2, 1; 1998 UH₂₀ *, 6, 2, 1; 1998 UJ₂₃ *, 8, 3, 3; 1998 UK₂₃ *, 7, 3, 3; 1998 VK *, 6, 2, 1; 1998 VL *, 6, 2, 1; (1848), 3, 1, 0; (2267), 3, 1, 0; (2295), 5, 2, 1; (3726), 3, 1, 0; (4084), 3, 1, 0; (4713), 4, 2, 1; (7783), 7, 2, 1; [151, 24, 10*, 1998/10/10-1998/11/08]

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

1994 WA₄, 4, 2, 1; 1996 GS, 4, 2, 1; 1997 KH, 5, 2, 1; 1997 LZ₄, 4, 2, 1; 1997 MR₁, 4, 2, 1; 1997 NC₃, 4, 2, 4; 1997 NE₃, 4, 2, 4; 1997 PM₁, 4, 2, 4; 1998 PR, 5, 2, 1; 1998 PU, 4, 2, 1; 1998 QE, 4, 2, 1; 1998 QF, 4, 2, 1; 1998 QH, 4, 2, 1; 1998 QY, 4, 2, 1; 1998 QZ, 2, 1, 0; 1998 QS₅, 3, 1, 0; 1998 QT₅, 3, 2, 1; 1998 QM₂₈, 4, 2, 1; 1998 QO₂₈, 4, 2, 1; 1998 QM₃₃, 4, 2, 2; 1998 QW₄₁, 5, 2, 1; 1998 RP₁, 6, 3, 3; 1998 RX₆₀, 5, 2, 2; 1998 RZ₆₈, 2, 1, 0; 1998 SB₂, 4, 2, 1; 1998 SE₄, 5, 2, 1; 1998 SL₄, 4, 2, 1; 1998 SM₄, 3, 2, 1; 1998 SA₂₈, 4, 2, 1; 1998 SB₂₈, 4, 2, 1; 1998 SC₂₈, 4, 2, 2; 1998 SA₃₆, 4, 2, 1; 1998 SW₃₆, 4, 2, 2; 1998 SO₁₀₁, 4, 2, 1; 1998 SJ₁₀₇, 5, 2, 1; 1998 ST₁₃₈, 4, 2, 1; 1998 SQ₁₄₃, 4, 2, 3; 1998 TB₂, 4, 2, 1; 1998 UK *, 7, 3, 2; 1998 UO *, 4, 2, 1; 1998 UP *, 6, 3, 7; 1998 US *, 6, 3, 6; 1998 UV₁ *, 6, 3, 4; 1998 UG₇ *, 4, 2, 4; [186, 44, 6*, 1998/10/09-1998/10/24]

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Observers B. A. Skiff, L. A. Marschall

Measurers M. W. Buie, G. Snyder

1.07-m Hall reflector + CCD, 0.8-m reflector + CCD

USNO-A1.0

1994 PS, 2, 1, 0; 1998 SV₈₇, 8, 4, 5; [10, 2, 0*, 1997/06/12-1998/10/14]

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0.20-m transit telescope + CCD

ACT

1976 YF₃, 1, 1, 0; 1978 PX₃, 1, 1, 0; 1981 EJ₅, 1, 1, 0; 1981 QK, 1, 1, 0; 1981 RF₂, 1, 1, 0; 1981 UR₂₇, 2, 2, 1; 1984 UR, 1, 1, 0; 1985 QP, 4, 4, 7; 1985 SC₃, 1, 1, 0; 1985 TY₁, 1, 1, 0; 1985 UG₂, 2, 2, 1; 1986 TV₆, 1, 1, 0; 1986 TT₁₁, 2, 2, 1; 1986 XT, 2, 2, 6; 1989 PF, 1, 1, 0; 1990 RR₂, 1, 1, 0; 1991 FL₂, 2, 2, 6; 1991 OO, 1, 1, 0; 1991 PT₉, 2, 2, 6; 1991 PG₁₁, 3, 3, 11; 1991 PZ₁₇, 1, 1, 0; 1991 RY₈, 3, 3, 6; 1991 RE₁₅, 1, 1, 0; 1991 RK₁₅, 1, 1, 0; 1991 RA₁₇, 2, 2, 5; 1991 UO₂, 1, 1, 0; 1991 VY₁, 1, 1, 0; 1992 GH, 1, 1, 0; 1992 QL₂, 1, 1, 0; 1993 BX₁₃, 2, 2, 1; 1994 GA₁, 1, 1, 0; 1994 VZ₆, 1, 1, 0; 1995 AF, 1, 1, 0; 1996 BB, 1, 1, 0; 1998 KU₂, 2, 2, 7; 1998 MK₃₀, 2, 2, 1; 4665 P-L, 1, 1, 0; 1104 T-1, 1, 1, 0; (5), 1, 1, 0; (14), 2, 2, 6; (29), 4, 4, 18; (44), 5, 5, 17; (98), 3, 3, 7; (126), 2, 2, 1; (165), 4, 4, 18; (197), 3, 3, 18; (307), 2, 2, 1; (314), 1, 1, 0; (348), 3, 3, 12; (379), 3, 3, 6; (453), 1, 1, 0; (487), 3, 3, 11; (488), 2, 2, 1; (621), 2, 2, 11; (791), 1, 1, 0; (927), 1, 1, 0; (968), 4, 4, 18; (1093), 1, 1, 0; (1398), 2, 2, 6; (1498), 1, 1, 0; (2739), 2, 2, 1; (3107), 5, 5, 18; (3368), 1, 1, 0; (3630), 2, 2, 1; (3753), 2, 2, 1; (4125), 2, 2, 1; (4436), 2, 2, 1; (5051), 1, 1, 0; (5230), 1, 1, 0; (5499), 2, 2, 1; (6070), 1, 1, 0; (9068), 3, 3, 11; (9156), 1, 1, 0; (9185), 2, 2, 1; (9215), 2, 2, 1; (9223), 1, 1, 0; (9276), 1, 1, 0; (9295), 2, 2, 10; (9297), 2, 2, 1; (9298), 3, 3, 6; (9300), 1, 1, 0; (9304), 1, 1, 0; (9308), 2, 2, 11; (9333), 1, 1, 0; (9350), 1, 1, 0; (9374), 2, 2, 1; (9442), 3, 3, 17; (9494), 1, 1, 0; [156, 88, 0*, 1998/09/21-1998/10/09]

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0.91-m Spacewatch telescope + CCD

GSC

1978 SA₅, 3, 1, 0; 1978 VV₆, 3, 1, 0; 1981 EN₂₁, 3, 1, 0; 1981 EH₂₃, 3, 1, 0; 1981 EW₃₀, 3, 1, 0; 1981 EP₄₁, 3, 1, 0; 1981 EQ₄₇, 2, 1, 0; 1981 JM₂, 3, 1, 0; 1981 VN, 6, 2, 5; 1984 SZ₅, 6, 2, 7; 1987 SJ₁, 6, 2, 10; 1987 SP₁₂, 3, 1, 0; 1988 FM, 3, 1, 0; 1988 PL, 3, 1, 0; 1988 RR₅, 6, 2, 4; 1988 RS₆, 6, 2, 10; 1988 UC, 3, 1, 0; 1989 AL₆, 6, 2, 6; 1989 CT₃, 3, 1, 0; 1989 GQ₁, 3, 1, 0; 1990 QY₂, 3, 1, 0; 1990 SG₁₁, 3, 1, 0; 1991 DK₁, 6, 2, 13; 1991 GP₃, 3, 1, 0; 1991 LU₁, 5, 2, 4; 1991 RL₁, 3, 1, 0; 1991 RT₃, 3, 1, 0; 1991 RT₁₇, 3, 1, 0; 1991 UQ, 9, 3, 13; 1992 DJ₈, 5, 2, 6; 1992 PD₂, 3, 1, 0; 1992 RO₃, 3, 1, 0; 1992 WF₁, 3, 1, 0; 1993 FR₃, 3, 1, 0; 1993 FL₈, 6, 2, 5; 1993 FC₄₆, 6, 2, 8; 1993 FS₅₀, 6, 2, 4; 1993 LZ₁, 6, 2, 6; 1993 NJ₁, 3, 1, 0; 1993 QV₄, 6, 2, 12; 1993 TH₁₉, 6, 2, 12; 1993 XB, 9, 3, 7; 1994 PO₇, 3, 1, 0; 1994 PV₃₇, 3, 1, 0; 1994 PA₃₉, 9, 3, 10; 1994 UQ₁, 6, 2, 7; 1994 VB, 3, 1, 0; 1994 VH, 3, 1, 0; 1994 VL, 6, 2, 5; 1995 BA₃, 6, 2, 6; 1995 FM₃, 3, 1, 0; 1995 TZ, 1, 1, 0; 1995 WW₁₇, 6, 2, 4; 1995 YG, 3, 1, 0; 1995 YA₇, 3, 1, 0; 1996 AQ₂, 3, 1, 0; 1996 DG₂, 3, 1, 0; 1996 ES₁, 6, 2, 4; 1996 GC₁₈, 6, 2, 6; 1996 GM₂₀, 5, 2, 5; 1996 GV₂₀, 3, 1, 0; 1996 TR₆, 3, 1, 0; 1996 TL₆₆, 3, 1, 0; 1997 CC₁₇, 3, 1, 0; 1997 GD₈, 3, 1, 0; 1997 GL₈, 6, 2, 13; 1997 GX₁₄, 6, 2, 8; 1997 GZ₁₄, 3, 1, 0; 1997 GT₁₈, 3, 1, 0; 1997 HQ₁, 6, 2, 6; 1997 HC₁₆, 3, 1, 0; 1997 JS₁₄, 6, 2, 5; 1997 JJ₁₆, 6, 2, 12; 1997 NC₃, 6, 2, 5; 1997 OJ, 6, 2, 5; 1997 WR₄₉, 6, 2, 8; 1998 OT₁₁, 3, 1, 0; 1998 PW, 3, 1, 0; 1998 QV₆, 9, 3, 16; 1998 QQ₁₂, 3, 1, 0; 1998 KM₃₀, 3, 1, 0; 1998 QZ₃₃, 3, 1, 0; 1998 QZ₃₄, 3, 1, 0; 1998 QZ₃₇, 3, 1, 0; 1998 QG₄₀, 3, 1, 0; 1998 QY₄₀, 3, 1, 0; 1998 QM₄₉, 6, 2, 8; 1998 QE₅₃, 3, 1, 0; 1998 QN₅₄, 3, 1, 0; 1998 QX₅₄, 6, 2, 4; 1998 QL₅₅, 9, 3, 14; 1998 QU₆₂, 3, 1, 0; 1998 QB₁₀₇, 6, 2, 5; 1998 RJ₅₄, 6, 2, 3; 1998 RO₅₆, 3, 1, 0; 1998 RS₅₆, 5, 2, 3; 1998 RM₅₈, 5, 2, 3; 1998 RP₅₈, 6, 2, 3; 1998 RQ₅₈, 6, 2, 3; 1998 RU₅₈, 3, 1, 0; 1998 RV₅₈, 6, 2, 15; 1998 RF₅₉, 3, 1, 0; 1998 RK₅₉, 3, 1, 0; 1998 RW₅₉, 6, 2, 11; 1998 RV₆₁, 3, 1, 0; 1998 RH₆₂, 5, 2, 3; 1998 RM₆₂, 3, 1, 0; 1998 RK₆₄, 9, 3, 15; 1998 RQ₆₄, 3, 1, 0; 1998 RX₆₄, 6, 2, 11; 1998 RA₆₅, 6, 2, 12; 1998 RB₆₅, 6, 2, 8; 1998 RC₆₅, 3, 1, 0; 1998 RJ₆₅, 3, 1, 0; 1998 RM₆₅, 6, 2, 12; 1998 RN₆₅, 3, 1, 0; 1998 RX₆₅, 3, 1, 0; 1998 RB₆₆, 3, 1, 0; 1998 RH₆₆, 3, 1, 0; 1998 RZ₆₈, 3, 1, 0; 1998 RT₆₉, 3, 1, 0; 1998 RY₆₉, 3, 1, 0; 1998 RY₇₁, 9, 3, 13; 1998 RA₇₂, 3, 1, 0; 1998 RC₇₂, 3, 1, 0; 1998 RD₇₂, 3, 1, 0; 1998 RM₈₀, 6, 2, 15; 1998 RP₈₀, 3, 1, 0; 1998 SK₂, 3, 1, 0; 1998 SS₈, 3, 1, 0; 1998 SJ₉, 3, 1, 0; 1998 SN₉, 3, 1, 0; 1998 SV₉, 6, 2, 11; 1998 SE₁₀, 6, 2,

14; 1998 SF₁₀ *, 3, 1, 0; 1998 SH₁₀ *, 6, 2, 6; 1998 SF₁₂ *, 5, 2, 5; 1998 SK₁₆ *, 3, 1, 0; 1998 SB₂₂ *, 3, 1, 0; 1998 SC₂₂ *, 6, 2, 5; 1998 SA₂₇ *, 5, 2, 6; 1998 SK₃₄ *, 6, 2, 8; 1998 SM₃₄ *, 3, 1, 0; 1998 SP₃₅ *, 9, 3, 15; 1998 SP₃₇ *, 6, 2, 2; 1998 SR₃₇ *, 6, 2, 2; 1998 SN₄₀ *, 3, 1, 0; 1998 SO₄₁ *, 6, 2, 3; 1998 SQ₄₁ *, 3, 1, 0; 1998 SU₄₁ *, 3, 1, 0; 1998 SJ₄₂ *, 2, 1, 0; 1998 SL₄₂ *, 3, 1, 0; 1998 SP₄₂ *, 3, 1, 0; 1998 SY₄₂ *, 9, 3, 9; 1998 SD₄₃ *, 3, 1, 0; 1998 SH₄₃ *, 9, 3, 14; 1998 SR₄₃ *, 3, 1, 0; 1998 SG₄₄ *, 3, 1, 0; 1998 SA₄₆ *, 3, 1, 0; 1998 SK₄₆ *, 6, 2, 1; 1998 SP₄₆ *, 9, 3, 3; 1998 SU₄₆ *, 6, 2, 6; 1998 SY₄₆ *, 6, 2, 1; 1998 SZ₄₆ *, 6, 2, 1; 1998 SA₄₇ *, 6, 2, 6; 1998 SC₄₇ *, 3, 1, 0; 1998 SD₄₇ *, 9, 3, 6; 1998 SE₄₇ *, 3, 1, 0; 1998 SF₄₇ *, 6, 2, 6; 1998 SX₄₇ *, 6, 2, 1; 1998 SB₄₈ *, 3, 1, 0; 1998 SM₄₈ *, 6, 2, 6; 1998 SS₄₈ *, 3, 1, 0; 1998 SV₄₈ *, 3, 1, 0; 1998 SF₄₉ *, 6, 2, 1; 1998 SM₅₀ *, 6, 2, 6; 1998 SY₅₀ *, 6, 2, 2; 1998 SA₅₁ *, 6, 2, 1; 1998 SG₅₁ *, 3, 1, 0; 1998 SJ₅₁ *, 6, 2, 6; 1998 SM₅₁ *, 3, 1, 0; 1998 SB₅₂ *, 3, 1, 0; 1998 SC₅₂ *, 6, 2, 3; 1998 SD₅₂ *, 3, 1, 0; 1998 SF₅₂ *, 6, 2, 3; 1998 SK₅₂ *, 9, 3, 15; 1998 SE₅₃ *, 6, 2, 6; 1998 SG₅₃ *, 6, 2, 6; 1998 SJ₅₃ *, 6, 2, 6; 1998 SH₅₄ *, 3, 1, 0; 1998 SR₅₄ *, 6, 2, 3; 1998 SY₅₄ *, 6, 2, 4; 1998 SO₅₅ *, 6, 2, 3; 1998 SU₅₅ *, 6, 2, 3; 1998 SH₅₆ *, 3, 1, 0; 1998 SL₅₆ *, 3, 1, 0; 1998 SO₅₆ *, 3, 1, 0; 1998 SE₅₈ *, 6, 2, 12; 1998 SF₅₈ *, 3, 1, 0; 1998 SM₅₈ *, 5, 2, 5; 1998 SV₆₂ *, 3, 1, 0; 1998 SY₆₂ *, 3, 1, 0; 1998 SO₆₃ *, 3, 1, 0; 1998 SQ₆₇ *, 3, 1, 0; 1998 SJ₇₀ *, 9, 3, 9; 1998 SB₈₁ *, 3, 1, 0; 1998 SX₈₁ *, 6, 2, 3; 1998 SN₈₃ *, 6, 2, 8; 1998 SS₈₃ *, 3, 1, 0; 1998 SU₈₃ *, 3, 1, 0; 1998 SV₈₃ *, 6, 2, 3; 1998 SX₈₃ *, 6, 2, 3; 1998 SO₈₅ *, 6, 2, 3; 1998 SU₈₅ *, 9, 3, 13; 1998 SS₈₉ *, 6, 2, 3; 1998 SM₉₃ *, 3, 1, 0; 1998 SP₉₃ *, 3, 1, 0; 1998 SU₉₆ *, 3, 1, 0; 1998 SP₉₇ *, 6, 2, 8; 1998 SZ₁₀₆ *, 3, 1, 0; 1998 SB₁₁₁ *, 3, 1, 0; 1998 SD₁₁₁ *, 3, 1, 0; 1998 SH₁₁₁ *, 6, 2, 4; 1998 SK₁₁₁ *, 3, 1, 0; 1998 SN₁₁₁ *, 3, 1, 0; 1998 SO₁₁₁ *, 3, 1, 0; 1998 SD₁₁₅ *, 3, 1, 0; 1998 SE₁₁₅ *, 3, 1, 0; 1998 SL₁₁₅ *, 3, 1, 0; 1998 SH₁₁₈ *, 6, 2, 5; 1998 SB₁₁₉ *, 6, 2, 4; 1998 SE₁₁₉ *, 9, 3, 15; 1998 SH₁₁₉ *, 3, 1, 0; 1998 SO₁₂₀ *, 3, 1, 0; 1998 SA₁₂₁ *, 3, 1, 0; 1998 SC₁₂₄ *, 9, 3, 15; 1998 SQ₁₂₄ *, 9, 3, 14; 1998 ST₁₂₄ *, 6, 2, 5; 1998 SA₁₃₅ *, 3, 1, 0; 1998 SZ₁₃₈ *, 5, 2, 1; 1998 SB₁₄₆ *, 6, 2, 2; 1998 SQ₁₄₆ *, 6, 2, 3; 1998 SV₁₄₇ *, 6, 2, 6; 1998 SE₁₄₉ *, 3, 1, 0; 1998 SJ₁₅₁ *, 9, 3, 12; 1998 SK₁₅₁ *, 6, 2, 5; 1998 SA₁₅₅ *, 3, 1, 0; 1998 SD₁₅₆ *, 6, 2, 4; 1998 SE₁₅₆ *, 6, 2, 9; 1998 SH₁₅₆ *, 6, 2, 5; 1998 SJ₁₅₆ *, 3, 1, 0; 1998 SK₁₅₆ *, 3, 1, 0; 1998 SC₁₅₇ *, 9, 3, 13; 1998 SE₁₅₇ *, 6, 2, 9; 1998 SG₁₅₇ *, 6, 2, 9; 1998 SM₁₅₉ *, 6, 2, 4; 1998 TQ *, 6, 2, 1; 1998 TR *, 6, 2, 1; 1998 TS *, 6, 2, 1; 1998 TT *, 6, 2, 1; 1998 TU *, 9, 3, 6; 1998 TV *, 9, 3, 6; 1998 TW *, 6, 2, 1; 1998 TX *, 6, 2, 1; 1998 TY *, 9, 3, 6; 1998 TZ *, 6, 2, 1; 1998 TA₁ *, 6, 2, 1; 1998 TB₁ *, 6, 2, 1; 1998 TC₁ *, 6, 2, 1; 1998 TD₁ *, 6, 2, 1; 1998 TE₁ *, 9, 3, 6; 1998 TF₁ *, 9, 3, 6; 1998 TG₁ *, 9, 3, 6; 1998 TH₁ *, 6, 2, 1; 1998 TI₁ *, 6, 2, 1; 1998 TJ₁ *, 6, 2, 1; 1998 TK₁ *, 6, 2, 1; 1998 TL₁ *, 6, 2, 1; 1998 TM₁ *, 6, 2, 1; 1998 TN₁ *, 9, 3, 6; 1998 TO₁ *, 9, 3, 6; 1998 TP₁ *, 6, 2, 1; 1998 TQ₁ *, 6, 2, 1; 1998 TW₁ *, 2, 1, 0; 1998 TZ₂ *, 3, 1, 0; 1998 TT₂ *, 3, 1, 0; 1998 TV₂ *, 3, 1, 0; 1998 TX₂ *, 3, 1, 0; 1998 TY₂ *, 3, 1, 0; 1998 TR₃ *, 3, 1, 0; 1998 TW₃ *, 6, 2, 3; 1998 TX₃ *, 6, 2, 3; 1998 TY₃ *, 6, 2, 3; 1998 TZ₃ *, 5, 2, 3; 1998 TA₄ *, 6, 2, 3; 1998 TB₄ *, 6, 2, 3; 1998 TC₄ *, 6, 2, 3; 1998 TD₄ *, 6, 2, 3; 1998 TE₄ *, 6, 2, 3; 1998 TF₄ *, 6, 2, 3; 1998 TG₄ *, 5, 2, 3; 1998 TH₄ *, 6, 2, 3; 1998 TI₄ *, 6, 2, 3; 1998 TJ₄ *, 6, 2, 3; 1998 TK₄ *, 6, 2, 3; 1998 TL₄ *, 5, 2, 3; 1998 TM₄ *, 6, 2, 3; 1998 TN₄ *, 5, 2, 3; 1998 TO₄ *, 6, 2, 3; 1998 TP₄ *, 6, 2, 3; 1998 TQ₄ *, 6, 2, 3; 1998 TR₄ *, 6, 2, 3; 1998 TS₄ *, 6, 2, 2; 1998 TT₄ *, 6, 2, 2; 1998 TV₄ *, 6, 2, 2; 1998 TW₄ *, 6, 2, 2; 1998 TX₄ *, 6, 2, 2; 1998 TY₄ *, 6, 2, 1; 1998 TZ₄ *, 6, 2, 1; 1998 TA₅ *, 9, 3, 4; 1998 TB₅ *, 9, 3, 4; 1998 TL₅ *, 8, 3, 6; 1998 TM₅ *, 9, 3, 7; 1998 TN₅ *, 2, 1, 0; 1998 TR₅ *, 6, 2, 5; 1998 TS₅ *, 5, 2, 12; 1998 TE₆ *, 3, 1, 0; 1998 TF₆ *, 5, 2, 12; 1998 TO₆ *, 2, 1, 0; 1998 TU₆ *, 3, 1, 0; 1998 TV₆ *, 5, 2, 12; 1998 TW₆ *, 12, 4, 27; 1998 TX₆ *, 18, 5, 14; 1998 TM₇ *, 6, 2, 5; 1998 TN₇ *, 6, 2, 5; 1998 TO₇ *, 6, 2, 4; 1998 TP₇ *, 6, 2, 4; 1998 TQ₇ *, 6, 2, 4; 1998 TR₇ *, 6, 2, 4; 1998 TS₇ *, 6, 2, 4; 1998 TT₇ *, 6, 2, 4; 1998 TU₇ *, 6, 2, 4; 1998 TV₇ *, 6, 2, 4; 1998 TW₇ *, 5, 2, 4; 1998 TX₇ *, 6, 2, 4; 1998 TY₇ *, 6, 2, 4; 1998 TZ₇ *, 5, 2, 4; 1998 TA₈ *, 6, 2, 4; 1998 TB₈ *, 6, 2, 4; 1998 TC₈ *, 6, 2, 4; 1998 TD₈ *, 6, 2, 4; 1998 TE₈ *, 8, 3, 4; 1998 TF₈ *, 6, 2, 6; 1998 TG₈ *, 9, 3, 17; 1998 TH₈ *, 6, 2, 6; 1998 TJ₈ *, 6, 2, 6; 1998 TK₈ *, 6, 2, 6; 1998 TL₈ *, 6, 2, 6; 1998 TM₈ *, 6, 2, 6; 1998 TN₈ *, 6, 2, 6; 1998 TO₈ *, 9, 3, 11; 1998 TP₈ *, 9, 3, 11; 1998 TQ₈ *, 6, 2, 6; 1998 TR₈ *, 6, 2, 6; 1998 TS₈ *, 9, 3, 11; 1998 TT₈ *, 9, 3, 11; 1998 TU₈ *, 6, 2, 6; 1998 TV₈ *, 6, 2, 6; 1998 TW₈ *, 6, 2, 6; 1998 TX₈ *, 6, 2, 6; 1998 TY₈ *, 6, 2, 6; 1998 TZ₈ *, 6, 2, 6; 1998 TA₉ *, 5, 2, 6; 1998 TB₉ *, 6, 2, 6; 1998 TC₉ *, 6, 2, 6; 1998 TD₉ *, 6, 2, 6; 1998 TE₉ *, 5, 2, 6; 1998 TF₉ *, 9, 3, 11; 1998 TG₉ *, 6, 2, 6; 1998 TH₉ *, 5, 2, 6; 1998 TI₉ *, 6, 2, 6; 1998 TJ₉ *, 9, 3, 11; 1998 TK₉ *, 9, 3, 11; 1998 TL₉ *, 6, 2, 6; 1998 TM₉ *, 9, 3, 11; 1998 TN₉ *, 6, 2, 6; 1998 TO₉ *, 5, 2, 6; 1998 TP₉ *, 9, 3, 11; 1998 TQ₉ *, 6, 2, 6; 1998 TR₉ *, 6, 2, 6; 1998 TS₉ *, 9, 3, 11; 1998 TT₉ *, 9, 3, 11; 1998 TV₉ *, 9, 3, 11; 1998 TW₉ *, 6, 2, 6; 1998 TX₉ *, 6, 2, 6; 1998 TY₉ *, 6, 2, 6; 1998 TZ₉ *, 6, 2, 6; 1998 TA₁₀ *, 9, 3, 11; 1998 TB₁₀ *, 6, 2, 6; 1998 TC₁₀ *, 6, 2, 6; 1998 TD₁₀ *, 6, 2, 6; 1998 TE₁₀ *, 6, 2, 6; 1998 TF₁₀ *, 9, 3, 11; 1998 TG₁₀ *, 6, 2, 6; 1998 TH₁₀ *, 9, 3, 11; 1998 TI₁₀ *, 6, 2, 6; 1998 TK₁₀ *, 6, 2, 6; 1998 TL₁₀ *, 6, 2, 6; 1998 TM₁₀ *, 6, 2, 6; 1998 TN₁₀ *, 6, 2, 6; 1998 TO₁₀ *, 6, 2, 6; 1998 TP₁₀ *, 6, 2, 6; 1998 TQ₁₀ *, 6, 2, 6; 1998 TR₁₀ *, 6, 2, 6; 1998 TS₁₀ *, 6, 2, 6; 1998 TT₁₀ *, 5, 2, 6; 1998 TV₁₀ *, 6, 2, 6; 1998 TW₁₀ *, 6, 2, 6; 1998 TX₁₀ *, 6, 2, 6; 1998 TY₁₀ *, 6, 2, 6; 1998 TZ₁₀ *, 6, 2, 6; 1998 TA₁₁ *, 6, 2, 6; 1998 TB₁₁ *, 6, 2, 6; 1998 TC₁₁ *, 5, 2, 6; 1998 TD₁₁ *, 5, 2, 6; 1998 TE₁₁ *, 9, 3, 9; 1998 TF₁₁ *, 8, 3, 10; 1998 TG₁₁ *, 6, 2, 5; 1998 TH₁₁ *, 6, 2, 5; 1998 TI₁₁ *, 6, 2, 5; 1998 TJ₁₁ *, 6, 2, 5; 1998 TK₁₁ *, 6, 2, 5; 1998 TL₁₁ *, 6, 2, 5; 1998 TM₁₁ *, 6, 2, 5; 1998 TN₁₁ *, 9, 3, 10; 1998 TO₁₁ *, 6, 2, 5; 1998 TP₁₁ *, 6, 2, 5; 1998 TQ₁₁ *, 6, 2, 5; 1998 TR₁₁ *, 9, 3, 10; 1998 TS₁₁ *, 6, 2, 5; 1998 TT₁₁ *, 6, 2, 5; 1998 TV₁₁ *, 6, 2, 5; 1998 TW₁₁ *, 6, 2, 5; 1998 TX₁₁ *, 9, 3, 10; 1998 TY₁₁ *, 9, 3, 10; 1998 TZ₁₁ *, 6, 2, 5; 1998 TA₁₂ *, 9, 3, 10; 1998 TB₁₂ *, 6, 2, 5; 1998 TC₁₂ *, 9, 3, 10;

1998 TD₁₂ *, 6, 2, 5; 1998 TE₁₂ *, 6, 2, 5; 1998 TF₁₂ *, 6, 2, 5; 1998 TG₁₂ *, 6, 2, 5; 1998 TH₁₂ *, 6, 2, 5; 1998 TJ₁₂ *, 9, 3, 10; 1998 TK₁₂ *, 6, 2, 5; 1998 TL₁₂ *, 6, 2, 5; 1998 TM₁₂ *, 5, 2, 5; 1998 TN₁₂ *, 5, 2, 5; 1998 TO₁₂ *, 6, 2, 5; 1998 TP₁₂ *, 5, 2, 5; 1998 TQ₁₂ *, 5, 2, 5; 1998 TR₁₂ *, 6, 2, 5; 1998 TS₁₂ *, 5, 2, 5; 1998 TT₁₂ *, 5, 2, 5; 1998 TV₁₂ *, 5, 2, 5; 1998 TV₁₂ *, 6, 2, 5; 1998 TW₁₂ *, 5, 2, 5; 1998 TX₁₂ *, 6, 2, 5; 1998 TY₁₂ *, 6, 2, 5; 1998 TZ₁₂ *, 5, 2, 5; 1998 TA₁₃ *, 6, 2, 5; 1998 TB₁₃ *, 6, 2, 5; 1998 TC₁₃ *, 5, 2, 5; 1998 TD₁₃ *, 8, 3, 15; 1998 TE₁₃ *, 6, 2, 5; 1998 TF₁₃ *, 6, 2, 5; 1998 TG₁₃ *, 5, 2, 5; 1998 TH₁₃ *, 6, 2, 5; 1998 TJ₁₃ *, 8, 3, 15; 1998 TK₁₃ *, 5, 2, 5; 1998 TL₁₃ *, 6, 2, 5; 1998 TM₁₃ *, 6, 2, 5; 1998 TN₁₃ *, 6, 2, 5; 1998 TO₁₃ *, 5, 2, 5; 1998 TP₁₃ *, 6, 2, 5; 1998 TQ₁₃ *, 5, 2, 5; 1998 TR₁₃ *, 5, 2, 5; 1998 TS₁₃ *, 5, 2, 5; 1998 TT₁₃ *, 6, 2, 5; 1998 TV₁₃ *, 5, 2, 5; 1998 TW₁₃ *, 6, 2, 5; 1998 TX₁₃ *, 6, 2, 5; 1998 TY₁₃ *, 6, 2, 5; 1998 TZ₁₃ *, 9, 3, 10; 1998 TA₁₄ *, 6, 2, 5; 1998 TB₁₄ *, 6, 2, 4; 1998 TC₁₄ *, 6, 2, 4; 1998 TD₁₄ *, 6, 2, 4; 1998 TE₁₄ *, 6, 2, 4; 1998 TF₁₄ *, 6, 2, 4; 1998 TG₁₄ *, 6, 2, 4; 1998 TH₁₄ *, 6, 2, 4; 1998 TJ₁₄ *, 11, 4, 9; 1998 TK₁₄ *, 6, 2, 4; 1998 TL₁₄ *, 9, 3, 8; 1998 TM₁₄ *, 6, 2, 4; 1998 TN₁₄ *, 6, 2, 4; 1998 TO₁₄ *, 6, 2, 4; 1998 TP₁₄ *, 12, 4, 9; 1998 TQ₁₄ *, 6, 2, 4; 1998 TR₁₄ *, 6, 2, 4; 1998 TS₁₄ *, 6, 2, 4; 1998 TT₁₄ *, 6, 2, 4; 1998 TV₁₄ *, 9, 3, 8; 1998 TV₁₄ *, 5, 2, 4; 1998 TW₁₄ *, 9, 3, 8; 1998 TX₁₄ *, 6, 2, 4; 1998 TY₁₄ *, 9, 3, 8; 1998 TZ₁₄ *, 8, 3, 8; 1998 TA₁₅ *, 5, 2, 4; 1998 TB₁₅ *, 5, 2, 4; 1998 TC₁₅ *, 5, 2, 4; 1998 TD₁₅ *, 6, 2, 4; 1998 TE₁₅ *, 5, 2, 4; 1998 TF₁₅ *, 5, 2, 4; 1998 TG₁₅ *, 5, 2, 4; 1998 TH₁₅ *, 5, 2, 4; 1998 TI₁₅ *, 5, 2, 4; 1998 TJ₁₅ *, 5, 2, 4; 1998 TK₁₅ *, 5, 2, 4; 1998 TG₁₇ *, 3, 1, 0; 1998 TR₁₈ *, 9, 3, 13; 1998 TV₁₈ *, 6, 2, 5; 1998 TN₁₉ *, 3, 1, 0; 1998 TO₁₉ *, 3, 1, 0; 1998 TT₁₉ *, 6, 2, 8; 1998 TU₁₉ *, 6, 2, 8; 1998 TV₁₉ *, 6, 2, 9; 1998 TW₁₉ *, 6, 2, 9; 1998 TX₁₉ *, 6, 2, 9; 1998 TY₁₉ *, 6, 2, 9; 1998 TZ₁₉ *, 5, 2, 9; 1998 TA₂₀ *, 6, 2, 6; 1998 TB₂₀ *, 6, 2, 6; 1998 TC₂₀ *, 6, 2, 6; 1998 TD₂₀ *, 6, 2, 6; 1998 TE₂₀ *, 6, 2, 6; 1998 TF₂₀ *, 6, 2, 6; 1998 TG₂₀ *, 6, 2, 6; 1998 TH₂₀ *, 5, 2, 6; 1998 TJ₂₀ *, 5, 2, 6; 1998 TK₂₀ *, 6, 2, 6; 1998 TL₂₀ *, 6, 2, 6; 1998 TM₂₀ *, 6, 2, 6; 1998 TN₂₀ *, 5, 2, 6; 1998 TO₂₀ *, 6, 2, 6; 1998 TP₂₀ *, 6, 2, 6; 1998 TQ₂₀ *, 6, 2, 6; 1998 TR₂₀ *, 6, 2, 6; 1998 TS₂₀ *, 6, 2, 6; 1998 TT₂₀ *, 5, 2, 6; 1998 TU₂₀ *, 5, 2, 6; 1998 TV₂₀ *, 6, 2, 6; 1998 TW₂₀ *, 6, 2, 6; 1998 TX₂₀ *, 6, 2, 6; 1998 TY₂₀ *, 6, 2, 6; 1998 TZ₂₀ *, 6, 2, 6; 1998 TA₂₁ *, 6, 2, 6; 1998 TB₂₁ *, 6, 2, 6; 1998 TC₂₁ *, 6, 2, 6; 1998 TD₂₁ *, 6, 2, 6; 1998 TE₂₁ *, 6, 2, 6; 1998 TF₂₁ *, 6, 2, 6; 1998 TG₂₁ *, 6, 2, 6; 1998 TH₂₁ *, 8, 3, 14; 1998 TJ₂₁ *, 6, 2, 6; 1998 TK₂₁ *, 9, 3, 14; 1998 TL₂₁ *, 6, 2, 6; 1998 TM₂₁ *, 6, 2, 6; 1998 TN₂₁ *, 9, 3, 14; 1998 TO₂₁ *, 9, 3, 14; 1998 TP₂₁ *, 6, 2, 6; 1998 TQ₂₁ *, 6, 2, 6; 1998 TR₂₁ *, 6, 2, 6; 1998 TS₂₁ *, 6, 2, 6; 1998 TT₂₁ *, 6, 2, 6; 1998 TU₂₁ *, 6, 2, 6; 1998 TV₂₁ *, 6, 2, 6; 1998 TW₂₁ *, 6, 2, 6; 1998 TX₂₁ *, 6, 2, 6; 1998 TY₂₁ *, 6, 2, 6; 1998 TZ₂₁ *, 6, 2, 6; 1998 TA₂₂ *, 6, 2, 6; 1998 TB₂₂ *, 6, 2, 6; 1998 TC₂₂ *, 6, 2, 6; 1998 TD₂₂ *, 6, 2, 6; 1998 TE₂₂ *, 9, 3, 14; 1998 TF₂₂ *, 6, 2, 6; 1998 TG₂₂ *, 9, 3, 14; 1998 TH₂₂ *, 6, 2, 6; 1998 TJ₂₂ *, 9, 3, 14; 1998 TK₂₂ *, 6, 2, 6; 1998 TL₂₂ *, 6, 2, 6; 1998 TM₂₂ *, 6, 2, 6; 1998 TN₂₂ *, 9, 3, 14; 1998 TO₂₂ *, 5, 2, 6; 1998 TP₂₂ *, 8, 3, 14; 1998 TQ₂₂ *, 8, 3, 14; 1998 TR₂₂ *, 6, 2, 7; 1998 TS₂₂ *, 6, 2, 7; 1998 TT₂₂ *, 6, 2, 7; 1998 TV₂₂ *, 9, 3, 16; 1998 TW₂₂ *, 6, 2, 6; 1998 TX₂₂ *, 6, 2, 6; 1998 TY₂₂ *, 6, 2, 5; 1998 TZ₂₂ *, 6, 2, 5; 1998 TA₂₃ *, 6, 2, 5; 1998 TB₂₃ *, 6, 2, 9; 1998 TC₂₃ *, 6, 2, 9; 1998 TD₂₃ *, 6, 2, 5; 1998 TE₂₃ *, 6, 2, 5; 1998 TF₂₃ *, 6, 2, 5; 1998 TG₂₃ *, 6, 2, 5; 1998 TH₂₃ *, 6, 2, 5; 1998 TI₂₃ *, 6, 2, 5; 1998 TJ₂₃ *, 6, 2, 5; 1998 TK₂₃ *, 6, 2, 5; 1998 TL₂₃ *, 6, 2, 5; 1998 TM₂₃ *, 6, 2, 5; 1998 TN₂₃ *, 6, 2, 5; 1998 TO₂₃ *, 5, 2, 8; 1998 TP₂₃ *, 6, 2, 5; 1998 TQ₂₃ *, 6, 2, 5; 1998 TR₂₃ *, 6, 2, 5; 1998 TS₂₃ *, 6, 2, 5; 1998 TT₂₃ *, 6, 2, 6; 1998 TV₂₃ *, 6, 2, 5; 1998 TW₂₃ *, 6, 2, 6; 1998 TX₂₃ *, 6, 2, 6; 1998 TY₂₃ *, 6, 2, 5; 1998 TZ₂₃ *, 6, 2, 5; 1998 TA₂₄ *, 6, 2, 6; 1998 TB₂₄ *, 6, 2, 5; 1998 TC₂₄ *, 6, 2, 5; 1998 TD₂₄ *, 6, 2, 5; 1998 TE₂₄ *, 6, 2, 5; 1998 TF₂₄ *, 6, 2, 5; 1998

1998 TL₂₈ *, 6, 2, 5; 1998 TM₂₈ *, 6, 2, 5; 1998 TN₂₈ *, 6, 2, 5; 1998 TO₂₈ *, 6, 2, 5; 1998 TP₂₈ *, 6, 2, 5; 1998 TQ₂₈ *, 6, 2, 5; 1998 TR₂₈ *, 6, 2, 5; 1998 TS₂₈ *, 9, 3, 14; 1998 TT₂₈ *, 5, 2, 5; 1998 TU₂₈ *, 6, 2, 5; 1998 TV₂₈ *, 6, 2, 5; 1998 TW₂₈ *, 6, 2, 5; 1998 TX₂₈ *, 6, 2, 5; 1998 TY₂₈ *, 6, 2, 5; 1998 TZ₂₈ *, 6, 2, 5; 1998 TA₂₉ *, 6, 2, 5; 1998 TB₂₉ *, 6, 2, 5; 1998 TC₂₉ *, 6, 2, 5; 1998 TD₂₉ *, 6, 2, 5; 1998 TE₂₉ *, 6, 2, 5; 1998 TF₂₉ *, 6, 2, 7; 1998 TG₂₉ *, 6, 2, 5; 1998 TH₂₉ *, 6, 2, 5; 1998 TJ₂₉ *, 6, 2, 5; 1998 TK₂₉ *, 6, 2, 5; 1998 TL₂₉ *, 6, 2, 5; 1998 TM₂₉ *, 6, 2, 5; 1998 TN₂₉ *, 6, 2, 5; 1998 TO₂₉ *, 6, 2, 5; 1998 TP₂₉ *, 6, 2, 5; 1998 TQ₂₉ *, 6, 2, 5; 1998 TR₂₉ *, 6, 2, 5; 1998 TS₂₉ *, 6, 2, 5; 1998 TT₂₉ *, 5, 2, 5; 1998 UY *, 8, 3, 12; 1998 UZ, 3, 1, 0; 1998 UB₁, 3, 1, 0; 1998 UR₁ *, 3, 1, 0; 1998 US₁ *, 3, 1, 0; 1998 UT₁ *, 3, 1, 0; 1998 UJ₁ *, 3, 1, 0; 1998 UO₂, 6, 2, 5; 1998 UP₂, 6, 2, 5; 1998 UQ₂, 6, 2, 5; 1998 UR₂, 6, 2, 4; 1998 UW₂, 9, 3, 14; 1998 UC₃, 9, 3, 14; 1998 UD₃, 3, 1, 0; 1998 UE₃, 5, 2, 22; 1998 UR₆, 3, 1, 0; 1998 UC₉ *, 6, 2, 8; 1998 UD₉ *, 6, 2, 6; 1998 UE₉ *, 6, 2, 6; 1998 UF₉ *, 9, 3, 12; 1998 UG₉, 9, 3, 12; 1998 UH₉ *, 6, 2, 8; 1998 UJ₉ *, 6, 2, 8; 1998 UK₉ *, 6, 2, 4; 1998 UL₉ *, 6, 2, 6; 1998 UM₉ *, 6, 2, 8; 1998 UN₉ *, 6, 2, 8; 1998 UO₉ *, 6, 2, 8; 1998 UP₉ *, 6, 2, 8; 1998 UQ₉ *, 6, 2, 8; 1998 UR₉ *, 6, 2, 8; 1998 US₉ *, 6, 2, 8; 1998 UT₉ *, 6, 2, 8; 1998 UU₉ *, 6, 2, 8; 1998 UV₉ *, 6, 2, 8; 1998 UW₉ *, 6, 2, 8; 1998 UX₉ *, 6, 2, 8; 1998 UY₉ *, 9, 3, 12; 1998 UA₁₀ *, 6, 2, 4; 1998 UB₁₀ *, 6, 2, 4; 1998 UC₁₀ *, 6, 2, 4; 1998 UD₁₀ *, 6, 2, 4; 1998 UE₁₀ *, 6, 2, 4; 1998 UF₁₀ *, 5, 2, 4; 1998 UG₁₀ *, 6, 2, 4; 1998 UH₁₀ *, 6, 2, 8; 1998 UJ₁₀ *, 6, 2, 4; 1998 UK₁₀ *, 6, 2, 4; 1998 UL₁₀ *, 5, 2, 4; 1998 UM₁₀ *, 6, 2, 6; 1998 UN₁₀ *, 6, 2, 6; 1998 UO₁₀ *, 6, 2, 8; 1998 UP₁₀ *, 6, 2, 8; 1998 UQ₁₀ *, 6, 2, 8; 1998 UR₁₀ *, 6, 2, 8; 1998 US₁₀ *, 6, 2, 8; 1998 UT₁₀ *, 6, 2, 8; 1998 UV₁₀ *, 6, 2, 8; 1998 UW₁₀ *, 6, 2, 8; 1998 UX₁₀ *, 6, 2, 8; 1998 UY₁₀ *, 6, 2, 8; 1998 UZ₁₀ *, 6, 2, 6; 1998 UA₁₁ *, 6, 2, 6; 1998 UB₁₁ *, 6, 2, 6; 1998 UC₁₁ *, 6, 2, 6; 1998 UD₁₁ *, 6, 2, 7; 1998 UE₁₁ *, 6, 2, 7; 1998 UF₁₁ *, 6, 2, 7; 1998 UG₁₁ *, 6, 2, 6; 1998 UH₁₁ *, 6, 2, 6; 1998 UJ₁₁ *, 6, 2, 7; 1998 UK₁₁ *, 8, 3, 7; 1998 UL₁₁ *, 6, 2, 7; 1998 UM₁₁ *, 6, 2, 7; 1998 UN₁₁ *, 8, 3, 12; 1998 UO₁₁ *, 6, 2, 7; 1998 UP₁₁ *, 6, 2, 7; 1998 UQ₁₁ *, 6, 2, 7; 1998 UR₁₁ *, 6, 2, 7; 1998 US₁₁ *, 8, 3, 12; 1998 UT₁₁ *, 6, 2, 7; 1998 UU₁₁ *, 6, 2, 7; 1998 UV₁₁ *, 6, 2, 6; 1998 UW₁₁ *, 6, 2, 6; 1998 UX₁₁ *, 6, 2, 7; 1998 UY₁₁ *, 5, 2, 7; 1998 UZ₁₁ *, 6, 2, 6; 1998 UA₁₂ *, 6, 2, 7; 1998 UB₁₂ *, 8, 3, 12; 1998 UC₁₂ *, 6, 2, 7; 1998 UD₁₂ *, 6, 2, 7; 1998 UE₁₂ *, 6, 2, 4; 1998 UF₁₂ *, 5, 2, 4; 1998 UG₁₂ *, 6, 2, 4; 1998 UH₁₂ *, 6, 2, 4; 1998 UJ₁₂ *, 6, 2, 4; 1998 UK₁₂ *, 6, 2, 5; 1998 UL₁₂ *, 6, 2, 5; 1998 UM₁₂ *, 6, 2, 5; 1998 UN₁₂ *, 6, 2, 5; 1998 UO₁₂ *, 6, 2, 5; 1998 UP₁₂ *, 6, 2, 5; 1998 UQ₁₂ *, 6, 2, 5; 1998 UR₁₂ *, 6, 2, 5; 1998 US₁₂ *, 5, 2, 5; 1998 UT₁₂ *, 6, 2, 5; 1998 UV₁₂ *, 6, 2, 5; 1998 UW₁₂ *, 6, 2, 5; 1998 UX₁₂ *, 6, 2, 5; 1998 UY₁₂ *, 6, 2, 5; 1998 UZ₁₂ *, 6, 2, 5; 1998 UA₁₃ *, 6, 2, 5; 1998 UB₁₃ *, 6, 2, 5; 1998 UC₁₃ *, 6, 2, 5; 1998 UD₁₃ *, 5, 2, 5; 1998 UE₁₃ *, 5, 2, 5; 1998 UF₁₃ *, 6, 2, 1; 1998 UG₁₃ *, 6, 2, 4; 1998 UH₁₃ *, 6, 2, 5; 1998 UJ₁₃ *, 5, 2, 5; 1998 UK₁₃ *, 6, 2, 1; 1998 UL₁₃ *, 6, 2, 1; 1998 UM₁₃ *, 6, 2, 1; 1998 UN₁₃ *, 6, 2, 1; 1998 UO₁₃ *, 6, 2, 1; 1998 UP₁₃ *, 5, 2, 1; 1998 UQ₁₃ *, 5, 2, 1; 1998 UR₁₃ *, 6, 2, 1; 1998 US₁₃ *, 6, 2, 1; 1998 UT₁₃ *, 5, 2, 1; 1998 UU₁₃ *, 6, 2, 1; 1998 UV₁₃ *, 6, 2, 1; 1998 UW₁₃ *, 6, 2, 1; 1998 UX₁₃ *, 6, 2, 1; 1998 UY₁₃ *, 6, 2, 1; 1998 UZ₁₃ *, 6, 2, 1; 1998 UA₁₄ *, 5, 2, 1; 1

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1.2-m $f/8$ reflector + CCD

USNO-A1.0

1996 TL₆₆, 2, 1, 0; [2, 1, 0*, 1998/09/13]

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P. J. Houlihan

Measurer B. W. Koehn

0.59-m LONEOS Schmidt + CCD

USNO-A1.0

1966 CM, 3, 1, 0; 1971 UQ, 3, 1, 0; 1972 PA, 3, 1, 0; 1973 SO₁, 3, 1, 0; 1973 SP₁, 3, 1, 0; 1975 LF₁, 3, 1, 0; 1975 VW₅, 6, 2, 3; 1976 YL₃, 3, 1, 0; 1977 DF₂, 3, 1, 0; 1977 QD₂, 3, 1, 0; 1977 TU₃, 6, 2, 53; 1977 TO₆, 3, 1, 0; 1977 VL₁, 3, 1, 0; 1978 GA, 3, 1, 0; 1978 PA₃, 3, 1, 0; 1978 PG₄, 3, 1, 0; 1978 SH₃, 6, 2, 6; 1978 SD₇, 6, 2, 7; 1978 SJ₇, 3, 1, 0; 1978 UN₅, 3, 1, 0; 1978 UD₇, 3, 1, 0; 1978 VK₃, 3, 1, 0; 1978 VP₃, 3, 1, 0; 1978 WV₆, 3, 1, 0; 1978 WU, 6, 2, 56; 1979 XL, 6, 2, 9; 1980 FS₁, 3, 1, 0; 1981 DS, 3, 1, 0; 1981 DF₁, 6, 2, 29; 1981 DV₂, 3, 1, 0; 1981 EZ, 6, 2, 9; 1981 EE₁, 3, 1, 0; 1981 EU₄, 3, 1, 0; 1981 EF₁₁, 3, 1, 0; 1981 ED₁₅, 3, 1, 0; 1981 EN₂₁, 6, 2, 9; 1981 EH₂₃, 3, 1, 0; 1981 EH₂₄, 3, 1, 0; 1981 EW₂₄, 3, 1, 0; 1981 EO₂₆, 6, 2, 7; 1981 EP₂₇, 2, 1, 0; 1981 EW₃₀, 3, 1, 0; 1981 ED₃₄, 3, 1, 0; 1981 EP₄₁, 6, 2, 8; 1981 EQ₄₇, 3, 1, 0; 1981 QJ₂, 3, 1, 0; 1981 QJ₃, 3, 1, 0; 1981 RQ₂, 3, 1, 0; 1981 SA₇, 3, 1, 0; 1981 UO₁₁, 3, 1, 0; 1981 UU₂₉, 6, 2, 1; 1981 VN, 6, 2, 8; 1982 BM, 3, 1, 0; 1982 JD₁, 3, 1, 0; 1982 UM₂, 6, 2, 6; 1982 UB₇, 6, 2, 7; 1982 UJ₇, 3, 1, 0; 1982 UC₁₁, 3, 1, 0; 1982 UE₁₂, 3, 1, 0; 1982 VP₃, 3, 1, 0; 1982 VB₄, 6, 2, 6; 1983 TU₁, 3, 1, 0; 1984 EL, 3, 1, 0; 1984 SZ₅, 2, 1, 0; 1984 SD₆, 6, 2, 6; 1984 SJ₇, 3, 1, 0; 1984 WJ₁, 3, 1, 0; 1985 AE, 3, 1, 0; 1985 CD, 3, 1, 0; 1985 CP₂, 3, 1, 0; 1985 RD₃, 6, 2, 2; 1985 SM₂, 3, 1, 0; 1985 UG₂, 3, 1, 0; 1986 JD, 3, 1, 0; 1986 PL₁, 3, 1, 0; 1986 QR₁, 3, 1, 0; 1986 QL₂, 3, 1, 0; 1986 QB₃, 3, 1, 0; 1986 SC₂, 3, 1, 0; 1986 XT, 5, 2, 10; 1987 CH, 3, 1, 0; 1987 DH₆, 3, 1, 0; 1987 DN₆, 3, 1, 0; 1987 EQ, 6, 2, 9; 1987 QT, 3, 1, 0; 1987 QT₁, 3, 1, 0; 1987 QS₅, 3, 1, 0; 1987 RR, 3, 1, 0; 1987 SJ₁, 6, 2, 4; 1987 SU₁₇, 3, 1, 0; 1987 UX, 6, 2, 7; 1987 UA₁, 3, 1, 0; 1987 US₄, 3, 1, 0; 1987 UU₄, 6, 2, 4; 1987 WJ₁, 3, 1, 0; 1987 YU₁, 3, 1, 0; 1988 BY₃, 3, 1, 0; 1988 CN₄, 3, 1, 0; 1988 FM, 3, 1, 0; 1988 JW, 3, 1, 0; 1988 PL, 2, 1, 0; 1988 PL₂, 3, 1, 0; 1988 RQ₅, 6, 2, 5; 1988 RS₆, 6, 2, 1; 1988 SS₂, 3, 1, 0; 1988 TT, 3, 1, 0; 1988 UC, 3, 1, 0; 1988 UV, 3, 1, 0; 1988 VY, 3, 1, 0; 1988 VR₂, 3, 1, 0; 1988 VP₃, 3, 1, 0; 1988 XB₅, 3, 1, 0; 1989 AF₃, 3, 1, 0; 1989 AK₆, 3, 1, 0; 1989 BW₁, 3, 1, 0; 1989 CX, 3, 1, 0; 1989 CS₂, 3, 1, 0; 1989 CY₂, 3, 1, 0; 1989 GA₃, 3, 1, 0; 1989 GR₃, 3, 1, 0; 1989 GU₃, 3, 1, 0; 1989 GO₄, 3, 1, 0; 1989 RX, 3, 1, 0; 1989 RY₁, 3, 1, 0; 1989 SK₃, 3, 1, 0; 1989 TN₁, 3, 1, 0; 1989 TU₄, 3, 1, 0; 1989 UL, 3, 1, 0; 1989 US₁, 3, 1, 0; 1989 WZ₂, 3, 1, 0; 1990 BA₂, 3, 1, 0; 1990 DM_{Q3}, 3, 1, 0; 1990 FK₁, 3, 1, 0; 1990 FD₃, 3, 1, 0; 1990 QM, 6, 2, 6; 1990 QJ₄, 3, 1, 0; 1990 QO₈, 6, 2, 3; 1990 RR₂, 3, 1, 0; 1990 RY₂, 3, 1, 0; 1990 SV, 3, 1, 0; 1990 SY, 3, 1, 0; 1990 SX₃, 3, 1, 0; 1990 SF₄, 3, 1, 0; 1990 SG₁₁, 6, 2, 8; 1990 SK₂₈, 3, 1, 0; 1990 TJ, 3, 1, 0; 1990 UU₁, 6, 2, 9; 1990 UG₄, 3, 1, 0; 1990 UE₅, 3, 1, 0; 1990 VL₁, 6, 1, 0; 1990 VH₃, 3, 1, 0; 1990 VK₄, 3, 1, 0; 1990 VS₄, 6, 2, 6; 1990 VQ₅, 3, 1, 0; 1990 VG₆, 3, 1, 0; 1990 VW₈, 3, 1, 0; 1990 WE₂, 3, 1, 0; 1990 WQ₂, 3, 1, 0; 1990 WU₅, 6, 2, 9; 1991 AK, 3, 1, 0; 1991 BK, 3, 1, 0; 1991 EY₃, 3, 1, 0; 1991 FL₂, 9, 3, 59; 1991 GK₄, 6, 2, 2; 1991 GA₆, 3, 1, 0; 1991 GZ₉, 3, 1, 0; 1991 LB, 6, 2, 6; 1991 NQ₆, 3, 1, 0; 1991 OO, 3, 1, 0; 1991 OV, 3, 1, 0; 1991 PV, 6, 2, 26; 1991 PQ₅, 3, 1, 0; 1991 PG₁₁, 3, 1, 0; 1991 PO₁₂, 6, 2, 2; 1991 PJ₁₃, 3, 1, 0; 1991 PM₁₃, 3, 1, 0; 1991 PJ₁₅, 3, 1, 0; 1991 PQ₁₆, 3, 1, 0; 1991 RG, 6, 2, 7; 1991 RL₁, 3, 1, 0; 1991 RC₂, 3, 1, 0; 1991 RE₂, 3, 1, 0; 1991 RS₂, 3, 1, 0; 1991 RU₂, 3, 1, 0; 1991 RT₃, 3, 1, 0; 1991 RL₈, 6, 2, 7; 1991 RS₈, 3, 1, 0; 1991 RY₈, 3, 1, 0; 1991 RR₁₀, 6, 2, 29; 1991 RE₁₅, 3, 1, 0; 1991 RK₁₅, 3, 1, 0; 1991 RA₁₇, 3, 1, 0; 1991 RU₁₇, 3, 1, 0; 1991 RX₁₇, 6, 2, 8; 1991

1, 0; 1992 RQ₃, 3, 1, 0; 1992 RF₇, 6, 2, 9; 1992 UM₉, 3, 1, 0; 1992 WF₁, 3, 1, 0; 1992 YW₁, 3, 1, 0; 1993 BN₃, 3, 1, 0; 1993 BQ₄, 3, 1, 0; 1993 FT₇, 3, 1, 0; 1993 FG₈, 3, 1, 0; 1993 FL₈, 6, 2, 6; 1993 FK₉, 6, 2, 18; 1993 FN₉, 5, 2, 2; 1993 FS₉, 3, 1, 0; 1993 FS₁₀, 3, 1, 0; 1993 FR₁₁, 3, 1, 0; 1993 FH₂₅, 3, 1, 0; 1993 FS₂₆, 3, 1, 0; 1993 FT₂₆, 3, 1, 0; 1993 FU₂₈, 3, 1, 0; 1993 FH₃₈, 3, 1, 0; 1993 FV₄₅, 6, 2, 2; 1993 FX₇₉, 6, 2, 5; 1993 GO₃, 3, 1, 0; 1993 HF₃, 3, 1, 0; 1993 JF₁, 3, 1, 0; 1993 LS₁, 3, 1, 0; 1993 LU₁, 6, 2, 6; 1993 MB₃, 3, 1, 0; 1993 OS₁₀, 3, 1, 0; 1993 PU₇, 5, 2, 9; 1993 QU₃, 3, 1, 0; 1993 QL₇, 3, 1, 0; 1993 SD₂, 3, 1, 0; 1993 SL₆, 6, 2, 6; 1993 TJ₃, 3, 1, 0; 1993 TK₃, 3, 1, 0; 1993 TG₂₆, 3, 1, 0; 1993 TU₂₉, 9, 3, 32; 1993 TJ₃₁, 3, 1, 0; 1993 TK₃₇, 2, 1, 0; 1993 UP₈, 3, 1, 0; 1993 VL₃, 3, 1, 0; 1993 VV₄, 3, 1, 0; 1993 WH₃, 3, 1, 0; 1993 XB₆, 2, 6; 1994 JU₃, 3, 1, 0; 1994 NO₁, 3, 1, 0; 1994 OB₃, 3, 1, 0; 1994 PS₃, 3, 1, 0; 1994 PL₁₂, 3, 1, 0; 1994 PW₁₅, 6, 2, 9; 1994 PD₁₈, 3, 1, 0; 1994 PA₁₉, 3, 1, 0; 1994 PY₁₉, 3, 1, 0; 1994 PP₂₆, 3, 1, 0; 1994 PB₃₀, 3, 1, 0; 1994 PW₃₁, 2, 1, 0; 1994 PV₃₇, 3, 1, 0; 1994 QA₃, 3, 1, 0; 1994 QR₃, 3, 1, 0; 1994 RU₃, 3, 1, 0; 1994 RT₁, 3, 1, 0; 1994 RA₁₁, 3, 1, 0; 1994 TQ₃, 6, 2, 27; 1994 TK₁₁, 6, 1, 0; 1994 TZ₁₄, 6, 2, 9; 1994 UB₃, 3, 1, 0; 1994 UT₁₁, 3, 1, 0; 1994 VB₃, 3, 1, 0; 1994 VL₃, 3, 1, 0; 1994 VF₂, 3, 1, 0; 1994 VR₂, 9, 3, 32; 1994 WJ₆, 6, 2, 2; 1994 WM₃, 3, 1, 0; 1994 WF₁, 9, 3, 58; 1994 WJ₁, 6, 2, 19; 1994 WW₂, 3, 1, 0; 1994 WQ₃, 3, 1, 0; 1994 WA₄, 3, 1, 0; 1994 YA₁, 3, 1, 0; 1994 YC₂, 3, 1, 0; 1994 YM₂, 3, 1, 0; 1995 AO₄, 3, 1, 0; 1995 AV₄, 3, 1, 0; 1995 BV₃, 3, 1, 0; 1995 BY₃, 3, 1, 0; 1995 BA₃, 5, 2, 8; 1995 BQ₈, 3, 1, 0; 1995 CD₂, 3, 1, 0; 1995 FM₃, 3, 1, 0; 1995 RC₃, 3, 1, 0; 1995 UO₃, 3, 1, 0; 1995 UQ₃, 3, 1, 0; 1995 UD₄, 3, 1, 0; 1995 UW₄, 6, 2, 3; 1995 UB₈, 3, 1, 0; 1995 VF₃, 3, 1, 0; 1995 VT₃, 3, 1, 0; 1995 VW₁, 3, 1, 0; 1995 WE₃, 3, 1, 0; 1995 WS₁, 3, 1, 0; 1995 WK₅, 3, 1, 0; 1995 WO₇, 3, 1, 0; 1995 WP₈, 3, 1, 0; 1995 XG₃, 3, 1, 0; 1995 YG₉, 9, 3, 9; 1995 YF₁, 3, 1, 0; 1995 YH₁, 6, 2, 1; 1995 YL₂₃, 3, 1, 0; 1996 AA₆, 6, 2, 21; 1996 AJ₃, 3, 1, 0; 1996 AJ₂, 3, 1, 0; 1996 AQ₂, 3, 1, 0; 1996 AP₃, 6, 2, 6; 1996 AX₃, 3, 1, 0; 1996 BH₂, 3, 1, 0; 1996 BL₂, 3, 1, 0; 1996 CQ₁, 3, 1, 0; 1996 CO₂, 6, 2, 18; 1996 CA₃, 3, 1, 0; 1996 CE₃, 3, 1, 0; 1996 CT₇, 3, 1, 0; 1996 CX₈, 3, 1, 0; 1996 CG₉, 3, 1, 0; 1996 DL₃, 3, 1, 0; 1996 DK₁, 3, 1, 0; 1996 DC₂, 6, 2, 9; 1996 DL₂, 2, 1, 0; 1996 DD₃, 3, 1, 0; 1996 EW₆, 6, 2, 23; 1996 EL₁, 3, 1, 0; 1996 FR₁, 3, 1, 0; 1996 FW₁, 3, 1, 0; 1996 FU₁₃, 3, 1, 0; 1996 GL₁, 3, 1, 0; 1996 GL₃, 6, 2, 23; 1996 GU₈, 3, 1, 0; 1996 GC₁₈, 1, 1, 0; 1996 HC₁, 3, 1, 0; 1996 HR₁₀, 3, 1, 0; 1996 JK₃, 3, 1, 0; 1996 KA₃, 3, 1, 0; 1996 OO₃, 3, 1, 0; 1997 AJ₄, 3, 1, 0; 1997 AE₁₈, 6, 2, 6; 1997 BC₉, 3, 1, 0; 1997 CC₁₇, 3, 1, 0; 1997 DC₃, 3, 1, 0; 1997 ES₂, 3, 1, 0; 1997 EW₂₅, 3, 1, 0; 1997 FB₁, 1, 1, 0; 1997 FM₁, 3, 1, 0; 1997 FY₁, 6, 2, 54; 1997 FY₂, 3, 1, 0; 1997 FQ₃, 6, 2, 7; 1997 GL₆, 3, 1, 0; 1997 GQ₆, 3, 1, 0; 1997 GB₇, 3, 1, 0; 1997 GL₈, 3, 1, 0; 1997 GL₁₁, 3, 1, 0; 1997 GA₁₄, 3, 1, 0; 1997 GX₁₄, 3, 1, 0; 1997 GC₁₉, 3, 1, 0; 1997 GR₂₁, 3, 1, 0; 1997 GQ₂₃, 3, 1, 0; 1997 GR₂₄, 6, 2, 1; 1997 GZ₂₅, 3, 1, 0; 1997 GM₃₃, 3, 1, 0; 1997 GA₃₈, 3, 1, 0; 1997 GC₃₈, 6, 2, 5; 1997 HQ₁, 3, 1, 0; 1997 HS₁₃, 3, 1, 0; 1997 HC₁₆, 3, 1, 0; 1997 JL₆, 2, 31; 1997 JO₃, 3, 1, 0; 1997 JQ₃, 3, 1, 0; 1997 JZ₆, 2, 8; 1997 JH₆, 3, 1, 0; 1997 JD₁₂, 3, 1, 0; 1997 JL₁₃, 6, 2, 6; 1997 JD₁₄, 3, 1, 0; 1997 JS₁₄, 3, 1, 0; 1997 JH₁₆, 3, 1, 0; 1997 KH₃, 3, 1, 0; 1997 KO₂, 6, 2, 25; 1997 KH₄, 6, 2, 26; 1997 LN₃, 3, 1, 0; 1997 NU₁, 3, 1, 0; 1997 NC₃, 3, 1, 0; 1997 NR₆, 3, 1, 0; 1997 NU₆, 3, 1, 0; 1997 OJ₆, 6, 2, 6; 1997 QU₁, 3, 1, 0; 1998 MM₅, 6, 2, 19; 1998 MU₇, 6, 2, 6; 1998 MJ₁₄, 6, 2, 20; 1998 MZ₂₃, 3, 1, 0; 1998 MK₃₀, 3, 1, 0; 1998 MM₃₆, 3, 1, 0; 1998 MB₃₈, 3, 1, 0; 1998 OK₃, 3, 1, 0; 1998 OD₁, 3, 1, 0; 1998 OT₆, 3, 1, 0; 1998 OZ₆, 3, 1, 0; 1998 OJ₇, 3, 1, 0; 1998 OU₇, 3, 1, 0; 1998 OZ₈, 6, 2, 45; 1998 OQ₁₁, 3, 1, 0; 1998 ON₁₂, 3, 1, 0; 1998 OV₁₂, 3, 1, 0; 1998 OA₁₃, 6, 2, 100; 1998 OR₁₃, 3, 1, 0; 1998 OT₁₄, 3, 1, 0; 1998 OV₁₄, 3, 1, 0; 1998 OX₁₄, 3, 1, 0; 1998 PU₃, 3, 1, 0; 1998 PL₁, 3, 1, 0; 1998 QC₃, 3, 1, 0; 1998 QZ₆, 6, 2, 5; 1998 QP₁, 3, 1, 0; 1998 QF₃, 3, 1, 0; 1998 QL₃, 3, 1, 0; 1998 QG₆, 3, 1, 0; 1998 QV₆, 6, 2, 9; 1998 QV₇, 3, 1, 0; 1998 QX₉, 3, 1, 0; 1998 QO₁₀, 3, 1, 0; 1998 QU₁₃, 3, 1, 0; 1998 QA₁₅, 3, 1, 0; 1998 QN₁₅, 3, 1, 0; 1998 QR₁₅, 3, 1, 0; 1998 QC₁₇, 3, 1, 0; 1998 QK₁₉, 3, 1, 0; 1998 QL₁₉, 3, 1, 0; 1998 QC₂₀, 3, 1, 0; 1998 QA₂₂, 3, 1, 0; 1998 QS₂₂, 3, 1, 0; 1998 QC₂₃, 3, 1, 0; 1998 QB₂₄, 3, 1, 0; 1998 QE₂₄, 3, 1, 0; 1998 QC₂₅, 3, 1, 0; 1998 QZ₂₅, 3, 1, 0; 1998 QA₂₆, 3, 1, 0; 1998 QF₂₆, 2, 1, 0; 1998 QX₂₇, 3, 1, 0; 1998 QM₂₈, 2, 1, 0; 1998 QM₃₀, 3, 1, 0; 1998 QN₃₀, 6, 2, 6; 1998 QR₃₀, 3, 1, 0; 1998 QC₃₁, 3, 1, 0; 1998 QF₃₁, 3, 1, 0; 1998 QT₃₁, 3, 1, 0; 1998 QB₃₂, 3, 1, 0; 1998 QS₃₂, 3, 1, 0; 1998 QH₃₃, 3, 1, 0; 1998 QL₃₃, 3, 1, 0; 1998 QR₃₃, 3, 1, 0; 1998 QS₃₃, 3, 1, 0; 1998 QK₃₄, 3, 1, 0; 1998 QN₃₄, 3, 1, 0; 1998 QW₃₄, 6, 2, 43; 1998 QG₃₅, 6, 2, 8; 1998 QK₃₆, 6, 2, 6; 1998 QN₃₆, 3, 1, 0; 1998 QO₃₆, 3, 1, 0; 1998 QR₃₆, 6, 2, 6; 1998 QS₃₆, 3, 1, 0; 1998 QT₃₆, 3, 1, 0; 1998 QY₃₆, 3, 1, 0; 1998 QB₃₇, 3, 1, 0; 1998 QM₃₇, 3, 1, 0; 1998 QT₃₇, 3, 1, 0; 1998 QV₃₇, 3, 1, 0; 1998 QP₃₇, 6, 2, 25; 1998 QY₃₇, 3, 1, 0; 1998 QR₃₈, 3, 1, 0; 1998 QV₃₈, 3, 1, 0; 1998 QX₃₈, 3, 1, 0; 1998 QY₃₈, 3, 1, 0; 1998 QA₃₉, 5, 2, 69; 1998 QE₃₉, 3, 1, 0; 1998 QG₃₉, 3, 1, 0; 1998 QT₃₉, 3, 1, 0; 1998 QZ₃₉, 6, 2, 45; 1998 QB₄₀, 3, 1, 0; 1998 QJ₄₀, 6, 2, 6; 1998 QL₄₀, 3, 1, 0; 1998 QM₄₀, 3, 1, 0; 1998 QN₄₀, 3, 1, 0; 1998 QP₄₀, 2, 1, 0; 1998 QX₄₀, 3, 1, 0; 1998 QY₄₀, 6, 2, 8; 1998 QS₄₁, 3, 1, 0; 1998 QW₄₁, 3, 1, 0; 1998 QT₄₂, 3, 1, 0; 1998 QU₄₂, 3, 1, 0; 1998 QE₄₃, 3, 1, 0; 1998 QF₄₃, 3, 1, 0; 1998 QP₄₃, 3, 1, 0; 1998 QQ₄₃, 3, 1, 0; 1998 QB₄₄, 6, 2, 6; 1998 QD₄₄, 9, 3, 51; 1998 QE₄₄, 6, 2, 2; 1998 QF₄₄, 3, 1, 0; 1998 QH₄₄, 9, 3, 23; 1998 QK₄₄, 3, 1, 0; 1998 QN₄₄, 3, 1, 0; 1998 QS₄₄, 3, 1, 0; 1998 QU₄₄, 3, 1, 0; 1998 QA₄₅, 3, 1, 0; 1998 QC₄₅, 3, 1, 0; 1998 QF₄₅, 3, 1, 0; 1998 QJ₄₅, 3, 1, 0; 1998 QK₄₅, 3, 1, 0; 1998 QQ₄₅, 3, 1, 0; 1998 QR₄₅, 3, 1, 0; 1998 QU₄₅, 6, 2, 16; 1998 QJ₄₆, 3, 1, 0; 1998 QL₄₆, 3, 1, 0; 1998 QN₄₆, 3, 1, 0; 1998 QA₄₇, 3, 1, 0; 1998 QB₄₇, 3, 1, 0; 1998 QE₄₇, 9, 3, 78; 1998 QG₄₇, 3, 1, 0; 1998 QS₄₇, 3, 1, 0; 1998 QT₄₇, 3, 1, 0; 1998 QX₄₇, 3, 1, 0; 1998 QY₄₇, 3, 1, 0; 1998 QD₄₈, 3, 1, 0; 1998 QF₄₈, 3, 1, 0; 1998 QL₄₈, 3, 1, 0; 1998 QM₄₈, 3, 1, 0; 1998 QN₄₈, 3, 1, 0; 1998 QW₄₈, 3, 1, 0; 1998 QE₄₉,

9, 3, 41; 1998 QG₄₉, 3, 1, 0; 1998 QL₄₉, 3, 1, 0; 1998 QM₄₉, 3, 1, 0; 1998 QQ₄₉, 6, 2, 17; 1998 QF₅₀, 6, 2, 26; 1998 QG₅₀, 3, 1, 0; 1998 QJ₅₀, 3, 1, 0; 1998 QN₅₀, 3, 1, 0; 1998 QS₅₀, 3, 1, 0; 1998 QX₅₀, 10, 4, 51; 1998 QZ₅₀, 3, 1, 0; 1998 QC₅₁, 6, 2, 2; 1998 QM₅₁, 3, 1, 0; 1998 QR₅₁, 9, 3, 49; 1998 QS₅₁, 3, 1, 0; 1998 QT₅₁, 3, 1, 0; 1998 QU₅₁, 3, 1, 0; 1998 QV₅₁, 3, 1, 0; 1998 QX₅₁, 3, 1, 0; 1998 QY₅₁, 3, 1, 0; 1998 QA₅₂, 3, 1, 0; 1998 QF₅₂, 3, 1, 0; 1998 QC₅₂, 6, 2, 51; 1998 QH₅₂, 3, 1, 0; 1998 QK₅₂, 3, 1, 0; 1998 QM₅₂, 6, 2, 43; 1998 QS₅₂, 3, 1, 0; 1998 QU₅₂, 3, 1, 0; 1998 QV₅₂, 3, 1, 0; 1998 QX₅₂, 3, 1, 0; 1998 QY₅₂, 6, 2, 27; 1998 QE₅₃, 3, 1, 0; 1998 QH₅₃, 3, 1, 0; 1998 QL₅₃, 3, 1, 0; 1998 QN₅₃, 3, 1, 0; 1998 QO₅₃, 6, 2, 3; 1998 QW₅₃, 3, 1, 0; 1998 QE₅₄, 3, 1, 0; 1998 QF₅₄, 6, 2, 29; 1998 QG₅₄, 3, 1, 0; 1998 QJ₅₄, 6, 2, 29; 1998 QK₅₄, 3, 1, 0; 1998 QL₅₄, 3, 1, 0; 1998 QM₅₄, 6, 2, 74; 1998 QN₅₄, 3, 1, 0; 1998 QO₅₄, 3, 1, 0; 1998 QQ₅₄, 3, 1, 0; 1998 QV₅₄, 6, 2, 27; 1998 QW₅₄, 3, 1, 0; 1998 QX₅₄, 6, 2, 29; 1998 QZ₅₄, 3, 1, 0; 1998 QA₅₅, 6, 2, 5; 1998 QD₅₅, 9, 3, 34; 1998 QE₅₅, 3, 1, 0; 1998 QG₅₅, 3, 1, 0; 1998 QH₅₅, 3, 1, 0; 1998 QL₅₅, 6, 2, 9; 1998 QP₅₅, 6, 2, 9; 1998 QS₅₅, 6, 2, 6; 1998 QY₅₅, 3, 1, 0; 1998 QE₅₇, 3, 1, 0; 1998 QP₅₇, 3, 1, 0; 1998 QZ₅₈, 3, 1, 0; 1998 QN₆₀, 3, 1, 0; 1998 QP₆₀, 3, 1, 0; 1998 QU₆₂, 3, 1, 0; 1998 QG₆₃, 3, 1, 0; 1998 QK₆₃, 6, 2, 48; 1998 QV₆₃, 6, 2, 9; 1998 QW₆₃, 3, 1, 0; 1998 QL₆₆, 3, 1, 0; 1998 QV₆₇, 3, 1, 0; 1998 QJ₆₉, 3, 1, 0; 1998 QF₆₉, 3, 1, 0; 1998 QF₇₀, 3, 1, 0; 1998 QM₇₀, 3, 1, 0; 1998 QO₇₀, 3, 1, 0; 1998 QR₇₀, 3, 1, 0; 1998 QU₇₀, 3, 1, 0; 1998 QY₇₀, 3, 1, 0; 1998 QB₇₁, 3, 1, 0; 1998 QC₇₁, 3, 1, 0; 1998 QD₇₁, 3, 1, 0; 1998 QF₇₁, 3, 1, 0; 1998 QL₇₁, 6, 2, 9; 1998 QO₇₁, 3, 1, 0; 1998 QP₇₁, 3, 1, 0; 1998 QR₇₁, 3, 1, 0; 1998 QZ₇₁, 3, 1, 0; 1998 QB₇₂, 6, 2, 27; 1998 QD₇₂, 3, 1, 0; 1998 QE₇₂, 3, 1, 0; 1998 QF₇₂, 3, 1, 0; 1998 QR₇₂, 3, 1, 0; 1998 QT₇₂, 3, 1, 0; 1998 QY₇₂, 3, 1, 0; 1998 QA₇₃, 6, 2, 6; 1998 QE₇₃, 6, 2, 19; 1998 QG₇₃, 6, 2, 17; 1998 QL₇₃, 6, 2, 17; 1998 QN₇₃, 3, 1, 0; 1998 QO₇₃, 6, 2, 20; 1998 QQ₇₃, 3, 1, 0; 1998 QT₇₃, 3, 1, 0; 1998 QW₇₃, 9, 3, 27; 1998 QZ₇₃, 3, 1, 0; 1998 QB₇₄, 6, 2, 20; 1998 QF₇₄, 6, 2, 17; 1998 QG₇₄, 6, 2, 9; 1998 QO₇₄, 6, 2, 29; 1998 QS₇₄, 3, 1, 0; 1998 QU₇₄, 3, 1, 0; 1998 QV₇₄, 3, 1, 0; 1998 QZ₇₄, 3, 1, 0; 1998 QB₇₅, 3, 1, 0; 1998 QC₇₅, 3, 1, 0; 1998 QF₇₅, 3, 1, 0; 1998 QN₇₅, 3, 1, 0; 1998 QQ₇₅, 3, 1, 0; 1998 QM₇₆, 3, 1, 0; 1998 QT₇₆, 3, 1, 0; 1998 QE₇₇, 6, 2, 27; 1998 QH₇₇, 3, 1, 0; 1998 QM₇₇, 3, 1, 0; 1998 QT₇₇, 3, 1, 0; 1998 QU₇₇, 3, 1, 0; 1998 QV₇₇, 6, 2, 22; 1998 QW₇₇, 6, 2, 49; 1998 QX₇₇, 3, 1, 0; 1998 QY₇₇, 6, 2, 49; 1998 QZ₇₇, 6, 2, 29; 1998 QB₇₈, 3, 1, 0; 1998 QE₇₈, 3, 1, 0; 1998 QW₈₃, 3, 1, 0; 1998 QZ₈₃, 3, 1, 0; 1998 QA₈₄, 3, 1, 0; 1998 QC₈₄, 9, 3, 117; 1998 QE₈₄, 3, 1, 0; 1998 QL₈₄, 6, 2, 2; 1998 QM₈₄, 3, 1, 0; 1998 QN₈₄, 3, 1, 0; 1998 QO₈₄, 3, 1, 0; 1998 QQ₈₄, 3, 1, 0; 1998 QT₈₄, 3, 1, 0; 1998 QW₈₄, 3, 1, 0; 1998 QF₈₅, 3, 1, 0; 1998 QO₈₅, 3, 1, 0; 1998 QP₈₅, 3, 1, 0; 1998 QU₈₅, 3, 1, 0; 1998 QW₈₅, 3, 1, 0; 1998 QX₈₅, 6, 2, 42; 1998 QY₈₅, 6, 2, 29; 1998 QB₈₆, 3, 1, 0; 1998 QC₈₆, 6, 2, 28; 1998 QD₈₆, 3, 1, 0; 1998 QE₈₆, 3, 1, 0; 1998 QG₈₆, 3, 1, 0; 1998 QN₈₆, 5, 2, 2; 1998 QP₈₆, 6, 2, 17; 1998 QQ₈₆, 3, 1, 0; 1998 QR₈₆, 6, 2, 17; 1998 QW₈₆, 3, 1, 0; 1998 QZ₈₆, 3, 1, 0; 1998 QA₈₇, 3, 1, 0; 1998 QB₈₇, 3, 1, 0; 1998 QC₈₇, 3, 1, 0; 1998 QU₈₇, 3, 1, 0; 1998 QA₈₉, 3, 1, 0; 1998 QE₈₉, 3, 1, 0; 1998 QL₈₉, 3, 1, 0; 1998 QV₈₉, 9, 3, 56; 1998 QE₉₀, 6, 2, 59; 1998 QG₉₀, 3, 1, 0; 1998 QM₉₀, 3, 1, 0; 1998 QP₉₀, 6, 2, 30; 1998 QQ₉₀, 3, 1, 0; 1998 QS₉₀, 6, 2, 23; 1998 QT₉₀, 3, 1, 0; 1998 QW₉₀, 6, 2, 22; 1998 QX₉₀, 6, 2, 30; 1998 QY₉₀, 3, 1, 0; 1998 QZ₉₀, 6, 2, 22; 1998 QA₉₁, 6, 2, 46; 1998 QC₉₁, 6, 2, 30; 1998 QF₉₁, 3, 1, 0; 1998 QN₉₁, 6, 2, 17; 1998 QW₉₁, 6, 2, 4; 1998 QC₉₂, 6, 2, 6; 1998 QG₉₂, 3, 1, 0; 1998 QJ₉₂, 6, 2, 6; 1998 QN₉₂, 3, 1, 0; 1998 QP₉₂, 6, 2, 6

0; 1998 RQ₄₆, 3, 1, 0; 1998 RW₄₆, 3, 1, 0; 1998 RM₄₇, 3, 1, 0; 1998 RQ₄₇, 3, 1, 0; 1998 RT₄₇, 3, 1, 0; 1998 RU₄₇, 3, 1, 0; 1998 RY₄₇, 3, 1, 0; 1998 RZ₄₇, 3, 1, 0; 1998 RC₄₈, 3, 1, 0; 1998 RS₄₈, 3, 1, 0; 1998 RD₄₉, 6, 2, 25; 1998 RU₄₉, 3, 1, 0; 1998 RC₅₀, 3, 1, 0; 1998 RF₅₀, 3, 1, 0; 1998 RT₅₀, 3, 1, 0; 1998 RQ₅₁, 3, 1, 0; 1998 RC₅₂, 3, 1, 0; 1998 RL₅₂, 3, 1, 0; 1998 RM₅₂, 6, 2, 18; 1998 RV₅₂, 3, 1, 0; 1998 RZ₅₂, 3, 1, 0; 1998 RG₅₃, 3, 1, 0; 1998 RV₅₃, 3, 1, 0; 1998 RB₅₄, 3, 1, 0; 1998 RL₅₄, 3, 1, 0; 1998 RO₅₄, 3, 1, 0; 1998 RP₅₄, 3, 1, 0; 1998 RE₅₅, 3, 1, 0; 1998 RF₅₅, 3, 1, 0; 1998 RM₅₅, 3, 1, 0; 1998 RQ₅₅, 3, 1, 0; 1998 RV₅₅, 3, 1, 0; 1998 RZ₅₅, 3, 1, 0; 1998 RC₅₆, 6, 2, 28; 1998 RF₅₆, 3, 1, 0; 1998 RJ₅₆, 3, 1, 0; 1998 RY₅₆, 3, 1, 0; 1998 RA₅₇, 3, 1, 0; 1998 RC₅₇, 3, 1, 0; 1998 RK₅₇, 3, 1, 0; 1998 RZ₅₇, 3, 1, 0; 1998 RE₅₈, 3, 1, 0; 1998 RH₅₈, 3, 1, 0; 1998 RJ₅₈, 3, 1, 0; 1998 RK₅₈, 3, 1, 0; 1998 RN₅₈, 3, 1, 0; 1998 RZ₅₈, 3, 1, 0; 1998 RA₅₉, 3, 1, 0; 1998 RE₅₉, 3, 1, 0; 1998 RF₅₉, 3, 1, 0; 1998 RJ₅₉, 3, 1, 0; 1998 RL₅₉, 3, 1, 0; 1998 RM₅₉, 6, 2, 20; 1998 RU₅₉, 3, 1, 0; 1998 RW₅₉, 3, 1, 0; 1998 RA₆₀, 6, 2, 1; 1998 RF₆₀, 3, 1, 0; 1998 RG₆₀, 3, 1, 0; 1998 RH₆₀, 6, 2, 49; 1998 RJ₆₀, 6, 2, 44; 1998 RL₆₀, 3, 1, 0; 1998 RN₆₀, 3, 1, 0; 1998 RO₆₀, 3, 1, 0; 1998 RV₆₀, 3, 1, 0; 1998 RX₆₀, 3, 1, 0; 1998 RY₆₀, 3, 1, 0; 1998 RZ₆₀, 3, 1, 0; 1998 RH₆₁, 3, 1, 0; 1998 RK₆₁, 3, 1, 0; 1998 RN₆₁, 3, 1, 0; 1998 RQ₆₁, 3, 1, 0; 1998 RR₆₁, 3, 1, 0; 1998 RU₆₁, 3, 1, 0; 1998 RY₆₁, 3, 1, 0; 1998 RB₆₂, 3, 1, 0; 1998 RD₆₂, 3, 1, 0; 1998 RE₆₂, 3, 1, 0; 1998 RF₆₂, 3, 1, 0; 1998 RG₆₂, 3, 1, 0; 1998 RV₆₂, 6, 2, 22; 1998 RX₆₂, 3, 1, 0; 1998 RZ₆₂, 3, 1, 0; 1998 RB₆₃, 6, 2, 25; 1998 RF₆₃, 3, 1, 0; 1998 RV₆₃, 3, 1, 0; 1998 RX₆₃, 3, 1, 0; 1998 RZ₆₃, 3, 1, 0; 1998 RJ₆₄, 3, 1, 0; 1998 RP₆₄, 9, 3, 76; 1998 RV₆₄, 3, 1, 0; 1998 RX₆₄, 3, 1, 0; 1998 RB₆₅, 3, 1, 0; 1998 RE₆₅, 3, 1, 0; 1998 RJ₆₅, 3, 1, 0; 1998 RK₆₅, 3, 1, 0; 1998 RL₆₅, 3, 1, 0; 1998 RM₆₅, 3, 1, 0; 1998 RN₆₅, 3, 1, 0; 1998 RO₆₅, 3, 1, 0; 1998 RP₆₅, 3, 1, 0; 1998 RQ₆₅, 9, 3, 29; 1998 RR₆₅, 3, 1, 0; 1998 RS₆₅, 3, 1, 0; 1998 RT₆₅, 3, 1, 0; 1998 RU₆₅, 6, 2, 29; 1998 RV₆₅, 3, 1, 0; 1998 RW₆₅, 3, 1, 0; 1998 RX₆₅, 3, 1, 0; 1998 RA₆₆, 3, 1, 0; 1998 RB₆₆, 9, 3, 48; 1998 RD₆₆, 3, 1, 0; 1998 RG₆₆, 3, 1, 0; 1998 RH₆₆, 6, 2, 48; 1998 RJ₆₆, 3, 1, 0; 1998 RK₆₆, 6, 2, 19; 1998 RL₆₆, 6, 2, 29; 1998 RN₆₆, 3, 1, 0; 1998 RP₆₆, 3, 1, 0; 1998 RR₆₆, 3, 1, 0; 1998 RS₆₆, 3, 1, 0; 1998 RT₆₆, 3, 1, 0; 1998 RU₆₆, 3, 1, 0; 1998 RV₆₆, 9, 3, 54; 1998 RX₆₆, 6, 2, 29; 1998 RZ₆₆, 3, 1, 0; 1998 RA₆₇, 6, 2, 19; 1998 RD₆₇, 3, 1, 0; 1998 RE₆₇, 6, 2, 48; 1998 RF₆₇, 3, 1, 0; 1998 RG₆₇, 6, 2, 23; 1998 RH₆₇, 9, 3, 48; 1998 RJ₆₇, 6, 2, 18; 1998 RK₆₇, 6, 2, 29; 1998 RL₆₇, 6, 2, 19; 1998 RM₆₇, 6, 2, 47; 1998 RN₆₇, 3, 1, 0; 1998 RO₆₇, 3, 1, 0; 1998 RV₆₇, 3, 1, 0; 1998 RW₆₇, 3, 1, 0; 1998 RX₆₇, 3, 1, 0; 1998 RZ₆₇, 3, 1, 0; 1998 RB₆₈, 3, 1, 0; 1998 RC₆₈, 9, 3, 48; 1998 RD₆₈, 6, 2, 29; 1998 RE₆₈, 3, 1, 0; 1998 RF₆₈, 3, 1, 0; 1998 RG₆₈, 6, 2, 29; 1998 RH₆₈, 6, 2, 29; 1998 RJ₆₈, 6, 2, 29; 1998 RK₆₈, 6, 2, 29; 1998 RL₆₈, 6, 2, 29; 1998 RM₆₈, 6, 2, 29; 1998 RN₆₈, 6, 2, 29; 1998 RO₆₈, 6, 2, 29; 1998 RP₆₈, 3, 1, 0; 1998 RQ₆₈, 6, 2, 29; 1998 RS₆₈, 9, 3, 73; 1998 RT₆₈, 6, 2, 32; 1998 RU₆₈, 6, 2, 19; 1998 RV₆₈, 6, 2, 5; 1998 RW₆₈, 6, 2, 5; 1998 RX₆₈, 6, 2, 73; 1998 RY₆₈, 9, 3, 73; 1998 RA₆₉, 6, 2, 5; 1998 RB₆₉, 6, 2, 27; 1998 RC₆₉, 6, 2, 27; 1998 RD₆₉, 3, 1, 0; 1998 RE₆₉, 6, 2, 19; 1998 RF₆₉, 3, 1, 0; 1998 RG₆₉, 6, 2, 19; 1998 RH₆₉, 3, 1, 0; 1998 RI₆₉, 3, 1, 0; 1998 RJ₆₉, 3, 1, 0; 1998 RK₆₉, 3, 1, 0; 1998 RL₆₉, 3, 1, 0; 1998 RM₆₉, 3, 1, 0; 1998 RN₆₉, 6, 2, 22; 1998 RO₆₉, 3, 1, 0; 1998 RP₆₉, 3, 1, 0; 1998 RQ₆₉, 3, 1, 0; 1998 RS₆₉, 3, 1, 0; 1998 RT₆₉, 3, 1, 0; 1998 RU₆₉, 3, 1, 0; 1998 RV₆₉, 3, 1, 0; 1998 RW₆₉, 3, 1, 0; 1998 RX₆₉, 3, 1, 0; 1998 RY₆₉, 3, 1, 0; 1998 RZ₆₉, 3, 1, 0; 1998 RA₇₀, 6, 2, 30; 1998 RB₇₀, 6, 2, 30; 1998 RC₇₀, 3, 1, 0; 1998 RD₇₀, 3, 1, 0; 1998 RE₇₀, 3, 1, 0; 1998 RF₇₀, 3, 1, 0; 1998 RG₇₀, 3, 1, 0; 1998 RH₇₀, 6, 2, 30; 1998 RI₇₀, 6, 2, 30; 1998 RJ₇₀, 6, 2, 30; 1998 RK₇₀, 6, 2, 30; 1998 RL₇₀, 6, 2, 30; 1998 RM₇₀, 6, 2, 30; 1998 RN₇₀, 6, 2, 30; 1998 RO₇₀, 6, 2, 30; 1998 RP₇₀, 6, 2, 30; 1998 RQ₇₀, 6, 2, 30; 1998 RS₇₀, 6, 2, 30; 1998 RT₇₀, 6, 2, 30; 1998 RU₇₀, 6, 2, 30; 1998 RV₇₀, 6, 2, 30; 1998 RW₇₀, 6, 2, 30; 1998 RX₇₀, 6, 2, 30; 1998 RY₇₀, 6, 2, 30; 1998 RZ₇₀, 6, 2, 30; 1998 RA₇₁, 6, 2, 30; 1998 RB₇₁, 6, 2, 30; 1998 RC₇₁, 3, 1, 0; 1998 RD₇₁, 3, 1, 0; 1998 RE₇₁, 3, 1, 0; 1998 RF₇₁, 3, 1, 0; 1998 RG₇₁, 3, 1, 0; 1998 RH₇₁, 6, 2, 30; 1998 RI₇₁, 6, 2, 30; 1998 RJ₇₁, 6, 2, 30; 1998 RK₇₁, 6, 2, 30; 1998 RL₇₁, 6, 2, 30; 1998 RM₇₁, 6, 2, 30; 1998 RN₇₁, 6, 2, 30; 1998 RO₇₁, 6, 2, 30; 1998 RP₇₁, 6, 2, 30; 1998 RQ₇₁, 6, 2, 30; 1998 RS₇₁, 6, 2, 30; 1998 RT₇₁, 6, 2, 30; 1998 RU₇₁, 6, 2, 30; 1998 RV₇₁, 6, 2, 30; 1998 RW₇₁, 6, 2, 30; 1998 RX₇₁, 6, 2, 30; 1998 RY₇₁, 6, 2, 30; 1998 RZ₇₁, 6, 2, 30; 1998 RA₇₂, 6, 2, 27; 1998 RB₇₂, 3, 1, 0; 1998 RC₇₂, 3, 1, 0; 1998 RD₇₂, 6, 2, 19; 1998 RE₇₂, 3, 1, 0; 1998 RF₇₂, 3, 1, 0; 1998 RG₇₂, 6, 2, 30; 1998 RH₇₂, 9, 3, 30; 1998 RI₇₂, 3, 1, 0; 1998 RJ₇₂, 9, 3, 32; 1998 RK₇₂, 3, 1, 0; 1998 RL₇₂, 3, 1, 0; 1998 RM₇₂, 3, 1, 0; 1998 RN₇₂, 3, 1, 0; 1998 RO₇₂, 3, 1, 0; 1998 RP₇₂, 6, 2, 8; 1998 RQ₇₂, 3, 1, 0; 1998 RS₇₂, 6, 2, 30; 1998 RT₇₂, 6, 2, 22; 1998 RU₇₂, 6, 2, 29; 1998 RV₇₂, 6, 2, 27; 1998 RW₇₂, 3, 1, 0; 1998 RX₇₂, 12, 4, 76; 1998 RY₇₂, 6, 2, 29; 1998 RZ₇₂, 6, 2, 29; 1998 RA₇₃, 6, 2, 29; 1998 RB₇₃, 6, 2, 18; 1998 RC₇₃, 3, 1, 0; 1998 RD₇₃, 6, 2, 47; 1998 RE₇₃, 6, 2, 29; 1998 RF₇₃, 3, 1, 0; 1998 RG₇₃, 6, 2, 19; 1998 RH₇₃, 3, 1, 0; 1998 RI₇₃, 3, 1, 0; 1998 RJ₇₃, 9, 3, 48; 1998 RK₇₃, 3, 1, 0; 1998 RL₇₃, 3, 1, 0; 1998 RM₇₃, 6, 2, 29; 1998 RN₇₃, 3, 1, 0; 1998 RO₇₃, 3, 1, 0; 1998 RP₇₃, 9, 3, 48; 1998 RQ₇₃, 3, 1, 0; 1998 RS₇₃, 3, 1, 0; 1998 RT₇₃, 6, 2, 29; 1998 RU₇₃, 3, 1, 0; 1998 RV₇₃, 3, 1, 0; 1998 RW₇₃, 6, 2, 19; 1998 RX₇₃, 9, 3, 59; 1998 RY₇₃, 12, 4, 52; 1998 RZ₇₃, 12, 4, 52; 1998 RA₇₄, 9, 3, 23; 1998 RB₇₄, 3, 1, 0; 1998 RC₇₄, 3, 1, 0; 1998 RD₇₄, 6, 2, 16; 1998 RE₇₄, 6, 2, 59; 1998 RF₇₄, 6, 2, 19; 1998 RG₇₄, 3, 1, 0; 1998 RH₇₄, 3, 1, 0; 1998 RI₇₄, 6, 2, 23; 1998 RJ₇₄, 9, 3, 48; 1998 RK₇₄, 6, 2, 16; 1998 RL₇₄, 3, 1, 0; 1998 RM₇₄, 3, 1, 0; 1998 RN₇₄, 3, 1, 0; 1998 RO₇₄, 3, 1, 0; 1998 RP₇₄, 6, 2, 29; 1998 RQ₇₄, 6, 2, 29; 1998 RS₇₄, 6, 2, 29; 1998 RT₇₄, 6, 2, 29; 1998 RU₇₄, 6, 2, 29; 1998 RV₇₄, 3, 1, 0; 1998 RW₇₄, 3, 1, 0; 1998 RX₇₄, 6, 2, 29; 1998 RY₇₄, 3, 1, 0; 1998 RZ₇₄, 3, 1, 0; 1998 RA₇₅, 9, 3, 73; 1998 RB₇₅, 9, 3, 73; 1998 RC₇₅, 3, 1, 0; 1998 RD₇₅, 9, 3, 29; 1998 RE₇₅, 6, 2, 29; 1998 RF₇₅, 6, 2, 29; 1998 RG₇₅, 6, 2, 30; 1998 RH₇₅, 6, 2, 30; 1998 RI₇₅, 3, 1, 0; 1998 RJ₇₅, 3, 1, 0; 1998 RK₇₅, 6, 2, 19; 1998 RL₇₅, 6, 2, 19; 1998 RM₇₅, 6, 2, 19; 1998 RN₇₅, 9, 3, 24; 1998 RO₇₅, 3, 1, 0; 1998 RP₇₅, 3, 1, 0; 1998 RQ₇₅, 3, 1, 0; 1998 RS₇₅, 6, 2, 22; 1998 RT₇₅, 6, 2, 32; 1998 RU₇₅, 6, 2, 32; 1998 RV₇₅, 3, 1, 0; 1998 RW₇₅, 6, 2, 30; 1998 RX₇₅, 6, 2, 19; 1998 RY₇₅, 6, 2, 22; 1998 RZ₇₅, 6, 2, 30; 1998 RA₇₆, 6, 2, 19; 1998 RB₇₆, 6, 2, 22; 1998 RC₇₆, 3, 1, 0; 1998 RD₇₆, 6, 2, 30; 1998 RE₇₆, 6, 2, 30; 1998 RF₇₆, 6, 2, 30; 1998 RG₇₆, 3, 1, 0; 1998 RH₇₆, 3, 1, 0; 1998 RI₇₆, 3, 1, 0; 1998 RJ₇₆, 3, 1, 0; 1998 RK₇₆, 3, 1, 0; 1998 RL₇₆, 3, 1, 0; 1998 RM₇₆, 3, 1, 0; 1998 RN₇₆, 3, 1, 0; 1998 RO₇₆, 3, 1, 0; 1998 RP₇₆, 6, 2, 30; 1998 RQ₇₆, 3, 1, 0; 1998 RS₇₆, 6, 2, 30; 1998 RT₇₆, 3, 1, 0; 1998 RU₇₆, 9, 3, 76; 1998 RV₇₆, 3, 1, 0; 1998 RW₇₆, 6, 2, 30; 1998 RX₇₆, 6, 2, 30; 1998 RY₇₆, 3, 1, 0; 1998 RZ₇₆, 3, 1, 0; 1998 RA₇₇, 3, 1, 0; 1998 RB₇₇, 9, 3, 20; 1998 RC₇₇, 6, 2, 30; 1998 RD₇₇, 3, 1, 0; 1998 RE₇₇, 6, 2, 30; 1998 RF₇₇, 6, 2, 30; 1998 RG₇₇, 6, 2, 30; 1998 RH₇₇, 6, 2, 30; 1998 RI₇₇, 6, 2, 30; 1998 RJ₇₇, 6, 2, 30; 1998 RK₇₇, 6, 2, 30; 1998 RL₇₇, 3, 1, 0; 1998 RM₇₇, 6, 2, 30; 1998 RN₇₇, 6, 2, 30; 1998 RO₇₇, 6, 2, 22; 1998 RU₇₇, 3, 1, 0; 1998 RV₇₇, 3, 1, 0; 1998 RW₇₇, 3, 1, 0; 1998 RX₇₇, 3, 1, 0; 1998 RY₇₇, 3, 1, 0; 1998 RZ₇₇, 6, 2, 22; 1998 RA₇₈, 3, 1, 0; 1998 RB₇₈, 6, 2, 30; 1998 RC₇₈, 6, 2, 30; 1998 RD₇₈, 3, 1, 0; 1998 RE₇₈, 3, 1, 0; 1998 RF₇₈, 6, 2, 30; 1998 RG₇₈, 6, 2, 30; 1998 RH₇₈, 6, 2, 30; 1998 RI₇₈, 6, 2, 30; 1998 RJ₇₈, 6, 2, 30; 1998 RK₇₈, 6, 2, 30; 1998 RL₇₈, 3, 1, 0; 1998 RM₇₈, 3, 1, 0; 1998 RN₇₈, 3, 1, 0; 1998 RO₇₈, 6, 2, 26; 1998 RU₇₈, 3, 1, 0; 1998 RV₇₈, 3, 1, 0; 1998 RW₇₈, 6, 2, 26; 1998 RX₇₈, 6, 2, 26; 1998 RY₇₈, 3, 1, 0; 1998 RZ₇₈, 6, 2, 26; 1998 RA₇₉, 3, 1, 0; 1998 RB₇₉, 3, 1, 0; 1998 RC₇₉, 6, 2, 26; 1998 RD₇₉, 6, 2, 26; 1998 RE₇₉, 3, 1, 0; 1998 RF₇₉, 3, 1, 0; 1998 RG₇₉, 6, 2, 30; 1998 RH₇₉, 6, 2, 30; 1998 RI₇₉, 6, 2, 30; 1998 RJ₇₉, 6, 2, 30; 1998 RK₇₉, 6, 2, 30; 1998 RL₇₉, 6, 2, 30; 1998 RM₇₉, 6, 2, 22; 1998 RN₇₉, 3, 1, 0; 1998 RO₇₉, 3, 1, 0; 1998 RP₇₉, 3, 1, 0; 1998 RQ₇₉, 3, 1, 0; 1998 RS₇₉, 6, 2, 30; 1998 RT₇₉, 3, 1, 0; 1998 RU₇₉, 3, 1, 0; 1998 RV₇₉, 3, 1, 0; 1998 RW₇₉, 6, 2, 5; 1998 RX₇₉, 9, 3, 53; 1998 RY₇₉, 3, 1, 0; 1998 RZ₇₉, 6,

2, 30; 1998 RA₈₀, 3, 1, 0; 1998 RB₈₀, 6, 2, 27; 1998 RC₈₀, 3, 1, 0; 1998 RD₈₀, 3, 1, 0; 1998 RE₈₀, 3, 1, 0; 1998 RF₈₀, 6, 1, 0; 1998 RG₈₀, 3, 1, 0; 1998 RH₈₀, 6, 2, 30; 1998 RI₈₀, 3, 1, 0; 1998 RJ₈₀, 3, 1, 0; 1998 RK₈₀, 3, 1, 0; 1998 RL₈₀, 6, 2, 30; 1998 RM₈₀, 3, 1, 0; 1998 RN₈₀, 3, 1, 0; 1998 RO₈₀, 3, 1, 0; 1998 RP₈₀, 3, 1, 0; 1998 RS₈₀, 3, 1, 0; 1998 RT₈₀, 3, 1, 0; 1998 RU₈₀, 3, 1, 0; 1998 RV₈₀, 3, 1, 0; 1998 RW₈₀, 3, 1, 0; 1998 RX₈₀, 3, 1, 0; 1998 RY₈₀, 3, 1, 0; 1998 RZ₈₀, 3, 1, 0; 1998 RA₈₁, 3, 1, 0; 1998 RB₈₁, 3, 1, 0; 1998 RC₈₁, 3, 1, 0; 1998 RD₈₁, 3, 1, 0; 1998 RE₈₁, 3, 1, 0; 1998 RF₈₁, 3, 1, 0; 1998 RG₈₁, 3, 1, 0; 1998 RH₈₁, 3, 1, 0; 1998 RI₈₁, 3, 1, 0; 1998 RJ₈₁, 3, 1, 0; 1998 RK₈₁, 3, 1, 0; 1998 RL₈₁, 3, 1, 0; 1998 RM₈₁, 3, 1, 0; 1998 RN₈₁, 3, 1, 0; 1998 RO₈₁, 3, 1, 0; 1998 RP₈₁, 3, 1, 0; 1998 RS₈₁, 3, 1, 0; 1998 RT₈₁, 3, 1, 0; 1998 RU₈₁, 3, 1, 0; 1998 RV₈₁, 3, 1, 0; 1998 RW₈₁, 3, 1, 0; 1998 RX₈₁, 3, 1, 0; 1998 RY₈₁, 3, 1, 0; 1998 RZ₈₁, 3, 1, 0; 1998 RA₈₂, 3, 1, 0; 1998 RB₈₂, 3, 1, 0; 1998 RC₈₂, 3, 1, 0; 1998 RD₈₂, 3, 1, 0; 1998 RE₈₂, 3, 1, 0; 1998 RF₈₂, 3, 1, 0; 1998 RG₈₂, 3, 1, 0; 1998 RH₈₂, 3, 1, 0; 1998 RI₈₂, 3, 1, 0; 1998 RJ₈₂, 3, 1, 0; 1998 RK₈₂, 3, 1, 0; 1998 RL₈₂, 3, 1, 0; 1998 RM₈₂, 3, 1, 0; 1998 RN₈₂, 3, 1, 0; 1998 RO₈₂, 3, 1, 0; 1998 RP₈₂, 3, 1, 0; 1998 RS₈₂, 3, 1, 0; 1998 RT₈₂, 3, 1, 0; 1998 RU₈₂, 3, 1, 0; 1998 RV₈₂, 3, 1, 0; 1998 RW₈₂, 3, 1, 0; 1998 RX₈₂, 3, 1, 0; 1998 RY₈₂, 3, 1, 0; 1998 RZ₈₂, 3, 1, 0; 1998 RA₈₃, 3, 1, 0; 1998 RB₈₃, 3, 1, 0; 1998 RC₈₃, 3, 1, 0; 1998 RD₈₃, 3, 1, 0; 1998 RE₈₃, 3, 1, 0; 1998 RF₈₃, 3, 1, 0; 1998 RG₈₃, 3, 1, 0; 1998 RH₈₃, 3, 1, 0; 1998 RI₈₃, 3, 1, 0; 1998 RJ₈₃, 3, 1, 0; 1998 RK₈₃, 3, 1, 0; 1998 RL₈₃, 3, 1, 0; 1998 RM₈₃, 3, 1, 0; 1998 RN₈₃, 3, 1, 0; 1998 RO₈₃, 3, 1, 0; 1998 RP₈₃, 3, 1, 0; 1998 RS₈₃, 3, 1, 0; 1998 RT₈₃, 3, 1, 0; 1998 RU₈₃, 3, 1, 0; 199

1, 0; 1998 SX₁₀₁, 6, 2, 5; 1998 SG₁₀₂, 3, 1, 0; 1998 SC₁₀₃, 6, 2, 5; 1998 SH₁₀₆, 6, 2, 5; 1998 SJ₁₀₆, 3, 1, 0; 1998 SM₁₀₆, 6, 2, 5; 1998 SO₁₀₆, 6, 2, 2; 1998 SS₁₀₆, 3, 1, 0; 1998 SU₁₀₆, 6, 2, 5; 1998 SC₁₀₆, 3, 1, 0; 1998 SA₁₀₇, 3, 1, 0; 1998 SK₁₀₇, 6, 2, 9; 1998 SR₁₀₇, 3, 1, 0; 1998 SQ₁₀₈, 3, 1, 0; 1998 SU₁₀₈, 3, 1, 0; 1998 SG₁₀₈, 3, 1, 0; 1998 SJ₁₀₉, 3, 1, 0; 1998 SP₁₀₉, 3, 1, 0; 1998 SQ₁₀₉, 3, 1, 0; 1998 SE₁₁₀, 3, 1, 0; 1998 SS₁₁₀, 3, 1, 0; 1998 SK₁₁₁, 3, 1, 0; 1998 SQ₁₁₁, 3, 1, 0; 1998 SR₁₁₁, 3, 1, 0; 1998 SX₁₁₁, 3, 1, 0; 1998 SY₁₁₁, 6, 2, 2; 1998 SA₁₁₂, 6, 2, 2; 1998 SC₁₁₂, 6, 2, 2; 1998 SD₁₁₂, 6, 2, 2; 1998 SE₁₁₂, 6, 2, 2; 1998 SG₁₁₂, 3, 1, 0; 1998 SS₁₁₃, 3, 1, 0; 1998 SA₁₁₄, 6, 2, 2; 1998 SR₁₁₄, 3, 1, 0; 1998 SV₁₁₄, 6, 2, 9; 1998 SJ₁₁₅, 3, 1, 0; 1998 SP₁₁₅, 3, 1, 0; 1998 SR₁₁₅, 3, 1, 0; 1998 SV₁₁₅, 3, 1, 0; 1998 SC₁₁₆, 3, 1, 0; 1998 SH₁₁₆, 3, 1, 0; 1998 SJ₁₁₆, 3, 1, 0; 1998 SM₁₁₆, 3, 1, 0; 1998 SU₁₁₆, 3, 1, 0; 1998 SA₁₁₇, 3, 1, 0; 1998 SF₁₁₇, 3, 1, 0; 1998 SL₁₁₇, 3, 1, 0; 1998 SP₁₁₇, 3, 1, 0; 1998 SA₁₁₈, 3, 1, 0; 1998 SD₁₁₉, 3, 1, 0; 1998 SJ₁₁₉, 6, 2, 9; 1998 SR₁₁₉, 9, 3, 9; 1998 ST₁₁₉, 6, 2, 2; 1998 SB₁₂₁, 6, 2, 9; 1998 SK₁₂₁, 3, 1, 0; 1998 SN₁₂₁, 3, 1, 0; 1998 SQ₁₂₁, 3, 1, 0; 1998 SS₁₂₁, 6, 2, 6; 1998 ST₁₂₁, 6, 2, 28; 1998 SA₁₂₂, 3, 1, 0; 1998 SJ₁₂₂, 3, 1, 0; 1998 SL₁₂₂, 6, 2, 6; 1998 SM₁₂₂, 3, 1, 0; 1998 SQ₁₂₂, 3, 1, 0; 1998 SW₁₂₂, 6, 2, 6; 1998 SX₁₂₂, 6, 2, 6; 1998 SZ₁₂₂, 6, 2, 23; 1998 SA₁₂₃, 3, 1, 0; 1998 SC₁₂₃, 3, 1, 0; 1998 SK₁₂₃, 6, 2, 6; 1998 SM₁₂₃, 3, 1, 0; 1998 SP₁₂₄, 6, 2, 9; 1998 SU₁₂₄, 6, 2, 9; 1998 SC₁₂₅, 6, 2, 9; 1998 SL₁₂₅, 6, 2, 2; 1998 SX₁₂₆, 3, 1, 0; 1998 SD₁₂₇, 3, 1, 0; 1998 SF₁₂₇, 3, 1, 0; 1998 SL₁₂₇, 6, 2, 9; 1998 SQ₁₂₇, 6, 2, 2; 1998 SW₁₂₇, 6, 2, 2; 1998 SY₁₂₇, 6, 2, 2; 1998 SD₁₂₈, 6, 2, 9; 1998 SG₁₂₈, 6, 2, 9; 1998 SH₁₂₈, 6, 2, 9; 1998 SB₁₂₉, 3, 1, 0; 1998 SK₁₂₉, 6, 2, 9; 1998 SW₁₂₉, 6, 2, 6; 1998 SX₁₃₀, 6, 2, 6; 1998 SD₁₃₀, 6, 2, 6; 1998 SE₁₃₀, 6, 2, 6; 1998 SP₁₃₀, 6, 2, 6; 1998 SQ₁₃₀, 3, 1, 0; 1998 SR₁₃₀, 6, 2, 6; 1998 SD₁₃₁, 3, 1, 0; 1998 SE₁₃₁, 3, 1, 0; 1998 SG₁₃₁, 6, 2, 6; 1998 SK₁₃₁, 3, 1, 0; 1998 SC₁₃₂, 3, 1, 0; 1998 SF₁₃₂, 3, 1, 0; 1998 SG₁₃₂, 3, 1, 0; 1998 SS₁₃₂, 3, 1, 0; 1998 SU₁₃₂, 3, 1, 0; 1998 SV₁₃₂, 3, 1, 0; 1998 SW₁₃₂, 6, 2, 6; 1998 SX₁₃₂, 6, 2, 6; 1998 SA₁₃₃, 3, 1, 0; 1998 SB₁₃₃, 6, 2, 6; 1998 SG₁₃₃, 6, 2, 7; 1998 SH₁₃₃, 3, 1, 0; 1998 SK₁₃₃, 3, 1, 0; 1998 SL₁₃₃, 3, 1, 0; 1998 SP₁₃₃, 6, 2, 7; 1998 SQ₁₃₃, 6, 2, 7; 1998 SX₁₃₃, 6, 2, 7; 1998 SE₁₃₄, 6, 2, 7; 1998 SG₁₃₄, 6, 2, 7; 1998 SM₁₃₄, 9, 3, 7; 1998 SO₁₃₄, 3, 1, 0; 1998 SP₁₃₄, 3, 1, 0; 1998 SV₁₃₄, 3, 1, 0; 1998 SX₁₃₄, 6, 2, 7; 1998 SY₁₃₄, 3, 1, 0; 1998 SB₁₃₅, 6, 2, 9; 1998 SH₁₃₅, 6, 2, 9; 1998 SK₁₃₅, 6, 2, 9; 1998 SM₁₃₅, 6, 2, 9; 1998 SN₁₃₅, 6, 2, 9; 1998 SO₁₃₅, 3, 1, 0; 1998 SQ₁₃₅, 6, 2, 9; 1998 SR₁₃₅, 6, 2, 9; 1998 ST₁₃₅, 6, 2, 3; 1998 SW₁₃₅, 6, 2, 9; 1998 SX₁₃₅, 6, 2, 3; 1998 SA₁₃₆, 6, 2, 9; 1998 SB₁₃₆, 3, 1, 0; 1998 SC₁₃₆, 3, 1, 0; 1998 SM₁₃₆, 6, 2, 9; 1998 SU₁₃₆, 6, 2, 3; 1998 SJ₁₃₇, 3, 1, 0; 1998 SK₁₃₇, 6, 2, 3; 1998 SL₁₃₇, 6, 2, 3; 1998 SO₁₃₇, 9, 2, 9; 1998 SS₁₃₇, 3, 1, 0; 1998 ST₁₃₇, 3, 1, 0; 1998 SF₁₃₈, 3, 1, 0; 1998 SR₁₃₈, 3, 1, 0; 1998 SS₁₃₈, 3, 1, 0; 1998 ST₁₃₈, 3, 1, 0; 1998 SY₁₃₈, 3, 1, 0; 1998 SZ₁₃₈, 6, 2, 6; 1998 SC₁₃₉, 6, 2, 6; 1998 SJ₁₃₉, 3, 1, 0; 1998 SL₁₄₀, 3, 1, 0; 1998 SM₁₄₀, 3, 1, 0; 1998 SO₁₄₀, 6, 2, 7; 1998 SQ₁₄₀, 6, 2, 6; 1998 SP₁₄₁, 3, 1, 0; 1998 SE₁₄₁, 6, 2, 9; 1998 SV₁₄₁, 6, 2, 9; 1998 SW₁₄₁, 6, 2, 9; 1998 SX₁₄₁, 6, 2, 3; 1998 SK₁₄₂, 6, 2, 9; 1998 SM₁₄₂, 6, 2, 9; 1998 SN₁₄₂, 6, 2, 9; 1998 SO₁₄₂, 6, 2, 9; 1998 SQ₁₄₂, 6, 2, 9; 1998 SV₁₄₂, 3, 1, 0; 1998 SW₁₄₂, 6, 2, 9; 1998 SX₁₄₂, 6, 2, 6; 1998 SC<

0, 2, 9; 1998 TX₃₀ *, 6, 2, 9; 1998 TY₃₀ *, 6, 2, 9; 1998 TZ₃₀ *, 6, 2, 9; 1998 TA₃₁ *, 6, 2, 9; 1998 TB₃₁ *, 6, 2, 9; 1998 TC₃₁ *, 6, 2, 9; 1998 TD₃₁ *, 9, 2, 9; 1998 TE₃₁ *, 6, 2, 9; 1998 TF₃₁ *, 6, 2, 7; 1998 TG₃₁ *, 6, 2, 7; 1998 TH₃₁ *, 6, 2, 7; 1998 TJ₃₁ *, 6, 2, 7; 1998 TK₃₁ *, 6, 2, 6; 1998 TL₃₁ *, 6, 2, 6; 1998 TM₃₁ *, 6, 2, 6; 1998 TN₃₁ *, 6, 2, 6; 1998 TO₃₁ *, 6, 2, 6; 1998 TP₃₁ *, 6, 2, 6; 1998 TQ₃₁ *, 6, 2, 6; 1998 TR₃₁ *, 6, 2, 3; 1998 TS₃₁ *, 6, 2, 9; 1998 TT₃₁ *, 6, 2, 9; 1998 TU₃₁ *, 6, 2, 6; 1998 TV₃₁ *, 6, 2, 9; 1998 TW₃₁ *, 6, 2, 9; 1998 TX₃₁ *, 6, 2, 9; 1998 TY₃₁ *, 6, 2, 9; 1998 TZ₃₁ *, 6, 2, 8; 1998 TA₃₂ *, 6, 2, 8; 1998 TB₃₂ *, 6, 2, 8; 1998 TC₃₂ *, 6, 2, 8; 1998 TD₃₂ *, 6, 2, 8; 1998 TE₃₂ *, 6, 2, 8; 1998 TF₃₂ *, 6, 2, 8; 1998 TG₃₂ *, 6, 2, 8; 1998 TH₃₂ *, 6, 2, 8; 1998 TJ₃₂ *, 6, 2, 8; 1998 TK₃₂ *, 6, 2, 8; 1998 TL₃₂ *, 6, 2, 8; 1998 TM₃₂ *, 6, 2, 8; 1998 TN₃₂ *, 6, 2, 8; 1998 TO₃₂ *, 6, 2, 6; 1998 TP₃₂ *, 6, 2, 6; 1998 TQ₃₂ *, 6, 2, 6; 1998 TR₃₂ *, 6, 2, 5; 1998 TS₃₂ *, 6, 2, 5; 1998 TT₃₂ *, 6, 2, 5; 1998 TU₃₂ *, 6, 2, 6; 1998 TV₃₂ *, 6, 2, 6; 1998 TW₃₂ *, 6, 2, 6; 1998 TX₃₂ *, 6, 2, 6; 1998 TY₃₂ *, 6, 2, 6; 1998 TZ₃₂ *, 6, 2, 6; 1998 TA₃₃ *, 6, 2, 6; 1998 TB₃₃ *, 6, 2, 6; 1998 TC₃₃ *, 6, 2, 6; 1998 TD₃₃ *, 6, 2, 6; 1998 TE₃₃ *, 6, 2, 6; 1998 TF₃₃ *, 6, 2, 6; 1998 TG₃₃ *, 6, 2, 6; 1998 TH₃₃ *, 6, 2, 6; 1998 TJ₃₃ *, 9, 2, 6; 1998 TK₃₃ *, 6, 2, 6; 1998 TL₃₃ *, 6, 2, 6; 1998 TM₃₃ *, 6, 2, 6; 1998 TN₃₃ *, 6, 2, 6; 1998 TO₃₃ *, 6, 2, 6; 1998 TP₃₃ *, 6, 2, 6; 1998 TQ₃₃ *, 6, 2, 6; 1998 TR₃₃ *, 6, 2, 6; 1998 TS₃₃ *, 6, 2, 6; 1998 TT₃₃ *, 6, 2, 6; 1998 TU₃₃ *, 6, 2, 6; 1998 TV₃₃ *, 6, 2, 6; 1998 TW₃₃ *, 6, 2, 6; 1998 TX₃₃ *, 6, 2, 6; 1998 TY₃₃ *, 6, 2, 6; 1998 TZ₃₃ *, 6, 2, 6; 1998 TA₃₄ *, 6, 2, 6; 1998 TB₃₄ *, 6, 2, 6; 1998 TC₃₄ *, 6, 2, 6; 1998 TD₃₄ *, 6, 2, 6; 1998 TE₃₄ *, 6, 2, 6; 1998 TF₃₄ *, 6, 2, 6; 1998 TG₃₄ *, 6, 2, 6; 1998 TH₃₄ *, 6, 2, 6; 1998 TJ₃₄ *, 6, 2, 6; 1998 TK₃₄ *, 6, 2, 6; 1998 TL₃₄ *, 6, 2, 6; 1998 TM₃₄ *, 6, 2, 6; 1998 TN₃₄ *, 6, 2, 6; 1998 TO₃₄ *, 6, 2, 6; 1998 TP₃₄ *, 6, 2, 6; 1998 TQ₃₄ *, 6, 2, 6; 1998 TR₃₄ *, 6, 2, 6; 1998 TS₃₄ *, 6, 2, 6; 1998 TT₃₄ *, 6, 2, 6; 1998 TU₃₄ *, 6, 2, 6; 1998 TV₃₄ *, 6, 2, 6; 1998 TW₃₄ *, 6, 2, 6; 1998 TX₃₄ *, 6, 2, 6; 1998 TY₃₄ *, 6, 2, 6; 1998 TZ₃₄ *, 6, 2, 6; 1998 TA₃₅ *, 6, 2, 6; 1998 TB₃₅ *, 6, 2, 6; 1998 UF₃, 3, 1, 0; 1998 UG₃, 3, 1, 0; 1998 UH₃, 3, 1, 0; 1998 UJ₃, 3, 1, 0; 1998 UK₃, 3, 1, 0; 1998 UL₃, 3, 1, 0; 1998 UM₃, 3, 1, 0; 1998 UN₃, 3, 1, 0; 1998 UO₃, 3, 1, 0; 1998 UP₃, 3, 1, 0; 1998 UQ₃, 3, 1, 0; 1998 UR₃, 3, 1, 0; 1998 US₃, 3, 1, 0; 1998 UT₃, 3, 1, 0; 1998 UV₃, 3, 1, 0; 1998 UW₃, 3, 1, 0; 1998 UX₃, 3, 1, 0; 1998 UY₃, 3, 1, 0; 1998 UZ₃, 3, 1, 0; 1998 UA₆, 6, 2, 6; 1998 UB₆, 6, 2, 6; 1998 UC₆, 6, 2, 6; 1998 UD₆, 6, 2, 6; 1998 UE₆, 6, 2, 6; 1998 UF₆, 6, 2, 6; 1998 UG₆, 6, 2, 6; 1998 UH₆, 6, 2, 6; 1998 UJ₆, 6, 2, 6; 1998 UK₆, 6, 2, 6; 1998 UL₆, 6, 2, 6; 1998 UM₆, 6, 2, 6; 1998 UN₆, 6, 2, 6; 1998 UO₆, 6, 2, 6; 1998 UP₆, 6, 2, 6; 1998 UQ₆, 6, 2, 6; 1998 UR₆, 6, 2, 6; 1998 US₆, 6, 2, 6; 1998 UT₆, 6, 2, 6; 1998 UV₆, 6, 2, 6; 1998 UW₆, 6, 2, 6; 1998 UX₆, 6, 2, 6; 1998 UY₆, 6, 2, 6; 1998 UZ₆, 6, 2, 6; 1998 UA₁₅, 3, 1, 0; 1998 UB₁₅, 3, 1, 0; 1998 UC₁₅, 3, 1, 0; 1998 UD₁₅, 3, 1, 0; 1998 UE₁₅, 3, 1, 0; 1998 UF₁₅, 3, 1, 0; 1998 UG₁₅, 3, 1, 0; 1998 UH₁₅, 3, 1, 0; 1998 UJ₁₅, 3, 1, 0; 1998 UK₁₅, 3, 1, 0; 1998 UL₁₅, 3, 1, 0; 1998 UM₁₅, 3, 1, 0; 1998 UN₁₅, 3, 1, 0; 1998 UO₁₅, 3, 1, 0; 1998 UP₁₅, 3, 1, 0; 1998 UQ₁₅, 3, 1, 0; 1998 UR₁₅, 3, 1, 0; 1998 US₁₅, 3, 1, 0; 1998 UT₁₅, 3, 1, 0; 1998 UV₁₅, 3, 1, 0; 1998 UW₁₅, 3, 1, 0; 1998 UX₁₅, 3, 1, 0; 1998 UY₁₅, 3, 1, 0; 1998 UZ₁₅, 3, 1, 0; 1998 UA₁₆, 3, 1, 0; 1998 UB₁₆, 3, 1,

(915), 3, 1, 0; (929), 6, 2, 9; (933), 3, 1, 0; (936), 6, 2, 2; (949), 3, 1, 0; (956), 5, 2, 2; (968), 3, 1, 0; (976), 3, 1, 0; (982), 3, 1, 0; (993), 3, 1, 0; (996), 3, 1, 0; (997), 3, 1, 0; (1004), 3, 1, 0; (1010), 3, 1, 0; (1028), 3, 1, 0; (1032), 3, 1, 0; (1039), 3, 1, 0; (1043), 3, 1, 0; (1058), 3, 1, 0; (1081), 3, 1, 0; (1097), 3, 1, 0; (1117), 3, 1, 0; (1129), 3, 1, 0; (1143), 3, 1, 0; (1147), 6, 2, 8; (1157), 3, 1, 0; (1163), 3, 1, 0; (1165), 6, 2, 6; (1169), 3, 1, 0; (1174), 3, 1, 0; (1178), 3, 1, 0; (1180), 3, 1, 0; (1188), 3, 1, 0; (1192), 3, 1, 0; (1193), 3, 1, 0; (1217), 3, 1, 0; (1225), 3, 1, 0; (1226), 3, 1, 0; (1249), 3, 1, 0; (1251), 3, 1, 0; (1260), 3, 1, 0; (1266), 3, 1, 0; (1274), 3, 1, 0; (1288), 3, 1, 0; (1298), 3, 1, 0; (1299), 3, 1, 0; (1313), 6, 2, 2; (1318), 6, 2, 10; (1319), 3, 1, 0; (1336), 6, 2, 8; (1349), 3, 1, 0; (1351), 3, 1, 0; (1373), 3, 1, 0; (1376), 3, 1, 0; (1388), 6, 2, 9; (1389), 3, 1, 0; (1397), 6, 2, 9; (1398), 2, 1, 0; (1402), 6, 2, 11; (1410), 3, 1, 0; 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1998 NOV. 10

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703 Catalina Sky Survey

C. W. Hergenrother, Space Sciences Building, University of Arizona, Tucson, AZ

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Observers T. B. Spahr, R. Ditteon

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0.41-m $f/3$ Schmidt + CCD

USNO-A1.0, GSC

1990 HL₁, 3, 1, 0; 1997 NQ₂, 3, 1, 0; 1997 PU₂, 5, 2, 1; 1998 QH₂₇, 3, 1, 0; 1998 QJ₂₈, 3, 1, 0; 1998 SR₂, 2, 1, 0; 1998 SV₂, 2, 1, 0; 1998 SE₅, 2, 1, 0; 1998 SA₁₀, 2, 1, 0; 1998 SR₁₂, 2, 1, 0; 1998 SS₁₂, 2, 1, 0; 1998 ST₁₂, 3, 1, 0; 1998 SW₁₂, 2, 1, 0; 1998 SX₁₂, 5, 2, 1; 1998 SM₂₇, 2, 1, 0; 1998 SN₂₇, 5, 2, 4; 1998 SO₂₇, 2, 1, 0; 1998 SP₂₇, 2, 1, 0; 1998 SQ₂₇, 2, 1, 0; 1998 SS₂₇, 4, 2, 5; 1998 TB₃ *, 11, 4, 34; 1998 TC₃ *, 8, 3, 11; 1998 TD₃ *, 7, 3, 11; 1998 TE₃ *, 10, 3, 13; 1998 TJ₇ *, 8, 3, 10; 1998 TK₇ *, 5, 2, 4; 1998 TU₂₉ *, 7, 3, 13; 1998 UA *, 7, 3, 28; 1998 UB *, 7, 3, 4; 1998 UC *, 12, 5, 35; 1998 UD *, 7, 3, 4; 1998 UE *, 8, 3, 9; 1998 UF *, 5, 2, 8; 1998 UG *, 7, 3, 3; 1998 UH *, 9, 4, 8; 1998 UJ *, 9, 4, 8; 1998 UT *, 5, 2, 3; 1998 UU *, 9, 3, 12; 1998 UV *, 7, 2, 3; 1998 UW *, 6, 3, 3; 1998 UX *, 12, 5, 25; 1998 UD₁ *, 3, 1, 0; 1998 UE₁ *, 5, 2, 29; 1998 UF₁ *, 5, 2, 24; 1998 UG₁ *, 8, 3, 34; 1998 UH₁ *, 8, 3, 34; 1998 UU₁₆ *, 8, 2, 1; 1998 UV₁₆ *, 7, 3, 2; 1998 UW₁₆ *, 7, 3, 2; 1998 UX₁₆ *, 7, 3, 2; 1998 UY₁₆ *, 7, 3, 2; 1998 UZ₁₆ *, 9, 3, 2; 1998 UA₁₇ *, 7, 3, 2; 1998 UB₁₇ *, 7, 3, 2; 1998 UL₁₈ *, 5, 2, 2; 1998 UM₁₈ *, 5, 2, 1; 1998 UN₁₈ *, 5, 2, 1; 1998 UT₁₈ *, 11, 3, 2; (3420), 3, 1, 0; [339, 59, 38*, 1998/09/20–1998/10/29]

704 Lincoln Laboratory Experimental Test System, New Mexico

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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

A913 CF, 18, 4, 13; 1964 VN₁, 4, 1, 0; 1966 CM, 10, 2, 2; 1971 UN, 5, 1, 0; 1971 UQ, 27, 6, 44; 1972 PA, 5, 1, 0; 1972 TE, 4, 1, 0; 1973 SS, 4, 1, 0; 1973 SN₁, 5, 1, 0; 1973 SO₁, 5, 1, 0; 1973 SP₁, 5, 1, 0; 1973 SA₂, 5, 1, 0; 1973 SG₅, 19, 4, 15; 1975 RA₂, 3, 1, 0; 1975 SB₁, 5, 1, 0; 1975 SU₁, 12, 3, 31; 1975 VW₅, 5, 1, 0; 1976 YF₃, 5, 1, 0; 1976 YL₃, 10, 2, 1; 1977 QD₂, 15, 3, 14; 1977 TU₃, 5, 1, 0; 1977 TO₆, 5, 1, 0; 1977 VL₁, 15, 3, 14; 1978 GA, 9, 2, 1; 1978 PA₃, 4, 1, 0; 1978 RH₉, 5, 1, 0; 1978 SH₃, 20, 4, 15; 1978 SD₇, 19, 4, 15; 1978 SJ₇, 10, 2, 1; 1978 UD₇, 10, 2, 1; 1978 VK₃, 13, 3, 15; 1978 VP₃, 8, 2, 1; 1978 VY₃, 10, 2, 1; 1978 VV₆, 9, 2, 14; 1978 VM₇, 8, 2, 14; 1978 WU, 4, 1, 0; 1978 YM, 5, 1, 0; 1979 QA₂, 10, 2, 1; 1979 SO, 4, 1, 0; 1980 BA, 4, 1, 0; 1980 FH₁, 5, 1, 0; 1980 FS₁, 2, 1, 0; 1980 FY₂, 18, 4, 13; 1980 FH₃, 8, 2, 1; 1981 DS, 12, 3, 14; 1981 DQ₁, 4, 1, 0; 1981 EZ, 5, 1, 0; 1981 EE₁, 14, 3, 14; 1981 EF₂, 5, 1, 0; 1981 EH₃, 4, 1, 0; 1981 EF₁₁, 5, 1, 0; 1981 EC₁₃, 9, 2, 13; 1981 EP₁₃, 5, 1, 0; 1981 EW₁₃, 4, 1, 0; 1981 EJ₁₅, 5, 1, 0; 1981 EW₁₇, 4, 1, 0; 1981 EE₁₉, 4, 1, 0; 1981 EY₁₉, 5, 1, 0; 1981 EN₂₁, 8, 2, 13; 1981 EH₂₃, 19, 4, 15; 1981 EH₂₄, 18, 4, 15; 1981 EW₂₄, 9, 2, 14; 1981 EB₂₅, 4, 1, 0; 1981 EF₂₅, 13, 3, 14; 1981 EO₂₆, 17, 4, 15; 1981 EP₂₇, 5, 1, 0; 1981 EW₃₀, 13, 3, 15; 1981 EB₃₄, 8, 2, 1; 1981 ED₃₄, 18, 4, 19; 1981 EX₃₈, 4, 1, 0; 1981 EQ₄₇, 9, 2, 15; 1981 QK, 9, 2, 31; 1981 QJ₃, 5, 1, 0; 1981 RB₂, 10, 2, 16; 1981 RQ₂, 5, 1, 0; 1981 SA₇, 19, 4, 15; 1981 TP, 19, 4, 15; 1981 UO₁₁, 13, 3, 15; 1981 UR₂₇, 10, 2, 1; 1981 UU₂₉, 5, 1, 0; 1981 VN, 20, 4, 30; 1982 BM, 18, 4, 15; 1982 SW₃, 5, 1, 0; 1982 TK₁, 5, 1, 0; 1982 UM₂, 14, 3, 15; 1982 US₆, 20, 4, 15; 1982 UE₇, 17, 4, 15; 1982 UJ₇, 39, 5, 27; 1982 UC₁₁, 5, 1, 0; 1982 UE₁₂, 10, 2, 16; 1982 VB₄, 5, 1, 0; 1983 CH, 5, 1, 0; 1983 TU₁, 5, 1, 0; 1983 XN₁, 10, 2, 16; 1984 EL, 7, 2, 1; 1984 MQ, 5, 1, 0; 1984 QU, 4, 1, 0; 1984 SA, 5, 1, 0; 1984 SZ₅, 10, 2, 1; 1984 SD₆, 20, 4, 15; 1984 SJ₇, 4, 1, 0; 1984 UR, 4, 1, 0; 1984 WJ₁, 9, 2, 30; 1985 AE, 8, 2, 1; 1985 CN, 5, 1, 0; 1985 CP₂, 19, 4, 15; 1985 PE₁, 4, 1, 0; 1985 QP, 15, 3, 14; 1985 RJ, 20, 4, 15; 1985 SM₂, 14, 3, 15; 1985 SX₂, 5, 1, 0; 1985 SC₃, 19, 4, 15; 1985 SM₃, 5, 1, 0; 1985 TY₁, 14, 3, 27; 1985 UG₂, 29, 5, 27; 1985 UO₃, 8, 2, 3; 1986 AA₂, 4, 1, 0; 1986 CB₂, 9, 2, 30; 1986 GC, 5, 1, 0; 1986 GF, 5, 1, 0; 1986 PL₁, 25, 3, 33; 1986 QJ₂, 4, 1, 0; 1986 QL₂, 19, 4, 15; 1986 QP₂, 5, 1, 0; 1986 QB₃, 5, 1, 0; 1986 RB₁₂, 4, 1, 0; 1986 SC₂, 4, 1, 0; 1986 TG₁, 3, 1, 0; 1986 TT₁₁, 3, 1, 0; 1987 BS₁, 10, 2, 16; 1987 DF₆, 4, 1, 0; 1987 DH₆, 5, 1, 0; 1987 DN₆, 13, 3, 14; 1987 EQ, 14, 3, 30; 1987 QT₁, 18, 4, 15; 1987 QC₃, 4, 1, 0; 1987 QS₅, 15, 3, 4; 1987 RG, 15, 3, 15; 1987 SJ₁, 13, 3, 15; 1987 SV₃, 5, 1, 0; 1987 ST₁₁, 19, 4, 30; 1987 SP₁₂, 10, 2, 1; 1987 SX₁₇, 5, 1, 0; 1987 UT, 5, 1, 0; 1987 UX, 20, 4, 15; 1987 UA₁, 5, 1, 0; 1987 US₄, 5, 1, 0; 1987 WD, 30, 6, 33; 1987 WJ₁, 19, 4, 15; 1987 WT₁, 5, 1, 0; 1987 YU₁, 5, 1, 0; 1988 AX₄, 19, 4, 15; 1988 CL₂, 5, 1, 0; 1988 FM, 18,

4, 15; 1988 PL, 5, 1, 0; 1988 RQ₅, 15, 3, 14; 1988 RR₅, 19, 4, 15; 1988 RY₅, 13, 3, 14; 1988 RS₆, 9, 2, 15; 1988 SS₂, 33, 7, 44; 1988 UC, 17, 4, 30; 1988 VY, 5, 1, 0; 1988 VS₁, 4, 1, 0; 1988 VP₃, 5, 1, 0; 1988 XX₂, 19, 4, 19; 1988 XB₅, 4, 1, 0; 1989 AT, 4, 1, 0; 1989 AS₁, 4, 1, 0; 1989 AF₃, 5, 1, 0; 1989 AJ₆, 9, 2, 1; 1989 BW₁, 5, 1, 0; 1989 CS₂, 5, 1, 0; 1989 CT₂, 18, 4, 15; 1989 CX₂, 5, 1, 0; 1989 CY₂, 14, 3, 14; 1989 CB₃, 5, 1, 0; 1989 ET₁, 3, 1, 0; 1989 EZ₄, 1, 0; 1989 GC₁, 4, 1, 0; 1989 GA₃, 10, 2, 1; 1989 GU₃, 20, 4, 15; 1989 GO₄, 8, 2, 1; 1989 GH₈, 10, 2, 1; 1989 NE₁, 4, 1, 0; 1989 RD₁, 5, 1, 0; 1989 SN₄, 3, 1, 0; 1989 SW₈, 5, 1, 0; 1989 TH₁, 9, 2, 16; 1989 TU₁, 4, 1, 0; 1989 TU₄, 10, 2, 1; 1989 TB₁₁, 5, 1, 0; 1989 TR₁₁, 3, 1, 0; 1989 TD₁₆, 20, 4, 15; 1989 UL, 10, 2, 1; 1989 UX₇, 10, 2, 30; 1989 WF₁, 5, 1, 0; 1990 DM₃, 9, 2, 30; 1990 EL₂, 8, 2, 1; 1990 EQ₂, 16, 4, 15; 1990 EN₄, 4, 1, 0; 1990 EL₇, 5, 1, 0; 1990 FK₁, 4, 1, 0; 1990 FD₃, 13, 3, 31; 1990 HG, 5, 1, 0; 1990 MR, 5, 1, 0; 1990 OX₁, 4, 1, 0; 1990 OL₄, 5, 1, 0; 1990 QM, 5, 1, 0; 1990 QZ₁, 5, 1, 0; 1990 QY₂, 20, 4, 15; 1990 QL₃, 5, 1, 0; 1990 QC₁₉, 9, 2, 6; 1990 RE₂, 5, 1, 0; 1990 RY₂, 10, 2, 1; 1990 RS₆, 4, 1, 0; 1990 RF₁₇, 3, 1, 0; 1990 SZ, 5, 1, 0; 1990 SD₅, 4, 1, 0; 1990 SG₁₁, 5, 1, 0; 1990 SK₂₈, 15, 3, 15; 1990 TJ₂, 20, 4, 15; 1990 TO₄, 5, 1, 0; 1990 UO₁, 9, 2, 1; 1990 UU₁, 20, 4, 15; 1990 UG₄, 19, 4, 15; 1990 UE₅, 19, 4, 15; 1990 VL₁, 20, 4, 27; 1990 VH₃, 5, 1, 0; 1990 VK₄, 4, 1, 0; 1990 VN₄, 20, 4, 15; 1990 VS₄, 19, 4, 15; 1990 VQ₅, 5, 1, 0; 1990 VP₆, 19, 4, 15; 1990 WE₂, 2, 0, 45; 1990 WU₅, 13, 3, 15; 1990 XF, 3, 1, 0; 1991 AK, 13, 3, 15; 1991 BK, 15, 3, 14; 1991 CL, 5, 1, 0; 1991 CC₃, 5, 1, 0; 1991 DY, 5, 1, 0; 1991 DK₁, 4, 1, 0; 1991 EY₃, 4, 1, 0; 1991 FG, 4, 1, 0; 1991 FL₂, 20, 4, 32; 1991 GP₃, 9, 2, 1; 1991 GK₄, 5, 1, 0; 1991 GA₆, 5, 1, 0; 1991 OV, 38, 8, 45; 1991 PV, 14, 3, 14; 1991 PG₁₁, 10, 2, 1; 1991 PO₁₂, 10, 2, 1; 1991 PJ₁₃, 4, 1, 0; 1991 PR₁₆, 9, 2, 1; 1991 PZ₁₇, 4, 1, 0; 1991 QJ, 9, 2, 16; 1991 RG, 20, 4, 15; 1991 RL₁, 10, 2, 1; 1991 RE₂, 10, 2, 26; 1991 RS₂, 10, 2, 1; 1991 RU₂, 25, 5, 32; 1991 RT₃, 19, 4, 15; 1991 RR₄, 5, 1, 0; 1991 RA₅, 4, 1, 0; 1991 RF₆, 4, 1, 0; 1991 RL₈, 25, 5, 33; 1991 RY₈, 29, 6, 33; 1991 RB₁₀, 25, 5, 15; 1991 RR₁₀, 32, 7, 44; 1991 RE₁₅, 9, 2, 16; 1991 RK₁₅, 4, 1, 0; 1991 RV₁₆, 5, 1, 0; 1991 RA₁₇, 10, 2, 13; 1991 RU₁₇, 19, 4, 30; 1991 RC₂₂, 18, 4, 30; 1991 RX₄₀, 31, 6, 31; 1991 RJ₄₁, 30, 6, 33; 1991 ST, 5, 1, 0; 1991 SM₂, 5, 1, 0; 1991 TN, 3, 1, 0; 1991 TH₁, 10, 2, 1; 1991 TK₁, 4, 1, 0; 1991 TX₄, 4, 1, 0; 1991 UF, 20, 4, 15; 1991 UQ, 9, 2, 30; 1991 UR, 29, 6, 33; 1991 UK₁, 5, 1, 0; 1991 UR₁, 4, 1, 0; 1991 UO₂, 15, 3, 15; 1991 UP₂, 5, 1, 0; 1991 UB₃, 5, 1, 0; 1991 UN₃, 8, 2, 31; 1991 UU₃, 5, 1, 0; 1991 UE₅, 5, 1, 0; 1991 VM, 5, 1, 0; 1991 VQ₁, 5, 1, 0; 1991 VF₂, 3, 1, 0; 1991 VG₂, 9, 2, 1; 1991 VZ₂, 18, 4, 15; 1991 VG₃, 9, 2, 30; 1991 VC₅, 20, 4, 15; 1991 VM₅, 20, 4, 15; 1991 XH₁, 5, 1, 0; 1991 YW, 38, 8, 45; 1991 YL₁, 4, 1, 0; 1992 AT₂, 9, 2, 1; 1992 AP₃, 18, 4, 15; 1992 BZ, 20, 4, 15; 1992 BQ₂, 8, 2, 1; 1992 CD₁, 4, 1, 0; 1992 CS₂, 23, 5, 33; 1992 CG₃, 13, 3, 15; 1992 DZ₂, 5, 1, 0; 1992 DS₆, 18, 4, 15; 1992 EA₆, 5, 1, 0; 1992 EX₈, 5, 1, 0; 1992 EW₉, 4, 1, 0; 1992 EG₁₁, 18, 4, 13; 1992 EK₁₂, 5, 1, 0; 1992 EK₁₄, 10, 2, 14; 1992 EB₂₆, 8, 2, 1; 1992 FV₁, 5, 1, 0; 1992 GA, 9, 2, 16; 1992 GB₁, 5, 1, 0; 1992 HA₁₄, 35, 8, 45; 1992 JB₂, 5, 1, 0; 1992 OF₁, 5, 1, 0; 1992 OP₁, 14, 3, 27; 1992 PB₁, 22, 5, 31; 1992 PB₂, 19, 3, 16; 1992 PD₂, 8, 2, 15; 1992 PH₂, 9, 2, 16; 1992 QL₂, 10, 1, 0; 1992 RX₆, 5, 1, 0; 1992 RF₇, 19, 4, 15; 1992 RT₇, 5, 1, 0; 1992 SB₁, 5, 1, 0; 1992 SF₁₁, 21, 5, 33; 1992 UM₉, 5, 1, 0; 1992 YW₁, 20, 4, 19; 1993 BM₃, 18, 4, 13; 1993 BN₃, 17, 4, 30; 1993 BQ₄, 15, 3, 15; 1993 BX₁₃, 10, 2, 1; 1993 DD₁, 4, 1, 0; 1993 EE, 5, 1, 0; 1993 EQ, 5, 1, 0; 1993 FR₃, 13, 3, 14; 1993 FA₅, 5, 1, 0; 1993 FY₅, 10, 2, 1; 1993 FZ₆, 5, 1, 0; 1993 FH₇, 5, 1, 0; 1993 FT₇, 19, 4, 19; 1993 FG₈, 5, 1, 0; 1993 FL₈, 5, 1, 0; 1993 FQ₈, 18, 4, 15; 1993 FK₉, 15, 3, 19; 1993 FN₉, 31, 7, 44; 1993 FU₁₃, 9, 2, 30; 1993 FU₁₇, 5, 1, 0; 1993 FV₂₄, 8, 2, 13; 1993 FH₂₅, 10, 2, 1; 1993 FS₂₆, 27, 6, 45; 1993 FT₂₆, 20, 4, 15; 1993 FV₂₆, 20, 4, 15; 1993 FV₂₇, 5, 1, 0; 1993 FU₂₈, 24, 5, 15; 1993 FT₃₁, 3, 1, 0; 1993 FY₃₄, 12, 3, 19; 1993 FY₃₇, 4, 1, 0; 1993 FH₃₈, 12, 3, 30; 1993 FV₄₅, 38, 8, 45; 1993 FY₅₅, 10, 2, 1; 1993 FE₇₆, 18, 4, 15; 1993 FX₇₉, 30, 6, 33; 1993 GA₁, 14, 3, 30; 1993 HR₁, 4, 1, 0; 1993 JB₁, 9, 2, 1; 1993 JF₁, 20, 4, 15; 1993 LU₁, 5, 1, 0; 1993 MB, 20, 4, 15; 1993 MR, 10, 2, 1; 1993 MG₁, 3, 1, 0; 1993 NO, 4, 1, 0; 1993 NA₂, 5, 1, 0; 1993 OB₂, 5, 1, 0; 1993 OH₁₂, 5, 1, 0; 1993 PU₇, 13, 3, 15; 1993 PW₇, 19, 4, 15; 1993 QU₃, 36, 8, 45; 1993 QV₄, 4, 1, 0; 1993 QL₇, 10, 2, 1; 1993 RP₃, 5, 1, 0; 1993 SO₂, 13, 3, 14; 1993 SX₄, 4, 1, 0; 1993 SL₆, 5, 1, 0; 1993 TK₃, 9, 2, 1; 1993 TM₁₅, 15, 3, 19; 1993 TW₁₆, 8, 2, 1; 1993 TG₂₆, 20, 4, 15; 1993 TJ₂₇, 4, 1, 0; 1993 TK₃₇, 15, 3, 19; 1993 TP₃₈, 7, 2, 1; 1993 TX₃₈, 5, 1, 0; 1993 UQ₂, 13, 3, 19; 1993 US₈, 20, 4, 15; 1993 VG₁, 5, 1, 0; 1993 VL₃, 5, 1, 0; 1993 VV₄, 9, 2, 1; 1993 XB, 5, 1, 0; 1993 XS, 13, 3, 15; 1993 YF, 5, 1, 0; 1993 YO, 5, 1, 0; 1994 EW, 10, 2, 1; 1994 GA₁, 3, 1, 0; 1994 GB₁, 3, 1, 0; 1994 NO₁, 10, 2, 1; 1994 OB, 15, 3, 15; 1994 PJ₂, 5, 1, 0; 1994 PO₇, 4, 1, 0; 1994 PK₈, 12, 3, 14; 1994 PL₁₁, 9, 2, 16; 1994 PS₁₁, 20, 4, 15; 1994 PW₁₅, 9, 2, 15; 1994 PD₁₈, 17, 4, 15; 1994 PG₁₈, 19, 4, 19; 1994 PA₁₉, 9, 2, 14; 1994 PY₁₉, 5, 1, 0; 1994 PN₂₅, 17, 4, 13; 1994 PP₂₆, 5, 1, 0; 1994 PW₂₇, 5, 1, 0; 1994 PB₃₀, 10, 2, 1; 1994 PW₃₁, 9, 2, 1; 1994 PX₃₁, 4, 1, 0; 1994 PO₃₂, 5, 1, 0; 1994 PP₃₇, 10, 2, 1; 1994 PV₃₇, 30, 6, 33; 1994 PA₃₉, 5, 1, 0; 1994 RU, 13, 3, 30; 1994 RV, 5, 1, 0; 1994 RX, 5, 1, 0; 1994 RL₁, 10, 2, 1; 1994 RT₂, 18, 4, 13; 1994 RN₅, 4, 1, 0; 1994 RA₁₁, 5, 1, 0; 1994 RE₁₁, 4, 1, 0; 1994 RW₁₇, 10, 2, 1; 1994 SB, 4, 1, 0; 1994 TJ₁, 30, 6, 31; 199

16; 1995 DZ₁, 5, 1, 0; 1995 EQ₁, 5, 1, 0; 1995 EF₈, 18, 4, 13; 1995 FM₃, 5, 1, 0; 1995 FV₁₄, 5, 1, 0; 1995 GO₇, 5, 1, 0; 1995 UQ₃, 10, 2, 1; 1995 UD₄, 8, 2, 1; 1995 UW₄, 19, 4, 15; 1995 UM₈, 5, 1, 0; 1995 VW₁, 5, 1, 0; 1995 WE₅, 5, 1, 0; 1995 WO₇, 18, 4, 16; 1995 WS₇, 17, 4, 15; 1995 WA₈, 14, 3, 14; 1995 WP₈, 19, 4, 30; 1995 WW₁₇, 14, 4, 15; 1995 WB₂₂, 8, 2, 1; 1995 XG₁₈, 18, 4, 30; 1995 XH₁, 20, 4, 19; 1995 YG₁₈, 4, 30; 1995 YR₄, 4, 1, 0; 1995 YV₄, 4, 1, 0; 1995 YD₁, 3, 1, 0; 1995 YH₁, 30, 6, 33; 1995 YH₃, 5, 1, 0; 1995 YL₃, 5, 1, 0; 1996 AJ₂, 19, 4, 15; 1996 AS₁₂, 3, 14; 1996 AF₂, 4, 1, 0; 1996 AJ₂, 18, 4, 15; 1996 AL₂, 5, 1, 0; 1996 AQ₂, 9, 2, 1; 1996 AP₃, 10, 2, 16; 1996 AX₃, 28, 6, 31; 1996 AW₄, 5, 1, 0; 1996 AK₁₀, 9, 2, 1; 1996 BX₁, 3, 1, 0; 1996 BB₂, 5, 1, 0; 1996 BE₂, 5, 1, 0; 1996 BH₂, 5, 1, 0; 1996 BL₂, 5, 1, 0; 1996 BR₃, 3, 1, 0; 1996 BW₄, 4, 1, 0; 1996 CH₁, 5, 1, 0; 1996 CE₃, 15, 3, 19; 1996 CT₇, 20, 4, 19; 1996 CX₈, 29, 6, 33; 1996 CG₉, 5, 1, 0; 1996 DF₄, 4, 1, 0; 1996 DL₅, 1, 0; 1996 DT₅, 1, 0; 1996 DK₁, 14, 3, 30; 1996 DO₁, 3, 1, 0; 1996 DG₂, 19, 4, 15; 1996 DD₂, 9, 2, 1; 1996 DQ₂, 5, 1, 0; 1996 DD₃, 13, 3, 15; 1996 EJ₅, 1, 0; 1996 EL₁, 20, 4, 19; 1996 ES₁, 18, 4, 33; 1996 ER₂, 5, 1, 0; 1996 EY₅, 21, 4, 19; 1996 FR₁, 15, 3, 14; 1996 FW₄, 7, 2, 1; 1996 FJ₅, 8, 2, 16; 1996 FO₅, 8, 2, 30; 1996 FU₁₃, 5, 1, 0; 1996 GS₁₉, 4, 30; 1996 GL₁, 5, 1, 0; 1996 GP₁, 18, 4, 31; 1996 GU₈, 5, 1, 0; 1996 GC₁₈, 5, 1, 0; 1996 GJ₁₉, 5, 1, 0; 1996 GM₂₀, 5, 1, 0; 1996 HW₅, 5, 1, 0; 1996 HC₁, 5, 1, 0; 1996 HE₁, 4, 1, 0; 1996 HP₁, 4, 1, 0; 1996 HE₂, 9, 2, 30; 1996 HR₁₀, 13, 3, 14; 1996 HB₁₂, 4, 1, 0; 1996 HT₁₄, 5, 1, 0; 1996 HU₁₈, 8, 2, 1; 1996 HR₂₁, 5, 1, 0; 1996 JS₃, 3, 1, 0; 1996 JN₆, 5, 1, 0; 1996 LA₁₉, 4, 15; 1996 OO₅, 4, 1, 0; 1996 RJ₅, 5, 1, 0; 1997 CT₁₆, 10, 2, 1; 1997 CC₁₇, 19, 4, 15; 1997 ES₂₂, 5, 30; 1997 EB₅₄, 20, 4, 15; 1997 FB₈, 8, 2, 15; 1997 FM₁₀, 1, 0; 1997 FM₁, 9, 2, 14; 1997 FY₂, 14, 3, 19; 1997 FQ₃, 28, 6, 33; 1997 FX₃, 19, 4, 33; 1997 GP₆, 3, 1, 0; 1997 GQ₆, 18, 4, 15; 1997 GB₇, 20, 4, 19; 1997 GD₈, 13, 3, 19; 1997 GL₈, 5, 1, 0; 1997 GL₁₁, 24, 5, 33; 1997 GX₁₄, 10, 2, 1; 1997 GC₁₉, 23, 5, 31; 1997 GK₂₁, 4, 1, 0; 1997 GR₂₁, 22, 5, 33; 1997 GM₂₂, 18, 4, 15; 1997 GX₂₂, 5, 1, 0; 1997 GR₂₄, 15, 3, 15; 1997 GZ₂₅, 5, 2, 13; 1997 GA₃₈, 10, 2, 1; 1997 GC₃₈, 35, 8, 45; 1997 HQ₁, 18, 4, 15; 1997 HP₂, 3, 1, 0; 1997 HS₁₃, 10, 2, 1; 1997 HC₁₆, 18, 4, 30; 1997 JO₁₀, 10, 2, 1; 1997 JR₅, 5, 1, 0; 1997 JH₆, 28, 6, 44; 1997 JU₇, 4, 1, 0; 1997 JV₇, 27, 6, 31; 1997 JD₁₂, 4, 1, 0; 1997 JL₁₃, 18, 4, 15; 1997 JC₁₄, 10, 2, 30; 1997 JD₁₄, 5, 1, 0; 1997 JS₁₄, 5, 1, 0; 1997 JF₁₆, 9, 2, 1; 1997 JH₁₆, 5, 1, 0; 1997 JJ₁₆, 5, 1, 0; 1997 JH₁₈, 4, 1, 0; 1997 KH₁₈, 28, 6, 33; 1997 LZ₄, 30, 6, 33; 1997 MJ₆, 4, 1, 0; 1997 MD₈, 5, 1, 0; 1997 NQ₂, 5, 1, 0; 1997 NC₃, 13, 3, 15; 1997 NE₃, 5, 1, 0; 1997 NR₆, 4, 1, 0; 1997 NU₆, 4, 1, 0; 1997 NJ₁₀, 17, 4, 30; 1997 OJ₅, 5, 1, 0; 1997 OY₄, 4, 1, 0; 1997 OV₂, 4, 1, 0; 1997 PJ₄, 4, 1, 0; 1997 PM₁, 5, 1, 0; 1997 PG₃, 4, 1, 0; 1997 SJ₄, 5, 1, 0; 1997 SR₈, 5, 1, 0; 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1998 RN₄₆, 10, 2, 1; 1998 RP₄₆, 8, 2, 1; 1998 RQ₄₆, 9, 2, 1; 1998 RS₄₆, 9, 2, 1; 1998 RT₄₆, 9, 2, 1; 1998 RU₄₆, 9, 2, 1; 1998 RV₄₆, 10, 2, 1; 1998 RW₄₆, 10, 2, 1; 1998 RA₄₇, 8, 2, 1; 1998 RB₄₇, 9, 2, 1; 1998 RC₄₇, 10, 2, 1; 1998 RE₄₇, 10, 2, 1; 1998 RF₄₇, 10, 2, 1; 1998 RH₄₇, 9, 2, 1; 1998 RK₄₇, 10, 2, 1; 1998 RL₄₇, 9, 2, 1; 1998 RM₄₇, 10, 2, 1; 1998 RN₄₇, 10, 2, 1; 1998 RO₄₇, 9, 2, 1; 1998 RP₄₇, 10, 2, 1; 1998 RQ₄₇, 10, 2, 1; 1998 RR₄₇, 10, 2, 1; 1998 RT₄₇, 10, 2, 1; 1998 RU₄₇, 9, 2, 1; 1998 RV₄₇, 8, 2, 1; 1998 RW₄₇, 9, 2, 1; 1998 RX₄₇, 10, 2, 1; 1998 RY₄₇, 10, 2, 1; 1998 RZ₄₇, 9, 2, 1; 1998 RA₄₈, 9, 2, 1; 1998 RB₄₈, 9, 2, 1; 1998 RC₄₈, 9, 2, 1; 1998 RD₄₈, 9, 2, 1; 1998 RE₄₈, 9, 2, 1; 1998 RF₄₈, 9, 2, 1; 1998 RH₄₈, 10, 2, 1; 1998 RJ₄₈, 9, 2, 1; 1998 RK₄₈, 9, 2, 1; 1998 RL₄₈, 10, 2, 1; 1998 RM₄₈, 9, 2, 1; 1998 RN₄₈, 9, 2, 1; 1998 RO₄₈, 10, 2, 1; 1998 RQ₄₈, 10, 2, 1; 1998 RR₄₈, 10, 2, 1; 1998 RS₄₈, 8, 2, 1; 1998 RV₄₈, 8, 2, 1; 1998 RW₄₈, 10, 2, 1; 1998 RZ₄₈, 10, 2, 1; 1998 RB₄₉, 9, 2, 1; 1998 RC₄₉, 8, 2, 1; 1998 RD₄₉, 8, 2, 1; 1998 RE₄₉, 7, 2, 1; 1998 RG₄₉, 10, 2, 1; 1998 RJ₄₉, 10, 2, 1; 1998 RK₄₉, 10, 2, 1; 1998 RL₄₉, 10, 2, 1; 1998 RM₄₉, 9, 2, 1; 1998 RN₄₉, 10, 2, 1; 1998 RO₄₉, 10, 2, 1; 1998 RP₄₉, 9, 2, 1; 1998 RQ₄₉, 9, 2, 1; 1998 RT₄₉, 8, 2, 1; 1998 RU₄₉, 10, 2, 1; 1998 RV₄₉, 9, 2, 1; 1998 RW₄₉, 9, 2, 1; 1998 RZ₄₉, 10, 2, 1; 1998 RA₅₀, 8, 2, 1; 1998 RB₅₀, 9, 2, 1; 1998 RC₅₀, 9, 2, 1; 1998 RD₅₀, 10, 2, 1; 1998 RE₅₀, 9, 2, 1; 1998 RF₅₀, 8, 2, 1; 1998 RJ₅₀, 9, 2, 1; 1998 RL₅₀, 10, 2, 1; 1998 RM₅₀, 10, 2, 1; 1998 RN₅₀, 10, 2, 1; 1998 RO₅₀, 9, 2, 1; 1998 RP₅₀, 9, 2, 1; 1998 RQ₅₀, 8, 2, 1; 1998 RS₅₀, 10, 2, 1; 1998 RV₅₀, 10, 2, 1; 1998 RW₅₀, 9, 2, 1; 1998 RX₅₀, 9, 2, 1; 1998 RY₅₀, 10, 2, 1; 1998 RZ₅₀, 9, 2, 1; 1998 RA₅₁, 9, 2, 1; 1998 RB₅₁, 9, 2, 1; 1998 RC₅₁, 9, 2, 1; 1998 RD₅₁, 9, 2, 1; 1998 RE₅₁, 10, 2, 1; 1998 RF₅₁, 10, 2, 1; 1998 RJ₅₁, 9, 2, 1; 1998 RL₅₁, 9, 2, 1; 1998 RM₅₁, 9, 2, 1; 1998 RN₅₁, 8, 2, 1; 1998 RO₅₁, 9, 2, 1; 1998 RP₅₁, 9, 2, 1; 1998 RQ₅₁, 9, 2, 1; 1998 RS₅₁, 9, 2, 1; 1998 RV₅₁, 8, 2, 1; 1998 RW₅₁, 8, 2, 1; 1998 RX₅₁, 9, 2, 1; 1998 RY₅₁, 9, 2, 1; 1998 RZ₅₁, 9, 2, 1; 1998 RA₅₂, 9, 2, 1; 1998 RB₅₂, 8, 2, 1; 1998 RC₅₂, 10, 2, 1; 1998 RD₅₂, 10, 2, 1; 1998 RE₅₂, 8, 2, 1; 1998 RF₅₂, 8, 2, 1; 1998 RG₅₂, 8, 2, 1; 1998 RH₅₂, 8, 2, 1; 1998 RJ₅₂, 10, 2, 1; 1998 RK₅₂, 10, 2, 1; 1998 RL₅₂, 10, 2, 1; 1998 RM₅₂, 10, 2, 1; 1998 RN₅₂, 10, 2, 1; 1998 RO₅₂, 10, 2, 1; 1998 RQ₅₂, 8, 2, 1; 1998 RS₅₂, 8, 2, 4; 1998 RV₅₂, 8, 2, 4; 1998 RW₅₂, 15, 2, 4; 1998 RX₅₂, 18, 4, 13; 1998 RY₅₂, 8, 2, 4; 1998 RZ₅₂, 20, 4, 13; 1998 RA₅₃, 18, 4, 13; 1998 RB₅₃, 16, 4, 13; 1998 RC₅₃, 8, 2, 4; 1998 RD₅₃, 20, 4, 13; 1998 RE₅₃, 19, 4, 13; 1998 RF₅₃, 20, 4, 13; 1998 RG₅₃, 20, 4, 13; 1998 RH₅₃, 7, 2, 4; 1998 RJ₅₃, 13, 2, 4; 1998 RK₅₃, 13, 2, 4; 1998 RL₅₃, 22, 4, 13; 1998 RM₅₃, 18, 4, 13; 1998 RN₅₃, 22, 4, 13; 1998 RO₅₃, 20, 4, 13; 1998 RP₅₃, 22, 4, 13; 1998 RQ₅₃, 13, 2, 4; 1998 RV₅₃, 24, 4, 13; 1998 RW₅₃, 19, 4, 13; 1998 RX₅₃, 20, 4, 13; 1998 RY₅₃, 10, 2, 4; 1998 RZ₅₃, 20, 4, 13; 1998 RA₅₄, 25, 4, 13; 1998 RB₅₄, 34, 6, 31; 1998 RC₅₄, 18, 4, 13; 1998 RD₅₄, 14, 2, 4; 1998 RE₅₄, 19, 4, 13; 1998 RF₅₄, 19, 4, 13; 1998 RG₅₄, 20, 4, 13; 1998 RH₅₄, 18, 4, 13; 1998 RJ₅₄, 24, 4, 13; 1998 RK₅₄, 9, 2, 4; 1998 RL₅₄, 20, 4, 13; 1998 RM₅₄, 24, 4, 13; 1998 RN₅₄, 19, 4, 13; 1998 RO₅₄, 20, 4, 13; 1998 RQ₅₄, 15, 2, 4; 1998 RS₅₄, 19, 4, 13; 1998 RV₅₄, 26, 4, 13; 1998 RW₅₄, 8, 2, 4; 1998 RX₅₄, 9, 2, 4; 1998 RY₅₄, 19, 4, 13; 1998 RZ₅₄, 20, 4, 13; 1998 RA₅₅, 10, 2, 4; 1998 RB₅₅, 19, 4, 13; 1998 RC₅₅, 19, 4, 13; 1998 RD₅₅, 17, 4, 13; 1998 RE₅₅, 32, 6, 31; 1998 RF₅₅, 19, 4, 13; 1998 RG₅₅, 8, 2, 4; 1998 RH₅₅, 8, 2, 4; 1998 RJ₅₅, 16, 4, 13; 1998 RK₅₅, 18, 4, 13; 1998 RL₅₅, 17, 4, 13; 1998 RM₅₅, 17, 4, 13; 1998 RN₅₅, 18, 4, 13; 1998 RO₅₅, 17, 4, 13; 1998 RP₅₅, 18, 4, 13; 1998 RQ₅₅, 23, 5, 31; 1998 RV₅₅, 27, 4, 13; 1998 RW₅₅, 28, 4, 13; 1998 RX₅₅, 17, 4, 13; 1998 RY₅₅, 17, 4, 13; 1998 RZ₅₅, 17, 4, 13; 1998 RA₅₆, 16, 4, 13; 1998 RB₅₆, 16, 4, 13; 1998 RC₅₆, 16, 4, 13; 1998 RD₅₆, 16, 4, 13; 1998 RE₅₆, 8, 2, 4; 1998 RF₅₆, 8, 2, 4; 1998 RG₅₆, 17, 4, 13; 1998 RH₅₆, 17, 4, 13; 1998 RJ₅₆, 17, 4, 13; 1998 RK₅₆, 33, 5, 31; 1998 RL₅₆, 17, 4, 13; 1998 RM₅₆, 17, 4, 13; 1998 RN₅₆, 18, 4, 13; 1998 RO₅₆, 28, 4, 13; 1998 RP₅₆, 17, 4, 13; 1998 RQ₅₆, 23, 4, 13; 1998 RV₅₆, 18, 4, 13; 1998 RW₅₆, 17, 4, 13; 1998 RX₅₆, 23, 4, 13; 1998 RY₅₆, 22, 4, 13; 1998 RZ₅₆, 7, 2, 4; 1998 RA₅₇, 8, 2, 4; 1998 RB₅₇, 8, 2, 4; 1998 RC₅₇, 18, 4, 13; 1998 RD₅₇, 18, 4, 13; 1998 RE₅₇, 17, 4, 13; 1998 RF₅₇, 8, 2, 4; 1998 RG₅₇, 18, 4, 13; 1998 RH₅₇, 16, 4, 13; 1998 RJ₅₇, 8, 2, 4; 1998 RK₅₇, 30, 6, 30; 1998 RL₅₇, 17, 4, 13; 1998 RM₅₇, 18, 4, 13; 1998 RN₅₇, 13, 2, 4; 1998 RO₅₇, 8, 2, 4; 1998 RP₅₇, 16, 4, 13; 1998 RQ₅₇, 16, 4, 13; 1998 RV₅₇, 8, 2, 4; 1998 RW₅₇, 19, 4, 13; 1998 RX₅₇, 25, 4, 13; 1998 RY₅₇, 8, 2, 4; 1998 RZ₅₇, 17, 4, 13; 1998 RA₅₈, 17, 4, 13; 1998 RB₅₈, 17, 4, 13; 1998 RC₅₈, 18, 4, 13; 1998 RD₅₈, 18, 4, 13; 1998 RE₅₈, 18, 4, 13; 1998 RF₅₈, 7, 2, 4; 1998 RG₅₈, 17, 4,

13; 1998 RH₅₈, 17, 4, 13; 1998 RJ₅₈, 18, 4, 13; 1998 RK₅₈, 16, 4, 13; 1998 RL₅₈, 7, 2, 4; 1998 RM₅₈, 16, 4, 13; 1998 RN₅₈, 18, 4, 13; 1998 RO₅₈, 6, 2, 4; 1998 RP₅₈, 18, 4, 13; 1998 RQ₅₈, 18, 4, 13; 1998 RS₅₈, 17, 4, 13; 1998 RV₅₈, 16, 4, 13; 1998 RW₅₈, 28, 4, 13; 1998 RX₅₈, 18, 4, 13; 1998 RY₅₈, 18, 4, 13; 1998 RZ₅₈, 16, 4, 13; 1998 RA₅₉, 28, 4, 13; 1998 RB₅₉, 18, 4, 13; 1998 RC₅₉, 16, 4, 13; 1998 RD₅₉, 18, 4, 13; 1998 RE₅₉, 18, 4, 13; 1998 RF₅₉, 23, 4, 31; 1998 RG₅₉, 18, 4, 13; 1998 RH₅₉, 17, 4, 31; 1998 RJ₅₉, 18, 4, 13; 1998 RK₅₉, 18, 4, 13; 1998 RL₅₉, 18, 4, 13; 1998 RM₅₉, 28, 6, 31; 1998 RN₅₉, 17, 4, 13; 1998 RO₅₉, 22, 5, 31; 1998 RP₅₉, 7, 2, 4; 1998 RQ₅₉, 8, 2, 4; 1998 RS₅₉, 17, 4, 13; 1998 RV₅₉, 17, 4, 13; 1998 RW₅₉, 18, 4, 13; 1998 RX₅₉, 17, 4, 13; 1998 RY₅₉, 17, 4, 13; 1998 RZ₅₉, 17, 4, 13; 1998 RA₆₀, 18, 4, 13; 1998 RB₆₀, 18, 4, 13; 1998 RC₆₀, 17, 4, 13; 1998 RD₆₀, 7, 2, 4; 1998 RE₆₀, 8, 2, 4; 1998 RF₆₀, 17, 4, 13; 1998 RG₆₀, 18, 4, 13; 1998 RH₆₀, 27, 6, 31; 1998 RJ₆₀, 23, 5, 15; 1998 RK₆₀, 16, 4, 13; 1998 RL₆₀, 17, 4, 13; 1998 RM₆₀, 16, 4, 13; 1998 RN₆₀, 17, 4, 13; 1998 RO₆₀, 18, 4, 13; 1998 RP₆₀, 8, 2, 4; 1998 RQ₆₀, 8, 2, 4; 1998 RV₆₀, 18, 4, 13; 1998 RW₆₀, 17, 4, 13; 1998 RX₆₀, 26, 6, 18; 1998 RY₆₀, 18, 4, 13; 1998 RZ₆₀, 17, 4, 13; 1998 RA₆₁, 18, 4, 13; 1998 RB₆₁, 18, 4, 13; 1998 RC₆₁, 18, 4, 13; 1998 RD₆₁, 17, 4, 13; 1998 RE₆₁, 18, 4, 13; 1998 RF₆₁, 8, 2, 4; 1998 RG₆₁, 18, 4, 13; 1998 RH₆₁, 17, 4, 13; 1998 RJ₆₁, 7, 2, 4; 1998 RK₆₁, 18, 4, 13; 1998 RL₆₁, 18, 4, 13; 1998 RM₆₁, 17, 4, 13; 1998 RN₆₁, 18, 4, 13; 1998 RO₆₁, 17, 4, 13; 1998 RP₆₁, 17, 4, 13; 1998 RQ₆₁, 18, 4, 13; 1998 RV₆₁, 17, 4, 13; 1998 RW₆₁, 17, 4, 13; 1998 RX₆₁, 8, 2, 4; 1998 RY₆₁, 17, 4, 13; 1998 RZ₆₁, 7, 2, 4; 1998 RA₆₂, 17, 4, 13; 1998 RB₆₂, 18, 4, 13; 1998 RC₆₂, 17, 4, 13; 1998 RD₆₂, 18, 4, 13; 1998 RE₆₂, 16, 4, 13; 1998 RF₆₂, 15, 4, 13; 1998 RG₆₂, 16, 4, 13; 1998 RH₆₂, 16, 4, 13; 1998 RJ₆₂, 18, 4, 13; 1998 RK₆₂, 17, 4, 13; 1998 RL₆₂, 18, 4, 13; 1998 RM₆₂, 18, 4, 13; 1998 RN₆₂, 18, 4, 13; 1998 RO₆₂, 17, 4, 13; 1998 RP₆₂, 8, 2, 4; 1998 RQ₆₂, 28, 6, 31; 1998 RV₆₂, 16, 4, 13; 1998 RW₆₂, 7, 2, 4; 1998 RX₆₂, 18, 4, 13; 1998 RY₆₂, 16, 4, 13; 1998 RZ₆₂, 18, 4, 13; 1998 RA₆₃, 8, 2, 4; 1998 RB₆₃, 17, 4, 13; 1998 RC₆₃, 7, 2, 4; 1998 RD₆₃, 8, 2, 4; 1998 RE₆₃, 17, 4, 13; 1998 RF₆₃, 17, 4, 13; 1998 RG₆₃, 28, 4, 13; 1998 RH₆₃, 16, 4, 13; 1998 RJ₆₃, 8, 2, 4; 1998 RK₆₃, 8, 2, 4; 1998 RL₆₃, 16, 4, 13; 1998 RM₆₃, 7, 2, 4; 1998 RN₆₃, 18, 4, 13; 1998 RO₆₃, 8, 2, 4; 1998 RP₆₃, 16, 4, 13; 1998 RQ₆₃, 17, 4, 13; 1998 RV₆₃, 18, 4, 13; 1998 RW₆₃, 17, 4, 13; 1998 RX₆₃, 17, 4, 13; 1998 RY₆₃, 17, 4, 13; 1998 RZ₆₃, 18, 4, 13; 1998 RA₆₄, 18, 4, 13; 1998 RB₆₄, 17, 4, 13; 1998 RC₆₄, 7, 2, 4; 1998 RD₆₄, 17, 4, 13; 1998 RE₆₄, 16, 4, 13; 1998 RF₆₄, 17, 4, 13; 1998 RG₆₄, 18, 4, 13; 1998 RH₆₄, 8, 2, 4; 1998 RJ₆₄, 18, 4, 13; 1998 RK₆₄, 17, 4, 13; 1998 RL₆₄, 18, 4, 13; 1998 RM₆₄, 16, 4, 13; 1998 RN₆₄, 18, 4, 13; 1998 RO₆₄, 15, 4, 13; 1998 RP₆₄, 18, 4, 13; 1998 RQ₆₄, 18, 4, 13; 1998 RV₆₄, 8, 2, 4; 1998 RW₆₄, 17, 4, 13; 1998 RX₆₄, 8, 2, 4; 1998 RY₆₄, 18, 4, 13; 1998 RZ₆₄, 7, 2, 4; 1998 RA₆₅, 17, 4, 13; 1998 RB₆₅, 17, 4, 13; 1998 RC₆₅, 26, 6, 31; 1998 RD₆₅, 17, 4, 13; 1998 RE₆₅, 17, 4, 13; 1998 RF₆₅, 16, 4, 13; 1998 RG₆₅, 8, 2, 4; 1998 RH₆₅, 18, 4, 13; 1998 RJ₆₅, 18, 4, 13; 1998 RK₆₅, 18, 4, 13; 1998 RL₆₅, 18, 4, 13; 1998 RM₆₅, 18, 4, 13; 1998 RN₆₅, 17, 4, 13; 1998 RO₆₅, 18, 4, 13; 1998 RP₆₅, 25, 6, 31; 1998 RQ₆₅, 18, 4, 13; 1998 RV₆₅, 17, 4, 13; 1998 RW₆₅, 18, 4, 13; 1998 RX₆₅, 22, 5, 31; 1998 RY₆₅, 16, 4, 13; 1998 RZ₆₅, 32, 7, 44; 1998 RA₆₆, 18, 4, 13; 1998 RB₆₆, 18, 4, 13; 1998 RC₆₆, 17, 4, 13; 1998 RD₆₆, 18, 4, 13; 1998 RE₆₆, 8, 2, 4; 1998 RF₆₆, 17, 4, 13; 1998 RG₆₆, 18, 4, 13; 1998 RH₆₆, 15, 4, 13; 1998 RJ₆₆, 17, 4, 13; 1998 RK₆₆, 18, 4, 13; 1998 RL₆₆, 26, 6, 31; 1998 RM₆₆, 17, 4, 13; 1998 RN₆₆, 23, 5, 15; 1998 RO₆₆, 18, 4, 13; 1998 RP₆₆, 17, 4, 13; 1998 RQ₆₆, 18, 4, 13; 1998 RV₆₆, 17, 4, 13; 1998 RW₆₆, 18, 4, 13; 1998 RX₆₆, 18, 4, 13; 1998 RY₆₆, 18, 4, 13; 1998 RZ₆₆, 14, 4, 13; 1998 RA₆₇, 17, 4, 13; 1998 RB₆₇, 6, 2, 4; 1998 RC₆₇, 8, 2, 4; 1998 RD₆₇, 17, 4, 13; 1998 RE₆₇, 17, 4, 13; 1998 RF₆₇, 7, 2, 4; 1998 RG₆₇, 28, 6, 45; 1998 RH₆₇, 18, 4, 13; 1998 RJ₆₇, 18, 4, 13; 1998 RK₆₇, 17, 4, 13; 1998 RL₆₇, 24, 6, 45; 1998 RM₆₇, 18, 4, 13; 1998 RN₆₇, 17, 4, 13; 1998 RO₆₇, 18, 4, 13; 1998 RP₆₇, 16, 4, 13; 1998 RQ₆₇, 17, 4, 13; 1998 RV₆₇, 17, 4, 13; 1998 RW₆₇, 17, 4, 13; 1998 RX₆₇, 25, 6, 44; 1998 RY₆₇, 17, 4, 13; 1998 RZ₆₇, 6, 2, 4; 1998 RA₆₈, 18, 4, 13; 1998 RB₆₈, 18, 4, 13; 1998 RC₆₈, 18, 4, 13; 1998 RD₆₈, 8, 2, 4; 1998 RE₆₈, 17, 4, 13; 1998 RF₆₈, 8, 2, 4; 1998 RG₆₈, 18, 4, 13; 1998 RH₆₈, 26, 6, 31; 1998 RJ₆₈, 18, 4, 13; 1998 RK₆₈, 18, 4, 13; 1998 RL₆₈, 16, 4, 13; 1998 RM_{68</}

13: 1998 RF₆₉ *, 18, 4, 13; 1998 RG₆₉ *, 17, 4, 13; 1998 RH₆₉ *, 8, 2, 4; 1998 RJ₆₉ *, 17, 4, 13; 1998 RK₆₉ *, 8, 2, 4; 1998 RL₆₉ *, 17, 4, 13; 1998 RM₆₉ *, 16, 4, 13; 1998 RN₆₉ *, 17, 4, 13; 1998 RO₆₉ *, 13, 3, 31; 1998 RP₆₉ *, 8, 2, 4; 1998 RQ₆₉ *, 17, 4, 13; 1998 RR₆₉ *, 18, 4, 13; 1998 RS₆₉ *, 17, 4, 13; 1998 RT₆₉ *, 16, 4, 13; 1998 RU₆₉ *, 18, 4, 13; 1998 RV₆₉ *, 16, 4, 13; 1998 RW₆₉ *, 17, 4, 13; 1998 RX₆₉ *, 17, 4, 13; 1998 RY₆₉ *, 18, 4, 13; 1998 RZ₆₉ *, 18, 4, 13; 1998 RA₇₀ *, 7, 2, 4; 1998 RB₇₀ *, 17, 4, 13; 1998 RC₇₀ *, 21, 5, 30; 1998 RD₇₀ *, 15, 4, 13; 1998 RE₇₀ *, 17, 4, 13; 1998 RF₇₀ *, 18, 4, 13; 1998 RG₇₀ *, 16, 4, 13; 1998 RH₇₀ *, 7, 2, 4; 1998 RJ₇₀ *, 7, 2, 4; 1998 RK₇₀ *, 17, 4, 13; 1998 RL₇₀ *, 8, 2, 4; 1998 RM₇₀ *, 8, 2, 4; 1998 RN₇₀ *, 18, 4, 13; 1998 RO₇₀ *, 17, 4, 13; 1998 RP₇₀ *, 17, 4, 13; 1998 RQ₇₀ *, 17, 4, 13; 1998 RS₇₀ *, 26, 6, 31; 1998 RT₇₀ *, 8, 2, 4; 1998 RU₇₀ *, 17, 4, 13; 1998 RV₇₀ *, 8, 2, 4; 1998 RW₇₀ *, 18, 4, 13; 1998 RX₇₀ *, 17, 4, 13; 1998 RY₇₀ *, 8, 2, 4; 1998 RZ₇₀ *, 17, 4, 13; 1998 RA₇₁ *, 18, 4, 13; 1998 RB₇₁ *, 17, 4, 13; 1998 RC₇₁ *, 16, 4, 13; 1998 RD₇₁ *, 18, 4, 13; 1998 RE₇₁ *, 17, 4, 13; 1998 RF₇₁ *, 18, 4, 13; 1998 RG₇₁ *, 18, 4, 13; 1998 RH₇₁ *, 18, 4, 13; 1998 RI₇₁ *, 18, 4, 13; 1998 RJ₇₁ *, 18, 4, 13; 1998 RK₇₁ *, 18, 4, 13; 1998 RL₇₁ *, 18, 4, 13; 1998 RM₇₁ *, 16, 4, 13; 1998 RN₇₁ *, 17, 4, 13; 1998 RO₇₁ *, 18, 4, 13; 1998 RP₇₁ *, 17, 4, 13; 1998 RQ₇₁ *, 18, 4, 13; 1998 RR₇₁ *, 18, 4, 13; 1998 RS₇₁ *, 18, 4, 13; 1998 RT₇₁ *, 26, 6, 31; 1998 RU₇₁ *, 18, 4, 13; 1998 RV₇₁ *, 17, 4, 13; 1998 RW₇₁ *, 8, 2, 4; 1998 RX₇₁ *, 17, 4, 13; 1998 RY₇₁ *, 8, 2, 4; 1998 RZ₇₁ *, 18, 4, 13; 1998 RA₇₂ *, 18, 4, 13; 1998 RB₇₂ *, 16, 4, 13; 1998 RC₇₂ *, 18, 4, 13; 1998 RD₇₂ *, 18, 4, 13; 1998 RE₇₂ *, 17, 4, 13; 1998 RF₇₂ *, 18, 4, 13; 1998 RG₇₂ *, 18, 4, 13; 1998 RH₇₂ *, 15, 4, 13; 1998 RI₇₂ *, 27, 6, 45; 1998 RJ₇₂ *, 18, 4, 13; 1998 RL₇₂ *, 17, 4, 13; 1998 RM₇₂ *, 18, 4, 13; 1998 RN₇₂ *, 18, 4, 13; 1998 RO₇₂ *, 18, 4, 13; 1998 RP₇₂ *, 17, 4, 13; 1998 RQ₇₂ *, 17, 4, 13; 1998 RS₇₂ *, 27, 6, 45; 1998 RT₇₂ *, 28, 6, 45; 1998 RU₇₂ *, 18, 4, 13; 1998 RV₇₂ *, 17, 4, 13; 1998 RW₇₂ *, 26, 6, 45; 1998 RX₇₂ *, 17, 4, 13; 1998 RY₇₂ *, 18, 4, 13; 1998 RZ₇₂ *, 8, 2, 4; 1998 RA₇₃ *, 8, 2, 4; 1998 RB₇₃ *, 18, 4, 45; 1998 RC₇₃ *, 17, 4, 13; 1998 RD₇₃ *, 18, 4, 13; 1998 RE₇₃ *, 18, 4, 13; 1998 RF₇₃ *, 8, 2, 4; 1998 RG₇₃ *, 26, 6, 45; 1998 RH₇₃ *, 18, 4, 13; 1998 RI₇₃ *, 8, 2, 4; 1998 RJ₇₃ *, 17, 4, 13; 1998 RK₇₃ *, 18, 4, 13; 1998 RL₇₃ *, 18, 4, 13; 1998 RM₇₃ *, 18, 4, 13; 1998 RN₇₃ *, 18, 4, 13; 1998 RO₇₃ *, 16, 4, 13; 1998 RP₇₃ *, 16, 4, 13; 1998 RQ₇₃ *, 16, 4, 45; 1998 RS₇₃ *, 18, 4, 13; 1998 RT₇₃ *, 18, 4, 13; 1998 RU₇₃ *, 8, 2, 4; 1998 RV₇₃ *, 16, 4, 13; 1998 RW₇₃ *, 18, 4, 13; 1998 RX₇₃ *, 24, 6, 45; 1998 RY₇₃ *, 18, 4, 13; 1998 RZ₇₃ *, 13, 3, 18; 1998 RA₇₄ *, 8, 2, 4; 1998 RB₇₄ *, 16, 4, 13; 1998 RC₇₄ *, 17, 4, 13; 1998 RD₇₄ *, 18, 4, 13; 1998 RE₇₄ *, 18, 4, 13; 1998 RF₇₄ *, 27, 6, 45; 1998 RG₇₄ *, 17, 4, 13; 1998 RH₇₄ *, 18, 4, 13; 1998 RI₇₄ *, 36, 8, 45; 1998 RJ₇₄ *, 18, 4, 13; 1998 RK₇₄ *, 18, 4, 13; 1998 RL₇₄ *, 18, 4, 13; 1998 RM₇₄ *, 18, 4, 13; 1998 RN₇₄ *, 13, 4, 13; 1998 RO₇₄ *, 18, 4, 13; 1998 RP₇₄ *, 18, 4, 13; 1998 RQ₇₄ *, 18, 4, 13; 1998 RS₇₄ *, 18, 4, 13; 1998 RT₇₄ *, 16, 4, 13; 1998 RU₇₄ *, 16, 4, 13; 1998 RV₇₄ *, 18, 4, 13; 1998 RW₇₄ *, 26, 6, 45; 1998 RX₇₄ *, 25, 6, 45; 1998 RY₇₄ *, 18, 4, 13; 1998 RZ₇₄ *, 8, 2, 4; 1998 RA₇₅ *, 18, 4, 13; 1998 RB₇₅ *, 18, 4, 13; 1998 RC₇₅ *, 25, 6, 45; 1998 RD₇₅ *, 18, 4, 13; 1998 RE₇₅ *, 18, 4, 13; 1998 RF₇₅ *, 18, 4, 13; 1998 RG₇₅ *, 18, 4, 13; 1998 RH₇₅ *, 18, 4, 13; 1998 RI₇₅ *, 18, 4, 13; 1998 RJ₇₅ *, 17, 4, 13; 1998 RK₇₅ *, 18, 4, 13; 1998 RL₇₅ *, 17, 4, 13; 1998 RM₇₅ *, 18, 4, 13; 1998 RN₇₅ *, 26, 6, 44; 1998

0, 4; 1998 RD₈₀^{*}, 8, 2, 4; 1998 RE₈₀^{*}, 17, 4, 13; 1998 RF₈₀^{*}, 7, 2, 4; 1998 RG₈₀^{*}, 7, 2, 4;
1998 RH₈₀^{*}, 18, 4, 13; 1998 RJ₈₀^{*}, 18, 4, 13; 1998 RK₈₀^{*}, 17, 4, 13; 1998 RL₈₀^{*}, 17, 4, 13;
1998 RM₈₀^{*}, 18, 4, 13; 1998 RN₈₀^{*}, 16, 4, 13; 1998 RO₈₀^{*}, 23, 6, 45; 1998 RP₈₀^{*}, 18, 4, 13;
1998 SA,₄ 1, 0; 1998 SC,₈ 2, 2, 4; 1998 SD,₄ 1, 0; 1998 SE,₉ 2, 1; 1998 SF,₉ 2, 1; 1998 ST,₉ 2,
2, 1; 1998 SA₁, 9, 2, 1; 1998 SM₁, 13, 3, 14; 1998 SP₁, 10, 2, 1; 1998 SQ₁, 8, 2, 1; 1998 SR₁, 10,
2, 1; 1998 SW₁, 10, 2, 13; 1998 SX₁, 10, 2, 1; 1998 SB₂, 9, 2, 1; 1998 SE₂, 4, 1, 0; 1998 SG₂, 13,
3, 2; 1998 SJ₂, 5, 1, 0; 1998 SK₂, 18, 4, 13;

1998 SL₂, 9, 2, 1; 1998 SQ₂, 5, 1, 0; 1998 SS₂, 5, 1, 0; 1998 SU₂, 10, 2, 1; 1998 SY₂, 10, 2,
1; 1998 SC₃, 8, 2, 4; 1998 SN₃, 8, 2, 1; 1998 SR₃, 9, 2, 1; 1998 SD₄, 5, 1, 0; 1998 SE₄, 20, 4, 33;
1998 SG₄, 7, 2, 1; 1998 SH₄, 9, 2, 1; 1998 SM₄, 10, 2, 1; 1998 SN₄, 17, 4, 13; 1998 SO₄, 24, 6, 31;
1998 SW₄, 18, 4, 13; 1998 SX₄, 9, 2, 1; 1998 SZ₄, 16, 4, 33; 1998 SB₅, 10, 2, 1; 1998 SG₅, 19, 4,
19; 1998 SX₇, 10, 2, 1; 1998 SH₈, 18, 4, 13; 1998 SK₈, 10, 2, 1; 1998 SM₈, 9, 2, 1; 1998 SO₈, 18,
4, 13; 1998 SS₈, 7, 2, 1; 1998 SX₈, 20, 4, 33; 1998 SZ₈, 8, 2, 1; 1998 SC₉, 9, 2, 1; 1998 SF₉, 10,
2, 1; 1998 SH₉, 10, 2, 1; 1998 SJ₉, 10, 2, 1; 1998 SK₉, 29, 6, 33; 1998 SM₉, 10, 2, 1; 1998 SN₉,
10, 2, 1; 1998 SO₉, 18, 4, 33; 1998 SQ₉, 9, 2, 1; 1998 SR₉, 9, 2, 1; 1998 SS₉, 9, 2, 1; 1998 SU₉, 9,
2, 1; 1998 SV₉, 18, 4, 13; 1998 SW₉, 10, 2, 1; 1998 SX₉, 27, 6, 45; 1998 SY₉, 9, 2, 1; 1998 SG₁₀,
30, 7, 44; 1998 SH₁₀, 4, 1, 0; 1998 SO₁₀, 4, 1, 0; 1998 SP₁₀, 13, 3, 32; 1998 SV₁₀, 18, 4, 13;
1998 SX₁₁, 9, 2, 1; 1998 SD₁₂, 4, 1, 0; 1998 SK₁₂, 10, 2, 1; 1998 SL₁₂, 18, 4, 13; 1998 SM₁₂, 18,
4, 13; 1998 SO₁₂, 5, 1, 0; 1998 SP₁₂, 5, 1, 0; 1998 SW₁₂, 5, 1, 0; 1998 SB₁₃, 10, 2, 1; 1998 SF₁₃,
31, 7, 45; 1998 SG₁₃, 18, 4, 13; 1998 SJ₁₃, 27, 6, 45; 1998 SK₁₃, 10, 2, 1; 1998 SN₁₃, 8, 2, 4;
1998 SP₁₃, 9, 2, 1; 1998 SZ₁₃, 19, 4, 15; 1998 SR₁₄, 10, 2, 1; 1998 SS₁₄, 10, 2, 1; 1998 ST₁₄, 10,
2, 1; 1998 SU₁₄, 10, 2, 1; 1998 SV₁₄, 19, 3, 6; 1998 SZ₁₄, 5, 1, 0; 1998 SY₁₅, 9, 2, 1; 1998 SK₁₆, 9,
2, 1; 1998 SL₁₆, 9, 2, 1; 1998 SO₁₆, 7, 2, 1; 1998 SR₁₆, 10, 2, 1; 1998 SX₁₆, 18, 4, 13; 1998 SY₁₆,
18, 4, 13; 1998 SC₁₇, 18, 4, 13; 1998 SF₁₇, 18, 4, 13; 1998 SG₁₇, 10, 2, 1; 1998 SM₁₇, 9, 2, 1;
1998 SK₁₈, 37, 8, 45; 1998 SV₁₈, 8, 2, 1; 1998 SW₂₀, 8, 2, 1; 1998 SD₂₁, 8, 2, 1; 1998 SK₂₁, 9, 2,
1; 1998 SO₂₁, 9, 2, 1; 1998 SP₂₁, 10, 2, 1; 1998 SQ₂₁, 6, 2, 1; 1998 SX₂₁, 10, 2, 1; 1998 SY₂₁,
10, 2, 1; 1998 SZ₂₁, 10, 2, 1; 1998 SA₂₂, 10, 2, 1; 1998 SB₂₂, 10, 2, 1; 1998 SC₂₂, 29, 6, 33;
1998 SE₂₂, 10, 2, 1; 1998 SH₂₂, 17, 4, 31; 1998 SJ₂₂, 19, 4, 13; 1998 SK₂₂, 29, 6, 31; 1998 SL₂₂,
19, 4, 13; 1998 SN₂₂, 32, 7, 44; 1998 SO₂₂, 18, 4, 13; 1998 SP₂₂, 17, 4, 13; 1998 SQ₂₂, 17, 4, 13;
1998 SR₂₂, 15, 4, 13; 1998 SS₂₂, 18, 4, 13; 1998 ST₂₂, 5, 1, 0; 1998 SV₂₂, 19, 4, 15; 1998 SX₂₂,
33, 7, 45; 1998 SD₂₃, 10, 2, 1; 1998 SG₂₃, 18, 4, 13; 1998 SH₂₃, 17, 4, 13; 1998 SJ₂₃, 10, 2, 1;
1998 SL₂₃, 18, 4, 13; 1998 SN₂₃, 8, 2, 4; 1998 SO₂₃, 10, 2, 1; 1998 SP₂₃, 10, 2, 1; 1998 SQ₂₃, 8,
2, 4; 1998 SR₂₃, 8, 2, 4; 1998 ST₂₃, 10, 2, 1; 1998 SU₂₃, 10, 2, 1; 1998 SV₂₃, 9, 2, 1; 1998 SW₂₃,
10, 2, 1; 1998 SX₂₃, 26, 6, 31; 1998 SY₂₃, 18, 4, 13; 1998 SZ₂₃, 10, 2, 1; 1998 SA₂₄, 17, 4, 13;
1998 SB₂₄, 10, 2, 1; 1998 SC₂₄, 28, 6, 31; 1998 SD₂₄, 19, 4, 15; 1998 SE₂₄, 4, 1, 0; 1998 SG₂₄,
10, 2, 1; 1998 SH₂₄, 10, 2, 1; 1998 SJ₂₄, 15, 3, 19; 1998 SK₂₄, 10, 2, 1; 1998 SM₂₄, 10, 2, 1;
1998 SN₂₄, 9, 2, 1; 1998 SO₂₄, 9, 2, 1; 1998 SP₂₄

2, 1; 1998 SX₄₉, 10, 2, 1; 1998 SY₄₉, 9, 2, 1; 1998 SH₅₀, 9, 2, 1; 1998 SK₅₀, 20, 4, 33; 1998 SK₅₁, 9, 2, 1; 1998 SK₅₂, 8, 2, 1; 1998 SQ₅₂, 18, 4, 13; 1998 SU₅₂, 9, 2, 1; 1998 SW₅₂, 18, 4, 33; 1998 SK₅₃, 10, 2, 1; 1998 SM₅₃, 9, 2, 1; 1998 SN₅₃, 10, 2, 1; 1998 SO₅₃, 10, 2, 1; 1998 SF₅₃, 10, 2, 1; 1998 SQ₅₃, 9, 2, 1; 1998 SS₅₃, 10, 2, 1; 1998 ST₅₃, 9, 2, 1; 1998 SY₅₃, 9, 2, 1; 1998 SZ₅₃, 20, 4, 13; 1998 SA₅₄, 18, 4, 13; 1998 SB₅₄, 28, 6, 31; 1998 SC₅₄, 9, 2, 1; 1998 SD₅₄, 18, 4, 13; 1998 SE₅₄, 8, 2, 4; 1998 SF₅₄, 18, 4, 13; 1998 SG₅₄, 18, 4, 13; 1998 SH₅₄, 27, 6, 31; 1998 SJ₅₄, 18, 4, 13; 1998 SK₅₄, 25, 4, 13; 1998 SL₅₄, 18, 4, 13; 1998 SM₅₄, 25, 4, 13; 1998 SN₅₄, 35, 6, 31; 1998 SO₅₄, 9, 2, 1; 1998 SP₅₄, 18, 4, 13; 1998 SQ₅₄, 18, 4, 13; 1998 SR₅₄, 9, 2, 1; 1998 SS₅₄, 10, 2, 1; 1998 ST₅₄, 17, 4, 13; 1998 SU₅₄, 18, 4, 13; 1998 SV₅₄, 18, 4, 13; 1998 SW₅₄, 17, 4, 13; 1998 SX₅₄, 17, 4, 13; 1998 SY₅₄, 16, 4, 13; 1998 SZ₅₄, 18, 4, 13; 1998 SA₅₅, 16, 4, 13; 1998 SB₅₅, 18, 4, 13; 1998 SC₅₅, 8, 2, 4; 1998 SD₅₅, 9, 2, 1; 1998 SE₅₅, 18, 4, 13; 1998 SF₅₅, 18, 4, 13; 1998 SG₅₅, 17, 4, 13; 1998 SH₅₅, 10, 2, 1; 1998 SJ₅₅, 17, 4, 13; 1998 SK₅₅, 8, 2, 1; 1998 SL₅₅, 16, 4, 13; 1998 SM₅₅, 17, 4, 13; 1998 SN₅₅, 15, 2, 1; 1998 SO₅₅, 10, 2, 1; 1998 SP₅₅, 22, 5, 31; 1998 SQ₅₅, 18, 4, 13; 1998 SR₅₅, 15, 4, 13; 1998 SS₅₅, 17, 4, 13; 1998 ST₅₅, 18, 4, 13; 1998 SU₅₅, 18, 4, 13; 1998 SV₅₅, 10, 2, 1; 1998 SX₅₅, 10, 2, 1; 1998 SY₅₅, 10, 2, 1; 1998 SA₅₆, 19, 4, 13; 1998 SB₅₆, 20, 4, 13; 1998 SC₅₆, 10, 2, 1; 1998 SD₅₆, 10, 2, 1; 1998 SE₅₆, 8, 2, 1; 1998 SF₅₆, 23, 4, 13; 1998 SG₅₆, 25, 4, 13; 1998 SH₅₆, 18, 4, 13; 1998 SJ₅₆, 9, 2, 1; 1998 SK₅₆, 10, 2, 1; 1998 SL₅₆, 18, 4, 13; 1998 SM₅₆, 9, 2, 1; 1998 SN₅₆, 17, 4, 13; 1998 SO₅₆, 18, 4, 13; 1998 SP₅₆, 10, 2, 1; 1998 SV₅₆, 9, 2, 1; 1998 SS₅₆, 9, 2, 1; 1998 ST₅₆, 20, 4, 13; 1998 SU₅₆, 30, 6, 31; 1998 SV₅₆, 17, 4, 13; 1998 SW₅₆, 10, 2, 1; 1998 SX₅₆, 23, 4, 13; 1998 SY₅₆, 23, 4, 13; 1998 SZ₅₆, 22, 4, 13; 1998 SB₅₇, 9, 2, 1; 1998 SC₅₇, 18, 4, 13; 1998 SD₅₇, 8, 2, 1; 1998 SE₅₇, 25, 4, 13; 1998 SF₅₇, 22, 5, 18; 1998 SG₅₇, 18, 4, 13; 1998 SH₅₇, 32, 7, 31; 1998 SJ₅₇, 18, 4, 13; 1998 SK₅₇, 18, 4, 13; 1998 SL₅₇, 21, 4, 13; 1998 SM₅₇, 17, 2, 1; 1998 SN₅₇, 28, 6, 31; 1998 SO₅₇, 23, 4, 13; 1998 SP₅₇, 8, 2, 4; 1998 SQ₅₇, 9, 2, 1; 1998 SR₅₇, 18, 4, 13; 1998 SS₅₇, 8, 2, 1; 1998 ST₅₇, 17, 4, 13; 1998 SV₅₇, 22, 5, 31; 1998 SW₅₇, 17, 4, 13; 1998 SX₅₇, 10, 2, 1; 1998 SY₅₇, 17, 4, 13; 1998 SZ₅₇, 18, 4, 13; 1998 SA₅₈, 18, 4, 13; 1998 SB₅₈, 10, 2, 1; 1998 SC₅₈, 17, 4, 13; 1998 SD₅₈, 28, 6, 31; 1998 SE₅₈, 17, 4, 13; 1998 SF₅₈, 28, 6, 31; 1998 SG₅₈, 9, 2, 1; 1998 SH₅₈, 33, 7, 44; 1998 SJ₅₈, 9, 2, 1; 1998 SK₅₈, 10, 2, 1; 1998 SM₅₈, 31, 7, 44; 1998 SN₅₈, 27, 6, 31; 1998 SO₅₈, 18, 4, 13; 1998 SP₅₈, 18, 4, 13; 1998 SQ₅₈, 10, 2, 1; 1998 SR₅₈, 18, 4, 13; 1998 SS₅₈, 18, 4, 13; 1998 ST₅₈, 18, 4, 13; 1998 SV₅₈, 17, 4, 13; 1998 SW₅₈, 17, 4, 13; 1998 SX₅₈, 18, 4, 13; 1998 SY₅₈, 8, 2, 4; 1998 SZ₅₈, 10, 2, 1; 1998 SA₅₉, 28, 6, 45; 1998 SB₅₉, 18, 4, 13; 1998 SC₅₉, 18, 4, 13; 1998 SD₅₉, 10, 2, 1; 1998 SE₅₉, 17, 4, 13; 1998 SF₅₉, 17, 4, 13; 1998 SG₅₉, 10, 2, 1; 1998 SH₅₉, 10, 2, 1; 1998 SJ₅₉, 10, 2, 1; 1998 SK₅₉, 19, 4, 33; 1998 SL₅₉, 10, 2, 1; 1998 SM₅₉, 10, 2, 1; 1998 SN₅₉, 18, 4, 13; 1998 SO₅₉, 18, 4, 13; 1998 SP₅₉, 10, 2, 1; 1998 SQ₅₉, 18, 4, 13; 1998 SR₅₉, 9, 2, 1; 1998 SS₅₉, 10, 2, 1; 1998 ST₅₉, 33, 7, 44; 1998 SU₅₉, 10, 2, 1; 1998 SV₅₉, 18, 4, 13; 1998 SW₅₉, 10, 2, 1; 1998 SX₅₉, 9, 2, 1; 1998 SY₅₉, 18, 4, 33; 1998 SZ₅₉, 10, 2, 1; 1998 SA₆₀, 18, 4, 13; 1998 SB₆₀, 18, 4, 13; 1998 SC₆₀, 18, 4, 13; 1998 SD₆₀, 16, 4, 13; 1998 SE₆₀, 18, 4, 13; 1998 SF₆₀, 18, 4, 13; 1998 SG₆₀, 18, 4, 13; 1998 SH₆₀, 18, 4, 13; 1998 SK₆₀, 18, 4, 13; 1998 SM₆₀, 18, 4, 13; 1998 SN₆₀, 9, 2, 1; 1998 SO₆₀, 18, 4, 13; 1998 SP₆₀, 18, 4, 13; 1998 SQ₆₀, 18, 4, 13; 1998 SR₆₀, 18, 4, 13; 1998 SS₆₀, 18, 4, 13; 1998 ST₆₀, 18, 4, 13; 1998 SX₆₀, 18, 4, 13; 1998 SY₆₀, 23, 5, 31; 1998 SZ₆₀, 17, 4, 13; 1998 SA₆₁, 17, 4, 13; 1998 SB₆₁, 10, 2, 1; 1998 SC₆₁, 18, 4, 13; 1998 SD₆₁, 4, 1, 0; 1998 SF₆₁, 8, 2, 4; 1998 SG₆₁, 18, 4, 34; 1998 SH₆₁, 10, 2, 1; 1998 SM₆₁, 9, 2, 1; 1998 SN₆₁, 10, 2, 1; 1998 SO₆₁, 27, 6, 45; 1998 SP₆₁, 10, 2, 1; 1998 SQ₆₁, 9, 2, 1; 1998 SR₆₁, 8, 2, 4; 1998 SS₆₁, 18, 4, 13; 1998 ST₆₁, 18, 4, 13; 1998 SU₆₁, 17, 4, 13; 1998 SV₆₁, 10, 2, 1; 1998 SB₆₂, 9, 2, 4; 1998 SL₆₂, 10, 2, 1; 1998 SM₆₂, 6, 2, 4; 1998 SP₆₂, 8, 2, 1; 1998 SS₆₂, 9, 2, 1; 1998 SU₆₂, 28, 6, 31; 1998 SV₆₂, 9, 2, 1; 1998 SW₆₂, 10, 2, 1; 1998 SX₆₂, 10, 2, 1; 1998 SZ₆₂, 18, 4, 33; 1998 SA₆₃, 9, 2, 1; 1998 SB₆₃, 30, 6, 33; 1998 SC₆₃, 9, 2, 1; 1998 SF₆₃, 23, 4, 13; 1998 SG₆₃, 8, 2, 1; 1998 SH₆₃, 9, 2, 1; 1998 SK₆₃, 18, 4, 13; 1998 SM₆₃, 35, 6, 31; 1998 SN₆₃, 10, 2, 1; 1998 SO₆₃, 18, 4, 13; 1998 SP₆₃, 9, 2, 1; 1998 SQ₆₃, 9, 2, 1; 1998 SR₆₃, 9, 2, 1; 1998 SS₆₃, 10, 2, 1; 1998 ST₆₃, 10, 2, 1; 1998 SV₆₃, 9, 2, 1; 1998 SW₆₃, 17, 4, 15; 1998 SX₆₃, 9, 2, 1; 1998 SZ₆₃, 8, 2, 1; 1998 SL₆₄, 9, 2, 1; 1998 SU₆₄, 3, 1, 0; 1998 SV₆₄, 9, 2, 1; 1998 SF₆₅, 18, 4, 15; 1998 SD₆₆, 19, 4, 15; 1998 SM₆₆, 13, 3, 14; 1998 SN₆₆, 5, 1, 0; 1998 SR₆₆, 9, 2, 1; 1998 SA₆₇, 18, 4, 30; 1998 SH₆₇, 4, 1, 0; 1998 SM₆₇, 16, 4, 15; 1998 SQ₆₇, 18, 4, 30; 1998 SS₆₇, 8, 2, 1; 1998 SV₆₇, 9, 2, 4; 1998 SW₆₇, 8, 2, 4; 1998 SX₆₇, 9, 2, 4; 1998 SY₆₇, 8, 2, 4; 1998 SZ₆₇, 10, 2, 4; 1998 SA₆₈, 10, 2, 4; 1998 SB₆₈, 8, 2, 4; 1998 SC₆₈, 8, 2, 4; 1998 SD₆₈, 8, 2, 4; 1998 SE₆₈, 12, 2, 4; 1998 SF₆₈, 8, 2, 4; 1998 SG₆₈, 8, 2, 2; 1998 SH₆₈, 10, 2, 5; 1998 SJ₆₈, 10, 2, 4; 1998 SK₆₈, 8, 2, 4; 1998 SL₆₈, 9, 2, 4; 1998 SM₆₈, 9, 2, 4; 1998 SN₆₈, 9, 2, 4; 1998 SO₆₈, 8, 2, 4; 1998 SP₆₈, 9, 2, 4; 1998 SQ₆₈, 8, 2, 4; 1998 SR₆₈, 9, 2, 4; 1998 SS₆₈, 9, 2, 4; 1998 ST₆₈, 8, 2, 4; 1998 SU₆₈, 10, 2, 4; 1998 SV₆₈, 8, 2, 4; 1998 SW₆₈, 8, 2, 4; 1998 SX₆₈, 8, 2, 2; 1998 SY₆₈, 8, 2, 2; 1998 SZ₆₈, 8, 2, 2; 1998 SA₆₉, 6, 2, 4; 1998 SB₆₉, 8, 2, 4; 1998 SC₆₉, 7, 2, 4; 1998 SD₆₉, 6, 2, 4; 1998 SE₆₉, 7, 2, 4; 1998 SF₆₉, 7, 2, 4; 1998 SG₆₉, 8, 2, 4; 1998 SH₆₉, 6, 2, 4; 1998 SJ₆₉, 6, 2, 4; 1998 SK₆₉, 7, 2, 4; 1998 SL₆₉, 6, 2, 4; 1998 SM₆₉, 6, 2, 4; 1998 SN₆₉, 6, 2, 4; 1998 SO₆₉, 6, 2, 4; 1998 SP₆₉, 6, 2, 4; 1998 SQ₆₉, 6, 2, 4; 1998 SR₆₉, 6, 2, 4; 1998 SS₆₉, 6, 2, 4; 1998 ST₆₉, 6, 2, 4; 1998 SU₆₉, 6, 2, 4; 1998 SV₆₉, 10, 2, 3; 1998 SW₆₉, 10, 2, 3; 1998 SX₆₉, 10, 2, 3; 1998 SY₆₉, 10, 2, 3; 1998 SZ₆₉, 8, 2, 2; 1998 SA₇₀, 12, 2, 2; 1998 SB₇₀, 7, 2, 2; 1998 SC₇₀, 10, 2, 3; 1998 SD₇₀, 7, 2, 3; 1998 SE₇₀, 14, 2, 3; 1998 SF₇₀, 14, 2, 3; 1998 SG₇₀, 14, 2, 3; 1998 SH₇₀, 10,

2, 3; 1998 SJ₇₀ *, 20, 3, 19; 1998 SL₇₀, 30, 6, 33; 1998 SM₇₀, 23, 5, 33; 1998 SO₇₀, 14, 3, 6; 1998 SQ₇₀, 10, 2, 1; 1998 SR₇₀, 10, 2, 1; 1998 SW₇₀, 4, 1, 0; 1998 SY₇₀, 9, 2, 1; 1998 SA₇₁, 10, 2, 1; 1998 SD₇₁, 9, 2, 1; 1998 SE₇₁, 9, 2, 1; 1998 SF₇₁ *, 6, 2, 1; 1998 SG₇₁, 10, 2, 1; 1998 SH₇₁, 14, 3, 6; 1998 SJ₇₁, 10, 2, 1; 1998 SK₇₁, 9, 2, 1; 1998 SL₇₁, 9, 2, 1; 1998 SM₇₁, 9, 2, 1; 1998 SN₇₁, 8, 2, 1; 1998 SO₇₁, 28, 6, 33; 1998 SR₇₁, 24, 5, 33; 1998 ST₇₁, 10, 2, 1; 1998 SU₇₁, 10, 2, 1; 1998 SV₇₁, 10, 2, 1; 1998 SX₇₁, 8, 2, 1; 1998 SD₇₂, 10, 2, 1; 1998 SF₇₂, 9, 2, 1; 1998 SH₇₂, 10, 2, 1; 1998 SJ₇₂, 27, 6, 33; 1998 SK₇₂, 9, 2, 1; 1998 SO₇₂, 16, 4, 15; 1998 SU₇₂, 14, 3, 15; 1998 SE₇₃ *, 7, 2, 1; 1998 SF₇₃, 8, 2, 1; 1998 SH₇₃, 22, 3, 6; 1998 SJ₇₃, 10, 2, 1; 1998 SK₇₃, 8, 2, 1; 1998 SM₇₃, 22, 5, 33; 1998 SN₇₃, 10, 2, 1; 1998 SP₇₃, 9, 2, 1; 1998 SQ₇₃, 19, 4, 6; 1998 SR₇₃, 10, 2, 1; 1998 ST₇₃, 5, 1, 0; 1998 SU₇₃, 24, 4, 6; 1998 SV₇₃, 10, 2, 1; 1998 SW₇₃, 10, 2, 1; 1998 SZ₇₃, 17, 4, 6; 1998 SA₇₄, 19, 4, 6; 1998 SC₇₄, 8, 2, 1; 1998 SE₇₄, 32, 7, 33; 1998 SG₇₄, 13, 3, 3; 1998 SH₇₄, 10, 2, 1; 1998 SJ₇₄, 10, 2, 1; 1998 SK₇₄, 9, 2, 1; 1998 SL₇₄, 10, 2, 1; 1998 SM₇₄, 10, 2, 1; 1998 SN₇₄, 9, 2, 1; 1998 SO₇₄, 10, 2, 1; 1998 SP₇₄, 19, 4, 33; 1998 SQ₇₄, 10, 2, 1; 1998 SR₇₄, 10, 2, 1; 1998 ST₇₄, 9, 2, 1; 1998 SU₇₄, 10, 2, 1; 1998 SV₇₄, 10, 2, 1; 1998 SW₇₄, 10, 2, 1; 1998 SY₇₄, 10, 2, 1; 1998 SZ₇₄, 9, 2, 1; 1998 SA₇₅, 9, 2, 1; 1998 SB₇₅, 8, 2, 13; 1998 SF₇₅, 14, 3, 14; 1998 SJ₇₅, 9, 2, 1; 1998 SK₇₅, 10, 2, 1; 1998 SO₇₅, 17, 4, 15; 1998 SP₇₅, 9, 2, 1; 1998 SQ₇₅, 10, 2, 1; 1998 SR₇₅, 8, 2, 1; 1998 SU₇₅ *, 15, 4, 6; 1998 SV₇₅ *, 32, 6, 33; 1998 SW₇₅ *, 19, 4, 6; 1998 SX₇₅ *, 18, 4, 6; 1998 SA₇₆ *, 6, 2, 4; 1998 SB₇₆ *, 7, 2, 4; 1998 SC₇₆ *, 7, 2, 4; 1998 SD₇₆ *, 9, 2, 4; 1998 SE₇₆ *, 8, 2, 4; 1998 SF₇₆ *, 7, 2, 4; 1998 SG₇₆ *, 8, 2, 4; 1998 SH₇₆ *, 8, 2, 4; 1998 SJ₇₆ *, 9, 2, 4; 1998 SK₇₆ *, 8, 2, 4; 1998 SL₇₆ *, 7, 2, 4; 1998 SM₇₆ *, 8, 2, 4; 1998 SN₇₆ *, 7, 2, 4; 1998 SO₇₆ *, 7, 2, 4; 1998 SP₇₆ *, 8, 2, 4; 1998 SQ₇₆ *, 7, 2, 4; 1998 SR₇₆ *, 9, 2, 4; 1998 SS₇₆ *, 7, 2, 4; 1998 ST₇₆ *, 10, 2, 1; 1998 SU₇₆ *, 10, 2, 3; 1998 SV₇₆ *, 9, 2, 1; 1998 SW₇₆ *, 10, 2, 1; 1998 SX₇₆ *, 10, 2, 1; 1998 SY₇₆ *, 10, 2, 1; 1998 SZ₇₆ *, 10, 2, 1; 1998 SA₇₇ *, 10, 2, 1; 1998 SB₇₇ *, 9, 2, 1; 1998 SC₇₇ *, 9, 2, 1; 1998 SD₇₇ *, 8, 2, 1; 1998 SE₇₇ *, 9, 2, 1; 1998 SF₇₇ *, 7, 2, 1; 1998 SG₇₇ *, 9, 2, 1; 1998 SH₇₇ *, 9, 2, 1; 1998 SJ₇₇ *, 9, 2, 1; 1998 SK₇₇ *, 8, 2, 1; 1998 SL₇₇ *, 8, 2, 1; 1998 SM₇₇ *, 9, 2, 1; 1998 SN₇₇ *, 10, 2, 1; 1998 SO₇₇ *, 9, 2, 1; 1998 SP₇₇ *, 10, 2, 1; 1998 SQ₇₇ *, 10, 2, 1; 1998 SR₇₇ *, 10, 2, 1; 1998 SS₇₇ *, 10, 2, 1; 1998 ST₇₇ *, 10, 2, 1; 1998 SU₇₇ *, 8, 2, 1; 1998 SV₇₇ *, 9, 2, 1; 1998 SW₇₇ *, 17, 4, 33; 1998 SX₇₇ *, 9, 2, 1; 1998 SY₇₇ *, 9, 2, 1; 1998 SZ₇₇ *, 9, 2, 1; 1998 SA₇₈ *, 8, 2, 1; 1998 SB₇₈ *, 9, 2, 1; 1998 SC₇₈ *, 9, 2, 1; 1998 SD₇₈ *, 9, 2, 1; 1998 SE₇₈ *, 10, 2, 1; 1998 SF₇₈ *, 9, 2, 1; 1998 SG₇₈ *, 9, 2, 1; 1998 SH₇₈ *, 9, 2, 1; 1998 SJ₇₈ *, 8, 2, 1; 1998 SK₇₈ *, 9, 2, 1; 1998 SL₇₈ *, 9, 2, 1; 1998 SM₇₈ *, 9, 2, 1; 1998 SN₇₈ *, 10, 2, 1; 1998 SO₇₈ *, 8, 2, 1; 1998 SV₇₈ *, 9, 2, 1; 1998 SW₇₈ *, 10, 2, 1; 1998 SX₇₈ *, 9, 2, 1; 1998 SY₇₈ *, 9, 2, 1; 1998 SZ₇₈ *, 7, 2, 1; 1998 SA₇₉ *, 9, 2, 1; 1998 SB₇₉ *, 9, 2, 1; 1998 SC₇₉ *, 9, 2, 1; 1998 SD₇₉ *, 10, 2, 1; 1998 SE₇₉ *, 9, 2, 1; 1998 SF₇₉ *, 10, 2, 1; 1998 SG₇₉ *, 10, 2, 1; 1998 SH₇₉ *, 10, 2, 1; 1998 SJ₇₉ *, 10, 2, 1; 1998 SK₇₉ *, 10, 2, 1; 1998 SL₇₉ *, 10, 2, 1; 1998 SM₇₉ *, 10, 2, 1; 1998 SN₇₉ *, 9, 2, 1; 1998 SO₇₉ *, 10, 2, 1; 1998 SP₇₉ *, 9, 2, 1; 1998 SQ₇₉ *, 10, 2, 1; 1998 SR₇₉ *, 9, 2, 1; 1998 SS₇₉ *, 10, 2, 1; 1998 ST₇₉ *, 9, 2, 1; 1998 SU₇₉ *, 9, 2, 1; 1998 SV₇₉ *, 9, 2, 1; 1998 SW₇₉ *, 10, 2, 1; 1998 SX₇₉ *, 9, 2, 1; 1998 SY₇₉ *, 10, 2, 1; 1998 SZ₇₉ *, 9, 2, 1; 1998 SA₈₀ *, 9, 2, 1; 1998 SB₈₀ *, 9, 2, 1; 1998 SC₈₀ *, 9, 2, 1; 1998 SD₈₀ *, 10, 2, 1; 1998 SE₈₀ *, 10, 2, 1; 1998 SF₈₀ *, 8, 2, 1; 1998 SG₈₀ *, 20, 2, 1; 1998 SH₈₀ *, 9, 2, 1; 1998 SJ₈₀ *, 9, 2, 1; 1998 SK₈₀ *, 10, 2, 1; 1998 SL₈₀ *, 10, 2, 1; 1998 SM₈₀ *, 9, 2, 1; 1998 SN₈₀ *, 9, 2, 1; 1998 SO₈₀ *, 8, 2, 1; 1998 SP₈₀ *, 10, 2, 1; 1998 SQ₈₀ *, 10, 2, 1; 1998 SR₈₀ *, 13, 2, 1; 1998 SS₈₀ *, 10, 2, 1; 1998 ST₈₀ *, 10, 2, 1; 1998 SU₈₀ *, 9, 2, 1; 1998 SV₈₀ *, 9, 2, 1; 1998 SW₈₀ *, 8, 2, 1; 1998 SX₈₀ *, 18, 2, 1; 1998 SY₈₀ *, 13, 2, 1; 1998 SZ₈₀ *, 10, 2, 1; 1998 SA₈₁ *, 14, 2, 1; 1998 SB₈₁ *, 14, 2, 1; 1998 SC₈₁ *, 10, 2, 1; 1998 SD₈₁ *, 9, 2,

2, 1; 1998 SC₈₅ *, 1, 2; 1998 SD₈₅ *, 10, 2, 1; 1998 SE₈₅ *, 10, 2, 1; 1998 SF₈₅ *, 10, 2, 1; 1998 SG₈₅ *, 7, 2, 1; 1998 SH₈₅ *, 9, 2, 1; 1998 SJ₈₅ *, 9, 2, 1; 1998 SK₈₅ *, 9, 2, 1; 1998 SL₈₅ *, 8, 2, 1; 1998 SM₈₅ *, 10, 2, 1; 1998 SN₈₅ *, 10, 2, 1; 1998 SO₈₅ *, 9, 2, 1; 1998 SF₈₅ *, 9, 2, 1; 1998 SQ₈₅ *, 8, 2, 1; 1998 SR₈₅ *, 8, 2, 1; 1998 SS₈₅ *, 9, 2, 1; 1998 ST₈₅ *, 10, 2, 1; 1998 SU₈₅ *, 8, 2, 1; 1998 SV₈₅ *, 10, 2, 1; 1998 SW₈₅ *, 7, 2, 1; 1998 SX₈₅ *, 10, 2, 1; 1998 SY₈₅ *, 10, 2, 1; 1998 SZ₈₅ *, 10, 2, 1; 1998 SA₈₆ *, 8, 2, 1; 1998 SB₈₆ *, 10, 2, 1; 1998 SC₈₆ *, 9, 2, 1; 1998 SD₈₆ *, 9, 2, 1; 1998 SE₈₆ *, 10, 2, 1; 1998 SF₈₆ *, 9, 2, 1; 1998 SG₈₆ *, 9, 2, 1; 1998 SH₈₆ *, 10, 2, 1; 1998 SJ₈₆ *, 10, 2, 1; 1998 SK₈₆ *, 9, 2, 1; 1998 SL₈₆ *, 9, 2, 1; 1998 SM₈₆ *, 8, 2, 1; 1998 SN₈₆ *, 8, 2, 1; 1998 SO₈₆ *, 9, 2, 1; 1998 SP₈₆ *, 9, 2, 1; 1998 SQ₈₆ *, 10, 2, 1; 1998 SR₈₆ *, 9, 2, 1; 1998 SS₈₆ *, 9, 2, 1; 1998 ST₈₆ *, 10, 2, 1; 1998 SU₈₆ *, 10, 2, 1; 1998 SV₈₆ *, 8, 2, 1; 1998 SW₈₆ *, 8, 2, 1; 1998 SX₈₆ *, 10, 2, 1; 1998 SY₈₆ *, 9, 2, 1; 1998 SZ₈₆ *, 9, 2, 1; 1998 SA₈₇ *, 10, 2, 1; 1998 SB₈₇ *, 9, 2, 1; 1998 SC₈₇ *, 10, 2, 1; 1998 SD₈₇ *, 8, 2, 1; 1998 SE₈₇ *, 19, 4, 33; 1998 SF₈₇ *, 8, 2, 1; 1998 SG₈₇ *, 18, 4, 33; 1998 SH₈₇ *, 8, 2, 1; 1998 SJ₈₇ *, 8, 2, 1; 1998 SK₈₇ *, 9, 2, 1; 1998 SL₈₇ *, 9, 2, 1; 1998 SM₈₇ *, 18, 4, 33; 1998 SN₈₇ *, 7, 2, 1; 1998 SO₈₇ *, 10, 2, 1; 1998 SP₈₇ *, 10, 2, 1; 1998 SQ₈₇ *, 8, 2, 1; 1998 SR₈₇ *, 10, 2, 1; 1998 SS₈₇ *, 10, 2, 1; 1998 ST₈₇ *, 9, 2, 1; 1998 SU₈₇ *, 10, 2, 1; 1998 SV₈₇ *, 9, 2, 1; 1998 SW₈₇ *, 9, 2, 1; 1998 SX₈₇ *, 10, 2, 1; 1998 SY₈₇ *, 10, 2, 1; 1998 SZ₈₇ *, 10, 2, 1; 1998 SA₈₈ *, 9, 2, 1; 1998 SB₈₈ *, 9, 2, 1; 1998 SC₈₈ *, 8, 2, 1; 1998 SD₈₈ *, 8, 2, 1; 1998 SE₈₈ *, 9, 2, 1; 1998 SF₈₈ *, 7, 2, 1; 1998 SG₈₈ *, 9, 2, 1; 1998 SH₈₈ *, 8, 2, 1; 1998 SJ₈₈ *, 8, 2, 1; 1998 SK₈₈ *, 7, 2, 1; 1998 SL₈₈ *, 8, 2, 1; 1998 SM₈₈ *, 8, 2, 1; 1998 SN₈₈ *, 7, 2, 1; 1998 SO₈₈ *, 8, 2, 1; 1998 SP₈₈ *, 8, 2, 1; 1998 SQ₈₈ *, 8, 2, 1; 1998 SR₈₈ *, 8, 2, 1; 1998 SS₈₈ *, 9, 2, 1; 1998 ST₈₈ *, 8, 2, 1; 1998 SU₈₈ *, 8, 2, 1; 1998 SV₈₈ *, 8, 2, 1; 1998 SW₈₈ *, 9, 2, 1; 1998 SX₈₈ *, 8, 2, 1; 1998 SY₈₈ *, 9, 2, 1; 1998 SZ₈₈ *, 9, 2, 1; 1998 SA₈₉ *, 9, 2, 1; 1998 SB₈₉ *, 8, 2, 1; 1998 SC₈₉ *, 8, 2, 1; 1998 SD₈₉ *, 8, 2, 1; 1998 SE₈₉ *, 8, 2, 1; 1998 SF₈₉ *, 7, 2, 1; 1998 SG₈₉ *, 7, 2, 1; 1998 SH₈₉ *, 9, 2, 1; 1998 SJ₈₉ *, 7, 2, 1; 1998 SK₈₉ *, 8, 2, 1; 1998 SL₈₉ *, 7, 2, 1; 1998 SM₈₉ *, 8, 2, 1; 1998 SN₈₉ *, 9, 2, 1; 1998 SO₈₉ *, 9, 2, 1; 1998 SP₈₉ *, 8, 2, 1; 1998 SQ₈₉ *, 9, 2, 1; 1998 SR₈₉ *, 7, 2, 1; 1998 SS₈₉ *, 8, 2, 1; 1998 ST₈₉ *, 9, 2, 1; 1998 SU₈₉ *, 9, 2, 1; 1998 SV₈₉ *, 8, 2, 1; 1998 SW₈₉ *, 7, 2, 1; 1998 SX₈₉ *, 8, 2, 1; 1998 SY₈₉ *, 8, 2, 1; 1998 SZ₈₉ *, 7, 2, 1; 1998 SA₉₀ *, 8, 2, 1; 1998 SB₉₀ *, 8, 2, 1; 1998 SC₉₀ *, 9, 2, 1; 1998 SD₉₀ *, 9, 2, 1; 1998 SE₉₀ *, 8, 2, 1; 1998 SF₉₀ *, 7, 2, 1; 1998 SG₉₀ *, 8, 2, 1; 1998 SH₉₀ *, 8, 2, 1; 1998 SJ₉₀ *, 8, 2, 1; 1998 SK₉₀ *, 8, 2, 1; 1998 SL₉₀ *, 9, 2, 1; 1998 SM₉₀ *, 8, 2, 1; 1998 SN₉₀ *, 8, 2, 1; 1998 SO₉₀ *, 8, 2, 1; 1998 SP₉₀ *, 8, 2, 1; 1998 SQ₉₀ *, 9, 2, 1; 1998 SR₉₀ *, 8, 2, 1; 1998 SS₉₀ *, 8, 2, 1; 1998 ST₉₀ *, 7, 2, 1; 1998 SU₉₀ *, 8, 2, 1; 1998 SV₉₀ *, 8, 2, 1; 1998 SW₉₀ *, 9, 2, 1; 1998 SX₉₀ *, 8, 2, 1; 1998 SY₉₀ *, 7, 2, 1; 1998 SZ₉₀ *, 7, 2, 1; 1998 SA₉₁ *, 7, 2, 1; 1998 SB₉₁ *, 8, 2, 1; 1998 SC₉₁ *, 7, 2, 1; 1998 SD₉₁ *, 7, 2, 1; 1998 SE₉₁ *, 8, 2, 1; 1998 SF₉₁ *, 9, 2, 1; 1998 SG₉₁ *, 9, 2, 1; 1998 SH₉₁ *, 7, 2, 1; 1998 SJ₉₁ *, 7, 2, 1; 1998 SK₉₁ *, 9, 2, 1; 1998 SL₉₁ *, 8, 2, 1; 1998 SM₉₁ *, 16, 4, 33; 1998 SN₉₁ *, 7, 2, 1; 1998 SO₉₁ *, 8, 2, 1; 1998 SP₉₁ *, 8, 2, 1; 1998 SQ₉₁ *, 8, 2, 1; 1998 SR₉₁ *, 18, 4, 33; 1998 SS₉₁ *, 8, 2, 1; 1998 ST₉₁ *, 7, 2, 1; 1998 SU₉₁ *, 10, 2, 1; 1998 SV₉₁ *, 8, 2,

2, 1; 1998 SG₉₇ *, 10, 2, 1; 1998 SH₉₇ *, 10, 2, 1; 1998 SJ₉₇ *, 10, 2, 1; 1998 SK₉₇ *, 8, 2, 1; 1998 SL₉₇ *, 10, 2, 1; 1998 SM₉₇ *, 10, 2, 1; 1998 SN₉₇ *, 9, 2, 1; 1998 SO₉₇ *, 8, 2, 1; 1998 SP₉₇ *, 9, 2, 1; 1998 SQ₉₇ *, 10, 2, 1; 1998 SR₉₇ *, 10, 2, 1; 1998 SS₉₇ *, 10, 2, 1; 1998 ST₉₇ *, 10, 2, 1; 1998 SU₉₇ *, 10, 2, 1; 1998 SV₉₇ *, 9, 2, 1; 1998 SW₉₇ *, 10, 2, 1; 1998 SX₉₇ *, 8, 2, 1; 1998 SY₉₇ *, 9, 2, 1; 1998 SZ₉₇ *, 8, 2, 1; 1998 SA₉₈ *, 10, 2, 1; 1998 SB₉₈ *, 9, 2, 1; 1998 SC₉₈ *, 9, 2, 1; 1998 SD₉₈ *, 9, 2, 1; 1998 SE₉₈ *, 9, 2, 1; 1998 SF₉₈ *, 10, 2, 1; 1998 SG₉₈ *, 10, 2, 1; 1998 SH₉₈ *, 9, 2, 1; 1998 SJ₉₈ *, 9, 2, 1; 1998 SK₉₈ *, 7, 2, 1; 1998 SL₉₈ *, 9, 2, 1; 1998 SM₉₈ *, 8, 2, 1; 1998 SN₉₈ *, 9, 2, 1; 1998 SO₉₈ *, 8, 2, 1; 1998 SP₉₈ *, 8, 2, 1; 1998 SQ₉₈ *, 10, 2, 1; 1998 SR₉₈ *, 9, 2, 1; 1998 SS₉₈ *, 9, 2, 1; 1998 ST₉₈ *, 10, 2, 1; 1998 SU₉₈ *, 9, 2, 1; 1998 SV₉₈ *, 10, 2, 1; 1998 SW₉₈ *, 9, 2, 1; 1998 SX₉₈ *, 9, 2, 1; 1998 SY₉₈ *, 10, 2, 1; 1998 SZ₉₈ *, 9, 2, 1; 1998 SA₉₉ *, 9, 2, 1; 1998 SB₉₉ *, 9, 2, 1; 1998 SC₉₉ *, 9, 2, 1; 1998 SD₉₉ *, 9, 2, 1; 1998 SE₉₉ *, 10, 2, 1; 1998 SF₉₉ *, 10, 2, 1; 1998 SG₉₉ *, 8, 2, 1; 1998 SH₉₉ *, 9, 2, 1; 1998 SJ₉₉ *, 10, 2, 1; 1998 SK₉₉ *, 9, 2, 1; 1998 SL₉₉ *, 8, 2, 1; 1998 SM₉₉ *, 9, 2, 1; 1998 SN₉₉ *, 10, 2, 1; 1998 SO₉₉ *, 7, 2, 1; 1998 SP₉₉ *, 8, 2, 1; 1998 SQ₉₉ *, 9, 2, 1; 1998 SR₉₉ *, 8, 2, 1; 1998 SS₉₉ *, 8, 2, 1; 1998 ST₉₉ *, 9, 2, 1; 1998 SU₉₉ *, 10, 2, 1; 1998 SV₉₉ *, 10, 2, 1; 1998 SW₉₉ *, 10, 2, 1; 1998 SX₉₉ *, 9, 2, 1; 1998 SY₉₉ *, 10, 2, 1; 1998 SZ₉₉ *, 10, 2, 1; 1998 SA₁₀₀ *, 9, 2, 1; 1998 SB₁₀₀ *, 9, 2, 1; 1998 SC₁₀₀ *, 8, 2, 1; 1998 SD₁₀₀ *, 9, 2, 1; 1998 SE₁₀₀ *, 8, 2, 1; 1998 SF₁₀₀ *, 9, 2, 1; 1998 SG₁₀₀ *, 9, 2, 1; 1998 SH₁₀₀ *, 10, 2, 1; 1998 SJ₁₀₀ *, 10, 2, 1; 1998 SK₁₀₀ *, 20, 4, 33; 1998 SL₁₀₀ *, 10, 2, 1; 1998 SM₁₀₀ *, 9, 2, 1; 1998 SN₁₀₀ *, 18, 4, 33; 1998 SO₁₀₀ *, 9, 2, 1; 1998 SP₁₀₀ *, 9, 2, 1; 1998 SQ₁₀₀ *, 9, 2, 1; 1998 SR₁₀₀ *, 9, 2, 1; 1998 SS₁₀₀ *, 8, 2, 1; 1998 ST₁₀₀ *, 10, 2, 1; 1998 SU₁₀₀ *, 7, 2, 1; 1998 SV₁₀₀ *, 8, 2, 1; 1998 SW₁₀₀ *, 10, 2, 1; 1998 SX₁₀₀ *, 10, 2, 1; 1998 SY₁₀₀ *, 8, 2, 1; 1998 SZ₁₀₀ *, 9, 2, 1; 1998 SA₁₀₁ *, 10, 2, 1; 1998 SB₁₀₁ *, 9, 2, 1; 1998 SC₁₀₁ *, 9, 2, 1; 1998 SD₁₀₁ *, 9, 2, 1; 1998 SE₁₀₁ *, 10, 2, 1; 1998 SF₁₀₁ *, 9, 2, 1; 1998 SG₁₀₁ *, 8, 2, 1; 1998 SH₁₀₁ *, 10, 2, 1; 1998 SJ₁₀₁ *, 9, 2, 1; 1998 SK₁₀₁ *, 9, 2, 1; 1998 SL₁₀₁ *, 9, 2, 1; 1998 SM₁₀₁ *, 8, 2, 1; 1998 SN₁₀₁ *, 10, 2, 1; 1998 SO₁₀₁ *, 10, 2, 1; 1998 SP₁₀₁ *, 10, 2, 1; 1998 SQ₁₀₁ *, 10, 2, 1; 1998 SR₁₀₁ *, 9, 2, 1; 1998 SS₁₀₁ *, 10, 2, 1; 1998 ST₁₀₁ *, 8, 2, 1; 1998 SU₁₀₁ *, 10, 2, 1; 1998 SV₁₀₁ *, 7, 2, 1; 1998 SW₁₀₁ *, 9, 2, 1; 1998 SX₁₀₁ *, 10, 2, 1; 1998 SY₁₀₁ *, 9, 2, 1; 1998 SZ₁₀₁ *, 9, 2, 1; 1998 SA₁₀₂ *, 10, 2, 1; 1998 SB₁₀₂ *, 10, 2, 1; 1998 SC₁₀₂ *, 9, 2, 1; 1998 SD₁₀₂ *, 9, 2, 1; 1998 SE₁₀₂ *, 10, 2, 1; 1998 SF₁₀₂ *, 10, 2, 1; 1998 SG₁₀₂ *, 9, 2, 1; 1998 SH₁₀₂ *, 9, 2, 1; 1998 SJ₁₀₂ *, 9, 2, 1; 1998 SK₁₀₂ *, 10, 2, 1; 1998 SL₁₀₂ *, 9, 2, 1; 1998 SM₁₀₂ *, 10, 2, 1; 1998 SN₁₀₂ *, 9, 2, 1; 1998 SO₁₀₂ *, 10, 2, 1; 1998 SF₁₀₂ *, 10, 2, 1; 1998 SG₁₀₂ *, 8, 2, 1; 1998 SH₁₀₂ *, 9, 2, 1; 1998 SJ₁₀₂ *, 9, 2, 1; 1998 SK₁₀₂ *, 10, 2, 1; 1998 SL₁₀₂ *, 9, 2, 1; 1998 SM₁₀₂ *, 10, 2, 1; 1998 SN₁₀₂ *, 9, 2, 1; 1998 SO₁₀₂ *, 10, 2, 1; 1998 SP₁₀₂ *, 10, 2, 1; 1998 SQ₁₀₂ *, 10, 2, 1; 1998 SR₁₀₂ *, 9, 2, 1; 1998 SS₁₀₂ *, 10, 2, 1; 1998 ST₁₀₂ *, 8, 2, 1; 1998 SU₁₀₂ *, 9, 2, 1; 1998 SV₁₀₂ *, 7, 2, 1; 1998 SW₁₀₂ *, 10, 2, 1; 1998 SX₁₀₂ *, 10, 2, 1; 1998 SY₁₀₂ *, 8, 2, 1; 1998 SZ₁₀₂ *, 9, 2, 1; 1998 SA₁₀₃ *, 10, 2, 1; 1998 SB₁₀₃ *, 8, 2, 1; 1998 SC₁₀₃ *, 10, 2, 1; 1998 SD₁₀₃ *, 10, 2, 1; 1998 SE₁₀₃ *, 8, 2, 1; 1998 SF₁₀₃ *, 10, 2, 1; 1998 SG₁₀₃ *, 9, 2, 1; 1998 SH₁₀₃ *, 10, 2, 1; 1998 SJ₁₀₃ *, 9, 2, 1; 1998 SK₁₀₃ *, 9, 2, 1; 1998 SL₁₀₃

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M.P.C. 32857

33; 1998 SL₁₀₈ *, 10, 2, 1; 1998 SM₁₀₈ *, 8, 2, 1; 1998 SN₁₀₈ *, 10, 2, 1; 1998 SO₁₀₈ *, 8, 2, 1; 1998 SP₁₀₈ *, 10, 2, 1; 1998 SQ₁₀₈ *, 20, 4, 33; 1998 SR₁₀₈ *, 10, 2, 1; 1998 SS₁₀₈ *, 10, 2, 1; 1998 ST₁₀₈ *, 10, 2, 1; 1998 SU₁₀₈ *, 18, 4, 33; 1998 SV₁₀₈ *, 10, 2, 1; 1998 SW₁₀₈ *, 19, 4, 33; 1998 SY₁₀₈ *, 7, 2, 1; 1998 SZ₁₀₈ *, 10, 2, 1; 1998 SA₁₀₉ *, 10, 2, 1; 1998 SB₁₀₉ *, 9, 2, 1; 1998 SC₁₀₉ *, 9, 2, 1; 1998 SD₁₀₉ *, 10, 2, 1; 1998 SE₁₀₉ *, 9, 2, 1; 1998 SF₁₀₉ *, 9, 2, 1; 1998 SG₁₀₉ *, 10, 2, 1; 1998 SH₁₀₉ *, 9, 2, 1; 1998 SJ₁₀₉ *, 20, 4, 33; 1998 SK₁₀₉ *, 9, 2, 1; 1998 SL₁₀₉ *, 8, 2, 1; 1998 SM₁₀₉ *, 9, 2, 1; 1998 SN₁₀₉ *, 9, 2, 1; 1998 SO₁₀₉ *, 7, 2, 1; 1998 SP₁₀₉ *, 18, 4, 33; 1998 SQ₁₀₉ *, 10, 2, 1; 1998 SR₁₀₉ *, 8, 2, 1; 1998 SS₁₀₉ *, 9, 2, 1; 1998 ST₁₀₉ *, 9, 2, 1; 1998 SU₁₀₉ *, 10, 2, 1; 1998 SV₁₀₉ *, 10, 2, 1; 1998 SW₁₀₉ *, 8, 2, 1; 1998 SX₁₀₉ *, 8, 2, 1; 1998 SY₁₀₉ *, 8, 2, 1; 1998 SZ₁₀₉ *, 10, 2, 1; 1998 SA₁₁₀ *, 10, 2, 1; 1998 SB₁₁₀ *, 10, 2, 1; 1998 SC₁₁₀ *, 10, 2, 1; 1998 SD₁₁₀ *, 20, 4, 33; 1998 SE₁₁₀ *, 19, 4, 33; 1998 SF₁₁₀ *, 9, 2, 1; 1998 SG₁₁₀ *, 10, 2, 1; 1998 SH₁₁₀ *, 9, 2, 1; 1998 SJ₁₁₀ *, 10, 2, 1; 1998 SL₁₁₀ *, 10, 2, 1; 1998 SM₁₁₀ *, 10, 2, 1; 1998 SN₁₁₀ *, 20, 4, 19; 1998 SO₁₁₀ *, 8, 2, 1; 1998 SP₁₁₀ *, 17, 4, 33; 1998 SQ₁₁₀ *, 10, 2, 1; 1998 SR₁₁₀ *, 10, 2, 1; 1998 SS₁₁₀ *, 10, 2, 1; 1998 ST₁₁₀ *, 9, 2, 1; 1998 SU₁₁₀ *, 8, 2, 1; 1998 SV₁₁₀ *, 10, 2, 1; 1998 SW₁₁₀ *, 9, 2, 1; 1998 SX₁₁₀ *, 10, 2, 1; 1998 SY₁₁₀ *, 10, 2, 1; 1998 SZ₁₁₀ *, 10, 2, 1; 1998 SA₁₁₁ *, 10, 2, 1; 1998 SB₁₁₁ *, 10, 2, 1; 1998 SC₁₁₁ *, 9, 2, 1; 1998 SD₁₁₁ *, 8, 2, 1; 1998 SE₁₁₁ *, 10, 2, 1; 1998 SF₁₁₁ *, 8, 2, 1; 1998 SG₁₁₁ *, 10, 2, 1; 1998 SH₁₁₁ *, 10, 2, 1; 1998 SJ₁₁₁ *, 10, 2, 1; 1998 SK₁₁₁ *, 9, 2, 1; 1998 SL₁₁₁ *, 8, 2, 1; 1998 SM₁₁₁ *, 8, 2, 1; 1998 SN₁₁₁ *, 9, 2, 1; 1998 SO₁₁₁ *, 10, 2, 1; 1998 SP₁₁₁ *, 8, 2, 1; 1998 SQ₁₁₁ *, 18, 4, 33; 1998 SR₁₁₁ *, 20, 4, 33; 1998 SS₁₁₁ *, 8, 2, 1; 1998 ST₁₁₁ *, 10, 2, 1; 1998 SU₁₁₁ *, 9, 2, 1; 1998 SV₁₁₁ *, 9, 2, 1; 1998 SW₁₁₁ *, 8, 2, 1; 1998 SX₁₁₁ *, 16, 4, 33; 1998 SY₁₁₁ *, 10, 2, 1; 1998 SZ₁₁₁ *, 9, 2, 1; 1998 SA₁₁₂ *, 10, 2, 1; 1998 SB₁₁₂ *, 10, 2, 1; 1998 SC₁₁₂ *, 10, 2, 1; 1998 SD₁₁₂ *, 9, 2, 1; 1998 SE₁₁₂ *, 10, 2, 1; 1998 SF₁₁₂ *, 9, 2, 1; 1998 SG₁₁₂ *, 20, 4, 33; 1998 SH₁₁₂ *, 10, 2, 1; 1998 SJ₁₁₂ *, 8, 2, 1; 1998 SK₁₁₂ *, 8, 2, 1; 1998 SL₁₁₂ *, 9, 2, 1; 1998 SM₁₁₂ *, 9, 2, 1; 1998 SN₁₁₂ *, 8, 2, 1; 1998 SO₁₁₂ *, 8, 2, 1; 1998 SQ₁₁₂ *, 7, 2, 1; 1998 SR₁₁₂ *, 10, 2, 1; 1998 SS₁₁₂ *, 10, 2, 1; 1998 ST₁₁₂ *, 10, 2, 1; 1998 SV₁₁₂ *, 9, 2, 1; 1998 SW₁₁₂ *, 8, 2, 1; 1998 SX₁₁₂ *, 10, 2, 1; 1998 SY₁₁₂ *, 9, 2, 1; 1998 SZ₁₁₂ *, 9, 2, 1; 1998 SA₁₁₃ *, 10, 2, 1; 1998 SB₁₁₃ *, 9, 2, 1; 1998 SC₁₁₃ *, 10, 2, 1; 1998 SD₁₁₃ *, 8, 2, 1; 1998 SE₁₁₃ *, 10, 2, 1; 1998 SF₁₁₃ *, 10, 2, 1; 1998 SG₁₁₃ *, 9, 2, 1; 1998 SH₁₁₃ *, 19, 4, 33; 1998 SJ₁₁₃ *, 9, 2, 1; 1998 SK₁₁₃ *, 9, 2, 1; 1998 SL₁₁₃ *, 7, 2, 1; 1998 SM₁₁₃ *, 9, 2, 1; 1998 SN₁₁₃ *, 9, 2, 1; 1998 SO₁₁₃ *, 10, 2, 1; 1998 SP₁₁₃ *, 9, 2, 1; 1998 SQ₁₁₃ *, 8, 2, 1; 1998 SR₁₁₃ *, 9, 2, 1; 1998 SS₁₁₃ *, 18, 4, 33; 1998 ST₁₁₃ *, 7, 2, 1; 1998 SU₁₁₃ *, 8, 2, 1; 1998 SV₁₁₃ *, 9, 2, 1; 1998 SW₁₁₃ *, 9, 2, 1; 1998 SX₁₁₃ *, 10, 2, 1; 1998 SY₁₁₃ *, 10, 2, 1; 1998 SZ₁₁₃ *, 10, 2, 1; 1998 SA₁₁₄ *, 10, 2, 1; 1998 SB₁₁₄ *, 9, 2, 1; 1998 SC₁₁₄ *, 10, 2, 1; 1998 SD₁₁₄ *, 9, 2, 1; 1998 SE₁₁₄ *, 9, 2, 1; 1998 SF₁₁₄ *, 10, 2, 1; 1998 SG₁₁₄ *, 8, 2, 1; 1998 SH₁₁₄ *, 9, 2, 1; 1998 SJ₁₁₄ *, 7, 2, 1; 1998 SK₁₁₄ *, 10, 2, 1; 1998 SL₁₁₄ *, 9, 2, 1; 1998 SM₁₁₄ *, 10, 2, 1; 1998 SN₁₁₄ *, 10, 2, 1; 1998 SO₁₁₄ *, 8, 2, 1; 1998 SP₁₁₄ *, 10, 2, 1; 1998 SQ₁₁₄ *, 9, 2, 1; 1998 SR₁₁₄ *, 10, 2, 1; 1998 SS₁₁₄ *, 10, 2, 1; 1998 ST₁₁₄ *, 10, 2, 1; 1998 SU₁₁₄ *, 9, 2, 1; 1998 SV₁₁₄ *, 10, 2, 1; 1998 SW₁₁₄ *, 9, 2, 1; 1998 SX₁₁₄ *, 8, 2, 1; 1998 SY₁₁₄ *, 9, 2, 1; 1998 SZ₁₁₄ *, 10, 2, 1; 1998 SA₁₁₅ *, 7, 2, 1; 1998 SB₁₁₅ *, 9, 2, 1; 1998 SC₁₁₅ *, 10, 2, 1; 1998 SD₁₁₅ *, 10, 2, 1; 1998 SE₁₁₅ *, 9, 2, 1; 1998 SF₁₁₅ *, 15, 3, 32; 1998 SG₁₁₅ *, 9, 2, 1; 1998 SH₁₁₅ *, 8, 2, 1; 1998 SJ₁₁₅ *, 9, 2, 1; 1998 SK₁₁₅ *, 10, 2, 1; 1998 SL₁₁₅ *, 8, 2, 1; 1998 SM₁₁₅ *, 10, 2, 1; 1998 SN₁₁₅ *, 9, 2, 1; 1998 SO₁₁₅ *, 10, 2, 1; 1998 SP₁₁₅ *, 10, 2, 1; 1998 SQ₁₁₅ *, 8, 2, 1; 1998 SR₁₁₅ *, 20, 4, 33; 1998 SS₁₁₅ *, 10, 2, 1; 1998 ST₁₁₅ *, 10, 2, 1; 1998 SU₁₁₅ *, 9, 2, 1; 1998 SV₁₁₅ *, 9, 2, 1; 1998 SW₁₁₅ *, 8, 2, 1; 1998 SX₁₁₅ *, 9, 2, 1; 1998 SY₁₁₅ *, 9, 2, 1; 1998 SZ₁₁₅ *, 10, 2, 1; 1998 SA₁₁₆ *, 8, 2, 1; 1998 SB₁₁₆ *, 20, 4, 33; 1998 SC₁₁₆ *, 10, 2, 1; 1998 SD₁₁₆ *, 8, 2, 1; 1998 SE₁₁₆ *, 10, 2, 1; 1998 SF₁₁₆ *, 9, 2, 1; 1998 SG₁₁₆ *, 9, 2, 1; 1998 SH₁₁₆ *, 15, 3, 32; 1998 SJ₁₁₆ *, 23, 5, 32; 1998 SK₁₁₆ *, 10, 2, 1; 1998 SL₁₁₆ *, 10, 2, 1; 1998 SM₁₁₆ *, 10, 2, 1; 1998 SN₁₁₆ *, 10, 2, 1; 1998 SO₁₁₆ *, 10, 2, 1; 1998 SP₁₁₆ *, 9, 2, 1; 1998 SQ₁₁₆ *, 10, 2, 1; 1998 SR₁₁₆ *, 20, 4, 33; 1998 SS₁₁₆ *, 10, 2, 1; 1998 ST₁₁₆ *, 10, 2, 1; 1998 SU₁₁₆ *, 10, 2, 1; 1998 SV₁₁₆ *, 10, 2, 1; 1998 SW₁₁₆ *, 9, 2, 1; 1998 SX₁₁₆ *, 10, 2, 1; 1998 SY₁₁₆ *, 8, 2, 1; 1998 SZ₁₁₆ *, 9, 2, 1; 1998 SA₁₁₇ *, 9, 2, 1; 1998 SB₁₁₇ *, 10, 2, 1; 1998 SC₁₁₇ *, 7, 2, 1; 1998 SD₁₁₇ *, 9, 2, 1; 1998 SE₁₁₇ *, 20, 4, 33; 1998 SF₁₁₇ *, 9, 2, 1; 1998 SG₁₁₇ *, 10, 2, 1; 1998 SH₁₁₇ *, 9, 2, 1; 1998 SJ₁₁₇ *, 9, 2, 1; 1998 SK₁₁₇ *, 17, 4, 33; 1998 SL₁₁₇ *, 17, 4, 33; 1998 SM₁₁₇ *, 8, 2, 1; 1998 SN₁₁₇ *, 10, 2, 1; 1998 SO₁₁₇ *, 9, 2, 1; 1998 SP₁₁₇ *, 18, 4, 33; 1998 SQ₁₁₇ *, 9, 2, 1; 1998 SR₁₁₇ *, 10, 2, 1; 1998 SS₁₁₇ *, 9, 2, 1; 1998 ST₁₁₇ *, 9, 2, 1; 1998 SU₁₁₇ *, 8, 2, 1; 1998 SV₁₁₇ *, 10, 2, 1; 1998 SW₁₁₇ *, 9, 2, 1; 1998 SX₁₁₇ *, 8, 2, 1; 1998 SY₁₁₇ *, 8, 2, 1; 1998 SZ₁₁₇ *, 10, 2, 1; 1998 SA₁₁₈ *, 15, 3, 32; 1998 SB₁₁₈ *, 10, 2, 1; 1998 SC₁₁₈ *, 9, 2, 1; 1998 SD₁₁₈ *, 19, 4, 33; 1998 SE₁₁₈ *, 10, 2, 1; 1998 SF₁₁₈ *, 10, 2, 1; 1998 SG₁₁₈ *, 9, 2, 1; 1998 SH₁₁₈ *, 9, 2, 1; 1998 SJ₁₁₈ *, 19, 4, 19; 1998 SK₁₁₈ *, 20, 4, 33; 1998 SL₁₁₈ *, 9, 2, 1; 1998 SM₁₁₈ *, 10, 2, 1; 1998 SN₁₁₈ *, 9, 2, 1; 1998 SO₁₁₈ *, 10, 2, 1; 1998 SP₁₁₈ *, 10, 2, 1; 1998 SQ₁₁₈ *, 10, 2, 1; 1998 SR₁₁₈ *, 10, 2, 1; 1998 SS₁₁₈ *, 9, 2, 1; 1998 ST₁₁₈ *, 8, 2, 1; 1998 SU₁₁₈ *, 10, 2, 1; 1998 SV₁₁₈ *, 9, 2, 1; 1998 SW₁₁₈ *, 8, 2, 1; 1998 SX₁₁₈ *, 8, 2, 1; 1998 SY₁₁₈ *, 9, 2, 1; 1998 SZ₁₁₈ *, 9, 2, 1; 1998 SA₁₁₉ *, 9, 2, 1; 1998 SB₁₁₉ *, 9, 2, 1; 1998 SC₁₁₉ *, 9, 2, 1; 1998 SD₁₁₉ *, 17, 4, 33; 1998 SE₁₁₉ *, 8, 2, 1; 1998 SF₁₁₉ *, 9, 2, 1; 1998 SG₁₁₉ *, 20, 4, 33; 1998 SH₁₁₉ *, 10, 2, 1; 1998 SJ₁₁₉ *, 9, 2,

1; 1998 SK₁₁₉ *, 10, 2, 1; 1998 SL₁₁₉ *, 9, 2, 1; 1998 SM₁₁₉ *, 10, 2, 1; 1998 SN₁₁₉ *, 10, 2, 1; 1998 SO₁₁₉ *, 9, 2, 1; 1998 SP₁₁₉ *, 9, 2, 1; 1998 SQ₁₁₉ *, 9, 2, 1; 1998 SR₁₁₉ *, 20, 4, 33; 1998 ST₁₁₉ *, 10, 2, 1; 1998 SU₁₁₉ *, 19, 4, 19; 1998 SV₁₁₉ *, 8, 2, 1; 1998 SW₁₁₉ *, 8, 2, 1; 1998 SX₁₁₉ *, 8, 2, 1; 1998 SY₁₁₉ *, 8, 2, 1; 1998 SZ₁₁₉ *, 8, 2, 1; 1998 SA₁₂₀ *, 8, 2, 1; 1998 SB₁₂₀ *, 7, 2, 1; 1998 SC₁₂₀ *, 7, 2, 1; 1998 SD₁₂₀ *, 8, 2, 1; 1998 SE₁₂₀ *, 7, 2, 1; 1998 SF₁₂₀ *, 8, 2, 1; 1998 SG₁₂₀ *, 9, 2, 1; 1998 SH₁₂₀ *, 8, 2, 1; 1998 SJ₁₂₀ *, 8, 2, 1; 1998 SK₁₂₀ *, 8, 2, 1; 1998 SL₁₂₀ *, 8, 2, 1; 1998 SM₁₂₀ *, 8, 2, 1; 1998 SN₁₂₀ *, 8, 2, 1; 1998 SO₁₂₀ *, 8, 2, 1; 1998 SP₁₂₀ *, 9, 2, 1; 1998 SQ₁₂₀ *, 7, 2, 1; 1998 SR₁₂₀ *, 8, 2, 1; 1998 SS₁₂₀ *, 8, 2, 1; 1998 ST₁₂₀ *, 8, 2, 1; 1998 SU₁₂₀ *, 8, 2, 1; 1998 SV₁₂₀ *, 8, 2, 1; 1998 SW₁₂₀ *, 7, 2, 1; 1998 SX₁₂₀ *, 9, 2, 1; 1998 SY₁₂₀ *, 7, 2, 1; 1998 SZ₁₂₀ *, 7, 2, 1; 1998 SA₁₂₁ *, 9, 2, 1; 1998 SB₁₂₁ *, 8, 2, 1; 1998 SC₁₂₁ *, 9, 2, 1; 1998 SD₁₂₁ *, 8, 2, 1; 1998 SE₁₂₁ *, 8, 2, 1; 1998 SF₁₂₁ *, 10, 2, 1; 1998 SG₁₂₁ *, 9, 2, 1; 1998 SH₁₂₁ *, 7, 2, 1; 1998 SJ₁₂₁ *, 9, 2, 1; 1998 SK₁₂₁ *, 8, 2, 1; 1998 SL₁₂₁ *, 10, 2, 1; 1998 SM₁₂₁ *, 10, 2, 1; 1998 SN₁₂₁ *, 10, 2, 1; 1998 SO₁₂₁ *, 8, 2, 1; 1998 SP₁₂₁ *, 9, 2, 1; 1998 SQ₁₂₁ *, 14, 3, 32; 1998 SR₁₂₁ *, 10, 2, 1; 1998 SS₁₂₁ *, 17, 4, 33; 1998 ST₁₂₁ *, 10, 2, 1; 1998 SU₁₂₁ *, 8, 2, 1; 1998 SV₁₂₁ *, 7, 2, 1; 1998 SW₁₂₁ *, 9, 2, 1; 1998 SX₁₂₁ *, 10, 2, 1; 1998 SY₁₂₁ *, 9, 2, 1; 1998 SZ₁₂₁ *, 8, 2, 1; 1998 SA₁₂₂ *, 10, 2, 1; 1998 SB₁₂₂ *, 9, 2, 1; 1998 SC₁₂₂ *, 10, 2, 1; 1998 SD₁₂₂ *, 8, 2, 1; 1998 SE₁₂₂ *, 10, 2, 1; 1998 SF₁₂₂ *, 9, 2, 1; 1998 SG₁₂₂ *, 10, 2, 1; 1998 SH₁₂₂ *, 10, 2, 1; 1998 SJ₁₂₂ *, 10, 2, 1; 1998 SK₁₂₂ *, 9, 2, 1; 1998 SL₁₂₂ *, 10, 2, 1; 1998 SM₁₂₂ *, 10, 2, 1; 1998 SN₁₂₂ *, 9, 2, 1; 1998 SO₁₂₂ *, 9, 2, 1; 1998 SP₁₂₂ *, 19, 4, 33; 1998 SQ₁₂₂ *, 8, 2, 1; 1998 SR₁₂₂ *, 10, 2, 1; 1998 SS₁₂₂ *, 10, 2, 1; 1998 ST₁₂₂ *, 8, 2, 1; 1998 SU₁₂₂ *, 9, 2, 1; 1998 SV₁₂₂ *, 9, 2, 1; 1998 SW₁₂₂ *, 10, 2, 1; 1998 SX₁₂₂ *, 19, 4, 33; 1998 SY₁₂₂ *, 9, 2, 1; 1998 SZ₁₂₂ *, 9, 2, 1; 1998 SA₁₂₃ *, 9, 2, 1; 1998 SB₁₂₃ *, 9, 2, 1; 1998 SC₁₂₃ *, 10, 2, 1; 1998 SD₁₂₃ *, 19, 4, 33; 1998 SE₁₂₃ *, 10, 2, 1; 1998 SF₁₂₃ *, 10, 2, 1; 1998 SG₁₂₃ *, 10, 2, 1; 1998 SH₁₂₃ *, 8, 2, 1; 1998 SJ₁₂₃ *, 8, 2, 1; 1998 SK₁₂₃ *, 10, 2, 1; 1998 SL₁₂₃ *, 9, 2, 1; 1998 SM₁₂₃ *, 19, 4, 33; 1998 SN₁₂₃ *, 10, 2, 1; 1998 SO₁₂₃ *, 10, 2, 1; 1998 SP₁₂₃ *, 9, 2, 1; 1998 SQ₁₂₃ *, 10, 2, 1; 1998 SR₁₂₃ *, 8, 2, 1; 1998 SS₁₂₃ *, 10, 2, 1; 1998 ST₁₂₃ *, 9, 2, 1; 1998 SU₁₂₃ *, 9, 2, 1; 1998 SV₁₂₃ *, 10, 2, 1; 1998 SW₁₂₃ *, 9, 2, 1; 1998 SX₁₂₃ *, 10, 2, 1; 1998 SY₁₂₃ *, 8, 2, 1; 1998 SZ₁₂₃ *, 10, 2, 1; 1998 SA₁₂₄ *, 10, 2, 1; 1998 SB₁₂₄ *, 8, 2, 1; 1998 SC₁₂₄ *, 8, 2, 1; 1998 SD₁₂₄ *, 10, 2, 1; 1998 SE₁₂₄ *, 9, 2, 1; 1998 SF₁₂₄ *, 10, 2, 1; 1998 SG₁₂₄ *, 10, 2, 1; 1998 SH₁₂₄ *, 10, 2, 1; 1998 SJ₁₂₄ *, 9, 2, 1; 1998 SK₁₂₄ *, 10, 2, 1; 1998 SL₁₂₄ *, 8, 2, 1; 1998 SM₁₂₄ *, 10, 2, 1; 1998 SN₁₂₄ *, 10, 2, 1; 1998 SO₁₂₄ *, 10, 2, 1; 1998 SP₁₂₄ *, 10, 2, 1; 1998 SQ₁₂₄ *, 19, 4, 33; 1998 SR₁₂₄ *, 9, 2, 1; 1998 SS₁₂₄ *, 9, 2, 1; 1998 ST₁₂₄ *, 9, 2, 1; 1998 SV₁₂₄ *, 19, 4, 33; 1998 SW₁₂₄ *, 8, 2, 1; 1998 SX₁₂₄ *, 10, 2, 1; 1998 SY₁₂₄ *, 9, 2, 1; 1998 SZ₁₂₄ *, 8, 2, 1; 1998 SA₁₂₅ *, 9, 2, 1; 1998 SB₁₂₅ *, 9, 2, 1; 1998 SC₁₂₅ *, 10, 2, 1; 1998 SD₁₂₅ *, 9, 2, 1; 1998 SE₁₂₅ *, 9, 2, 1; 1998 SF₁₂₅ *, 9, 2, 1; 1998 SG₁₂₅ *, 9, 2, 1; 1998 SH₁₂₅ *, 9, 2, 1; 1998 SJ₁₂₅ *, 9, 2, 1; 1998 SK₁₂₅ *, 10, 2, 1; 1998 SL₁₂₅ *, 9, 2, 1; 1998 SM₁₂₅ *, 9, 2, 1; 1998 SN₁₂₅ *, 9, 2, 1; 1998 SO₁₂₅ *, 9, 2, 1; 1998 SP₁₂₅ *, 10, 2, 1; 1998 SQ₁₂₅ *, 9, 2, 1; 1998 SR₁₂₅ *, 10, 2, 1; 1998 SS₁₂₅ *, 8, 2, 1; 1998 ST₁₂₅ *, 10, 2, 1; 1998 SU₁₂₅ *, 10, 2, 1; 1998 SV₁₂₅ *, 8, 2, 1; 1998 SW₁₂₅ *, 9, 2, 1; 1998 SX₁₂₅ *, 10, 2, 1; 1998 SY₁₂₅ *, 9, 2, 1; 1998 SZ₁₂₅ *, 8, 2, 1; 1998 SA₁₂₆ *, 10, 2, 1; 1998 SB₁₂₆ *, 9, 2, 1; 1998 SC₁₂₆ *, 9, 2, 1; 1998 SD₁₂₆ *, 8, 2, 1; 1998 SE₁₂₆ *, 10, 2, 1; 1998 SF₁₂₆ *, 9, 2, 1; 1998 SG₁₂₆ *, 9, 2, 1; 1998 SH₁₂₆ *, 9, 2, 1; 1998 SJ₁₂₆ *, 9, 2, 1; 1998 SK₁₂₆ *, 9, 2, 1; 1998 SL₁₂₆ *, 10, 2, 1; 1998 SM₁₂₆ *, 10, 2, 1; 1998 SN₁₂₆ *, 7, 2, 1; 1998 SO₁₂₆ *, 10, 2, 1; 1998 SP₁₂₆ *, 9, 2, 1; 1998 SQ₁₂₆ *, 9, 2, 1; 1998 SR₁₂₆ *, 10, 2, 1; 1998 SS₁₂₆ *, 10, 2, 1; 1998 ST₁₂₆ *, 10, 2, 1; 1998 SU₁₂₆ *, 10, 2, 1; 1998 SV₁₂₆ *, 10, 2, 1; 1998 SW₁₂₆ *, 10, 2, 1; 1998 SX₁₂₆ *, 18, 4, 33; 1998 SY₁₂₆ *, 10, 2, 1; 1998 SZ₁₂₆ *, 9, 2, 1; 1998 SA₁₂₇ *, 10, 2, 1; 1998 SB₁₂₇ *, 10, 2, 1; 1998 SC₁₂₇ *, 10, 2, 1; 1998 SD₁₂₇ *, 10, 2, 1; 1998 SE₁₂₇ *, 10, 2, 1; 1998 SF₁₂₇ *, 20, 4, 33; 1998 SG₁₂₇ *, 10, 2, 1; 1998 SH₁₂₇ *, 10, 2, 1; 1998 SJ₁₂₇ *, 10, 2, 1; 1998 SK₁₂₇ *, 9, 2, 1; 1998 SL₁₂₇ *, 20, 4, 33; 1998 SM₁₂₇ *, 10, 2, 1; 1998 SN₁₂₇ *, 10, 2, 1; 1998 SO₁₂₇ *, 9, 2, 1; 1998 SP₁₂₇ *, 10, 2, 1; 1998 SQ₁₂₇ *, 10, 2, 1; 1998 SR₁₂₇ *, 9, 2, 1; 1998 SV₁₂₇ *, 8, 2, 1; 1998 SW₁₂₇ *, 9, 2, 1; 1998 SX₁₂₇ *, 10, 2, 1

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1; 1998 SE₁₃₂ *, 10, 2, 1; 1998 SF₁₃₂ *, 9, 2, 1; 1998 SG₁₃₂ *, 10, 2, 1; 1998 SH₁₃₂ *, 10, 2,
1; 1998 SJ₁₃₂ *, 8, 2, 1; 1998 SK₁₃₂ *, 9, 2, 1; 1998 SL₁₃₂ *, 9, 2, 1; 1998 SM₁₃₂ *, 7, 2, 1;
1998 SN₁₃₂ *, 9, 2, 1; 1998 SO₁₃₂ *, 10, 2, 1; 1998 SP₁₃₂ *, 10, 2, 1; 1998 SR₁₃₂ *, 9, 2, 1;
1998 SS₁₃₂ *, 10, 2, 1; 1998 ST₁₃₂ *, 10, 2, 1; 1998 SU₁₃₂ *, 10, 2, 1; 1998 SV₁₃₂ *, 10, 2,
1; 1998 SW₁₃₂ *, 14, 2, 1; 1998 SX₁₃₂ *, 9, 2, 1; 1998 SY₁₃₂ *, 9, 2, 1; 1998 SZ₁₃₂ *, 8, 2,
1; 1998 SA₁₃₃ *, 9, 2, 1; 1998 SB₁₃₃ *, 9, 2, 1; 1998 SC₁₃₃ *, 8, 2, 1; 1998 SD₁₃₃ *, 10, 2, 1;
1998 SE₁₃₃ *, 10, 2, 1; 1998 SF₁₃₃ *, 10, 2, 1; 1998 SG₁₃₃ *, 10, 2, 1; 1998 SH₁₃₃ *, 19, 4,
33; 1998 SJ₁₃₃ *, 10, 2, 1; 1998 SK₁₃₃ *, 9, 2, 1; 1998 SL₁₃₃ *, 10, 2, 1; 1998 SM₁₃₃ *, 8, 2,
1; 1998 SN₁₃₃ *, 10, 2, 1; 1998 SO₁₃₃ *, 9, 2, 1; 1998 SP₁₃₃ *, 9, 2, 1; 1998 SQ₁₃₃ *, 10, 2,
1; 1998 SR₁₃₃ *, 10, 2, 1; 1998 SS₁₃₃ *, 9, 2, 1; 1998 ST₁₃₃ *, 10, 2, 1; 1998 SU₁₃₃ *, 8, 2,
1; 1998 SV₁₃₃ *, 9, 2, 1; 1998 SW₁₃₃ *, 7, 2, 1; 1998 SX₁₃₃ *, 13, 3, 18; 1998 SY₁₃₃ *, 10,
2, 1; 1998 SZ₁₃₃ *, 10, 2, 1; 1998 SA₁₃₄ *, 8, 2, 1; 1998 SB₁₃₄ *, 10, 2, 1; 1998 SC₁₃₄ *, 10,
2, 1; 1998 SD₁₃₄ *, 8, 2, 1; 1998 SE₁₃₄ *, 10, 2, 1; 1998 SF₁₃₄ *, 10, 2, 1; 1998 SG₁₃₄ *, 10,
2, 1; 1998 SH₁₃₄ *, 10, 2, 1; 1998 SJ₁₃₄ *, 10, 2, 1; 1998 SK₁₃₄ *, 8, 2, 1; 1998 SL₁₃₄ *, 10,
2, 1; 1998 SM₁₃₄ *, 10, 2, 1; 1998 SN₁₃₄ *, 10, 2, 1; 1998 SO₁₃₄ *, 8, 2, 1; 1998 SP₁₃₄ *, 20,
4, 33; 1998 SQ₁₃₄ *, 8, 2, 1; 1998 SR₁₃₄ *, 9, 2, 1; 1998 SS₁₃₄ *, 9, 2, 1; 1998 ST₁₃₄ *, 9, 2,
1; 1998 SU₁₃₄ *, 9, 2, 1; 1998 SV₁₃₄ *, 10, 2, 1; 1998 SW₁₃₄ *, 9, 2, 1; 1998 SX₁₃₄ *, 10, 2,
1; 1998 SY₁₃₄ *, 9, 2, 1; 1998 SZ₁₃₄ *, 10, 2, 1; 1998 SA₁₃₅ *, 10, 2, 1; 1998 SB₁₃₅ *, 8, 2,
1; 1998 SC₁₃₅ *, 9, 2, 1; 1998 SD₁₃₅ *, 10, 2, 1; 1998 SE₁₃₅ *, 10, 2, 1; 1998 SF₁₃₅ *, 9, 2,
1; 1998 SG₁₃₅ *, 9, 2, 1; 1998 SH₁₃₅ *, 10, 2, 1; 1998 SJ₁₃₅ *, 10, 2, 1; 1998 SK₁₃₅ *, 9, 2,
1; 1998 SL₁₃₅ *, 10, 2, 1; 1998 SM₁₃₅ *, 10, 2, 1; 1998 SN₁₃₅ *, 10, 2, 1; 1998 SO₁₃₅ *, 18,
4, 33; 1998 SP₁₃₅ *, 10, 2, 1; 1998 SQ₁₃₅ *, 20, 4, 33; 1998 SR₁₃₅ *, 10, 2, 1; 1998 SS₁₃₅ *,
10, 2, 1; 1998 ST₁₃₅ *, 10, 2, 1; 1998 SU₁₃₅ *, 9, 2, 1; 1998 SV₁₃₅ *, 10, 2, 1; 1998 SW₁₃₅ *,
10, 2, 1; 1998 SX₁₃₅ *, 10, 2, 1; 1998 SY₁₃₅ *, 9, 2, 1; 1998 SZ₁₃₅ *, 9, 2, 1; 1998 SA₁₃₆ *,
19, 4, 33; 1998 SB₁₃₆ *, 10, 2, 1; 1998 SC₁₃₆ *, 10, 2, 1; 1998 SD₁₃₆ *, 8, 2, 1; 1998 SE₁₃₆ *,
9, 2, 1; 1998 SF₁₃₆ *, 10, 2, 1; 1998 SG₁₃₆ *, 10, 2, 1; 1998 SH₁₃₆ *, 10, 2, 1; 1998 SJ₁₃₆ *,
10, 2, 1; 1998 SK₁₃₆ *, 9, 2, 1; 1998 SL₁₃₆ *, 9, 2, 1; 1998 SM₁₃₆ *, 10, 2, 1; 1998 SN₁₃₆ *,
10, 2, 1; 1998 SO₁₃₆ *, 9, 2, 1; 1998 SP₁₃₆ *, 10, 2, 1; 1

2, 1; 1998 SE₁₄₁ *, 18, 2, 33; 1998 SF₁₄₁ *, 10, 2, 1; 1998 SG₁₄₁ *, 9, 2, 1; 1998 SH₁₄₁ *, 9, 2, 1; 1998 SJ₁₄₁ *, 10, 2, 1; 1998 SK₁₄₁ *, 10, 2, 1; 1998 SL₁₄₁ *, 7, 2, 1; 1998 SM₁₄₁ *, 9, 2, 1; 1998 SN₁₄₁ *, 9, 2, 1; 1998 SO₁₄₁ *, 8, 2, 1; 1998 SP₁₄₁ *, 14, 3, 19; 1998 SQ₁₄₁ *, 10, 2, 1; 1998 SR₁₄₁ *, 8, 2, 1; 1998 SS₁₄₁ *, 9, 2, 1; 1998 SU₁₄₁ *, 10, 2, 1; 1998 SV₁₄₁ *, 10, 2, 1; 1998 SW₁₄₁ *, 9, 2, 1; 1998 SX₁₄₁ *, 8, 2, 1; 1998 SY₁₄₁ *, 10, 2, 1; 1998 SZ₁₄₁ *, 10, 2, 1; 1998 SA₁₄₂ *, 10, 2, 1; 1998 SB₁₄₂ *, 9, 2, 1; 1998 SC₁₄₂ *, 9, 2, 1; 1998 SD₁₄₂ *, 10, 2, 1; 1998 SE₁₄₂ *, 9, 2, 1; 1998 SF₁₄₂ *, 9, 2, 1; 1998 SG₁₄₂ *, 7, 2, 1; 1998 SH₁₄₂ *, 10, 2, 1; 1998 SJ₁₄₂ *, 8, 2, 1; 1998 SK₁₄₂ *, 9, 2, 1; 1998 SL₁₄₂ *, 10, 2, 1; 1998 SM₁₄₂ *, 8, 2, 1; 1998 SN₁₄₂ *, 9, 2, 1; 1998 SO₁₄₂ *, 9, 2, 1; 1998 SP₁₄₂ *, 8, 2, 1; 1998 SQ₁₄₂ *, 9, 2, 1; 1998 SR₁₄₂ *, 9, 2, 1; 1998 SS₁₄₂ *, 10, 2, 1; 1998 ST₁₄₂ *, 8, 2, 1; 1998 SU₁₄₂ *, 10, 2, 1; 1998 SV₁₄₂ *, 10, 2, 1; 1998 SW₁₄₂ *, 10, 2, 1; 1998 SX₁₄₂ *, 8, 2, 1; 1998 SY₁₄₂ *, 8, 2, 1; 1998 SZ₁₄₂ *, 9, 2, 1; 1998 SA₁₄₃ *, 8, 2, 1; 1998 SB₁₄₃ *, 8, 2, 1; 1998 SC₁₄₃ *, 9, 2, 1; 1998 SD₁₄₃ *, 8, 2, 1; 1998 SE₁₄₃ *, 7, 2, 1; 1998 SF₁₄₃ *, 8, 2, 1; 1998 SG₁₄₃ *, 7, 2, 1; 1998 SH₁₄₃ *, 9, 2, 1; 1998 SJ₁₄₃ *, 9, 2, 1; 1998 SK₁₄₃ *, 8, 2, 1; 1998 SL₁₄₃ *, 9, 2, 1; 1998 SM₁₄₃ *, 9, 2, 1; 1998 SN₁₄₃ *, 8, 2, 1; 1998 SO₁₄₃ *, 18, 4, 33; 1998 SP₁₄₃ *, 18, 4, 33; 1998 SQ₁₄₃ *, 8, 2, 1; 1998 SR₁₄₃ *, 8, 2, 1; 1998 SS₁₄₃ *, 9, 2, 1; 1998 SU₁₄₃ *, 8, 2, 1; 1998 SV₁₄₃ *, 8, 2, 1; 1998 SW₁₄₃ *, 9, 2, 1; 1998 SX₁₄₃ *, 8, 2, 1; 1998 SY₁₄₃ *, 8, 2, 1; 1998 SZ₁₄₃ *, 9, 2, 1; 1998 SA₁₄₄ *, 8, 2, 1; 1998 SB₁₄₄ *, 8, 2, 1; 1998 SC₁₄₄ *, 8, 2, 1; 1998 SD₁₄₄ *, 9, 2, 1; 1998 SE₁₄₄ *, 18, 4, 33; 1998 SF₁₄₄ *, 9, 2, 1; 1998 SG₁₄₄ *, 9, 2, 1; 1998 SH₁₄₄ *, 9, 2, 1; 1998 SJ₁₄₄ *, 9, 2, 1; 1998 SK₁₄₄ *, 8, 2, 1; 1998 SL₁₄₄ *, 9, 2, 1; 1998 SM₁₄₄ *, 9, 2, 1; 1998 SN₁₄₄ *, 8, 2, 1; 1998 SO₁₄₄ *, 18, 4, 33; 1998 SP₁₄₄ *, 18, 4, 33; 1998 SQ₁₄₄ *, 8, 2, 1; 1998 SR₁₄₄ *, 8, 2, 1; 1998 SS₁₄₄ *, 9, 2, 1; 1998 SU₁₄₄ *, 8, 2, 1; 1998 SV₁₄₄ *, 8, 2, 1; 1998 SW₁₄₄ *, 9, 2, 1; 1998 SX₁₄₄ *, 8, 2, 1; 1998 SY₁₄₄ *, 8, 2, 1; 1998 SZ₁₄₄ *, 9, 2, 1; 1998 SA₁₄₅ *, 8, 2, 1; 1998 SB₁₄₅ *, 8, 2, 1; 1998 SC₁₄₅ *, 8, 2, 1; 1998 SD₁₄₅ *, 9, 2, 1; 1998 SE₁₄₅ *, 18, 4, 33; 1998 SF₁₄₅ *, 9, 2, 1; 1998 SG₁₄₅ *, 9, 2, 1; 1998 SH₁₄₅ *, 9, 2, 1; 1998 SJ₁₄₅ *, 9, 2, 1; 1998 SK₁₄₅ *, 8, 2, 1; 1998 SL₁₄₅ *, 9, 2, 1; 1998 SM₁₄₅ *, 9, 2, 1; 1998 SN₁₄₅ *, 8, 2, 1; 1998 SO₁₄₅ *, 18, 4, 33; 1998 SP₁₄₅ *, 18, 4, 33; 1998 SQ₁₄₅ *, 8, 2, 1; 1998 SR₁₄₅ *, 8, 2, 1; 1998 SS₁₄₅ *, 9, 2, 1; 1998 SU₁₄₅ *, 8, 2, 1; 1998 SV₁₄₅ *, 8, 2, 1; 1998 SW₁₄₅ *, 9, 2, 1; 1998 SX₁₄₅ *, 8, 2, 1; 1998 SY₁₄₅ *, 8, 2, 1; 1998 SZ₁₄₅ *, 9, 2, 1; 1998 SA₁₄₆ *, 8, 2, 1; 1998 SB₁₄₆ *, 8, 2, 1; 1998 SC₁₄₆ *, 8, 2, 1; 1998 SD₁₄₆ *, 9, 2, 1; 1998 SE₁₄₆ *, 18, 4, 33; 1998 SF₁₄₆ *, 9, 2, 1; 1998 SG₁₄₆ *, 9, 2, 1; 1998 SH₁₄₆ *, 9, 2, 1; 1998 SJ₁₄₆ *, 9, 2, 1; 1998 SK₁₄₆ *, 8, 2, 1; 1998 SL₁₄₆ *, 9, 2, 1; 1998 SM₁₄₆ *, 9, 2, 1; 1998 SN₁₄₆ *, 8, 2, 1; 1998 SO₁₄₆ *, 18, 4, 33; 1998 SP₁₄₆ *, 18, 4, 33; 1998 SQ₁₄₆ *, 8, 2, 1; 1998 SR₁₄₆ *, 8, 2, 1; 1998 SS₁₄₆ *, 9, 2, 1; 1998 SU₁₄₆ *, 8, 2, 1; 1998 SV₁₄₆ *, 8, 2, 1; 1998 SW₁₄₆ *, 9, 2, 1; 1998 SX₁₄₆ *, 8, 2, 1; 1998 SY₁₄₆ *, 8, 2, 1; 1998 SZ₁₄₆ *, 9, 2, 1; 1998 SA₁₄₇ *, 8, 2, 1; 1998 SB₁₄₇ *, 8, 2, 1; 1998 SC₁₄₇ *, 8, 2, 1; 1998 SD₁₄₇ *, 9, 2, 1; 1998 SE₁₄₇ *, 18, 4, 33; 1998 SF₁₄₇ *, 9, 2, 1; 1998 SG₁₄₇ *, 9, 2, 1; 1998 SH₁₄₇ *, 9, 2, 1; 1998 SJ₁₄₇ *, 9, 2, 1; 1998 SK₁₄₇ *, 8, 2, 1; 1998 SL₁₄₇ *, 9, 2, 1; 1998 SM₁₄₇ *, 9, 2, 1; 1998 SN₁₄₇ *, 8, 2, 1; 1998 SO₁₄₇ *, 18, 4, 33; 1998 SP₁₄₇ *, 18, 4, 33; 1998 SQ₁₄₇ *, 8, 2, 1; 1998 SR₁₄₇ *, 8, 2, 1; 1998 SS₁₄₇ *, 9, 2, 1; 1998 SU₁₄₇ *, 8, 2, 1; 1998 SV₁₄₇ *, 8, 2, 1; 1998 SW₁₄₇ *,

1998 NOV. 10

M.P.C. 32859

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(5512), 4, 1, 0; (5513), 5, 1, 0; (5525), 4, 1, 0; (5527), 5, 1, 0; (5529), 8, 2, 30; (5547), 10, 2, 16; (5550), 4, 1, 0; (5559), 4, 1, 0; (5561), 5, 1, 0; (5569), 14, 3, 15; (5573), 18, 4, 15; (5581), 15, 3, 14; (5586), 13, 3, 15; (5600), 5, 1, 0; (5605), 13, 3, 15; (5630), 4, 1, 0; (5631), 5, 1, 0; (5655), 20, 4, 15; (5658), 14, 3, 14; (5676), 18, 4, 30; (5678), 4, 1, 0; (5692), 14, 3, 14; (5694), 15, 3, 14; (5700), 4, 1, 0; (5701), 5, 1, 0; (5712), 4, 1, 0; (5730), 18, 4, 15; (5732), 5, 1, 0; (5734), 4, 1, 0; (5741), 10, 2, 1; (5750), 4, 1, 0; (5755), 10, 2, 16; (5757), 5, 1, 0; (5763), 19, 4, 15; (5769), 10, 2, 16; (5771), 5, 1, 0; (5779), 12, 3, 2; (5791), 5, 1, 0; (5800), 4, 1, 0; (5814), 5, 1, 0; (5826), 9, 2, 30; (5835), 19, 4, 15; (5841), 5, 1, 0; (5844), 4, 1, 0; (5854), 6, 2, 30; (5866), 4, 1, 0; (5919), 5, 1, 0; (5920), 3, 1, 0; (5958), 4, 1, 0; (5970), 20, 4, 15; (5985), 5, 1, 0; (6004), 19, 4, 15; (6018), 20, 4, 15; (6020), 20, 4, 15; (6035), 5, 1, 0; (6041), 20, 4, 15; (6043), 3, 1, 0; (6046), 15, 3, 14; (6058), 5, 1, 0; (6059), 7, 2, 2; (6065), 9, 2, 6; (6066), 5, 1, 0; (6069), 18, 4, 15; (6070), 20, 4, 15; (6073), 5, 1, 0; (6074), 9, 2, 31; (6081), 10, 2, 1; (6082), 5, 1, 0; (6093), 15, 3, 14; (6095), 5, 1, 0; (6096), 19, 4, 15; (6097), 14, 3, 15; (6100), 15, 3, 15; (6114), 14, 3, 3; (6118), 19, 4, 15; (6120), 13, 3, 30; (6122), 9, 2, 31; (6131), 5, 1, 0; (6132), 20, 4, 15; (6133), 19, 4, 15; (6135), 9, 2, 16; (6142), 10, 2, 1; (6145), 5, 1, 0; (6146), 4, 1, 0; (6147), 5, 1, 0; (6152), 2, 1, 0; (6154), 4, 1, 0; (6155), 5, 1, 0; (6162), 19, 4, 30; (6173), 5, 1, 0; (6189), 4, 1, 0; (6193), 5, 1, 0; (6195), 5, 1, 0; (6197), 4, 1, 0; (6201), 10, 2, 1; (6204), 18, 2, 1; (6208), 5, 1, 0; (6211), 5, 1, 0; (6213), 4, 1, 0; (6216), 17, 4, 30; (6228), 5, 1, 0; (6230), 14, 3, 14; (6233), 5, 1, 0; (6254), 19, 4, 15; (6255), 4, 1, 0; (6256), 9, 2, 1; (6262), 32, 6, 30; (6265), 4, 1, 0; (6273), 4, 1, 0; (6275), 5, 1, 0; (6284), 5, 1, 0; (6286), 9, 2, 14; (6289), 4, 1, 0; (6299), 4, 1, 0; (6301), 5, 1, 0; (6306), 5, 1, 0; (6323), 5, 1, 0; (6325), 5, 1, 0; (6341), 13, 3, 15; (6342), 5, 1, 0; (6343), 10, 2, 1; (6355), 21, 5, 30; (6359), 4, 1, 0; (6365), 5, 1, 0; (6366), 5, 1, 0; (6371), 5, 1, 0; (6372), 5, 1, 0; (6374), 4, 1, 0; (6383), 5, 1, 0; (6390), 14, 3, 15; (6392), 8, 2, 31; (6393), 5, 1, 0; (6394), 5, 1, 0; (6415), 9, 2, 1; (6416), 20, 4, 15; (6419), 9, 2, 16; (6425), 8, 2, 30; (6428), 4, 1, 0; (6482), 8, 2, 14; (6485), 8, 2, 27; (6504), 5, 1, 0; (6506), 5, 1, 0; (6535), 5, 1, 0; (6541), 20, 4, 15; (6562), 5, 1, 0; (6563), 5, 1, 0; (6629), 10, 2, 1; (6669), 23, 5, 30; (6679), 10, 2, 1; (6690), 10, 2, 1; (6713), 20, 4, 15; (6714), 4, 1, 0; (6728), 5, 1, 0; (6735), 15, 3, 14; (6741), 4, 1, 0; (6743), 5, 1, 0; (6744), 5, 1, 0; (6753), 4, 1, 0; (6762), 10, 2, 1; (6764), 15, 3, 14; (6765), 19, 4, 15; (6768), 5, 1, 0; (6769), 3, 1, 0; (6774), 3, 1, 0; (6780), 5, 1, 0; (6787), 19, 4, 15; (6790), 3, 1, 0; (6792), 5, 2, 1; (6804), 15, 3, 14; (6807), 15, 3, 15; (6817), 20, 4, 15; (6818), 9, 2, 31; (6827), 5, 1, 0; (6837), 10, 2, 16; (6841), 9, 2, 1; (6843), 15, 3, 15; (6844), 14, 3, 15; (6846), 9, 2, 1; (6849), 13, 3, 30; (6852), 10, 2, 1; (6853), 9, 2, 30; (6864), 13, 3, 15; (6865), 14, 3, 14; (6868), 18, 4, 15; (6871), 5, 1, 0; (6877), 4, 1, 0; (6878), 12, 3, 30; (6884), 5, 1, 0; (6886), 5, 1, 0; (6887), 4, 1, 0; (6888), 19, 4, 15; (6891), 8, 2, 1; (6893), 10, 2, 16; (6897), 13, 3, 15; (6900), 4, 1, 0; (6902), 20, 4, 15; (6904), 20, 4, 15; (6916), 4, 1, 0; (6919), 5, 1, 0; (6920), 10, 2, 14; (6935), 13, 3, 15; (6936), 23, 5, 30; (6939), 5, 1, 0; (6948), 4, 1, 0; (6950), 4, 1, 0; (6951), 8, 2, 1; (6953), 5, 1, 0; (6955), 14, 3, 30; (6959), 8, 2, 16; (6967), 5, 1, 0; (6968), 4, 1, 0; (6972), 13, 3, 30; (6973), 4, 1, 0; (6980), 14, 3, 15; (6983), 5, 1, 0; (6985), 4, 1, 0; (6987), 18, 4, 15; (6993), 8, 2, 1; (6994), 18, 4, 15; (7010), 4, 1, 0; (7022), 10, 2, 30; (7024), 14, 3, 30; (7029), 5, 1, 0; (7036), 10, 2, 16; (7037), 10, 2, 16; (7043), 10, 2, 1; (7045), 4, 1, 0; (7046), 4, 1, 0; (7048), 10, 2, 1; (7060), 20, 4, 15; (7067), 5, 1, 0; (7099), 9, 2, 30; (7105), 5, 1, 0; (7119), 8, 2, 16; (7147), 5,

1, 0; (7152), 5, 1, 0; (7165), 10, 2, 16; (7172), 4, 1, 0; (7176), 5, 1, 0; (7179), 10, 2, 1; (7205), 5, 1, 0; (7209), 5, 1, 0; (7222), 39, 5, 27; (7274), 5, 1, 0; (7294), 13, 3, 15; (7308), 10, 2, 16; (7317), 10, 2, 1; (7354), 4, 1, 0; (7361), 15, 3, 15; (7362), 14, 3, 15; (7363), 20, 4, 15; (7368), 5, 1, 0; (7382), 38, 5, 27; (7400), 5, 1, 0; (7439), 5, 1, 0; (7459), 9, 2, 14; (7462), 4, 1, 0; (7471), 5, 1, 0; (7477), 5, 1, 0; (7509), 10, 2, 12; (7514), 9, 2, 1; (7516), 19, 4, 15; (7531), 19, 4, 15; (7537), 20, 4, 15; (7580), 20, 4, 15; (7584), 15, 3, 15; (7594), 5, 1, 0; (7601), 10, 2, 13; (7602), 5, 1, 0; (7611), 9, 2, 3; (7614), 4, 1, 0; (7641), 5, 1, 0; (7653), 5, 1, 0; (7655), 20, 4, 15; (7660), 4, 1, 0; (7663), 3, 1, 0; (7667), 5, 1, 0; (7677), 10, 2, 1; (7686), 5, 1, 0; (7687), 5, 1, 0; (7688), 20, 4, 15; (7690), 12, 3, 30; (7695), 4, 1, 0; (7702), 5, 1, 0; (7704), 4, 1, 0; (7715), 4, 1, 0; (7716), 5, 1, 0; (7721), 19, 4, 15; (7726), 5, 1, 0; (7727), 14, 3, 14; (7729), 4, 1, 0; (7735), 4, 1, 0; (7739), 5, 1, 0; (7740), 18, 4, 30; (7758), 15, 3, 14; (7760), 4, 1, 0; (7764), 5, 1, 0; (7768), 24, 5, 30; (7773), 20, 4, 15; (7776), 5, 1, 0; (7779), 5, 1, 0; (7780), 5, 1, 0; (7786), 19, 4, 15; (7791), 9, 2, 1; (7792), 15, 3, 15; (7798), 15, 3, 13; (7799), 5, 1, 0; (7804), 10, 2, 16; (7805), 9, 2, 30; (7807), 5, 1, 0; (7808), 4, 1, 0; (7810), 4, 1, 0; (7812), 10, 2, 30; (7817), 5, 1, 0; (7826), 13, 3, 14; (7828), 4, 1, 0; (7830), 13, 3, 31; (7831), 20, 2, 1; (7835), 9, 2, 30; (7836), 20, 4, 15; (7843), 4, 1, 0; (7846), 9, 2, 1; (7852), 5, 1, 0; (7862), 2, 1, 0; (7878), 4, 1, 0; (7895), 5, 1, 0; (7896), 9, 2, 30; (7898), 9, 2, 31; (7901), 5, 1, 0; (7902), 14, 3, 15; (7903), 5, 1, 0; (7904), 20, 4, 15; (7905), 5, 1, 0; (7935), 5, 1, 0; (7942), 10, 2, 16; (7960), 4, 1, 0; (7996), 4, 1, 0; (8027), 4, 1, 0; (8045), 5, 1, 0; (8048), 16, 4, 30; (8049), 10, 2, 1; (8074), 5, 1, 0; (8084), 5, 1, 0; (8085), 4, 1, 0; (8086), 5, 1, 0; (8186), 5, 1, 0; (9000), 4, 1, 0; (9021), 4, 1, 0; (9143), 19, 4, 15; (9147), 25, 5, 15; (9154), 5, 1, 0; (9156), 9, 2, 1; (9167), 10, 2, 1; (9198), 15, 3, 14; (9199), 5, 1, 0; (9200), 20, 4, 15; (9204), 5, 1, 0; (9206), 20, 4, 15; (9216), 5, 1, 0; (9223), 4, 1, 0; (9253), 3, 1, 0; (9254), 15, 3, 14; (9255), 10, 2, 1; (9260), 10, 2, 1; (9261), 17, 4, 15; (9262), 10, 2, 1; (9263), 4, 1, 0; (9264), 10, 2, 1; (9271), 10, 2, 1; (9272), 20, 4, 15; (9276), 20, 3, 16; (9277), 3, 1, 0; (9282), 10, 2, 1; (9285), 9, 2, 1; (9288), 10, 2, 1; (9289), 10, 2, 16; (9290), 20, 4, 15; (9295), 19, 4, 15; (9296), 10, 2, 1; (9297), 19, 4, 27; (9298), 18, 4, 15; (9299), 10, 2, 1; (9300), 5, 1, 0; (9302), 19, 4, 15; (9307), 10, 2, 16; (9314), 14, 3, 15; (9322), 19, 4, 15; (9324), 10, 2, 1; (9325), 9, 2, 1; (9333), 5, 1, 0; (9338), 10, 2, 1; (9340), 8, 2, 1; (9348), 14, 3, 13; (9354), 4, 1, 0; (9358), 13, 3, 2; (9361), 9, 2, 1; (9362), 15, 3, 2; (9363), 4, 1, 0; (9364), 8, 3, 2; (9369), 18, 4, 15; (9370), 8, 2, 30; (9374), 10, 2, 1; (9376), 10, 2, 1; (9379), 14, 3, 14; (9387), 5, 1, 0; (9390), 20, 4, 15; (9392), 20, 4, 15; (9401), 5, 1, 0; (9403), 10, 2, 1; (9406), 18, 4, 15; (9407), 10, 2, 1; (9408), 3, 1, 0; (9414), 3, 1, 0; (9415), 19, 4, 15; (9419), 10, 2, 1; (9420), 20, 4, 15; (9421), 13, 3, 19; (9424), 3, 1, 0; (9425), 9, 2, 16; (9431), 9, 2, 14; (9438), 5, 1, 0; (9443), 20, 4, 15; (9445), 10, 2, 1; (9447), 5, 1, 0; (9478), 4, 1, 0; (9481), 13, 2, 16; (9489), 8, 2, 1; (9493), 10, 2, 1; (9496), 10, 2, 1; (9500), 8, 2, 1; (9501), 10, 2, 1; (9502), 4, 1, 0; (9507), 4, 1, 0; (9509), 8, 2, 1; [63496, 5864, 2901*, 1998/08/25–1998/10/30]

705 Apache Point

B. Gladman, Institute for Theoretical Astrophysics, 60 Saint George Street,
Toronto, ON M5S 1A7, Canada [gladman@cita.utoronto.ca]

Observers S. Tremaine, M. Holman, B. Gladman, W. Offutt, B. Gillespie,
C. Hastings, K. Gloria

3.5-m reflector + CCD

1993 SC, 2, 1, 0; 1995 QY₉, 2, 1, 0; 1996 RQ₂₀, 5, 2, 1; 1996 SZ₄, 3, 2, 1; 1996 TK₆₆, 2, 1, 0;
1996 TQ₆₆, 5, 2, 1; 1996 TS₆₆, 4, 2, 1; 1997 CS₂₉, 2, 2, 1; [25, 8, 0*, 1998/10/17–1998/10/18]

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

1994 PO₃₂, 5, 2, 7; 1998 SN₁₁₆, 7, 2, 1; 1998 UQ, 2, 1, 0; [14, 3, 0*, 1998/10/13–1998/10/29]

714 Bagdad

J. R. Bruton, Bagdad Observatory, P.O. Box 1191, Bagdad, AZ 86321, U.S.A.

[jbruton1@juno.com]

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

GSC

(5738), 4, 2, 2; (7834), 4, 2, 1; [8, 2, 0*, 1998/10/16–1998/10/20]

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

(1036), 4, 2, 3; [4, 1, 0*, 1998/10/25–1998/10/28]

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

(456), 6, 1, 0; (497), 5, 1, 0; (576), 7, 1, 0; (1538), 4, 1, 0; (1828), 6, 2, 47; (2355), 3, 1, 0; (5186), 3, 1, 0; [34, 7, 0*, 1998/08/12–1998/09/28]

721 Lime Creek

R. 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, 3, 1, 0; [5, 2, 0*, 1998/10/18–1998/10/19]

725 Fair Oaks Ranch

J. V. McClusky, McClusky Observatory, 31789 Sunland, Fair Oaks Ranch, TX 78015, U.S.A. [mcclusky@lonestar.utsa.edu]

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

USNO-SA1.0

1993 FH₂₀, 3, 1, 0; 1995 AV₄, 7, 2, 10; 1998 QY₃₇, 7, 2, 10; 1998 QZ₃₉, 3, 1, 0; 1998 QQ₄₅, 9, 2, 10; 1998 SD₁₃₁, 3, 1, 0; 6063 P-L, 6, 2, 10; [38, 7, 0*, 1998/10/13–1998/10/23]

727 Zeno Observatory, Edmond

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

[tstaffor@aig.vialink.com]

0.15-m $f/6$ refractor + CCD

GSC

1981 EW₂₄, 3, 1, 0; 1998 RS, 12, 4, 21; 1998 SK₂, 12, 4, 21; 1998 UZ *, 13, 5, 11; 1998 UA₁ *, 15, 5, 11; (7024), 3, 1, 0; (9298), 3, 1, 0; [61, 7, 2*, 1998/10/09–1998/10/30]

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 + CCD

1981 EF₂₅, 6, 2, 1; 1981 TP, 6, 2, 1; 1998 ST, 3, 1, 0; 1998 SF₁₄₁, 6, 2, 1; (281), 6, 2, 1; (4115), 6, 2, 1; (4184), 3, 1, 0; (4416), 3, 1, 0; [39, 8, 0*, 1998/10/23–1998/10/24]

734 Farpoint Observatory, Eskridge

G. Hug, RTE 1 Box 35c, Eskridge, KS 66423, U.S.A. [frogstar@inlandnet.net]

Observers G. Hug, G. Bell

Measurer G. Hug

0.30-m Schmidt-Cassegrain + CCD

GSC

1973 SO₁, 6, 2, 2; 1987 SG₃, 6, 2, 2; 1988 GF, 6, 2, 2; 1990 QJ₄, 5, 2, 2; 1990 VW₈, 6, 2, 2; 1994 NF₁, 6, 2, 2; 1996 AP₂, 8, 3, 4; 1998 QQ₄₅, 3, 1, 0; 1998 SJ₇₀, 2, 1, 0; 1998 SN₉₃, 4, 1, 0; 1998 SD₁₃₁, 3, 1, 0; 1998 SZ₁₃₈, 2, 1, 0; 1998 UQ, 3, 1, 0; 1998 UD₁, 3, 1, 0; 1998 UT₁₈, 3, 1, 0; (3603), 6, 2, 1; (3750), 6, 2, 1; (4058), 6, 2, 1; (4202), 6, 2, 1; (4942), 6, 2, 1; (7942), 6, 2, 1; [102, 21, 0*, 1998/10/10–1998/10/30]

735 George Observatory, Needville

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

[bdillon@houston.geoquest.slb.com]

Observers W. G. Dillon, K. Rivich

Measurer W. G. Dillon

0.46-m reflector + CCD

USNO-A1.0

1998 SH₄, 2, 1, 0; 1998 SJ₄, 3, 1, 0; [5, 2, 0*, 1998/10/10]

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

1997 GX₂₂, 3, 1, 0; 1998 SW₁₄₅, 14, 5, 7; 1998 SX₁₄₅, 3, 1, 0; (4079), 3, 1, 0; (5841), 2, 1, 0; [25, 5, 0*, 1998/10/22–1998/10/29]

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

1998 RH₇₄, 3, 1, 0; (285), 5, 2, 1; (307), 6, 2, 1; (310), 6, 2, 1; (325), 9, 3, 2; (358), 3, 1, 0; (414), 9, 3, 2; (453), 13, 4, 4; (487), 6, 2, 1; (497), 5, 2, 2; (521), 3, 1, 0; (568), 6, 2, 1; (572), 6, 2, 1; (576), 6, 2, 1; (577), 5, 2, 1; (642), 6, 2, 1; (674), 3, 1, 0; (721), 6, 2, 1; (759), 6, 2, 1; (803), 3, 1, 0; (861), 6, 2, 1; (936), 6, 2, 1; (971), 6, 2, 1; (980), 3, 1, 0; (1036), 5, 1, 0; (1059), 11, 3, 11; (1115), 6, 2, 1; (1117), 5, 2, 1; (1188), 3, 1, 0; (1225), 6, 2, 1; (1249), 9, 3, 2; (1481), 6, 2, 1; (1508), 3, 1, 0; (1635), 3, 1, 0; (2257), 8, 3, 2; (2294), 5, 2, 1; (2379), 5, 2, 1; (2892), 6, 2, 1; (5455), 4, 1, 0; [221, 39, 0*, 1998/10/06–1998/10/20]

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

1980 BA, 6, 2, 1; 1984 MQ, 5, 2, 1; 1989 TB₁₁, 6, 2, 2; 1993 FX₇₉, 6, 2, 2; 1993 LU₁, 6, 2, 3; 1996 EJ, 6, 2, 1; 1997 NZ, 6, 2, 2; 1997 NG₃, 6, 2, 3; 2079 P-L, 5, 2, 2; 6039 P-L, 3, 1, 0; (1313), 5, 2, 8; (1498), 6, 2, 8; (1574), 5, 2, 8; (1712), 6, 2, 8; (1796), 5, 2, 8; (2266), 4, 2, 8; [86, 16, 0*, 1998/09/24–1998/10/27]

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 W. Osborn, D. Ferrer, R. Miller

Measurers W. Osborn, D. Ferrer

0.40-m $f/12$ Cassegrain reflector + CCD, 0.20-m $f/10$ Schmidt-Cassegrain + CCD

USNO-A1.0

1981 EJ₅, 8, 2, 1; 1982 UE₁₂, 4, 2, 1; (122), 2, 1, 0; (171), 3, 1, 0; (1004), 4, 2, 1; [21, 5, 0*, 1995/06/21–1998/10/10]

747 Baton Rouge Observatory

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

[walt@sprintmail.com]

Observers W. R. Cooney, R. Miller, T. G. Guzik, K. Guzik, C. Myers

Measurer W. R. Cooney

0.51-m $f/8.4$ reflector + CCD

USNO-A2.0

1988 BY₃, 5, 1, 0; 1991 CO₁, 5, 1, 0; 1991 UR₁, 6, 2, 2; 1995 UD₄, 7, 2, 2; 1998 SH₄, 1, 1, 0; 1998 SJ₄, 2, 1, 0; 1998 SG₂₇, 4, 2, 2; 1998 SK₃₅, 10, 4, 17; 1998 SL₃₅, 12, 4, 17; 1998 SD₁₃₁, 3, 1, 0; 1998 SZ₁₃₈, 3, 1, 0; 1998 UD₁₅ *, 11, 3, 3; (4803), 5, 1, 0; [74, 13, 1*, 1998/10/09–1998/10/27]

749 Oakwood

J. A. Howell, 4046 Lyman Way, Gainesville, GA 30507, U.S.A.

[andyho@mindspring.com]

0.46-m $f/4.4$ Newtonian reflector + CCD

GSC

1996 AL₂, 5, 2, 1; 1998 SW₁₄₅, 6, 2, 1; 1998 SX₁₄₅, 8, 2, 6; 6628 P-L, 4, 1, 0; [23, 4, 0*, 1998/10/23–1998/11/07]

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 KU₂, 2, 1, 0; 1998 PG, 10, 4, 11; (778), 2, 1, 0; (1036), 2, 1, 0; (1373), 8, 2, 21; (1508), 2, 1, 0; (7358), 5, 2, 1; [31, 7, 0*, 1998/10/13–1998/11/03]

755 Optec Observatory

G. Persha, Optec, Inc., 199 Smith St., Lowell, MI 49331, U.S.A.

[71267.476@compuserve.com]

0.25-m $f/6.3$ Schmidt-Cassegrain + CCD + focal reducer + Wratten 21A filter

GSC

1986 QL₂, 3, 1, 0; [3, 1, 0*, 1998/10/23]

757 High Point

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0.25-m Schmidt-Cassegrain + CCD

USNO-A1.0

1985 SX₂, 4, 2, 1; 1989 AT, 4, 2, 1; 1989 RX, 6, 3, 18; 1991 UR, 1, 1, 0; 1994 PS₁₁, 2, 1, 0; 1997 GR₂₄, 2, 1, 0; 1998 QM₉₉, 2, 1, 0; (453), 2, 1, 0; (721), 2, 1, 0; (1036), 2, 1, 0; (1388), 2, 1, 0; (1508), 2, 1, 0; (3368), 2, 1, 0; (3750), 4, 2, 2; (4058), 2, 1, 0; (4339), 2, 1, 0; (4436), 2, 1, 0; (5051), 2, 1, 0; (5064), 2, 1, 0; (5434), 2, 1, 0; (7641), 4, 2, 1; (9083), 2, 1, 0; (9262), 2, 1, 0; (9264), 2, 1, 0; [59, 24, 0*, 1998/10/10–1998/11/08]

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0.30-m $f/5$ Maksutov + CCD

GSC

1978 WU, 3, 1, 0; 1982 UE₇, 4, 1, 0; 1983 TU₁, 7, 2, 3; 1984 SA, 7, 2, 1; 1987 SX₁₇, 7, 2, 3; 1988 RQ₂, 3, 1, 0; 1991 RE₁₁, 14, 4, 18; 1991 UB₃, 3, 1, 0; 1991 UE₃, 7, 2, 1; 1992 EA₆, 3, 1, 0; 1993 FE₇₆, 11, 3, 2; 1993 LU₁, 6, 2, 1; 1993 VV₄, 3, 1, 0; 1994 YJ₁, 5, 2, 1; 1995 BY, 11, 3, 2; 1996 BL₂, 3, 1, 0; 1998 MK₃₀, 6, 2, 2; 1998 PG, 10, 3, 4; 1998 QK₅₆, 3, 1, 0; 1998 QT₆₀, 5, 1, 0; 1998 QX₇₇, 3, 1, 0; 1998 SA₇₃, 17, 5, 4; 1998 SS₁₃₈, 13, 3, 2; 1998 TT₃, 4, 1, 0; 1998 TU₃, 6, 1, 0; 1998 TS₁₉, 11, 3, 2; 1998 UQ, 6, 2, 2; 1998 UV₈, 10, 3, 2; 1998 UF₁₅ *, 37, 10, 15; 1998 VH *, 7, 2, 1; 1998 VJ *, 7, 2, 1; (1036), 4, 1, 0; (3289), 11, 2, 1; (3797), 8, 2, 1; (5164), 2, 1, 0; (5732), 3, 1, 0; (9261), 4, 1, 0; [274, 37, 3*, 1998/10/06–1998/11/09]

761 Zephyrhills

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0.178-m $f/9.45$ reflector + CCD

GSC

1971 UN, 4, 2, 1; 1976 YF₃, 4, 2, 1; 1981 EW₂₄, 3, 2, 1; 1981 RB₂, 4, 2, 2; 1981 UO₁₁, 4, 2, 1; 1984 MQ, 4, 2, 1; 1985 SM₂, 4, 2, 1; 1989 RD₁, 4, 2, 1; 1991 RR₁₀, 2, 1, 0; 1991 UK₁, 4, 2, 1; 1991 UE₅, 4, 2, 1; 1991 VG₃, 4, 2, 1; 1992 CG₃, 2, 1, 0; 1992 EK₁₄, 4, 2, 1; 1992 FV₁, 2, 1, 0; 1993 FG₈, 3, 2, 1; 1994 PJ₂, 2, 1, 0; 1994 RV, 4, 2, 1; 1994 RJ₁₁, 4, 2, 1; 1994 WN₃, 2, 1, 0; 1996 EJ, 2, 1, 0; 1997 GA₃₈, 2, 1, 0; 1998 PG, 4, 2, 1; 1998 QJ₉₉, 2, 1, 0; 1998 RR₂, 4, 2, 2; 1998 SD₅₈, 2, 1, 0; 1998 UQ, 3, 1, 0; 1998 VA *, 9, 3, 2; (1225), 2, 1, 0; (1508), 2, 1, 0; (2099), 2, 1, 0; (2915), 4, 2, 1; (3750), 2, 1, 0; (3786), 4, 2, 1; (3955), 4, 2, 1; (4058), 8, 4, 22; (4268), 2, 1, 0; (4339), 2, 1, 0; (4558), 4, 2, 1; (4816), 2, 1, 0; (4834), 4, 2, 6; (5367), 7, 3, 7; (5402), 2, 1, 0; (5434), 2, 1, 0; (6066), 4, 2, 1; (6082), 6, 3, 15; (6254), 4, 2, 20; (6326), 2, 1, 0; (6338), 4, 2, 1; (6618), 2, 1, 0; (7201), 4, 2, 1; (7344), 2, 1, 0; [177, 52, 1*, 1998/10/04–1998/11/09]

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Observers G. Pizarro, O. Pizarro

Measurers E. W. Elst

1.0-m Schmidt

(4) 1973 SG₅, 6, 2, 2; 1979 ML₅, 6, 2, 1; 1981 EF₂₅, 3, 1, 0; 1981 EO₂₆, 6, 2, 2; 1981 EP₂₇, 6, 2, 1; 1981 SA₇, 6, 2, 1; 1981 TP, 6, 2, 2; 1982 UE₇, 6, 2, 2; 1987 WJ₁, 6, 2, 2; 1988 AX₄, 6, 2, 2; 1988 FM, 6, 2, 2; 1988 RY₅, 6, 2, 1; 1990 VP₆, 6, 2, 2; 1990 WU₅, 6, 2, 2; 1991 GP₃, 6, 2, 1; 1991 PR₁₆, 6, 2, 1; 1991 RL₈, 6, 2, 2; 1991 RJ₄₁, 6, 2, 2; 1991 TH₁, 3, 1, 0; 1991 VZ₂, 6, 2, 2; 1992 BZ, 6, 2, 2; 1992 SF₁₁, 6, 2, 2; 1993 FQ₈, 6, 2, 1; 1993 UK₉ *, 3, 1, 0; 1994 PD₁₈, 12, 3, 3; 1994 PY₂₁, 6, 2, 1; 1994 TK₁₁, 6, 2, 2; 1994 VB, 6, 2, 1; 1994 YJ₁, 6, 2, 2; 1995 BY, 6, 2, 1; 1995 BQ₈, 6, 2, 2; 1995 WS₇, 6, 2, 1; 1996 AV₁, 6, 2, 1; 1996 DK₁, 6, 2, 1; 1996 DD₃, 6, 2, 2; 1996 HR₁₀, 6, 2, 1; 1997 ES₂, 6, 2, 2; 1997 FQ₃, 6, 2, 2; 1997 FX₃, 6, 2, 2; 1997 GQ₆, 6, 2, 1; 1997 GM₂₂, 6, 2, 2; 1997 GX₂₂, 6, 2, 1; 1997 GR₂₄, 6, 2, 2; 1997 GA₃₈, 12, 4, 5; 1997 JF₁₆, 6, 2, 1; 1998 QF₉₂, 6, 2, 1; 1998 QG₉₂, 6, 2, 1; 1998 QJ₉₂, 6, 2, 1; 1998 QP₉₂, 6, 2, 1; 1998 QM₉₈, 6, 2, 1; 1998 RM₆, 6, 2, 1; 1998 SA, 6, 2, 1; 1998 SP, 6, 2, 2; 1998 SQ, 6, 2, 2; 1998 ST, 6, 2, 2; 1998 SW, 12, 3, 3; 1998 SX, 6, 2, 1; 1998 SY, 12, 3, 3; 1998 SA₁, 6, 2, 1; 1998 SE₁, 6, 2, 1; 1998 SG₁, 3, 1, 0; 1998 SK₁, 6, 2, 1; 1998 SM₁, 6, 2, 1; 1998 SN₁, 3, 1, 0; 1998 SO₁, 6, 2, 1; 1998 SR₃, 6, 2, 2; 1998 SA₄, 6, 2, 1; 1998 SB₄, 6, 2, 1; 1998 SC₄, 6, 2, 1; 1998 SZ₁₃, 3, 1, 0; 1998 SV₁₄, 3, 1, 0; 1998 SV₂₂, 6, 2, 1; 1998 SZ₂₄, 6, 2, 1; 1998 SA₂₅, 6, 2, 1; 1998 SA₂₈, 6, 2, 2; 1998 SB₂₈, 6, 2, 2; 1998 SC₂₈, 6, 2, 2; 1998 SA₃₆, 6, 2, 2; 1998 SC₄₆, 3, 1, 0; 1998 SE₄₆, 3, 1, 0; 1998 SM₄₆, 6, 2, 1; 1998 SF₄₉, 6, 2, 1; 1998 SM₄₉, 6, 2, 2; 1998 SO₄₉, 6, 2, 2; 1998 SP₄₉, 6, 2, 2; 1998 SV₆₃ *, 9, 2, 1; 1998 SW₆₃ *, 6, 2, 1; 1998 SX₆₃ *, 6, 2, 1; 1998 SY₆₃ *, 12, 3, 3; 1998 SZ₆₃ *, 12, 3, 3; 1998 SA₆₄ *, 6, 2, 1; 1998 SB₆₄ *, 9, 3, 3; 1998 SC₆₄ *, 6, 2, 1; 1998 SD₆₄ *, 6, 2, 1; 1998 SE₆₄ *, 6, 2, 1; 1998 SF₆₄ *, 6, 2, 1; 1998 SG₆₄ *, 6, 2, 1; 1998 SH₆₄ *, 6, 2, 1; 1998 SJ₆₄ *, 6, 2, 1; 1998 SK₆₄ *, 6, 2, 1; 1998 SL₆₄ *, 6, 2, 1; 1998 SM₆₄ *, 6, 2, 1; 1998 SN₆₄ *, 6, 2, 1; 1998 SO₆₄ *, 12, 2, 1; 1998 SP₆₄ *, 6, 2, 1; 1998 SQ₆₄ *, 12, 2, 1; 1998 SR₆₄ *, 6, 2, 1; 1998 SS₆₄ *, 6, 2, 1; 1998 ST₆₄ *, 6, 2, 1; 1998 SU₆₄ *, 6, 2, 1; 1998 SV₆₄ *, 6, 2, 1; 1998 SW₆₄ *, 6, 2, 1; 1998 SX₆₄ *, 6, 2, 1; 1998 SY₆₄ *, 6, 2, 1; 1998 SZ₆₄ *, 6, 2, 1; 1998 SA₆₅ *, 6, 2, 1; 1998 SB₆₅ *, 6, 2, 1; 1998 SC₆₅ *, 6, 2, 1; 1998 SD₆₅ *, 6, 2, 1; 1998 SE₆₅ *, 6, 2, 1; 1998 SF₆₅ *, 6, 2, 1; 1998 SG₆₅ *, 6, 2, 1; 1998 SH₆₅ *, 6, 2, 1; 1998 SJ₆₅ *, 6, 2, 1; 1998 SK₆₅ *, 6, 2, 1; 1998 SL₆₅ *, 6, 2, 1; 1998 SM₆₅ *, 6, 2, 1; 1998 SN₆₅ *, 6, 2, 1; 1998 SO₆₅ *, 6, 2, 1; 1998 SP₆₅ *, 6, 2, 1; 1998 SQ₆₅ *, 6, 2, 1; 1998 SR₆₅ *, 6, 2, 1; 1998 SS₆₅ *, 6, 2, 1; 1998 ST₆₅ *, 6, 2, 1; 1998 SU₆₅ *, 6, 2, 1; 1998 SV₆₅ *, 6, 2, 1; 1998 SW₆₅ *, 6, 2, 1; 1998 SX₆₅ *, 6, 2, 1; 1998 SY₆₅ *, 6, 2, 1; 1998 SZ₆₅ *, 6, 2, 1; 1998 SA₆₆ *, 6, 2, 1; 1998 SB₆₆ *, 6, 2, 1; 1998 SC₆₆ *, 6, 2, 1; 1998 SD₆₆ *, 6, 2, 1; 1998 SE₆₆ *, 6, 2, 1; 1998 SF₆₆ *, 6, 2, 1; 1998 SG₆₆ *, 6, 2, 1; 1998 SH₆₆ *, 6, 2, 1; 1998 SJ₆₆ *, 6, 2, 1; 1998 SK₆₆ *, 6, 2, 1; 1998 SL₆₆ *, 6, 2, 1; 1998 SM₆₆ *, 6, 2, 1; 1998 SN₆₆ *, 9, 2, 1; 1998 SO₆₆ *, 6, 2, 1; 1998 SP₆₆ *, 6, 2, 1; 1998 SQ₆₆ *, 6, 2, 1; 1998 SR₆₆ *, 12, 2, 1; 1998 SS₆₆ *, 6, 2, 1; 1998 ST₆₆ *, 12, 2, 1; 1998 SU₆₆ *, 6, 2, 1; 1998 SV₆₆ *, 6, 2, 1; 1998 SW₆₆ *, 6, 2, 1; 1998 SX₆₆ *, 6, 2, 1; 1998 SY₆₆ *, 6, 2, 1; 1998 SZ₆₆ *, 6, 2, 1; 1998 SA₆₇ *, 6, 2, 1; 1998 SB₆₇ *, 6, 2, 1; 1998 SC₆₇ *, 6, 2, 1; 1998 SD₆₇ *, 6, 2, 1; 1998 SE₆₇ *, 6, 2, 1; 1998 SF₆₇ *, 6, 2, 1; 1998 SG₆₇ *, 6, 2, 1; 1998 SH₆₇ *, 6, 2, 1; 1998 SJ₆₇ *, 6, 2, 1; 1998 SK₆₇ *, 6, 2, 1; 1998 SL₆₇ *, 6, 2, 1; 1998 SM₆₇ *, 6, 2, 1; 1998 SN₆₇ *, 6, 2, 1; 1998 SO₆₇ *, 6, 2, 1; 1998 SP₆₇ *, 6, 2, 1; 1998 SQ₆₇ *, 6, 2, 1; 1998 SR₆₇ *, 6, 2, 1; 1998 SS₆₇ *, 6, 2, 1; 1998 ST₆₇ *, 6, 2, 1; 1998 SU₆₇ *, 6, 2, 1; 1998 SK₇₀ *, 6, 2, 2; 1998 SL₇₀ *, 6, 2, 2; 1998 SM₇₀ *, 6, 2, 2; 1998 SN₇₀ *, 6, 2, 2; 1998 SO₇₀ *, 6, 2, 2; 1998 SP₇₀ *, 6, 2, 2; 1998 SQ₇₀ *, 6, 2, 2; 1998 SR₇₀ *, 6, 2, 2; 1998 SS₇₀ *, 6, 2, 2; 1998 ST₇₀ *, 6, 2, 2; 1998 SU₇₀ *, 6, 2, 2; 1998 SV₇₀ *, 6, 2, 2; 1998 SW₇₀ *, 6, 2, 2; 1998 SX₇₀ *, 6, 2, 2; 1998 SY₇₀ *, 6, 2, 2; 1998 SZ₇₀ *, 6, 2, 2; 1998 SA₇₁ *, 6, 2, 2; 1998 SB₇₁ *, 6, 2, 2; 1998 SC₇₁ *, 6, 2, 2; 1998 SD₇₁ *, 6, 2, 2; 1998 SE₇₁ *, 6, 2, 2; 1998 SF₇₁ *, 6, 2, 2; 1998 SG₇₁ *, 6, 2, 2; 1998 SH₇₁ *, 6, 2, 2; 1998 SJ₇₁ *, 6, 2, 2; 1998 SK₇₁ *, 6, 2, 2; 1998 SL₇₁ *, 9, 3, 5; 1998 SM₇₁ *, 6, 2, 2; 1998 SN₇₁ *, 6, 2, 2; 1998 SO₇₁ *, 6, 2, 2; 1998 SP₇₁ *, 6, 2, 2; 1998 SQ₇₁ *, 6, 2, 2; 1998 SR₇₁ *, 6, 2, 2; 1998 SS₇₁ *, 6, 2, 2; 1998 ST₇₁ *, 6, 2, 2; 1998 SU₇₁ *, 12, 4, 5; 1998 SV₇₁ *, 6, 2, 2; 1998 SW₇₁ *, 6, 2, 2; 1998 SX₇₁ *, 6, 2, 2; 1998 SY₇₁ *, 6, 2, 2; 1998 SZ₇₁ *, 6, 2, 2; 1998 SA₇₂ *, 6, 2, 2; 1998 SB₇₂ *, 6, 2, 2; 1998 SC₇₂ *, 12, 4, 5; 1998 SD₇₂ *, 6, 2, 2; 1998 SE₇₂ *, 6, 2, 2; 1998 SF₇₂ *, 6, 2, 2; 1998 SG₇₂ *, 6, 2, 2; 1998 SH₇₂ *, 6, 2, 2; 1998 SJ₇₂ *, 6, 2, 2; 1998 SK₇₂ *, 6, 2, 2; 1998 SL₇₂ *, 6, 2, 2; 1998 SM₇₂ *, 6, 2, 2; 1998 SN₇₂ *, 6, 2, 2; 1998 SO₇₂ *, 6, 2, 2; 1998 SP₇₂ *, 6, 2, 2; 1998 SQ₇₂ *, 12, 4, 5; 1998 SR₇₂ *, 6, 2, 2; 1998 SS₇₂ *, 6, 2, 2; 1998 ST₇₂ *, 6, 2, 2; 1998 SU₇₂ *, 6, 2, 2; 1998 SV₇₂ *, 6, 2, 2; 1998 SW₇₂ *, 6, 2, 2; 1998 SX₇₂ *, 6, 2, 2; 1998 SY₇₂ *, 6, 2, 2; 1998 SZ₇₂ *, 6, 2, 2; 1998 SA₇₃ *, 6, 2, 2; 1998 SB₇₃ *, 6, 2, 2; 1998 SC₇₃ *, 6, 2, 2; 1998 SD₇₃ *, 6, 2, 2; 1998 SE₇₃ *, 6, 2, 2; 1998 SF₇₃ *, 6, 2, 2; 1998 SG₇₃ *, 6, 2, 2; 1998 SH₇₃ *, 6, 2, 2; 1998 SJ₇₃ *, 6, 2, 2; 1998 SK₇₃ *, 6, 2, 2; 1998 SL₇₃ *, 6, 2, 2; 1998 SM₇₃ *, 6, 2, 2; 1998 SN₇₃ *, 6, 2, 2; 1998 SO₇₃ *, 6, 2, 2; 1998 SP₇₃ *, 6, 2, 2; 1998 SQ₇₃ *, 6, 2, 2; 1998 SR₇₃ *, 6, 2, 2; 1998 SS₇₃ *, 6, 2, 2; 1998 ST₇₃ *, 6, 2, 2; 1998 SU₇₃ *, 6, 2, 2; 1998 SV₇₃ *, 6, 2, 2; 1998 SW₇₃ *, 6, 2, 2; 1998 SX₇₃ *, 6, 2, 2; 1998 SY₇₃ *, 6, 2, 2; 1998 SZ₇₃ *, 6, 2, 2; 1998 SA₇₄ *, 6, 2, 2; 1998 SB₇₄ *, 6, 2, 2; 1998 SC₇₄ *, 6, 2, 2; 1998 SD₇₄ *, 6, 2, 2;

1998 SE₇₄ *, 6, 2, 2; 1998 SF₇₄ *, 6, 2, 2; 1998 SG₇₄ *, 6, 2, 2; 1998 SH₇₄ *, 6, 2, 2; 1998 SJ₇₄ *, 6, 2, 2; 1998 SK₇₄ *, 6, 2, 2; 1998 SL₇₄ *, 6, 2, 2; 1998 SM₇₄ *, 6, 2, 2; 1998 SN₇₄ *, 6, 2, 2; 1998 SO₇₄ *, 6, 2, 2; 1998 SP₇₄ *, 6, 2, 2; 1998 SQ₇₄ *, 6, 2, 2; 1998 SR₇₄ *, 6, 2, 2; 1998 SS₇₄ *, 6, 2, 2; 1998 ST₇₄ *, 6, 2, 2; 1998 SU₇₄ *, 6, 2, 2; 1998 SV₇₄ *, 6, 2, 2; 1998 SW₇₄ *, 6, 2, 2; 1998 SX₇₄ *, 6, 2, 2; 1998 SY₇₄ *, 6, 2, 2; 1998 SZ₇₄ *, 6, 2, 2; 1998 SA₇₅ *, 6, 2, 2; 1998 SB₇₅ *, 6, 2, 2; 1998 SC₇₅ *, 6, 2, 2; 1998 SD₇₅ *, 6, 2, 2; 1998 SE₇₅ *, 6, 2, 2; 1998 SF₇₅ *, 6, 2, 2; 1998 SG₇₅ *, 6, 2, 2; 1998 SH₇₅ *, 6, 2, 2; 1998 SJ₇₅ *, 6, 2, 2; 1998 SK₇₅ *, 6, 2, 2; 1998 SL₇₅ *, 6, 2, 2; 1998 SM₇₅ *, 6, 2, 2; 1998 SN₇₅ *, 6, 2, 2; 1998 SO₇₅ *, 9, 3, 3; 1998 SP₇₅ *, 6, 2, 2; 1998 SX₇₅ *, 3, 1, 0; 1998 SA₁₃₃ *, 3, 1, 0; 1998 SJ₁₃₃ *, 6, 2, 2; 1998 SO₁₃₃ *, 6, 2, 2; 1998 ST₁₃₃ *, 6, 2, 2; 1998 SV₁₃₃ *, 6, 2, 2; 1998 SZ₁₃₃ *, 6, 2, 2; 1998 SE₁₃₄ *, 3, 1, 0; 1998 SF₁₃₄ *, 6, 2, 2; 1998 SG₁₃₄ *, 6, 2, 2; 1998 SH₁₃₄ *, 6, 2, 2; 1998 SK₁₃₄ *, 6, 2, 2; 1998 SA₁₃₈ *, 6, 2, 2; 1998 SD₁₃₈ *, 6, 2, 2; 1998 SE₁₃₈ *, 6, 2, 2; 1998 SH₁₃₈ *, 6, 2, 2; 1998 SK₁₃₈ *, 6, 2, 2; 1998 SM₁₃₈ *, 6, 2, 2; 1998 SN₁₃₈ *, 6, 2, 2; 1998 SR₁₃₈ *, 6, 2, 2; 1998 ST₁₃₈ *, 6, 2, 2; 1998 SU₁₃₈ *, 6, 2, 2; 1998 SY₁₃₈ *, 6, 2, 2; 1998 SU₁₄₀ *, 6, 2, 2; 1998 SV₁₄₀ *, 6, 2, 2; 1998 SW₁₄₀ *, 6, 2, 2; 1998 SX₁₄₀ *, 3, 1, 0; 1998 SY₁₄₀ *, 6, 2, 2; 1998 SZ₁₄₀ *, 3, 1, 0; 1998 SB₁₄₁ *, 3, 1, 0; 1998 SC₁₄₁ *, 6, 2, 2; 1998 SD₁₄₁ *, 6, 2, 2; 1998 SF₁₄₁ *, 6, 2, 2; 1998 SG₁₄₁ *, 6, 2, 2; 1998 SJ₁₄₁ *, 6, 2, 2; 1998 SK₁₄₁ *, 6, 2, 2; 1998 SM₁₄₁ *, 6, 2, 2; 1998 ST₁₄₂ *, 6, 2, 2; 1998 SF₁₄₃ *, 3, 1, 0; 1998 SL₁₄₃ *, 6, 2, 2; 1998 SM₁₄₃ *, 6, 2, 2; 1998 SN₁₄₃ *, 6, 2, 2; 1998 SO₁₄₃ *, 6, 2, 2; 1998 SP₁₄₃ *, 6, 2, 2; 1998 SQ₁₄₃ *, 6, 2, 2; 1998 SR₁₄₃ *, 6, 2, 2; 1998 SS₁₄₃ *, 6, 2, 2; 1998 ST₁₄₃ *, 6, 2, 2; 1998 SU₁₄₃ *, 6, 2, 2; 1998 SV₁₄₃ *, 6, 2, 2; 1998 SW₁₄₃ *, 6, 2, 2; 1998 SX₁₄₃ *, 6, 2, 2; 1998 SY₁₄₃ *, 6, 2, 2; 1998 SZ₁₄₃ *, 6, 2, 2; 1998 SA₁₄₄ *, 6, 2, 2; 1998 SB₁₄₄ *, 6, 2, 2; 1998 SC₁₄₄ *, 6, 2, 2; 1998 SD₁₄₄ *, 6, 2, 2; 1998 SE₁₄₄ *, 6, 2, 2; 1998 SF₁₄₄ *, 6, 2, 2; 1998 SG₁₄₄ *, 6, 2, 2; 1998 SH₁₄₄ *, 6, 2, 2; 1998 SJ₁₄₄ *, 6, 2, 2; 1998 SK₁₄₄ *, 6, 2, 2; 1998 SM₁₄₄ *, 6, 2, 1; 1998 SN₁₄₄ *, 6, 2, 1; 1998 SO₁₄₄ *, 6, 2, 1; 1998 SP₁₄₄ *, 6, 2, 1; 1998 SQ₁₄₄ *, 6, 2, 1; 1998 SR₁₄₄ *, 6, 2, 1; 1998 SS₁₄₄ *, 6, 2, 1; 1998 ST₁₄₄ *, 6, 2, 1; 1998 SU₁₄₄ *, 6, 2, 1; 1998 SV₁₄₄ *, 6, 2, 1; 1998 SW₁₄₄ *, 6, 2, 1; 1998 SX₁₄₄ *, 6, 2, 1; 1998 SY₁₄₄ *, 6, 2, 1; 1998 SZ₁₄₄ *, 6, 2, 1; 1998 SA₁₄₅ *, 6, 2, 1; 1998 SB₁₄₅ *, 6, 2, 1; 1998 SC₁₄₅ *, 6, 2, 1; 1998 SD₁₄₅ *, 6, 2, 1; 1998 SE₁₄₅ *, 6, 2, 1; 1998 SF₁₄₅ *, 6, 2, 1; 1998 SG₁₄₅ *, 6, 2, 1; 1998 SH₁₄₅ *, 6, 2, 1; 1998 SJ₁₄₅ *, 6, 2, 1; 1998 SK₁₄₅ *, 6, 2, 1; 1998 SL₁₄₅ *, 6, 2, 1; 1998 SM₁₄₅ *, 6, 2, 1; 1998 SN₁₄₅ *, 6, 2, 1; 1998 SO₁₄₅ *, 6, 2, 1; 1998 SP₁₄₅ *, 6, 2, 1; 1998 SQ₁₄₅ *, 6, 2, 1; 1998 SR₁₄₅ *, 6, 2, 1; 1998 SS₁₄₅ *, 6, 2, 1; 1998 ST₁₄₅ *, 6, 2, 1; 1998 SU₁₄₅ *, 6, 2, 1; 1998 SV₁₄₅ *, 6, 2, 1; 1998 SW₁₄₅ *, 6, 2, 1; 1998 SX₁₄₅ *, 6, 2, 1; 1998 SY₁₄₅ *, 6, 2, 1; 1998 SZ₁₄₅ *, 6, 2, 1; 1998 SA₁₄₆ *, 6, 2, 1; 1998 SB₁₄₆ *, 6, 2, 1; 1998 SC₁₄₆ *, 6, 2, 1; 1998 SD₁₄₆ *, 6, 2, 1; 1998 SE₁₄₆ *, 6, 2, 1; 1998 SF₁₄₆ *, 6, 2, 1; 1998 SG₁₄₆ *, 6, 2, 1; 1998 SH₁₄₆ *, 6, 2, 1; 1998 SJ₁₄₆ *, 6, 2, 1; 1998 SK₁₄₆ *, 6, 2, 1; 1998 SL₁₄₆ *, 6, 2, 1; 1998 SM₁₄₆ *, 6, 2, 1; 1998 SN₁₄₆ *, 6, 2, 1; 1998 SO₁₄₆ *, 6, 2, 1; 1998 SP₁₄₆ *, 6, 2, 1; 1998 SQ₁₄₆ *, 6, 2, 1; 1998 SR₁₄₆ *, 6, 2, 1; 1998 SS₁₄₆ *, 6, 2, 1; 1998 ST₁₄₆ *, 6, 2, 1; 1998 SU₁₄₆ *, 6, 2, 1; 1998 SV₁₄₆ *, 6, 2, 1; 1998 SW₁₄₆ *, 6, 2, 1; 1998 SX₁₄₆ *, 6, 2, 1; 1998 SY₁₄₆ *, 6, 2, 1; 1998 SZ₁₄₆ *, 6, 2, 1; 1998 SA₁₄₇ *, 6, 2, 1; 1998 SB₁₄₇ *, 6, 2, 1; 1998 SC₁₄₇ *, 6, 2, 1; 1998 SD₁₄₇ *, 6, 2, 1; 1998 SE₁₄₇ *, 6, 2, 1; 1998 SF₁₄₇ *, 6, 2, 1; 1998 SG₁₄₇ *, 6, 2, 1; 1998 SH₁₄₇ *, 6, 2, 1; 1998 SJ₁₄₇ *, 6, 2, 1; 1998 SK₁₄₇ *, 6, 2, 1; 1998 SL₁₄₇ *, 6, 2, 1; 1998 SM₁₄₇ *, 6, 2, 1; 1998 SN₁₄₇ *, 6, 2, 1; 1998 SO₁₄₇ *, 6, 2, 1; 1998 SP₁₄₇ *, 6, 2, 1; 1998 SQ₁₄₇ *, 6, 2, 1; 1998 SR₁₄₇ *, 6, 2, 1; 1998 SS₁₄₇ *, 6, 2, 1; 1998 ST₁₄₇ *, 6, 2, 1; 1998 SU₁₄₇ *, 6, 2, 1; 1998 SV₁₄₇ *, 6, 2, 1; 1998 SW₁₄₇ *, 6, 2, 1; 1998 SX₁₄₇ *, 6, 2, 1; 1998 SY₁₄₇ *, 6, 2, 1; 1998 SZ₁₄₇ *, 6, 2, 1; 1998 SA₁₄₈ *, 6, 2, 1; 1998 SR₁₆₃ *, 6, 2, 1; 1998 SS₁₆₃ *, 6, 2, 1; 1998 ST₁₆₃ *, 6, 2, 1; 1998 SU₁₆₃ *, 6, 2, 1; 1998 SV₁₆₃ *, 6, 2, 1; 1998 SW₁₆₃ *, 6, 2, 1; 1998 SX₁₆₃ *, 6, 2, 1; 1998 SY₁₆₃ *, 6, 2, 1; 1998 SZ₁₆₃ *, 6, 2, 1; 1998 SA₁₆₄ *, 6, 2, 1; 1998 SB₁₆₄ *, 6, 2, 1; 1998 SC₁₆₄ *, 6, 2, 1; 1998 SD₁₆₄ *, 6, 2, 1; 1998 SE₁₆₄ *, 6, 2, 1; 1998 SF₁₆₄ *, 6, 2, 1; 1998 SG₁₆₄ *, 6, 2, 1; 1998 SH₁₆₄ *, 6, 2, 1; 1998 SJ₁₆₄ *, 6, 2, 1; 1998 SK₁₆₄ *, 6, 2, 1; 1998 SL₁₆₄ *, 6, 2, 1; 1998 SM₁₆₄ *, 6, 2, 1; 1998 TB₆ *, 6, 2, 1; 4113 P-L, 3, 1, 0; 4614 P-L, 6, 2, 2; 6628 P-L, 6, 2, 1; 6761 P-L, 6, 2, 1; 2175 T-1, 6, 2, 2; 2108 T-2, 6, 2, 1; 3101 T-3, 6, 2, 1; 3176 T-3, 6, 2, 1; (268), 6, 2, 1; (281), 6, 2, 1; (673), 6, 2, 2; (784), 6, 2, 2; (794), 6, 2, 1; (853), 12, 3, 3; (1028), 6, 2, 1; (1388), 6, 2, 1; (1425), 6, 2, 1; (1674), 6, 2, 2; (1783), 6, 2, 1; (1957), 6, 2, 1; (2201), 6, 2, 1; (2524), 6, 2, 1; (2833), 6, 2, 2; (2953), 3, 1, 0; (3149), 6, 2, 1; (3207), 6, 2, 2; (3411), 6, 2, 2; (3482), 6, 2, 1; (3519), 6, 2, 1; (3604), 6, 2, 2; (3656), 6, 2, 2; (3666), 6, 2, 2; (3747), 6, 2, 1; (3797), 6, 2, 2; (3807), 6, 2, 2; (3845), 6, 2, 1; (4079), 6, 2, 1; (4098), 6, 2, 1; (4115), 6, 2, 2; (4144), 6, 2, 1; (4184), 9, 2, 1; (4196), 6, 2, 1; (4416), 6, 2, 2; (4441), 6, 2, 2; (4635), 6, 2, 1; (5174), 6, 2, 2; (5181), 6, 2, 1; (5346), 6, 2, 2; (5573), 6, 2, 2; (5692), 6, 2, 1; (5730), 6, 2, 2; (5763), 6, 2, 2; (6020), 6, 2, 2; (6131), 6, 2, 1; (6133), 6, 2, 2; (6262), 6, 2, 2; (6669), 6, 2, 1; (6765), 6, 2, 1; (6843), 6, 2, 2; (6844), 6, 2, 1; (6865), 6, 2, 2; (6868), 6, 2, 1; (6920), 6, 2, 1; (6936), 6, 2, 2; (6994), 6, 2, 2; (7222), 6, 2, 2; (7516), 6, 2, 2; (7531), 6, 2, 2; (7690), 6, 2, 1; (7773), 6, 2, 2; (7792), 6, 2, 1; (9261), 6, 2, 2; (9322), 6, 2, 2; (9369), 6, 2, 1; [3432, 564, 366*, 1993/10/20–1998/09/23]

824 Lake Clear

K. A. Williams, RD #1 Box 277, Forest Home Road, Lake Clear, NY 12945,
U.S.A. [kenwill@NorthNet.org]

0.41-m $f/5.0$ reflector + CCD

GSC

1998 ST₈₃, 3, 1, 0; [3, 1, 0*, 1998/09/29]

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

1998 UC₁, 7, 3, 2; 1998 UH₁₅ *, 6, 3, 2; (1036), 4, 2, 1; (1508), 7, 3, 2; (3352), 6, 3, 2; (4801), 5, 2, 1; [35, 6, 1*, 1998/10/20–1998/10/22]

830 Hudson

S. Brady, 5 Melba Drive, Hudson, NH 03051, U.S.A. [sbrady@tiac.net]

0.25-m $f/5.6$ Newtonian reflector + CCD

GSC

1985 CP₂, 3, 1, 0; [3, 1, 0*, 1998/10/21]

832 Etters

J. D. Fetter, Redland Observatory, 386 Cameron Street, Etters, PA 17319, U.S.A.

[jfetter@mindspring.com]

0.30-m $f/10$ Schmidt-Cassegrain + CCD

GSC, SA-1.0

1991 UF, 4, 2, 5; 1998 SV₁₃₂, 4, 2, 1; 1998 UN *, 4, 2, 1; (2256), 4, 2, 6; (4339), 4, 2, 5; (4351), 4, 2, 6; [24, 6, 1*, 1998/10/11–1998/10/17]

834 Buenos Aires-AAAA

R. Mackintosh, Seccion Sistema Solar, Asociacion Argentina Amigos de la
Astronomia, Av. Patricias Argentinas 550, AR-1405 Capital Federal,
Argentina [robertom@aaaa.org.ar]

Observers R. Mackintosh, A. Macedo, H. Ruggiu

Measurers R. Mackintosh, J. R. Carozza

0.25-m $f/6.3$ reflector + CCD

USNO-A1.0

(346), 1, 1, 0; (433), 5, 3, 16; (636), 3, 1, 0; (773), 4, 2, 5; (814), 1, 1, 0; (819), 3, 1, 0; (1018), 2, 1, 0; (1119), 2, 1, 0; (1145), 3, 1, 0; (1155), 3, 2, 5; (1701), 4, 2, 1; [31, 11, 0*, 1998/06/03–1998/09/16]

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

(678), 5, 5, 32; [5, 1, 0*, 1998/09/19–1998/10/21]

844 Los Molinos

T. Gallardo, Departamento de Astronomia, Facultad de Ciencias, Montevideo,
Uruguay [gallardo@fisica.edu.uy]

Observer J. C. Tulic, R. Salvo

0.35-m $f/6.4$ reflector + CCD

GSC

1998 QK₅₆, 3, 1, 0; 1998 TU₃, 10, 2, 1; (1866), 6, 2, 1; (3753), 4, 2, 13; [23, 4, 0*, 1998/10/07–1998/10/31]

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

1998 SS₄₉, 5, 2, 12; 1998 TU₃, 3, 1, 0; [8, 2, 0*, 1998/10/21–1998/11/02]

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 QG₇₄, 3, 1, 0; [3, 1, 0*, 1998/10/25]

886 Susono

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

0.25-m $f/6.3$ reflector + CCD

GSC

1994 RX, 2, 1, 0; 1995 YH₁, 2, 1, 0; 1998 SS₂, 5, 2, 6; 1998 TA, 14, 5, 22; 1998 TE, 2, 1, 0;

1998 UP₆, 6, 3, 9; 1998 UR₆ *, 3, 1, 0; (9314), 2, 1, 0; [36, 8, 1*, 1998/10/09–1998/10/31]

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

1985 AE, 6, 2, 7; 1987 UR, 4, 2, 4; 1988 VP₃, 6, 2, 7; 1989 TU₁, 3, 1, 0; 1990 VH₃, 6, 2, 7; 1993 DG₂, 3, 1, 0; 1994 OB, 6, 2, 8; 1994 RX, 3, 1, 0; 1994 UY, 9, 3, 14; 1994 UB₁, 5, 2, 7; 1994 UC₁, 6, 2, 6; 1997 UB₁₁, 4, 1, 0; 1998 SS₂, 9, 3, 27; 1998 ST₁₂₁, 6, 2, 1; 1998 SS₁₂₃, 6, 2, 4; 1998 ST₁₂₃, 6, 2, 4; 1998 SB₁₃₆, 3, 1, 0; 1998 SC₁₃₆, 3, 1, 0; 1998 TA, 9, 3, 20; 1998 TB, 6, 2, 7; 1998 TE *, 21, 7, 36; 1998 TF₁₉, 3, 1, 0; 1998 UP₆, 5, 2, 2; 1998 UR₆, 6, 2, 16; 1998 US₆ *, 14, 5, 20; 1998 UT₆ *, 11, 4, 13; 1998 UU₆ *, 11, 4, 13; 1998 UH₈ *, 9, 3, 9; 1998 UU₂₂ *, 8, 3, 7; 1998 UV₂₂ *, 9, 3, 7; 1998 VC *, 9, 3, 7; 1998 VD *, 6, 2, 1; 1998 VE *, 7, 2, 1; [228, 33, 10*, 1998/09/19–1998/11/08]

894 Otomo

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

0.25-m $f/3.4$ reflector

PPM

1998 UJ₁₅ *, 4, 2, 6; [4, 1, 1*, 1998/10/18–1998/10/24]

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 SG₂, 2, 1, 0; 1998 TT₃, 2, 1, 0; 1998 UQ, 2, 1, 0; 1998 UQ₁, 2, 1, 0; (784), 2, 1, 0; (9387), 2, 1, 0; [12, 6, 0*, 1998/10/08–1998/10/25]

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

1998 UP₆ *, 2, 1, 0; [2, 1, 1*, 1998/10/18]

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

1980 FH₃, 3, 1, 0; 1981 EZ₁₀, 6, 2, 1; 1981 EP₄₁, 3, 1, 0; 1985 SC₃, 3, 1, 0; 1986 TZ₁₁, 6, 2, 1; 1987 DN₆, 12, 4, 8; 1988 GD, 3, 1, 0; 1988 RQ₈, 3, 1, 0; 1989 CT₂, 3, 1, 0; 1989 EJ₆, 3, 1, 0; 1989 VS₁, 3, 1, 0; 1990 EQ₂, 3, 1, 0; 1990 QE₇, 3, 1, 0; 1990 QO₈, 9, 3, 7; 1990 RY₂, 15, 5, 9; 1990 RR₇, 3, 1, 0; 1991 FH₂, 6, 2, 1; 1991 PO₁₂, 3, 1, 0; 1991 PM₁₃, 6, 2, 1; 1991 RO₃, 3, 1, 0; 1991 RT₃, 3, 1, 0; 1991 RJ₂₂, 3, 1, 0; 1991 TV₄, 6, 2, 1; 1991 UZ₃, 3, 1, 0; 1991 VL₁, 3, 1, 0; 1993 FU₁₃, 6, 2, 1; 1993 PC₇, 6, 2, 1; 1993 RZ₁, 6, 2, 1; 1993 TW₁₆, 9, 3, 8; 1993 TG₁₉, 3, 1, 0; 1993 TO₂₀, 3, 1, 0; 1993 UQ₂, 3, 1, 0; 1994 PJ₂, 6, 2, 4; 1994 PC₁₅, 3, 1, 0; 1994 PL₂₃, 3, 1, 0; 1994 PW₃₁, 3, 1, 0; 1994 RZ, 3, 1, 0; 1994 RL₁, 3, 1, 0; 1994 RT₁, 3, 1, 0; 1994 SN₉, 6, 2, 94; 1994 UM₁, 12, 4, 8; 1994 VL, 3, 1, 0; 1994 WM, 3, 1, 0; 1994 WW₇, 3, 1, 0; 1995 UZ₄₅, 3, 1, 0; 1995 YV₅, 6, 2, 1; 1996 AR, 3, 1, 0; 1996 BZ, 3, 1, 0; 1996 CG₉, 3, 1, 0; 1996 DV, 3, 1, 0; 1996 DQ₂, 3, 1, 0; 1996 GS, 6, 2, 1; 1996 HF₁₁, 3, 1, 0; 1996 HR₂₁, 3, 1, 0; 1997 AH₅, 3, 1, 0; 1997 CA₂₂, 3, 1, 0; 1997 ER₁₁, 3, 1, 0; 1997 EG₂₇, 3, 1, 0; 1997 HV₁₁, 3, 1, 0; 1997 JD₁₂, 3, 1, 0; 1997 JE₁₅, 3, 1, 0; 1997 LN, 9, 3, 6; 1997 XX₅, 3, 1, 0; 1998 EZ₁₉, 6, 2, 1; 1998 FK₃₅, 3, 1, 0; 1998 HO₁₃₂, 3, 1, 0; 1998 MC₁₄, 3, 1, 0; 1998 MG₁₆, 3, 1, 0; 1998 MS₁₈, 3, 1, 0; 1998 MT₁₈, 3, 1, 0; 1998 MJ₄₈ *, 6, 2, 6; 1998 OC₁, 3, 1, 0; 1998 OC₇, 6, 2, 1; 1998 ON₁₂, 6, 2, 1; 1998 OD₁₃, 6, 2, 1; 1998 PD₁, 6, 2, 2; 1998 QX, 3, 1, 0; 1998 QW₃, 3, 1, 0; 1998 QA₄, 6, 2, 1; 1998 QO₅, 3, 1, 0; 1998 QQ₁₂, 3, 1, 0; 1998 QN₁₆, 3, 1, 0; 1998 QT₁₆, 3, 1, 0; 1998 QX₁₇, 3, 1, 0; 1998 QL₁₈, 3, 1, 0; 1998 QN₁₈, 6, 2, 1; 1998 QY₁₉, 6, 2, 1; 1998 QW₂₀, 6, 2, 1; 1998 QF₂₃, 12, 4, 9; 1998 QL₂₃, 9, 3, 7; 1998 QV₂₄, 3, 1, 0; 1998 QS₃₀, 3, 1, 0; 1998 QZ₃₀, 6, 2, 1; 1998 QS₃₁, 3, 1, 0; 1998 QB₃₂, 6, 2, 13; 1998 QD₃₅, 6, 2, 1; 1998 QK₃₅, 3, 1, 0; 1998 QS₃₅, 6, 2, 11; 1998 QC₃₉, 3, 1, 0; 1998 QR₃₉, 3, 1, 0; 1998 QC₄₂, 3, 1, 0; 1998 QA₄₄, 3, 1, 0; 1998 QF₄₇, 6, 2, 1; 1998 QW₄₈, 3, 1, 0; 1998 QZ₅₀, 6, 2, 1; 1998 QA₅₆, 9, 3, 8; 1998 QB₅₆, 12, 4, 8; 1998 QC₅₈, 12, 4, 8; 1998 QA₆₉, 6, 2, 2; 1998 QX₉₀, 3, 1, 0; 1998 QA₉₁, 3, 1, 0; 1998 QC₉₁, 3, 1, 0; 1998 QC₉₈, 3, 1, 0; 1998 QO₁₀₀, 3, 1, 0; 1998 QA₁₀₃, 3, 1, 0; 1998 QJ₁₀₃, 3, 1, 0; 1998 QV₁₀₃, 6, 2, 2; 1998 QG₁₀₄, 6, 2, 6; 1998 QM₁₀₄, 3, 1, 0; 1998 QP₁₀₅, 3, 1, 0; 1998 QB₁₀₆, 6, 2, 1; 1998 RL₉, 6, 2, 1; 1998 RY₁₅, 6, 2, 4; 1998 RD₁₇, 3, 1, 0; 1998 RJ₁₇, 6, 2, 2; 1998 RK₁₇, 6, 2, 23; 1998 RS₁₈, 6, 2, 1; 1998 RD₁₉, 6, 2, 1; 1998 RM₁₉, 6, 2, 1; 1998 RD₂₀, 6, 2, 1; 1998 RE₂₄, 6, 2, 1; 1998 RO₄₄, 3, 1, 0; 1998 RA₄₅, 6, 2, 1; 1998 RO₄₈, 9, 3, 5; 1998 RB₄₉, 3, 1, 0; 1998 RD₄₉, 3, 1, 0; 1998 RM₅₀, 6, 2, 2; 1998 RC₅₃, 6, 2, 6; 1998 RF₅₃, 3, 1, 0; 1998 RG₅₃, 3, 1, 0; 1998 RC₅₇, 9, 3, 5; 1998 RJ₅₇, 6, 2, 8; 1998 RB₅₈, 6, 2, 8; 1998 RC₅₈, 9, 3, 8; 1998 RG₅₈, 3, 1, 0; 1998 RJ₅₈, 9, 3, 8; 1998 RD₆₄, 3, 1, 0; 1998 RN₆₄, 9, 3, 4; 1998 RV₆₉, 9, 3, 8; 1998 RB₇₀, 3, 1, 0; 1998 RF₇₀, 3, 1, 0; 1998 RX₇₀, 3, 1, 0; 1998 RB₇₁, 3, 1, 0; 1998 RD₇₁, 6, 1, 0; 1998 RK₇₁, 3, 1, 0; 1998 RQ₇₆, 3, 1, 0; 1998 RV₇₆, 3, 1, 0; 1998 RW₇₆, 3, 1, 0; 1998 RU₇₈, 3, 1, 0; 1998 RV₇₈, 3, 1, 0; 1998 RY₇₈, 3, 1, 0; 1998 RZ₇₈, 3, 1, 0; 1998 SG₅, 3, 1, 0; 1998 SX₇, 3, 1, 0; 1998 SK₁₂, 3, 1, 0; 1998 SL₂₁, 6, 2, 6; 1998 SN₂₁, 7, 3, 8; 1998 SO₂₁, 6, 2, 1; 1998 SQ₂₁, 6, 2, 12; 1998 SN₂₃, 3, 1, 0; 1998 SW₃₂, 3, 1, 0; 1998 SK₃₇, 6, 2, 7; 1998 SM₃₇, 6, 2, 7; 1998 SN₃₇, 12, 4, 14; 1998 SQ₃₇, 9, 3, 12; 1998 SA₄₄, 3, 1, 0; 1998 SC₄₄, 9, 3, 9; 1998 SS₄₄, 9, 3, 8; 1998 SA₄₆, 3, 1, 0; 1998 SB₄₆, 6, 2, 2; 1998 SL₄₇, 3, 1, 0; 1998 SU₄₈, 6, 2, 7; 1998 SW₄₈, 3, 1, 0; 1998 SP₄₉, 3, 1, 0; 1998 SW₄₉, 3, 1, 0; 1998 SL₅₀, 6, 2, 5; 1998 SU₅₂, 9, 3, 14; 1998 SA₅₃, 3, 1, 0; 1998 SH₅₄, 3, 1, 0; 1998 SV₅₄, 9, 3, 8; 1998 SR₅₅, 6, 2, 8; 1998 SA₅₆, 6, 2, 4; 1998 ST₅₆, 6, 2, 6; 1998 SU₅₆, 3, 1, 0; 1998 SW₅₆, 3, 1, 0; 1998 SB₅₇, 3, 1, 0; 1998 SC₅₇, 12, 4, 10; 1998 SF₅₇, 9, 3, 10; 1998 SB₅₈, 6, 2, 3; 1998 SM₆₆, 6, 2, 1; 1998 SM₆₇, 3, 1, 0; 1998 SQ₆₇, 3, 1, 0; 1998 SF₇₁, 6, 2, 7; 1998 SQ₇₉, 6, 2, 6; 1998 SS₇₉, 6, 2, 4; 1998 SU₇₉, 6, 2, 4; 1998 SJ₈₁, 3, 1, 0; 1998 SL₈₁, 3, 1, 0; 1998 SR₈₁, 6, 2, 4; 1998 SE₈₄, 9, 3, 8; 1998 SF₈₅, 3, 1, 0; 1998 SD₁₁₃, 6, 1, 0; 1998 SK₁₂₁, 6, 2, 1; 1998 SA₁₃₁, 6, 2, 1; 1998 SO₁₃₁, 3, 1, 0; 1998 SU₁₃₂, 12, 4, 8; 1998 SY₁₃₂, 6, 2, 1; 1998 SB₁₃₃, 6, 2, 1; 1998 ST₁₃₈, 3, 1, 0; 1998 SY₁₃₈, 6, 2, 1; 1998 SC₁₃₉, 6, 2, 2; 1998 SE₁₃₉, 6, 2, 5; 1998 SM₁₄₀, 6, 2, 6; 1998 SQ₁₄₀, 12, 4, 9; 1998 ST₁₄₀, 3, 1, 0; 1998 SV₁₄₀, 3, 1, 0; 1998 SJ₁₄₃ *, 6, 1, 0; 1998 SD₁₄₆, 6, 2, 1; 1998 SS₁₄₆, 6, 2, 1; 1998 SF₁₄₇, 3, 1, 0; 1998 SV₁₄₇, 3, 1, 0; 1998 SL₁₆₂, 6, 2, 1; 1998 SA₁₆₄, 6, 2, 1; 1998 TA, 3, 1, 0; 1998 TC, 3, 1, 0; 1998 TJ, 6, 2, 1; 1998 TB₂ *, 6, 2, 2; 1998 TD₂ *, 9, 3, 14; 1998 TE₂ *, 6, 2, 2; 1998 TF₂ *, 6, 2, 2; 1998 TG₂ *, 6, 2, 2; 1998 TH₂ *, 6, 2, 2; 1998 TJ₂ *, 6, 2, 2; 1998 TK₂ *, 12, 4, 8; 1998 TL₂ *, 6, 2, 2; 1998 TM₂ *, 9, 3, 7; 1998 TN₂ *, 6, 2, 2; 1998 TO₂ *, 6, 2, 2; 1998 TP₂ *, 12, 4, 8; 1998 TQ₂ *, 12, 4, 8; 1998 TR₂ *, 12, 4, 8; 1998 TS₂ *, 12, 4, 8; 1998 TT₂ *, 12, 4, 8; 1998 TU₂ *, 12, 4, 8; 1998 TV₂ *, 12, 4, 8; 1998 TW₂ *, 6, 2, 2; 1998 TX₂ *, 9, 3, 7; 1998 TY₂ *, 6, 2, 2; 1998 TZ₂ *, 6, 2, 2; 1998 TP₅, 3, 1, 0; 1998 TR₅, 3, 1, 0; 1998 TV₆, 3, 1, 0; 1998 TA₇ *, 6, 2, 6; 1998 TB₇ *, 6, 2, 6; 1998 TC₇ *, 6, 2, 4; 1998 TD₇ *, 6, 2, 4; 1998 TE₇ *, 9, 3, 8; 1998 TF₇ *, 6, 2, 4; 1998 TG₇ *, 6, 2, 4; 1998 TH₇ *, 9, 3, 8; 1998 TL₁₅ *, 6, 2, 7; 1998 TM₁₅ *,

3, 1, 0; 1998 TN₁₅ *, 9, 3, 6; 1998 TO₁₅ *, 6, 2, 5; 1998 TP₁₅ *, 9, 3, 6; 1998 TQ₁₅ *, 9, 3, 6; 1998 TR₁₅ *, 9, 3, 6; 1998 TS₁₅ *, 9, 3, 6; 1998 TT₁₅ *, 9, 3, 6; 1998 TU₁₅ *, 6, 2, 5; 1998 TV₁₅ *, 9, 3, 6; 1998 TW₁₅ *, 6, 2, 5; 1998 TX₁₅ *, 9, 3, 6; 1998 TY₁₅ *, 6, 2, 5; 1998 TZ₁₅ *, 9, 3, 6; 1998 TA₁₆ *, 6, 2, 5; 1998 TB₁₆ *, 9, 3, 6; 1998 TC₁₆ *, 9, 3, 6; 1998 TD₁₆ *, 9, 3, 6; 1998 TE₁₆ *, 9, 3, 6; 1998 TF₁₆ *, 9, 3, 6; 1998 TG₁₆ *, 6, 2, 8; 1998 TH₁₆ *, 6, 2, 8; 1998 TI₁₆ *, 6, 2, 9; 1998 TJ₁₆ *, 6, 2, 6; 1998 TK₁₆ *, 6, 2, 6; 1998 TL₁₆ *, 6, 2, 6; 1998 TM₁₆ *, 6, 2, 6; 1998 TN₁₆ *, 6, 2, 6; 1998 TO₁₆ *, 6, 2, 6; 1998 TP₁₆ *, 6, 2, 6; 1998 TQ₁₆ *, 6, 2, 7; 1998 TR₁₆ *, 6, 2, 7; 1998 TS₁₆ *, 6, 2, 6; 1998 TT₁₆ *, 6, 2, 6; 1998 TU₁₆ *, 6, 2, 7; 1998 TV₁₆ *, 6, 2, 7; 1998 TW₁₆ *, 6, 2, 7; 1998 TX₁₆ *, 6, 2, 7; 1998 TY₁₆ *, 6, 2, 7; 1998 TZ₁₆ *, 6, 2, 7; 1998 TA₁₇ *, 6, 2, 7; 1998 TB₁₇ *, 6, 2, 7; 1998 TC₁₇ *, 6, 2, 7; 1998 TD₁₇ *, 6, 2, 7; 1998 TE₁₇ *, 6, 2, 7; 1998 TF₁₇ *, 6, 2, 7; 1998 TG₁₇ *, 6, 2, 7; 1998 TH₁₇ *, 6, 2, 7; 1998 TI₁₇ *, 6, 2, 7; 1998 TJ₁₇ *, 6, 2, 7; 1998 TK₁₇ *, 6, 2, 7; 1998 TL₁₇ *, 6, 2, 6; 1998 TM₁₇ *, 6, 2, 6; 1998 TN₁₇ *, 6, 2, 6; 1998 TO₁₇ *, 6, 2, 6; 1998 TS₁₇ *, 6, 2, 7; 1998 TT₁₇ *, 6, 2, 8; 1998 TU₁₇ *, 6, 2, 8; 1998 TV₁₇ *, 6, 2, 8; 1998 TD₁₉ *, 3, 1, 0; 1998 TA₂₀ *, 3, 1, 0; 1998 UK₂ *, 6, 2, 1; 1998 UP₂ *, 6, 2, 1; 1998 UY₁ *, 6, 2, 1; 1998 UZ₁ *, 6, 2, 1; 1998 UA₂ *, 6, 2, 1; 1998 UB₂ *, 6, 2, 1; 1998 UC₂ *, 6, 2, 1; 1998 UD₂ *, 6, 2, 1; 1998 UE₂ *, 6, 2, 1; 1998 UF₂ *, 6, 2, 1; 1998 UG₂ *, 6, 2, 1; 1998 UH₂ *, 6, 2, 1; 1998 UJ₂ *, 6, 2, 1; 1998 UK₂ *, 6, 2, 1; 1998 UL₂ *, 6, 2, 1; 1998 UM₂ *, 6, 2, 1; 1998 UN₂ *, 6, 2, 1; 1998 UO₂ *, 6, 2, 1; 1998 UT₂ *, 6, 2, 1; 1998 UV₂ *, 6, 2, 1; 1998 UW₂ *, 6, 2, 1; 1998 UX₂ *, 6, 2, 1; 1998 UY₂ *, 6, 2, 1; 1998 UZ₂ *, 6, 2, 1; 1998 UA₃ *, 6, 2, 1; 1998 UB₃ *, 6, 2, 1; 1998 UC₃ *, 6, 2, 1; 1998 UD₃ *, 6, 2, 1; 1998 UE₃ *, 6, 2, 1; 1998 UF₃ *, 6, 2, 1; 1998 UG₃ *, 6, 2, 1; 1998 UH₃ *, 6, 2, 1; 1998 UJ₃ *, 6, 2, 1; 1998 UK₃ *, 6, 2, 1; 1998 UL₃ *, 6, 2, 1; 1998 UM₃ *, 6, 2, 1; 1998 UN₃ *, 6, 2, 1; 1998 UO₃ *, 6, 2, 1; 1998 UP₃ *, 6, 2, 1; 1998 UQ₃ *, 6, 2, 1; 1998 UR₃ *, 6, 2, 1; 1998 US₃ *, 6, 2, 1; 1998 UT₃ *, 6, 2, 1; 1998 UU₃ *, 6, 2, 1; 1998 UV₃ *, 6, 2, 1; 1998 UW₃ *, 6, 2, 1; 1998 UX₃ *, 6, 2, 1; 1998 UY₃ *, 6, 2, 1; 1998 UZ₃ *, 6, 2, 1; 1998 UA₄ *, 15, 5, 6; 1998 UH₄ *, 6, 2, 4; 1998 UJ₄ *, 6, 2, 4; 1998 UK₄ *, 6, 2, 1; 1998 UL₄ *, 6, 2, 1; 1998 UM₄ *, 6, 2, 1; 1998 UN₄ *, 6, 2, 1; 1998 UO₄ *, 6, 2, 1; 1998 UP₄ *, 6, 2, 1; 1998 UQ₄ *, 6, 2, 1; 1998 UR₄ *, 6, 2, 1; 1998 US₄ *, 6, 2, 1; 1998 UT₄ *, 6, 2, 1; 1998 UU₄ *, 6, 2, 1; 1998 UV₄ *, 6, 2, 1; 1998 UW₄ *, 6, 2, 1; 1998 UX₄ *, 6, 2, 1; 1998 UY₄ *, 6, 2, 1; 1998 UZ₄ *, 6, 2, 1; 1998 UA₅ *, 6, 2, 1; 1998 UB₅ *, 6, 2, 1; 1998 UC₅ *, 6, 2, 1; 1998 UD₅ *, 6, 2, 1; 1998 UE₅ *, 6, 2, 1; 1998 UF₅ *, 6, 2, 1; 1998 UG₅ *, 6, 2, 1; 1998 UH₅ *, 6, 2, 1; 1998 UJ₅ *, 6, 2, 1; 1998 UK₅ *, 6, 2, 1; 1998 UL₅ *, 6, 2, 1; 1998 UM₅ *, 6, 2, 1; 1998 UN₅ *, 6, 2, 1; 1998 UO₅ *, 6, 2, 1; 1998 UP₅ *, 9, 3, 5; 1998 UQ₅ *, 6, 2, 1; 1998 UR₅ *, 6, 2, 1; 1998 US₅ *, 6, 2, 1; 1998 UT₅ *, 6, 2, 1; 1998 UV₅ *, 6, 2, 1; 1998 UW₅ *, 9, 3, 5; 1998 UX₅ *, 6, 2, 1; 1998 UY₅ *, 9, 3, 5; 1998 UZ₅ *, 6, 2, 1; 1998 UA₆ *, 6, 2, 1; 1998 UB₆ *, 6, 2, 1; 1998 UC₆ *, 6, 2, 1; 1998 UD₆ *, 6, 2, 1; 1998 UE₆ *, 9, 3, 5; 1998 UF₆ *, 6, 2, 1; 1998 UG₆ *, 9, 3, 5; 1998 UH₆ *, 6, 2, 1; 1998 UJ₆ *, 6, 2, 1; 1998 UK₆ *, 6, 2, 1; 1998 UL₆ *, 9, 3, 4; 1998 UL₈ *, 3, 1, 0; 1998 UY₁₅ *, 6, 2, 5; 1998 UZ₁₅ *, 6, 2, 5; 1998 UA₁₆ *, 6, 2, 5; 1998 UB₁₆ *, 6, 2, 5; 1998 UC₁₆ *, 6, 2, 4; 1998 UD₁₆ *, 6, 2, 4; 1998 UE₁₆ *, 6, 2, 4; 1998 UF₁₆ *, 6, 2, 4; 1998 UG₁₆ *, 6, 2, 4; 1998 UH₁₆ *, 4, 2, 4; 1998 UJ₁₆ *, 6, 2, 4; 1998 VM *, 6, 2, 2; 2549 P-L, 6, 2, 6; 4792 P-L, 3, 1, 0; 6062 P-L, 3, 1, 0; 6103 P-L, 3, 1, 0; 6520 P-L, 3, 1, 0; 6594 P-L, 3, 1, 0; 6645 P-L, 3, 1, 0; 7066 P-L, 3, 1, 0; 9518 P-L, 12, 4, 10; 4164 T-1, 3, 1, 0; 4172 T-1, 3, 1, 0; 1041 T-2, 6, 2, 1; 3109 T-2, 3, 1, 0; 4183 T-3, 3, 1, 0; (4), 6, 2, 3; (240), 6, 2, 1; (302), 6, 2, 1; (515), 9, 3, 6; (927), 3, 1, 0; (1700), 12, 4, 27; (1777), 3, 1, 0; (1822), 6, 2, 2; (1893), 3, 1, 0; (1938), 6, 2, 2; (2242), 3, 1, 0; (2327), 3, 1, 0; (2516), 6, 2, 13; (2610), 9, 3, 6; (2719), 18, 6, 7; (2814), 3, 1, 0; (2848), 9, 3, 9; (3107), 6, 2, 6; (3145), 6, 2, 5; (3239), 3, 1, 0; (3290), 6, 2, 4; (3491), 6, 2, 1; (3522), 3, 1, 0; (4016), 15, 5, 7; (4151), 6, 2, 1; (4214), 12, 4, 10; (4252), 3, 1, 0; (4282), 3, 1, 0; (4286), 3, 1, 0; (4351), 6, 2, 2; (4530), 9, 3, 5; (4591), 9, 3, 5; (4593), 6, 2, 1; (4713), 3, 1, 0; (4912), 3, 1, 0; (4960), 9, 3, 6; (5030), 3, 1, 0; (5300), 3, 1, 0; (5314), 3, 1, 0; (5455), 9, 3, 13; (5543), 3, 1, 0; (5704), 3, 1, 0; (5880), 3, 1, 0; (5934), 9, 3, 13; (6096), 6, 2, 1; (6201), 6, 2, 1; (6779), 3, 1, 0; (6951), 3, 1, 0; (6996), 3, 1, 0; (7008), 3, 1, 0; (7019), 6, 2, 1; (7060), 6, 2, 1; (7594), 3, 1, 0; (7671), 9, 3, 13; (7679), 6, 2, 1; (8084), 3, 1, 0; (8133), 3, 1, 0; (9173), 9, 3, 13; (9266), 3, 1, 0; (9284), 3, 1, 0; (9298), 3, 1, 0; (9319), 3, 1, 0; (9338), 3, 1, 0; (9339), 6, 2, 1; (9376), 9, 3, 7; (9470), 6, 2, 2; (9478), 9, 3, 5; (9497), 6, 2, 2; [2984, 531, 207*, 1997/01/31–1998/11/08]

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4.2-m William Herschel Telescope + CCD

1993 SB, 2, 1, 0; 1994 TA, 2, 1, 0; 1995 QY₉, 7, 2, 1; 1996 SZ₄, 2, 1, 0; 1998 QJ₁, 6, 3, 2; 1998 SG₃₅, 7, 3, 2; 1998 TR₆ *, 7, 2, 1; [33, 7, 1*, 1998/10/15–1998/10/19]

955 Sasseoires

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

GSC, SA-1.0

(1574), 3, 1, 0; (1796), 12, 1, 0; [15, 2, 0*, 1998/09/09–1998/09/10]

958 Observatoire de Dax

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Observers P. Dupouy, F. Marechal

Measurer F. Marechal, J.-F. Lahitte

0.203-m *f*/3.3 reflector + CCD

GSC

1997 PJ₄, 5, 2, 5; 1998 QR₂₆, 2, 1, 0; 1998 QR₅₃, 5, 2, 11; 1998 RE₂₅, 5, 2, 2; [17, 4, 0*, 1998/09/28–1998/10/31]

965 Observação Astronomica no Algarve

B. Ewen-Smith, sitio do Poio, P-8500 Portimão, Portugal [coa@mail.telepac.pt]

Observers M. Challis, P. Howard, B. Ewen-Smith

0.5-m reflector + CCD

GSC, USNO-SA1.0

1998 SD₆₇, 14, 4, 16; [14, 1, 0*, 1998/10/22–1998/11/07]

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C/1998 M2 (LINEAR)

Epoch 1998 Aug. 15.0 TT = JDT 2451040.5

T 1998 Aug. 13.1720 TT

<i>q</i>			Nakano	
2.725321	(2000.0)	P	Q	
<i>z</i> +0.000829	<i>ω</i> 37.2429	+0.1709475	+0.4867638	
±0.000003	<i>Ω</i> 260.8802	−0.9737774	+0.2159344	
<i>e</i> 0.997741	<i>i</i> 60.1822	+0.1501151	+0.8464239	

From 311 observations 1998 May 28–Nov. 5, mean residual 0″.6.

C/1998 M5 (LINEAR)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>T</i>	1999 Jan. 24.5753 TT		Nakano	
<i>q</i>	1.742203	(2000.0)	P	Q
<i>z</i>	+0.002303	ω 101.2881	−0.1155578	−0.8885370
	±0.000005	Ω 333.3762	−0.1972463	+0.4586334
<i>e</i>	0.995988	<i>i</i> 82.2279	+0.9735195	−0.0125459

From 712 observations 1998 June 30–Nov. 8, mean residual 0^u.6.**C/1998 M6 (Montani)**

Epoch 1998 Sept. 24.0 TT = JDT 2451080.5

<i>T</i>	1998 Oct. 6.3674 TT		Nakano	
<i>q</i>	5.979520	(2000.0)	P	Q
<i>z</i>	+0.000027	ω 9.1277	+0.5852807	−0.1160795
	±0.000049	Ω 306.6042	−0.7926352	−0.2903993
<i>e</i>	0.999836	<i>i</i> 91.5535	−0.1708097	+0.9498388

From 78 observations 1998 June 30–Oct. 16, mean residual 0^u.6.**P/1998 QP₅₄ (LONEOS-Tucker)**

Epoch 1998 Sept. 24.0 TT = JDT 2451080.5

<i>T</i>	1998 Oct. 6.3647 TT		Nakano	
<i>q</i>	1.882052	(2000.0)	P	Q
<i>n</i>	0.1144379	ω 30.0798	+0.9707070	−0.2208853
<i>a</i>	4.201679	Ω 341.9319	+0.1093630	+0.7565517
<i>e</i>	0.552071	<i>i</i> 17.7474	+0.2139340	+0.6154992
<i>P</i>	8.61			

From 168 observations 1998 Aug. 27–Nov. 8, mean residual 0^u.8.**P/1998 S1 (LINEAR-Mueller)***T* 1998 Nov. 2.8740 TT

<i>q</i>	2.547674	(2000.0)	Marsden	
<i>n</i>	0.1079285	ω 26.4111	+0.9018312	−0.4320804
<i>a</i>	4.368964	Ω 359.1747	+0.3569160	+0.7483626
<i>e</i>	0.416870	<i>i</i> 10.5537	+0.2435394	+0.5032494
<i>P</i>	9.13			

From 121 observations 1998 Sept. 17–Nov. 8.

C/1998 T1 (LINEAR)*T* 1999 June 25.1876 TT

<i>q</i>	1.468071	(2000.0)	Marsden	
		ω 226.2893	+0.2977041	−0.9515738
		Ω 153.3231	−0.8194195	−0.2134939
<i>e</i>	1.0	<i>i</i> 170.1661	−0.4898204	−0.2211960

From 130 observations 1998 Oct. 2–Nov. 8.

C/1998 U1 (LINEAR)*T* 1998 May 3.8754 TT

<i>q</i>	3.980822	(2000.0)	Nakano	
		ω 124.9112	+0.1123781	+0.9727776
		Ω 210.4545	+0.7301717	+0.0574956
<i>e</i>	1.0	<i>i</i> 156.4307	+0.6739588	−0.2244952

From 47 observations 1998 Oct. 18–Nov. 7.

P/1998 U2 (Mueller)*T* 1998 Oct. 20.8596 TT

<i>q</i>	2.024973	(2000.0)	Nakano	
<i>n</i>	0.1132239	ω 49.5850	+0.9000774	−0.4354569
<i>a</i>	4.231658	Ω 336.2172	+0.3872928	+0.8157457
<i>e</i>	0.521470	<i>i</i> 2.1927	+0.1996624	+0.3807051
<i>P</i>	8.70			

From 88 observations 1998 Sept. 14–Nov. 7.

P/1998 U3 (Jäger)*T* 1999 Mar. 7.7714 TT

<i>q</i>	2.152631	(2000.0)	Marsden	
<i>n</i>	0.0638793	ω 179.4942	−0.5496016	−0.7899833
<i>a</i>	6.197683	Ω 303.8178	+0.7653360	−0.3456679
<i>e</i>	0.652672	<i>i</i> 19.0944	+0.3349611	−0.5063991
<i>P</i>	15.4			

From 168 observations 1998 Oct. 24–Nov. 8.

P/1998 U4 (Spahr)*T* 1999 Mar. 4.2648 TT

<i>q</i>	3.826380	(2000.0)	Nakano	
<i>n</i>	0.0750867	ω 252.9459	+0.2727375	−0.9620000
<i>a</i>	5.564517	Ω 181.4355	+0.9533407	+0.2684079
<i>e</i>	0.312361	<i>i</i> 31.3916	−0.1294444	−0.0501320
<i>P</i>	13.1			

From 27 observations 1998 Oct. 27–Nov. 7.

C/1998 U5 (LINEAR)*T* 1998 Dec. 21.4337 TT

<i>q</i>	1.238124	(2000.0)	Marsden	
		ω 50.9158	+0.7247848	+0.0789679
		Ω 66.6934	+0.1132503	−0.9935524
<i>e</i>	1.0	<i>i</i> 131.8197	+0.6796039	+0.0813494

From 81 observations 1998 Oct. 30–Nov. 8.

(9512)* 1966 CM = 1985 QH₆ = 1985 RG₅

Discovered 1966 Feb. 13 at the Purple Mountain Observatory.

Id. H. Kaneda (*MPC* 16227)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	242.71192	(2000.0)	Williams	
<i>n</i>	0.22920449	ω 358.53127	−0.85062447	−0.51135019
<i>a</i>	2.6443604	Ω 149.70637	+0.48482633	−0.85286265
<i>e</i>	0.1079490	<i>i</i> 14.03206	+0.20342428	−0.10557598
<i>P</i>	4.30	<i>H</i> 12.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1966 02 13	330	0.9+	2.0+	1997 07 03	610	1.0+	1.7+	1998 06 29	704	0.3−	0.9−
1966 02 14	330	0.3−	1.4+	1997 07 06	610	0.2+	1.0+	1998 09 18	704	0.1+	0.7+
1966 02 21	760	0.4−	1.2−	1997 07 06	610	0.2+	0.9+	1998 09 18	704	1.2+	0.3−
1966 02 25	330	0.4+	1.4+	1997 07 06	610	0.2+	0.7+	1998 09 18	704	1.1+	0.4−
1985 08 24	095	(1.7−	4.9+)	1997 07 07	560	0.3−	0.1+	1998 09 18	704	1.3+	0.5−
1985 09 11	095	(3.1−	3.8−)	1997 07 07	560	0.5−	0.4−	1998 10 12	699	0.8−	0.2−
1989 08 01	675	0.5−	0.6+	1997 07 07	560	0.6−	0.5−	1998 10 12	699	0.1−	0.1+
1989 08 01	675	0.3−	0.6+	1997 07 08	610	0.3+	0.6+	1998 10 12	699	0.4−	0.2+
1997 06 14	596	1.2−	0.4−	1997 07 08	610	0.3+	0.3+	1998 10 16	704	0.3−	1.4−
1997 06 14	596	1.9−	0.9−	1997 07 08	610	0.2+	0.1+	1998 10 16	704	0.8−	0.9+
1997 06 14	596	1.2−	0.6−	1997 07 12	610	0.8+	0.4+	1998 10 16	704	1.5−	1.1+
1997 06 28	824	0.0	0.1−	1997 07 12	610	0.9+	0.3+	1998 10 16	704	1.9−	1.0+

1997 06 28	824	0.1−	0.2−	1997 07 12	610	1.1+	0.1+	1998 10 16	704	1.5−	1.6+
1997 06 28	824	0.9−	0.4−	1997 07 13	560	0.1−	0.0	1998 10 18	704	0.2+	0.2+
1997 07 01	610	1.1+	0.8+	1997 07 13	560	0.2+	0.8−	1998 10 18	704	0.1−	0.1+
1997 07 01	610	0.2+	0.2+	1997 07 13	560	0.2−	0.9−	1998 10 18	704	0.3−	0.7+
1997 07 01	610	0.8−	0.5−	1998 06 29	704	1.8+	0.9−	1998 10 18	704	0.1+	0.5+
1997 07 03	610	(2.3+	0.3−)	1998 06 29	704	(0.4−	3.2−)	1998 10 18	704	1.9+	0.3+
1997 07 03	610	1.6+	0.7+	1998 06 29	704	1.1+	0.5−				

(9513)* 1971 UN = 1990 SR

Discovered 1971 Oct. 26 by L. Kohoutek at Bergedorf.

Id. B. G. Marsden (*MPC* 17196)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	74.06672		(2000.0)	P	Q
<i>n</i>	0.25671601	ω	294.68547	+0.87938734	+0.46907220
<i>a</i>	2.4518887	Ω	37.48901	−0.37387440	+0.78639743
<i>e</i>	0.2380236	<i>i</i>	7.69974	−0.29478100	+0.40193327
<i>P</i>	3.84	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1948 11 03	690	0.1+	1.3−	1994 08 08	801	0.1−	0.4+	1998 08 17	120	0.3−	0.4+
1948 11 05	690	1.0+	1.6−	1994 08 08	801	1.2+	0.5+	1998 08 17	120	(3.2−	0.3+)
1971 10 26	029	0.2−	0.8−	1994 10 04	801	0.2−	0.2+	1998 08 31	704	0.5+	0.2−
1971 10 26	029	0.2+	0.1−	1994 10 04	801	0.6−	0.4+	1998 08 31	704	1.1−	1.5−
1971 10 27	095	1.1+	1.2+	1994 10 11	046	(3.2−	3.0+)	1998 08 31	704	(2.7+	0.8−)
1971 10 30	029	0.2−	0.0	1994 10 11	046	(2.9−	1.9+)	1998 08 31	704	0.1−	0.1−
1971 11 10	029	0.3+	0.3−	1994 10 12	046	0.4+	0.4+	1998 08 31	704	1.2+	0.7−
1971 11 10	029	1.0−	0.3−	1994 10 12	046	0.4+	0.6+	1998 10 15	761	0.2−	0.6+
1971 11 19	029	0.3+	0.1+	1994 10 12	046	0.1+	0.7+	1998 10 15	761	0.3−	0.7+
1989 03 07	675	0.3+	1.3−	1994 10 12	046	0.1+	0.5+	1998 10 16	761	0.5+	0.1+
1989 03 07	675	0.0	0.2+	1994 10 12	046	0.3+	0.6+	1998 10 16	761	0.1−	0.3+
1989 03 29	675	0.2−	0.5−	1994 10 14	046	0.3−	0.9+	1998 10 19	658	0.1−	0.6+
1989 03 29	675	0.6−	0.2−	1994 10 14	046	0.2−	0.9+	1998 10 19	658	0.1+	0.5+
1990 09 17	675	0.0	0.5−	1994 10 14	046	0.2−	0.8+	1998 10 19	658	0.2+	0.4+
1990 09 17	675	1.2+	0.5+	1994 10 14	046	0.1−	0.8+	1998 10 29	704	0.6−	1.3−
1990 09 19	675	0.2−	1.2−	1994 11 01	033	0.2−	0.5−	1998 10 29	704	1.1−	1.0−
1990 09 19	675	0.2−	1.0−	1994 11 01	033	0.4−	0.2−	1998 10 29	704	0.2+	0.4−
1990 09 20	675	0.4−	1.8−	1997 04 08	689	0.1+	0.5−	1998 10 29	704	0.4−	0.6−
1990 09 20	675	0.2+	0.4+	1997 04 09	689	0.3−	0.2−	1998 10 29	704	0.2+	0.8−
1990 09 20	675	0.3−	0.2−	1998 08 17	120	0.2−	0.5+				

(9514)* 1973 SG₅ = 1984 WQ₄ = 1996 BL₁

Discovered 1973 Sept. 27 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. T. Kobayashi (*MPC* 27552)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	70.34086		(2000.0)	P	Q
<i>n</i>	0.27737916	ω	253.90047	+0.71791498	+0.69514948
<i>a</i>	2.3285568	Ω	62.04331	−0.62163520	+0.66407432
<i>e</i>	0.2607749	<i>i</i>	2.39746	−0.31331735	+0.27526804
<i>P</i>	3.55	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	0.3−	0.9−	1996 01 27	709	0.2−	0.7−	1998 10 14	704	0.4+	0.5+
1973 09 19	675	0.4+	1.2−	1996 01 27	709	0.1+	0.6−	1998 10 14	704	0.2+	0.6+
1973 09 20	675	0.1−	0.7−	1996 01 27	709	0.5−	0.7−	1998 10 14	704	0.5+	0.1−
1973 09 24	675	0.8+	0.6−	1997 04 07	566	0.1−	0.1+	1998 10 14	704	1.1+	0.1+
1973 09 24	675	0.8−	0.1+	1997 04 07	566	0.0	0.5+	1998 10 15	704	1.0+	0.1+
1973 09 25	675	(1.2+	3.6−)	1997 04 07	566	0.1−	0.1−	1998 10 15	704	0.9+	0.3+
1973 09 25	675	(3.3+	3.9−)	1998 09 21	809	0.0	0.7−	1998 10 15	704	0.2+	0.2−
1973 09 27	095	1.9+	0.1+	1998 09 21	809	1.0−	0.6−	1998 10 15	704	0.2+	0.2+
1984 11 20	010	0.9+	0.9−	1998 09 21	809	1.0−	0.3−	1998 10 15	704	0.2+	0.5+
1991 11 06	691	1.4−	0.4+	1998 09 23	809	1.4−	1.8−	1998 10 28	704	0.1−	1.1+
1991 11 06	691	1.1−	0.4+	1998 09 23	809	1.8−	2.1−	1998 10 28	704	1.2+	0.6−
1991 11 06	691	1.0−	0.3+	1998 09 23	809	2.3−	1.5−	1998 10 28	704	1.4−	0.8+
1996 01 21	709	0.5+	0.8−	1998 09 26	704	0.1+	0.5+	1998 10 28	704	0.4+	1.3+

1996 01 21	709	0.5+	0.7−	1998 09 26	704	1.0+	0.8−	1998 10 29	704	0.8+	1.1+
1996 01 25	709	0.1+	0.0	1998 09 26	704	0.7−	0.9−	1998 10 29	704	0.1+	1.6+
1996 01 25	709	1.5+	0.5−	1998 09 26	704	0.7+	0.1−	1998 10 29	704	0.6+	1.7+
1996 01 25	709	0.6−	0.5−	1998 09 26	704	0.2−	0.6+	1998 10 29	704	0.1−	1.3+
1996 01 25	709	0.2−	0.2−	1998 10 14	704	0.4+	0.7+	1998 10 29	704	0.8−	0.6+

(9515)* 1975 RA₂ = 1993 HT₆

Discovered 1975 Sept. 5 by M. R. Cesco at El Leoncito.

Id. G. V. Williams (*MPC* 22947)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	76.71210		(2000.0)	P	Q
<i>n</i>	0.26140977	ω	314.32161	+0.91349379	+0.36781627
<i>a</i>	2.4224501	Ω	25.65848	−0.14999701	+0.70178264
<i>e</i>	0.2253489	<i>i</i>	23.67855	−0.37819305	+0.61009206
<i>P</i>	3.77	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1955 04 14	675	0.5−	0.7+	1994 10 05	033	0.3−	0.9−	1994 10 14	046	0.5−	0.1−
1955 04 14	675	0.0	0.6+	1994 10 06	033	0.2+	1.1−	1994 10 14	046	0.5−	0.1−
1975 09 05	808	0.1−	0.9+	1994 10 07	033	0.2+	0.3−	1994 10 16	292	1.5−	0.1+
1975 09 05	808	0.4+	0.9+	1994 10 08	801	0.2−	0.2−	1994 10 16	292	0.5+	0.3+
1975 09 06	808	0.6+	0.2+	1994 10 08	801	0.0	0.5−	1994 11 03	801	0.1+	0.1−
1975 09 06	808	0.7+	0.5−	1994 10 09	801	0.3−	0.2+	1994 11 03	801	0.8+	0.6−
1975 09 08	808	0.8−	0.3−	1994 10 09	801	0.0	0.4+	1997 05 26	689	0.9−	0.3+
1975 09 29	808	0.5+	0.2−	1994 10 10	033	0.3−	0.6−	1998 08 31	704	1.5+	0.6+
1975 09 30	808	0.2−	0.4−	1994 10 11	046	0.6−	1.4+	1998 08 31	704	1.2+	0.8+
1989 05 09	675	0.2+	1.0+	1994 10 11	046	1.2+	0.2+	1998 08 31	704	1.2+	0.6+
1989 05 09	675	0.3−	2.1+	1994 10 12	046	0.5−	0.2+	1998 08 31	704	0.3+	0.7+
1993 04 25	809	(2.0+	2.2+)	1994 10 12	046	0.3−	0.2+	1998 08 31	704	1.0+	0.8+
1993 04 25	809	(2.8+	2.5+)	1994 10 12	046	0.6−	0.2+	1998 10 02	704	0.0	0.5−
1993 04 25	809	(3.4+	2.4+)	1994 10 12	046	0.5−	0.2+	1998 10 02	704	0.3−	0.7−
1993 04 26	809	0.4+	1.0−	1994 10 12	046	0.4−	0.2+	1998 10 02	704	0.3+	1.6−
1993 04 26	809	0.6+	1.1−	1994 10 12	046	0.4−	0.2+				
1993 04 26	809	0.7+	1.0−	1994 10 14	046	0.4−	0.1−				

(9516)* 1976 YL₃ = 1977 BH = 1953 VJ₂ = 1981 SF₆ = 1992 OR₆

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

Id. B. G. Marsden (d, *MPC* 22222), H. Oishi (*MPC* 22222), T. Kobayashi (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	354.26518		(2000.0)	P	Q
<i>n</i>	0.17296122	ω	227.40506	+0.76090874	−0.64883845
<i>a</i>	3.1903395	Ω	173.04343	+0.60708172	+0.70909092
<i>e</i>	0.2118699	<i>i</i>	2.43859	+0.22906259	+0.27604118
<i>P</i>	5.70	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1953 11 14	760	(3.8−	6.4−)	1996 04 20	809	0.2+	1.3+	1998 09 26	704	0.1−	0.2+
1953 11 14	760	(2.6−	7.6−)	1998 09 14	691	1.0−	0.0	1998 09 26	704	0.2+	0.9+
1976 12 16	095	0.4+	0.1+	1998 09 14	704	0.3+	0.0	1998 09 26	704	0.1+	1.0+
1976 12 20	095	0.8−	0.1+	1998 09 14	691	1.2−	0.1+	1998 09 27	704	0.1−	0.1−
1977 01 20	095	0.9+	1.5+	1998 09 14	704	0.3+	1.2+	1998 09 27	704	1.0−	0.3+
1981 09 28	095	1.5−	0.2+	1998 09 14	691	0.9−	0.0	1998 09 27	704	0.6−	0.3+
1992 07 26	809	0.5+	1.7−	1998 09 14	704	0.1−	0.3−	1998 09 27	704	0.5−	0.9+
1992 07 26	809	0.4−	1.3−	1998 09 18	704	0.5+	0.5−	1998 09 27	704	0.7−	0.1+
1992 07 30	809	0.9+	0.8−	1998 09 18	704	0.8+	0.3−	1998 10 14	704	0.4+	0.2+
1992 07 30	809	0.8+	0.9−	1998 09 18	704	1.3+	0.4+	1998 10 14	704	0.5+	0.5−
1992 07 30	809	0.4+	0.5−	1998 09 18	704	1.0+	0.5−	1998 10 14	704	0.7−	1.0−
1992 07 31	809	0.9+	0.2−	1998 09 18	704	0.9+	0.2−	1998 10 14	704	0.3−	0.3+
1992 07 31	809	1.0+	0.6−	1998 09 21	610	0.1+	0.3+	1998 10 14	704	0.2+	0.6−
1992 07 31	809	0.3+	0.2−	1998 09 21	610	0.8+	0.1−	1998 10 15	704	0.6−	0.5−
1993 12 17	801	0.1−	1.9−	1998 09 25	704	0.5+	1.4+	1998 10 15	704	0.5+	0.0
1993 12 18	801	0.5+	1.0−	1998 09 25	704	0.3+	0.2+	1998 10 15	704	1.0−	0.3+
1996 04 18	809	(0.4+	2.4+)	1998 09 25	704	0.5−	0.4+	1998 10 15	704	1.0−	0.3+
1996 04 18	809	(0.2−	2.6+)	1998 09 25	704	1.0+	0.4+	1998 10 15	704	1.3−	0.5−

1996 04 18	809	0.4+	1.6+	1998 09 25	704	0.3+	0.4+	1998 10 17	699	0.8-	0.9+
1996 04 20	809	0.8+	1.5+	1998 09 26	704	0.2-	0.8+	1998 10 17	699	0.7-	0.2+
1996 04 20	809	1.0-	1.8+	1998 09 26	704	0.1+	0.4+	1998 10 17	699	0.6-	0.6+

(9517)* 1977 VL₁ = 1970 AN = 4318 T-1

Discovered 1977 Nov. 3 at the Purple Mountain Observatory.

Id. T. Kobayashi (*MPC* 21098)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	18.93867		(2000.0)		P		Q
n	0.23392693	ω	327.72389		+0.94943195		-0.30423107
a	2.6086505	Ω	50.18799		+0.30523979		+0.83649406
e	0.2309494	i	5.79835		+0.07353673		+0.45576435
P	4.21	H	14.4	G	0.15	U	2

Residuals in seconds of arc

1970 01 04	095	1.3-	0.3+	1977 11 08	330	0.9+	1.2-	1998 09 27	704	0.1+	1.2+
1971 03 24	675	(0.5+	3.2-)	1977 11 11	330	(3.5+	1.1+)	1998 09 27	704	1.0-	0.1-
1971 03 26	675	0.8-	1.3-	1994 10 04	801	0.5+	0.2-	1998 09 27	704	0.4-	0.3+
1971 03 26	675	0.0	2.0-	1994 10 04	801	0.2+	0.7+	1998 09 27	704	0.9-	0.6+
1971 03 27	675	(2.8-	2.1-)	1994 10 07	801	0.0	0.2+	1998 09 27	704	0.1-	0.4+
1977 10 07	675	0.0	2.2-	1994 10 07	801	0.1-	0.1+	1998 10 14	704	0.1+	0.2+
1977 10 11	675	0.9+	1.1-	1998 09 14	704	0.5+	0.7-	1998 10 14	704	0.5+	0.1+
1977 10 11	675	1.2+	0.1-	1998 09 14	704	0.8-	1.1-	1998 10 14	704	(0.5+	2.1-)
1977 10 12	675	0.4-	1.0-	1998 09 14	704	0.8-	0.0	1998 10 14	704	0.3+	0.1-
1977 10 12	675	1.0-	1.1-	1998 09 15	910	1.3+	0.3-	1998 10 14	704	0.6+	0.1-
1977 10 16	675	0.9+	1.3+	1998 09 15	910	1.3+	0.4-	1998 10 15	704	0.0	0.7+
1977 10 16	675	0.9-	1.6+	1998 09 15	910	1.1+	0.2-	1998 10 15	704	0.3-	0.2+
1977 10 16	675	1.3+	0.3-	1998 09 16	910	0.7+	0.2-	1998 10 15	704	0.4+	0.3-
1977 10 16	675	1.0-	0.9+	1998 09 16	910	0.8+	0.1+	1998 10 15	704	0.5+	1.0+
1977 10 17	675	0.1-	1.9+	1998 09 16	910	0.6+	0.0	1998 10 15	704	0.2+	0.5+
1977 10 17	675	1.0-	0.2-	1998 09 17	699	0.4-	0.2-	1998 10 17	699	0.4+	0.7+
1977 10 17	675	(0.7+	3.1+)	1998 09 17	699	0.3-	0.1-	1998 10 17	699	0.3+	0.2+
1977 10 17	675	0.2-	0.0	1998 09 17	699	0.5-	0.1-	1998 10 17	699	0.5+	0.6+
1977 10 21	675	1.1+	1.0-	1998 09 18	704	0.1+	0.2+	1998 10 26	610	(0.0	3.4-)
1977 10 21	675	(3.6+	1.2+)	1998 09 18	704	0.6-	1.0-	1998 10 26	610	(0.3+	2.4-)
1977 10 21	675	0.6-	0.1-	1998 09 18	704	0.9-	0.4-	1998 10 26	610	0.6+	0.9-
1977 10 21	675	(3.8+	0.5+)	1998 09 18	704	0.7-	1.2-	1998 10 26	610	1.1+	0.5+
1977 10 22	675	0.8-	0.2-	1998 09 18	704	(2.3-	0.6-)	1998 10 26	610	1.6+	1.9+
1977 10 22	675	0.3+	0.2+	1998 09 26	704	1.3-	0.1-	1998 10 28	704	0.3-	0.1-
1977 10 22	675	2.2+	1.5-	1998 09 26	704	1.1-	0.7-	1998 10 28	704	0.3-	0.4+
1977 10 22	675	0.0	0.3-	1998 09 26	704	0.8-	0.1+	1998 10 28	704	0.0	0.5+
1977 11 03	330	0.1+	0.0	1998 09 26	704	0.1-	0.9-	1998 10 28	704	1.2-	0.0
1977 11 04	330	(2.7+	0.5+)	1998 09 26	704	0.6-	0.2-	1998 10 28	704	1.5-	1.1+

(9518)* 1978 GA = 1989 AA₈ = 4152 T-1

Discovered 1978 Apr. 7 at the Agassiz Station of the Harvard College Observatory.

Id. T. Kobayashi (*MPC* 21098)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	300.85915		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.27098442	ω	306.88430		-0.25557021		-0.96537106
a	2.3650473	Ω	157.75064		+0.92519175		-0.25993311
e	0.1421412	i	7.95009		+0.28054250		-0.02221451
P	3.64	H	14.4	G	0.15	U	1

Residuals in seconds of arc

1971 03 24	675	(3.7+	2.0-)	1996 03 23	801	0.5-	0.5-	1998 09 27	704	1.0+	0.7-
1971 03 26	675	0.8+	1.1+	1996 03 23	801	1.1+	0.1+	1998 09 27	704	0.8+	0.7+
1971 03 26	675	0.8+	1.6+	1998 08 27	809	(2.3-	4.4-)	1998 09 27	704	1.1-	0.5+
1971 03 27	675	1.4-	0.8-	1998 08 27	809	(1.9-	4.1-)	1998 09 27	704	0.6-	0.2-
1978 04 07	801	0.2+	0.5-	1998 08 27	809	(1.0-	4.0-)	1998 09 27	704	0.1+	0.9-
1978 04 09	801	0.2-	0.5+	1998 09 17	699	0.5-	0.1+	1998 10 10	699	0.2-	0.4+
1978 04 10	801	0.5+	0.1-	1998 09 17	699	0.8-	0.8+	1998 10 10	699	0.0	0.2-
1978 05 08	801	(2.9+	3.3+)	1998 09 17	699	0.0	0.8+	1998 10 10	699	0.7+	0.4+
1978 05 12	801	0.7+	0.7-	1998 09 18	704	0.5-	0.5+	1998 10 14	704	0.2-	0.8+

1989 01 11	033	0.8-	0.2-	1998 09 18	704	1.4-	0.2-	1998 10 14	704	1.4+	0.1-
1989 01 11	033	0.6-	0.5+	1998 09 18	704	1.4-	0.1-	1998 10 14	704	1.3-	1.2-
1993 04 14	657	0.4+	0.2+	1998 09 18	704	1.0-	1.0+	1998 10 14	704	0.6+	0.4+
1993 04 14	657	0.5-	0.4-	1998 09 18	704	1.1-	0.9-	1998 10 15	704	1.1+	0.6+
1993 04 14	657	0.8+	0.4+	1998 09 26	704	0.4-	0.1+	1998 10 15	704	(1.3+	2.4-)
1996 01 18	801	0.4-	0.4+	1998 09 26	704	0.0	0.0	1998 10 15	704	1.2+	0.1+
1996 01 18	801	0.2+	0.5+	1998 09 26	704	0.7+	0.0	1998 10 15	704	(0.2+	2.2+)
1996 03 18	801	0.5+	0.1+	1998 09 26	704	1.3+	0.2-	1998 10 15	704	0.3+	0.6+
1996 03 18	801	0.1-	0.3-	1998 09 26	704	0.7+	1.1-				

(9519)* 1978 VK₃ = 1988 AX₃ = 1988 DS

Discovered 1978 Nov. 6 by E. F. Helin and S. J. Bus at Palomar.

Id. C. M. Bardwell (*MPC* 12958), S. Nakano (d, *MPC* 26737), F. N. Bowman (d, *ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Bardwell

M	173.08374		(2000.0)		P		Q
n	0.23944871	ω	327.28148		-0.75010342		+0.65703194
a	2.5683904	Ω	253.98105		-0.58868848		-0.71519520
e	0.0807765	i	4.48684		-0.30131502		-0.23833769
P	4.12	H	13.8	G	0.15	U	2

Residuals in seconds of arc

1978 11 05	675	0.4-	0.1+	1996 02 05	608	0.1+	0.3+	1998 09 27	704	0.0	1.0+
1978 11 06	675	0.2-	0.1+	1998 09 14	704	0.7+	0.1+	1998 09 27	704	0.2+	0.5+
1978 11 08	675	0.6-	0.7-	1998 09 14	704	0.0	0.5-	1998 10 14	704	0.0	0.4-
1978 11 29	675	0.9+	0.8-	1998 09 14	704	1.7-	0.0	1998 10 14	704	0.1-	0.5+
1978 11 29	675	(3.9+	0.2+)	1998 09 18	704	0.6-	0.2+	1998 10 14	704	1.4-	1.9+
1978 11 30	675	0.3+	0.1-	1998 09 18	704	0.2+	0.6-	1998 10 14	704	0.9+	1.3+
1988 01 11	033	1.5+	0.3+	1998 09 18	704	0.7-	0.3+	1998 10 14	699	1.0+	0.5+
1988 01 13	033	1.3+	0.3+	1998 09 18	704	0.6-	0.4-	1998 10 14	699	0.3+	0.3+
1988 01 14	033	1.9+	0.5+	1998 09 18	704	0.8-	0.2-	1998 10 14	699	0.7+	0.2-
1988 02 10	033	0.2-	0.2+	1998 09 25	699	0.1+	0.4+	1998 10 28	704	1.0+	0.7+
1988 02 11	033	1.1-	0.5-	1998 09 25	699	0.5-	0.2+	1998 10 28	704	0.6+	0.8-
1988 02 16	809	0.5-	1.1-	1998 09 25	699	1.0+	0.4+	1998 10 28	704	0.2+	0.3-
1988 02 16	809	1.4-	0.4-	1998 09 26	704	0.7-	0.2+	1998 10 28	704	0.3-	0.2-
1988 03 14	033	(0.5+	2.7+)	1998 09 26	704	(0.6-	2.2-)	1998 10 28	704	0.2+	0.2+
1988 03 14	033	1.2-	0.2-	1998 09 26	704	0.3-	0.9-	1998 10 29	704	0.6+	1.0-
1988 01 29	608	0.5+	0.3+	1998 09 26	704	0.1-	0.3-	1998 10 29	704	(0.2-	2.9-)
1996 01 29	608	0.6+	0.6-	1998 09 26	704	0.2+	0.3+	1998 10 29	704	1.4+	0.2-
1996 02 04	608	0.6-	0.4+	1998 09 27	704	0.9-	0.2-	1998 10 29	704	0.3+	2.0-
1996 02 04	608	0.2-	1.4+	1998 09 27	704	0.2-	0.7-				
1996 02 05	608	0.1+	0.3+	1998 09 27	704	0.8-	0.3+				

(9520)* 1978 VV₆

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

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	76.60526		(2000.0)		P		Q
n	0.29278806	ω	274.97758		+0.79380002		+0.60708888
a	2.2461244	Ω	47.64873		-0.53665891		+0.72735213
e	0.2054486	i	2.82282		-0.28614463		+0.32000307
P	3.37	H	15.1	G	0.15	U	2

Residuals in seconds of arc

1951 11 30	675	1.1+	0.9+	1981 09 25	095	(5.0+	1.6-)	1998 10 15	704	0.0	1.1-
1951 11 30	675	0.6-	0.3+	1981 11 03	801	0.3+	0.2+	1998 10 15	704	0.7-	0.3+
1977 04 24	675	0.7-	2.0+	1981 11 25	801	0.0	0.3+	1998 10 18	691	1.4-	0.3+
1977 04 24	675	0.4+	1.5+	1996 01 14	608	0.8+	0.7-	1998 10 18	691	1.5-	0.5+
1977 04 25	675	1.4+	0.4+	1996 01 14	608	0.8+	0.5-	1998 10 18	691	1.5-	0.1+
1977 04 25	675	0.2+	0.0	1996 01 16	608	0.1+	0.3-	1998 10 29	704	0.8+	0.3+
1978 11 05	675	0.3+	0.2+	1996 01 16	608	0.5+	0.2-	1998 10 29	704	0.8+	0.3-
1978 11 06	675	0.8-	0.6+	1998 10 14	699	0.1+	0.6+	1998 10 29	704	1.2+	0.2-
1978 11 07	675	0.7-	0.8+	1998 10 14	699	0.2+	0.8+	1998 10 29	704	0.2+	0.3-
1978 11 08	675	0.8-	0.6+	1998 10 14	699	0.3+	0.7+	1998 10 29	704	0.9+	0.4-
1978 11 29	675	0.6-	0.0	1998 10 15	704	0.1-	0.0				
1978 11 30	675	0.2-	0.2-	1998 10 15	704	(0.8+	2.1+)				

(9521)* 1980 FS₁ = 1997 GW₂₇

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

Id. B. G. Marsden (*MPC* 29608)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	125.12247		(2000.0)			P		Q			
<i>a</i>	0.28989927	ω	68.19161			−0.13185469		+0.99111226			
<i>n</i>	2.2610212	Ω	194.26549			−0.93385013		−0.13016269			
<i>e</i>	0.1457599	<i>i</i>	4.10283			−0.33247297		−0.02746196			
<i>P</i>	3.40	<i>H</i>	15.3		<i>G</i>	0.15		<i>U</i>	1		
Residuals in seconds of arc											
1980 03 16	809	0.1−	0.7+	1997 04 12	684	0.5+	0.0	1998 09 26	704	0.6−	1.0−
1980 03 16	809	0.3+	0.2+	1997 04 14	684	1.1+	0.9+	1998 09 26	704	0.0	1.7−
1980 03 16	809	0.1−	0.2+	1997 04 14	684	0.1+	0.6+	1998 09 26	704	0.1−	1.0−
1980 03 16	809	0.5+	0.1−	1997 04 14	684	0.2−	0.6+	1998 09 26	704	0.1−	0.1−
1980 03 17	809	0.3+	0.1+	1997 04 15	684	0.4−	0.0	1998 09 26	704	1.0−	1.2−
1980 03 17	809	0.1−	0.7−	1997 04 15	684	0.3−	0.1−	1998 09 27	704	0.8+	0.5+
1980 03 17	809	0.0	0.8+	1997 04 27	684	0.2−	0.3+	1998 09 27	704	0.9−	0.2+
1980 03 17	809	0.3−	0.2+	1997 04 28	684	0.4+	0.9+	1998 09 27	704	1.5−	1.3+
1980 03 23	809	0.0	0.2+	1997 04 28	684	0.0	0.4+	1998 09 27	704	(0.5+	2.0+)
1991 09 09	691	0.0	0.2+	1998 09 17	422	0.2−	0.3+	1998 09 27	704	1.6−	1.8+
1991 09 09	691	0.3−	0.2−	1998 09 17	422	0.3+	1.2+	1998 10 19	699	0.9+	1.2+
1991 09 09	691	0.1+	0.5+	1998 09 18	704	0.5−	0.7−	1998 10 19	699	0.6+	0.5−
1995 11 17	327	0.1+	0.4−	1998 09 18	704	0.2+	0.1+	1998 10 19	699	1.9+	0.3−
1995 11 17	327	0.0	0.5−	1998 09 18	704	1.2+	0.5+	1998 10 29	704	0.2+	1.7+
1997 04 12	684	0.1−	0.2+	1998 09 18	704	0.9+	1.9+	1998 10 29	704	0.5−	0.9+
1997 04 12	684	0.3+	0.0	1998 09 18	704	1.7−	0.3+				

(9522)* 1981 DS = 1954 FG

Discovered 1981 Feb. 28 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. E. Bowell (*MPC* 24733)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	312.48792		(2000.0)			P		Q			
<i>n</i>	0.14681292	ω	219.01073			−0.13485668		−0.97986263			
<i>a</i>	3.5587149	Ω	239.20268			+0.94661677		−0.08349053			
<i>e</i>	0.0670693	<i>i</i>	9.87067			+0.29279750		−0.18137958			
<i>P</i>	6.71	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1954 03 28	675	1.2−	0.4+	1981 04 09	413	0.0	0.6−	1998 10 14	704	0.7+	0.3−
1954 03 28	675	1.3+	1.1−	1981 05 01	413	1.6+	0.2−	1998 10 14	704	1.3−	0.9−
1981 02 09	413	0.7−	0.2+	1981 05 03	413	0.6+	0.6−	1998 10 15	704	0.0	0.0
1981 02 09	413	1.4+	0.7+	1994 02 10	675	0.4+	1.0−	1998 10 15	704	1.2+	0.7−
1981 02 28	413	0.4−	1.1+	1994 02 10	675	0.0	0.2−	1998 10 15	704	0.1−	0.2−
1981 02 28	413	2.0+	0.1+	1997 10 31	688	0.6+	0.1−	1998 10 15	704	1.4−	0.6+
1981 03 06	413	2.2−	0.8+	1997 10 31	688	0.2+	0.3+	1998 10 16	327	0.6−	0.2+
1981 03 06	413	0.6−	1.3−	1998 09 26	704	0.2+	0.3−	1998 10 16	327	0.2+	0.2+
1981 03 08	413	0.8−	0.6+	1998 09 26	704	0.3+	0.3+	1998 10 16	327	1.2−	0.0
1981 03 08	413	0.7+	0.6−	1998 09 26	704	0.8+	0.1−	1998 10 17	327	0.1−	0.1+
1981 03 12	413	1.0−	0.7+	1998 09 26	704	0.2+	0.3−	1998 10 17	327	0.1−	0.2+
1981 03 12	413	1.3+	1.1−	1998 09 26	704	1.3−	0.3+	1998 10 17	327	0.3−	0.1+
1981 04 07	413	1.2−	1.3+	1998 10 11	699	0.0	0.5+	1998 10 28	704	0.2−	0.6−
1981 04 07	413	0.4−	0.5+	1998 10 11	699	0.1−	0.1+	1998 10 28	704	0.9+	0.6+
1981 04 08	413	0.4−	0.6+	1998 10 11	699	0.1+	0.8+	1998 10 28	704	0.4+	0.8−
1981 04 08	413	1.1+	0.2+	1998 10 14	704	0.2+	0.5+	1998 10 28	704	0.1−	0.4−
1981 04 09	413	1.1−	0.4+	1998 10 14	704	0.8+	1.1+				

(9523)* 1981 EE₁ = 1977 DC

Discovered 1981 Mar. 5 by H. Debehogne and G. DeSanctis at the European Southern Observatory.

Id. W. Landgraf (*MPC* 10820)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	243.01561		(2000.0)		P		Q				
<i>n</i>	0.25683511	ω	18.58317		−0.96089350		−0.27539314				
<i>a</i>	2.4511306	Ω	145.38946		+0.24715067		−0.90014977				
<i>e</i>	0.1302975	<i>i</i>	2.92888		+0.12490087		−0.33747447				
<i>P</i>	3.84	<i>H</i>	14.1		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1954 02 26	675	0.8+	0.0	1981 03 09	809	0.1+	0.7−	1998 09 25	699	0.2+	0.1+
1954 02 26	675	1.2−	0.6+	1981 03 09	809	0.4+	0.7−	1998 09 25	699	0.6−	0.6+
1954 03 07	760	1.2+	0.3+	1981 03 09	809	0.5+	0.8−	1998 09 26	704	0.1+	1.0+
1977 02 13	675	0.2+	0.3+	1981 03 09	809	0.8+	0.5−	1998 09 26	704	0.4+	1.0−
1977 02 14	675	0.5−	0.4−	1981 03 10	809	0.2+	0.5−	1998 09 26	704	1.2−	0.6−
1977 02 16	801	0.7−	2.0+	1981 03 10	809	0.7+	0.9−	1998 09 26	704	0.3+	0.7−
1978 07 07	675	2.4−	1.8+	1981 03 10	809	1.1+	1.2−	1998 09 26	704	0.3+	0.5+
1978 07 08	675	0.6+	2.0+	1981 03 11	413	0.6−	1.3+	1998 09 27	704	0.7+	0.1−
1978 07 09	675	0.8+	1.5+	1981 03 11	413	0.5+	0.7+	1998 09 27	704	0.3+	1.3+
1981 02 02	413	0.1−	0.7−	1981 03 16	809	0.3+	0.0	1998 09 27	704	0.4+	0.1+
1981 02 13	413	0.1+	0.0	1981 03 16	809	0.5+	0.1−	1998 09 27	704	0.1−	0.7+
1981 03 02	413	1.8−	1.7+	1981 03 16	809	0.8+	0.0	1998 09 27	704	0.0	0.2+
1981 03 02	413	0.1+	0.2+	1981 03 17	809	0.5−	1.0+	1998 10 15	704	0.4−	0.4+
1981 03 03	413	1.1−	0.9+	1981 03 17	809	0.2−	0.1−	1998 10 15	704	1.3+	1.7−
1981 03 03	413	0.1+	0.6+	1981 04 26	413	1.4−	0.8−	1998 10 15	704	0.5+	0.5+
1981 03 05	809	0.2−	0.1+	1981 05 02	413	1.9−	0.5−	1998 10 15	704	0.3+	1.3−
1981 03 05	809	0.0	0.5+	1990 08 24	809	0.2−	2.0−	1998 10 15	704	0.6−	0.5+
1981 03 05	809	0.1−	0.6+	1990 08 24	809	1.1−	0.9−	1998 10 19	699	0.5+	0.4+
1981 03 06	809	0.9+	0.4+	1990 08 24	809	(1.0+	2.5−)	1998 10 19	699	1.6+	0.5+
1981 03 06	809	1.4+	0.5+	1991 12 11	033	0.1−	0.5+	1998 10 19	699	1.2+	0.5+
1981 03 06	809	1.5+	0.5+	1991 12 12	033	0.4−	0.7+	1998 10 28	704	0.0	0.3−
1981 03 07	809	1.7−	0.2−	1991 12 12	033	0.5−	0.7+	1998 10 28	704	0.4+	1.0−
1981 03 07	809	0.6−	1.1−	1998 09 14	704	1.0−	1.0−	1998 10 28	704	1.0+	0.7−
1981 03 07	809	0.1+	1.9−	1998 09 14	704	(2.2−	2.3+)	1998 10 28	704	(1.0+	2.3+)
1981 03 07	413	0.6−	1.2+	1998 09 14	704	0.1−	0.9+	1998 10 28	704	0.6+	1.7+
1981 03 07	413	0.5+	0.5+	1998 09 17	691	1.0−	0.0	1998 10 29	704	0.2−	0.2+
1981 03 08	809	0.4−	0.4−	1998 09 17	691	1.1−	0.2−	1998 10 29	704	1.1−	0.1−
1981 03 08	809	0.0	0.5−	1998 09 17	691	0.9−	0.0	1998 10 29	704	(1.8+	2.4+)
1981 03 08	809	0.5+	0.5−	1998 09 25	699	0.5+	0.6+	1998 10 29	704	0.1−	0.5+

(9524)* 1981 EJ₅ = 1975 NU

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

Id. T. Furuta (*JAM* 1874)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	78.85817		(2000.0)		P		Q				
n	0.30249738	ω	9.67640		+0.45183269		+0.88829756				
a	2.1978007	Ω	287.22329		−0.82414180		+0.38031039				
e	0.2258848	i	4.94345		−0.34152234		+0.25747126				
P	3.26	H	14.7		G	0.15	U	2			
Residuals in seconds of arc											
1975 07 11	095	(4.5−	0.7+)	1981 04 08	413	0.9−	0.3+	1998 08 27	704	0.6+	0.4+
1975 07 13	095	0.4−	1.1+	1981 04 09	413	0.7−	0.1+	1998 08 27	704	0.3−	0.0
1981 02 12	413	0.4−	0.2−	1981 04 09	413	1.2+	0.6−	1998 08 27	699	0.6+	1.1+
1981 02 14	413	0.1−	0.4+	1981 04 29	413	1.5−	0.8−	1998 08 27	704	0.6−	0.6+
1981 03 01	413	1.2+	1.3+	1989 12 21	888	1.2−	0.2+	1998 08 27	699	0.6+	0.7+
1981 03 02	413	1.4−	1.1−	1989 12 21	888	0.1−	0.1+	1998 08 27	704	0.2+	0.8+
1981 03 07	413	1.6−	0.5+	1990 01 04	888	1.7+	0.6−	1998 08 27	699	0.6+	0.2−
1981 03 07	413	1.6+	0.1−	1990 01 04	888	0.7−	0.6+	1998 08 27	704	0.4−	0.7+
1981 03 07	413	0.6+	0.4+	1998 06 29	704	0.9−	1.5−	1998 09 22	689	0.4−	0.5−
1981 03 07	413	0.5+	1.8+	1998 06 29	704	1.0+	0.6−	1998 10 09	746	0.4+	0.9−
1981 03 10	413	1.1−	0.7−	1998 06 29	704	0.3+	0.3−	1998 10 09	746	0.1+	0.2−
1981 03 10	413	1.4+	0.9−	1998 06 29	704	0.1+	1.3−	1998 10 09	746	0.7−	0.1−
1981 03 11	413	1.7+	0.4+	1998 06 29	704	0.8+	0.5−	1998 10 09	746	0.2−	0.1−
1981 03 12	413	0.1+	0.2−	1998 08 23	704	1.6+	0.5+	1998 10 09	746	0.6+	0.0
1981 03 12	413	(3.0+	0.9−)	1998 08 23	704	0.6−	0.3−	1998 10 10	746	0.9−	0.6−

M.P.C. 32870

1998 NOV. 10

1981 04 07 413 0.4- 0.6- 1998 08 23 704 (1.2+ 2.1+) 1998 10 10 746 0.5- 1.1-
 1981 04 07 413 0.8+ 0.7- 1998 08 23 704 1.7- 1.2- 1998 10 10 746 0.9+ 0.1-
 1981 04 08 413 1.3- 0.0 1998 08 23 704 0.1+ 1.9+

(9525)* 1981 EF₁₁ = 1977 DH₉ = 1994 PS₁₉

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

Id. B. G. Marsden (*MPC* 23484), L. D. Schmadel (*ibid.*), K. Hurukawa (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	8.31035		(2000.0)		P		Q	
<i>n</i>	0.25560572	ω	61.54083		+0.85029532		-0.52223059	
<i>a</i>	2.4589838	Ω	329.80468		+0.42590650		+0.75572998	
<i>e</i>	0.0988545	<i>i</i>	7.46792		+0.30919497		+0.39515491	
<i>P</i>	3.86	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 02 19	381	0.9+	1.7+	1994 08 13	809	0.1-	1.7+	1998 09 18	699	0.4+	0.2-
1977 02 19	381	0.9+	1.1+	1994 08 13	809	0.0	1.8+	1998 09 18	704	0.0	0.6-
1981 02 12	413	0.3+	0.3+	1994 09 05	809	(0.7+	3.9-)	1998 09 18	704	0.3+	0.1-
1981 02 13	413	0.2+	1.2+	1994 09 05	809	(1.2+	4.0-)	1998 09 18	699	0.5+	0.1+
1981 03 01	413	1.2-	0.9+	1994 09 05	809	(0.5+	4.0-)	1998 09 18	704	0.2-	0.3+
1981 03 01	413	(3.4+	0.2+)	1995 11 22	691	0.8+	0.2-	1998 09 18	699	0.9+	0.1+
1981 03 01	413	0.2-	1.6+	1995 11 22	691	0.6+	0.6-	1998 09 26	704	0.1+	0.4+
1981 03 01	413	1.5+	0.1+	1995 11 22	691	0.8+	0.3-	1998 09 26	704	0.2+	0.2-
1981 03 07	413	2.2+	0.1+	1998 08 02	699	1.1-	1.6-	1998 09 26	704	0.2-	0.2+
1981 03 07	413	1.8+	1.3+	1998 08 02	699	0.6+	1.8-	1998 09 26	704	0.2+	0.1+
1981 03 11	413	0.7-	0.1+	1998 08 02	699	0.8+	0.5-	1998 09 26	704	0.3-	0.2+
1981 03 11	413	2.2+	0.4-	1998 08 27	699	0.3+	1.1-	1998 09 27	704	0.7-	0.3-
1981 03 15	413	0.9-	0.6+	1998 08 27	699	0.4+	1.0-	1998 09 27	704	0.4+	0.2+
1981 03 15	413	(4.1+	1.0+)	1998 08 27	699	0.2+	0.3-	1998 09 27	704	0.1+	0.4+
1981 04 05	413	1.2-	1.0+	1998 08 28	704	0.8+	0.5+	1998 09 27	704	0.8-	0.4+
1981 04 05	413	0.4+	0.5+	1998 08 28	704	(0.4+	2.2+)	1998 09 27	704	1.0-	0.6+
1981 04 06	413	2.1-	0.1+	1998 08 28	704	0.3+	0.8+	1998 10 15	699	0.5-	0.3-
1981 04 06	413	0.8+	0.9-	1998 08 28	699	0.3-	0.1-	1998 10 15	704	0.7-	0.3+
1981 04 12	413	0.5-	0.3-	1998 08 28	699	0.5-	0.3+	1998 10 15	699	0.2-	0.5-
1981 04 12	413	1.8-	0.0	1998 08 28	699	1.2-	0.6+	1998 10 15	704	0.0	1.5+
1981 04 29	413	0.1+	0.9-	1998 09 14	704	0.5-	0.6-	1998 10 15	699	0.5+	0.4-
1994 08 12	809	(1.4+	2.2+)	1998 09 14	704	0.7-	0.1-	1998 10 15	704	0.9-	0.7+
1994 08 12	809	0.2+	1.5+	1998 09 14	704	0.0	0.4+	1998 10 15	704	0.5-	1.0+
1994 08 12	809	0.2-	1.7+	1998 09 18	704	0.2+	0.3-	1998 10 15	704	0.1-	0.6-
1994 08 13	809	0.4-	1.4+	1998 09 18	704	0.7-	0.1+				

(9526)* 1981 EC₁₃

Discovered 1981 Mar. 1 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

<i>M</i>	150.07629		(2000.0)		P		Q	
<i>n</i>	0.19754592	ω	292.04329		-0.45746958		+0.88495235	
<i>a</i>	2.9198285	Ω	310.43396		-0.76785227		-0.44251211	
<i>e</i>	0.0273979	<i>i</i>	6.56845		-0.44846903		-0.14505985	
<i>P</i>	4.99	<i>H</i>	13.9		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 02 09	413	1.8+	1.6-	1991 05 12	688	0.7+	0.5+	1998 09 26	704	0.6-	1.1+
1981 03 01	413	0.7+	0.4+	1991 05 12	688	0.4-	0.5+	1998 09 26	704	(2.1-	0.0)
1981 03 01	413	1.2+	0.1-	1991 05 13	688	0.6+	0.1+	1998 09 27	704	0.9-	0.4-
1981 03 06	413	1.5-	1.1+	1991 05 13	688	0.6-	0.1-	1998 09 27	704	(2.7+	3.2+)
1981 03 06	413	1.2+	0.3+	1993 09 16	658	0.2+	0.3-	1998 09 27	704	0.4-	0.1+
1981 03 08	413	1.5-	1.0+	1993 09 16	658	0.5+	0.1+	1998 09 27	704	0.9+	1.5+
1981 03 08	413	0.2+	0.5+	1993 09 16	658	0.3+	0.1+	1998 09 27	704	0.3-	0.8+
1981 03 12	413	0.3-	0.8+	1993 09 20	658	0.3-	1.3+	1998 10 15	704	0.0	0.5+
1981 03 12	413	1.0+	0.2-	1993 09 20	658	0.3-	1.3+	1998 10 15	704	0.1-	1.1+
1981 04 09	413	1.2+	0.3-	1993 09 20	658	0.5-	1.3+	1998 10 15	704	0.5-	1.2-
1981 04 09	413	2.0-	0.6+	1997 05 29	696	0.1-	0.2+	1998 10 15	704	0.7-	0.7-
1981 05 01	413	0.8+	1.9-	1997 05 29	696	0.2+	0.1-	1998 10 15	704	1.1-	0.3+

1981 05 03 413 1.2- 0.4- 1997 05 29 696 0.2+ 0.3- 1998 10 28 704 1.7+ 0.4-
 1984 12 31 675 0.9- 0.2+ 1998 09 18 704 0.4- 0.2- 1998 10 28 704 (2.4+ 0.6+)
 1987 06 17 675 0.4- 0.4+ 1998 09 18 704 0.8- 1.5- 1998 10 28 704 1.5+ 1.8-
 1987 06 17 675 0.3- 0.0 1998 09 18 704 0.9- 0.3+ 1998 10 28 704 (0.9+ 2.5+)
 1987 06 23 675 0.3- 0.2+ 1998 09 26 704 1.9+ 0.3-
 1987 06 23 675 0.1- 0.2- 1998 09 26 704 0.8+ 0.8-

(9527)* 1981 EH₂₃

Discovered 1981 Mar. 3 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

<i>M</i>	345.04200		(2000.0)		P		Q	
<i>n</i>	0.26085569	ω	163.88202		+0.20749905		-0.97805991	
<i>a</i>	2.4258792	Ω	274.13935		+0.89545041		+0.19752684	
<i>e</i>	0.1190592	<i>i</i>	1.06390		+0.39384351		+0.06619638	
<i>P</i>	3.78	<i>H</i>	15.1		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 02 13	675	0.1-	0.6+	1994 09 01	691	0.4-	0.0	1998 10 15	704	0.3+	0.2+
1977 02 14	675	1.6-	1.1+	1994 10 08	691	0.6-	0.1+	1998 10 15	704	0.5+	0.6-
1979 09 18	675	0.6+	0.7+	1994 10 08	691	0.5-	0.3+	1998 10 15	704	1.2-	0.0
1979 09 19	675	0.5+	0.6+	1994 10 08	691	0.6-	0.2+	1998 10 15	704	(0.3-	3.0-)
1981 02 09	413	0.4+	0.3-	1998 09 26	704	0.4+	0.8+	1998 10 15	327	0.3+	0.3-
1981 02 13	413	0.3+	0.4+	1998 09 26	704	1.1-	0.7-	1998 10 15	327	0.3+	0.1+
1981 03 03	413	0.9-	0.6+	1998 09 26	704	1.2+	0.7+	1998 10 15	327	0.2+	0.1+
1981 03 03	413	(4.3+	3.0-)	1998 09 26	704	0.6+	1.6-	1998 10 17	327	0.2+	0.1+
1981 03 07	413	0.4+	0.8+	1998 09 26	704	0.9-	0.3+	1998 10 17	327	0.2+	0.0
1981 03 07	413	2.3+	0.6-	1998 09 27	691	0.9-	0.6-	1998 10 17	327	0.1+	0.3-
1981 03 11	413	2.2-	1.5+	1998 09 27	691	1.0-	0.6-	1998 10 18	327	0.3-	0.2-
1981 03 16	413	0.8+	0.8-	1998 09 27	691	0.9-	0.6-	1998 10 18	327	0.0	0.0
1981 03 29	413	0.6-	0.7+	1998 10 10	699	1.3+	0.5+	1998 10 18	327	0.1+	0.2-
1981 04 08	413	0.5-	0.2-	1998 10 10	699	1.9+	1.1+	1998 10 28	704	0.3+	0.2-
1981 04 08	413	(3.2+	1.8-)	1998 10 10	699	0.9+	1.9+	1998 10 28	704	1.0+	1.0-
1981 04 11	413	0.3-	0.1+	1998 10 14	704	0.3-	0.2+	1998 10 28	704	0.3+	0.4-
1981 04 11	413	1.1+	1.7-	1998 10 14	704	1.9-	1.2+	1998 10 28	704	0.0	0.5-
1981 04 30	413	0.4+	0.9-	1998 10 14	704	0.4+	0.0	1998 10 29	704	0.4-	0.5-
1981 05 02	413	1.0+	1.0-	1998 10 14	704	0.7-	0.2-	1998 10 29	704	0.8+	0.5+
1994 09 01	691	0.2-	0.2-	1998 10 14	704	(3.3-	0.7-)	1998 10 29	704	0.1-	0.1-
1994 09 01	691	0.1+	0.3-	1998 10 15	691	0.5-	0.1+	1998 10 29	704	0.3+	0.1+
1994 09 01	691	0.1-	0.1-	1998 10 15	691	0.1-	0.0	1998 10 29	704	0.1+	0.3-
1994 09 01	691	0.3-	0.2+	1998 10 15	691	0.1-	0.0				
1994 09 01	691	0.4-	0.0	1998 10 15	704	0.5+	0.0				

(9528)* 1981 EH₂₄

Discovered 1981 Mar. 7 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

<i>M</i>	356.04837		(2000.0)		P		Q	
<i>n</i>	0.20183125	ω	21.07322		+0.63454015		-0.77265302	
<i>a</i>	2.8783511	Ω	29.55079		+0.70344830		+0.56709589	
<i>e</i>	0.0680921	<i>i</i>	2.22341		+0.32018634		+0.28532362	
<i>P</i>	4.88	<i>H</i>	14.6		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 02 09	413	1.3-	2.1-	1991 04 14	688	0.2+	0.2-	1998 10 14	704	0.7+	0.8+
1981 02 13	413	0.8+	1.9-	1991 04 14	688	0.0	0.0	1998 10 14	704	(3.9+	0.9+)
1981 03 02	413	1.5-	0.5-	1993 09 17	809	1.2+	1.7-	1998 10 14	704	(0.5+	2.3+)
1981 03 03	413	0.2+	1.3-	1993 09 17	809	0.1+	1.9-	1998 10 14	704	1.0-	0.3-
1981 03 03	413	0.4+	0.1+	1993 09 17	809	(2.8-	2.1-)	1998 10 15	704	1.4-	0.4+
1981 03 07	413	0.1-	1.1-	1993 09 18	809	1.6+	1.3-	1998 10 15	704	0.4+	0.4+
1981 03 11	413	(6.1+	3.1-)	1993 09 18	809	1.4+	0.7-	1998 10 15	704	1.1-	1.5+
1981 03 11	413	1.5-	1.2-	1993 09 18	809	0.2+	0.7-	1998 10 15	704	1.1-	0.8-
1981 03 16	413	(4.4+	5.1-)	1993 09 18	691</						

1998 NOV. 10

M.P.C. 32871

1981 04 26	413	(3.4+ 2.4-)	1998 09 26	704	1.2+ 1.0-	1998 10 28	704	0.7- 0.1+
1981 05 02	413	0.3- 1.8+	1998 09 26	704	1.0+ 0.7+	1998 10 28	704	0.4+ 0.8-
1988 09 15	675	0.9+ 1.8-	1998 09 26	704	0.3- 0.8-	1998 10 28	704	0.8- 1.7-
1988 09 15	675	0.2- 2.1-	1998 09 26	704	0.3+ 1.3+	1998 10 28	704	0.3- 1.5+
1988 09 16	807	1.0+ 0.2+	1998 09 26	704	0.5+ 0.1-	1998 10 28	704	0.9- 1.1+
1988 09 18	807	0.8+ 0.7-	1998 09 27	704	0.3+ 0.1+	1998 10 29	704	0.4+ 0.3+
1988 10 04	807	1.3- 0.9-	1998 09 27	704	0.1+ 1.6+	1998 10 29	704	1.1+ 1.0-
1988 11 03	807	1.5+ 0.3-	1998 09 27	704	1.6- 0.9+	1998 10 29	704	0.9+ 0.9+
1988 11 06	807	0.5+ 0.7+	1998 09 27	704	1.4+ 0.3-	1998 10 29	704	(2.4+ 1.7+)
1988 11 08	807	0.5+ 0.6+	1998 09 27	704	(2.0- 0.7+)	1998 10 29	704	1.7- 0.9-

(9529)* 1981 EF₂₅

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

M	329.49320		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26191849	ω	21.31671	-0.16378562	-0.98647893
a	2.4193123	Ω	78.11035	+0.90423370	-0.15247406
e	0.1587257	i	0.33937	+0.39438012	-0.06009148
P	3.76	H	15.5	G 0.15	U 1

Residuals in seconds of arc

1977 02 11	675	0.5+ 0.1+	1981 05 02	413	1.2- 0.6+	1998 10 15	704	(0.1+ 2.2+)
1977 02 12	675	0.4- 0.3+	1996 03 11	691	0.2+ 0.4+	1998 10 23	731	(2.3+ 0.1+)
1977 02 14	675	0.0 0.3+	1996 03 11	691	0.2+ 0.3+	1998 10 23	731	0.8+ 1.2-
1981 02 09	413	1.6+ 0.5-	1996 03 11	691	0.2+ 0.3+	1998 10 23	731	0.4- 0.3-
1981 02 12	413	0.6+ 0.3+	1996 03 18	691	0.1+ 0.5+	1998 10 24	731	0.1- 0.1+
1981 02 13	413	0.0 0.3+	1996 03 18	691	0.0 0.5+	1998 10 24	731	0.4- 0.8+
1981 03 02	413	2.3- 0.2-	1996 03 18	691	0.2+ 0.4+	1998 10 24	731	1.3+ 0.8+
1981 03 02	413	0.2+ 1.2-	1998 09 20	809	(4.4+ 1.6+)	1998 10 28	704	0.5- 0.6-
1981 03 06	413	0.3- 0.7-	1998 09 20	809	(3.7+ 1.0+)	1998 10 28	704	0.3- 1.5-
1981 03 11	413	0.7- 0.6-	1998 09 20	809	(3.7+ 1.4+)	1998 10 28	704	0.1- 0.9-
1981 03 15	413	1.2- 0.3+	1998 09 26	704	0.0 0.5-	1998 10 28	704	0.1- 0.7-
1981 03 15	413	1.9+ 1.7-	1998 09 26	704	0.2- 0.2+	1998 10 29	704	0.1+ 0.0
1981 04 06	413	1.7- 0.9+	1998 09 26	704	1.6- 1.0-	1998 10 29	704	0.3- 0.2+
1981 04 06	413	0.2- 1.3-	1998 09 26	704	1.4+ 1.2+	1998 10 29	704	0.7+ 0.8+
1981 04 10	413	0.7- 0.2+	1998 09 26	704	1.2+ 0.4+	1998 10 29	704	0.6+ 0.1-
1981 04 10	413	(1.6+ 2.8-)	1998 10 15	704	0.2- 1.9+	1998 10 29	704	1.4- 0.4-
1981 04 26	413	1.8+ 0.8-	1998 10 15	704	(1.3+ 2.6+)			
1981 05 01	413	1.1+ 0.7+	1998 10 15	704	(0.8- 3.4+)			

(9530)* 1981 EO₂₆

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

M	337.69229		(2000.0)	P	Q
n	0.20140339	ω	137.73701	+0.32752055	-0.94473522
a	2.8824262	Ω	293.14008	+0.86265199	+0.30518668
e	0.0452015	i	0.89359	+0.38543719	+0.11973494
P	4.89	H	13.9	G 0.15	U 2

Residuals in seconds of arc

1951 02 04	675	0.0 1.1-	1991 04 15	675	(1.3+ 3.0+)	1998 10 10	699	0.1+ 0.3+
1951 02 04	675	0.4+ 0.0	1991 04 19	809	1.4+ 0.8+	1998 10 10	699	0.1+ 1.1-
1981 02 12	413	0.5- 0.2+	1991 04 19	809	(2.0- 0.5+)	1998 10 10	699	0.0 1.0+
1981 02 12	413	1.2- 0.3+	1991 04 19	809	1.1+ 0.7-	1998 10 14	704	1.0+ 0.2+
1981 02 13	413	0.6- 0.6-	1991 04 19	675	0.6- 0.3+	1998 10 14	704	0.8- 0.2+
1981 03 02	413	1.2+ 0.7-	1991 04 19	675	1.0+ 0.2-	1998 10 14	704	0.2+ 0.2+
1981 03 02	413	(4.4- 1.1+)	1993 10 10	809	1.7- 1.3+	1998 10 14	704	0.5+ 0.8-
1981 03 06	413	(3.4+ 3.0-)	1993 10 10	809	1.1- 0.6+	1998 10 15	704	0.2- 0.8+
1981 03 06	413	0.4- 0.5-	1993 10 10	809	(2.1- 0.1+)	1998 10 15	704	0.8- 0.6+
1981 03 11	413	0.9- 0.2+	1993 10 22	809	(0.3- 2.0+)	1998 10 15	704	0.2- 0.7+
1981 03 15	413	0.1- 0.2+	1993 10 22	809	0.7- 1.6+	1998 10 15	704	1.1+ 0.9+
1981 03 15	413	0.2+ 1.0+	1993 10 22	809	1.8- 1.7+	1998 10 15	470	(3.9- 2.3-)
1981 04 05	413	1.9- 1.3+	1998 09 18	809	0.6+ 1.3+	1998 10 15	470	(3.7- 2.6-)

1981 04 05	413	(3.8+ 1.1-)	1998 09 18	809	0.4- 0.3+	1998 10 15	470	(3.0- 2.0-)
1981 04 06	413	0.6- 0.3+	1998 09 18	809	0.1- 0.2-	1998 10 17	699	0.5+ 0.3+
1981 04 06	413	0.1- 0.8-	1998 09 20	809	0.7- 0.3-	1998 10 17	699	0.1+ 0.2+
1981 04 10	413	2.3+ 0.6+	1998 09 20	809	1.0- 0.4-	1998 10 17	699	1.0+ 0.0
1981 05 01	413	0.6+ 0.8-	1998 09 20	809	1.2- 1.8-	1998 10 28	704	0.3+ 0.2-
1981 05 03	413	0.8- 0.6-	1998 09 26	704	0.3+ 0.2-	1998 10 28	704	0.1+ 0.1-
1988 09 15	675	0.7+ 0.9-	1998 09 26	704	0.5+ 0.0	1998 10 28	704	0.1+ 0.0
1988 09 15	675	0.4- 2.3-	1998 09 26	704	0.5+ 0.8-	1998 10 28	704	1.7- 0.2+
1988 11 04	807	1.7+ 1.8-	1998 09 26	704	0.7+ 0.7-	1998 10 29	704	0.7- 0.5+
1988 11 06	807	1.8+ 0.6-	1998 09 26	704	0.2+ 0.1-	1998 10 29	704	0.1- 0.2+
1991 04 10	809	(0.9+ 2.3-)	1998 09 27	704	0.8+ 0.9-	1998 10 29	704	0.4+ 0.0
1991 04 10	809	0.3- 1.3-	1998 09 27	704	1.1+ 1.4-	1998 10 29	704	0.4+ 1.1+
1991 04 10	809	0.4- 0.4-	1998 09 27	704	0.3- 0.9-	1998 10 29	704	0.3- 0.6-
1991 04 15	675	0.7- 0.1-	1998 09 27	704	0.1+ 0.7-			

(9531)* 1981 QK = 1961 UU = 1991 QK

Discovered 1981 Aug. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. G. V. Williams (*MPC* 20011)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	71.57739		(2000.0)	P	Q
n	0.29513502	ω	354.06019	+0.99419877	+0.10755761
a	2.2342009	Ω	359.76405	-0.09403983	+0.86735165
e	0.1861685	i	5.81794	-0.05220463	+0.48593464
P	3.34	H	13.9	G 0.15	U 2

Residuals in seconds of arc

1961 10 17	760	1.5- 1.7+	1981 10 05	046	1.0+ 0.6-	1998 08 31	704	0.0 0.1-
1961 10 17	760	1.0- 1.8+	1981 10 05	046	(3.1- 0.2+)	1998 08 31	704	1.8+ 0.5-
1981 08 30	688	0.9+ 0.5+	1981 10 22	095	(2.7- 3.1+)	1998 08 31	704	(2.6+ 2.5-)
1981 08 30	688	1.5+ 0.5+	1991 09 13	675	(2.2- 1.1+)	1998 08 31	704	0.3- 0.0
1981 09 02	095	0.3- 0.8+	1991 09 13	675	(2.8- 0.9+)	1998 08 31	704	1.1+ 0.3-
1981 09 22	046	1.2- 0.3-	1991 09 16	675	1.6- 0.6+	1998 09 29	704	0.9+ 0.1-
1981 09 22	046	0.9- 0.0	1991 09 16	675	1.9- 0.9+	1998 09 29	704	0.0 0.1-
1981 09 25	688	1.1+ 1.7-	1993 02 25	399	1.3- 0.1-	1998 09 29	704	0.7- 0.4-
1981 09 25	688	0.2+ 1.0-	1993 02 25	399	(1.4+ 2.3-)	1998 09 29	704	0.8+ 0.0
1981 09 25	688	1.1+ 1.4-	1997 07 31	688	0.6+ 0.6+	1998 09 29	704	1.2- 0.1+
1981 09 25	046	0.3+ 0.1+	1997 07 31	688	0.2+ 0.0	1998 10 03	689	0.3+ 0.2+
1981 09 25	095	1.4+ 0.8+	1997 08 01	688	0.8+ 0.6+	1998 10 30	704	0.7+ 1.0+
1981 09 25	046	0.1+ 0.5-	1997 08 01	688	0.6+ 0.1-	1998 10 30	704	(2.8+ 1.8-)
1981 09 26	688	0.8+ 1.1-	1998 08 28	704	0.3- 1.2+	1998 10 30	704	1.0+ 1.2-
1981 09 26	688	0.5+ 0.9-	1998 08 28	704	0.5- 0.8+	1998 10 30	704	1.0- 0.5-
1981 10 05	688	(2.6+ 1.5-)	1998 08 28	704	0.6- 1.6+			
1981 10 05	688	0.3- 1.2-	1998 08 28	704	1.4- 1.6+			

(9532)* 1981 RQ₂ = 1981 SY = 1981 TE₁ = 1981 UD₁₃ = 1976 JL₆ = 1993 LD

Discovered 1981 Sept. 7 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Id. T. Furuta (d, *JAM* 2059), G. V. Williams (*MPC* 22399, *MPC* 24557), L. D. Schmadel (*MPC* 24557)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	86.05023		(2000.0)	P	Q
n	0.23620142	ω	91.34330	+0.77872168	+0.61226878
a	2.5918770	Ω	230.92361	-0.62252022	+0.72704048
e	0.1859129	i	10.15105	-0.07785322	+0.31070738
P	4.17	H	12.7	G 0.15	U 1

Residuals in seconds of arc

1976 05 03	809	0.8+ 0.4-	1994 12 10	893	1.0- 0.5+	1998 08 31	704	0.1- 0.4-
1981 09 07	095	(4.7+ 1.8-)	1997 06 23	599	0.4+ 0.5+	1998 08 31	704	0.1- 0.8-
1981 09 24	675	0.5- 1.5-	1997 06 23	599	0.3+ 0.6+	1998 08 31	704	0.0 1.7+
1981 09 24	675	1.1+ 1.0-	1997 06 26	599	0.5+ 0.6+	1998 10 19	699	0.1+ 0.7+
1981 10 03	095	0.4- 0.4-	1997 06 26	599	0.5- 0.3-	1998 10 19	699	0.2+ 0.3+

1981 10 23	095	(1.9– 4.0+)	1997 07 03	691	0.5+ 0.2–	1998 10 19	699	0.2– 0.7+)
1993 06 14	675	0.1– 0.2+	1997 07 03	691	0.9– 0.4+	1998 10 29	704	0.6+ 0.3+
1993 06 17	675	(2.4+ 0.3–)	1997 07 03	691	0.8– 0.5+	1998 10 29	704	0.2– 0.1–
1993 06 20	675	(2.7+ 0.3–)	1998 08 28	704	0.1– 0.3–	1998 10 29	704	0.1– 0.0–
1993 09 12	801	0.1– 0.4+	1998 08 28	704	0.1– 0.7–	1998 10 29	704	0.1+ 0.1+
1993 09 12	801	0.3– 1.5+	1998 08 28	704	0.2– 1.0+	1998 10 29	704	(0.5+ 2.1–)
1994 12 08	391	0.2+ 0.9+	1998 08 28	704	0.5+ 0.8+	1998 10 30	120	0.1+ 0.1–
1994 12 08	391	(3.3+ 1.9+)	1998 08 31	704	1.1– 0.4+	1998 10 30	120	0.3+ 0.2–
1994 12 10	893	0.7– 0.7+	1998 08 31	704	1.9+ 0.0	1998 10 31	120	0.5+ 0.0

(9533)* 1981 SA₇ = 1973 YK₂ = 1985 PJ₂

Discovered 1981 Sept. 28 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. N. S. Chernykh (*MPC* 14188), L. D. Schmadel (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	7.49557		(2000.0)		P	Q
n	0.23266923	ω	353.86561		+0.65951350	−0.74579988
a	2.6180429	Ω	54.82749		+0.69445747	+0.55669014
e	0.1732014	i	6.59906		+0.28769910	+0.36589430
P	4.24	H	13.7	G	0.15	U 1

Residuals in seconds of arc

1973 12 20	095	1.0+ 1.1–	1998 09 18	699	0.0 0.8+	1998 10 14	704	0.4– 0.5–
1981 09 28	095	0.7– 1.1–	1998 09 18	699	0.0 1.0+	1998 10 14	704	0.6– 0.2+
1981 10 06	095	0.3– 1.2–	1998 09 18	699	0.1+ 0.9+	1998 10 14	704	0.6– 0.2+
1981 10 26	095	1.6+ 1.1–	1998 09 20	809	1.0+ 0.4+	1998 10 15	704	0.7+ 0.1–
1985 08 13	095	0.9+ 1.4–	1998 09 20	809	1.2+ 0.0	1998 10 15	704	0.3+ 0.4–
1990 11 14	801	0.1– 0.2–	1998 09 20	809	0.1+ 1.1+	1998 10 15	704	0.8+ 0.1+
1990 11 14	801	0.2– 0.2–	1998 09 21	809	0.8– 0.3–	1998 10 15	704	0.4+ 0.2–
1990 12 14	801	0.4– 0.1+	1998 09 21	809	1.5– 0.2–	1998 10 15	704	0.8+ 0.3+
1990 12 14	801	0.5– 0.1+	1998 09 21	809	1.5– 0.4–	1998 10 28	704	1.2– 0.4–
1990 12 17	801	0.4– 0.2+	1998 09 26	704	0.8+ 0.8–	1998 10 28	704	0.8– 0.3+
1990 12 17	801	0.3– 0.1+	1998 09 26	704	0.2+ 0.1+	1998 10 28	704	1.0– 0.4+
1994 11 28	098	1.2+ 1.1+	1998 09 26	704	0.6+ 0.4+	1998 10 28	704	1.2– 0.1–
1994 11 28	098	0.7– 0.7+	1998 09 26	704	0.9+ 1.3+	1998 10 29	704	0.2+ 0.1–
1994 11 28	098	1.2– 0.4–	1998 09 26	704	1.1– 1.1+	1998 10 29	704	0.4– 0.9–
1995 02 03	801	0.7+ 0.3–	1998 10 11	699	0.9+ 0.2+	1998 10 29	704	0.0 0.4–
1995 02 03	801	1.1+ 0.4–	1998 10 11	699	0.8+ 0.0	1998 10 29	704	0.4+ 0.7–
1996 03 18	801	0.0 0.6–	1998 10 11	699	0.2+ 0.3+	1998 10 29	704	0.5+ 0.5+
1996 03 18	801	0.2+ 0.8–	1998 10 14	704	0.1+ 0.3–			
1996 03 23	801	0.3– 0.8+	1998 10 14	704	1.2– 0.1+			

(9534)* 1981 TP = 1953 TL₃ = 1961 DM = 1989 EU₆ = 1992 PQ₄

Discovered 1981 Oct. 4 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.

Id. E. Bowell (*MPC* 20811), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	30.60456		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.17654660	ω	338.75975		+0.99567118		-0.09261804
a	3.1469981	Ω	26.55814		+0.08759216		+0.90695027
e	0.2103695	i	0.99936		+0.03108897		+0.41092956
P	5.58	H	13.4	G	0.15	U	1

Residuals in seconds of arc

1953 10 09	760	1.0– 0.2+	1998 09 16	910	0.5+ 0.1+	1998 10 14	704	1.4– 0.1–
1953 10 09	760	1.7– 0.4+	1998 09 16	910	0.5+ 0.1+	1998 10 15	704	0.1– 0.8–
1954 12 22	675	1.0+ 0.9–	1998 09 18	809	(1.4+ 2.3–)	1998 10 15	704	0.2– 0.4+
1954 12 22	675	1.4+ 1.2+	1998 09 18	809	(0.1– 2.7–)	1998 10 15	704	0.1+ 0.2+
1961 02 17	033	0.7– 0.8–	1998 09 18	809	(1.3– 2.6–)	1998 10 15	704	0.4– 0.1–
1961 02 17	033	1.4+ 1.1–	1998 09 20	910	0.5+ 0.2+	1998 10 15	704	0.0 0.9–
1981 09 05	095	(0.1+ 3.9+)	1998 09 20	910	0.1– 0.1+	1998 10 20	681	0.1– 0.4+
1981 09 26	688	(2.7+ 3.1–)	1998 09 20	910	0.1– 0.1+	1998 10 20	681	0.2– 0.1+
1981 09 26	688	0.3– 1.5–	1998 09 20	809	1.1+ 0.9–	1998 10 22	681	0.1– 0.2–
1981 09 28	095	1.0+ 0.1–	1998 09 20	809	0.5+ 1.3–	1998 10 22	681	0.1– 0.0
1981 10 04	688	(3.5– 8.9–)	1998 09 20	809	0.2+ 0.6–	1998 10 23	731	0.0 0.0

1981 10 04	688	(0.8+ 5.3–)	1998 09 26	704	0.5+ 0.8+	1998 10 23	731	0.0 0.1+
1989 03 05	033	1.2+ 0.8+	1998 09 26	704	0.0 0.1+	1998 10 23	731	0.5+ 0.2–
1989 03 05	033	0.4– 1.0+	1998 09 26	704	0.3+ 0.8+	1998 10 24	731	0.3+ 0.3–
1992 08 02	675	0.7+ 0.7+	1998 09 26	704	0.3+ 0.7–	1998 10 24	731	0.4+ 0.1+
1992 08 02	675	0.4+ 0.3+	1998 09 26	704	0.4– 1.2+	1998 10 24	731	0.1– 0.3–
1992 08 06	675	0.5+ 0.3–	1998 09 27	704	1.1+ 0.5+	1998 10 28	704	0.1+ 0.1+
1992 08 06	675	0.4+ 0.5+	1998 09 27	704	0.3– 0.6–	1998 10 28	704	0.5– 0.1–
1995 02 22	033	1.2– 0.4–	1998 09 27	704	0.0 0.8+	1998 10 28	704	0.2+ 1.4–
1995 02 23	033	1.8– 0.1+	1998 09 27	704	0.4+ 0.0	1998 10 28	704	2.0– 0.2–
1995 02 24	033	0.9– 0.9+	1998 09 27	704	0.7– 0.4–	1998 10 29	704	1.4+ 0.1–
1998 09 14	699	0.0 0.3–	1998 10 14	704	1.3– 0.6–	1998 10 29	704	0.8+ 0.0
1998 09 14	699	0.2– 0.4+	1998 10 14	704	0.7– 0.6+	1998 10 29	704	0.4+ 0.4+
1998 09 14	699	0.0 0.8+	1998 10 14	704	0.9– 0.7+	1998 10 29	704	0.2+ 0.8+
1998 09 16	910	0.6+ 0.1+	1998 10 14	704	1.8– 0.1–	1998 10 29	704	0.7+ 0.2–

(9535)* 1981 UO₁₁ = 1979 BT₁ = 1991 RX₂₀

Discovered 1981 Oct. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. E. Bowell (*MPC* 19673), G. V. Williams (*MPC* 23511)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	12.06930		(2000.0)		P		Q
n	0.29020423	ω	298.67611		+0.58344335		-0.80971587
a	2.2594369	Ω	115.49494		+0.76733581		+0.52422702
e	0.1425278	i	3.99476		+0.26606317		+0.26371621
P	3.40	H	13.9	G	0.15	U	2

Residuals in seconds of arc

1979 01 24	095	1.3– 0.5+	1996 03 18	801	0.2– 0.2+	1998 10 14	704	1.0– 1.7+
1981 10 22	095	0.6+ 0.9+	1996 03 18	801	0.1+ 0.1–	1998 10 14	704	0.5+ 1.0+
1981 10 24	095	(4.0+ 0.5–)	1998 08 28	704	0.2+ 0.7+	1998 10 15	761	0.4– 1.1+
1981 10 28	095	1.5+ 1.3–	1998 08 28	704	1.4– 0.0	1998 10 15	761	0.7– 0.4+
1991 09 14	675	0.0 0.6–	1998 08 28	704	0.7+ 0.7–	1998 10 15	704	1.1– 1.1–
1991 09 14	675	0.3– 0.1+	1998 08 28	704	1.8– 1.4–	1998 10 15	704	0.4+ 1.0–
1991 09 16	675	1.2– 0.0	1998 08 31	704	1.1+ 0.6+	1998 10 15	704	0.2– 0.0
1991 09 16	675	0.4– 0.1–	1998 08 31	704	0.3– 0.6+	1998 10 15	704	0.2– 0.3+
1993 03 17	809	1.5+ 0.2+	1998 08 31	704	(2.3+ 0.5+)	1998 10 16	761	0.4– 0.8+
1993 03 18	809	0.0 1.0–	1998 08 31	704	0.3+ 0.5+	1998 10 16	761	0.2– 0.2+
1993 04 16	413	(2.5– 1.4–)	1998 08 31	704	1.4+ 0.0	1998 10 29	704	0.5+ 0.6–
1995 12 23	801	0.3+ 0.2–	1998 10 14	699	0.7+ 0.2+	1998 10 29	704	0.1+ 0.3–
1995 12 23	801	0.0 0.6–	1998 10 14	704	0.3+ 0.5–	1998 10 29	704	0.7+ 0.7–
1996 01 02	411	1.2– 0.2+	1998 10 14	699	0.5+ 0.5+	1998 10 29	704	0.8+ 0.8–
1996 01 02	411	0.0 0.9+	1998 10 14	704	0.2– 0.4+	1998 10 29	704	0.5– 1.0–
1996 02 18	801	0.2+ 0.2+	1998 10 14	699	0.5+ 0.5+			

(9536)* 1981 UR₂₇ = A923 HA = 1949 GQ = 1994 TS₁

Discovered 1981 Oct. 24 by S. J. Bus at Palomar.

Id. G. V. Williams (*MPC* 24100)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	159.94634		(2000.0)		P		Q
n	0.22701184	ω	203.81409		-0.80222454		+0.59468426
a	2.6613605	Ω	13.08398		-0.50345251		-0.62632171
e	0.1115824	i	13.48424		-0.32089151		-0.50405530
P	4.34	H	12.6	G	0.15	U	1

Residuals in seconds of arc

1923 04 19	094	(38.6– 26.2–)X	1998 08 26	809	(1.6+ 3.5+)	1998 09 26	704	0.8– 0.3–
1949 04 04	760	(4.9– 1.7–)	1998 08 26	809	(0.5+ 3.3+)	1998 09 26	704	0.6+ 0.4–
1949 04 04	760	0.9– 1.6–	1998 08 26	809	(1.4+ 3.5+)	1998 09 26	704	1.0– 0.5–
1981 10 24	675	0.7+ 0.3+	1998 08 27	809	(1.4+ 3.4+)	1998 09 26	704	0.6+ 0.2+
1981 10 25	675	0.3+ 0.9–	1998 08 27	809	(1.8+ 3.4+)	1998 09 26	704	0.2– 0.2–
1981 10 26	675	0.2– 0.8–	1998 08 27	809	(1.0+ 3.2+)	1998 09 27	704	0.9– 0.0
1989 08 29	675	0.1– 0.0	1998 09 14	704	0.1– 0.1+	1998 09 27	704	1.7– 0.3–
1989 08 29	675	0.0 0.3–	1998 09 14	704	0.4+ 0.8–	1998 09 27	704	1.1– 0.1–
1989 09 04	675	0.2– 0.7–	1998 09 14	704	(0.5– 3.0–)	1998 09 27	704	(2.3– 0.0)
1989 09 04	675	0.6+ 0.7–	1998 09 17	699	0.7+ 1.0+	1998 09 27	704	1.2– 0.6+

1994 10 02	400	0.3+	0.7-	1998 09 17	699	0.6+	0.9+	1998 10 08	689	0.9+	0.6-
1994 10 02	400	0.9-	0.8-	1998 09 17	699	0.6+	0.8+	1998 10 09	689	0.0	0.4-
1994 10 03	400	0.9+	0.5+	1998 09 18	704	0.5+	0.8-	1998 10 14	704	2.1+	0.2+
1994 10 03	400	0.3+	1.7-	1998 09 18	704	1.5+	0.5-	1998 10 14	704	0.9-	0.4-
1994 10 07	400	0.2+	0.0	1998 09 18	704	0.2+	0.0	1998 10 14	704	0.4-	0.5-
1994 10 07	400	0.4+	0.4+	1998 09 18	704	0.9+	0.6-	1998 10 14	704	0.1+	0.4+
1996 03 24	801	0.3+	0.4+	1998 09 18	704	0.0	0.6+	1998 10 14	704	1.7-	1.2+
1996 03 24	801	0.6+	0.5+	1998 09 19	823	0.9-	0.1-	1998 10 15	704	0.1+	0.1+
1996 04 19	801	0.6-	0.4+	1998 09 19	823	0.0	0.0	1998 10 15	704	0.7-	0.8+
1996 04 19	801	0.5-	0.4+	1998 09 20	823	0.6-	0.4+	1998 10 15	704	0.6-	1.2+
1996 04 22	801	0.1+	0.4+	1998 09 20	823	0.6+	1.1-	1998 10 15	704	0.8-	1.2+
1996 04 22	801	0.2+	0.1+	1998 09 24	699	0.3+	0.6+	1998 10 15	704	0.2+	1.2+
1997 03 27	689	0.6+	0.1+	1998 09 24	699	0.1+	0.5+				
1997 04 09	689	0.0	1.4+	1998 09 24	699	0.2+	0.6+				

(9537)* 1982 BM = 1993 QN₂

Discovered 1982 Jan. 18 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. G. V. Williams (*MPC* 22682)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	273.51464		(2000.0)	P	Q		Williams
<i>n</i>	0.22218388	ω	203.95873	-0.87952301	-0.47347515		
<i>a</i>	2.6997757	Ω	307.69614	+0.44572122	-0.78471079		
<i>e</i>	0.1460616	<i>i</i>	3.44485	+0.16664893	-0.40006282		
<i>P</i>	4.44	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1953 09 06	675	0.7+	1.8-	1994 11 27	010	(0.4-	4.0+)	1998 10 11	699	0.5+	1.8+
1953 09 06	675	0.0	0.3-	1994 11 28	010	(0.6+	3.6+)	1998 10 11	699	0.9+	0.8+
1981 12 24	095	(0.8+	2.6+)	1994 11 28	010	(1.3+	2.9+)	1998 10 11	699	0.1-	0.9+
1982 01 16	046	0.6-	0.0	1994 11 28	010	(1.2+	3.3+)	1998 10 14	704	0.2+	1.2+
1982 01 16	046	0.5-	1.1+	1994 11 29	010	(1.6+	3.0+)	1998 10 14	704	0.6-	0.6+
1982 01 18	688	(1.3+	3.3-)	1996 05 21	566	0.5-	0.1-	1998 10 14	704	1.5-	1.9-
1982 01 18	688	1.3+	1.1-	1996 05 21	566	0.3+	0.7+	1998 10 14	704	0.0	1.4-
1982 01 18	046	0.1+	1.4-	1996 05 21	566	0.1-	0.3+	1998 10 15	704	0.3-	0.3+
1982 01 18	046	1.5-	2.0-	1996 05 21	566	0.1-	0.1+	1998 10 15	704	0.3+	1.1+
1982 01 19	046	0.2+	0.6-	1996 05 21	566	0.1-	0.5+	1998 10 15	704	0.7+	0.4+
1982 01 19	046	0.1+	0.9-	1996 05 21	566	0.5+	0.1+	1998 10 15	704	0.8-	0.7+
1982 01 19	095	(1.9+	3.0+)	1997 08 01	688	0.8+	0.1-	1998 10 15	704	1.2-	0.8+
1991 02 07	675	0.5+	1.1+	1997 08 01	688	0.9+	0.4-	1998 10 28	704	0.1+	0.8-
1991 02 07	675	0.2+	1.2+	1998 09 26	704	0.0	0.2+	1998 10 28	704	0.4-	0.1-
1993 08 16	010	0.4+	0.1+	1998 09 26	704	0.9+	0.5-	1998 10 28	704	0.7+	0.2+
1993 08 16	010	0.1+	0.4-	1998 09 26	704	0.5+	0.6-	1998 10 28	704	0.1-	0.2-
1993 08 16	010	0.0	0.4-	1998 09 26	704	0.2+	0.2+	1998 10 29	704	0.4-	0.3+
1993 08 17	010	1.1+	0.1+	1998 09 26	704	1.3-	1.3-	1998 10 29	704	1.4-	0.7+
1993 09 14	691	1.2-	0.7-	1998 09 27	704	0.1+	0.0	1998 10 29	704	0.8-	0.3+
1993 09 14	691	1.4-	0.4-	1998 09 27	704	0.3+	0.4+	1998 10 29	704	0.4-	0.1-
1993 09 20	675	0.9+	0.5+	1998 09 27	704	0.9+	0.1-	1998 10 29	704	1.7-	0.3-
1993 09 20	675	(1.4+	2.3-)	1998 09 27	704	1.3+	0.0				
1994 11 27	010	(1.0+	3.9+)	1998 09 27	704	1.5+	0.7+				

(9538)* 1982 UM₂ = 1986 VH

Discovered 1982 Oct. 20 by A. Mrkos at Kleť.

Id. H. Oishi (*JAM* 2029), E. Bowell (unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	11.86535		(2000.0)	P	Q		Williams
<i>n</i>	0.24621128	ω	250.36461	+0.65240400	-0.75773778		
<i>a</i>	2.5211427	Ω	158.89226	+0.70929800	+0.60386896		
<i>e</i>	0.1392678	<i>i</i>	2.26452	+0.26695574	+0.24733731		
<i>P</i>	4.00	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1954 12 21	675	1.1+	0.9+	1994 11 21	587	0.6-	0.1-	1997 06 08	046	(0.8-	2.3-)
1954 12 21	675	0.7+	0.7+	1994 11 22	046	0.6-	0.1+	1998 08 09	046	1.1+	0.2+
1982 10 20	046	(6.5+	2.2-)	1994 11 22	046	0.2-	0.4+	1998 08 09	046	0.7+	0.7+

1982 10 20	046	(3.9+	3.1-)	1994 11 22	046	0.5-	0.4+	1998 08 09	046	0.4+	0.7+
1982 10 21	046	(3.8+	6.1-)	1994 11 24	587	0.1-	0.5+	1998 08 11	046	0.2-	0.2-
1982 10 21	046	(4.2+	1.2-)	1994 11 24	587	0.3+	0.5+	1998 08 11	046	0.0	0.4-
1982 10 22	046	(0.6+	4.6-)	1994 11 25	587	0.5+	1.5+	1998 08 11	046	0.0	0.2+
1982 10 22	046	(1.9-	4.7-)	1994 11 25	587	0.3+	1.1+	1998 10 14	046	0.1+	0.0
1982 11 11	046	1.1-	2.0-	1995 01 16	046	1.4-	0.2+	1998 10 14	046	0.3+	0.1+
1982 11 11	046	(1.5-	3.1-)	1995 01 16	046	0.4-	0.3-	1998 10 14	046	0.3+	0.1+
1982 11 14	046	(2.3-	2.5-)	1995 01 16	046	0.1+	0.6+	1998 10 14	699	0.5+	0.3+
1982 11 14	046	(2.4-	3.5-)	1995 01 31	046	0.3-	0.4+	1998 10 14	704	1.5+	1.1-
1982 11 16	046	2.3+	2.2-	1995 01 31	046	0.0	0.0	1998 10 14	699	0.3+	0.4+
1982 11 16	046	0.2+	2.0-	1995 01 31	046	0.0	0.3+	1998 10 14	704	1.0+	0.1-
1986 10 12	095	0.0	1.8-	1996 02 27	046	0.4-	1.0-	1998 10 14	699	0.2+	0.5+
1986 11 05	881	1.0-	0.4-	1996 02 27	046	0.2+	1.3-	1998 10 14	704	0.5+	0.7+
1986 11 05	881	1.8-	0.1-	1996 02 27	046	0.1-	0.8-	1998 10 14	704	0.7+	0.9-
1986 11 06	688	1.9-	0.5+	1996 02 28	046	0.4+	1.4-	1998 10 15	704	0.6+	0.4+
1986 11 06	688	1.1+	0.6+	1996 02 28	046	0.9+	1.6-	1998 10 15	704	1.0+	0.6+
1986 11 11	887	1.7-	1.1-	1996 02 28	046	0.4+	1.7-	1998 10 15	704	0.0	0.4-
1986 11 11	887	1.1-	0.2-	1996 03 17	566	0.1-	0.4+	1998 10 15	704	0.6+	1.2-
1986 12 04	688	0.2+	1.1+	1996 03 17	566	0.9-	0.1+	1998 10 15	704	0.1+	0.6-
1986 12 04	688	1.0+	1.7+	1996 03 17	566	0.2-	0.4+	1998 10 17	046	0.0	0.3+
1990 11 10	046	(0.5+	2.1-)	1996 03 17	566	1.0-	0.2+	1998 10 17	046	0.1+	0.2+
1990 11 10	046	(1.9+	2.1-)	1996 03 17	566	0.2-	0.3+	1998 10 17	046	0.1+	0.2+
1994 10 12	046	0.4+	0.1-	1996 03 17	566	0.8-	0.0	1998 10 20	699	0.6+	0.4+
1994 10 12	046	0.8+	0.3-	1996 03 19	566	0.3+	0.3+	1998 10 20	699	0.1-	0.0
1994 10 12	046	0.7+	0.3-	1996 03 19	566	0.0	0.5+	1998 10 20	699	0.7+	0.2+
1994 10 19	046	0.3-	0.2+	1996 03 19	566	0.2+	0.6+	1998 10 29	704	0.0	0.4-
1994 10 19	046	0.1+	0.4+	1996 04 17	566	0.1+	0.6+	1998 10 29	704	0.7-	0.9-
1994 10 19	046	0.3-	0.6+	1996 04 17	566	0.5+	0.7+	1998 10 29	704	1.2-	0.4-
1994 10 31	691	0.9-	0.2+	1996 04 17	566	0.2+	0.6+	1998 10 29	704	0.6-	1.3-
1994 10 31	691	1.3-	0.3+	1997 06 05	046	0.2-	0.1-	1998 10 29	704	0.9-	1.0-
1994 10 31	691	1.1-	0.3-	1997 06 05	046	0.1+	0.4-				
1994 11 21	587	0.5+	0.1-	1997 06 05	046	0.3-	0.7-				

(9539)* 1982 UE₇ = 1987 SR₂₈

Discovered 1982 Oct. 21 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Id. T. Kobayashi (*MPC* 15882)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	11.28325		(2000.0)	P	Q		Williams
<i>n</i>	0.18157715	ω	221.87841	+0.82005073	-0.57228398		
<i>a</i>	3.0886018	Ω	173.02956	+0.53100509	+0.75905689		
<i>e</i>	0.1848439	<i>i</i>	1.32256	+0.21342539	+0.31036059		
<i>P</i>	5.43	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 10 21	095	(3.5+	0.9+)	1996 05 19	809	0.1-	1.2+	1998 09 27	704	0.6+	0.3-
1982 10 23	095	1.7-	1.2+	1996 05 19	809	(2.2+	0.6+)	1998 09 27	704	0.1-	1.4-
1982 11 12	095	0.9+	0.3-	1996 05 19	809	(1.8+	2.2+)	1998 10 10	699	0.4+	1.0+
1987 09 24	095	0.2+	1.0+	1996 05 19	809	(1.2+	2.9+)	1998 10 10	699	0.7+	0.3+
1987 09 27	095	0.1+	2.1+	1996 05 19	809	(1.0+	2.8+)	1998 10 10	699	0.6+	0.5-
1989 01 08	675	0.1+	0.4+	1996 05 19	809	(0.1-	2.6+)	1998 10 14	704	0.3-	0.4-
1989 01 08	675	0.9+	0.2+	1996 05 20	621	0.6+	0.7-	1998 10 14	704	0.1+	0.4+
1992 07 26	809	0.3-	0.2-	1996 05 20	621	1.4+	1.7-	1998 10 14	704	0.5+	0.4+
1992 07 26	809	0.3-	0.6+	1996 05 20	621	0.2+	1.0-	1998 10 14	704	0.1+	0.8+
1992 07 26	809	0.2+	0.3+	1998 09 18	809	0.0	2.0-	1998 10 15	704	0.2-	0.0

1992 08 05	675	0.5+	0.2+	1998 09 24	621	0.3+	0.5-	1998 10 28	704	0.1-	0.1-
1992 08 25	801	0.7+	0.8-	1998 09 26	704	0.8+	0.1-	1998 10 28	704	0.3+	0.2-
1992 08 25	801	0.6+	0.5-	1998 09 26	704	(2.1+	1.2-)	1998 10 28	704	0.6-	0.2-
1992 09 01	801	1.2+	0.8-	1998 09 26	704	(0.6-	3.3-)	1998 10 29	704	0.0	0.3+
1992 09 01	801	0.3-	0.2+	1998 09 26	704	(0.1+	2.1-)	1998 10 29	704	0.1+	1.0+
1995 02 25	691	0.9-	0.6+	1998 09 27	704	0.2+	0.5-	1998 10 29	704	0.4+	1.1+
1995 02 25	691	0.5-	0.5+	1998 09 27	704	0.3+	0.5-	1998 10 29	704	0.2+	0.2+
1995 02 25	691	0.6-	0.2+	1998 09 27	704	0.9-	0.3-	1998 10 29	704	0.1+	0.4+

(9540)* 1982 UJ₇ = 1989 AE₃

Discovered 1982 Oct. 21 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Id. B. G. Marsden (*MPC* 14348)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	334.00809		(2000.0)	P	Q	Marsden
<i>n</i>	0.18042173	ω	328.27081	+0.17632472	-0.98346326	
<i>a</i>	3.1017740	Ω	111.54529	+0.91215159	+0.14746195	
<i>e</i>	0.1435168	<i>i</i>	2.54783	+0.36998523	+0.10514267	
<i>P</i>	5.46	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1957 04 28	675	0.6+	0.8-	1993 12 18	894	0.2-	0.1-	1998 10 02	704	1.3+	0.9-
1982 10 21	095	1.2-	1.1+	1996 06 14	566	0.0	0.2+	1998 10 02	704	0.1+	0.1+
1982 10 23	095	1.6-	0.7+	1996 06 14	566	0.3-	0.5+	1998 10 02	704	1.1+	0.6-
1982 11 12	095	0.8+	0.2+	1996 06 14	566	0.8-	0.4+	1998 10 02	704	0.2+	0.0
1988 12 29	413	1.6+	1.8-	1998 09 18	699	0.0	0.2+	1998 10 02	704	0.7+	1.7-
1988 12 29	413	0.0	1.6+	1998 09 18	699	0.2+	0.1+	1998 10 02	704	0.5+	0.6-
1989 01 04	413	2.1-	2.1+	1998 09 18	699	0.3-	0.3+	1998 10 11	699	0.0	0.0
1989 01 04	413	0.7-	0.8+	1998 09 26	704	0.2+	0.1-	1998 10 11	699	0.6-	0.5+
1989 01 06	413	1.0-	0.2+	1998 09 26	704	0.6+	0.5-	1998 10 11	699	0.4-	0.1+
1989 01 06	413	2.4+	0.3+	1998 09 26	704	1.0+	0.7-	1998 10 14	704	0.4-	0.3+
1989 01 08	675	0.8+	0.9+	1998 09 26	704	0.5+	0.6-	1998 10 14	704	0.8-	0.7+
1989 01 08	675	0.3-	0.5+	1998 09 26	704	0.7+	0.6-	1998 10 14	704	0.3-	1.0-
1989 01 10	413	0.2+	0.2+	1998 09 27	704	0.5+	0.7-	1998 10 14	704	0.4+	0.6-
1989 01 10	413	1.5+	1.4-	1998 09 27	704	0.4-	0.6-	1998 10 14	704	0.6+	0.0
1989 02 04	071	(3.0-	2.4+)	1998 09 27	704	0.2-	0.0	1998 10 15	704	0.4-	0.4-
1989 02 04	071	(2.2-	4.8+)	1998 09 27	704	0.1+	0.5-	1998 10 15	704	0.1+	0.4-
1993 10 14	801	0.2+	0.4-	1998 09 27	704	0.5-	0.1+	1998 10 15	704	0.1+	0.5-
1993 10 14	801	0.8-	0.2+	1998 10 02	704	0.5-	0.9+	1998 10 15	704	0.5-	1.6-
1993 11 11	801	0.6+	0.9-	1998 10 02	704	0.2+	0.4+	1998 10 15	704	0.8-	0.1-
1993 11 11	801	0.2-	0.9-	1998 10 02	704	0.7-	0.6+	1998 10 28	704	0.3-	0.3+
1993 11 16	596	(1.6-	2.3-)	1998 10 02	704	(0.4-	2.8+)	1998 10 28	704	0.1-	0.3+
1993 11 16	596	(2.7-	3.0-)	1998 10 02	704	0.7+	1.8+	1998 10 28	704	0.2+	0.2+
1993 11 17	801	0.3-	1.1-	1998 10 02	704	1.0-	2.0+	1998 10 28	704	0.1-	0.3+
1993 11 17	801	0.3-	0.9-	1998 10 02	704	(1.0-	2.0+)	1998 10 28	704	(2.1-	0.2+)
1993 12 09	894	(2.3-	0.2-)	1998 10 02	704	0.7-	1.0+	1998 10 29	704	0.4+	0.1+
1993 12 17	801	0.2+	0.4-	1998 10 02	704	0.4-	1.6+	1998 10 29	704	0.3+	0.1+
1993 12 17	801	0.4+	0.4-	1998 10 02	704	0.4+	0.2+	1998 10 29	704	0.3-	1.4+
1993 12 18	801	0.1-	0.4-	1998 10 02	704	0.3+	0.6+	1998 10 29	704	0.1+	0.5+
1993 12 18	801	0.4-	0.3-	1998 10 02	704	0.8+	0.5+	1998 10 29	704	1.2-	0.9+
1993 12 18	894	0.6-	0.7-	1998 10 02	704	0.0	0.1+				

(9541)* 1983 CH = 1995 VC₁₉

Discovered 1983 Feb. 11 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. T. Kobayashi (*MPC* 26558)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	2.55867		(2000.0)	P	Q	Williams
<i>n</i>	0.30094719	ω	343.17493	+0.15104983	-0.98315002	
<i>a</i>	2.2053415	Ω	98.04724	+0.91850649	+0.10108689	
<i>e</i>	0.0939455	<i>i</i>	5.96841	+0.36541726	+0.15230720	
<i>P</i>	3.28	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1983 02 11	688	1.6-	0.9-	1995 11 10	327	0.1-	0.8-	1996 05 21	704	0.2+	0.4+
1983 02 11	688	0.3+	1.7-	1995 11 10	327	0.6+	0.3-	1996 05 21	704	1.7-	0.2-
1983 02 15	688	1.2-	0.5-	1995 11 18	327	0.0	0.2+	1996 05 21	704	0.2-	0.4+
1983 02 15	688	1.2+	0.7-	1995 11 18	327	0.4+	0.1-	1998 08 28	704	0.8-	0.1+
1983 02 19	688	0.6+	1.7-	1995 11 18	327	0.2+	1.0-	1998 08 28	704	0.9+	0.3-
1983 02 19	688	0.2-	0.9-	1996 01 11	411	0.7-	0.1-	1998 08 28	704	0.5+	0.5-
1988 10 07	675	0.7-	0.9-	1996 01 11	411	0.7-	0.4+	1998 08 31	704	0.1+	0.3-
1988 10 07	675	0.3-	0.4-	1996 01 12	691	0.9-	0.0	1998 08 31	704	0.2+	0.7+
1991 08 07	675	0.3+	0.2+	1996 01 12	691	0.7-	0.0	1998 08 31	704	1.4+	0.0
1991 08 07	675	0.4-	0.1+	1996 01 12	691	(2.4-	0.3+)	1998 08 31	704	0.0	0.1-
1991 09 15	675	0.3+	1.1-	1996 01 12	411	0.4-	0.5+	1998 08 31	704	1.2-	0.1+
1991 09 15	675	0.8+	0.1+	1996 01 12	411	0.6+	0.2+	1998 09 29	704	0.2+	0.2-
1993 03 24	675	0.3+	0.8+	1996 05 19	704	0.0	0.2-	1998 09 29	704	0.8-	0.9+
1993 03 24	675	1.3+	0.8+	1996 05 19	704	0.5+	0.1+	1998 09 29	704	0.2+	0.3-
1994 07 09	675	0.3+	1.4-	1996 05 19	704	0.4+	0.3+	1998 09 29	704	0.6+	1.6+
1994 08 06	675	1.5-	1.2-	1996 05 19	704	0.5+	0.4+	1998 09 29	704	0.4+	0.5+
1994 08 06	675	1.1+	0.9-	1996 05 19	704	0.1-	0.4-				
1995 11 10	327	0.7+	0.9+	1996 05 21	704	0.0	0.1+				

(9542)* 1983 TU₁

Discovered 1983 Oct. 12 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	61.72889		(2000.0)	P	Q	Williams
<i>n</i>	0.26534500	ω	306.74450	+0.99118717	+0.07468821	
<i>a</i>	2.3984396	Ω	49.24515	-0.01309793	+0.87710906	
<i>e</i>	0.1164235	<i>i</i>	8.30419	-0.13181975	+0.47444849	
<i>P</i>	3.71	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1964 08 08	675	0.6+	0.4+	1994 09 10	675	0.3-	0.3+	1998 10 18	758	0.3-	0.4+
1983 10 11	688	2.1-	1.4-	1994 09 10	675	0.3-	0.1+	1998 10 18	699	0.1+	0.7+
1983 10 11	688	0.1+	0.9+	1997 07 08	689	0.6+	0.3+	1998 10 18	758	0.3-	0.8+
1983 10 12	688	0.3+	1.1-	1998 08 28	704	0.5+	0.1+	1998 10 18	758	0.0	0.8+
1983 10 12	688	1.9+	0.3-	1998 08 28	704	(2.8+	2.5-)	1998 10 18	758	0.5-	0.7+
1983 11 04	688	1.7+	1.8-	1998 08 28	704	0.3+	0.4-	1998 10 23	120	0.1+	0.2+
1983 11 04	688	1.2+	1.2-	1998 08 28	704	0.8+	0.4+	1998 10 24	120	0.2+	0.7+
1983 11 09	675	0.1+	0.3-	1998 08 28	704	0.0	0.6+	1998 10 24	120	0.0	0.3+
1983 11 09	675	1.4-	0.8-	1998 08 31	704	0.2-	0.2-	1998 10 26	120	0.4+	0.2-
1989 03 29	675	0.2+	0.4-	1998 08 31	704	1.0-	1.1-	1998 10 26	120	0.0	0.0
1989 03 29	675	0.2+	0.1+	1998 08 31	704	(3.0-	0.4+)	1998 10 29	704	0.3+	0.6-
1989 05 09	675	0.6+	0.0	1998 10 15	758	0.2+	0.5+	1998 10 29	704	0.6+	0.5+
1989 05 09	675	0.3-	0.1-	1998 10 15	758	0.2+	0.3+	1998 10 29	704	0.3-	0.3-
1992 02 05	675	1.0+	0.1-	1998 10 15	758	0.2+	0.6+	1998 10 29	704	0.7-	0.6-
1992 02 05	675	1.0-	0.4-	1998 10 18	699	0.1-	0.8+	1998 10 29	704	0.9-	0.4-
1993 05 21	675	1.7-	0.1-	1998 10 18	699	0.4-	0.5+				

(9543)* 1983 XN₁ = 1982 RK₃ = 1992 PF₁

Discovered 1983 Dec. 4 by M. Antal at Piskkestető.

Id. A. Lowe (*MPC* 20923), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	350.90373		(2000.0)	P	Q	Williams
<i>n</i>	0.18969103	ω	109.94536	+0.43599947	-0.89351992	
<i>a</i>	2.9998867	Ω	313.72481	+0.76013264	+0.42949752	
<i>e</i>	0.0703848	<i>i</i>	8.54369	+0.48177052	+0.13097342	
<i>P</i>	5.20	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1954 05 24	675	1.1-	1.8-	1992 07 30	809	0.6-	1.3-	1997 08 02	566	0.4-	0.8+
1954 05 24	675	2.5+	1.2-	1992 07 30	809	0.4-	0.6-	1997 08 02	566	0.1+	0.8+
1982 09 12	095	(0.8+	4.1+)	1992 08 08	010	0.2+	0.1+	1997 08 02	566	0.2+	0.5+
1983 12 04	561	1.1-	0.4-	1992 08 08	010	0.3+	0.3+	1997 08 02	566	0.1-	0.8+
1983 12 05	561	0.9-	0.9-	1992 08 08	010	0.5+	0.1-	1997 08 02	566	0.6-	0.2+
1983 12 05	561	2.3-	0.3-	1992 08 09	010	0.0	1.0-	1997 08 02	566	0.1+	0.8+

1998 NOV. 10

M.P.C. 32875

1992 06 28	675	0.9+	1.8-	1992 08 09	010	1.1+	0.1+	1998 07 21	104	0.3+	1.1+
1992 07 24	809	0.3-	0.0	1992 08 09	010	1.9+	0.5-	1998 07 21	104	0.7+	1.9+
1992 07 24	809	1.0-	1.2-	1997 08 01	566	0.3-	0.0	1998 07 21	104	0.6-	1.3+
1992 07 24	809	1.3-	1.5-	1997 08 01	566	0.0	0.6-	1998 10 02	704	0.6+	0.2-
1992 07 24	809	(2.1+	1.9-)	1997 08 01	566	0.3-	0.3-	1998 10 02	704	0.4+	0.3-
1992 07 24	809	0.9+	1.0-	1997 08 02	566	0.2+	0.7+	1998 10 02	704	0.3+	0.8+
1992 07 24	809	0.5+	1.2-	1997 08 02	566	0.2-	0.8+	1998 10 02	704	1.8+	0.6+
1992 07 26	809	(2.6-	0.0)	1997 08 02	566	0.1+	0.6+	1998 10 02	704	0.0	1.3-
1992 07 26	809	(2.6-	0.2-)	1997 08 02	566	0.1+	0.7+	1998 10 18	704	0.8-	0.1+
1992 07 26	809	(2.8-	0.4-)	1997 08 02	566	0.2-	1.3+	1998 10 18	704	1.0+	0.3+
1992 07 26	809	0.7+	0.9-	1997 08 02	566	0.3-	0.7+	1998 10 18	704	0.5+	0.5+
1992 07 26	809	0.2-	0.5-	1997 08 02	566	0.2-	0.4+	1998 10 18	704	0.2+	0.1+
1992 07 26	809	0.3-	0.8-	1997 08 02	566	0.3-	0.6+	1998 10 18	704	0.6-	0.2+
1992 07 30	809	0.2-	1.6-	1997 08 02	566	0.5-	0.5+				

(9544)* 1984 EL = 1990 GR₁ = 1996 GL₁₉

Discovered 1984 Mar. 1 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. B. G. Marsden (*MPC* 27305)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17174631	ω	108.92538	-0.96625175	-0.24280913		
<i>a</i>	3.2053671	Ω	57.10685	+0.18042629	-0.87628502		
<i>e</i>	0.0872654	<i>i</i>	5.88061	+0.18385837	-0.41613494		
<i>P</i>	5.74	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1984 03 01	688	0.2+	0.0	1998 09 14	704	0.2-	0.3-	1998 09 26	704	0.6-	0.3-
1984 03 01	688	0.6-	1.1-	1998 09 14	704	1.0-	0.4-	1998 09 27	704	0.0	0.0
1984 03 06	688	1.5-	0.9-	1998 09 18	704	0.2+	0.3+	1998 09 27	704	0.2+	0.5+
1984 03 06	688	0.9-	1.3-	1998 09 18	704	0.3-	0.7-	1998 09 27	704	1.1-	0.5+
1984 03 31	688	0.9-	2.4-	1998 09 18	704	0.1-	1.1+	1998 09 27	704	0.7-	0.9-
1984 03 31	688	1.7+	0.3+	1998 09 18	704	0.6-	0.3+	1998 09 27	704	0.3+	0.8-
1990 04 01	675	(0.5+	2.7+)	1998 09 18	704	0.7-	0.2+	1998 10 12	699	0.0	0.5+
1990 04 01	675	0.3-	0.4-	1998 09 24	699	0.8+	0.0	1998 10 12	699	1.1-	1.1+
1994 02 11	691	0.8-	1.3+	1998 09 24	699	1.0+	0.5+	1998 10 12	699	0.7-	0.3+
1994 02 11	691	0.8-	1.3+	1998 09 24	699	1.3+	0.1-	1998 10 14	704	0.7+	0.4-
1994 02 11	691	0.7-	1.4+	1998 09 25	704	1.0+	0.1+	1998 10 14	704	(2.0+	2.7-)
1996 04 15	809	0.5-	1.0-	1998 09 25	704	1.9+	0.7-	1998 10 14	704	2.0+	1.0-
1996 04 15	809	0.7-	0.2-	1998 09 25	704	0.7-	1.8-	1998 10 15	704	0.8-	0.3+
1996 04 15	809	1.0-	0.8-	1998 09 25	704	1.2+	0.4-	1998 10 15	704	0.2-	0.5+
1996 04 17	809	0.5+	1.3+	1998 09 26	704	0.0	0.8-	1998 10 15	704	1.2+	0.7-
1996 04 17	809	1.6+	1.3+	1998 09 26	704	0.1-	0.8-	1998 10 15	704	1.0+	0.4-
1996 04 17	809	1.2+	1.3+	1998 09 26	704	0.6-	0.9-				
1998 09 14	704	0.5-	0.6+	1998 09 26	704	0.4-	0.2-				

(9545)* 1984 MQ = 1971 RB = 1971 SF₃ = 1993 MH₁

Discovered 1984 June 25 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Id. G. V. Williams (*MPC* 22400), H. Oishi (d, *JAM* 852)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22006628	ω	168.24419	+0.70857215	+0.69913888		
<i>a</i>	2.7170672	Ω	146.73609	-0.66070951	+0.70489245		
<i>e</i>	0.2718817	<i>i</i>	10.03261	-0.24776691	+0.11971410		
<i>P</i>	4.48	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 09 15	805	1.7-	0.1-	1993 07 16	675	0.1-	0.9+	1998 10 05	761	1.5+	0.7+
1971 09 15	805	0.5-	2.0-	1993 07 16	675	(0.4+	2.4+)	1998 10 14	744	0.6-	0.1+
1971 09 27	805	0.4-	1.1+	1993 07 20	675	0.2-	0.2+	1998 10 14	744	1.1-	0.6+
1971 09 27	805	0.9+	1.7+	1993 07 20	675	1.8-	0.5+	1998 10 14	744	0.2+	0.5-
1971 09 27	805	1.3+	0.2+	1998 08 09	426	0.3+	0.1-	1998 10 15	744	0.2+	0.6-
1984 06 25	095	0.9+	1.9+	1998 08 09	426	0.8+	0.2-	1998 10 15	744	0.6-	0.6-
1984 06 28	095	0.9-	1.7-	1998 08 15	426	0.7+	0.5+	1998 10 16	704	0.7-	0.1-

1984 07 02	095	0.3+	1.0+	1998 08 15	426	0.3+	0.6+	1998 10 16	704	0.5+	0.1+
1993 06 22	675	(0.2-	3.4-)	1998 08 15	426	0.5+	0.7+	1998 10 16	704	1.7-	0.1-
1993 06 22	675	1.2+	1.4-	1998 10 04	761	(2.7+	0.4+)	1998 10 16	704	0.2-	0.4-
1993 06 26	675	0.5+	1.5-	1998 10 04	761	(2.3+	1.9-)	1998 10 16	704	0.4+	0.6-
1993 06 26	675	0.2+	0.3-	1998 10 05	761	0.9+	1.0-				

(9546)* 1984 SD₆ = 1953 TR₁ = 1989 AP₈ = 1991 RL₃₃

Discovered 1984 Sept. 22 by H. Debehogne at the European Southern Observatory.

Id. G. V. Williams (*MPC* 21934)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28498884	ω	0.06140	+0.97746366	-0.21001329		
<i>a</i>	2.2869192	Ω	12.12596	+0.19364039	+0.85154577		
<i>e</i>	0.1590727	<i>i</i>	5.85515	+0.08407253	+0.48037924		
<i>P</i>	3.46	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 10 08	760	0.4+	0.6-	1984 10 01	809	0.5+	1.0-	1998 10 11	699	0.0	0.7+
1984 09 22	809	0.1+	0.0	1984 10 01	809	0.6+	0.6-	1998 10 14	704	0.3-	0.2+
1984 09 22	809	0.3+	0.3+	1989 01 10	054	0.1-	1.1+	1998 10 14	704	0.6-	0.6-
1984 09 22	809	0.5+	0.4+	1989 01 10	054	0.1-	0.9+	1998 10 14	704	0.4-	0.8-
1984 09 22	809	0.1+	0.4+	1991 09 10	033	0.2-	0.9-	1998 10 14	704	0.6+	0.8-
1984 09 22	809	0.5+	0.3+	1991 09 10	033	0.6+	0.7-	1998 10 14	704	1.4-	1.9-
1984 09 22	809	0.9+	0.3+	1991 09 10	675	0.0	0.3-	1998 10 15	704	0.1+	0.1-
1984 09 23	809	0.6+	0.2-	1991 09 10	675	1.5-	1.2-	1998 10 15	704	1.2+	0.4-
1984 09 23	809	1.1+	0.2-	1991 09 13	033	0.3-	1.5-	1998 10 15	704	0.0	0.1-
1984 09 23	809	1.5+	0.2-	1991 09 17	675	1.3+	0.9+	1998 10 15	704	0.1-	0.4-
1984 09 24	809	1.0-	0.2-	1991 09 17	675	0.0	0.4-	1998 10 15	704	0.2+	0.3+
1984 09 24	809	0.8-	0.0	1991 10 04	033	0.1-	0.1-	1998 10 17	699	0.3-	0.6-
1984 09 24	809	0.5-	0.2-	1991 10 04	033	0.0	0.0	1998 10 17	699	0.0	0.6-
1984 09 26	809	0.2-	1.2+	1991 10 05	033	0.2+	0.3-	1998 10 17	699	0.1+	0.6-
1984 09 26	809	0.3-	1.1+	1998 09 18	699	0.0	0.2-	1998 10 26	104	0.4+	0.1+
1984 09 26	809	0.2+	1.1+	1998 09 18	699	0.0	0.6+	1998 10 26	104	0.0	0.1+
1984 09 27	809	1.0-	0.8+	1998 09 18	699	0.1-	0.0	1998 10 26	104	0.4-	0.2+
1984 09 27	809	0.7-	0.8+	1998 09 26	704	0.7+	0.6-	1998 10 26	104	0.2-	0.1-
1984 09 27	809	0.4-	0.8+	1998 09 26	704	1.0+	0.3+	1998 10 28	704	0.3-	0.1+
1984 09 28	809	0.7-	0.2-	1998 09 26	704	0.0	0.4+	1998 10 28	704	0.1+	0.1-
1984 09 28	809	0.6-	0.2-	1998 09 26	704	0.7-	0.5-	1998 10 28	704	0.4+	0.4+
1984 09 28	809	1.0-	0.2-	1998 09 27	704	1.0-	0.3-	1998 10 28	704	0.8+	1.2+
1984 09 29	809	0.5-	1.1+	1998 09 27	704	0.8-	0.4+	1998 10 28	704	0.3-	0.9+
1984 09 29	809	0.7-	1.0+	1998 09 27	704	0.7+	1.1+	1998 10 29	704	0.3+	0.3+
1984 09 29	809	1.0-	0.9+	1998 09 27	704	0.5-	0.1-	1998 10 29	704	0.6+	0.1-
1984 09 30	809	0.1-	0.4-	1998 09 27	704	1.6-	0.8-	1998 10 29	704	0.4+	0.1+
1984 09 30	809	0.1+	0.3-	1998 10 11	699	1.7+	0.7+	1998 10 29	704	0.5+	0.7+
1984 09 30	809	0.2+	0.4-	1998 10 11	699	0.1-	0.7+	1998 10 29	704	0.9+	0.5-

(9547)* 1985 AE = 1979 OO₇

Discovered 1985 Jan. 15 by K. Suzuki and T. Urata at Toyota.

Id. T. Kobayashi (*MPC* 12005)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26955083	ω	343.70104	-0.50701826	-0.86166996		
<i>a</i>	2.3734255	Ω	136.75815	+0.79425425	-0.47669982		
<i>e</i>	0.0804507	<i>i</i>	1.78888	+0.33480243	-0.17401768		
<i>P</i>	3.66	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1979 07 24	413	0.7+	0.2-	1995 12 29	385	0.4+	0.3-	1998 09 27	704	0.2+	1.3+
1979 07 27	675	(3.8+	0.9-)	1995 12 29	385	0.1+	0.2-	1998 09 27	704	0.4+	0.8-
1985 01 15	881	0.4-	2.2-	1995 12 30	385	0.3+	0.0	1998 10 10	699	0.4+	0.4-
1985 01 15	881	(0.1-	3.2-)	1995 12 30	385	0.1+	0.3-	1998 10 10	699	1.0-	0.3+
1985 01 20	372	(4.4+	0.9-)	1995 12 30	385	0.1+	0.1-	1998 10 10	699	0.8+	0.7+
1985 01 20	372	(4.7+	0.2-)	1995 12 31	385	0.0	0.1-	1998 10 11	888	0.3-	0.7+
1985 01 21	881	0.4-	0.7+	1995 12 31	385	0.5+	0.1+	1998 10 11	888	0.2+	0.4+

1985 01 21	881	(2.7+ 3.2-)	1995 12 31	385	0.3- 0.4+	1998 10 11	888	0.7- 0.4-
1985 01 25	372	0.4- 0.6+	1996 01 27	385	0.1+ 0.3+	1998 10 18	888	0.1+ 0.3-
1985 01 25	372	(5.5+ 3.2+)	1996 01 27	385	0.2+ 0.2+	1998 10 18	888	0.7- 0.6-
1993 04 25	691	1.1- 0.1+	1996 01 27	385	0.0 0.0	1998 10 18	888	0.1- 0.8-
1993 04 25	691	0.7- 0.9-	1996 01 29	887	0.0 0.2+	1998 10 28	704	0.8+ 1.5-
1993 04 25	691	0.4- 1.1-	1996 01 29	887	0.0 0.5+	1998 10 28	704	0.3- 1.1-
1994 08 10	809	1.5+ 1.3+	1996 01 29	887	0.1+ 0.1-	1998 10 28	704	0.1- 0.8-
1994 08 10	809	0.5- 2.0+	1996 01 30	887	0.7+ 0.2+	1998 10 28	704	0.2- 0.3-
1994 08 10	809	(0.2+ 3.1+)	1996 01 30	887	0.1+ 1.0+	1998 10 28	704	0.1- 0.0
1995 12 27	566	0.0 0.2+	1996 01 30	887	0.3+ 0.3+	1998 10 29	704	(0.6+ 2.4+)
1995 12 27	566	0.1- 0.2+	1998 09 27	704	0.5- 0.1+	1998 10 29	704	0.6- 1.2-
1995 12 27	566	0.2- 0.2+	1998 09 27	704	0.1+ 0.3-	1998 10 29	704	(1.1+ 2.6+)
1995 12 29	385	0.2+ 0.8-	1998 09 27	704	0.7+ 0.7+			

(9548)* 1985 CN = 1994 PO₃₄

Discovered 1985 Feb. 13 by Spacewatch at Kitt Peak.

Id. B. G. Marsden (*MPC* 24559)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Marsden					
<i>M</i>	341.28969		(2000.0)	P	Q			
<i>n</i>	0.26899171	ω	284.77973	+0.02775089	-0.99847243			
<i>a</i>	2.3767132	Ω	163.40697	+0.96938762	+0.01521608			
<i>e</i>	0.2406511	<i>i</i>	9.63115	+0.24396216	+0.05311570			
<i>P</i>	3.66	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	1	

Residuals in seconds of arc

1954 09 04	675	0.5+ 0.0	1985 04 24	691	1.4+ 0.2-	1998 09 24	699	(1.9- 2.1+)
1954 09 04	675	0.4- 0.1-	1985 05 15	691	0.8+ 0.7-	1998 09 24	699	0.1- 0.9+
1985 02 13	691	0.2- 0.4-	1985 05 15	691	0.7+ 1.0-	1998 09 26	704	0.1+ 0.4-
1985 02 13	691	0.3+ 0.9-	1985 05 15	691	1.6+ 0.8-	1998 09 26	704	0.5+ 0.7-
1985 02 13	691	0.4+ 0.3-	1994 08 10	809	0.7+ 0.1+	1998 09 26	704	0.6+ 0.7-
1985 02 15	691	0.6- 1.0-	1994 08 10	809	0.0 0.1+	1998 09 26	704	0.5+ 0.3-
1985 02 15	691	0.4+ 0.2-	1994 08 10	809	0.3+ 0.4-	1998 09 26	704	0.3+ 0.2-
1985 02 15	691	0.1- 0.3-	1994 08 11	809	1.2- 0.2+	1998 09 27	704	0.2+ 0.2-
1985 03 18	691	1.5- 0.6+	1994 08 11	809	0.5+ 0.3+	1998 09 27	704	0.8+ 0.5+
1985 03 18	691	1.5- 0.5+	1994 08 11	809	0.6- 0.9-	1998 09 27	704	0.6- 0.1-
1985 03 18	691	1.5- 0.1-	1998 09 18	704	0.0 0.3-	1998 09 27	704	0.7+ 0.3+
1985 03 25	691	1.3+ 1.0+	1998 09 18	704	0.1+ 0.3+	1998 09 27	704	0.3+ 1.1-
1985 03 25	691	1.4+ 0.5+	1998 09 18	704	0.9- 0.6+	1998 10 16	704	0.4- 0.3-
1985 03 25	691	0.9+ 1.0+	1998 09 18	704	0.6- 0.3+	1998 10 16	704	0.3+ 0.3+
1985 04 13	691	1.2- 0.3+	1998 09 18	704	1.0- 0.3-	1998 10 16	704	0.1- 0.7+
1985 04 13	691	1.1- 0.7+	1998 09 22	699	0.5+ 0.5-	1998 10 16	704	0.3- 0.2+
1985 04 13	691	1.3- 0.5+	1998 09 22	699	0.7- 0.3+	1998 10 16	704	0.1- 0.0
1985 04 24	691	0.7+ 0.2-	1998 09 22	699	0.5- 0.4+			
1985 04 24	691	0.5+ 0.1+	1998 09 24	699	0.4+ 0.8+			

(9549)* 1985 SM₂ = 1981 TU₁ = 1987 BP₃ = 1992 JK₃

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

Id. T. Kobayashi (*MPC* 23971)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams					
<i>M</i>	252.87537		(2000.0)	P	Q			
<i>n</i>	0.23414145	ω	304.31200	-0.98721725	-0.01153226			
<i>a</i>	2.6070569	Ω	235.52693	+0.05788295	-0.95522103			
<i>e</i>	0.1076933	<i>i</i>	11.11763	-0.14849801	-0.29566837			
<i>P</i>	4.21	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	1	

Residuals in seconds of arc

1981 10 03	095	0.8- 0.9-	1994 11 25	596	1.6+ 0.6-	1998 10 14	704	0.5- 0.1+
1985 09 19	095	1.7+ 0.8-	1995 01 05	033	0.1+ 0.5+	1998 10 14	704	0.3+ 1.0-
1985 09 21	095	1.1- 0.4+	1995 01 05	033	1.1- 0.5+	1998 10 15	704	0.3- 1.2+
1985 10 18	095	0.1+ 0.6+	1996 05 21	801	0.1+ 0.8-	1998 10 15	704	1.3+ 0.6-
1987 01 30	010	0.6+ 0.2+	1996 05 21	801	0.0 0.9-	1998 10 15	704	1.5- 0.1-
1987 01 30	010	0.4+ 1.1-	1996 05 23	801	0.3+ 0.6+	1998 10 15	704	0.1+ 1.4-
1987 01 31	010	0.1+ 0.5-	1996 05 23	801	0.1+ 0.7-	1998 10 15	704	0.4- 0.5-
1992 05 10	809	1.7- 0.9+	1997 09 23	118	0.4- 0.0	1998 10 19	699	0.0 0.4+

1992 05 10	809	1.4- 0.3+	1997 09 23	118	0.0 0.2-	1998 10 19	699	0.4- 0.6+
1992 05 12	809	0.6+ 0.3+	1997 09 23	118	0.1- 0.0	1998 10 19	699	0.2- 1.0+
1992 05 12	809	0.8+ 0.2+	1997 09 24	118	0.3- 0.2-	1998 10 24	761	(3.2- 0.0)
1992 05 12	809	1.2+ 0.3+	1997 09 24	118	0.1- 0.3-	1998 10 24	761	1.0- 0.4-
1992 05 13	809	0.8- 0.6+	1997 09 24	118	0.3- 0.1-	1998 10 25	761	0.5- 0.2+
1992 05 13	809	0.4- 0.1+	1997 09 26	118	0.5+ 0.2+	1998 10 25	761	0.2- 0.4+
1994 11 03	801	0.3- 0.5+	1997 09 26	118	0.7+ 0.1+	1998 10 29	704	0.1+ 0.7+
1994 11 07	801	0.7- 0.5+	1997 09 26	118	0.7+ 0.1+	1998 10 29	704	0.5- 0.6+
1994 11 07	801	1.1- 0.4+	1997 09 28	118	0.9+ 0.1+	1998 10 29	704	0.6+ 0.4+
1994 11 21	596	(1.7+ 2.9-)	1997 09 28	118	0.3+ 0.1-	1998 10 29	704	0.7+ 1.3+
1994 11 21	596	(0.1+ 2.4-)	1997 09 28	118	0.5+ 0.1-	1998 10 29	704	(2.0- 2.6+)
1994 11 25	596	0.3+ 0.4-	1998 10 14	704	0.6+ 0.3+			
1994 11 25	596	0.0 0.6-	1998 10 14	704	0.9+ 1.2-			

(9550)* 1985 TY₁ = 1951 WZ₁ = 1981 UB₉ = 1989 RA₂

Discovered 1985 Oct. 15 by E. Bowell at the Anderson Mesa Station of the

Lowell Observatory.

Id. T. Kobayashi (*MPC* 15245), S. Nakano (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Asher					
<i>M</i>	41.77126		(2000.0)	P	Q			
<i>n</i>	0.22922375	ω	114.88348	+0.98978310	-0.05920211			
<i>a</i>	2.6442122	Ω	248.72964	+0.01053099	+0.93759215			
<i>e</i>	0.0878453	<i>i</i>	8.00105	+0.14219181	+0.34266028			
<i>P</i>	4.30	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1	

Residuals in seconds of arc

1951 11 29	711	(22.8+ 13.7+)	Y	1989 09 03	511	0.0 1.1+	1998 10 02	704	0.4- 0.4-
1951 11 29	711	(1.5+ 5.9+)	Y	1989 09 03	511	(2.4+ 1.7-)	1998 10 02	704	0.9+ 1.1-
1981 10 30	381	0.4+ 0.4+		1989 09 05	511	0.4- 1.6-	1998 10 02	704	0.5+ 1.8-
1981 10 30	381	0.5- 0.8-		1989 09 05	511	0.4- 0.1+	1998 10 03	689	0.3+ 1.3-
1985 09 19	095	0.6+ 1.0+		1993 07 24	801	1.2+ 0.5+	1998 10 18	704	0.7+ 0.5-
1985 09 21	095	(0.4+ 3.0+)		1993 07 24	801	1.4+ 0.6+	1998 10 18	704	0.4+ 0.1-
1985 10 15	688	(0.6- 3.0-)		1997 07 08	689	0.2- 0.8-	1998 10 18	704	0.2- 0.5+
1985 10 15	688	0.8- 0.2+		1997 07 09	689	1.1- 0.4-	1998 10 18	704	0.5+ 0.3+
1985 10 18	095	0.4+ 1.7+		1998 09 20	699	0.2- 0.3+	1998 10 18	704	0.0 0.3+
1989 08 30	675	0.5- 1.3-		1998 09 20	699	0.5- 0.2+	1998 10 29	704	0.5+ 0.0
1989 08 30	675	0.4- 0.7-		1998 09 20	699	0.6- 0.2+	1998 10 29	704	1.6- 1.0-
1989 09 01	511	0.5+ 0.6+		1998 10 02	704	0.3+ 0.8-	1998 10 29	704	0.1- 1.1+
1989 09 01	511	1.3- 1.0+		1998 10 02	704	0.4+ 0.1-	1998 10 29	704	0.3- 1.3+

(9551)* 1985 UJ

Discovered 1985 Oct. 20 by A. Mrkos at Kleť.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams					
<i>M</i>	37.42603		(2000.0)	P	Q			
<i>n</i>	0.23082198	ω	4.30692	+0.90630686	-0.41906890			
<i>a</i>	2.6319922	Ω	20.73641	+0.38298776	+0.75971698			
<i>e</i>	0.4187457	<i>i</i>	8.88277	+0.17868479	+0.49720355			
<i>P</i>	4.27	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	2	

Residuals in seconds of arc

1985 09 21	675	1.4+ 0.5+	1989 08 02	413	0.1- 0.8-	1998 09 20	046	0.1- 0.9-
1985 09 21	675	0.9- 1.1+	1995 02 01	413	0.3- 0.1-	1998 09 20	046	0.9- 1.7-
1985 10 11	675	0.6- 1.3+	1995 02 01	413	0.1- 0.0	1998 09 25	046	0.0 0.2-
1985 10 11	675	0.1- 0.5+	1995 02 21	413	0.2+ 0.3+	1998 09 25	046	0.3- 0.3-
1985 10 13	675	0.0 0.9+	1995 02 21	413	0.1- 0.6+	1998 09 25	046	0.1+ 0.1+
1985 10 18	095 (2.4+ 4.5+)		1995 02 28	104	0.3- 0.6+	1998 10 21	046	0.0 1.0-
1985 10 20	046 0.8- 0.2+		1995 02 28	104	0.7- 0.2+	1998 10 21	046	0.4+ 1.1-
1985 10 20	046 0.8- 0.1+		1995 02 28	104	0.9- 0.5+	1998 10 21	046	0.7+ 1.3-
1985 10 21	046 1.5+ 0.2-		1995 03 01	104	0.5+ 0.7+	1998 10 23	046	0.2+ 0.3-
1985 10 21	046 0.6+ 0.1+		1995 03 21	413	1.4+ 0.1+	1998 10 23	046	0.2- 0.3-
1985 10 24	046 2.2- 0.8-		1995 03 21	413	1.3+ 0.3+	1998 10 23	046	0.3+ 0.2-
1989 08 02	413 (5.1- 2.0-)		1995 03 22	413	0.9+ 0.9+			

Id. S. Nakano (d, *MPC* 14158), T. B. Spahr (*MPC* 30446), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	22.90704		(2000.0)		P		Q
<i>n</i>	0.15526956	ω	219.97602		+0.78866547		-0.61479085
<i>a</i>	3.4282974	Ω	177.93043		+0.59899346		+0.76603122
<i>e</i>	0.0886449	<i>i</i>	9.95722		+0.13861321		+0.18769227
<i>P</i>	6.35	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1985 09 21	095	(5.1+ 1.5-)	1997 09 08	046	1.1+ 0.0	1997 10 20	046	0.5- 0.4-
1985 10 17	010	(9.0- 1.4-)	1997 09 08	046	0.6+ 0.2-	1997 10 21	046	0.3- 0.1+
1985 10 18	010	(8.4- 3.0-)	1997 09 08	046	0.6+ 0.1-	1997 10 21	046	0.2+ 0.2-
1985 10 24	046	0.2+ 0.7+	1997 09 10	046	0.1+ 0.1-	1998 08 31	704	0.2- 1.4-
1985 10 24	046	0.0 1.5-	1997 09 10	046	0.3+ 0.1-	1998 08 31	704	0.1+ 0.3-
1991 09 11	675	(4.0+ 0.4-)	1997 09 10	046	0.3+ 0.1+	1998 08 31	704	2.0+ 1.7+
1991 09 11	675	(3.5+ 3.6-)	1997 09 29	046	0.5- 0.4-	1998 08 31	704	(1.5+ 2.8+)
1991 09 15	675	(2.9+ 0.8-)	1997 09 29	046	0.2- 0.2-	1998 10 21	046	0.7- 0.3+
1991 09 15	675	(3.6+ 1.8-)	1997 09 29	046	0.5- 0.4-	1998 10 21	046	0.7- 0.2+
1994 03 09	691	0.4- 0.0	1997 10 05	046	0.5- 0.2-	1998 10 21	046	0.6- 0.3+
1994 03 09	691	(2.6- 0.2+)	1997 10 05	046	0.3- 0.3-	1998 10 23	046	0.2+ 0.1+
1994 03 09	691	0.3+ 0.2-	1997 10 05	046	0.1- 0.3-	1998 10 23	046	0.3+ 0.1-
1994 03 14	675	0.0 1.1-	1997 10 20	046	0.2- 0.0	1998 10 23	046	0.1+ 0.1-
1994 03 14	675	0.4- 1.6-	1997 10 20	046	0.2- 0.1-			

(9553)* 1985 UG₂ = 1990 EB₈

Discovered 1985 Oct. 17 at Caussols.

Id. H. Kaneda (*MPC* 17436)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	12.91886		(2000.0)		P		Q
<i>n</i>	0.30241939	ω	252.19921		+0.74036606		-0.67199578
<i>a</i>	2.1981785	Ω	150.01546		+0.62871722		+0.68345092
<i>e</i>	0.1168300	<i>i</i>	1.91795		+0.23785029		+0.28516049
<i>P</i>	3.26	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1954 02 26	675	0.0	1.5+	1997 05 04	809	(2.3+ 2.8+)	1998 10 02	704	0.8-	0.1+
1954 02 26	675	0.9+	0.0	1997 05 04	809	(1.7+ 2.9+)	1998 10 02	704	0.2-	0.6+
1985 09 21	095	1.0+	0.0	1997 05 04	809	(2.2+ 3.8+)	1998 10 02	704	0.1+	0.9+
1985 10 17	010	(45.9- 8.9-)		1997 05 07	704	1.2+ 0.6+	1998 10 02	704	0.2-	0.6+
1985 10 18	010	(45.3- 11.4-)		1997 05 07	704	0.9+ 0.6+	1998 10 10	699	0.3+	0.0
1985 10 18	095	0.8+	1.2+	1997 05 07	704	0.8+ 0.4+	1998 10 10	699	0.2+	0.1-
1985 10 20	049	0.4-	0.1+	1997 05 07	704	1.0+ 0.2+	1998 10 10	699	0.4+	0.0
1985 10 20	049	1.1-	0.5+	1998 09 18	699	0.1- 0.7+	1998 10 14	704	0.9+	0.3-
1985 10 24	049	1.6-	0.9-	1998 09 18	699	0.0 0.8+	1998 10 14	704	0.0	0.0
1985 10 24	049	0.1-	0.4+	1998 09 18	699	0.0 0.5+	1998 10 14	704	0.3+	0.9-
1985 11 12	095	2.2+	1.3+	1998 09 21	689	0.2+ 1.8-	1998 10 14	704	0.5-	0.3+
1988 09 10	675	0.6-	0.5-	1998 09 22	689	0.4+ 1.1-	1998 10 14	704	1.1-	1.0+
1988 09 10	675	0.0	0.0	1998 09 26	704	0.5- 1.4+	1998 10 15	704	0.3+	0.8-
1988 09 12	675	0.1-	1.4-	1998 09 26	704	0.3- 1.7+	1998 10 15	704	0.2-	0.1-
1988 09 12	675	0.1-	1.5-	1998 09 26	704	0.7+ 0.7+	1998 10 15	704	0.2-	0.0
1990 03 04	809	0.6-	0.4+	1998 09 26	704	0.6- 1.8+	1998 10 15	704	0.5-	0.1-
1990 03 04	809	0.4-	0.5+	1998 09 26	704	(0.2- 2.1+)	1998 10 28	704	0.1-	0.9-
1990 03 04	809	0.4-	0.6+	1998 09 27	704	0.6+ 1.8+	1998 10 28	704	0.6+	1.1-
1990 03 06	809	0.7-	1.1+	1998 09 27	704	(0.6- 2.3+)	1998 10 28	704	0.8+	0.9-
1990 03 06	809	0.5-	0.9+	1998 09 27	704	0.1+ 0.8+	1998 10 28	704	0.2+	1.4-
1990 03 06	809	0.5-	0.9+	1998 09 27	704	0.4- 1.1+	1998 10 28	704	0.1-	1.5-
1993 01 21	801	0.5+	0.4-	1998 09 27	704	0.5+ 0.9+	1998 10 29	704	0.5-	0.5-
1993 01 21	801	0.3+	0.3-	1998 10 02	704	0.3- 0.4-	1998 10 29	704	0.7-	0.1-
1993 02 21	801	0.3+	1.7-	1998 10 02	704	0.2+ 0.0	1998 10 29	704	0.0	0.6+
1993 02 21	801	0.1+	0.7-	1998 10 02	704	1.0+ 0.1-	1998 10 29	704	0.3-	0.5+
1997 05 03	809	(0.2+ 3.5+)		1998 10 02	704	1.3- 0.9-	1998 10 29	704	0.4-	0.2-
1997 05 03	809	(0.2- 2.9+)		1998 10 02	704	0.5- 0.4+				
1997 05 03	809	(0.5+ 2.2+)		1998 10 02	704	0.4+ 0.0				

(9554)* 1985 XA = 1994 AT₃ = 1997 JB

Discovered 1985 Dec. 13 by R. Chemin at Caussols.

Id. B. G. Marsden (*MPC* 29911)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	316.92143		(2000.0)		P		Q
<i>n</i>	0.37489114	ω	37.67653		-0.42507852		-0.80414531
<i>a</i>	1.9048726	Ω	81.07988		+0.69400673		-0.58425327
<i>e</i>	0.0501319	<i>i</i>	24.87305		+0.58108769		+0.10953734
<i>P</i>	2.63	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1985 12 13	010	(4.8+ 0.6+)	1997 05 01	619	0.9+	0.4-	1998 09 04	954	0.2-	1.1+	
1985 12 13	010	0.3+	0.5-	1997 05 02	619	0.4+	1.1+	1998 09 05	954	0.4-	0.4-
1985 12 17	010	1.8+ 0.1+	1997 05 02	619	0.1+	0.6+	1998 09 05	954	0.4-	0.3-	
1985 12 17	010	0.9+ 2.2-	1997 05 02	619	0.4+	0.3+	1998 09 05	954	0.5-	0.3-	
1985 12 19	010	(2.7- 0.2+)	1997 05 03	954	0.2-	0.3-	1998 09 05	954	0.4-	0.3-	
1985 12 19	010	(3.5+ 1.0-)	1997 05 03	954	0.1-	0.3-	1998 09 05	954	0.5-	0.4-	
1986 01 09	801	1.6- 0.9+	1997 05 03	954	0.3-	0.3-	1998 10 16	423	0.4+	0.1-	
1986 01 10	801	1.3- 0.7+	1997 05 03	954	0.3-	0.4-	1998 10 16	423	0.2-	0.5-	
1986 02 03	801	(6.6- 8.2-)	1997 05 03	954	0.3-	0.4-	1998 10 20	423	0.3+	0.1-	
1994 01 11	675	0.8+ 1.2+	1997 07 09	599	0.6-	0.2+	1998 10 20	423	0.0	0.3-	
1994 01 11	675	0.7+ 0.1+	1997 07 09	599	0.4-	0.2+	1998 10 20	423	0.1-	0.3+	
1994 01 13	675	(1.4+ 4.2+)	1998 09 04	954	0.1-	1.0+	1998 10 27	423	0.9+	0.6+	
1994 01 13	675	2.0- 0.6-	1998 09 04	954	0.1-	0.9+					

(9555)* 1986 GC = 1982 BB₆

Discovered 1986 Apr. 2 by P. Jensen at Brorfelde.

Id. S. Nakano (*MPC* 10840)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	158.11368		(2000.0)		P		Q
<i>n</i>	0.27135891	ω	169.20212		-0.70967233		+0.69696720
<i>a</i>	2.3628709	Ω	55.49114		-0.65535011		-0.59939698
<i>e</i>	0.0817187	<i>i</i>	7.17801		-0.25861443		-0.39364958
<i>P</i>	3.63	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1951 09 08	675	0.1+	0.1-	1991 09 12	675	1.0-	1.3-	1998 09 21	704	0.6+	0.2+
1982 01 26	381	0.9-	0.1+	1991 09 14	675	0.0	0.1+	1998 09 21	704	0.4+	1.4-
1982 01 26	381	1.7+	0.4-	1991 09 14	675	1.8-	1.7-	1998 09 21	704	0.8+	0.0
1982 01 28	381	0.8+	0.1-	1995 11 21	358	0.3+	0.3-	1998 09 21	704	0.6+	1.6-
1986 04 02	054	1.0-	0.4+	1995 11 21	358	1.1-	0.0	1998 10 15	704	1.1+	1.3+
1986 04 04	054	1.2-	0.3+	1995 11 22	358	1.7-	0.4-	1998 10 15	704	0.4-	1.0+
1986 04 05	054	0.4+	1.7-	1995 11 22	358	0.4+	1.5+	1998 10 15	704	1.7-	1.6+
1986 04 08	054	(4.0+	1.5+)	1995 11 30	896	0.8+	0.4-	1998 10 15	704	0.8+	0.5+
1986 04 10	054	(3.7-	1.3+)	1995 11 30	896	0.6+	0.6-	1998 10 15	704	0.7-	0.6+
1991 09 12	675	1.5+	0.7-	1998 09 21	704	0.4+	0.4-				

(9556)* 1986 GF = 1979 HE₄ = 1993 HJ₁

Discovered 1986 Apr. 8 by the International Near-Earth Asteroid Survey at Palomar.

Id. G. V. Williams (*MPC* 22224)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	247.12450		(2000.0)		P		Q
<i>n</i>	0.27885937	ω	315.49755		-0.92651093		-0.33007009
<i>a</i>	2.3203094	Ω	206.85332		+0.34179362		-0.93903680
<i>e</i>	0.1793211	<i>i</i>	23.57236		-0.15733598		-0.09624773
<i>P</i>	3.53	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 04 30	095	(6.7+ 10.8+)	1993 04 29	413	0.1-	0.2-	1995 12 02	608	0.9+	0.2+
1979 05 01	095	(4.2+ 5.8-)	1993 05 15	413	0.6+	0.7-	1995 12 02	608	0.1+	0.3-
1986 04 08	675	1.8+ 2.1+	1993 05 15	413	0.9-	1.0-	1995 12 05	608	0.8+	0.3+
1986 04 08	675	1.0+ 1.0+	1993 05 17	413	0.8+	0.0	1995 12 05	608	0.8+	0.2+

1986 04 09	675	0.6−	0.5+	1993 05 18	675	1.0−	1.3−	1998 09 19	699	0.4+	0.3+
1986 04 09	675	2.1−	2.1+	1993 05 18	675	1.8+	0.4+	1998 09 19	699	0.2−	0.4+
1986 04 30	675	0.7−	0.5−	1993 05 20	675	0.6−	0.5−	1998 09 19	699	0.6−	0.3+
1986 04 30	675	0.6−	0.6+	1993 05 20	675	1.5−	1.9−	1998 09 25	699	0.4−	1.8+
1986 05 03	675	1.2+	2.3+	1995 11 06	608	0.8−	0.0	1998 09 25	699	0.0	1.1+
1993 04 20	675	0.6+	1.7−	1995 11 06	608	0.5−	0.4−	1998 09 25	699	0.1+	1.1+
1993 04 20	675	(2.2−	2.7−)	1995 11 11	608	0.8−	0.7+	1998 10 18	704	0.2+	0.2+
1993 04 22	675	0.2−	0.6+	1995 11 11	608	0.6−	0.1+	1998 10 18	704	0.6+	0.5−
1993 04 22	675	0.2−	0.8+	1995 11 24	413	0.6−	0.2−	1998 10 18	704	0.2−	0.1+
1993 04 25	675	0.8+	0.5−	1995 11 24	413	0.6+	0.5+	1998 10 18	704	0.4+	0.7−
1993 04 25	675	0.3+	1.3−	1995 11 29	608	0.3−	0.1+	1998 10 18	704	0.5+	0.2−
1993 04 26	675	0.8+	1.5+	1995 11 29	608	0.4−	0.0				

(9557)* 1986 QL₂ = 1996 GW₁

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

Id. S. Nakano (*MPC* 27102)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	124.04012		(2000.0)	P	Q
n	0.17496567	ω	277.36264	−0.12963982	+0.99143448
a	3.1659265	Ω	345.16045	−0.88358318	−0.12276106
e	0.1500764	i	3.54783	−0.44997143	−0.04458012
P	5.63	H	12.4	G 0.15	U 1

Residuals in seconds of arc

1986 08 28	809	1.6−	0.8−	1996 03 12	399	0.6−	0.9+	1998 10 15	704	0.5−	1.1−
1986 08 28	809	1.7−	0.7−	1996 03 12	399	1.0−	0.6+	1998 10 17	699	0.9+	0.5+
1986 08 28	809	1.5−	0.8−	1996 04 13	399	1.8−	0.9+	1998 10 17	699	0.9+	0.5+
1986 08 30	809	0.9−	0.5−	1996 04 13	399	1.5−	0.3+	1998 10 17	699	0.5+	1.2+
1986 08 30	809	0.8−	0.6−	1996 04 14	399	0.9+	0.9−	1998 10 23	755	0.8+	1.0−
1986 08 30	809	0.9−	0.7−	1996 04 14	399	1.2−	1.0−	1998 10 23	755	1.2−	0.9+
1986 09 01	809	0.8−	0.4+	1996 04 22	566	0.7+	0.1−	1998 10 23	755	0.2−	0.1−
1986 09 01	809	0.7−	0.2+	1996 04 22	566	0.8+	0.2−	1998 10 23	120	0.0	0.3+
1986 09 01	809	0.6−	0.1−	1996 04 22	566	1.2+	0.0	1998 10 23	120	(3.8+	5.5+)
1986 09 02	809	0.3+	0.0	1996 04 23	566	0.8+	0.1−	1998 10 24	620	0.0	1.8+
1986 09 02	809	0.3+	0.1+	1996 04 23	566	0.8+	0.2−	1998 10 24	620	0.3−	1.9+
1986 09 02	809	0.3+	0.1+	1996 04 23	566	0.7+	0.5−	1998 10 24	620	0.5−	0.7+
1986 09 03	809	0.8+	0.5+	1998 09 14	699	0.9−	0.7−	1998 10 24	540	0.2−	0.1−
1986 09 03	809	1.0+	0.4+	1998 09 14	699	0.8−	0.9−	1998 10 24	540	0.4+	0.4+
1986 09 03	809	1.1+	0.1−	1998 09 14	699	0.5−	0.1+	1998 10 24	540	0.8+	0.0
1986 09 04	809	0.6+	0.4−	1998 09 26	704	0.3−	0.0	1998 10 26	118	0.1+	0.5−
1986 09 04	809	0.4+	0.4−	1998 09 26	704	0.7+	0.3−	1998 10 26	118	0.1+	0.5−
1986 09 04	809	0.2+	0.3−	1998 09 26	704	0.3+	0.0	1998 10 26	118	0.2+	0.4−
1986 09 05	809	0.9+	0.1−	1998 09 26	704	0.3−	0.6+	1998 10 28	704	0.4+	0.5−
1986 09 05	809	1.1+	0.1−	1998 09 27	704	0.5−	0.4+	1998 10 28	704	1.1+	0.9−
1986 09 05	809	0.9+	0.1−	1998 09 27	704	0.2+	0.1+	1998 10 28	704	0.1−	0.8−
1986 09 07	809	0.7+	0.2+	1998 09 27	704	0.3−	0.6−	1998 10 28	704	0.2+	1.2−
1986 09 07	809	0.7+	0.2+	1998 09 27	704	0.6−	0.7−	1998 10 28	704	1.0+	0.5−
1986 09 07	809	0.6+	0.0	1998 09 27	704	0.0	0.3−	1998 10 28	620	0.5−	0.3−
1986 09 09	809	0.3+	0.7+	1998 10 14	704	0.9−	0.0	1998 10 28	620	0.3−	0.3−
1986 09 09	809	0.4+	0.9+	1998 10 14	704	0.8−	0.6+	1998 10 28	620	0.1−	0.2−
1986 09 09	809	0.4+	0.8+	1998 10 14	704	0.5−	0.6+	1998 10 29	704	0.2+	1.0−
1986 09 11	809	0.7−	0.6+	1998 10 14	704	0.8−	1.3+	1998 10 29	704	1.0+	0.4−
1986 09 11	809	0.5−	0.7+	1998 10 15	704	0.7+	0.1+	1998 10 29	704	0.4+	0.2−
1986 09 11	809	0.6−	0.6+	1998 10 15	704	0.4+	0.2−	1998 10 29	704	0.6+	0.2−
1993 12 09	675	0.5+	0.3+	1998 10 15	704	0.5−	0.0	1998 10 29	704	0.5+	0.1−
1993 12 09	675	0.7−	0.7+	1998 10 15	704	0.3−	0.2+				

(9558)* 1986 QB₃ = 1975 VU₉ = 1981 WG₂

Discovered 1986 Aug. 29 by H. Debehogne at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 12206)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	47.14902		(2000.0)	P	Q
n	0.17264149	ω	274.59029	+0.99850350	−0.02175267
a	3.1942772	Ω	86.66193	+0.04004607	+0.91565754
e	0.1822505	i	2.88094	−0.03724333	+0.40137026
P	5.71	H	12.8	G 0.15	U 1

Residuals in seconds of arc

1975 11 09	381	1.1−	0.4−	1986 09 07	809	0.5+	1.0−	1995 03 23	691	0.4−	0.0
1975 11 09	381	1.2−	0.0	1986 09 07	809	0.5+	0.8−	1995 03 23	691	0.7−	0.2−
1981 11 23	046	2.2+	1.6+	1986 09 09	809	0.3+	0.6+	1995 03 27	675	0.6+	0.0
1981 11 23	046	2.0+	2.0+	1986 09 09	809	0.3+	0.7+	1995 03 29	691	0.3−	0.1−
1986 08 29	809	1.2−	0.3+	1986 09 09	809	0.3+	0.5+	1995 03 29	691	0.6−	0.2−
1986 08 29	809	1.1−	0.2+	1986 09 09	809	0.8+	0.2−	1995 03 29	691	0.6−	0.2−
1986 08 29	809	0.8−	0.4+	1986 09 09	809	0.8+	0.3−	1995 04 04	691	0.3−	0.3−
1986 08 29	809	0.6−	0.4+	1986 09 09	809	0.9+	0.2−	1995 04 04	691	0.1−	0.1−
1986 08 29	809	0.6−	0.3+	1986 09 11	809	0.8+	0.3+	1996 04 18	809	1.0−	0.4−
1986 08 29	809	0.6−	0.4+	1986 09 11	809	1.2+	0.3+	1996 04 18	809	1.0−	0.8+
1986 08 31	809	0.9−	0.8+	1986 09 11	809	1.3+	0.4+	1996 04 18	809	0.6−	0.2+
1986 08 31	809	1.0−	0.6+	1986 09 11	809	0.7+	0.1+	1996 04 18	809	0.6+	1.5−
1986 08 31	809	0.9−	0.6+	1986 09 11	809	1.1+	0.3−	1996 04 18	809	(0.9+	2.1−)
1986 09 01	809	1.1−	0.0	1986 09 11	809	0.8+	0.6−	1996 04 18	809	0.4+	1.3−
1986 09 01	809	1.0−	0.0	1986 09 13	809	2.4+	0.5+	1996 04 20	809	(4.2+	1.0−)
1986 09 01	809	1.2−	0.0	1986 09 13	809	2.5+	0.3+	1996 04 20	809	(3.9+	1.2−)
1986 09 01	809	1.0−	0.0	1986 09 13	809	2.4+	0.5+	1996 04 20	809	(4.1+	1.6−)
1986 09 01	809	1.2−	0.0	1986 09 14	809	2.2+	0.8−	1997 08 01	566	1.2+	1.8+
1986 09 01	809	1.1−	0.0	1986 09 14	809	2.3+	1.0−	1997 08 01	566	1.6+	1.8+
1986 09 02	809	1.2−	0.9+	1986 09 14	809	2.2+	0.9−	1997 08 01	566	(1.1+	2.1+)
1986 09 02	809	1.0−	0.7+	1988 01 11	033	0.3+	0.0	1998 08 31	704	1.2−	0.3+
1986 09 02	809	0.7−	0.3+	1988 01 11	033	0.0	0.3−	1998 08 31	704	(1.1+	2.2−)
1986 09 03	809	1.0−	0.1+	1992 09 29	691	1.9−	0.4−	1998 08 31	704	1.8+	1.9−
1986 09 03	809	0.7−	0.1−	1992 09 29	691	1.8−	0.9−	1998 08 31	704	1.1+	1.4+
1986 09 03	809	0.5−	0.1+	1992 09 29	691	1.7−	0.8−	1998 08 31	704	0.3+	0.2+
1986 09 04	809	1.3−	0.5−	1992 09 30	400	0.2+	0.2+	1998 10 13	120	1.3+	0.3−
1986 09 04	809	1.1−	0.6−	1992 09 30	400	0.3+	0.7−	1998 10 13	120	0.3+	0.3−
1986 09 04	809	0.6−	0.6−	1992 11 26	675	0.4+	1.3−	1998 10 18	699	0.0	0.0
1986 09 05	809	0.4−	0.8−	1992 11 26	675	1.6+	0.5−	1998 10 18	699	0.1+	0.4−
1986 09 05	809	0.1−	0.8−	1992 11 28	675	0.1+	1.0−	1998 10 18	699	0.1+	0.0
1986 09 05	809	0.1−	0.8−	1992 11 28	675	0.5−	0.6−	1998 10 23	120	0.1+	0.4+
1986 09 06	809	0.4−	0.2+	1994 01 31	589	1.1−	0.8+	1998 10 23	120	0.3+	0.4+
1986 09 06	809	0.1−	0.1+	1994 01 31	589	0.8+	0.4+	1998 10 23	120	0.3+	0.2+
1986 09 06	809	0.3−	0.0	1994 01 31	589	0.3+	0.0	1998 10 29	704	0.6−	0.0
1986 09 07	809	0.0	0.2−	1994 01 31	589	0.8+	0.0	1998 10 29	704	0.2−	0.0
1986 09 07	809	0.3+	0.3−	1995 02 04	691	0.5−	0.2+	1998 10 29	704	0.6−	0.0
1986 09 07	809	0.5+	0.6−	1995 02 04	691	0.2−	0.7+	1998 10 29	704	0.0	0.5+
1986 09 07	809	0.6+	1.0−	1995 03 23	691	0.4−	0.1−	1998 10 29	704	1.2−	0.5−

(9559)* 1987 DH₆ = 1983 GG₂ = 1991 BB₁

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

Id. H. Kaneda (*MPC* 17959)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	170.89823		(2000.0)	P	Q
n	0.22291367	ω	343.71250	−0.38127490	+0.92414514
a	2.6938800	Ω	263.86971	−0.84543968	−0.35915031
e	0.1069419	i	1.39415	−0.37398021	−0.13025670
P	4.42	H	13.2	G 0.15	U 1

1987 02 24	809	0.4-	0.4-	1987 03 06	809	0.2-	0.0	1997 07 06	816	0.2+	0.2+
1987 02 24	809	0.3-	0.3-	1987 03 07	809	1.1-	0.6-	1997 07 06	816	0.5+	0.1-
1987 02 24	809	0.1-	0.2-	1987 03 07	809	0.9-	0.3+	1997 07 08	816	0.6-	0.4-
1987 02 25	809	0.3+	0.0	1987 03 07	809	0.4-	0.1+	1997 07 08	816	0.7-	0.5-
1987 02 25	809	0.5+	0.0	1991 01 16	675	0.0	0.7-	1997 07 08	816	0.7-	0.2-
1987 02 25	809	0.5+	0.0	1991 01 16	675	0.7-	0.3-	1997 07 08	816	0.7-	0.4-
1987 02 26	809	0.3+	0.8+	1991 01 18	511	1.6-	0.0	1997 07 08	689	0.2-	0.2-
1987 02 26	809	0.5+	0.7+	1991 01 18	511	(2.3-	1.4-)	1997 07 09	689	0.6+	0.1-
1987 02 26	809	0.5+	0.5+	1991 01 18	511	0.4-	0.6-	1997 07 11	816	0.6-	0.3-
1987 02 27	809	0.4+	1.1+	1991 01 19	511	(2.7-	0.9+)	1997 07 11	816	0.4-	0.3-
1987 02 27	809	0.5+	0.7+	1991 01 19	511	(3.1-	0.1-)	1997 07 11	816	0.5-	0.3-
1987 02 27	809	0.5+	0.7+	1991 01 20	511	(4.1-	0.1+)	1997 07 12	816	0.4-	0.0
1987 02 28	809	0.2-	0.0	1991 01 20	511	(2.1-	0.2+)	1997 07 12	816	0.2-	0.4+
1987 02 28	809	0.1-	0.1+	1992 05 03	809	0.3+	0.1-	1997 07 12	816	0.4-	0.2+
1987 02 28	809	0.0	0.1+	1992 05 03	809	1.0+	0.0	1997 07 12	816	0.3-	0.1+
1987 03 01	809	0.5+	0.4+	1992 05 03	809	1.7+	0.4+	1998 10 11	120	(1.2+	2.7+)
1987 03 01	809	0.6+	0.3+	1993 09 14	809	(2.6+	2.1+)	1998 10 11	120	(2.4+	1.3+)
1987 03 01	809	0.7+	0.0	1993 09 14	809	1.9+	1.5+	1998 10 11	120	0.2-	0.8-
1987 03 02	809	0.2-	0.7+	1993 09 14	809	0.1+	1.3+	1998 10 18	699	0.1+	0.6+
1987 03 02	809	0.3-	1.1+	1993 09 15	098	(3.2+	4.5+)	1998 10 18	699	0.4+	0.5+
1987 03 02	809	0.4-	1.2+	1993 09 19	809	(0.0	2.8+)	1998 10 18	699	1.6+	0.3+
1987 03 03	809	0.7+	0.1+	1993 09 19	809	0.4-	1.5+	1998 10 29	704	0.4-	0.8+
1987 03 03	809	0.8+	0.1+	1993 09 19	809	0.4-	1.8+	1998 10 29	704	0.5+	0.9+
1987 03 03	809	1.0+	0.0	1993 10 10	675	0.1-	0.9+	1998 10 29	704	0.1-	0.4-
1987 03 04	809	0.2+	0.5-	1993 10 10	675	0.6-	0.2+	1998 10 29	704	0.6-	1.5-
1987 03 04	809	0.2+	0.5-	1996 03 17	801	0.3-	0.9-	1998 10 29	704	0.1-	0.4-

(9560)* 1987 EQ = 1991 PW₂

Discovered 1987 Mar. 3 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. B. G. Marsden (*MPC* 18811)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	218.95699		(2000.0)	P	Q
<i>n</i>	0.30824957	ω	238.62712	-0.89067764	+0.45412189
<i>a</i>	2.1703731	Ω	328.36643	-0.40188203	-0.80865500
<i>e</i>	0.0559752	<i>i</i>	2.36053	-0.21256570	-0.37396578
<i>P</i>	3.20	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1987 02 24	809	(2.8+	0.1-)	1987 03 07	809	1.4+	0.6-	1993 01 16	010	0.1-	0.5-
1987 02 24	809	(2.9+	0.1-)	1987 03 07	809	1.6+	0.1-	1993 01 16	010	0.2-	1.2-
1987 02 24	809	(2.8+	0.1-)	1987 03 10	809	(3.8+	0.9-)	1993 01 17	010	0.3+	0.4-
1987 02 25	809	0.8+	0.2-	1987 03 10	809	(3.7+	0.9-)	1993 01 17	010	0.3+	0.0
1987 02 25	809	0.9+	0.3-	1987 03 10	809	(3.7+	0.9-)	1993 01 17	010	0.3+	0.5-
1987 02 25	809	1.1+	0.3-	1991 08 02	809	(1.1+	2.4+)	1995 11 01	411	0.1-	0.6-
1987 02 28	809	0.5-	0.6+	1991 08 02	809	(1.3+	2.5+)	1995 11 01	411	1.2-	0.2-
1987 02 28	809	0.3-	1.3+	1991 08 02	809	(0.7+	2.8+)	1998 09 29	704	1.3-	1.5+
1987 02 28	809	0.1+	0.8+	1991 08 07	809	0.5-	1.5+	1998 09 29	704	0.8-	1.2-
1987 03 02	809	1.0-	0.8+	1991 08 07	809	1.0-	1.3+	1998 09 29	704	0.3-	0.4+
1987 03 02	809	0.9-	0.8+	1991 08 07	809	0.1-	1.6+	1998 09 29	704	0.4+	1.1-
1987 03 02	809	0.6-	1.0+	1991 08 14	809	(0.1+	2.9+)	1998 10 10	699	0.3+	0.8+
1987 03 03	688	1.0-	2.3-	1991 08 14	809	(0.3-	2.8+)	1998 10 10	699	0.5+	0.6+
1987 03 03	809	0.7-	0.6+	1991 08 14	809	(0.1-	3.2+)	1998 10 10	699	0.2+	1.0+
1987 03 03	809	0.4-	0.6+	1991 09 04	809	(2.5+	1.9-)	1998 10 15	704	0.3+	0.9+
1987 03 03	809	0.0	0.6+	1991 09 04	809	0.8+	1.8-	1998 10 15	704	2.0-	1.1+
1987 03 03	688	2.4-	0.4-	1991 09 04	809	0.9-	1.6-	1998 10 15	704	0.2+	0.3+
1987 03 04	809	0.8-	0.2-	1991 09 05	809	(2.9+	2.4-)	1998 10 15	704	0.3+	0.6-
1987 03 04	809	0.5-	0.4-	1991 09 05	809	(1.0+	2.6-)	1998 10 15	704	1.0-	1.5-
1987 03 04	809	0.2-	0.1-	1991 09 05	809	(0.2-	2.2-)	1998 10 19	699	0.3+	0.7+
1987 03 05	809	0.5-	0.1-	1991 09 06	809	0.9+	1.9-	1998 10 19	699	0.7+	1.0+
1987 03 05	809	0.4-	0.2-	1991 09 06	809	0.8+	1.4-	1998 10 19	699	0.3+	0.4+
1987 03 05	809	0.3-	0.1-	1991 09 06	809	0.5+	1.4-	1998 10 29	704	0.1+	0.0
1987 03 06	809	0.9+	0.3-	1991 09 07	809	(3.0+	0.6-)	1998 10 29	704	0.2+	0.0
1987 03 06	809	0.8+	0.4-	1991 09 07	809	0.6+	0.3-	1998 10 29	704	0.6+	0.1-
1987 03 06	809	1.0+	0.4-	1991 09 07	809	0.4+	0.9-	1998 10 29	704	0.1-	0.2-
1987 03 07	809	1.2+	0.8-	1993 01 16	010	0.6+	0.9-	1998 10 29	704	0.0	0.7-

(9561)* 1987 QT₁ = 1990 EY₄ = 1990 EE_s

Discovered 1987 Aug. 19 by E. W. Elst at the European Southern Observatory.

Id. S. Nakano (*MPC* 16428), G. V. Williams (d, *MPC* 20500)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	120.85764		(2000.0)	P	Q
<i>n</i>	0.28141277	ω	298.42318	-0.00815573	+0.99889699
<i>a</i>	2.3062525	Ω	330.99815	-0.88085322	-0.02906508
<i>e</i>	0.2249483	<i>i</i>	5.47293	-0.47331922	+0.03687857
<i>P</i>	3.50	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1955 04 20	675	0.2-	0.2+	1990 03 06	809	0.8-	0.1-	1998 10 11	699	0.0	0.2+
1955 04 20	675	0.2-	0.2-	1990 03 06	809	0.5-	0.3-	1998 10 11	699	0.4-	0.1-
1987 08 18	809	1.3-	0.4-	1990 03 06	809	0.1-	0.4-	1998 10 11	699	0.2-	0.5-
1987 08 18	809	0.6+	1.2-	1990 04 15	809	1.1+	1.0-	1998 10 14	704	0.3-	0.3-
1987 08 19	809	0.3+	0.9+	1990 04 16	809	0.5-	1.1-	1998 10 14	704	1.2+	0.4+
1987 08 19	809	0.3+	0.9+	1990 04 16	809	1.6-	1.3-	1998 10 14	704	0.8+	0.6-
1987 08 19	809	0.9+	0.3+	1990 04 16	809	0.6+	1.7-	1998 10 14	704	1.0+	0.3-
1987 08 21	809	1.9+	1.4-	1990 04 17	809	0.3-	1.2-	1998 10 14	704	1.3-	1.6-
1987 08 21	809	(2.5+	1.3-)	1990 04 17	809	1.9-	1.9-	1998 10 15	704	0.4+	0.3-
1987 08 21	809	(3.0+	0.6-)	1991 09 15	675	(1.2-	2.6-)	1998 10 15	704	1.2+	0.2-
1987 08 22	809	0.5-	1.7-	1991 09 15	675	0.7+	1.8-	1998 10 15	704	0.1+	0.2-
1987 08 22	809	0.1-	1.4-	1994 08 06	675	0.5-	1.0-	1998 10 15	704	0.6-	0.0
1987 08 24	809	0.5+	1.4-	1994 08 06	675	0.7-	0.6+	1998 10 28	704	1.6-	0.1+
1987 08 24	809	(2.3+	1.9-)	1998 09 26	704	0.5+	0.6-	1998 10 28	704	0.1-	1.3-
1990 03 02	809	(2.5+	1.0-)	1998 09 26	704	1.5+	1.4-	1998 10 28	704	0.4-	0.2+
1990 03 02	809	1.2+	1.2-	1998 09 26	704	1.0+	1.9-	1998 10 28	704	0.2-	0.1+
1990 03 02	809	0.6+	1.1-	1998 09 26	704	0.7+	1.3-	1998 10 29	704	0.7-	1.2+
1990 03 04	809	(0.5-	2.2-)	1998 09 26	704	1.4+	1.3-	1998 10 29	704	0.5+	0.6+
1990 03 04	809	0.5-	1.6-	1998 09 27	704	0.5+	0.2-	1998 10 29	704	0.2-	0.2+
1990 03 04	809	(0.7-	2.4-)	1998 09 27	704	0.4+	0.1+	1998 10 29	704	0.7-	0.5+
1990 03 04	809	1.6-	0.6-	1998 09 27	704	0.4-	0.3-	1998 10 29	704	0.3-	0.6+
1990 03 04	809	1.6-	0.6-	1998 09 27	704	0.5+	1.3-				
1990 03 04	809	1.5-	0.5-	1998 09 27	704	0.1+	1.4-				

(9562)* 1987 RG = 1981 NR₁ = 1982 XB₂ = 1982 XK₂

Discovered 1987 Sept. 1 by E. W. Elst at the European Southern Observatory.

Id. S. Nakano (*MPC* 12448), H. Oishi (d, *ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	57.84921		(2000.0)	P	Q
<i>n</i>	0.18119439	ω	204.47942	+0.82092722	+0.56858152
<i>a</i>	3.0929498	Ω	120.76601	-0.51325166	+0.77526401
<i>e</i>	0.1814225	<i>i</i>	3.52654	-0.25030228	+0.27510138
<i>P</i>	5.44	<i>H</i>	12.5	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1954 07 28	675	1.1-	1.1-	1987 09 22	071	(3.5+	1.2+)	1998 09 24	012	0.9-	0.2+
1954 07 28	675	1.2+	0.5-	1987 09 29	688	(2.1+	2.4-)	1998 09 24	012	0.3-	0.3+
1981 07 10	808	1.4-	0.8+	1987 09 29	688	(1.6-	2.4-)	1998 09 24	699	0.9+	0.5+
1981 07 10	808	0.8+	0.6+	1987 10 14	046	(3.9-	1.6-)	1998 09 24	699	0.8+	0.5+
1982 12 13	381	0.1+	0.1+	1987 10 14	046	(5.2-	0.9+)	1998 09 24	699	0.7+	0.5+
1982 12 13	381	(2.6+	0.5-)	1987 10 16	688	1.3+	0.2+	1998 09 26	704	0.6+	0.3-
1982 12 13	381	0.4-	0.0	1987 10 16	688	0.0	0.2+	1998 09 26	704	0.6+	0.6+
1982 12 14	381	0.3-	0.5+	1992 07 29	801	0.2+	0.2+	1998 09 26	704	0.3+	0.7+
1982 12 14	381	2.0+	0.7-	1992 07 29	801	0.3+	0.3+	1998 09 26	704	0.7-	0.1+
1982 12 14	381	0.0	0.7+	1992 07 31	801	0.0	0.4+	1998 09 26	704	0.8-	0.5+
1982 12 14	381	(0.3+	2.6+)	1992 07 31	801	0.0	0.5+	1998 09 27	704	0.1+	0.1+
1987 08 31	095	0.2+	0.5-	1992 08 02	801	0.0	0.4+	1998 09 27	704	0.2+	0.2+
1987 09 01	809	(1.7-	2.4+)	1992 08 02	801	0.1-	0.4+	1998 09 27	704	0.2-	0.7+
1987 09 01	809	(2.2-	2.1+)	1992 08 03	801	0.4-	0.4+	1998 09 27	704	0.7-	0.3-
1987 09 01	809	(1.4-	2.5+)	1992 08 03	801	0.2-	0.3+	1998 09 27	704	0.3+	0.3+
1987 09 01	809	(0.8-	2.4+)	1992 08 27	675	0.0	0.8-	1998 10 14	704	0.0	0.4-
1987 09 02	809	0.2+	0.4-	1992 08 27	675	0.1-	0.1+	1998 10 14	704	1.2-	0.4-
1987 09 02	809	0.1+	0.7-	1993 11 13	801	0.2-	0.0	1998 10 14	704	0.0	0.5+

1987 09 02	809	1.1+	0.9-	1993 11 13	801	0.3-	0.2-	1998 10 14	704	0.7-	0.4-
1987 09 03	809	0.3-	0.8-	1993 11 16	801	0.1-	0.0	1998 10 14	704	0.2-	0.5-
1987 09 03	809	0.8+	1.1-	1993 11 16	801	0.4-	0.3-	1998 10 28	704	0.6-	0.1+
1987 09 19	688	0.4+	0.2-	1997 06 06	801	0.4+	1.8-	1998 10 28	704	0.1-	0.5+
1987 09 19	688	0.2+	0.2-	1997 06 06	801	0.0	0.3+	1998 10 28	704	0.2-	1.2+
1987 09 19	071	(0.8-	5.2-)	1997 06 07	801	0.6+	0.2-	1998 10 28	704	1.1-	0.1-
1987 09 19	071	(2.2-	6.4-)	1997 06 07	801	0.1+	0.4+	1998 10 28	704	0.7+	1.7+
1987 09 19	071	(2.1-	4.0-)	1997 06 07	886	0.6-	0.5+	1998 10 29	704	0.4-	0.3+
1987 09 20	071	(0.5-	3.8-)	1997 06 07	886	0.2-	0.9+	1998 10 29	704	0.6+	0.4+
1987 09 21	071	0.3-	1.9-	1998 09 18	699	0.5+	0.1+	1998 10 29	704	0.8-	0.2+
1987 09 21	071	0.8+	2.0-	1998 09 18	699	0.0	0.2+	1998 10 29	704	1.1-	0.0
1987 09 22	071	(1.2+	2.4-)	1998 09 18	699	0.1-	0.3+	1998 10 29	704	0.0	0.1-
1987 09 22	071	(2.8+	0.7-)	1998 09 24	012	0.3-	0.3+				

(9563)* 1987 SJ₁ = 1969 UQ₁ = 1969 VT

Discovered 1987 Sept. 21 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. S. Nakano (*MPC* 15558)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	50.27400		(2000.0)	P	Q	Asher	
<i>n</i>	0.27210139	ω	150.09858	+0.99253362	+0.12150798		
<i>a</i>	2.3585706	Ω	202.92953	-0.11661575	+0.91982672		
<i>e</i>	0.2238249	<i>i</i>	1.56224	-0.03574597	+0.37303432		
<i>P</i>	3.62	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 1		

Residuals in seconds of arc

1951 12 01	675	0.1-	0.0	1987 10 02	809	0.3+	0.2-	1998 10 13	691	1.1-	0.3-
1951 12 01	675	0.2-	1.0-	1987 10 02	809	0.2+	0.1-	1998 10 13	691	1.0-	0.4-
1969 10 16	095	1.3+	1.7+	1987 10 02	809	0.3+	0.2-	1998 10 14	704	0.2+	0.6-
1969 11 11	095	1.8-	1.9+	1993 03 25	691	0.8-	1.2-	1998 10 14	699	0.1+	0.1+
1987 09 04	095	(3.4-	4.2+)	1993 03 25	691	0.6-	1.0-	1998 10 14	704	1.1+	1.3+
1987 09 21	688	0.3+	1.1-	1993 03 25	691	0.6-	1.1-	1998 10 14	699	0.2+	0.1+
1987 09 21	688	0.6+	1.5-	1997 04 14	691	0.0	0.3-	1998 10 14	704	(2.2-	1.1-)
1987 09 24	809	1.1-	0.9-	1997 04 14	691	0.1+	0.2-	1998 10 14	699	0.3+	0.1+
1987 09 24	809	0.9-	0.7-	1997 04 14	691	0.3+	0.3-	1998 10 14	704	0.0	0.8+
1987 09 24	809	0.6-	0.9-	1998 08 28	704	0.4-	0.3-	1998 10 15	704	0.3+	0.5-
1987 09 24	095	1.0-	2.0+	1998 08 28	704	0.2+	1.6+	1998 10 15	704	1.9+	0.0
1987 09 27	809	0.4-	0.1+	1998 08 28	704	0.5+	0.4-	1998 10 15	704	0.1-	0.4-
1987 09 27	809	0.4-	0.2+	1998 08 28	704	0.7+	1.4+	1998 10 15	704	0.7+	0.0
1987 09 27	809	0.4-	0.1+	1998 08 28	704	1.5-	0.3+	1998 10 23	691	1.0-	0.2-
1987 09 27	095	0.2+	0.9+	1998 08 31	704	0.0	0.4+	1998 10 23	691	0.8-	0.3-
1987 09 28	809	0.4+	0.1-	1998 08 31	704	0.9-	1.2-	1998 10 23	691	0.8-	0.3-
1987 09 28	809	0.5+	0.2+	1998 08 31	704	0.8+	0.0	1998 10 29	704	0.2+	0.5-
1987 09 29	688	1.9+	1.2-	1998 08 31	704	0.2-	0.5-	1998 10 29	704	0.8+	0.3+
1987 09 29	688	0.0	0.4-	1998 10 10	699	0.1+	0.1+	1998 10 29	704	0.3+	0.2-
1987 10 01	809	0.2+	0.1-	1998 10 10	699	0.1+	0.1-	1998 10 29	704	0.0	0.6-
1987 10 01	809	0.3+	0.1-	1998 10 10	699	0.4+	0.2-	1998 10 29	704	0.3+	0.4-
1987 10 01	809	0.5+	0.1-	1998 10 13	691	0.9-	0.4-				

(9564)* 1987 SG₃ = 1951 NQ

Discovered 1987 Sept. 26 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

Id. E. Bowell (*MPC* 23779)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	88.10064		(2000.0)	P	Q	Williams	
<i>n</i>	0.27551616	ω	120.97863	+0.61308648	+0.78849336		
<i>a</i>	2.3390419	Ω	187.43646	-0.78993257	+0.61274125		
<i>e</i>	0.3186683	<i>i</i>	22.25725	+0.01146751	+0.05316376		
<i>P</i>	3.58	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 1		

Residuals in seconds of arc

1951 07 11	675	0.1-	0.1-	1987 11 22	675	0.4+	1.2-	1994 10 09	689	0.2+	1.2-
1951 07 11	675	0.5+	0.9+	1987 11 23	675	1.2+	0.3-	1994 10 13	689	0.1+	0.6-
1987 09 17	095	(1.3-	8.2+)	1990 04 01	675	(3.4-	0.0)	1998 08 28	704	1.1+	0.8+
1987 09 20	675	2.2-	1.0+	1990 04 01	675	0.4-	0.8-	1998 08 28	704	(1.0+	2.6-)

1987 09 20	675	0.8-	0.8+	1990 04 01	675	0.2-	1.1+	1998 08 28	704	(2.2+	1.1-)
1987 09 26	675	0.4-	0.4+	1994 07 05	801	0.5-	0.2-	1998 08 28	704	0.3+	0.0
1987 09 26	675	0.8-	0.0	1994 07 05	801	0.3-	0.1-	1998 08 28	704	(2.1+	1.0+)
1987 09 26	095	0.2+	2.1-	1994 07 07	801	0.2-	0.2-	1998 10 23	734	0.0	0.3+
1987 09 29	688	(1.5+	3.1-)	1994 07 07	801	0.4-	0.3-	1998 10 23	734	0.0	0.3+
1987 09 29	688	(5.5+	2.8+)	1994 08 04	801	0.7+	1.3+	1998 10 23	734	0.0	0.4+
1987 10 17	675	0.1+	0.1-	1994 08 07	801	0.1+	0.1+	1998 10 25	734	0.2+	0.4+
1987 10 18	675	0.9-	0.1-	1994 08 07	801	0.2+	0.0	1998 10 25	734	0.1-	0.3+
1987 10 19	675	0.2-	0.3+	1994 08 08	801	1.2+	0.1+	1998 10 25	734	0.6+	0.3+
1987 10 22	413	0.9+	0.8-	1994 08 08	801	0.1-	0.5+				
1987 10 22	413	0.9+	0.8+	1994 09 07	689	0.1+	0.2-				

(9565)* 1987 SU₁₇ = 1993 FR₂₈

Discovered 1987 Sept. 18 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. G. V. Williams (*MPC* 23513)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	86.62467		(2000.0)	P	Q	Williams	
<i>n</i>	0.27496104	ω	120.56393	+0.90518931	+0.42033128		
<i>a</i>	2.3421890	Ω	214.69239	-0.41788439	+0.85324543		
<i>e</i>	0.1323832	<i>i</i>	6.34282	-0.07749162	+0.30869703		
<i>P</i>	3.58	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 1		

Residuals in seconds of arc

1987 09 18	095	0.7+	2.2-	1997 05 03	809	(0.2-	3.2-)	1997 06 10	691	1.5-	0.3-
1987 09 20	095	0.3-	1.0+	1997 05 03	809	(1.1-	2.9-)	1997 06 10	691	1.7-	0.6-
1987 09 26	095	0.3+	1.0-	1997 05 03	809	(1.1-	3.8-)	1998 08 28	704	0.2+	0.3-
1987 10 02	095	0.3-	0.5-	1997 05 04	809	0.9+	0.3-	1998 08 28	704	1.0+	0.6-
1993 03 21	809	0.4-	0.3-	1997 05 04	809	1.4+	0.4-	1998 08 28	704	0.8-	1.2-
1993 03 22	809	(3.3-	0.3-)	1997 05 04	809	0.6+	0.6-	1998 08 28	704	0.1+	0.2+
1993 03 22	809	0.6+	0.4-	1997 06 05	691	1.2-	0.8-	1998 08 31	704	(2.6+	0.5-)
1993 03 26	809	0.1-	1.0-	1997 06 05	691	1.3-	0.6-	1998 08 31	704	0.7+	2.0-
1993 04 17	413	(0.6-	3.4-)	1997 06 07	809	1.0+	0.9+	1998 08 31	704	(0.8+	2.6-)
1994 09 08	596	0.7-	0.2-	1997 06 07	809	1.1+	0.6+	1998 08 31	704	0.6+	0.9-
1994 09 08	596	1.0+	0.6-	1997 06 07	809	1.3+	0.6+	1998 08 31	704	1.5-	0.8+
1994 10 04	801	0.6+	1.0+	1997 06 08	809	(2.6+	0.1-)	1998 10 20	699	0.3-	0.1-
1994 10 04	801	0.4-	0.5-	1997 06 08	809	(3.0+	0.2+)	1998 10 20	699	0.2+	0.3+
1994 10 07	801	0.1+	1.2+	1997 06 08	809	(2.9+	0.2+)	1998 10 20	699	0.1-	0.4+
1994 10 07	801	0.8-	1.5+	1997 06 10	691	1.5-	0.2-				

(9566)* 1987 SX₁₇ = 1976 SE₈ = 1980 WV₁

Discovered 1987 Sept. 18 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. T. Kobayashi (*MPC* 15415)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	68.43052		(2000.0)	P	Q	Williams	
<i>n</i>	0.27193335	ω	94.25401	+0.90570988	+0.42045737		
<i>a</i>	2.3595421	Ω	240.89032	-0.40927321	+0.83425249		
<i>e</i>	0.2494729	<i>i</i>	3.53696	-0.11038591	+0.35670490		
<i>P</i>	3.62	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 1		

Residuals in seconds of arc

1976 09 28	095	(4.7-	5.5+)	1994 11 07	801	0.0	0.1-	1998 08 31	704	1.7+	1.1+
1976 09 28	095	(5.4-	5.1+)	1995 12 30	327	0.7+	0.1+	1998 10 15	758	0.2-	0.1+
1976 09 29	095	(5.0-	3.0+)	1995 12 30	327	0.8+	0.2-	1998 10 15	758	0.5-	0.4+
1980 11 30	095	0.9-	1.2+	1995 12 30	327	0.1-	0.3+	1998 10 15	758	0.2-	0.1+
1980 12 10	095	0.2-	1.0-	1996 01 01	327	0.3-	0.7+	1998 10 15	758	0.1+	0.6+
1987 09 18	095	0.0	1.5-	1996 01 01	327	0.6+	0.2-	1998 10 18	758	0.2-	0.4-
1987 09 20	095	0.2+	0.7-	1996 01 01	327	0.0	0.2-	1998 10 18	758	0.5+	0.9-
1987 10 02	095	1.2+	1.0+	1998 08 28	704	0.4+	0.6+	1998 10 18	758	0.2-	0.7-
1994 07 10	675	0.4-	0.3-	1998 08 28	704	0.4-	0.3-	1998 10 29	704	1.0-	0.2-
1994 07 10	675	0.1-	0.8+	1998 08 28	704	1.9+	0.4+	1998 10 29	704	0.0	0.8-

1998 NOV. 10

M.P.C. 32881

1994 08 06 033 0.2+ 0.2- 1998 08 31 704 0.4+ 1.0+ 1998 10 29 704 0.4- 0.9-
 1994 08 09 033 0.2- 0.0 1998 08 31 704 0.7+ 2.0+

(9567)* 1987 US₄ = 1976 SU₅ = 1976 UK₁

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

Id. H. Kaneda (*MPC* 15711)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	36.34670		(2000.0)	P	Q
<i>n</i>	0.26988634	ω	33.32215	+0.92291350	-0.38490851
<i>a</i>	2.3714580	Ω	349.30527	+0.34216862	+0.83040089
<i>e</i>	0.2102668	<i>i</i>	2.69463	+0.17649735	+0.40283966
<i>P</i>	3.65	<i>H</i>	14.4	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1976 09 24	095	0.8+	1.9-	1987 11 26	675	0.7-	0.6-	1998 10 19	699	0.3+	0.1-
1976 10 26	095	2.2-	0.1+	1987 11 26	675	0.6+	0.2+	1998 10 19	699	0.1+	0.2+
1978 03 15	675	0.0	0.7-	1987 11 28	399	(2.7-	1.9-)	1998 10 19	699	0.2-	0.2+
1978 03 16	675	0.2-	0.8+	1987 11 28	399	(3.1-	2.6-)	1998 10 29	704	0.6-	0.2+
1987 10 22	095	(4.4-	0.9+)	1994 08 09	801	0.5+	0.6+	1998 10 29	704	0.3+	0.1-
1987 10 27	095	(3.3-	1.0-)	1994 08 09	801	0.4-	0.1+	1998 10 29	704	0.8-	0.3+
1987 11 17	399	1.5+	1.0+	1998 08 31	704	(2.1-	1.2-)	1998 10 29	704	0.0	0.3-
1987 11 17	399	1.1+	1.1+	1998 08 31	704	1.4-	0.6-	1998 10 29	704	0.4+	0.6+
1987 11 22	399	1.2+	0.4-	1998 08 31	704	1.2-	0.3-				
1987 11 22	399	0.6+	0.4-	1998 08 31	704	0.8-	0.3+				

(9568)* 1988 AX₄ = 1941 UB₁ = 1990 OX₄

Discovered 1988 Jan. 13 by H. Debehogne at the European Southern Observatory.

Id. E. Bowell (*MPC* 16874), G. V. Williams (*MPC* 23972)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	55.05498		(2000.0)	P	Q
<i>n</i>	0.25951823	ω	169.33612	+0.96972634	+0.24410737
<i>a</i>	2.4342068	Ω	176.51448	-0.23118939	+0.92634322
<i>e</i>	0.1486371	<i>i</i>	6.14940	-0.07862753	+0.28687949
<i>P</i>	3.80	<i>H</i>	14.1	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1941 10 16	053(33.6-	12.2+)	X	1990 07 28	675	0.1+	0.2+	1998 09 26	704	0.1-	0.1+
1941 10 19	053(28.5-	35.0-)	X	1990 07 30	675	0.5-	0.6+	1998 09 26	704	0.2+	0.6-
1941 10 22	053(41.0+	78.5-)	X	1990 07 30	675	0.7+	0.4-	1998 09 26	704	0.2-	1.3-
1941 10 27	053(18.7-	64.4+)	X	1994 08 19	596	0.2-	0.3-	1998 09 26	704	0.5+	0.4-
1988 01 13	809	0.0	0.2-	1994 08 19	596	0.1+	0.1-	1998 09 26	704	0.6+	0.3-
1988 01 13	809	0.4+	0.1-	1994 08 19	596	0.1+	0.1-	1998 10 14	704	0.5-	0.8-
1988 01 13	809	0.9+	0.0	1994 10 08	801	0.5-	0.4-	1998 10 14	704	0.1-	0.6-
1988 01 14	809	0.4+	0.4-	1994 10 08	801	0.1+	0.8-	1998 10 14	704	0.1+	1.2-
1988 01 14	809	0.7+	0.1-	1997 04 06	704	0.4+	0.2+	1998 10 14	704	0.2-	0.9-
1988 01 14	809	0.5+	0.0	1997 04 06	704	0.2+	1.0-	1998 10 14	704	0.9-	0.7-
1988 01 16	809	0.6-	0.5+	1997 04 07	809	0.7-	0.4-	1998 10 15	704	0.5-	0.7-
1988 01 16	809	0.4-	0.1+	1997 04 07	809	0.2+	0.6-	1998 10 15	704	1.0-	0.5+
1988 01 16	809	0.1-	0.3+	1997 04 07	809	0.4-	0.9-	1998 10 15	704	1.0-	0.2+
1988 01 18	809	0.2+	0.1+	1997 04 07	704	0.6+	0.1+	1998 10 15	704	0.5-	0.3+
1988 01 18	809	0.3+	0.3+	1997 04 07	704	0.8+	1.1+	1998 10 15	704	1.4-	0.2-
1988 01 20	809	0.0	0.2+	1997 04 08	809	0.5-	0.1-	1998 10 28	704	0.5-	0.2+
1988 01 20	809	0.1+	0.4+	1997 04 08	809	0.5-	0.3-	1998 10 28	704	1.2-	0.2+
1988 01 22	809	0.1+	0.1-	1997 04 08	809	0.5-	0.7-	1998 10 28	704	0.7-	0.3-
1988 01 22	809	0.3-	0.6+	1997 04 11	704	0.2-	1.0+	1998 10 28	704	0.8-	0.1+
1988 01 24	809	0.6-	0.1+	1997 04 11	704	0.6+	1.0+	1998 10 29	704	0.1-	0.4+
1988 01 24	809	0.5-	0.6+	1998 09 21	809	(1.2+	3.1+)	1998 10 29	704	0.4-	0.0
1988 01 26	809	0.6-	0.2-	1998 09 21	809	0.8+	2.5+	1998 10 29	704	0.2-	0.2-
1988 01 28	809	0.5-	1.3-	1998 09 21	809	0.8+	2.6+	1998 10 29	704	0.9-	0.4-
1990 07 25	675	0.3+	0.2+	1998 09 23	809	2.9+	0.2-	1998 10 29	704	0.4-	0.3-
1990 07 25	675	0.2-	0.6+	1998 09 23	809	(3.0+	0.6-)				
1990 07 28	675	0.4-	0.4+	1998 09 23	809	2.7+	0.3+				

(9569)* 1988 CL₂ = 1990 SG₁₉ = 1990 SL₂₀

Discovered 1988 Feb. 11 by E. W. Elst at the European Southern Observatory.

Id. S. Nakano (*MPC* 19300)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	52.96911		(2000.0)	P	Q
<i>n</i>	0.25971471	ω	244.27774	+0.98354656	-0.16242013
<i>a</i>	2.4329789	Ω	124.97324	+0.17987230	+0.92114705
<i>e</i>	0.1919108	<i>i</i>	5.53907	-0.01679665	+0.35370583
<i>P</i>	3.79	<i>H</i>	13.9	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1988 01 19	071	(0.5+	2.9-)	1990 09 17	675	0.1+	0.0	1997 07 08	691	0.6-	0.0
1988 01 19	071	(2.7+	2.9-)	1990 09 17	675	0.7+	0.4-	1997 07 08	691	0.7-	0.4-
1988 02 11	809	0.2-	0.0	1990 09 20	675	1.1+	0.6-	1997 07 08	691	0.7-	0.5-
1988 02 15	809	1.4+	1.7-	1990 09 20	675	0.2+	0.2-	1998 08 28	704	1.7-	0.6+
1988 02 16	809	0.9+	1.8-	1997 04 16	704	(3.1+	0.8+)	1998 08 28	704	0.1+	0.4-
1988 02 16	809	0.7+	1.3-	1997 04 16	704	(2.5+	0.5-)	1998 08 28	704	1.7+	1.0-
1988 02 16	809	0.5-	1.2-	1997 06 12	688	0.4-	0.8-	1998 08 28	704	(0.9-	2.2+)
1988 02 17	809	0.6+	0.4-	1997 06 12	688	1.0+	0.3-	1998 08 28	704	(2.8-	1.4+)
1988 02 17	809	0.3+	0.6-	1997 07 02	688	0.9+	0.1+	1998 08 31	704	0.6-	0.2-
1988 02 17	809	0.4+	0.8-	1997 07 02	688	0.8+	0.2+	1998 08 31	704	0.6+	0.7+
1988 02 21	809	1.0+	0.0	1997 07 02	688	1.0+	0.3+	1998 08 31	704	1.5+	0.5+
1988 02 21	809	0.3-	0.9+	1997 07 02	688	0.9+	0.0	1998 08 31	704	0.2+	0.3-
1988 02 21	809	1.2-	1.4+	1997 07 03	688	0.2-	0.8+	1998 08 31	704	0.7-	1.0-
1988 02 23	809	0.4+	0.0	1997 07 03	688	0.7+	0.7+	1998 09 29	704	0.9-	1.1-
1988 02 23	809	1.7-	1.1+	1997 07 03	688	0.7+	0.1-	1998 09 29	704	0.4-	0.1-
1988 02 23	809	2.1-	1.3+	1997 07 03	691	1.4-	0.9-	1998 09 29	704	0.9-	1.0+
1990 08 28	095	(2.3-	8.1+)	1997 07 03	691	1.2-	0.2-	1998 09 29	704	1.4+	1.2+
1990 08 28	095	1.4-	1.1-	1997 07 03	691	1.2-	0.0	1998 09 29	704	0.2-	0.9+

(9570)* 1988 RQ₅ = 1964 TF₁ = 1982 JA₁

Discovered 1988 Sept. 2 by H. Debehogne at the European Southern Observatory.

Id. H. Kaneda (*MPC* 16431)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.96647		(2000.0)	P	Q
<i>n</i>	0.20249784	ω	151.83776	+0.96654717	+0.25611054
<i>a</i>	2.8720309	Ω	193.34481	-0.24519694	+0.90669786
<i>e</i>	0.0536859	<i>i</i>	3.45927	-0.07526637	+0.33512145
<i>P</i>	4.87	<i>H</i>	13.2	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1964 10 08	330	0.7-	1.5+	1993 10 10	675	0.6+	0.0	1998 09 26	704	0.0	0.4-
1982 05 15	675	0.3-	0.4-	1993 10 10	675	0.6-	0.4-	1998 09 26	704	0.4-	0.4-
1982 05 16	675	2.3-	0.4-	1996 03 20	566	1.0+	0.1+	1998 09 26	704	0.3+	0.5-
1982 05 16	675	1.6-	0.5+	1996 03 20	566	1.1+	0.1+	1998 09 27	704	0.1+	0.6+
1982 05 17	675	1.6+	0.7+	1996 03 20	566	0.8+	0.2-	1998 09 27	704	0.2+	0.3-
1982 05 18	675	0.4-	0.7+	1998 09 14	704	0.7-	0.4+	1998 09 27	704	0.1+	0.6+
1988 09 02	809	1.1-	0.2+	1998 09 14	704	0.5-	0.4-	1998 09 27	691	1.9-	0.1-
1988 09 02	809	1.0-	0.0	1998 09 14	704	0.3-	0.8+	1998 09 27	704	0.2-	0.3+
1988 09 02	809	0.9-	0.2-	1998 09 15	699	0.2+	0.8+	1998 09 27	691	2.0-	0.2-
1988 09 05	809	1.2+	0.3-	1998 09 15	699	1.1+	0.5+	1998 09 27	704	1.4+	0.0
1988 09 05	809	1.2+	0.4-	1998 09 15	699	1.1+	0.7+	1998 09 27	691	1.9-	0.0
1988 09 05	809	1.1+	0.2-	1998 09 18	704	0.1+	0.0	1998 10 14	704	0.9+	0.4+
1988 09 08	809	0.0	0.1-	1998 09 18	704	0.1-	0.5-	1998 10 14	704	0.9+	0.2+
1988 09 08	809	0.3+	0.2-	1998 09 18	704	0.1-	0.5-	1998 10 14	704	0.4+	1.4-
1988 09 08	809	0.4+	0.2-	1998 09 18	704	0.5-	0.4-	1998 10 14	704	0.8+	0.6-
1988 09 09	809	1.3+	0.8+	1998 09 18	704	0.3-	0.6-	1998 10 14	704	0.1+	0.3-
1988 09 09	809	1.5+	0.9+	1998 09 20	691	1.3-	0.3-	1998 10 14	699	0.2+	0.4+
1988 09 09	809	1.9+	0.6+	1998 09 20	691	1.7-	0.4-	1998 10 14	699	0.6+	0.5+
1988 09 10	675	0.1-	0.6-	1998 09 20	691	1.1-	0.4-	1998 10 14	699	0.8+	0.5+
1988 09 10	675	0.1-	1.0-	1998 09 21	691	1.6-	0.2-	1998 10 15	704	0.7+	0.2+

1988 09 12	675	0.2-	1.0-	1998 09 21	691	1.6-	0.1-	1998 10 15	704	1.0+	0.2+
1988 09 16	675	0.2+	0.9-	1998 09 23	120	(4.6+	0.5+)	1998 10 15	704	1.3+	0.1-
1988 09 16	675	0.8-	0.2-	1998 09 23	120	(3.7+	0.6-)	1998 10 15	704	1.0+	0.7+
1993 09 15	809	(1.1+	2.3+)	1998 09 24	120	(3.2+	0.8+)	1998 10 19	699	0.4+	0.1-
1993 09 15	809	0.0	1.4+	1998 09 24	120	(3.2+	0.3+)	1998 10 19	699	1.0+	0.0
1993 09 15	809	0.6-	1.2+	1998 09 24	120	(4.1+	0.8-)	1998 10 19	699	0.4+	0.3-
1993 09 19	675	0.2+	0.4+	1998 09 25	704	0.9+	0.8-	1998 10 28	704	0.3-	0.6+
1993 09 19	675	0.0	1.3+	1998 09 25	704	0.6+	0.1+	1998 10 28	704	0.5-	0.8-
1993 09 22	809	0.6-	1.9+	1998 09 25	704	1.0+	0.0	1998 10 28	704	0.1-	0.1-
1993 09 22	809	0.9-	1.5+	1998 09 25	704	0.4+	0.1-	1998 10 28	704	0.1-	0.1-
1993 09 22	809	0.3-	0.1-	1998 09 25	704	(3.8+	0.3+)	1998 10 28	704	1.1-	0.9-
1993 09 23	675	0.6+	0.3+	1998 09 26	704	0.1-	0.1+				
1993 09 23	675	0.9+	0.4+	1998 09 26	704	1.7-	1.3-				

(9571)* 1988 RR₅ = 1951 CF₂ = 1991 OT₁ = 1994 LH₁₀

Discovered 1988 Sept. 2 by H. Debehogne at the European Southern Observatory.

Id. E. Bowell (*MPC* 28841), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	121.24827	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.30230095	ω	259.89311	+0.08706269	+0.99613710
<i>a</i>	2.1987526	Ω	15.11576	-0.89595270	+0.08331847
<i>e</i>	0.1030639	<i>i</i>	2.51524	-0.43553284	+0.02772917
<i>P</i>	3.26	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1951 02 04	675	0.7+	0.4+	1994 06 08	675	1.1+	0.2+	1998 09 27	704	0.7+	1.0+
1951 02 04	675	0.1-	1.1+	1994 06 08	675	0.2-	0.1-	1998 09 27	704	(2.9-	0.6+)
1988 09 02	809	1.0-	1.5+	1997 03 02	691	0.8-	0.2-	1998 10 14	704	0.4-	0.2-
1988 09 02	809	0.1-	1.6+	1997 03 02	691	1.3+	0.0	1998 10 14	704	0.0	0.0
1988 09 02	809	0.2+	1.7+	1997 03 02	691	0.7-	0.4-	1998 10 14	691	1.6-	0.3-
1988 09 06	809	0.4+	1.0-	1997 03 07	691	0.2-	0.2-	1998 10 14	691	(1.8+	3.3-)
1988 09 06	809	0.1+	1.0-	1997 03 07	691	0.4-	0.6-	1998 10 14	704	(0.2+	3.1+)
1988 09 06	809	0.1+	1.1-	1997 03 07	691	0.3-	0.4-	1998 10 14	704	0.6+	0.1+
1988 09 07	809	0.9-	0.6+	1998 09 14	327	(2.4+	0.8+)	1998 10 14	691	1.5-	0.2-
1988 09 07	809	0.6-	0.6+	1998 09 14	327	(3.1+	1.1+)	1998 10 15	704	0.6+	0.0
1988 09 07	809	0.5-	0.4+	1998 09 14	327	(2.5+	0.6+)	1998 10 15	704	0.0	0.5-
1988 09 10	809	0.1-	0.1-	1998 09 15	699	0.6+	0.3+	1998 10 15	704	0.5+	0.9-
1988 09 10	809	0.2-	0.2-	1998 09 15	699	0.2-	0.2-	1998 10 15	704	0.3+	0.4-
1988 09 10	809	0.1+	0.0	1998 09 15	699	0.5+	0.1+	1998 10 15	704	0.2+	0.5+
1988 09 11	675	0.5+	1.0+	1998 09 18	704	0.4+	0.0	1998 10 18	691	1.1-	0.1-
1988 09 11	675	0.7+	0.9+	1998 09 18	704	0.1+	0.3+	1998 10 18	691	1.1-	0.0
1988 09 11	809	0.0	0.6-	1998 09 18	704	0.5+	0.5-	1998 10 18	691	1.7-	0.0
1988 09 11	809	0.1+	0.7-	1998 09 18	704	0.9-	0.4-	1998 10 28	704	0.3-	0.4-
1988 09 11	809	0.1+	0.8-	1998 09 18	704	0.4+	0.1+	1998 10 28	704	1.5-	0.6-
1988 10 04	807	1.3+	0.9-	1998 09 26	704	0.4+	0.3+	1998 10 28	704	0.1+	1.3-
1988 10 07	807	1.2+	0.7-	1998 09 26	704	0.9+	0.3-	1998 10 28	704	0.2-	1.6-
1988 11 03	807	2.0-	2.4-	1998 09 26	704	1.3+	0.1-	1998 10 28	704	0.2-	0.7-
1988 11 05	807	(2.9+	0.8+)	1998 09 26	704	1.1+	0.0	1998 10 29	704	0.3-	1.2+
1991 07 16	675	(2.6+	1.7-)	1998 09 26	704	0.9+	0.7-	1998 10 29	704	0.7+	0.9+
1991 07 16	675	(4.7+	10.3-)	1998 09 27	704	1.0+	1.3+	1998 10 29	704	0.3-	0.8+
1994 05 10	675	0.3-	0.1-	1998 09 27	704	0.2-	0.9+	1998 10 29	704	1.2+	0.6+
1994 05 10	675	0.3-	0.0	1998 09 27	704	0.7+	1.2+	1998 10 29	704	1.7-	0.7-

(9572)* 1988 RS₆ = 1991 LE₃

Discovered 1988 Sept. 8 by H. Debehogne at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 19022)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	66.86174	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.30075434	ω	143.84872	+0.87823232	+0.47822712
<i>a</i>	2.2062842	Ω	187.58297	-0.44328461	+0.81198915
<i>e</i>	0.2538128	<i>i</i>	1.13400	-0.17946240	+0.33462282
<i>P</i>	3.28	<i>H</i>	15.8	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1988 09 08	809	0.1-	0.2+	1991 06 06	809	0.3+	1.2+	1998 08 31	704	(1.5-	2.5+)
1988 09 08	809	0.1+	0.1+	1991 06 06	809	0.7-	1.2+	1998 10 14	704	0.6-	0.6-
1988 09 08	809	0.6+	0.3+	1991 06 06	809	0.1-	0.6+	1998 10 14	704	0.5-	1.3+
1988 09 09	809	0.3-	0.5+	1991 06 08	809	(6.8-	1.2+)	1998 10 14	704	0.7-	1.2-
1988 09 09	809	0.1+	0.5+	1991 06 08	809	(2.4-	1.0+)	1998 10 14	704	0.2-	0.5-
1988 09 09	809	0.7+	0.3+	1991 06 08	809	1.3+	0.9+	1998 10 17	691	0.1+	0.1+
1988 09 12	809	0.3+	0.1-	1997 03 07	691	0.2-	1.7-	1998 10 17	691	0.0	0.1+
1988 09 12	809	0.5+	0.2-	1997 03 07	691	0.4-	1.2-	1998 10 17	691	0.1+	0.0
1988 09 12	809	0.7+	0.2-	1997 03 07	691	0.6-	1.6-	1998 10 19	699	0.1+	1.9+
1988 09 14	807	0.8+	0.1+	1997 03 09	691	1.0-	1.2-	1998 10 19	699	1.3+	0.9+
1988 09 14	809	0.5-	0.5-	1997 03 09	691	0.9-	1.0-	1998 10 19	699	0.8+	1.3+
1988 09 14	809	0.2-	0.6-	1997 03 09	691	0.7-	1.3-	1998 10 20	699	1.0+	1.1+
1988 09 14	809	0.0	0.7-	1998 08 24	910	0.6-	0.6-	1998 10 20	699	0.3+	0.1+
1988 09 15	807	0.8+	0.2-	1998 08 24	910	0.4-	0.8-	1998 10 20	699	0.8+	0.0
1988 09 15	809	1.3-	0.9-	1998 08 24	910	0.6-	0.7-	1998 10 27	691	1.3-	0.1+
1988 09 15	809	0.9-	1.1-	1998 08 25	910	1.1-	0.5-	1998 10 27	691	1.5-	0.1+
1988 09 15	809	0.9-	1.3-	1998 08 25	910	0.0	1.1-	1998 10 27	691	1.5-	0.2+
1988 09 18	809	(3.7-	2.8-)	1998 08 25	910	0.2+	1.0-	1998 10 29	704	0.3+	0.6+
1988 09 18	809	(3.4-	3.0-)	1998 08 31	704	0.4+	0.8+	1998 10 29	704	0.7+	0.0
1988 09 18	809	(3.3-	3.1-)	1998 08 31	704	1.0+	0.6-	1998 10 29	704	0.5+	0.1-
1988 10 06	807	1.9+	1.2-	1998 08 31	704	0.6-	1.0+	1998 10 29	704	0.6-	0.7+
1988 10 07	807	0.6+	2.0-	1998 08 31	704	0.9+	0.1-	1998 10 29	704	0.2+	0.1+

(9573)* 1988 UC = 1973 VW = 1991 GS₃

Discovered 1988 Oct. 16 by K. Endate and K. Watanabe at Kitami.

Id. B. G. Marsden (*MPC* 18430)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Marsden		
<i>M</i>	54.54470	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.19809314	ω	313.03444	+0.99059424	+0.13392264
<i>a</i>	2.9144488	Ω	39.29378	-0.10908597	+0.89676269
<i>e</i>	0.0937038	<i>i</i>	2.54016	-0.08260333	+0.42175988
<i>P</i>	4.98	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1953 10 31	675	2.2+	2.0-	1991 04 10	809	0.5-	0.5+	1998 09 29	704	0.9-	0.5+
1953 10 31	675	0.6-	0.2-	1991 04 15	675	0.4+	1.3-	1998 09 29	704	0.6-	0.2+
1971 05 14	675	0.5+	0.4-	1991 04 19	809	0.6-	0.4-	1998 09 29	704	0.2-	2.0+
1971 05 14	675	1.8+	0.3+	1991 04 19	809	(3.5-	0.2+)	1998 09 29	704	1.6-	0.5+
1971 05 16	675	(3.1+	0.8+)	1991 04 19	809	(3.2-	1.3-)	1998 10 14	704	1.3+	1.4-
1973 11 03	033	0.7-	0.1+	1991 05 15	675	0.1+	0.0	1998 10 14	704	1.1+	1.8+
1988 10 07	675	0.1-	0.3+	1991 05 17	675	(1.4+	2.3-)	1998 10 14	704	1.1+	0.6+
1988 10 07	675	0.0	0.3-	1991 05 17	675	0.0	0.0	1998 10 14	704	0.1-	0.6+
1988 10 16	400	(3.9+	0.9-)	1993 10 14	675	0.8+	0.6+	1998 10 15	704	0.7+	0.6+
1988 10 16	400	(1.3+	3.0-)	1993 10 14	675	0.3-	0.2+	1998 10 15	704	1.0+	0.0
1988 10 16	400	(1.1+	2.9-)	1993 10 20	400	1.2+	1.5-	1998 10 15	704	0.6+	1.7-
1988 10 18	400	1.9-	1.5-	1993 10 20	400	1.3+	1.4+	1998 10 15	704	0.8-	0.7+
1988 10 18	400	0.3-	0.4+	1996 04 13	400	1.3+	1.5-	1998 10 19	699	0.5+	0.6+
1988 10 18	400	2.1-	1.6-	1996 04 13	400	1.0+	0.4+	1998 10 19	699	0.3+	0.7+
1988 11 02	400	1.4+	0.4+	1997 08 01	566	0.1-	0.1+	1998 10 19	699	0.2-	0.6+
1988 11 02	400	0.1+	0.4-	1997 08 01	566	0.2-	1.1+	1998 10 27	691	1.6-	0.1+
1988 11 06	400	0.9-	0.7+	1997 08 01	566	0.7+	0.3+	1998 10 27	691	1.8-	0.2+
1988 11 06	400	0.3-	1.6+	1998 08 26	910	0.3-	0.0	1998 10 27	691	1.5-	0.1+
1991 04 08	809	0.4+	0.5+	1998 08 26	910	0.2-	0.2-	1998 10 29	704	0.6+	0.6+
1991 04 08	809	0.5-	0.7+	1998 08 26	910	0.5-	0.2-	1998 10 29	704	0.3+	0.1-
1991 04 08	809	1.4-	0.4+	1998 08 31	910	0.5+	0.6-	1998 10 29	704	0.0	0.5+
1991 04 10	809	0.6-	1.8+	1998 08 31	910	0.4+	0.6-	1998 10 29	704	0.7+	0.8-
1991 04 10	809	0.2-	1.5+	1998 08 31	910	0.6+	0.5-	1998 10 29	704	0.2-	0.6-

M.P.C. 32883

(9576)* 1989 CX₂ = 1981 RX = 1987 WN₅
 Discovered 1989 Feb. 4 by E. W. Elst at the European Southern Observatory.
 Id. H. Kaneda (*MPC* 15716)

(9578)* 1989 GA₃ = 1970 EJ₃ = 1985 DX₃
 Discovered 1989 Apr. 3 by E. W. Elst at the European Southern Observatory.
 Id. S. Nakano (*MPC* 14795)
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	260.89015		(2000.0)	P	Q
<i>n</i>	0.26227118	ω	281.09523	-0.84695718	-0.53124630
<i>a</i>	2.4171429	Ω	226.81900	+0.49834018	-0.77949441
<i>e</i>	0.1532317	<i>i</i>	1.65009	+0.18525819	-0.33191238
<i>P</i>	3.76	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 1

1955 04 20	675	0.4-	0.1-	1993 05 14	809	0.5-	1.8+	1998 09 26	704	0.7+	0.8-
1955 04 20	675	0.6-	1.2+	1993 05 15	809	0.5-	0.8+	1998 09 26	704	0.4-	0.9-
1970 03 10	805	1.5+	0.7+	1993 05 15	809	1.7-	0.7+	1998 09 26	704	0.2-	0.1-
1970 03 10	805	0.6+	0.4-	1993 05 15	809	2.0-	0.4-	1998 09 26	704	0.5+	0.9-
1970 03 10	805	0.3-	0.1+	1993 05 23	809	0.6+	0.3+	1998 09 26	704	0.5+	0.8-
1985 02 20	675	0.3-	1.1-	1993 05 23	809	0.8+	0.2+	1998 09 27	704	0.9+	0.7+
1985 02 22	675	0.2+	0.5-	1993 05 23	809	1.2+	0.6-	1998 09 27	704	0.6+	0.7-
1989 04 03	809	1.5-	1.6-	1994 09 05	809	0.4+	0.2+	1998 09 27	704	0.5+	0.0
1989 04 03	809	0.8-	2.0-	1994 09 05	809	0.5+	0.8+	1998 09 27	704	0.0	1.1-
1989 04 03	809	1.0-	1.8-	1994 09 05	809	0.4+	1.5+	1998 09 27	704	1.2+	1.1-
1989 04 05	809	0.5-	1.2-	1994 09 06	809	1.3+	0.1-	1998 10 14	704	1.5+	1.4-
1989 04 05	809	0.3-	1.7-	1994 09 06	809	0.5+	0.8-	1998 10 14	704	0.8+	0.5+
1989 04 05	809	0.8-	1.2-	1994 09 06	809	1.2+	0.5-	1998 10 14	704	0.0	1.2-
1989 04 08	809	0.5+	0.1+	1996 02 19	689	1.0+	1.2-	1998 10 14	704	(1.1+	2.2-)
1989 04 08	809	0.0	0.6-	1998 09 14	704	0.2-	0.2-	1998 10 14	704	1.8-	0.0
1989 04 08	809	0.2+	0.4-	1998 09 14	704	0.2+	1.3-	1998 10 14	699	0.3+	0.6-
1989 04 10	809	(1.8+	2.5-)	1998 09 14	704	2.1-	1.5-	1998 10 14	699	0.1-	1.0-
1989 04 10	809	0.8+	2.1-	1998 09 15	699	0.7+	0.4-	1998 10 14	699	0.1+	0.6-
1989 04 10	809	0.2+	2.1-	1998 09 15	699	0.4+	0.2-	1998 10 15	704	0.6+	0.4-
1991 12 04	399	(4.9-	0.1-)	1998 09 15	699	0.1+	0.6-	1998 10 15	704	0.4+	0.3-
1991 12 04	399	(3.8-	0.1-)	1998 09 18	704	0.2-	1.3-	1998 10 15	704	(1.8+	2.2-)
1991 12 05	399	1.6-	1.0-	1998 09 18	704	0.3-	0.2-	1998 10 15	704	1.2+	0.2-
1991 12 05	399	1.4-	1.1+	1998 09 18	704	1.0+	1.4+	1998 10 15	704	0.1-	1.3-
1993 05 14	809	(2.7-	2.8+)	1998 09 18	704	2.0-	1.6+				
1993 05 14	809	1.2-	2.1+	1998 09 18	704	0.8-	1.7+				

M	229.54711		(2000.0)	P	Q						
n	0.26049883	ϖ	224.19269	-0.99214432	-0.12279008						
a	2.4280942	Ω	308.73897	+0.12159102	-0.90156885						
e	0.1136725	i	1.75744	+0.02941536	-0.41484480						
P	3.78	H	14.3	G	0.15						
				U	2						
Residuals in seconds of arc											
1976 12 16	095	0.2+	1.8-	1989 04 10	809	0.5+	0.5+	1998 09 26	704	1.3-	1.6-
1976 12 20	095	0.2+	0.4-	1989 04 10	809	0.7+	1.1+	1998 09 26	704	0.9-	0.8-
1985 02 22	675	0.9-	1.4+	1989 04 11	809	1.5-	0.5-	1998 09 26	704	0.8+	0.5-
1985 02 23	675	0.5+	1.1+	1989 04 11	809	0.2+	0.3-	1998 09 26	704	1.0+	1.8-
1989 04 03	809	(5.8+ 0.2+)	1989 04 11	809	2.1+	0.1+	1998 09 27	704	0.1-	0.5+	
1989 04 03	809	(6.5+ 0.5+)	1991 12 10	033	0.4-	0.4+	1998 09 27	704	0.1-	0.6+	
1989 04 03	809	(7.0+ 0.8+)	1991 12 10	033	0.8+	0.7+	1998 09 27	704	0.5-	0.5-	
1989 04 03	809	1.0-	0.5-	1991 12 11	033	0.1-	0.5+	1998 09 27	704	0.7+	0.8+
1989 04 03	809	0.9-	1.3-	1998 09 14	704	0.2+	0.9-	1998 09 27	704	0.4+	0.3+
1989 04 03	809	0.4-	1.1-	1998 09 14	704	0.3+	0.1+	1998 10 14	704	1.1+	0.6+
1989 04 05	809	0.3-	0.1+	1998 09 14	704	0.3-	0.8+	1998 10 14	704	1.0-	0.6+
1989 04 05	809	0.1+	0.3+	1998 09 15	699	0.4+	0.4+	1998 10 14	704	1.3-	0.9+
1989 04 05	809	0.1-	0.2+	1998 09 15	699	0.5-	0.9+	1998 10 14	704	0.7+	1.3-
1989 04 05	809	0.1+	0.1+	1998 09 15	699	0.3-	0.0	1998 10 15	704	0.6-	0.2+
1989 04 09	809	0.4+	1.4+	1998 09 18	704	0.1-	0.7+	1998 10 15	704	0.6-	0.6-
1989 04 09	809	0.6+	0.6+	1998 09 18	704	0.1+	0.1-	1998 10 15	704	0.8-	1.2+
1989 04 09	809	1.2+	0.6+	1998 09 18	704	0.1+	0.1-	1998 10 15	704	(0.2- 3.1+)	
1989 04 10	809	1.1-	0.1+	1998 09 18	704	0.6-	1.4+	1998 10 19	699	0.2+	1.5+
1989 04 10	809	0.4-	1.2+	1998 09 18	704	1.5+	0.8+	1998 10 19	699	0.0	1.0+
1989 04 10	809	2.3+	0.1+	1998 09 26	704	1.3-	0.5+	1998 10 19	699	0.0	0.3-

Epoch	1999 Jan. 22.0	TT = JDT 2451200.5	Asher							
M	54.58334	(2000.0)	P			Q				
n	0.22645920	ω 33.07753	+0.98537043				-0.16811845			
a	2.6656885	Ω 336.55304	+0.13710452				+0.87939515			
e	0.1339979	i 4.02822	+0.10122972				+0.44542154			
P	4.35	H 12.7	G 0.15				U 1			
Residuals in seconds of arc										
1950 12 09	675 0.0	0.3+	1993 07 24	675 2.0-	1.9-	1997 07 02	704 0.0	1.0+		
1950 12 09	675 0.1-	0.5+	1993 08 25	410 0.4+	1.2-	1998 08 31	704 1.4+	0.3+		
1976 10 26	095 (3.4- 4.9+)		1993 08 25	410 1.5-	0.3+	1998 08 31	704 1.7-	1.9+		
1980 09 02	688 (0.3+ 4.8-)		1993 09 14	410 0.8-	0.8-	1998 08 31	704 1.0-	0.4+		
1980 09 07	095 0.2+	1.2-	1993 09 14	410 0.8-	1.6-	1998 08 31	704 0.4-	0.3-		
1989 09 27	675 1.4+	0.2+	1997 06 28	704 0.5+	0.6+	1998 08 31	704 0.5+	0.3-		
1989 09 28	675 1.2+	0.5-	1997 06 28	704 0.6+	0.4+	1998 10 24	744 0.2+	0.2+		
1989 09 28	675 1.0+	0.4+	1997 06 28	704 0.4+	0.2+	1998 10 24	744 0.0	0.4+		
1989 09 29	675 0.5+	0.2+	1997 06 29	704 0.2+	1.3+	1998 10 24	744 0.3-	0.5+		
1989 09 29	675 0.6+	0.6-	1997 06 29	704 0.5+	1.1+	1998 10 26	744 0.0	0.4+		
1989 10 04	374 (2.1- 2.9+)		1997 06 29	704 0.1+	1.1+	1998 10 26	744 0.5-	0.5+		
1989 10 04	374 1.3+	1.3+	1997 06 29	704 0.1+	0.6+	1998 10 26	744 0.0	0.4-		
1989 10 21	095 2.1-	1.4+	1997 06 29	704 0.0	1.3+	1998 10 30	704 0.0	0.2-		
1991 02 07	675 1.2-	0.8+	1997 07 02	704 0.1-	0.7+	1998 10 30	704 1.2-	0.5-		
1991 02 07	675 0.5-	1.3+	1997 07 02	704 0.5+	1.2+	1998 10 30	704 0.5+	1.5+		
1993 07 21	675 0.5-	2.0-	1997 07 02	704 0.7+	0.5+	1998 10 30	704 0.2+	1.0+		
1993 07 24	675 0.4+	1.2-	1997 07 02	704 0.4+	1.3+	1998 10 30	704 0.7+	1.2+		

Epoch	1999 Jan. 22.0	TT =	JDT 2451200.5	Williams						
M	125.59314		(2000.0)	P			Q			
n	0.29388784	ω	287.95780	+0.27504807			+0.96142634			
a	2.2405173	Ω	358.00061	-0.84867696			+0.24141171			
e	0.1556308	i	4.63713	-0.45176982			+0.13183240			
P	3.35	H	14.2	G	0.15		U	1		
Residuals in seconds of arc										
1954 07 28	675	0.1-	0.4-	1990 03 17	809	1.6-	0.8+	1991 09 17	675 0.0 1.2-	
1954 07 28	675	0.0	0.7-	1990 03 17	809	1.3-	0.7+	1991 09 17	675 1.3+ 0.4-	
1977 06 08	808	1.7+	0.8-	1990 03 17	809	1.3-	0.7+	1997 04 08	689 0.4- 0.7+	
1977 06 08	808	0.9+	0.8+	1991 08 12	801	0.1+	0.3-	1997 04 09	689 0.2+ 0.0	
1977 06 11	808	0.4-	1.4-	1991 08 12	801	0.0	0.3-	1998 09 29	704 1.5+ 0.8-	
1977 06 11	808	0.1-	0.4-	1991 09 02	413	0.2+	0.1+	1998 09 29	704 (3.5+ 1.4-)	
1990 02 24	809	0.1-	0.6-	1991 09 02	413	1.1+	1.2-	1998 09 29	704 0.3- 0.3+	
1990 02 24	809	0.2+	0.6-	1991 09 03	413	0.5-	0.6-	1998 09 29	704 (1.3- 2.2+)	
1990 02 25	809	0.8-	0.7-	1991 09 09	801	0.2+	0.2+	1998 10 19	699 0.3+ 1.0+	
1990 02 25	809	0.5-	0.7-	1991 09 09	801	0.1-	0.0	1998 10 19	699 1.2+ 0.8+	
1990 02 25	809	0.1-	0.7-	1991 09 10	675	0.9+	0.6-	1998 10 19	699 0.1- 1.0+	
1990 02 26	809	1.1-	1.8-	1991 09 10	675	1.2-	1.7-	1998 10 29	704 0.3- 1.2+	
1990 02 26	809	0.7-	1.5-	1991 09 13	801	0.1-	0.1-	1998 10 29	704 0.5- 0.1-	
1990 02 26	809	0.1-	1.5-	1991 09 13	801	0.2-	0.1+	1998 10 29	704 0.4+ 0.2-	
1990 03 16	809	0.5+	0.2+	1991 09 15	691	0.6-	0.0	1998 10 29	704 0.8+ 0.2-	
1990 03 16	809	0.5+	0.1+	1991 09 15	691	0.0	0.2-	1998 10 29	704 0.2+ 0.0	
1990 03 16	809	0.8+	0.3+	1991 09 15	691	0.5-	0.3-			

(9582)* 1990 EL₇ = 1969 TJ₇ = 1991 PK₁₇ = 1059 T-1
 Discovered 1990 Mar. 3 by H. Debehogne at the European Southern
 Observatory.
 Id. G. V. Williams (*MPC* 19303)

1998 NOV. 10

M.P.C. 32885

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	301.06408	(2000.0)	P	Q
<i>n</i>	0.30931231	ω 177.69107	-0.78900426	-0.61264336
<i>a</i>	2.1653989	Ω 324.39457	+0.56240860	-0.68988860
<i>e</i>	0.0452942	<i>i</i> 4.55780	+0.24732335	-0.38564470
<i>P</i>	3.19	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1969 10 08	033	0.3+	0.1+	1990 03 03	809	0.0	0.3+	1991 08 06	809	0.1-	1.0-
1969 10 08	033	0.5-	0.2-	1990 03 04	809	0.4+	0.0	1991 10 10	801	1.1+	0.9+
1971 03 24	675	0.2-	0.6+	1990 03 04	809	0.7+	0.0	1991 10 11	801	1.2+	0.5+
1971 03 25	675	0.9-	0.7+	1990 03 04	809	1.0+	0.0	1998 08 31	704	1.0-	1.4+
1971 03 25	675	0.6-	0.4+	1990 03 16	809	0.3-	0.6-	1998 08 31	704	1.3-	0.3-
1971 03 26	675	1.6+	0.3-	1990 03 16	809	0.6-	0.1-	1998 08 31	704	0.8+	0.9-
1971 03 27	675	0.9+	0.7-	1990 03 16	809	0.8-	0.3+	1998 08 31	704	0.4+	0.1-
1988 09 16	675	0.1+	0.4-	1990 03 18	809	0.3-	1.5-	1998 10 29	704	0.2+	0.1-
1988 09 16	675	0.4-	0.4-	1990 03 18	809	0.5-	1.2-	1998 10 29	704	0.2-	0.4-
1990 02 24	403	0.5-	0.0	Y 1990 03 18	809	0.7-	0.9-	1998 10 29	704	1.5+	0.2+
1990 03 03	809	0.5-	0.3+	1991 08 06	809	0.1-	0.7-	1998 10 29	704	0.3+	0.0
1990 03 03	809	0.3-	0.3+	1991 08 06	809	0.1-	1.2-	1998 10 29	704	0.5-	0.5-

(9583)* 1990 HL₁

Discovered 1990 Apr. 28 by R. H. McNaught at Siding Spring.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	118.41105	(2000.0)	P	Q
<i>n</i>	0.26578475	ω 1.17744	-0.47956348	+0.81430267
<i>a</i>	2.3957933	Ω 240.25141	-0.80814438	-0.55505465
<i>e</i>	0.2744298	<i>i</i> 22.12561	-0.34193791	+0.16978074
<i>P</i>	3.71	<i>H</i> 14.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1975 03 12	413	0.6-	0.7-	1990 05 23	675	0.9+	1.7-	1998 08 25	704	0.6+	0.4-
1975 03 12	413	0.3+	1.2-	1990 05 23	675	0.8+	0.7-	1998 08 25	704	0.8+	0.1+
1990 04 28	413	(1.0-	2.7+)	1990 06 28	413	0.8-	0.3+	1998 08 25	704	0.5+	1.0-
1990 04 28	413	1.0-	1.3+	1990 06 28	413	0.1-	0.2+	1998 08 25	704	1.1+	1.1+
1990 04 29	413	1.2-	1.2+	1990 06 29	413	(1.1+	2.4+)	1998 09 24	699	0.6+	0.8+
1990 04 29	413	1.5-	1.0+	1990 06 29	413	0.9-	0.2+	1998 09 24	699	0.1-	0.3+
1990 05 18	675	0.6+	1.0-	1994 08 04	801	0.2-	1.1-	1998 09 24	699	0.1-	0.1+
1990 05 18	675	0.1+	1.4-	1994 08 04	801	1.6-	0.8-	1998 10 27	703	0.3-	0.1+
1990 05 19	675	0.5+	0.5+	1994 08 08	801	0.9+	0.1+	1998 10 27	703	1.2-	0.3-
1990 05 19	675	1.2+	0.4+	1995 12 18	691	0.4-	0.7-	1998 10 27	703	0.6+	0.2-
1990 05 19	413	0.1-	0.8-	1995 12 18	691	0.7-	1.0-				
1990 05 19	413	0.8+	0.3+	1995 12 18	691	0.6-	0.8-				

(9584)* 1990 OL₄ = 1975 PF

Discovered 1990 July 25 by H. E. Holt at Palomar.

Id. R. Nagata (*MPC* 17211)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	60.06611	(2000.0)	P	Q
<i>n</i>	0.26175829	ω 66.54052	+0.97974280	+0.17019107
<i>a</i>	2.4202993	Ω 283.52754	-0.19901994	+0.88603721
<i>e</i>	0.2325222	<i>i</i> 6.23192	+0.02225087	+0.43124595
<i>P</i>	3.77	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 08 14	805	0.6+	0.2-	1996 02 16	566	0.1-	0.6-	1998 08 31	704	0.1-	1.0-
1975 08 15	805	0.2-	0.6-	1996 02 16	566	0.2+	0.4-	1998 08 31	704	1.0-	0.3+
1975 08 16	805	0.1-	0.1+	1996 02 16	566	0.1-	0.3-	1998 08 31	704	0.4-	0.1-
1990 07 25	675	0.0	1.9-	1996 02 21	360	0.2-	0.4+	1998 10 01	681	0.1+	0.6+
1990 07 25	675	0.5+	0.5+	1996 02 21	360	0.5-	0.1+	1998 10 01	681	0.5+	0.8+
1990 07 27	675	0.5+	0.7-	1998 07 23	867	0.2-	1.0+	1998 10 01	681	0.2+	0.7+
1990 07 27	675	0.6-	1.2-	1998 07 23	867	0.7-	1.1+	1998 10 04	681	0.2+	0.1-
1990 07 28	675	0.2+	0.5-	1998 07 23	867	0.5-	1.1+	1998 10 04	681	0.4+	0.1+
1990 07 28	675	0.5+	0.3+	1998 08 28	704	1.2+	0.7-	1998 10 04	681	0.5+	0.8+
1996 02 15	566	0.7-	0.1-	1998 08 28	704	0.8+	1.3-	1998 10 18	704	0.8+	0.6+

1996 02 15	566	1.0-	0.2+	1998 08 28	704	(0.4-	2.1-)	1998 10 18	704	0.2+	0.9-
1996 02 15	566	0.1-	0.0	1998 08 28	704	0.2+	1.7-	1998 10 18	704	0.7+	1.0-
1996 02 15	360	0.0	1.2-	1998 08 28	704	1.9-	0.9-	1998 10 18	704	0.1-	0.7-
1996 02 15	360	0.3-	1.3-	1998 08 31	704	1.0-	0.4+	1998 10 18	704	0.4-	1.3-
1996 02 15	360	0.2+	1.6-	1998 08 31	704	0.6-	0.9+				

(9585)* 1990 QY₂ = 1978 NH₇

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

Id. R. Nagata (*MPC* 17448)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	358.72696	(2000.0)	P	Q
<i>n</i>	0.25253255	ω 48.73841	+0.65654548	-0.75428643
<i>a</i>	2.4788932	Ω 0.22483	+0.67938549	+0.59125880
<i>e</i>	0.0995599	<i>i</i> 2.31846	+0.32769405	+0.28542078
<i>P</i>	3.90	<i>H</i> 14.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1978 07 10	675	2.2+	0.3-	Y 1990 09 15	809	0.9-	0.4-	1998 09 27	704	0.4-	1.0-
1978 07 11	675	(6.9+	2.7-)	Y 1990 09 15	809	0.3-	0.8-	1998 10 10	560	0.4+	0.2-
1978 07 13	675	(5.0-	0.6-)	Y 1990 09 15	809	0.3+	0.3-	1998 10 10	560	0.2+	0.0
1988 01 23	303	0.1-	0.9-	1990 09 15	809	0.7+	0.2-	1998 10 10	560	0.2+	0.0
1990 08 16	809	0.9-	0.3+	1990 09 15	809	1.0+	0.1-	1998 10 14	704	0.7+	0.4-
1990 08 16	809	1.6-	0.1+	1990 09 16	809	0.9+	0.1+	1998 10 14	704	1.1+	0.3-
1990 08 16	809	(2.2-	0.3+)	1990 09 16	809	0.9+	0.2-	1998 10 14	691	1.1-	0.7-
1990 08 20	809	(2.1-	2.1+)	1990 09 16	809	1.1+	0.4-	1998 10 14	704	0.2-	0.5-
1990 08 20	809	(2.6-	1.4+)	1990 09 19	675	0.1-	1.2-	1998 10 14	691	1.0-	0.2-
1990 08 20	809	(2.6-	1.7+)	1990 09 19	675	0.5+	1.1-	1998 10 14	704	0.1+	0.2-
1990 08 22	675	(0.1+	2.5+)	1996 03 23	566	0.4-	0.6+	1998 10 14	704	0.4+	0.4-
1990 08 22	675	0.8-	0.8+	1996 03 23	566	0.4-	0.4-	1998 10 14	691	0.8-	0.1-
1990 08 23	675	1.1-	0.6+	1996 03 23	566	0.2-	0.9-	1998 10 15	704	0.2-	0.0
1990 08 23	675	0.9-	1.0+	1997 06 10	689	0.3+	1.2+	1998 10 15	704	0.2-	0.7+
1990 08 26	809	(0.8-	2.3+)	1998 09 18	704	(3.1-	0.5-)	1998 10 15	704	0.4-	0.1+
1990 08 26	809	(0.7-	2.3+)	1998 09 18	704	1.1+	0.1+	1998 10 15	704	0.2-	0.3+
1990 08 26	809	(1.6-	3.6+)	1998 09 18	704	1.2+	0.2-	1998 10 15	704	1.0-	0.5+
1990 08 27	675	0.4-	2.0-	1998 09 18	704	0.0	0.9-	1998 10 15	560	0.2+	0.3-
1990 08 27	675	0.2-	0.0	1998 09 25	327	0.5+	0.8+	1998 10 15	560	0.6+	0.5+
1990 08 28	675	0.4-	0.0	1998 09 25	327	0.7+	0.7+	1998 10 15	560	0.2+	0.4+
1990 08 28	675	0.9+	0.1+	1998 09 25	327	0.4+	0.8+	1998 10 28	704	0.7+	0.7-
1990 09 13	809	1.2-	0.8+	1998 09 26	704	0.3+	0.1+	1998 10 28	704	0.7-	0.4-
1990 09 13	809	0.7-	0.8+	1998 09 26	704	0.1+	0.4+	1998 10 28	704	0.1+	0.7-
1990 09 13	809	0.4-	0.5+	1998 09 26	704	0.0	1.1+	1998 10 28	704	0.2-	0.2-
1990 09 14	809	0.3+	0.8-	1998 09 26	704	1.3+	0.7+	1998 10 28	704	1.3-	0.1-
1990 09 14	809	0.9+	0.3-	1998 09 26	704	0.3+	1.2+	1998 10 29	704	0.6-	0.1+
1990 09 14	809	1.4+	0.1-	1998 09 27	704	0.4+	0.6+	1998 10 29	704	0.7+	0.1+
1990 09 14	675	0.6+	0.8-	1998 09 27	704	0.5+	0.8+	1998 10 29	704	0.4-	0.6+
1990 09 14	675	0.5-	1.2-	1998 09 27	704	0.7-	0.1-	1998 10 29	704	0.3-	0.2-
1990 09 15	809	1.2-	0.4-	1998 09 27	704	0.3-	0.3-	1998 10 29	704	1.3-	1.3+

(9586)* 1990 SG₁₁ = 1990 SQ₂₉ = 1986 PQ₅ = 1993 FS₂₅

Discovered 1990 Sept. 16 by H. E. Holt at Palomar.

Id. K. Ichikawa (*MPC* 24229)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	99.89319	(2000.0)	P	Q
<i>n</i>	0.25719698	ω 94.39563	+0.49870095	+0.86657991
<i>a</i>	2.4488310	Ω 205.54420	-0.81117158	+0.45914610
<i>e</i>	0.1929371	<i>i</i> 2.43857	-0.30544726	+0.19550987
<i>P</i>	3.83	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1986 08 09	095	1.6+	1.5-	1994 06 16	691	0.7-	0.1+	1998 10 14	120	0.6+	0.2-
1990 09 16	675	0.3-	0.1+	1994 06 16	691	0.8-	0.1-	1998 10 15	120	0.3-	0.2+
1990 09 16	675	0.1-	0.4-	1994 10 25	400	1.3-	1.3-	1998 10 15	120	0.4+	0.2+
1990 09 19	675	0.3+	0.4-	1994 10 25	400	(2.6-	0.0)	1998 10 18	699	0.1-	0.1+
1990 09 19	675	1.1+	0.8+	1995 12 29	691	0.3-	0.5-	1998 10 18	699	0.7-	0.7+
1990 09 20	675	0.0	1.4-	1995 12 29	691	0.6-	0.7-	1998 10 18	699	0.6+	0.2-

1990 09 20	675	0.2+	0.8-	1995 12 29	691	0.2-	0.7-	1998 10 20	120	0.7-	0.2+
1990 09 27	809	0.3+	0.1+	1997 04 29	691	0.7-	0.1-	1998 10 20	120	0.1-	0.0
1990 09 27	809	0.5+	0.1-	1997 04 29	691	0.7-	0.1+	1998 10 28	120	1.1+	0.3+
1990 09 27	809	1.1+	0.2+	1997 04 29	691	0.6-	0.1+	1998 10 28	120	1.1+	0.1-
1990 09 28	809	1.2-	0.0	1998 09 29	910	0.2+	0.1+	1998 10 29	704	0.9+	0.2+
1990 09 28	809	0.9-	0.2-	1998 09 29	910	0.4+	0.1+	1998 10 29	704	0.4+	0.0
1990 09 28	809	0.9-	0.4-	1998 09 29	910	0.3+	0.2+	1998 10 29	704	0.5+	0.6+
1991 12 07	691	1.2-	0.9-	1998 10 10	699	0.4-	0.1+	1998 10 29	704	0.5+	0.5-
1991 12 07	691	1.2-	1.0-	1998 10 10	699	0.2+	1.2+	1998 10 29	704	0.7+	0.4+
1993 03 21	809	0.0	0.3+	1998 10 10	699	0.8-	1.0+	1998 10 29	120	0.6+	0.1-
1993 03 22	809	1.1+	0.1-	1998 10 12	691	1.0-	0.1+	1998 10 29	120	0.3+	0.4+
1993 03 26	809	0.7-	0.7-	1998 10 12	691	0.8-	0.0	1998 11 06	120	0.7-	0.1+
1993 04 21	413	1.9+	0.7-	1998 10 12	691	0.9-	0.0	1998 11 06	120	0.2+	0.3-
1994 06 16	691	1.6-	0.3+	1998 10 13	120	1.0+	0.2-				

(9587)* 1990 UG₄ = 1988 BV₄

Discovered 1990 Oct. 16 by E. W. Elst at the European Southern Observatory.

Id. H. Kaneda (*MPC* 17965)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	108.41816		(2000.0)	P	Q
<i>n</i>	0.23803024	ω	80.60033	+0.08622195	+0.99442044
<i>a</i>	2.5785841	Ω	194.76333	-0.98180255	+0.07445057
<i>e</i>	0.1621900	<i>i</i>	13.79806	-0.16920262	+0.07473356
<i>P</i>	4.14	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1988 01 26	413	0.7-	0.7+	1998 09 18	704	0.8-	1.1-	1998 10 14	704	0.6+	0.4+
1988 01 26	413	1.0+	0.3+	1998 09 18	704	1.0-	1.0-	1998 10 15	704	0.5-	0.6-
1988 01 27	413	0.7-	0.2+	1998 09 18	704	1.0-	0.3-	1998 10 15	704	1.2-	0.3+
1988 01 27	413	(4.6-	1.3+)	1998 09 18	704	1.1-	0.6-	1998 10 15	704	0.2+	0.5+
1990 10 16	809	0.1-	0.7+	1998 09 18	704	1.9-	0.5-	1998 10 15	704	1.0-	1.0+
1990 10 16	809	0.1+	0.9-	1998 09 26	704	0.5+	0.3+	1998 10 19	699	0.5-	0.2+
1990 10 16	809	0.5-	0.1-	1998 09 26	704	0.2+	0.6-	1998 10 19	699	0.4-	0.0
1990 10 20	809	0.5-	0.5-	1998 09 26	704	0.5-	0.0	1998 10 19	699	0.4-	0.3-
1990 10 20	809	0.6+	0.7-	1998 09 26	704	0.3+	0.9+	1998 10 28	704	1.1-	0.9+
1990 10 20	809	0.3+	1.0-	1998 09 27	704	0.0	0.7+	1998 10 28	704	0.9-	0.4-
1990 10 24	809	0.6+	0.2-	1998 09 27	704	1.9+	0.6+	1998 10 28	704	0.3-	0.3-
1990 10 24	809	0.3+	1.3-	1998 09 27	704	0.1+	0.5+	1998 10 28	704	0.6-	0.7-
1990 10 24	809	0.5+	1.1-	1998 09 27	704	0.8+	1.1+	1998 10 28	704	0.7-	0.2+
1997 04 01	358	0.9+	0.4-	1998 09 27	704	0.4+	1.3+	1998 10 29	704	0.7+	0.6-
1997 04 01	358	0.4+	0.7-	1998 10 14	704	0.3+	0.5+	1998 10 29	704	1.3+	0.2-
1997 04 08	358	1.5-	0.6-	1998 10 14	704	1.9+	0.4+	1998 10 29	704	1.5+	0.2-
1997 04 08	358	0.7+	1.1-	1998 10 14	704	0.2+	0.3-	1998 10 29	704	1.8+	0.7-
1997 06 10	689	0.4-	1.2-	1998 10 14	704	0.2-	0.5-	1998 10 29	704	0.6+	0.1-

(9588)* 1990 WE₂ = 1955 HY = 1973 UH₅

Discovered 1990 Nov. 18 by E. W. Elst at the European Southern Observatory.

Id. H. Kaneda (*MPC* 18435)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	88.64937		(2000.0)	P	Q
<i>n</i>	0.23635279	ω	90.52540	+0.37961996	+0.92104387
<i>a</i>	2.5907702	Ω	202.40899	-0.91334320	+0.35814866
<i>e</i>	0.2110665	<i>i</i>	13.19026	-0.14728503	+0.15299582
<i>P</i>	4.17	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1955 04 18	675	0.3+	1.1-	1993 06 18	693	0.6+	0.3-	1998 10 15	704	0.1+	0.1-
1955 04 18	675	0.7-	0.1+	1997 02 09	910	1.0-	0.1+	1998 10 15	704	(2.6-	1.8-)
1973 10 27	033	1.9-	0.3+	1997 02 09	910	0.9-	0.3+	1998 10 15	704	0.2-	0.9-
1973 10 27	033	1.3+	1.6+	1997 02 09	910	1.1-	0.2+	1998 10 15	704	0.1+	1.3-
1973 10 28	033	0.4+	1.3+	1998 09 26	704	(2.1-	0.1-)	1998 10 17	699	0.4-	0.4+
1973 10 31	033	1.4-	1.1+	1998 09 26	704	0.5+	1.9-	1998 10 17	699	0.7-	0.6+
1990 11 11	809	1.1-	0.1-	1998 09 26	704	(0.1+	2.3-)	1998 10 17	699	0.2-	0.3+

1990 11 11	809	1.2-	0.1-	1998 09 26	704	0.5-	0.4-	1998 10 28	704	0.2+	0.2+
1990 11 11	809	(3.0-	1.2-)	1998 09 27	704	0.3-	1.2-	1998 10 28	704	0.2+	0.2+
1990 11 18	809	1.7+	0.9-	1998 09 27	704	0.7+	0.3-	1998 10 28	704	0.6-	0.3-
1990 11 18	809	0.9+	0.0	1998 09 27	704	1.9+	1.8-	1998 10 28	704	0.9-	0.1-
1990 11 18	809	0.1+	0.5-	1998 09 27	704	0.9+	1.3-	1998 10 28	704	0.4+	0.2+
1990 11 20	809	1.7+	0.3+	1998 09 27	704	(2.0+	2.5-)	1998 10 29	704	0.3+	0.4+
1990 11 20	809	0.1+	1.1-	1998 10 14	704	0.1-	1.2-	1998 10 29	704	0.3+	1.2+
1990 11 20	809	1.0+	0.1-	1998 10 14	704	0.3+	0.7+	1998 10 29	704	0.9-	0.3+
1993 04 24	691	0.1-	0.1-	1998 10 14	704	0.4+	0.2+	1998 10 29	704	0.4-	0.9+
1993 04 24	691	0.4-	0.3-	1998 10 14	704	0.3-	0.4+	1998 10 29	704	0.9-	0.5+
1993 06 17	693	1.5+	1.0-	1998 10 14	704	1.0-	0.6+				
1993 06 17	693	0.6+	0.5+	1998 10 15	704	0.1-	0.4-				

(9589)* 1990 WU₅ = 2197 T-1

Discovered 1990 Nov. 21 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 19307)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	295.31206		(2000.0)	P	Q
<i>n</i>	0.23588598	ω	344.68827	-0.47403513	-0.87893701
<i>a</i>	2.5941871	Ω	133.57550	+0.81527509	-0.46067394
<i>e</i>	0.0570642	<i>i</i>	4.15885	+0.33259168	-0.12348786
<i>P</i>	4.18	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	1.4-	2.0-	1997 06 29	704	0.1-	0.1-	1998 09 27	704	1.9-	0.5+
1971 03 25	675	0.5-	0.5-	1997 07 02	704	0.6+	0.1+	1998 09 27	704	0.8-	0.1+
1971 03 25	675	0.7+	0.4-	1997 07 02	704	0.3+	0.0	1998 10 11	699	0.0	0.2+
1971 03 26	675	0.4-	0.4-	1997 07 02	704	0.2-	0.6-	1998 10 11	699	0.2-	0.2-
1971 03 27	675	1.1-	0.4-	1997 07 02	704	0.4+	0.2+	1998 10 11	699	0.3+	0.7-
1990 11 16	809	0.4-	0.6+	1997 07 02	704	0.2+	0.5-	1998 10 14	704	1.4+	0.6-
1990 11 21	809	0.7+	1.2+	1998 09 18	699	0.0	0.3-	1998 10 14	704	0.8+	0.1-
1990 11 21	809	0.9-	0.6-	1998 09 18	699	0.6+	0.4+	1998 10 14	704	0.1+	0.2+
1990 11 21	809	0.1-	0.2-	1998 09 18	699	0.0	0.4+	1998 10 14	704	0.1+	0.4-
1990 11 22	809	1.8+	0.1-	1998 09 21	809	0.3+	0.1+	1998 10 15	704	0.9+	0.3-
1990 11 22	809	1.0+	0.5+	1998 09 21	809	1.3-	1.7-	1998 10 15	704	0.5-	0.8+
1990 11 22	809	1.0+	0.5+	1998 09 21	809	0.6+	1.0-	1998 10 15	704	0.6-	0.6-
1993 07 13	809	0.6+	0.4-	1998 09 23	809	0.0	0.5+	1998 10 15	704	1.1-	0.7-
1993 07 13	809	0.1+	0.8-	1998 09 23	809	0.6+	0.7+	1998 10 20	699	0.5+	0.8-
1993 07 13	809	0.7-	1.6-	1998 09 23	809	0.3-	0.1+	1998 10 20	699	0.2-	1.4-
1993 07 20	809	0.9+	0.5+	1998 09 26	704	1.3-	1.6+	1998 10 20	699	0.9+	0.4-
1993 07 20	809	0.2+	0.8+	1998 09 26	704	1.0-	1.0-	1998 10 29	704	1.0+	0.0
1993 07 20	809	0.3+	0.4+	1998 09 26	704	0.3-	0.5-	1998 10 29	704	0.4+	0.7+
1993 07 24	809	0.7+	1.5+	1998 09 26	704	0.3-	0.6-	1998 10 29	704	1.7+	1.2+
1997 06 29	704	0.0	0.5-	1998 09 26	704	0.5-	0.1+	1998 10 29	704	0.4+	0.5+
1997 06 29	704	0.6-	0.2+	1998 09 27	704	1.3-	1.9-	1998 10 29	704	0.6+	0.1-
1997 06 29	704	0.4-	0.6-	1998 09 27	704	1.2-	0.4-				
1997 06 29	704	0.3-	0.2+	1998 09 27	704	0.6-	0.5-				

(9590)* 1991 DK₁ = 1996 RN₂₈

Discovered 1991 Feb. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 29613)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	201.08545		(2000.0)	P	Q
<i>n</i>	0.08334623	ω	178.34201	-0.88603657	+0.46015037
<i>a</i>	5.1905342	Ω	29.26689	-0.42667956	-0.76162085
<i>e</i>	0.0393855	<i>i</i>	6.64548	-0.18133874	-0.45628424
<i>P</i>	11.83	<i>H</i>	11.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1991 02 21	691	0.1-	1.4-	1996 09 11	809	0.3+	0.2-	1997 10 30	608	0.1+	0.5+
1991 02 21	691	1.4-	0.8-	1996 09 12	809	0.1-	0.1-	1998 09 18	711	0.7+	0.2+
1991 02 21	691	1.1+	0.2-	1996 09 12	809	0.1+	0.1+	1998 09 20	711	0.5+	0.7+
1991 02 22	691	0.1-	0.2+	1996 09 14	809	1.0+	0.1-	1998 10 16	691	(3.0-	0.7-)
1991 02 22	691	0.3-	0.1-	1996 09 14	809	0.2-	1.1-	1998 10 16	691	0.0	0.1-

1998 NOV. 10

M.P.C. 32887

1991 02 22	691	0.3-	0.1-	1996 09 14	809	0.2-	1.2-	1998 10 16	691	1.4-	0.2-
1991 03 10	691	0.1+	0.4+	1997 09 28	608	0.2+	0.9-	1998 10 29	704	1.0+	0.1-
1991 03 10	691	0.2+	0.3+	1997 09 28	608	0.2+	0.2-	1998 10 29	691	0.6-	0.0
1991 03 10	691	0.0	0.1+	1997 10 02	608	0.1-	0.5-	1998 10 29	704	(1.6+	2.3-)
1991 04 18	691	0.5+	0.2+	1997 10 02	608	0.3-	0.5-	1998 10 29	691	0.7-	0.0
1991 04 18	691	0.1+	0.2+	1997 10 26	608	0.3-	0.6+	1998 10 29	704	1.4+	0.0
1991 04 18	691	0.9-	0.4-	1997 10 26	608	0.4-	0.7+	1998 10 29	691	0.5-	0.0
1992 04 05	691	0.3-	0.5-	1997 10 29	608	0.1+	0.7+	1998 10 29	704	0.0	1.8-
1992 04 05	691	0.2+	0.0	1997 10 29	608	0.1-	0.5+				
1992 04 05	691	0.1+	0.3+	1997 10 30	608	0.1+	0.6+				

(9591)* 1991 FH₂ = 1978 UR₅

Discovered 1991 Mar. 20 by H. Debehogne at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 25638)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	195.04154	(2000.0)	P	Q	
<i>n</i>	0.18982008	ω	238.40515	-0.93678490	-0.34967524
<i>a</i>	2.9985269	Ω	281.12476	+0.32525819	-0.85684249
<i>e</i>	0.0605633	<i>i</i>	0.74160	+0.12900064	-0.37887752
<i>P</i>	5.19	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1978 10 27	675	0.5+	0.2+	1993 09 09	691	(3.8-	0.0	)	1998 08 17	704	0.6-	0.5+
1978 10 28	675	0.3-	0.1+	1993 09 09	691	(3.4-	0.3-	)	1998 08 17	704	0.5-	0.1+
1978 10 29	675	0.2-	0.4-	1997 05 27	599	0.5-	1.4+		1998 08 17	704	0.6+	0.6-
1991 03 20	809	0.3-	0.2-	1997 05 27	599	0.0	1.3+		1998 09 14	704	1.5+	0.9-
1991 03 20	809	0.4+	0.2-	1997 06 09	046	0.3+	0.1-		1998 09 14	704	1.0-	0.7+
1991 03 20	809	1.0+	0.2-	1997 06 09	046	0.0	0.4-		1998 09 14	704	0.8+	2.1+
1991 03 21	809	0.8-	0.7+	1997 06 09	046	0.1+	0.1-		1998 09 14	704	(2.7+	1.5+)
1991 03 21	809	0.5-	0.6+	1997 06 09	046	0.1-	0.2-		1998 10 20	910	0.4-	0.5-
1991 03 21	809	0.2-	0.7+	1997 06 09	046	0.2+	0.0		1998 10 20	910	0.1-	0.4-
1991 03 22	809	0.1+	0.7-	1997 06 10	046	0.1-	0.3-		1998 10 20	910	0.4-	0.2-
1991 03 22	809	0.1+	0.7-	1997 06 10	046	0.1-	1.0-		1998 10 21	910	0.0	0.2+
1991 03 22	809	0.1+	0.7-	1997 06 10	046	0.3-	0.5-		1998 10 21	910	0.3-	0.2-
1991 04 15	675	0.0	0.4+	1997 06 10	046	0.2+	0.4-		1998 10 21	910	0.5-	0.0
1991 04 15	675	0.3+	0.5+	1998 08 17	704	0.3+	0.1-					
1993 09 09	691	(3.7-	0.6+)	1998 08 17	704	0.1+	0.3-					

(9592)* 1991 GK₄ = 1993 TV

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

Id. T. Nomura (*MPC* 22688)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	22.75351	(2000.0)	P	Q	
<i>n</i>	0.20667234	ω	170.94800	+0.74117053	-0.67114358
<i>a</i>	2.8332255	Ω	231.21878	+0.61469041	+0.68760800
<i>e</i>	0.0759032	<i>i</i>	1.12089	+0.26985541	+0.27705874
<i>P</i>	4.77	<i>H</i>	13.4	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1991 04 08	809	1.7+	0.7-	1993 10 11	400	(3.2-	2.8-	)	1996 05 22	809	(2.1+	2.7+)
1991 04 08	809	1.7+	1.6-	1993 10 11	400	2.0-	1.5-		1996 05 22	809	(2.0+	2.1+)
1991 04 08	809	0.0	1.7-	1993 10 12	400	(4.4-	0.3+)		1997 08 01	566	0.1-	0.7-
1991 04 08	809	(2.2+	1.2-)	1993 10 12	400	(4.0-	3.9-)		1997 08 01	566	0.1-	0.6-
1991 04 08	809	1.8+	1.8-	1995 01 23	411	1.2-	0.2+		1997 08 01	566	0.9+	0.6-
1991 04 08	809	1.5+	1.8-	1995 01 23	411	1.5-	0.2+		1998 08 31	704	0.1+	0.1+
1991 04 10	809	0.0	0.4-	1996 03 23	566	(2.6+	1.1-)		1998 08 31	704	1.1-	1.3-
1991 04 10	809	0.7-	0.4-	1996 03 23	566	(2.8+	1.3-)		1998 08 31	704	(2.1+	2.8-)
1991 04 10	809	0.1-	0.8-	1996 03 23	566	(2.4+	1.7-)		1998 08 31	704	0.3-	1.2-
1991 04 10	809	0.7+	1.0+	1996 04 17	809	1.2+	0.8+		1998 08 31	704	0.4+	0.9-
1991 04 10	809	0.5+	0.3+	1996 04 17	809	0.4+	0.1-		1998 10 18	699	0.8+	0.0
1991 04 10	809	0.6+	0.5+	1996 04 17	809	0.3-	0.5+		1998 10 18	699	0.3+	0.5-
1991 04 19	809	(0.5-	2.1+)	1996 04 18	809	0.3+	0.4+		1998 10 18	699	0.6+	0.0
1991 04 19	809	(3.5-	2.5+)	1996 04 18	809	0.2+	0.1+		1998 10 20	699	0.8+	0.4+
1991 04 19	809	1.5-	1.4+	1996 04 18	809	0.5+	0.5-		1998 10 20	699	0.6+	0.6+

1991 04 19	809	0.7-	0.7-	1996 05 19	809	0.2-	0.2-	1998 10 20	699	0.6+	0.9+
1991 04 19	809	1.6-	0.8-	1996 05 19	809	0.7-	0.3-	1998 10 29	704	0.5+	0.1-
1991 04 19	809	1.4-	0.7-	1996 05 19	809	1.1-	0.3-	1998 10 29	704	0.0	0.1+
1991 04 19	675	0.9-	0.8-	1996 05 21	566	1.4-	1.3+	1998 10 29	704	0.5+	0.2+
1991 05 15	675	0.4+	0.3-	1996 05 21	566	0.5-	1.7+	1998 10 29	704	0.2+	0.1+
1991 05 15	675	0.3-	1.2+	1996 05 21	566	0.8-	1.0+	1998 10 29	704	0.5-	0.7-
1991 05 17	675	0.7+	0.2+	1996 05 22	809	(2.5+	2.6+)				

(9593)* 1991 PZ₁₇ = 1989 AM₈ = 1996 BR₄

Discovered 1991 Aug. 7 by H. E. Holt at Palomar.

Id. B. G. Marsden (*MPC* 26741)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	347.59090	(2000.0)	P	Q	
<i>n</i>	0.28338946	ω	306.62753	+0.54858229	-0.83027486
<i>a</i>	2.2955156	Ω	109.81786	+0.79664202	+0.48329510
<i>e</i>	0.1552674	<i>i</i>	6.00959	+0.25380890	+0.27761397
<i>P</i>	3.48	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1989 01 10	054	0.0	0.8-	1993 04 14	675	0.1-	0.4-	1998 08 26	809	(3.4+	2.7+)
1989 01 10	054	0.5-	0.8-	1993 04 14	675	(2.7+	0.3-)	1998 08 26	809	(3.6+	2.5+)
1991 08 07	675	0.7-	0.8-	1993 04 15	675	0.6+	0.7-	1998 08 26	809	(3.3+	3.0+)
1991 08 07	675	0.9-	0.6-	1993 04 15	675	0.4-	0.9+	1998 09 21	704	0.2+	0.2-
1991 09 12	675	0.2+	0.1+	1996 01 16	098	0.2-	0.6+	1998 09 21	704	0.3-	0.1+
1991 09 12	675	0.7+	0.4-	1996 01 16	098	0.7-	0.2-	1998 09 21	704	0.2+	0.6+
1991 09 14	675	0.7-	1.3+	1996 01 17	566	0.4+	0.1+	1998 09 21	704	0.1+	0.3-
1991 09 14	675	0.5+	0.6+	1996 01 17	566	1.0+	0.4+	1998 09 21	704	0.1-	0.9-
1991 09 15	675	1.6+	0.7-	1996 01 17	566	0.4+	0.4+	1998 09 22	689	0.4+	0.8-
1991 09 15	675	0.1+	0.7-	1996 01 17	098	0.0	0.2-	1998 10 13	704	0.2-	0.1+
1991 09 16	675	0.1+	0.6-	1996 01 17	098	0.1-	0.3-	1998 10 13	704	1.1-	2.0+
1991 09 16	675	0.4+	0.3-	1996 01 19	098	0.2-	0.3-	1998 10 13	704	0.4-	0.6+
1993 04 13	691	0.2-	0.3-	1998 08 25	809	(3.5+	3.4+)	1998 10 13	704	0.1+	0.2-
1993 04 13	691	0.1-	0.4-	1998 08 25	809	(3.2+	3.0+)				
1993 04 13	691	0.3-	0.4-	1998 08 25	809	(2.7+	2.2+)				

(9594)* 1991 RG = 1985 YY = 1990 EG₉ = 1990 GH

Discovered 1991 Sept. 4 by R. H. McNaught at Siding Spring.

Id. H. Kaneda (*MPC* 19312)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	198.79705	(2000.0)	P	Q	
<i>n</i>	0.29434423	ω	344.83530	-0.83693900	+0.54492360
<i>a</i>	2.2382007	Ω	228.29880	-0.49477306	-0.79309907
<i>e</i>	0.0950130	<i>i</i>	3.90951	-0.23395026	-0.27212522
<i>P</i>	3.35	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1985 12 17	010	2.3+	0.9-	1994 07 05	010	0.5+	1.2-	1998 10 10	699	0.5+	0.6+
1985 12 17	010	(5.1+	1.5-)	1994 07 05	010	(2.2-	0.9-)	1998 10 10	699	0.5+	0.2+
1985 12 19	010	0.3-	1.1+	1994 07 05	010	1.8-	0.8+	1998 10 14	704	0.1-	0.2-
1988 10 07	675	1.7-	0.5-	1994 07 08	010	(0.0	2.7-)	1998 10 14	704	0.1-	0.6+
1990 03 02	809	0.1-	0.4-	1994 07 08	010	(0.1-	3.0-)	1998 10 14	704	0.3-	0.8-
1990 03 02	809	0.3-	0.9-	1994 07 08	010	(0.6-	3.5-)	1998 10 14	704	0.7+	0.2+
1990 03 02	809	1.0-	0.2-	1994 07 17	292	0.4+	0.6-	1998 10 14	704	0.6+	1.4-
1990 04 15	809	(1.7+	2.2-)	1994 07 17	292	0.9+	0.8+	1998 10 15	704	0.1-	0.6+
1990 04 16	809	0.7+	1.7-	1998 09 14	699	0.3+	0.1+	1998 10 15	704	0.2-	0.4+
1990 04 16	809	1.0-	1.9-	1998 09 14	699	0.5-	0.3+	1998 10 15	704	0.7+	0.4-
1990 04 16	809	1.1+	1.8-	1998 09 14	699	0.4+	0.1+	1998 10 15	704	(0.9-	2.8-)
1990 04 17	809	0.2+	1.6-	1998 09 23	098	0.5+	0.1-	1998 10 15	704	0.2-	1.3-
1990 04 17	809	1.3-	1.8-	1998 09 23	098	0.3-	0.7+	1998 10 17	699	0.5+	0.4+
1991 09 04	413	0.4+	0.3-	1998 09 23	098	0.7+	1.6-	1998 10 17	699	0.1+	0.7+
1991 09 05	413	0.2+	0.1+	1998 09 26	704	1.0-	0.2-	1998 10 17	699	0.2+	0.7+
1991 09 07	413	0.2+	1.7-	1998 09 26	704	0.8-	1.1-	1998 10 28	704	1.0+	0.4+
1991 09 15	675	(0.5+	2.7-)	1998 09 26	704	(1.1-	2.2-)	1998 10 28	704	1.5+	1.0-
1991 09 17	675	(0.2-	3.0-)	1998 09 26	704	0.9-	1.6-	1998 10 28	704	0.5+	0.5+
1991 09 17	675	0.1+	1.7-	1998 09 26	704	1.4-	1.7-	1998 10 28	704	0.7+	0.2-

1993 01 20	801	0.0	1.3+	1998 09 27	704	0.2+	0.4-	1998 10 28	704	0.6+	0.2+
1993 01 20	801	0.3-	1.1+	1998 09 27	704	0.0	0.1+	1998 10 29	704	0.9+	0.6+
1993 01 26	801	1.8-	1.1+	1998 09 27	704	0.5-	0.0	1998 10 29	704	0.2+	0.0
1994 07 04	010	0.8+	0.9+	1998 09 27	704	0.7-	1.2-	1998 10 29	704	0.7+	0.4+
1994 07 04	010	1.2-	0.1+	1998 09 27	704	1.7-	1.3-	1998 10 29	704	0.6+	0.2+
1994 07 04	010	0.7-	0.4+	1998 10 10	699	0.1+	0.9+	1998 10 29	704	0.0	0.2-

(9595)* 1991 RE₁₁ = 1989 BD₁

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

Id. K. Ichikawa (*MPC* 20152)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	14.20829		(2000.0)		P		Q
<i>n</i>	0.28780603	ω	123.27845		+0.52867158		-0.84562893
<i>a</i>	2.2719710	Ω	294.63719		+0.74937260		+0.50570059
<i>e</i>	0.1720103	<i>i</i>	4.64487		+0.39868167		+0.17081751
<i>P</i>	3.42	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 08 15	675	0.9+	0.1-	1991 09 17	675	1.2-	0.3+	1998 10 22	758	0.1+	0.1+
1953 08 15	675	0.8+	0.6+	1991 09 17	675	1.2-	1.6-	1998 10 25	758	0.3+	0.3+
1955 03 24	675	0.3-	0.1-	1998 08 28	704	0.0	0.2+	1998 10 25	758	0.3+	0.4+
1955 03 24	675	2.0-	2.0-	1998 08 28	704	0.8-	0.3+	1998 10 25	758	0.2+	0.3+
1989 01 26	046	0.6-	0.5-	1998 08 28	704	0.2+	0.4-	1998 10 25	758	0.3+	0.5+
1989 01 26	046	0.1-	0.1-	1998 08 28	704	0.5+	0.1+	1998 10 25	098	0.2-	1.2+
1989 01 27	046	0.5+	0.6-	1998 08 28	704	1.2-	0.2+	1998 10 25	098	0.5-	0.7-
1989 01 27	046	0.5+	0.2-	1998 08 31	704	1.0-	0.2-	1998 11 07	758	0.2+	0.4-
1989 01 28	046	1.4-	0.2-	1998 08 31	704	0.1+	0.2-	1998 11 07	758	0.3+	0.0
1989 01 28	046	0.8+	0.0	1998 08 31	704	0.1+	0.6-	1998 11 07	758	0.3+	0.1+
1991 09 13	675	0.0	1.7-	1998 08 31	704	0.4-	0.3-	1998 11 07	758	0.3+	0.0
1991 09 13	675	0.6+	0.9-	1998 08 31	704	0.5+	1.7-	1998 11 09	758	0.4+	0.7+
1991 09 15	675	0.0	0.8-	1998 10 22	758	0.4+	0.5+	1998 11 09	758	0.2+	0.8+
1991 09 15	675	0.5+	0.9-	1998 10 22	758	0.2-	0.6+	1998 11 09	758	0.2+	0.4+

(9596)* 1991 RC₂₂ = 1971 VC = 1977 JM = 1978 WK₆ = 1981 TS₃

Discovered 1991 Sept. 15 by H. E. Holt at Palomar.

Id. K. Kinoshita (*MPC* 25065)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	102.21930		(2000.0)		P		Q
<i>n</i>	0.29185554	ω	251.23685		+0.41663025		+0.90783640
<i>a</i>	2.2509063	Ω	43.48299		-0.80593094		+0.39300811
<i>e</i>	0.1875110	<i>i</i>	3.95463		-0.42058834		+0.14621115
<i>P</i>	3.38	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 11 10	029	0.9+	0.4+	1991 09 16	675	0.2+	0.8-	1998 10 15	704	(0.5+	2.4+)
1971 11 10	029	1.0+	0.3+	1991 09 16	675	0.1-	0.4-	1998 10 20	699	0.2+	0.9+
1977 05 15	095	0.8+	1.1-	1991 09 17	675	0.9+	0.4-	1998 10 20	699	0.1+	0.9+
1978 11 29	675	1.2-	0.6+	1991 09 17	675	0.4+	0.4-	1998 10 20	699	0.8+	1.0+
1978 11 30	675	1.6-	1.2+	1997 03 10	689	1.0-	0.3+	1998 10 28	704	1.2+	1.5-
1981 10 07	095	0.6-	2.3-	1998 09 29	704	1.2-	0.2-	1998 10 28	704	1.6+	0.8-
1991 09 04	691	1.6-	0.7+	1998 09 29	704	0.2+	0.2-	1998 10 28	704	1.8+	0.4-
1991 09 04	691	1.2-	0.2+	1998 09 29	704	0.3-	1.0+	1998 10 28	704	0.1-	1.0-
1991 09 04	691	1.6-	0.7+	1998 09 29	704	0.3-	0.3-	1998 10 29	704	0.2+	0.0
1991 09 14	675	0.5+	0.9+	1998 10 15	704	0.4-	0.0	1998 10 29	704	0.1-	0.2-
1991 09 14	675	0.2-	0.2+	1998 10 15	704	0.8-	0.4-	1998 10 29	704	0.7+	0.4+
1991 09 15	675	0.3+	0.2-	1998 10 15	704	0.2-	0.7+	1998 10 29	704	0.0	1.3-
1991 09 15	675	0.4+	0.1+	1998 10 15	704	0.6+	1.9+	1998 10 29	704	0.4-	1.0-

(9597)* 1991 UF = 1977 VS₁ = 1984 UZ₂

Discovered 1991 Oct. 18 by S. Ueda and H. Kaneda at Kushiro.

Id. G. V. Williams (*MPC* 20510)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	33.74425		(2000.0)		P		Q
<i>n</i>	0.28118109	ω	101.03782		+0.95527674		-0.29253881
<i>a</i>	2.3075191	Ω	275.98296		+0.25151176		+0.88062140
<i>e</i>	0.1338810	<i>i</i>	2.49029		+0.15552551		+0.37272911
<i>P</i>	3.51	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 11 08	330	0.2-	1.0+	1995 12 24	566	0.5+	1.0+	1998 10 14	704	0.1+	0.1+
1984 10 26	688	2.1+	1.2-	1995 12 24	566	0.3+	1.2+	1998 10 14	704	0.6+	0.7+
1984 10 26	688	0.0	1.5-	1995 12 24	566	0.3+	1.2+	1998 10 14	704	0.5+	1.1-
1991 09 13	675	0.3+	0.8-	1998 09 14	699	0.6+	0.9+	1998 10 14	704	0.2-	0.6-
1991 09 13	675	0.2-	1.2-	1998 09 14	699	0.3+	1.1+	1998 10 14	704	(0.5-	2.3-)
1991 09 14	675	0.9+	0.8-	1998 09 14	699	0.4+	1.2+	1998 10 15	704	0.2+	0.4-
1991 09 15	675	0.3+	0.9-	1998 09 23	098	(2.4-	0.0)	1998 10 15	704	0.2-	0.5+
1991 09 15	675	0.5+	0.1+	1998 09 23	098	(1.5-	2.9+)	1998 10 15	704	0.3-	0.4+
1991 10 18	399	0.5+	0.2-	1998 09 23	098	0.1-	0.7-	1998 10 15	704	1.1-	0.3-
1991 10 18	399	0.6+	0.2+	1998 09 26	704	0.1+	1.7+	1998 10 15	704	0.7-	0.8-
1991 10 19	399	0.8-	0.1+	1998 09 26	704	1.8+	0.5-	1998 10 16	832	0.0	0.0
1991 10 19	399	(2.2-	0.2-)	1998 09 26	704	0.9+	1.7-	1998 10 16	832	0.1+	0.1-
1991 10 28	399	1.9-	0.6+	1998 09 26	704	0.7+	0.4-	1998 10 28	704	0.0	0.4-
1991 10 28	399	0.1-	0.3+	1998 09 26	704	0.3-	1.0-	1998 10 28	704	0.2-	0.1-
1991 10 29	399	0.2+	0.7-	1998 09 27	704	1.0-	0.5+	1998 10 28	704	(0.2+	2.6+)
1991 10 29	399	(2.3-	0.9-)	1998 09 27	704	0.1-	1.1+	1998 10 28	704	2.0-	0.3-
1991 10 31	399	0.6-	0.5+	1998 09 27	704	0.2-	0.2-	1998 10 28	704	0.7-	0.6+
1991 10 31	399	1.3-	0.9-	1998 09 27	704	0.2+	0.8+	1998 10 29	704	0.5+	0.2+
1994 07 11	809	0.9-	0.6+	1998 09 27	704	1.4-	0.6-	1998 10 29	704	0.2-	0.8+
1994 07 11	809	0.0	0.6+	1998 10 11	832	0.1-	0.5+	1998 10 29	704	0.8+	0.8+
1994 07 11	809	0.7+	0.8+	1998 10 11	832	0.0	0.4+	1998 10 29	704	0.0	0.7+
1994 07 12	809	0.9-	0.6+	1998 10 11	699	0.1+	0.5+	1998 10 29	704	0.9+	0.5-
1994 07 12	809	0.1+	0.8+	1998 10 11	699	0.0	0.7+				
1994 07 12	809	0.1+	0.2+	1998 10 11	699	0.3+	0.5+				

(9598)* 1991 UQ = 1977 RY₅ = 1990 FR₅ = 1993 CC₂

Discovered 1991 Oct. 18 by S. Ueda and H. Kaneda at Kushiro.

Id. K. Kinoshita (*MPC* 23518), S. Nakano (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	101.50948		(2000.0)		P		Q
<i>n</i>	0.28403524	ω	284.18090		+0.55588766		+0.83103875
<i>a</i>	2.2920349	Ω	19.62717		-0.73910048		+0.50462605
<i>e</i>	0.1449271	<i>i</i>	3.25391		-0.38042001		+0.23393835
<i>P</i>	3.47	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 12 09	675	0.3+	0.7+	1991 10 31	399	(3.5-	2.6-)	1998 10 16	691	1.5-	0.4+
1950 12 09	675	0.5-	0.4+	1991 10 31	399	1.3-	1.3-	1998 10 16	691	1.8-	0.2-
1977 09 09	095	1.2+	0.8+	1993 02 13	372	0.9+	1.3-	1998 10 19	699	0.8+	0.3+
1990 03 27	675	0.5+	0.6-	1993 02 13	372	1.2-	0.7-	1998 10 19	699	0.4+	0.5+
1990 03 27	675	0.3-	0.0	1993 02 17	372	(2.8-	0.3-)	1998 10 19	699	0.2+	1.0+
1990 03 29	400	(0.2-	5.5+)	1993 02 17	372	0.3-	0.8+	1998 10 20	691	1.0+	0.2+
1990 03 29	400	(1.2-	8.4+)	1997 05 03	557	0.5-	0.2+	1998 10 20	691	0.6-	0.2-
1990 04 01	675	0.6+	0.0	1997 05 03	557	0.7-	0.1+	1998 10 20	691	0.4-	0.2-
1990 04 01	675	0.3+	1.3-	1997 05 03	557	0.5-	0.0	1998 10 29	691	0.2-	0.1-
1990 04 22	675	0.5+	0.4-	1997 05 03	557	0.5-	0.4+	1998 10 29	691	0.4-	0.1-
1991 10 18	399	0.0	1.9-	1998 09 29	704	1.6+	0.2-	1998 10 29	704	0.5+	0.4+
1991 10 18	399	2.0-	1.0-	1998 09 29	704	(2.6+	0.7-)	1998 10 29	691	0.1-	0.1-
1991 10 19	399	0.3-	1.9-	1998 09 29	704	0.3-	1.1-	1998 10 29	704	0.9+	0.3+
1991 10 19	399	1.3+	0.9-	1998 09 29	704	1.1+	0.1-	1998 10 29	704	0.2-	0.8+
1991 10 28	399	(1.6-	2.3-)	1998 10 10	699	0.6+	0.0	1998 10 29	704	0.0	1.0+
1991 10 28	399	(2.7-	2.3-)	1998 10 10	699	1.0+	0.4+	1998 10 29	704	0.7+	0.8+
1991 10 29	399	(3.0-	0.0)	1998 10 10	699	0.6+	0.4+				
1991 10 29	399	(1.9-	3.5-)	1998 10 16	691	1.6-	0.2+				

(9599)* 1991 UP₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	74.51267		(2000.0)	P	Q
<i>n</i>	0.28667640	ω	275.97930	+0.99330748	+0.08388627
<i>a</i>	2.2779355	Ω	79.22797	-0.04412660	+0.91086685
<i>e</i>	0.1394759	<i>i</i>	4.63557	-0.10673844	+0.40408499
<i>P</i>	3.44	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1991 10 29	400	0.2-	0.6+	1991 12 02	400	(0.5-	4.3+)	1994 08 04	675	0.2+	0.8+
1991 10 29	400	1.2+	0.6+	1991 12 02	400	(2.2+	0.8-)	1998 08 31	704	0.6-	1.0-
1991 10 31	400	(2.2-	0.9-)	1992 01 26	691	1.1-	0.8+	1998 08 31	704	0.9+	2.0-
1991 10 31	400	0.1+	0.5+	1992 01 26	691	1.1-	0.6+	1998 08 31	704	(2.8+	0.9-)
1991 11 02	400	0.7-	0.5-	1992 01 26	691	1.4-	0.8+	1998 08 31	704	1.5+	0.4-
1991 11 02	400	0.9-	0.4-	1993 04 14	675	0.7+	0.4-	1998 08 31	704	0.8-	0.6-
1991 11 04	691	0.2+	0.7+	1993 04 14	675	1.0+	0.0	1998 09 29	704	1.2-	0.5+
1991 11 04	691	0.2+	0.3+	1993 04 17	691	0.5-	0.1+	1998 09 29	704	0.9+	0.0
1991 11 04	691	0.3+	0.3+	1993 04 17	691	0.6-	0.2+	1998 09 29	704	0.7+	1.4-
1991 11 04	400	1.3+	0.5+	1993 04 17	691	0.6-	0.0	1998 09 29	704	0.5+	0.3+
1991 11 04	400	0.2-	0.3+	1994 07 12	675	(0.3+	2.7+)	1998 09 29	704	0.5-	0.3-
1991 11 13	894	0.2+	1.1-	1994 07 12	675	0.7-	0.6-				
1991 11 13	894	0.5-	0.4-	1994 08 04	675	0.1+	0.9+				

(9600)* 1991 UB₃ = 1993 HM₃

Discovered 1991 Oct. 31 by S. Ueda and H. Kaneda at Kushiro.

Id. G. V. Williams (*MPC* 22235)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	32.08626		(2000.0)	P	Q
<i>n</i>	0.28383263	ω	334.30203	+0.82270151	-0.56355029
<i>a</i>	2.2931256	Ω	60.20096	+0.53527912	+0.72373457
<i>e</i>	0.1967025	<i>i</i>	4.93525	+0.19141181	+0.39827045
<i>P</i>	3.47	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1953 12 07	675	0.3-	0.1-	1991 11 11	894	1.0+	1.2-	1998 08 31	704	(1.2-	2.9-)
1953 12 07	675	0.4+	0.1-	1991 11 11	894	0.6+	0.4-	1998 08 31	704	0.4-	1.8-
1989 02 02	675	0.3-	0.3+	1991 11 12	894	(2.2+	0.2+)	1998 10 15	758	0.5+	0.6-
1991 10 18	399	0.1-	1.0+	1991 11 12	894	(3.6+	0.5-)	1998 10 15	758	0.2-	0.4-
1991 10 18	399	1.4-	0.1+	1993 03 24	809	0.2-	0.8+	1998 10 15	758	0.3-	1.0-
1991 10 19	399	0.9-	0.2+	1993 04 18	413	(7.0+	1.0-)	1998 10 18	699	0.2+	0.0
1991 10 19	399	2.0-	0.1+	1993 04 20	691	0.2+	0.6-	1998 10 18	699	0.1+	0.0
1991 10 31	399	0.8+	0.2-	1993 04 20	691	0.1+	0.4-	1998 10 18	699	0.5+	0.1+
1991 10 31	399	0.5+	0.1-	1993 04 20	691	0.0	0.4-	1998 10 20	699	0.1-	0.4+
1991 11 04	399	0.5-	0.1+	1993 04 24	691	0.1+	0.6-	1998 10 20	699	0.3+	0.3-
1991 11 04	399	1.1-	0.1+	1993 04 24	691	0.1-	0.4-	1998 10 20	699	0.4+	0.0
1991 11 05	691	0.3-	0.8+	1993 04 24	691	0.6-	0.4-	1998 10 29	704	0.5-	0.2+
1991 11 05	691	0.2-	0.8+	1998 08 28	704	0.6+	0.0	1998 10 29	704	0.0	0.7-
1991 11 05	691	0.6+	0.8+	1998 08 28	704	1.7+	1.2-	1998 10 29	704	0.1+	0.7-
1991 11 09	399	0.6+	0.5+	1998 08 28	704	0.6-	0.2-	1998 10 29	704	0.1+	0.4+
1991 11 09	399	1.2+	0.5-	1998 08 28	704	1.7+	0.2+	1998 10 29	704	0.1-	0.1-
1991 11 10	894	0.2+	1.5+	1998 08 31	704	0.3-	1.4-				
1991 11 10	894	0.7-	0.0	1998 08 31	704	0.9-	0.5+				

(9601)* 1991 UE₃ = 1974 VZ₂ = 1980 JL

Discovered 1991 Oct. 18 by S. Ueda and H. Kaneda at Kushiro.

Id. H. Kaneda (*MPC* 19514)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	138.78346		(2000.0)	P	Q
<i>n</i>	0.29074587	ω	208.58072	+0.25822356	+0.95807898
<i>a</i>	2.2566299	Ω	76.60965	-0.86031597	+0.28649654
<i>e</i>	0.1907896	<i>i</i>	7.33014	-0.43951909	+0.00209552
<i>P</i>	3.39	<i>H</i>	12.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1974 11 09	808	0.5+	0.8-	1997 04 30	399	(2.5-	0.8+)	1997 05 31	367	1.0+	0.4-
1974 11 09	808	0.3+	0.7-	1997 04 30	399	(3.0-	0.9-)	1998 08 31	704	0.2+	0.3-
1980 05 12	046	1.6-	1.0-	1997 05 03	399	1.1-	0.8+	1998 08 31	704	1.4+	0.1-
1980 05 12	046	0.1-	1.1-	1997 05 03	399	0.2-	0.6+	1998 08 31	704	0.0	0.3+
1980 05 13	046	0.5+	0.0	1997 05 10	962	1.0-	0.4-	1998 08 31	704	0.7-	0.4-
1980 05 13	046	0.1+	0.7-	1997 05 10	962	0.8-	0.4+	1998 08 31	704	1.0+	1.7-
1991 10 18	399	0.8-	0.1-	1997 05 12	689	2.0-	0.6+	1998 11 08	758	0.1+	0.7+
1991 10 18	399	0.7+	0.1+	1997 05 27	610	1.3+	0.8+	1998 11 08	758	0.6-	0.4-
1991 11 04	399	0.9-	0.0	1997 05 27	610	1.3+	0.8+	1998 11 08	758	0.0	0.3+
1991 11 04	399	0.4-	0.7+	1997 05 27	610	1.3+	0.6+	1998 11 09	758	0.1-	1.3+
1991 11 05	399	0.5-	0.3+	1997 05 28	610	0.4+	0.0	1998 11 09	758	0.3-	0.9+
1991 11 05	399	0.8-	0.0	1997 05 28	610	0.5+	0.3+	1998 11 09	758	0.2-	0.3+
1991 11 11	399	0.3+	1.1+	1997 05 28	610	0.8+	0.8+	1998 11 09	758	(0.3-	2.4+)
1991 11 11	399	1.0+	0.1+	1997 05 31	367	0.6+	0.7-				

(9602)* 1991 UU₃ = 1977 RS₅ = 1984 UE₃

Discovered 1991 Oct. 31 by T. Fujii and K. Watanabe at Kitami.

Id. H. Kaneda (*MPC* 19515)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	92.31904		(2000.0)	P	Q
<i>n</i>	0.28601663	ω	335.95716	+0.89134778	+0.45331580
<i>a</i>	2.2814373	Ω	357.08395	-0.40934555	+0.80299626
<i>e</i>	0.1610037	<i>i</i>	2.23233	-0.19477002	+0.38691315
<i>P</i>	3.45	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1977 09 09	095	0.6+	0.0	1994 08 04	675	0.7-	0.4-	1996 01 19	691	0.1-	0.2-
1984 10 26	688	0.3-	0.8-	1994 08 04	675	0.3+	0.1-	1998 08 31	704	0.0	1.2-
1984 10 26	688	0.6-	0.8-	1994 08 09	801	0.1-	0.3-	1998 08 31	704	0.5+	0.8-
1991 10 31	400	0.8-	2.2+	1994 08 09	801	0.4+	0.3+	1998 08 31	704	1.0-	0.3-
1991 10 31	400	1.0-	0.8+	1994 10 04	801	0.2+	0.2-	1998 08 31	704	1.7+	1.6-
1991 11 04	400	0.0	1.9+	1994 10 07	801	0.2+	0.0	1998 09 29	704	0.0	2.0-
1991 11 04	400	0.9+	1.3+	1996 01 12	691	0.2+	0.4-	1998 09 29	704	0.3+	0.6+
1991 11 14	400	1.3+	0.7+	1996 01 12	691	0.1+	0.4-	1998 09 29	704	0.3-	1.3-
1991 11 14	400	2.2-	0.4-	1996 01 12	691	0.0	0.4-	1998 09 29	704	1.7-	1.3+
1991 12 02	400	1.4+	0.5-	1996 01 19	691	0.6-	0.3-	1998 09 29	704	1.1+	0.6-
1991 12 02	400	(1.1+	3.3+)	1996 01 19	691	0.0	0.2-				

(9603)* 1991 VG₂ = 1980 WZ₃

Discovered 1991 Nov. 9 by S. Ueda and H. Kaneda at Kushiro.

Id. H. Kaneda (*MPC* 19519)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Asher

<i>M</i>	317.15145		(2000.0)	P	Q
<i>n</i>	0.26810536	ω	308.16939	-0.08541936	-0.99600365
<i>a</i>	2.3819486	Ω	146.70272	+0.92834359	-0.08906722
<i>e</i>	0.1728606	<i>i</i>	2.72310	+0.36177579	-0.00661462
<i>P</i>	3.68	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 11 29	675	0.1-	0.4-	1998 09 14	704	0.1-	0.9+	1998 09 26	704	0.8+	0.7-
1980 12 01	675	0.3+	0.8-	1998 09 14	704	0.8-	0.3+	1998 09 26	704	0.1+	1.5-
1991 11 09	399	1.3+	0.8+	1998 09 14	704	0.7-	0.4+	1998 09 26	704	1.9+	0.3-
1991 11 09	399	0.4+	1.4+	1998 09 18	704	1.4+	0.2-	1998 09 27	704	0.2+	1.1-
1991 11 11	399	(3.0+	1.7+)	1998 09 18	704	0.2-	0.2+	1998 09 27	704	0.4+	0.2+
1991 11 11	399	1.1+	0.7+	1998 09 18	704	0.8+	0.4-	1998 09 27	704	0.0	0.8-
1991 11 13	399	0.9-	0.7+	1998 09 18	704	0.2+	0.5+	1998 09 27	704	0.4+	0.4+
1991 11 13	399	0.7-	0.7-	1998 09 18	704	0.4-	0.2-	1998 09 27	704	0.0	1.1-
1991 12 05	399	0.9-	1.2-	1998 09 25	699	0.1+	0.3+	1998 10 14	704	0.1-	2.1+
1991 12 05	399	0.6+	0.1+	1998 09 25	704	0.8+	1.2-	1998 10 14	704	(2.3-	0.7-)
1991 12 07	399	1.1-	0.0	1998 09 25	704	0.9-	1.5+	1998 10 14	704	(2.6-	2.6+)
1996 01 13	399	0.2-	0.4+	1998 09 25	699	0.1-	0.1+	1998 10 14	704	0.8-	0.0
1996 01 13	399	0.3-	0.4-	1998 09 25	699	0.8+	0.3-	1998 10 15	704	1.7-	1.6+
1996 01 18	399	0.5+	1.6+	1998 09 25	704	0.2-	1.2-	1998 10 15	704	(0.8-	2.9+)
1996 01 18	399	0.1+	1.0-	1998 09 25	704	0.8-	0.6-	1998 10 15	704	(0.3+	4.1+)

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1998 NOV. 10

1996 01 21	399	1.0−	0.9+	1998 09 25	704	0.3−	0.9−	1998 10 15	704	0.2−	1.1+
1996 01 21	399	0.8−	0.2+	1998 09 25	704	0.1−	0.6+	1998 10 15	704	(0.6+	2.2+)
1996 02 12	399	0.5+	0.1−	1998 09 25	704	1.1−	0.7−	1998 10 17	699	0.4−	1.8+
1996 02 12	399	0.4−	0.5−	1998 09 25	704	0.0	0.4+	1998 10 17	699	0.2+	0.1+
1996 02 16	399	0.2−	0.3−	1998 09 26	704	0.5+	1.3−				
1996 02 16	399	1.6+	2.0−	1998 09 26	704	0.6+	1.4−				

(9604)* 1991 YW = 1995 WW₃₁ = 1997 LS₁₆

Discovered 1991 Dec. 30 by E. W. Elst at Haute Provence.

Id. T. Kobayashi (*MPC* 30450), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	0.77220	(2000.0)		P	Q		
<i>n</i>	0.26327646	ω	274.15181	+0.70487493	−0.70578596		
<i>a</i>	2.4109860	Ω	130.76070	+0.68224980	+0.64724447		
<i>e</i>	0.1347597	<i>i</i>	5.36602	+0.19413023	+0.28799440		
<i>P</i>	3.74	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 12 29	511	(1.1−	2.5−)	1998 09 14	704	0.8−	0.2+	1998 10 14	704	1.2+	1.8−
1991 12 29	511	(1.4−	2.9−)	1998 09 14	704	0.6−	0.3+	1998 10 14	704	(0.4−	2.5+)
1991 12 30	511	1.3+	1.3−	1998 09 18	704	0.8−	0.0	1998 10 14	704	1.5−	0.1−
1991 12 30	511	0.5+	0.2+	1998 09 18	704	1.0−	1.0+	1998 10 15	704	1.1−	0.4−
1992 01 04	511	1.8−	0.8+	1998 09 18	704	1.2−	0.3−	1998 10 15	704	0.5−	1.8+
1992 01 04	511	(5.0−	1.0−)	1998 09 18	704	1.4−	0.8+	1998 10 15	704	0.3+	0.1+
1995 11 19	691	0.5+	0.2+	1998 09 18	704	0.4−	1.3+	1998 10 15	704	0.4+	1.6+
1995 11 19	691	0.4+	0.1+	1998 09 24	910	0.7+	0.4+	1998 10 15	704	0.5+	1.0+
1995 11 19	691	0.2+	0.0	1998 09 24	910	0.7+	0.5+	1998 10 17	699	0.1−	0.1−
1995 11 20	691	0.4−	0.5+	1998 09 24	910	0.7+	0.5+	1998 10 17	699	0.5−	0.0
1995 11 20	691	0.4−	0.2+	1998 09 26	704	0.3−	0.8−	1998 10 17	699	0.5−	0.5+
1995 11 20	691	0.2−	0.4+	1998 09 26	704	0.3−	0.6−	1998 10 28	704	0.1−	1.4−
1997 06 08	809	1.2+	0.3−	1998 09 26	704	1.2+	0.6−	1998 10 28	704	1.9+	0.1+
1997 06 08	809	0.4−	0.0	1998 09 26	704	0.1−	1.0−	1998 10 28	704	(0.5+	2.5−)
1997 06 08	809	0.7+	0.5−	1998 09 26	704	1.4+	0.5−	1998 10 28	704	1.0−	0.9−
1997 06 09	809	0.0	1.2+	1998 09 27	704	0.1+	0.5−	1998 10 28	704	0.9+	1.9−
1997 06 09	809	0.3+	0.1+	1998 09 27	704	0.2−	0.4−	1998 10 29	704	0.6+	0.6−
1997 06 09	809	0.2+	1.2+	1998 09 27	704	0.1+	0.1−	1998 10 29	704	0.4+	1.0+
1997 06 29	691	0.8−	1.0−	1998 09 27	704	0.3+	0.8+	1998 10 29	704	(2.3+	1.2−)
1997 06 29	691	0.9−	0.5−	1998 09 27	704	0.2+	0.4−	1998 10 29	704	0.3+	0.9−
1997 06 29	691	0.6−	0.8−	1998 10 14	704	0.3−	0.1+	1998 10 29	704	0.8+	0.4−
1998 09 14	704	0.4−	0.1+	1998 10 14	704	0.5+	1.6+				

(9605)* 1992 AP₃ = 1987 XJ = 1994 PE₁ = 1994 RB₁₆

Discovered 1992 Jan. 11 by O. A. Naranjo at Mérida.

Id. K. Kinoshita (*MPC* 25427)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	340.59928	(2000.0)		P	Q		
<i>n</i>	0.26293744	ω	128.04079	+0.17081286	−0.98468954		
<i>a</i>	2.4130580	Ω	312.08678	+0.88868304	+0.16920995		
<i>e</i>	0.1837145	<i>i</i>	2.68598	+0.42551784	+0.04188689		
<i>P</i>	3.75	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 12 15	033	0.7−	0.6+	1994 08 17	104	0.7−	0.6−	1998 09 27	704	0.4+	0.5+
1987 12 15	033	0.4+	0.7+	1994 08 17	104	1.5−	0.4−	1998 09 27	704	(0.5+	2.2+)
1992 01 11	303	1.4+	0.5+	1994 08 17	104	1.0−	0.2−	1998 09 27	704	0.2−	0.3+
1992 01 12	303	1.4−	0.4+	1994 08 17	104	1.0−	0.0	1998 10 14	704	0.2+	0.0
1992 01 14	399	0.9+	0.3−	1994 09 03	809	1.4+	1.5+	1998 10 14	704	1.2+	0.4−
1992 01 14	399	0.6+	0.8−	1994 09 03	809	(2.0+	1.2+)	1998 10 14	704	(2.2+	0.4+)
1992 01 31	691	0.5−	1.3+	1994 09 03	809	1.8+	1.4+	1998 10 14	704	0.1−	0.7−
1992 01 31	691	0.8−	1.2+	1994 09 04	809	1.1+	0.3+	1998 10 14	704	0.9+	0.2−
1992 01 31	691	1.1−	0.5+	1994 09 04	809	0.8+	0.3−	1998 10 15	704	0.3−	0.1−
1992 02 04	675	1.5+	0.0	1994 09 04	809	0.2+	0.2+	1998 10 15	704	0.4+	0.9−
1994 08 10	809	1.1+	0.4+	1998 09 18	704	0.0	0.2+	1998 10 15	704	0.9+	0.3+
1994 08 10	809	0.3+	0.1−	1998 09 18	704	0.6+	0.2−	1998 10 15	704	0.7−	0.6−
1994 08 10	809	0.9−	0.2−	1998 09 18	704	0.2+	0.4+	1998 10 15	704	0.6−	0.4+

1994 08 11	809	0.0	1.5+	1998 09 18	704	0.4+	0.2+	1998 10 28	704	1.7−	0.6−
1994 08 11	809	0.3−	0.8+	1998 09 18	704	0.3−	0.6+	1998 10 28	704	0.4−	0.1+
1994 08 11	809	0.8−	1.3+	1998 09 26	704	0.4+	0.1−	1998 10 28	704	0.7−	0.4−
1994 08 11	104	0.8−	0.0	1998 09 26	704	0.0	0.4+	1998 10 28	704	0.6+	0.7−
1994 08 11	104	0.9−	0.4+	1998 09 26	704	0.3+	0.4−	1998 10 28	704	0.4+	1.2−
1994 08 11	104	0.7−	0.8+	1998 09 26	704	0.1+	0.2−	1998 10 29	704	0.4−	0.5−
1994 08 11	104	(1.9−	2.2+)	1998 09 26	704	0.4+	0.1−	1998 10 29	704	0.3−	0.5−
1994 08 17	104	0.2−	1.2−	1998 09 27	704	0.5−	0.6+	1998 10 29	704	0.4+	0.1+
1994 08 17	104	0.6−	0.7−	1998 09 27	704	0.3+	0.5+				

(9606)* 1992 BZ = 1983 YD = 1988 AC₃ = 1990 RE₈

Discovered 1992 Jan. 28 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 19688)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Asher			
<i>M</i>	322.03049	(2000.0)		P	Q		
<i>n</i>	0.25649709	ω	26.62911	−0.19135105	−0.98012860		
<i>a</i>	2.4532836	Ω	74.43967	+0.89057728	−0.19576447		
<i>e</i>	0.1291331	<i>i</i>	3.11064	+0.41262195	−0.03200327		
<i>P</i>	3.84	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1983 12 25	046	1.9−	1.5−	1992 02 08	399	0.9+	0.6+	1998 09 27	704	0.0	1.0−
1983 12 25	046	1.0−	0.6+	1992 02 08	399	1.7−	1.7+	1998 09 27	704	0.4+	1.0−
1983 12 28	046	1.2+	0.9−	1992 02 21	399	(0.2−	2.9−)	1998 10 11	699	0.0	0.1+
1983 12 28	046	1.3+	0.1−	1992 02 21	399	1.2−	0.6−	1998 10 11	699	0.0	0.1−
1984 01 01	046	(0.3−	4.5−)	1992 02 22	399	1.5−	0.5+	1998 10 11	699	0.3+	0.1+
1984 01 01	046	(1.0−	2.5−)	1992 02 22	399	0.1−	0.9−	1998 10 14	704	0.0	0.4+
1988 01 11	033	0.6+	0.9+	1994 11 01	033	1.1−	0.2+	1998 10 14	704	0.0	0.8+
1988 01 11	033	1.2+	0.5+	1994 11 01	033	1.0−	1.0+	1998 10 14	704	0.7−	0.9+
1990 09 14	809	0.2−	0.9+	1998 09 18	699	0.2+	0.4+	1998 10 14	704	0.7+	0.2−
1990 09 14	809	0.1+	1.2+	1998 09 18	699	0.0	0.2+	1998 10 14	704	1.4+	1.0−
1990 09 14	809	0.5+	1.0+	1998 09 18	699	0.3−	0.2−	1998 10 15	704	0.4+	0.1+
1990 09 15	809	0.8−	0.3−	1998 09 21	809	(1.5+	3.2+)	1998 10 15	704	0.0	0.1+
1990 09 15	809	0.0	0.2−	1998 09 21	809	(1.2+	2.8+)	1998 10 15	704	0.1−	0.0
1990 09 15	809	0.3+	0.1−	1998 09 21	809	(1.0+	2.6+)	1998 10 15	704	0.2−	0.2−
1992 01 14	877	0.9+	1.6−	1998 09 23	809	(3.5+	2.7+)	1998 10 15	704	1.7−	1.3−
1992 01 14	877	(4.6−	6.9+)	1998 09 23	809	(3.6+	2.7+)	1998 10 28	704	0.6+	0.0
1992 01 14	877	0.1+	0.8+	1998 09 23	809	(2.8+	3.1+)	1998 10 28	704	0.8+	0.9−
1992 01 28	399	(1.8+	2.5−)	1998 09 26	704	0.0	0.6+	1998 10 28	704	0.2−	0.4−
1992 01 28	399	0.5−	0.6−	1998 09 26	704	1.9−	1.6+	1998 10 28	704	0.3−	0.6−
1992 01 29	399	1.0+	0.3+	1998 09 26	704	0.1−	1.1−	1998 10 28	704	0.3−	1.3+
1992 01 29	399	0.6+	0.9+	1998 09 26	704	0.4+	0.6−	1998 10 29	704	0.1+	0.2−
1992 02 01	877	0.2+	1.7+	1998 09 26	704	0.2−	0.0	1998 10 29	704	0.5+	0.4+
1992 02 01	877	(3.1−	0.9−)	1998 09 27	704	0.5+	0.2−	1998 10 29	704	0.2+	0.4+
1992 02 05	399	0.1+	0.2+	1998 09 27	704	0.6+	0.4+	1998 10 29	704	0.1−	0.1−
1992 02 05	399	1.0+	1.0−	1998 09 27	704	0.7+	0.2+	1998 10 29	704	0.3−	0.6−

(9607)* 1992 DS₆ = 1979 HJ₁

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

Id. G. V. Williams (*MPC* 29099)

1993 08 13	675	0.2-	0.6+	1998 09 27	704	1.0+	0.3-	1998 10 28	704	0.3-	0.4-
1993 08 13	675	0.2+	0.6+	1998 09 27	704	1.1-	0.1-	1998 10 29	704	0.5+	0.7+
1993 10 09	675	0.8-	1.6-	1998 10 14	704	0.1+	0.2+	1998 10 29	704	0.6+	0.2-
1993 10 09	675	0.2+	1.0+	1998 10 14	704	0.7-	0.3+	1998 10 29	704	0.0	0.3-
1997 03 10	689	0.1+	1.1+	1998 10 14	704	0.0	0.3+	1998 10 29	704	0.2-	0.4-
1997 04 08	689	0.6+	0.0	1998 10 14	704	0.7-	0.3+	1998 10 29	704	0.3-	0.2-
1998 09 26	704	0.7+	0.2-	1998 10 15	704	0.0	0.3+				
1998 09 26	704	0.1-	0.6-	1998 10 15	704	0.0	0.9+				

(9608)* 1992 PD₂ = 1987 SN₁₉ = 1988 XJ₂

Discovered 1992 Aug. 2 by H. E. Holt at Palomar.

Id. K. Ichikawa (*MPC* 20934), G. V. Williams (*MPC* 30450)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	104.23603		(2000.0)	P	Q
<i>n</i>	0.18954091	ω	85.53512	+0.36884480	+0.92790382
<i>a</i>	3.0014705	Ω	206.31453	-0.89397254	+0.33815071
<i>e</i>	0.2044498	<i>i</i>	7.03531	-0.25449284	+0.15699873
<i>P</i>	5.20	<i>H</i>	12.9	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1987 09 17	095	1.2-	1.0+	1996 03 23	566	0.0	1.1-	1998 10 14	704	1.0+	0.9-
1987 09 23	095	0.1+	0.2-	1997 06 10	689	(3.0+	1.6-)	1998 10 14	704	0.8+	0.1+
1988 12 15	372	1.3+	1.8-	1997 06 23	689	(2.7+	0.0)	1998 10 14	704	1.9+	1.8-
1991 04 14	675	0.0	0.7+	1997 06 24	689	0.8+	0.4-	1998 10 18	699	0.1-	1.3-
1991 04 14	675	0.2-	0.3+	1997 07 07	476	(2.7+	2.5+)	1998 10 18	699	(2.3-	0.8+)
1991 04 16	675	1.0+	0.4+	1997 07 09	689	0.1+	0.4-	1998 10 27	691	(2.6-	0.3+)
1991 04 16	675	0.8+	1.0+	1997 07 15	610	(0.1-	2.2-)	1998 10 27	691	(2.5-	0.3+)
1992 07 31	675	0.2+	0.7-	1997 07 15	610	0.2-	0.1-	1998 10 27	691	(2.6-	0.2+)
1992 07 31	675	0.1+	0.7-	1997 07 15	610	0.5-	1.8+	1998 10 29	704	0.4-	0.7+
1992 08 02	675	0.2+	0.7-	1997 07 26	610	(1.3-	2.3+)	1998 10 29	704	0.0	0.2+
1992 08 02	675	0.4+	0.6-	1997 07 26	610	0.2-	0.8+	1998 10 29	704	0.9-	0.2+
1992 08 06	675	0.0	1.2-	1997 07 26	610	0.3+	0.1+	1998 10 29	704	0.5-	0.1+
1992 08 06	675	0.1+	0.3-	1998 10 10	699	0.7-	1.5+	1998 10 29	704	0.3-	1.0+
1996 03 23	566	0.8-	1.3-	1998 10 10	699	1.5-	0.8+				
1996 03 23	566	1.5-	0.4-	1998 10 10	699	0.1+	1.4+				

(9609)* 1992 QL₂ = 1935 SG₂ = 1971 QG₁ = 1987 SS₂₃

Discovered 1992 Aug. 26 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. G. V. Williams (*MPC* 27714)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	91.57045		(2000.0)	P	Q
<i>n</i>	0.18936234	ω	76.72257	+0.74352109	+0.65295294
<i>a</i>	3.0033571	Ω	242.30677	-0.65911995	+0.67915986
<i>e</i>	0.1013110	<i>i</i>	9.38067	-0.11285956	+0.33525266
<i>P</i>	5.20	<i>H</i>	12.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1935 09 23	754	0.2+	0.4-	1997 08 12	124	0.6+	0.7-	1998 10 19	699	0.4+	0.2+
1971 08 19	095	(4.4+	1.6-)	1997 09 25	141	0.2-	0.0	1998 10 19	699	0.2+	0.1+
1987 09 23	095	0.2-	1.0-	1997 09 25	141	0.2-	0.1-	1998 10 20	653	1.3-	1.0+
1991 05 15	675	0.2+	1.3+	1997 09 25	141	0.2-	0.5-	1998 10 20	653	1.0-	0.3+
1991 05 15	675	0.1-	0.8+	1997 09 27	141	0.9-	0.1+	1998 10 21	653	0.1-	0.2+
1992 08 23	675	0.9+	0.2+	1997 09 27	141	0.4-	0.4+	1998 10 21	653	0.5+	0.4-
1992 08 26	095	0.8-	0.9-	1997 09 27	141	0.2-	1.0+	1998 10 29	704	0.1+	1.3-
1992 08 26	095	0.6-	0.2+	1997 10 03	141	0.4+	1.3+	1998 10 29	704	(0.3-	2.1-)
1992 08 28	675	0.6+	1.6-	1997 10 03	141	0.2+	1.8+	1998 10 29	704	0.1-	1.8-
1992 08 28	675	0.6+	0.1-	1997 10 03	141	0.2-	1.9+	1998 10 29	704	(0.6+	2.4-)
1992 08 28	095	0.2+	0.4-	1998 08 28	704	1.9-	0.0	1998 10 29	704	(0.4-	2.4-)
1992 08 28	095	(2.1+	0.5+)	1998 08 28	704	(2.2+	1.0-)	1998 10 29	704	0.4-	0.1+
1997 08 01	566	0.4-	0.2-	1998 08 28	704	1.8-	0.3+	1998 10 29	704	0.4+	0.1-
1997 08 01	566	0.2+	0.4-	1998 08 28	704	0.6+	0.7-	1998 10 29	704	0.2+	1.2+
1997 08 01	566	0.6+	0.5+	1998 08 28	704	1.5+	0.6+	1998 10 29	704	1.1+	1.4+
1997 08 12	124	0.4-	0.1-	1998 10 08	689	0.0	0.2-	1998 10 29	704	1.2+	1.7+
1997 08 12	124	0.3+	0.3-	1998 10 19	699	0.3-	0.5+				

(9610)* 1992 RQ = 1975 RE₁ = 1981 UZ₁₆

Discovered 1992 Sept. 2 by F. Börngen and L. D. Schmadel at Tautenburg.

Id. B. G. Marsden (*MPC* 21114)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	48.66222		(2000.0)	P	Q
<i>n</i>	0.17580924	ω	240.36416	+0.99837184	+0.04124012
<i>a</i>	3.1557911	Ω	117.24750	-0.02326713	+0.92519955
<i>e</i>	0.2609527	<i>i</i>	2.54050	-0.05207979	+0.37723342
<i>P</i>	5.61	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 09 03	095	(0.4-	5.1-)	1995 03 10	691	0.5-	0.4-	1996 03 26	809	0.4+	0.9+
1975 09 06	095	(1.0-	3.6-)	1995 03 10	691	0.1-	0.3-	1997 06 29	704	1.0+	0.6+
1981 10 24	095	0.8-	1.7+	1995 03 10	691	0.3-	0.0	1997 06 29	704	1.2-	0.7-
1992 09 02	033	1.7+	0.9-	1995 03 10	691	0.3-	0.2-	1997 06 29	704	0.8+	0.4-
1992 09 04	033	0.1+	1.1-	1995 03 10	691	0.5-	0.2-	1997 06 29	704	0.6+	1.6+
1992 09 04	033	1.8+	0.6-	1995 03 10	691	0.5-	0.4-	1997 06 29	704	1.1-	1.1+
1992 09 06	033	(2.7+	0.3-)	1995 03 10	691	0.8-	0.3-	1998 08 31	704	1.6-	1.3+
1992 09 07	033	(2.9+	1.0+)	1995 03 10	691	0.5-	0.2-	1998 08 31	704	0.1+	0.2+
1992 09 26	033	0.2+	1.0-	1995 03 23	691	0.4+	1.3-	1998 08 31	704	1.0+	1.0-
1992 09 26	033	0.1-	1.1-	1995 03 23	691	0.6+	1.7-	1998 08 31	704	1.7-	1.1-
1992 09 27	033	0.5+	0.9-	1995 03 23	691	1.3-	1.2-	1998 08 31	704	0.3-	1.2+
1992 09 28	033	1.1-	1.3-	1996 03 24	809	0.9+	0.2+	1998 10 20	699	0.7+	0.2+
1994 01 07	691	0.4+	0.3+	1996 03 24	809	1.0+	0.6+	1998 10 20	699	0.4+	0.6+
1994 01 07	691	1.2+	0.7+	1996 03 24	809	0.0	0.6-	1998 10 20	699	0.2-	1.0+
1994 01 07	691	0.3-	0.3+	1996 03 26	809	1.5-	0.6+				
1995 03 10	691	0.1-	0.3-	1996 03 26	809	0.3+	0.4-				

(9611)* 1992 RF₇ = 1990 FF₂

Discovered 1992 Sept. 2 by E. W. Elst at the European Southern Observatory.

Id. B. G. Marsden (*MPC* 21586), A. Lowe (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	123.98780		(2000.0)	P	Q
<i>n</i>	0.17284593	ω	219.23160	-0.16116548	+0.98515001
<i>a</i>	3.1917579	Ω	41.59097	-0.88157016	-0.11673259
<i>e</i>	0.0839957	<i>i</i>	5.11694	-0.44368879	-0.12590853
<i>P</i>	5.70	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1956 05 08	675	0.1+	1.5+	1998 09 18	704	0.9-	0.7-	1998 10 10	699	0.8-	0.0
1956 05 08	675	1.2+	1.2+	1998 09 18	704	1.9+	1.5+	1998 10 10	699	0.4-	0.0
1990 03 17	046	1.7+	1.1-	1998 09 18	704	1.0+	0.4-	1998 10 14	704	0.8-	0.6+
1990 03 17	046	0.6-	1.0-	1998 09 18	704	0.6-	1.5+	1998 10 14	704	0.3+	1.1+
1990 03 18	046	1.2-	1.8-	1998 09 19	691	1.4-	0.1-	1998 10 14	704	1.8-	0.4+
1990 03 18	046	0.2+	0.1+	1998 09 19	691	1.3-	0.3-	1998 10 14	704	0.4+	0.0
1992 09 02	809	0.9+	0.4-	1998 09 21	120	0.1-	1.3-	1998 10 15	704	0.0	0.7-
1992 09 02	809	0.2-	0.5-	1998 09 21	120	0.6+	1.0-	1998 10 15	704	1.5+	0.7-
1992 09 02	809	1.7-	0.8-	1998 09 23	120	(2.1+	0.4+)	1998 10 15	704	1.0-	1.4-
1992 09 03	809	0.9+	0.1+	1998 09 23	120	(3.5+	0.5-)	1998 10 15	704	1.0+	1.7+
1992 09 22	809	0.8+	1.5-	1998 09 24	120	(3.2+	0.1-)	1998 10 15	704	0.8-	0.9+
1992 09 22	809	0.6+	1.2-	1998 09 25	699	0.5-	0.4+	1998 10 19	699	0.1+	0.4-
1992 09 22	809	0.2+	1.9-	1998 09 25	699	0.1+	1.6+	1998 10 19	699	0.2-	0.5+
1992 09 23	809	0.8+	1.5-	1998 09 25	699	1.1-	0.1-	1998 10 19	699	0.4-	0.3+
1992 09 23	809	(0.1+	2.3-)	1998 09 26	704	0.6-	0.6+	1998 10 28	704	0.5-	1.9+
1992 09 23	809	(0.8+	2.5-)	1998 09 26	704	0.1-	0.6+	1998 10 28	704	0.1-	0.3-
1993 12 09	675	(2.3-	0.5+)	1998 09 26	704	0.8-	0.4+	1998 10 28	704	0.5-	1.2-
1996 03 27	691	0.9-	0.1-	1998 09 26	704	0.6-	0.7-	1998 10 28	704	0.9+	0.1-
1996 03 27	691	0.7-	0.1+	1998 09 26	704	0.1+	0.0	1998 10 28	704	1.1+	1.1-
1996 03 27	691	0.9-	0.2+	1998 09 27	704	0.2-	0.1+	1998 10 29	704	0.9+	1.5-
1997 06 11	689	1.4+	0.8+	1998 09 27	704	0.7-	0.8+	1998 10 29	704	1.0+	0.8-
1998 09 17	699	1.2+	0.3+	1998 09 27	704	0.5-	1.1+	1998 10 29	704	1.2+	0.2-
1998 09 17	699	0.2+	0.9+	1998 09 27	704	0.4-	0.7+	1998 10 29	704	0.5+	0.3+
1998 09 17	699	0.8+	0.2+	1998 09 27	704	1.2-	0.3-	1998 10 29	704	0.7+	0.1+
1998 09 18	704	0.5+	0.5+	1998 10 10	699	0.1+	0.2+				

Marsden

P

1998 08 18	118	0.0	0.1-	1998 09 20	704	(2.7-	1.1+)	1998 10 15	704	0.2+	0.1-
1998 08 20	118	0.2+	0.0	1998 09 26	704	2.0-	0.6+	1998 10 15	704	0.0	0.6+

Discovered 1993 Jan. 23 by E. W. Elst at the European Southern

1998 08 18	118	0.0	0.1-	1998 09 20	704	(2.7-	1.1+)	1998 10 15	704	0.2+	0.1-
1998 08 20	118	0.2+	0.0	1998 09 26	704	2.0-	0.6+	1998 10 15	704	0.0	0.6+

1998 NOV. 10

M.P.C. 32893

(9616)* 1993 FR₃ = 1978 GV₁ = 1989 EY₅

Discovered 1993 Mar. 21 by E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 23521)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	118.99261	(2000.0)	P	Q	
<i>n</i>	0.26170466	<i>ω</i> 73.17279	+0.20844031	+0.97683672	
<i>a</i>	2.4206300	<i>Ω</i> 208.99405	−0.93105341	+0.18303053	
<i>e</i>	0.1211565	<i>i</i> 5.73075	−0.29948654	+0.11085958	
<i>P</i>	3.77	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1949 11 23	675	0.9−	0.2+	1996 01 08	608	0.2+	0.2−	1998 09 26	704	0.5+	0.5−
1949 11 23	675	0.2+	1.0+	1996 01 08	608	0.3−	0.3+	1998 09 27	691	1.8−	0.2−
1955 03 24	675	0.4−	0.2+	1997 05 03	809	1.1+	0.5+	1998 09 27	691	1.6−	0.0
1955 03 24	675	0.5+	1.1−	1997 05 03	809	1.3+	0.5+	1998 09 27	691	1.6−	0.2−
1978 04 07	095	(4.0−	4.0+)	1997 05 03	809	1.2+	0.7+	1998 10 12	691	1.1−	0.2+
1989 03 02	413	1.0+	0.9−	1997 05 04	809	0.3+	0.1+	1998 10 12	691	1.2−	0.2+
1989 03 02	413	0.2+	0.4−	1997 05 04	809	0.9+	0.5+	1998 10 12	691	1.3−	0.2+
1989 03 04	413	0.4−	0.9+	1997 05 04	809	(0.9+	2.7+)	1998 10 15	704	1.1+	0.0
1993 03 21	809	1.7−	0.4+	1997 05 07	704	0.9−	0.1−	1998 10 15	704	1.0+	1.2+
1993 03 21	675	0.7+	1.1+	1997 05 07	704	0.4−	0.1−	1998 10 15	704	0.5+	0.8+
1993 03 22	809	0.9−	0.1−	1997 05 07	704	1.3−	0.2−	1998 10 15	704	0.7−	0.2−
1993 03 22	675	0.4+	0.3+	1997 05 07	704	0.6−	0.2−	1998 10 28	704	0.8+	0.0
1993 03 22	675	1.2+	1.4+	1997 05 07	704	0.2−	0.2−	1998 10 28	704	0.4+	0.2−
1993 03 26	809	0.4−	0.5+	1998 09 14	699	0.6+	0.2−	1998 10 28	704	0.8+	0.1+
1993 04 18	413	0.5−	1.5+	1998 09 14	699	0.5+	0.2−	1998 10 28	704	0.4+	0.7−
1994 09 04	675	1.1+	0.3−	1998 09 14	699	0.2−	0.4−	1998 10 29	704	0.7+	0.1+
1994 09 06	675	1.7+	0.3+	1998 09 26	704	0.6+	0.0	1998 10 29	704	0.1−	0.4−
1994 09 06	675	1.6−	0.1−	1998 09 26	704	0.8+	0.7+	1998 10 29	704	0.5−	0.5+
1996 01 07	608	0.7+	0.6−	1998 09 26	704	0.1−	1.2+	1998 10 29	704	0.5−	0.2+
1996 01 07	608	0.3+	0.2−	1998 09 26	704	0.0	1.0+	1998 10 29	704	0.6−	0.9+

(9617)* 1993 FA₅ = 1991 RN₁₈

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* 23521)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	356.54273	(2000.0)	P	Q	
<i>n</i>	0.29712342	<i>ω</i> 280.98245	+0.05579999	−0.99809468	
<i>a</i>	2.2242220	<i>Ω</i> 165.73927	+0.95272061	+0.04533687	
<i>e</i>	0.1125135	<i>i</i> 6.13633	+0.29868009	+0.04185181	
<i>P</i>	3.32	<i>H</i> 14.1	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1951 08 08	675	1.6−	0.4−	1993 04 16	413	0.6−	0.4+	1997 06 10	689	0.5+	1.6+
1951 08 08	675	2.1+	1.2+	1994 08 07	292	(4.7+	2.0+)	1997 06 11	689	2.1+	0.6−
1991 09 13	675	0.7−	1.2−	1994 08 07	292	(4.2+	2.5+)	1997 06 23	689	(2.8+	1.8+)
1991 09 13	675	1.6−	0.5−	1995 11 25	801	0.7+	0.1+	1998 08 31	704	0.5−	0.3+
1991 09 16	675	(0.5−	3.8−)	1995 11 25	801	0.4+	0.4−	1998 08 31	704	1.1−	0.2+
1991 09 16	675	0.1−	1.3−	1996 02 18	801	0.4−	1.0−	1998 08 31	704	0.4+	0.2+
1993 03 17	809	0.1−	0.3+	1996 02 18	801	0.1−	0.7−	1998 09 29	704	0.2−	1.2+
1993 03 18	809	0.3+	0.1+	1996 03 18	801	0.1−	0.0	1998 09 29	704	1.9+	0.5−
1993 03 22	372	1.0−	1.6+	1996 03 18	801	0.2+	0.0	1998 09 29	704	1.2+	1.6+
1993 03 22	372	(0.2+	3.4+)	1996 03 21	801	0.0	0.3+	1998 09 29	704	0.4+	0.7+
1993 03 23	809	0.0	0.2+	1996 03 21	801	0.2+	0.3+	1998 09 29	704	0.9−	1.0+

(9618)* 1993 FQ₈ = 1986 HF = 1997 GX₆

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* 29918)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		(2000.0)		P	Q
<i>M</i>	56.71068				
<i>n</i>	0.27036455	<i>ω</i>	312.86426	+0.97223375	+0.22036289
<i>a</i>	2.3686608	<i>Ω</i>	34.62443	−0.15300586	+0.85323401
<i>e</i>	0.1398686	<i>i</i>	7.96678	−0.17706144	+0.47268586
<i>P</i>	3.65	<i>H</i> 14.7	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1986 04 29	675	1.6−	2.3−	1997 04 30	704	0.7−	0.2+	1998 10 09	120	(2.7+	0.8−)
1986 04 29	675	0.1+	0.1+	1997 04 30	704	0.5−	0.4+	1998 10 14	704	0.3+	0.0
1993 03 17	809	0.4−	1.7−	1997 05 01	704	0.3+	1.1−	1998 10 14	704	1.7−	0.4+
1993 03 18	809	0.6−	0.2+	1997 05 01	704	0.1+	1.0−	1998 10 14	704	0.2−	0.3−
1993 03 23	809	0.7+	1.0+	1997 05 01	704	0.8+	0.1−	1998 10 14	704	1.2+	1.4+
1993 04 16	413	1.0+	0.2+	1997 05 01	704	0.4+	0.9−	1998 10 14	704	(0.1+	2.7−)
1997 04 02	704	0.6+	0.9+	1997 05 01	704	0.0	0.1+	1998 10 15	704	0.9+	1.0+
1997 04 02	704	0.7−	1.1+	1998 09 18	699	0.9+	0.7+	1998 10 15	704	0.9−	1.1+
1997 04 06	704	0.1+	1.4+	1998 09 18	699	1.4+	0.3+	1998 10 15	704	1.1−	0.3−
1997 04 06	704	0.7+	0.2+	1998 09 18	699	1.5+	1.4+	1998 10 15	704	0.2−	0.7+
1997 04 08	704	0.7+	0.6+	1998 09 20	809	(2.2+	1.0−)	1998 10 28	704	0.3−	0.8−
1997 04 08	704	0.5+	0.5+	1998 09 20	809	0.7+	0.6−	1998 10 28	704	0.9−	0.9−
1997 04 30	704	0.3−	0.4+	1998 09 20	809	0.0	0.6−	1998 10 28	704	0.6−	0.9−
1997 04 30	704	0.0	0.2−	1998 09 21	809	1.6+	0.1−	1998 10 28	704	0.9−	0.3−
1997 04 30	704	0.1+	0.4+	1998 09 21	809	1.0+	0.4+	1998 10 29	704	0.9−	0.2−
1997 04 30	704	0.1−	0.2+	1998 09 21	809	1.0+	0.0	1998 10 29	704	0.9−	0.5−
1997 04 30	704	0.3−	0.3+	1998 09 24	120	0.5−	0.3+	1998 10 29	704	0.2−	0.3−
1997 04 30	704	0.0	0.1−	1998 09 25	120	0.7−	0.2+	1998 10 29	704	0.3−	0.4−
1997 04 30	704	0.2−	0.5+	1998 09 25	120	0.1+	0.3+	1998 10 29	704	0.8−	0.2−
1997 04 30	704	0.0	0.3+	1998 10 09	120	0.8+	0.6−				

(9619)* 1993 FS₉ = 1983 QO₁ = 4303 T-1

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* 23522)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		(2000.0)		P	Q
<i>M</i>	66.82614				
<i>n</i>	0.26849736	<i>ω</i>	207.03025	+0.95178581	+0.29745848
<i>a</i>	2.3796297	<i>Ω</i>	135.44979	−0.25857764	+0.90945700
<i>e</i>	0.2505348	<i>i</i>	6.13562	−0.16504963	+0.29052782
<i>P</i>	3.67	<i>H</i> 14.3	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1971 03 24	675	1.2+	2.0−	1994 08 13	809	(2.7+	1.4+)	1995 11 20	691	0.8−	0.4−
1971 03 26	675	1.8+	0.1+	1994 08 13	809	(2.5+	1.2+)	1995 11 20	691	0.9−	0.5−
1971 03 26	675	0.4+	0.2+	1994 09 05	809	0.0	0.1+	1995 11 30	691	1.6−	0.5−
1971 03 27	675	2.1−	1.6−	1994 09 05	809	0.0	0.1−	1995 11 30	691	1.3−	0.7−
1983 08 16	095	0.5−	1.5−	1994 09 05	809	0.0	0.3+	1995 11 30	691	1.2−	0.6−
1993 03 17	809	0.7−	0.0	1994 09 06	809	0.6−	0.8−	1998 08 31	704	0.8+	0.1+
1993 03 18	809	0.5+	0.5+	1994 09 06	809	0.6−	0.9−	1998 08 31	704	0.2−	0.0
1993 03 23	809	0.6−	0.3−	1994 09 06	809	0.3−	1.0−	1998 08 31	704	0.1+	0.5−
1993 04 16	413	1.4+	0.4−	1994 09 09	675	0.1+	0.3+	1998 10 19	699	0.6+	0.0
1994 08 12	809	0.0	0.7−	1994 09 09	675	0.1−	0.6+	1998 10 19	699	1.2+	0.6+
1994 08 12	809	0.9+	0.1+	1994 10 01	675	0.2+	0.6−	1998 10 19	699	0.2+	0.5+
1994 08 12	809	0.4+	0.0	1994 10 01	675	0.8+	0.5+				
1994 08 13	809	(3.1+	1.2+)	1995 11 20	691	0.8−	0.3−				

(9620)* 1993 FU₁₃ = 1988 XQ₄ = 1991 RE₃₅

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

Id. E. Bowell (*MPC* 29617), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	353.05766		(2000.0)	P	Q
n	0.29194338	ω	2.01538	+0.23169089	-0.97016671
a	2.2504548	Ω	74.59346	+0.89147785	+0.18238238
e	0.1543324	i	4.24643	+0.38934121	+0.15972861
P	3.38	H	14.2	G 0.15	U 2

Residuals in seconds of arc

1988 12 15	888	0.6-	1.0+	1993 04 16	413	1.4-	0.7+	1998 10 22	910	0.5+	0.3+
1988 12 15	888	0.2+	0.7+	1998 08 31	704	0.4-	0.7+	1998 10 23	910	0.7+	0.1+
1991 08 07	675	0.2+	0.0	1998 08 31	704	0.4+	0.2-	1998 10 23	910	0.6+	0.0
1991 08 07	675	0.4-	0.2+	1998 08 31	704	1.5+	0.8+	1998 10 23	910	0.7+	0.1+
1991 09 12	675	1.0+	1.3-	1998 08 31	704	0.9+	1.3+	1998 10 29	704	0.7-	0.2-
1991 09 12	675	0.5+	0.1+	1998 09 29	704	0.8-	0.4-	1998 10 29	704	0.9-	0.7-
1991 09 14	675	1.4-	0.8+	1998 09 29	704	0.5-	1.3+	1998 10 29	704	0.6-	0.7-
1991 09 14	675	0.4-	1.1+	1998 09 29	704	0.1-	1.5-	1998 10 29	704	0.3-	0.9-
1993 03 17	809	0.1-	0.5-	1998 09 29	704	0.5-	0.9-	1998 10 29	704	0.2-	0.9-
1993 03 18	809	0.4+	0.0	1998 10 22	910	0.5+	0.4+				
1993 03 23	809	1.0+	0.2-	1998 10 22	910	0.5+	0.4+				

(9621)* 1993 FT₂₆ = 1981 UZ₂₇ = 1988 YH

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

Id. G. V. Williams (*MPC* 23526)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	338.40243		(2000.0)	P	Q
n	0.28936986	ω	217.30463	+0.03835354	-0.99803228
a	2.2637781	Ω	230.55275	+0.93159673	+0.05366881
e	0.1668373	i	3.68302	+0.36146443	-0.03242259
P	3.41	H	14.7	G 0.15	U 2

Residuals in seconds of arc

1981 10 24	675	1.2+	1.0+	1998 09 26	704	0.1+	0.4+	1998 10 15	704	0.8+	1.2-
1981 10 25	675	0.8+	0.5-	1998 09 26	704	0.2-	1.5+	1998 10 15	704	0.2-	1.4-
1981 10 26	675	1.0-	0.2-	1998 09 26	704	1.1+	0.3-	1998 10 15	704	0.9-	1.3-
1988 12 16	372	(4.5-	1.8+)	1998 09 26	704	0.8+	0.2+	1998 10 15	704	0.7-	0.8-
1988 12 16	372	1.5-	0.5+	1998 09 26	704	0.3+	0.3+	1998 10 22	610	0.3-	0.4+
1990 05 26	675	1.0-	0.3+	1998 09 27	704	0.3-	0.6+	1998 10 22	610	0.1+	0.3+
1990 05 26	675	0.5-	0.7+	1998 09 27	704	0.4+	0.4+	1998 10 22	610	0.4+	0.2+
1993 03 21	809	0.9+	0.3+	1998 09 27	704	0.0	0.8+	1998 10 28	704	0.3+	0.4+
1993 03 22	809	1.4+	0.5-	1998 09 27	704	0.2+	0.6+	1998 10 28	704	0.3+	0.5+
1993 03 26	809	0.5-	0.3+	1998 09 27	704	0.0	0.4+	1998 10 28	704	0.2+	0.6+
1993 04 18	413	0.1+	0.8+	1998 10 11	699	0.1+	0.0	1998 10 28	704	0.5-	0.8+
1994 07 08	010	(4.3-	1.5-)	1998 10 11	699	0.0	0.1+	1998 10 28	704	0.2-	1.4+
1994 07 08	010	(5.2-	0.2-)	1998 10 11	699	0.0	0.2+	1998 10 29	704	0.0	0.2+
1994 07 08	010	(5.4-	2.1-)	1998 10 14	704	0.1-	0.5-	1998 10 29	704	0.9+	0.1-
1998 09 18	704	0.2+	0.2+	1998 10 14	704	0.1+	0.3+	1998 10 29	704	0.7-	0.2+
1998 09 18	704	0.5-	0.6+	1998 10 14	704	0.5+	0.2-	1998 10 29	704	0.1+	0.7-
1998 09 18	704	0.5-	0.5-	1998 10 14	704	0.2-	0.8-	1998 10 29	704	0.4+	0.5-
1998 09 18	704	0.7-	0.2+	1998 10 14	704	0.4+	1.3-				
1998 09 18	704	1.7-	0.2-	1998 10 15	704	0.4-	0.4-				

(9622)* 1993 FV₂₆ = 1971 VD = 1991 RM₄₁

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

Id. G. V. Williams (*MPC* 23526)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	335.09303		(2000.0)	P	Q
n	0.29100762	ω	235.84059	-0.03037840	-0.99776463
a	2.2552766	Ω	216.04341	+0.94713408	-0.00970584
e	0.1922364	i	5.80597	+0.31939659	-0.06611768
P	3.39	H	14.7	G 0.15	U 2

Residuals in seconds of arc

1971 11 10	029	0.8+	1.0+	1998 09 26	704	0.5-	0.4+	1998 10 15	704	0.7+	0.4-
1971 11 10	029	0.9-	0.6-	1998 09 26	704	1.4-	0.4+	1998 10 15	704	0.4+	0.3-
1971 11 19	029	0.2-	0.6+	1998 09 26	704	0.0	0.2+	1998 10 15	704	0.5+	0.4-
1991 09 13	691	0.0	0.0	1998 09 26	704	0.5-	0.8+	1998 10 15	704	0.6+	0.4+
1991 09 13	691	0.2-	0.7+	1998 09 27	704	0.2+	0.4+	1998 10 28	704	0.1+	0.5-
1993 03 21	809	0.3-	0.7+	1998 09 27	704	0.4+	1.1+	1998 10 28	704	0.2+	0.5-
1993 03 22	809	1.0+	0.3+	1998 09 27	704	0.0	0.3+	1998 10 28	704	0.6+	1.0-
1993 03 26	809	0.1+	0.3-	1998 09 27	704	0.5+	0.1-	1998 10 28	704	0.7+	0.5-
1993 04 18	413	0.5-	0.4+	1998 09 27	704	0.1+	1.4-	1998 10 28	704	0.8+	0.9+
1998 09 18	704	0.2+	0.8+	1998 10 14	704	0.2-	0.1+	1998 10 29	704	0.9-	0.3+
1998 09 18	704	0.2-	0.1-	1998 10 14	704	0.5+	0.6-	1998 10 29	704	0.4-	0.3+
1998 09 18	704	0.4+	0.1+	1998 10 14	704	0.4-	0.8-	1998 10 29	704	0.3-	1.1+
1998 09 18	704	0.4-	0.3-	1998 10 14	704	1.0-	0.1+	1998 10 29	704	1.3-	0.6-
1998 09 18	704	0.1+	0.5-	1998 10 14	704	0.7+	0.6-	1998 10 29	704	0.3-	0.8+
1998 09 26	704	0.4-	0.2+	1998 10 15	704	0.7+	0.4-				

(9623)* 1993 FU₂₈ = 1971 QT₁ = 1990 OU₅

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

Id. T. Kobayashi (*MPC* 24108)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	69.87713		(2000.0)	P	Q
n	0.25697186	ω	9.27285	+0.77140821	+0.63473767
a	2.4502609	Ω	311.22734	-0.58761050	+0.68331672
e	0.1649139	i	3.44075	-0.24421973	+0.36081345
P	3.84	H	14.2	G 0.15	U 1

Residuals in seconds of arc

1955 04 16	675	1.8+	0.2-	1995 12 25	566	0.2-	0.4+	1998 10 14	704	0.2+	0.5+
1955 04 16	675	(5.1+	0.0)	1998 09 17	699	0.1+	0.0	1998 10 14	704	0.6+	0.0
1971 08 30	095	(3.7+	5.0-)	1998 09 17	699	0.0	0.5+	1998 10 15	704	1.6+	0.4+
1971 09 16	095	0.9-	0.3+	1998 09 17	699	0.3+	0.2+	1998 10 15	704	0.7-	0.2-
1989 03 07	675	1.1-	0.4-	1998 09 18	704	1.3+	1.2-	1998 10 15	704	0.9+	0.7+
1989 03 07	675	0.0	0.1-	1998 09 18	704	1.5+	0.9-	1998 10 15	704	0.5+	1.4+
1990 07 20	372	1.4-	0.7-	1998 09 18	704	0.8+	1.8-	1998 10 19	704	1.0+	0.4+
1990 07 20	372	0.7-	1.7+	1998 09 18	704	(1.3+	2.4-)	1998 10 19	704	1.0-	0.2-
1993 03 21	809	0.2-	0.2+	1998 09 18	704	0.9+	2.0-	1998 10 19	704	0.6+	0.3-
1993 03 22	809	0.7+	0.0	1998 09 26	704	0.0	0.1-	1998 10 19	704	0.4+	0.7+
1993 03 26	809	0.1+	0.0	1998 09 26	704	0.3-	0.6+	1998 10 19	704	0.6-	0.1+
1993 04 17	413	1.5+	0.3-	1998 09 26	704	0.7-	0.9+	1998 10 28	704	1.1-	0.3-
1994 08 31	691	1.0-	0.1-	1998 09 27	704	0.1-	0.3-	1998 10 28	704	0.6+	0.1+
1994 08 31	691	1.1-	0.1-	1998 09 27	704	0.5-	0.5-	1998 10 28	704	0.1-	0.3+
1994 08 31	691	1.1-	0.4-	1998 09 27	704	0.6-	0.3+	1998 10 28	704	0.2+	0.7+
1995 12 24	566	0.2-	0.8+	1998 09 27	704	0.5-	0.8-	1998 10 28	704	0.4+	0.3-
1995 12 24	566	0.1-	0.9+	1998 09 27	704	1.0-	0.8-	1998 10 29	704	0.0	0.1+
1995 12 24	566	0.5+	0.8+	1998 10 11	699	0.3-	0.6+	1998 10 29	704	0.9-	0.9+
1995 12 25	566	0.6-	0.2+	1998 10 11	699	0.3+	0.8-	1998 10 29	704	0.2-	1.0+
1995 12 25	566	0.1-	0.2-	1998 10 11	699	0.4+	0.5+	1998 10 29	704	0.2+	0.0
1995 12 25	566	1.3-	0.2+	1998 10 14	704	0.3+	0.3-	1998 10 29	704	0.1+	0.1-
1995 12 25	566	0.8-	0.0	1998 10 14	704	0.7+	0.1+				
1995 12 25	566	0.3-	0.3+	1998 10 14	704	1.5+	0.8+				

(9624)* 1993 FH₃₈ = 1979 ST₅ = 1991 XP₆ = 1994 PY

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

Id. S. Nakano (*MPC* 24109)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

M	70.38018		(2000.0)	P	Q
n	0.26235452	ω	182.13569	+0.86378765	+0.50302678
a	2.4166310	Ω	147.61217	-0.46147553	+0.81285233
e	0.1900841	i	3.09234	-0.20226527	+0.29365823
P	3.76	H	13.7	G 0.15	U 2

Residuals in seconds of arc

1979 09 23	095	(7.5+ 0.3-)	1994 09 02	033	0.0	0.3-	1998 09 29	704	(2.3+ 0.0)
1991 12 07	691	0.3+ 0.7-	1994 09 03	033	0.4-	0.1-	1998 09 29	704	0.2- 1.1-
1991 12 07	691	0.2+ 0.8-	1994 09 09	808	0.6+ 0.3+		1998 10 15	704	0.4+ 1.9+
1991 12 07	691	0.4+ 0.9-	1994 09 09	808	0.6+ 0.6-		1998 10 15	704	0.7- 0.6-
1993 03 19	809	0.1- 1.2+	1994 09 12	675	0.3+ 0.6-		1998 10 15	704	1.2- 1.5+
1993 03 20	809	0.9+ 0.3+	1994 09 12	675	0.0	0.4-	1998 10 15	704	0.2- 0.7-
1993 03 24	809	0.8+ 0.5-	1994 10 01	675	0.3+ 1.5-		1998 10 20	699	0.2+ 1.0+
1993 04 16	413	(5.6+ 5.2-)	1994 10 01	675	2.0+ 0.1-		1998 10 20	699	0.0 0.8+
1994 08 14	411	0.8- 0.4+	1996 01 13	691	0.8- 0.1+		1998 10 20	699	0.4+ 0.6+
1994 08 14	411	0.2- 0.1-	1996 01 13	691	0.8- 0.1+		1998 10 29	704	0.1+ 0.5+
1994 08 15	411	0.8- 0.7+	1996 01 13	691	0.9- 0.1+		1998 10 29	704	0.3- 0.4+
1994 08 15	411	0.6- 0.4+	1998 09 29	704	(2.5+ 0.1-)		1998 10 29	704	0.4+ 0.2+
1994 08 15	411	0.6- 0.3+	1998 09 29	704	(2.5+ 1.4-)				
1994 09 01	033	0.4- 0.6-	1998 09 29	704	0.9+ 0.3-				

(9625)* 1993 HF = 1985 GW₁ = 1991 XJ

Discovered 1993 Apr. 16 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 22241)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.24429114	ω	321.57574	-0.91849938	+0.36616777		
<i>a</i>	2.5343363	Ω	240.52692	-0.30698771	-0.89825069		
<i>e</i>	0.1343612	<i>i</i>	9.87233	-0.24923369	-0.24303675		
<i>P</i>	4.03	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1985 04 15	675	1.1+ 0.8+	1993 05 14	361	1.3- 1.7+	1998 08 22	827	0.3- 0.2-
1985 04 23	675	0.2+ 0.3+	1993 05 14	361	1.6- 0.9+	1998 08 24	704	0.5- 0.3+
1991 12 04	399	0.3+ 1.0+	1993 05 15	361	0.8+ 0.4-	1998 08 24	704	0.1- 1.2+
1991 12 04	399	0.9- 1.6-	1993 05 15	361	0.6- 0.8+	1998 08 24	704	0.3- 0.4+
1991 12 05	399	1.2- 0.6+	1994 08 05	033	0.1+ 0.4-	1998 08 24	704	0.7+ 0.5-
1991 12 05	399	0.9+ 0.3+	1995 11 25	399	0.7+ 0.1+	1998 08 24	704	0.0 0.1+
1991 12 14	399	0.6- 0.1+	1995 11 25	399	1.5+ 0.7-	1998 08 27	704	0.8+ 0.1+
1991 12 14	399	0.1- 1.1+	1995 11 28	595	0.2- 0.3+	1998 08 27	704	0.7+ 1.6+
1993 03 22	399	(2.6+ 1.6+)	1995 11 28	595	0.5- 0.4+	1998 08 27	704	(3.0+ 0.0)
1993 03 25	399	(3.5+ 0.2-)	1997 03 09	689	1.3+ 0.4-	1998 08 27	704	0.1- 0.6-
1993 03 25	399	(3.1+ 2.0+)	1998 08 22	827	0.2- 0.8-	1998 10 10	699	1.1- 0.2+
1993 04 16	399	0.0	1998 08 22	827	0.2+ 0.6-	1998 10 10	699	0.2+ 0.0
1993 04 16	399	0.3+ 1.7-	1998 08 22	827	0.4+ 0.5-	1998 10 10	699	1.2- 0.8+

(9626)* 1993 JF₁ = 1987 WM₁ = 1987 UT₉ = 1996 CF₁

Discovered 1993 May 14 by E. W. Elst at the European Southern

Observatory.

Id. T. Kobayashi (*MPC* 26743), S. Nakano (d, *ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26280262	ω	48.69979	-0.17026849	-0.98440903		
<i>a</i>	2.4138832	Ω	51.15830	+0.88630919	-0.17256571		
<i>e</i>	0.1566237	<i>i</i>	3.24806	+0.43065608	-0.03405795		
<i>P</i>	3.75	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 10 28	095	0.8- 0.9-	1996 02 19	691	0.5- 0.1+	1998 09 27	704	0.1- 0.5-
1987 11 22	688	0.6- 0.8+	1996 02 24	098	1.2+ 0.3-	1998 09 27	704	0.7+ 0.5-
1987 11 22	688	1.3+ 0.3-	1996 02 24	098	0.7+ 0.4-	1998 10 10	699	0.3- 0.4+
1993 05 14	809	(2.7+ 2.9-)	1996 03 14	098	1.2- 0.4-	1998 10 10	699	2.0- 1.1+
1993 05 14	809	(3.3+ 2.4-)	1996 03 14	098	0.7- 0.3+	1998 10 10	699	1.8+ 0.8-
1993 05 14	809	(2.5+ 3.1-)	1996 03 20	098	0.5+ 0.3+	1998 10 14	704	0.7- 0.3+
1993 05 15	809	(11.6+ 4.0-)	1996 03 20	098	(0.2- 3.3+)	1998 10 14	704	0.4- 0.1+
1993 05 15	809	(13.6+ 3.9-)	1998 09 17	699	0.1+ 0.2-	1998 10 14	704	0.8- 0.4+
1993 05 15	809	(13.2+ 3.1-)	1998 09 17	699	0.5+ 0.1+	1998 10 14	704	0.8- 0.2+
1993 05 23	809	(1.8+ 4.5-)	1998 09 17	699	0.3+ 0.3-	1998 10 14	704	0.6- 0.1-
1993 05 23	809	(3.5+ 5.2-)	1998 09 17	691	0.5- 0.3-	1998 10 15	704	0.4- 0.5-
1993 05 23	809	(1.8+ 4.3-)	1998 09 17	691	0.2- 0.3-	1998 10 15	704	0.5- 0.1+

1994 09 11	675	0.6+ 1.0-	1998 09 17	691	0.3- 0.4-	1998 10 15	704	0.4- 0.7-
1994 09 11	675	0.0 0.1-	1998 09 18	704	0.4- 0.3-	1998 10 15	704	0.3- 0.9+
1996 02 11	411	0.1- 0.1+	1998 09 18	704	1.0+ 0.8-	1998 10 15	704	0.6- 0.8+
1996 02 11	411	1.0- 0.1-	1998 09 18	704	0.6- 0.5-	1998 10 28	704	0.3+ 0.2-
1996 02 12	411	0.0 0.4+	1998 09 18	704	0.1- 0.3-	1998 10 28	704	0.1- 0.8-
1996 02 12	411	0.6+ 0.0	1998 09 18	704	0.4+ 0.1+	1998 10 28	704	0.7+ 0.0
1996 02 14	098	0.0 0.6+	1998 09 26	704	0.1- 0.1+	1998 10 28	704	0.2+ 0.7-
1996 02 14	098	0.4- 0.0	1998 09 26	704	0.4- 0.7-	1998 10 28	704	1.2+ 0.8-
1996 02 15	098	0.3+ 0.9-	1998 09 26	704	0.4- 0.8+	1998 10 29	704	0.6+ 0.0
1996 02 15	098	0.9+ 1.3-	1998 09 26	704	0.3+ 0.4-	1998 10 29	704	0.6+ 1.1+
1996 02 18	411	0.2+ 0.3-	1998 09 26	704	0.2- 0.4-	1998 10 29	704	0.0 1.4+
1996 02 18	411	0.3+ 0.3+	1998 09 27	704	0.7+ 0.3+	1998 10 29	704	0.5+ 0.7+
1996 02 19	691	0.5- 0.2+	1998 09 27	704	1.0+ 0.9+	1998 10 29	704	0.1+ 0.7+
1996 02 19	691	0.7- 0.1+	1998 09 27	704	0.0 0.3+			

(9627)* 1993 LU₁ = 1994 XX

Discovered 1993 June 15 by H. E. Holt at Palomar.

Id. S. Nakano (*MPC* 24568)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	46.78973	ω	108.43628	+0.91772913	+0.36625949		
<i>a</i>	2.6741145	Ω	230.37998	-0.39568064	+0.87686588		
<i>e</i>	0.2027293	<i>i</i>	11.51065	+0.03478610	+0.31138434		
<i>P</i>	4.37	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 06 14	675	1.0+ 0.2-	1997 05 01	704	0.0 0.2+	1998 10 14	744	0.5- 0.7-
1993 06 15	675	0.3+ 1.7-	1997 05 01	704	0.0 0.2+	1998 10 17	744	0.4- 0.7-
1993 06 15	675	0.2- 0.6-	1997 05 01	704	0.2+ 0.3+	1998 10 17	744	0.3+ 1.1-
1993 06 20	675	0.2- 1.2-	1997 05 01	704	0.1+ 0.5+	1998 10 17	744	0.0 0.2-
1993 06 20	675	0.4- 0.5-	1997 05 05	704	0.4+ 0.3+	1998 10 18	699	0.7+ 0.7-
1994 12 02	905	0.1+ 1.2-	1997 05 05	704	0.1+ 0.3+	1998 10 18	704	0.5+ 0.5+
1994 12 02	905	1.7+ 0.2+	1997 05 05	704	0.2+ 0.2+	1998 10 18	699	0.6+ 0.3+
1994 12 04	905	0.5- 0.2-	1997 05 05	704	0.2+ 0.3+	1998 10 18	704	0.5+ 0.2-
1994 12 04	905	0.7- 0.6+	1997 05 05	704	0.2+ 0.3+	1998 10 18	699	0.6+ 0.1-
1994 12 23	385	0.5- 0.3-	1997 05 07	566	0.9- 0.2+	1998 10 18	704	0.2- 0.6-
1994 12 23	385	0.4+ 0.5-	1997 05 07	566	0.7- 0.8+	1998 10 18	704	0.3- 0.4-
1994 12 23	385	0.3- 0.5-	1997 05 07	566	1.2- 0.9+	1998 10 18	704	0.1+ 0.4+
1995 01 01	385	0.3- 0.3-	1998 09 19	699	0.1- 0.1-	1998 11 07	758	0.0 0.5+
1995 01 01	385	0.3- 0.6-	1998 09 19	699	0.3- 0.3+	1998 11 07	758	0.3+ 0.9+
1997 04 30	704	0.2+ 0.0	1998 09 19	699	0.5+ 0.3+	1998 11 07	758	0.2- 0.8+
1997 04 30	704	0.2+ 0.6+	1998 10 12	699	0.1- 1.0+	1998 11 07	758	0.6- 1.5+
1997 04 30	704	0.9+ 0.4+	1998 10 12	699	0.4- 0.9+	1998 11 08	758	0.8- 1.7+
1997 04 30	704	0.1+ 0.2+	1998 10 12	699	0.4+ 0.7+	1998 11 08	758	1.0- 0.8+
1997 04 30	704	0.2+ 0.3+	1998 10 14	744	0.7- 0.4-			
1997 05 01	704	0.3+ 0.2+	1998 10 14	744	0.2- 0.1-			

(9628)* 1993 OB₂ = 1951 QM = 1951 QN = 1981 UD₂₁ = 1991 BM = 1994 XW₄

Discovered 1993 July 16 by E. F. Helin at Palomar.

Id. T. Kobayashi (*MPC* 24568)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	53.73248	ω	101.19568	+0.95678366	-0.19612699		
<i>a</i>	2.6094037	Ω	270.37960	+0.10017627	+0.91543253		
<i>e</i>	0.2023517	<i>i</i>	12.39863	+0.27300138	+0.35145055		
<i>P</i>	4.22	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc (or two decimals in units of degrees)

1951 08 24	760	0.7+	1.6-	1993 07 15	675	(1.7-	2.2-)	1997 07 16	751	1.3-	0.9+
1951 08 24	760	(0.3+	3.3+)	1993 07 16	675	0.7+	0.1-	1997 07 16	751	0.3+	0.6-
1951 08 30	020	(0.12+	0.06+)	X 1993 07 16	675	0.7+	0.6-	1997 07 31	751	0.5-	0.2+
1981 10 22	675	(6.4-	4.2+)	1993 07 17	675	0.5+	0.5+	1997 07 31	751	(0.2-	2.2+)
1981 10 22	675	(5.1-	4.9+)	1993 07 17	675	0.8-	0.6+	1998 10 01	681	0.1+	0.5+
1981 10 23	675	(11.1+	3.5+)	1993 07 20	675	(2.4+	0.7+)	1998 10 01	681	0.2+	0.6+

1981 10 23	675 (12.6+ 4.6+)	1993 07 20	675 1.0+ 1.1-	1998 10 01	681 0.1+ 0.5+
1991 01 18	675 0.7- 0.5-	1994 12 09	411 0.3- 0.5+	1998 10 02	704 0.8- 1.0-
1991 01 18	675 1.2- 1.2-	1994 12 09	411 0.6- 0.8+	1998 10 02	704 (0.3- 2.6-)
1991 01 19	391 1.2+ 0.2-	1994 12 10	411 0.8- 0.1+	1998 10 02	704 0.8- 0.8-
1991 01 19	391 1.1+ 1.7-	1994 12 10	411 0.4- 0.4-	1998 10 02	704 1.3+ 0.1+
1991 01 22	391 (25.7+ 17.8-)	1995 02 27	801 0.2- 0.2-	1998 10 02	704 1.4+ 0.3-
1991 01 22	391 (26.5+ 18.1-)	1995 03 03	801 0.0 0.5-	1998 10 20	681 0.0 0.3+
1993 07 15	675 0.4- 0.9-	1995 03 03	801 0.1+ 0.1-	1998 10 22	681 0.2- 0.5+

(9629)* 1993 PU₇ = 1926 PH = 1980 TD₉

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

Id. K. Ichikawa (*MPC* 29103)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	354.50575	(2000.0)	P	Q
<i>n</i>	0.22140148	ω 97.27031	+0.37645753	-0.92630417
<i>a</i>	2.7061323	Ω 330.60025	+0.83704013	+0.34725594
<i>e</i>	0.0520314	<i>i</i> 1.80963	+0.39704352	+0.14619814
<i>P</i>	4.45	<i>H</i> 13.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1926 08 10	672 1.5- 1.2-	1993 09 18	010 0.3+ 0.4-	1998 10 15	704 0.8+ 0.5-
1926 08 11	672 0.2- 1.1+	1993 09 18	010 0.1+ 0.3-	1998 10 15	704 1.6+ 1.4-
1954 12 22	675 0.2- 0.0	1993 09 18	010 0.4- 0.7+	1998 10 15	704 0.4+ 1.2+
1954 12 22	675 1.4+ 0.4-	1996 03 21	566 0.0 1.1+	1998 10 15	704 0.8+ 0.8+
1956 05 08	675 0.5- 0.1+	1996 03 21	566 0.4+ 0.7+	1998 10 19	699 0.5- 1.2+
1956 05 08	675 0.5+ 0.2-	1996 03 21	566 0.3+ 1.0+	1998 10 19	699 0.6- 0.8+
1980 10 13	095 1.4+ 2.1+	1998 10 10	699 0.4- 1.3+	1998 10 19	699 0.3- 0.4+
1993 08 13	675 1.2+ 1.3+	1998 10 10	699 0.6- 1.2+	1998 10 29	704 0.0 0.2+
1993 08 15	010 0.3+ 0.7+	1998 10 14	704 2.6- 1.9-	1998 10 29	704 0.6- 0.2+
1993 08 15	010 0.2+ 0.3+	1998 10 14	704 0.4- 0.6-	1998 10 29	704 0.1- 0.5+
1993 08 15	010 0.8- 0.6-	1998 10 14	704 0.8- 2.4-	1998 10 29	704 0.1+ 0.1+
1993 08 17	010 0.8+ 0.7-	1998 10 14	704 0.1+ 2.0-	1998 10 29	704 0.7- 1.0+

(9630)* 1993 PW₇ = 1984 SW₁

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

Id. G. V. Williams (*MPC* 23341)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	82.62129	(2000.0)	P	Q
<i>n</i>	0.21359647	ω 339.66515	+0.64306147	+0.76543341
<i>a</i>	2.7716603	Ω 330.34000	-0.69570025	+0.57070841
<i>e</i>	0.1568246	<i>i</i> 2.79832	-0.32011423	+0.29732745
<i>P</i>	4.61	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1984 09 20	046 1.1- 1.6-	1993 08 17	010 (3.0- 3.1-)	1998 09 26	704 0.8- 0.7-
1984 09 21	046 0.3- 1.6-	1993 08 17	010 (3.0- 0.5+)	1998 10 14	704 0.1+ 1.0+
1984 09 29	046 (3.9+ 0.3-)	1993 08 19	010 1.8- 0.3-	1998 10 14	704 1.1+ 1.0+
1984 09 29	046 (3.4+ 0.7-)	1993 08 19	010 (2.2- 0.7-)	1998 10 14	704 0.4+ 1.4+
1984 09 30	046 1.5- 0.7+	1993 08 19	010 (2.6- 0.1+)	1998 10 14	704 0.2+ 1.7+
1984 09 30	046 0.6+ 0.3+	1993 09 18	010 0.1- 1.1+	1998 10 14	704 0.2- 0.4-
1989 11 02	675 0.5+ 1.2+	1993 09 18	010 0.7- 1.6+	1998 10 15	704 0.2+ 0.7+
1989 11 02	675 1.4+ 1.0+	1993 09 18	010 0.5- 1.4+	1998 10 15	704 0.5+ 0.2+
1989 11 04	675 0.5+ 1.6-	1993 09 18	010 (2.5+ 0.4+)	1998 10 15	704 0.3+ 0.6+
1989 11 04	675 1.5+ 1.1+	1993 09 18	010 1.6+ 1.4+	1998 10 15	704 0.9- 0.3+
1991 01 22	675 0.4- 0.3+	1993 09 18	010 1.5+ 0.8+	1998 10 15	704 1.3- 0.5-
1991 01 22	675 1.1+ 0.2+	1996 03 25	566 0.0 0.4+	1998 10 28	704 (2.3- 0.1+)
1993 08 13	675 0.1- 0.7-	1996 03 25	566 0.5- 1.0+	1998 10 28	704 0.1+ 1.1-
1993 08 13	675 0.2- 0.5-	1996 03 25	566 0.0 0.5+	1998 10 28	704 0.1+ 0.8-
1993 08 15	010 0.1+ 0.4-	1998 09 14	699 0.6- 0.0	1998 10 28	704 0.6+ 0.7-
1993 08 15	010 0.1+ 0.2-	1998 09 14	699 0.6- 0.3+	1998 10 29	704 0.5+ 0.2-
1993 08 15	010 1.0- 1.2-	1998 09 14	699 0.7- 0.6-	1998 10 29	704 0.4+ 0.3-
1993 08 16	010 1.9+ 0.9+	1998 09 26	704 0.7+ 1.0-	1998 10 29	704 0.3+ 0.2+
1993 08 17	010 0.1+ 1.1-	1998 09 26	704 (2.6+ 0.9-)	1998 10 29	704 0.1+ 0.4-
1993 08 17	010 0.7+ 0.4+	1998 09 26	704 1.5- 1.2-	1998 10 29	704 0.5- 0.9-
1993 08 17	010 0.9- 0.9+	1998 09 26	704 0.2+ 0.9-		

(9631)* 1993 SL₆ = 1979 WJ₆ = 1988 RW₇ = 1995 AT

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

Observatory.

Id. T. Kobayashi (*MPC* 24745)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	19.67437	(2000.0)	P	Q
<i>n</i>	0.20739745	ω 219.34180	+0.82615822	-0.56342939
<i>a</i>	2.8266179	Ω 174.94847	+0.52554001	+0.76856276
<i>e</i>	0.0667869	<i>i</i> 2.04849	+0.20315090	+0.30308185
<i>P</i>	4.75	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1979 11 17	095 1.7+ 1.1-	1993 09 22	675 0.5- 1.8-	1996 04 20	691 0.3- 0.4+
1988 09 10	046 (6.9+ 0.6-)	1993 09 23	095 0.1+ 0.6-	1996 04 20	691 0.1- 0.1+
1988 09 10	046 (6.2+ 1.7-)	1993 09 24	809 (0.8+ 2.9-)	1997 07 12	817 0.8+ 0.9+
1991 04 15	675 0.7+ 0.4-	1993 09 24	809 (0.2- 3.1-)	1998 09 17	910 0.1+ 0.5+
1991 04 15	675 1.4+ 0.2-	1993 09 24	809 (1.2- 2.6-)	1998 09 17	910 0.2+ 0.6+
1991 04 17	675 0.6- 0.9+	1995 01 05	411 0.3+ 0.1-	1998 09 17	910 0.1+ 0.6+
1991 04 17	675 1.4+ 0.0	1995 01 05	411 0.4- 0.3-	1998 09 22	910 1.0+ 0.7+
1993 09 15	095 (0.3- 2.9-)	1995 01 06	411 0.3+ 1.3+	1998 09 22	910 1.0+ 0.6+
1993 09 17	809 0.4- 0.4-	1995 01 06	411 0.3- 0.7+	1998 09 22	910 0.9+ 0.6+
1993 09 17	809 0.9- 1.2-	1995 01 07	411 0.4+ 0.5-	1998 10 14	699 0.4+ 0.8+
1993 09 17	809 (3.2- 0.3-)	1995 01 07	411 1.4- 0.8-	1998 10 14	699 0.1- 1.0+
1993 09 18	809 0.1+ 0.0	1995 01 10	411 0.6- 0.0	1998 10 14	699 0.0 0.6+
1993 09 18	809 0.4- 0.0	1995 01 10	411 1.3- 0.3+	1998 10 20	699 0.1+ 1.3+
1993 09 18	809 0.6- 0.2+	1996 03 24	566 0.1- 0.4-	1998 10 20	699 0.1+ 0.8+
1993 09 18	675 1.7- 0.7+	1996 03 24	566 0.2- 0.2+	1998 10 20	699 0.4- 1.1+
1993 09 18	675 0.4+ 0.6-	1996 03 24	566 0.2+ 0.2+	1998 10 29	704 0.4+ 0.5+
1993 09 22	809 (1.1- 5.0-)	1996 04 13	691 0.0 0.4+	1998 10 29	704 0.7+ 0.6-
1993 09 22	809 (2.1- 4.2-)	1996 04 13	691 0.1- 0.4+	1998 10 29	704 0.1+ 1.8-
1993 09 22	809 (3.6- 4.0-)	1996 04 13	691 0.0 0.2-	1998 10 29	704 0.7- 0.0
1993 09 22	675 0.5- 0.2+	1996 04 20	691 0.2- 0.1-	1998 10 29	704 0.2+ 0.9-

(9632)* 1993 TK₃ = 1997 JW₁₄

Discovered 1993 Oct. 15 by K. Endate and K. Watanabe at Kitami.

Id. B. G. Marsden (*MPC* 30080)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	25.12967	(2000.0)	P	Q
<i>n</i>	0.19005488	ω 261.96450	+0.99469757	+0.08357206
<i>a</i>	2.9960567	Ω 93.22711	-0.05335405	+0.91757808
<i>e</i>	0.2976054	<i>i</i> 3.44166	-0.08792089	+0.38867234
<i>P</i>	5.19	<i>H</i> 14.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1993 10 15	400 1.9- 0.6+	1998 09 14	704 1.3+ 0.2+	1998 09 27	704 1.4- 1.2+
1993 10 15	400 0.3- 1.1+	1998 09 14	704 0.5+ 0.9-	1998 09 27	704 1.0+ 0.1-
1993 10 20	400 0.0 1.8+	1998 09 14	704 0.8+ 0.7-	1998 09 27	704 0.5+ 0.5+
1993 10 20	400 (2.8- 1.1+)	1998 09 17	699 0.7+ 0.1-	1998 09 27	704 0.1+ 0.4+
1993 11 11	400 0.4+ 0.0	1998 09 17	699 0.5+ 0.5-	1998 09 27	704 0.3+ 0.5-
1993 11 11	400 0.1- 0.9+	1998 09 17	699 0.3+ 0.1+	1998 09 27	704 0.8+ 0.3-
1994 12 28	691 0.3- 0.2-	1998 09 18	704 0.4+ 0.6-	1998 09 27	704 0.6- 0.4-
1994 12 28	691 0.3+ 0.1-	1998 09 18	704 0.4- 0.3+	1998 09 27	704 0.4- 0.2-
1994 12 28	691 0.4+ 0.1+	1998 09 18	704 0.1- 0.8+	1998 10 14	704 0.9- 0.4-
1997 05 03	809 0.1+ 0.5+	1998 09 18	704 1.2+ 0.6+	1998 10 14	704 1.0- 0.5-
1997 05 03	809 0.7- 0.2+	1998 09 18	704 0.1+ 0.6-	1998 10 14	704 1.0- 0.1-
1997 05 03	809 (3.4- 0.1+)	1998 09 24	699 0.4+ 1.0+	1998 10 14	704 2.1- 1.2+
1997 05 04	809 0.6- 1.5+	1998 09 24	699 0.0 1.2+	1998 10 15	704 0.4+ 0.9-
1997 05 04	809 0.3+ 0.1-	1998 09 24	699 0.7+ 1.0+	1998 10 15	704 1.0- 0.1-
1997 05 04	809 0.3- 0.9+	1998 09 26	704 0.2+ 0.3+	1998 10 15	704 0.8- 0.4+
1997 06 07	809 1.0- 1.4-	1998 09 26	704 0.1- 1.1-	1998 10 15	704 0.5- 0.3-
1997 06 07	809 (0.2- 2.3-)	1998 09 26	704 0.7+ 0.3+	1998 10 15	704 0.9- 0.1-
1997 06 07	809 (0.6- 2.5-)	1998 09 26	704 0.9+ 1.1-	1998 10 17	699 0.8- 0.2-
1997 06 08	809 0.6+ 0.7+	1998 09 26	704 0.6+ 0.1-	1998 10 17	699 0.6- 0.3-
1997 06 08	809 1.8+ 1.7+	1998 09 27	704 0.1- 1.3+	1998 10 17	699 0.5+ 2.1-
1997 06 08	809 0.9+ 0.3+	1998 09 27	704 0.1+ 0.2-		

(9633)* 1993 UP₈ = 1982 SE₈ = 1987 QC₁₀ = 1991 FD₆ = 1996 EA₆

Discovered 1993 Oct. 20 by E. W. Elst at the European Southern

Observatory.

Id. S. Nakano (*MPC* 27106)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	87.07368		(2000.0)	P		Q	
<i>n</i>	0.18530879	ω	117.41126	+0.33000091		+0.94361371	
<i>a</i>	3.0469970	Ω	171.72685	-0.91776101		+0.32723519	
<i>e</i>	0.1295625	<i>i</i>	10.53818	-0.22093918		+0.05010289	
<i>P</i>	5.32	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 09 19	095	(4.4- 1.6-)	1996 04 20	367	(1.8+ 2.7+)	1998 09 27	704	0.3+	1.2-
1987 08 26	095	0.0 0.1+	1996 04 20	897	1.9+ 0.5+	1998 09 27	704	0.0 0.6+	
1991 03 27	809	1.4- 0.3-	1997 08 06	956	0.5+ 0.3-	1998 09 27	704	1.0+ 1.2+	
1991 03 27	809	1.3- 0.7-	1997 08 06	956	0.1+ 0.0	1998 09 27	704	0.4+ 1.2+	
1991 03 27	809	1.2- 1.0-	1997 08 11	956	1.3+ 0.3-	1998 10 14	704	0.5+ 0.5-	
1993 10 10	809	(2.4+ 0.2-)	1997 08 11	956	0.7+ 0.2-	1998 10 14	704	0.5- 0.9+	
1993 10 10	809	1.8+ 0.9-	1998 09 14	704	0.2- 0.2+	1998 10 14	704	1.0- 0.3-	
1993 10 10	809	1.6+ 0.9-	1998 09 14	704	0.1+ 0.3-	1998 10 14	704	0.0 0.5-	
1993 10 20	809	1.5+ 0.1-	1998 09 14	704	0.2+ 0.4+	1998 10 14	704	1.1- 0.2+	
1993 10 20	809	0.7+ 0.3-	1998 09 17	699	0.3+ 0.4+	1998 10 15	704	0.4+ 0.2+	
1993 10 20	809	0.0 0.4+	1998 09 17	699	0.4+ 0.4+	1998 10 15	704	0.4+ 0.3-	
1993 10 21	809	0.4+ 1.1-	1998 09 17	699	0.6+ 0.3+	1998 10 15	704	1.6- 0.5+	
1993 10 21	809	0.4- 0.1-	1998 09 18	704	1.0+ 0.1+	1998 10 15	704	0.0 0.2+	
1993 10 21	809	1.1- 0.4-	1998 09 18	704	0.8- 0.3+	1998 10 15	704	0.2- 0.8+	
1996 03 11	691	0.7- 0.1+	1998 09 18	704	0.8- 0.5+	1998 10 17	699	0.3- 0.0	
1996 03 11	691	0.8- 0.2+	1998 09 18	704	1.4- 0.7+	1998 10 17	699	0.5- 0.1+	
1996 03 11	691	0.8- 0.4+	1998 09 18	704	1.4- 0.4+	1998 10 17	699	0.2- 0.3-	
1996 03 18	691	0.2- 0.4-	1998 09 23	012	0.0 0.3-	1998 10 28	704	0.6- 0.2+	
1996 03 18	691	0.3- 0.4-	1998 09 23	012	0.4+ 0.3-	1998 10 28	704	0.3- 0.5+	
1996 03 18	691	0.5- 0.6-	1998 09 23	012	0.2+ 0.3-	1998 10 28	704	1.0- 0.4-	
1996 03 19	566	0.1+ 0.3+	1998 09 25	699	0.4+ 0.9+	1998 10 28	704	1.5- 0.6-	
1996 03 19	566	0.3+ 0.5+	1998 09 25	699	0.3+ 0.6+	1998 10 28	704	1.0- 1.3-	
1996 03 19	566	0.4+ 0.6+	1998 09 25	699	0.2+ 0.4+	1998 10 29	704	0.4+ 0.1-	
1996 04 18	897	1.6+ 0.9+	1998 09 26	704	0.8+ 0.7+	1998 10 29	704	0.1+ 0.3-	
1996 04 18	897	0.7+ 0.0	1998 09 26	704	0.6+ 0.6-	1998 10 29	704	0.8- 0.1+	
1996 04 18	897	0.1- 1.8+	1998 09 26	704	0.7+ 0.8+	1998 10 29	704	0.3+ 0.8-	
1996 04 20	367	1.7+ 1.4+	1998 09 26	704	0.0 0.9-	1998 10 29	704	0.2- 0.3+	
1996 04 20	367	(2.0+ 2.3+)	1998 09 26	704	0.3- 0.5-				

(9634)* 1993 XB = 1997 MP₁

Discovered 1993 Dec. 4 at Farra d'Isonzo.

Id. G. V. Williams (*MPC* 30275)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	63.92580		(2000.0)	P		Q	
<i>n</i>	0.18244767	ω	130.29627	+0.91592206		+0.39767928	
<i>a</i>	3.0787694	Ω	206.40439	-0.39520181		+0.87005580	
<i>e</i>	0.1380723	<i>i</i>	7.00094	-0.07001645		+0.29129726	
<i>P</i>	5.40	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1954 07 28	675	0.2- 0.0	1997 06 12	688	0.6+ 0.3+	1998 10 17	691	0.8- 0.1-	
1954 07 28	675	0.3+ 0.4-	1997 06 12	688	0.7+ 0.6+	1998 10 17	691	0.9- 0.4-	
1993 12 04	595	1.3+ 0.4-	1997 06 25	595	0.6+ 0.1-	1998 10 17	691	0.9- 0.4-	
1993 12 04	595	0.3- 0.4+	1997 06 25	595	0.1- 0.4-	1998 10 20	699	1.3+ 0.6+	
1993 12 04	595	0.4+ 0.4-	1997 06 28	595	0.5+ 0.3-	1998 10 20	699	0.4+ 0.9+	
1993 12 05	595	0.7+ 0.6-	1997 06 28	595	0.5+ 0.2-	1998 10 20	699	0.5+ 0.7-	
1993 12 05	595	0.0 0.4-	1997 07 01	595	0.8- 0.5-	1998 10 23	691	0.7- 0.2-	
1993 12 06	595	0.7+ 0.1+	1997 07 01	595	1.2- 0.8-	1998 10 23	691	0.6- 0.2-	
1993 12 06	595	0.1- 0.2+	1997 07 03	595	0.4- 0.1-	1998 10 23	691	0.8- 0.3-	
1993 12 12	595	0.7- 0.2-	1997 07 03	595	0.1- 0.8+	1998 10 24	691	0.7- 0.1-	
1993 12 12	595	1.2- 0.6-	1998 09 23	595	0.5+ 1.1+	1998 10 24	691	1.2- 0.4-	
1993 12 22	595	0.6+ 0.1-	1998 09 24	595	1.2+ 0.8+	1998 10 24	691	1.1- 0.3-	
1993 12 23	595	(2.5- 0.9+)	1998 09 29	595	0.0 0.7+	1998 10 29	704	0.6+ 0.4-	

1994 01 18	595	0.8- 0.3+	1998 09 30	595	0.3- 1.2+	1998 10 29	704	0.1+ 0.3-	
1994 01 18	595	0.6- 0.4+	1998 09 30	595	0.2- 0.4+	1998 10 29	704	0.5+ 0.4+	
1994 01 18	595	0.8- 0.2-	1998 10 14	699	1.0+ 1.2-	1998 10 29	704	0.8+ 0.2-	
1994 01 30	595	0.6+ 0.7-	1998 10 14	699	1.0+ 0.2+	1998 10 29	704	0.9+ 0.0	
1994 01 31	595	0.1- 0.7+	1998 10 14	699	0.4- 0.2+				

(9635)* 1993 XS = 1989 CO₉ = 1995 HP₅

Discovered 1993 Dec. 9 by T. Urata at the Nihondaira Observatory.

Id. E. Bowell (*MPC* 28589), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	310.01151		(2000.0)	P		Q	
<i>n</i>	0.17845016	ω	25.75579	-0.31756106		-0.94719215	
<i>a</i>	3.1245783	Ω	82.78594	+0.86205064		-0.30793645	
<i>e</i>	0.1831049	<i>i</i>	2.57201	+0.39499830		-0.08945490	
<i>P</i>	5.52	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 02 02	675	0.1- 0.8-	1994 01 01	385	0.6- 0.1+	1998 09 26	704	0.1- 0.6-	
1989 02 02	675	0.3- 0.4-	1994 01 01	385	0.1+ 0.9+	1998 09 27	704	0.3+ 0.0	
1993 11 13	033	0.1- 0.3+	1994 01 01	385	0.0 0.9+	1998 09 27	704	0.9- 0.2-	
1993 11 13	033	0.7- 0.4-	1994 01 04	887	1.0- 0.6+	1998 09 27	704	0.9+ 0.1-	
1993 12 09	385	0.1+ 0.4-	1994 01 04	887	0.8- 0.5+	1998 09 27	704	0.2- 1.6+	
1993 12 09	385	0.2+ 0.1-	1994 01 04	887	0.2- 0.5+	1998 10 14	704	0.9+ 0.9-	
1993 12 09	385	0.1+ 0.2+	1995 04 25	691	0.5- 0.7-	1998 10 14	704	0.2+ 0.1-	
1993 12 11	887	0.4+ 0.1-	1995 04 25	691	0.3- 0.8-	1998 10 14	704	0.1- 0.7+	
1993 12 11	887	0.1+ 0.5-	1995 04 25	691	0.4- 1.0-	1998 10 14	704	0.5- 0.6+	
1993 12 11	887	0.6+ 0.1-	1997 07 08	688	0.0 0.6+	1998 10 28	704	0.1+ 1.1-	
1993 12 12	385	0.0 0.4-	1997 07 08	688	0.1- 0.3+	1998 10 28	704	(0.1- 2.2-)	
1993 12 12	385	0.0 0.3-	1998 09 18	704	1.2+ 1.2-	1998 10 28	704	1.6- 1.2+	
1993 12 12	385	0.0 0.1-	1998 09 18	704	(2.9+ 1.0+)	1998 10 28	704	0.5- 0.4+	
1993 12 18	385	0.2+ 0.4-	1998 09 18	704	0.4+ 0.5-	1998 10 29	704	(2.2- 0.5-)	
1993 12 18	385	0.6+ 0.5-	1998 09 18	704	(2.1- 2.0-)	1998 10 29	704	1.4- 0.6-	
1993 12 18	385	0.5+ 0.4+	1998 09 26	704	1.2+ 0.6+	1998 10 29	704	1.2+ 0.9-	
1993 12 21	385	0.0 0.7+	1998 09 26	704	(2.1+ 0.1+)	1998 10 29	704	0.4- 1.1-	
1993 12 21	385	0.6+ 0.4+	1998 09 26	704	(2.1+ 0.4-)	1998 10 29	704	0.2- 1.2-	
1994 01 01	385	0.7- 0.0	1998 09 26	704	1.0+ 0.8-				

(9636)* 1993 YO

Discovered 1993 Dec. 17 at Farra d'Isonzo.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	216.40994		(2000.0)	P		Q	
<i>n</i>	0.17338088	ω	89.51709	-0.95824256		+0.09038361	
<i>a</i>	3.1851893	Ω	95.65031	-0.18765106		-0.91463838	
<i>e</i>	0.0330566	<i>i</i>	15.82032	+0.21577368		-0.39403989	
<i>P</i>	5.68	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 12 17	595	0.1+ 0.4-	1995 05 02	595	0.5+ 0.1+	1996 06 16	595	1.1+ 0.4-	
1993 12 17	595	0.3+ 0.2-	1995 05 03	595	0.5- 0.0	1996 06 16	595	0.4+ 0.0	
1993 12 18	595	0.5+ 0.7-	1995 05 03	595	0.1+ 0.7-	1998 09 18	595	0.6+ 0.6-	
1993 12 18	595	0.8- 0.1-	1995 05 25	595	0.6+ 0.1-	1998 09 18	595	0.3+ 0.3-	
1993 12 22	595	0.1+ 0.3+	1995 05 25	595	0.5- 1.4+	1998 09 21	595	0.2- 1.8+	
1993 12 23	595	0.7+ 0.5+	1996 05 10	595	0.9- 0.0	1998 09 22	595	0.5+ 0.2-	
1994 01 12	595	0.1- 0.5-	1996 05 10	595	0.2- 0.1+	1998 10 16	704	0.2+ 0.4+	
1994 01 12	595	0.2- 0.2+	1996 05 18	595	0.7- 0.4+	1998 10 16	704	0.3+ 0.6+	
1994 01 12	595	0.3- 0.2-	1996 05 18	595	0.4+ 0.3-	1998 10 16	704	0.5- 0.3+	
1994 01 30	595	0.7- 0.1+	1996 06 14	595	0.4+ 0.2+	1998 10 16	704	0.2- 0.2-	
1994 01 30	595	0.3+ 0.5+	1996 06 14	595	0.1- 0.1+	1998 10 16	704	1.6- 0.5-	
1995 05 02	595	0.2+ 0.6+	1996 06 14	595	0.3- 0.2+				

(9637)* 1994 PJ₂ = 1972 TF₁ = 1979 OG₄ = 1983 RQ₉

Discovered 1994 Aug. 9 at Palomar in the course of the Planet-Crossing Asteroid Survey.

Id. S. Nakano (*MPC* 26174)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	33.22012		(2000.0)	P		Q	
<i>n</i>	0.26681673	ω	240.08293	+0.84594477		−0.53322417	
<i>a</i>	2.3896117	Ω	152.13884	+0.49430668		+0.77912005	
<i>e</i>	0.2317540	<i>i</i>	0.86200	+0.20009585		+0.32961180	
<i>P</i>	3.69	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1972 10 07	095	1.0+	0.9−	1994 08 11	675	(3.7−	5.0−)	1998 08 31	704	0.2−	0.1+
1979 07 24	675	1.2−	1.1+	1994 09 03	809	1.6+	0.5+	1998 08 31	704	0.1+	0.1+
1979 07 24	413	0.4−	1.4−	1994 09 03	809	1.9+	1.4+	1998 08 31	704	0.7+	0.7+
1979 07 25	675	0.4+	0.4+	1994 09 03	809	0.9+	1.1+	1998 08 31	704	0.6+	0.2−
1979 07 27	675	(3.5+	1.2−)	1994 09 04	809	1.3−	0.8+	1998 09 29	704	0.8−	0.6+
1983 09 13	095	1.2+	2.0−	1994 09 04	809	1.2−	0.6+	1998 09 29	704	1.0+	1.5−
1992 02 05	691	0.6−	1.0+	1994 09 04	809	1.4−	1.1+	1998 09 29	704	1.1−	0.6+
1992 02 05	691	1.0−	0.7+	1994 09 11	894	2.1−	0.2−	1998 09 29	704	0.9+	1.5−
1992 02 05	691	1.3−	0.9+	1994 09 11	894	0.8−	1.1+	1998 09 29	704	1.0−	0.3+
1994 08 09	675	(1.2+	2.8−)	1996 02 12	327	0.3+	0.2+	1998 10 11	761	0.5−	0.0
1994 08 09	675	0.5−	1.8−	1996 02 12	327	1.7+	0.4+	1998 10 11	761	0.6−	0.4−
1994 08 10	809	(0.8+	2.4−)	1996 02 12	327	1.5+	0.3−	1998 10 23	910	0.3+	0.3+
1994 08 10	809	(0.3−	2.4−)	1996 02 12	327	0.2+	0.9−	1998 10 23	910	0.3+	0.2+
1994 08 10	809	(0.9−	2.5−)	1998 08 28	704	0.9−	0.6+	1998 10 23	910	0.5+	0.4+
1994 08 11	809	1.6+	0.3−	1998 08 28	704	0.0	0.6+	1998 10 27	910	0.6+	0.0
1994 08 11	809	0.8+	0.2−	1998 08 28	704	0.7−	0.7+	1998 10 27	910	0.6+	0.1−
1994 08 11	809	0.8−	0.2−	1998 08 28	704	1.1−	1.0−	1998 10 27	910	0.5+	0.1+
1994 08 11	675	(1.8−	3.1−)	1998 08 31	704	0.4−	0.8+				

(9638)* 1994 PO₇ = 1995 XM

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

Id. B. G. Marsden (*MPC* 26403)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	149.82576		(2000.0)	P		Q	
<i>n</i>	0.26444628	ω	83.78720	−0.62551971		+0.78018089	
<i>a</i>	2.4038705	Ω	147.48954	−0.72055812		−0.57445768	
<i>e</i>	0.1611636	<i>i</i>	0.69798	−0.29920075		−0.24762098	
<i>P</i>	3.73	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1994 08 10	809	1.2+	0.5+	1995 12 23	817	0.7+	0.2−	1998 09 25	699	0.1−	0.3+
1994 08 10	809	0.5+	0.4+	1997 01 19	327	1.5−	0.2+	1998 09 26	704	1.5+	1.3−
1994 08 10	809	0.4+	0.3+	1997 01 19	327	0.5−	0.6+	1998 09 26	704	1.9+	1.2−
1994 08 11	809	1.7+	0.4−	1997 01 19	327	0.3+	0.1+	1998 09 26	704	0.8−	1.8−
1994 08 11	809	0.3+	0.5−	1997 04 01	809	0.5+	0.2−	1998 09 26	704	1.0−	1.0−
1994 08 11	809	1.2+	0.1−	1997 04 01	809	0.2+	0.0	1998 09 26	704	1.2−	0.5−
1994 09 03	809	0.7−	0.5−	1997 04 01	809	0.0	0.9−	1998 09 27	704	1.3+	1.2+
1994 09 03	809	0.8−	0.5−	1998 09 14	704	0.4−	0.2−	1998 09 27	704	0.9+	0.7+
1994 09 03	809	2.0−	0.6−	1998 09 14	704	0.6−	0.1+	1998 09 27	704	0.4−	0.9+
1994 09 04	809	1.0−	0.6+	1998 09 14	704	0.4+	1.0−	1998 09 27	704	0.0	0.2+
1994 09 04	809	0.5−	0.9+	1998 09 17	699	0.3+	0.4+	1998 09 27	704	0.6+	1.1+
1994 09 04	809	0.8−	1.1+	1998 09 17	699	0.5−	0.1−	1998 10 15	704	1.3−	0.8+
1994 09 08	691	(2.6−	0.5+)	1998 09 17	699	0.3−	0.7+	1998 10 15	704	2.9+	1.2−
1994 09 08	691	(2.5−	0.4+)	1998 09 18	704	0.3−	1.0+	1998 10 15	704	1.3−	0.9−
1994 09 08	691	(2.9−	0.2+)	1998 09 18	704	1.1+	0.3−	1998 10 15	704	1.4−	0.6+
1995 12 12	817	0.9−	0.1+	1998 09 18	704	0.2+	1.0+	1998 10 20	691	0.8−	0.4−
1995 12 12	817	0.3−	1.3+	1998 09 18	704	0.6+	0.7+	1998 10 20	691	0.7−	0.2−
1995 12 13	817	0.7+	0.2−	1998 09 18	704	0.6+	0.7−	1998 10 20	691	1.2−	0.5−
1995 12 13	817	0.5+	0.2−	1998 09 25	699	0.7+	0.5−				
1995 12 13	817	0.4−	0.5−	1998 09 25	699	0.5−	0.1+				

(9639)* 1994 PS₁₁ = 1996 AW₁₀

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

Id. G. V. Williams (*MPC* 26744)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	22.98676		(2000.0)	P		Q	
<i>n</i>	0.26528711	ω	151.83758	+0.90417324		−0.42592986	
<i>a</i>	2.3987885	Ω	233.40863	+0.38393255		+0.84363600	
<i>e</i>	0.0568272	<i>i</i>	2.31793	+0.18726067		+0.32689761	
<i>P</i>	3.72	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1994 08 10	809	1.5+	0.6+	1997 06 04	566	0.2−	0.6+	1998 10 15	704	0.1−	0.2−
1994 08 10	809	0.4+	1.3+	1997 06 04	566	0.1−	0.5+	1998 10 15	704	0.1−	0.2−
1994 08 10	809	0.8−	0.6+	1997 06 04	566	0.5+	0.3+	1998 10 15	704	0.7+	0.3−
1994 08 11	809	1.2+	0.9+	1998 09 14	699	0.3+	0.5+	1998 10 15	704	0.0	0.8−
1994 08 11	809	0.7+	1.4+	1998 09 14	699	0.2+	0.9+	1998 10 15	704	0.7+	0.5−
1994 08 11	809	0.2−	1.4+	1998 09 14	699	0.2−	0.3+	1998 10 18	757	0.3+	0.6−
1994 09 03	809	0.6+	0.2+	1998 09 23	012	0.3−	0.5−	1998 10 18	757	(3.6+	1.4+)
1994 09 03	809	0.2+	0.3+	1998 09 23	012	0.1−	0.0	1998 10 22	610	(0.4+	3.0+)
1994 09 03	809	0.9+	0.2+	1998 09 23	012	0.2−	0.1+	1998 10 22	610	0.4+	2.4+
1994 09 04	809	1.9−	1.4−	1998 09 26	704	0.9+	0.5+	1998 10 22	610	0.4+	1.7+
1994 09 04	809	1.9−	1.3−	1998 09 26	704	0.0	0.0	1998 10 28	704	0.2−	0.0
1994 09 04	809	1.7−	1.0−	1998 09 26	704	0.7+	0.2+	1998 10 28	704	0.7−	0.6−
1996 01 13	691	0.0	0.4+	1998 09 26	704	0.8+	1.1+	1998 10 28	704	0.3−	0.9−
1996 01 13	691	0.1+	0.2+	1998 10 01	012	0.9+	0.3−	1998 10 28	704	0.9−	0.1−
1996 01 13	691	0.3+	0.2+	1998 10 01	012	0.2−	0.1−	1998 10 28	704	0.6−	0.6−
1996 01 20	691	0.5+	0.6+	1998 10 01	012	0.2+	0.3+	1998 10 29	704	1.9−	0.7−
1996 01 20	691	0.4+	0.6+	1998 10 14	704	0.8+	0.3−	1998 10 29	704	1.9−	0.9−
1996 01 20	691	0.3+	0.5+	1998 10 14	704	1.4+	1.3−	1998 10 29	704	2.5−	0.1−
1996 01 27	691	0.3−	0.6+	1998 10 14	704	0.5+	0.6−	1998 10 29	704	2.6−	0.0
1996 01 27	691	0.1−	0.5+	1998 10 14	704	0.8+	1.2−	1998 10 29	704	2.5−	0.6−
1996 01 27	691	0.2−	0.1−	1998 10 14	704	1.0+	1.2−				

(9640)* 1994 PP₂₆ = 1993 CD₁

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

Id. B. G. Marsden (*MPC* 24901)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	130.78505		(2000.0)	P		Q	
<i>n</i>	0.26000424	ω	218.57390	−0.46116623		+0.88708674	
<i>a</i>	2.4311724	Ω	23.98367	−0.80135757		−0.40667320	
<i>e</i>	0.1539034	<i>i</i>	2.83025	−0.38098787		−0.21838963	
<i>P</i>	3.79	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

Residuals in seconds of arc											
1993 02 13	372	1.0−	0.1+	1994 09 09	675	0.8−	0.9−	1998 09 26	704	0.3−	1.8−
1993 02 13	372	0.7−	0.9+	1997 03 08	809	0.1−	0.0	1998 09 26	704	1.9−	0.2+
1993 02 17	372	0.3+	1.5−	1997 03 08	809	0.1+	0.0	1998 09 26	704	1.3−	0.5−
1993 02 17	372	0.2+	0.2−	1997 03 08	809	0.3−	0.0	1998 09 26	704	0.6−	0.5−
1993 02 19	372	0.9+	0.1−	1997 03 09	809	(1.2+	2.9−)	1998 09 26	704	0.9−	0.2−
1993 02 19	372	0.7+	1.7+	1997 03 09	809	(1.1+	2.2−)	1998 09 27	704	0.7−	0.5−
1994 08 12	809	0.7+	1.0−	1997 03 09	809	(1.3+	2.8−)	1998 09 27	704	0.7−	0.2+
1994 08 12	809	1.0+	0.9−	1997 04 15	691	0.3+	0.3+	1998 09 27	704	0.1−	0.3−
1994 08 12	809	0.6+	0.7−	1997 04 15	691	0.2+	0.2−	1998 09 27	704	1.0−	0.2−
1994 08 13	809	1.2+	0.5+	1997 04 15	691	0.1+	0.2+	1998 09 27	704	0.5−	0.9−
1994 08 13	809	0.3+	0.2+	1998 09 14	704	1.0+	0.3−	1998 10 15	704	1.2+	0.9+
1994 08 13	809	0.3+	0.2+	1998 09 14	704	1.1+	0.7−	1998 10 15	704	0.9+	0.1+
1994 09 05	809	0.8−	0.5+	1998 09 14	704	0.9+	0.8−	1998 10 15	704	0.9+	0.4+
1994 09 05	809	1.6−	0.6−	1998 09 17	699	0.3+	0.3−	1998 10 15	704	1.4+	1.8+
1994 09 05	809	1.8−	0.1−	1998 09 17	699	0.7+	0.1+	1998 10 15	704	(3.2−	0.5+)
1994 09 06	809	0.5+	1.6+	1998 09 17	699	0.1+	0.4−	1998 10 17	699	1.2+	1.4+
1994 09 06	809	0.1+	1.4+	1998 09 25	699	0.2+	0.3+	1998 10 17	699	1.0+	0.2−
1994 09 06	809	0.1−	1.9+	1998 09 25	699	0.4−	0.3+	1998 10 17	699	1.2+	0.4+
1994 09 09	675	0.6−	0.2+	1998 09 25	699	0.3+	0.6+				

1998 NOV. 10

M.P.C. 32899

Id. G. V. Williams (*MPC* 29921)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25652114	ω	61.23170	+0.23211811	+0.97109187		
<i>a</i>	2.4531303	Ω	222.30931	−0.91878835	+0.20010078		
<i>e</i>	0.1340864	<i>i</i>	4.74596	−0.31929477	+0.13015479		
<i>P</i>	3.84	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1991 12 28	691	0.3+	1.2+	1997 03 12	809	0.4+	1.5−
1991 12 28	691	0.2−	0.1+	1997 03 12	809	0.7+	1.5−
1994 08 12	809	0.1+	1.7+	1997 03 12	809	0.2+	1.7−
1994 08 12	809	0.2+	1.6+	1997 03 31	704	0.7+	0.9−
1994 08 12	809	0.6+	1.4+	1997 03 31	704	0.4+	0.3+
1994 08 13	809	(3.6+ 2.5+)		1997 03 31	704	0.6−	2.0+
1994 08 13	809	(3.6+ 2.2+)		1997 03 31	704	0.5−	0.7+
1994 08 13	809	(3.1+ 2.1+)		1997 04 03	704	1.2+	0.7+
1994 09 05	809	0.3−	1.0−	1997 04 03	704	0.7+	0.7−
1994 09 05	809	0.8−	0.8−	1997 04 07	566	0.4+	0.4+
1994 09 05	809	0.4−	1.4−	1997 04 07	566	1.2−	0.4+
1994 09 06	809	(0.0 3.2−)		1997 04 07	566	1.4−	0.4+
1994 09 06	809	(0.6− 2.5−)		1998 09 16	699	0.5+	0.5−
1994 09 06	809	(0.2− 4.0−)		1998 09 16	699	0.1+	0.6−
1997 01 18	599	0.3−	0.7+	1998 09 16	699	0.1+	0.3−
1997 01 18	599	1.0−	0.1+	1998 09 18	704	1.1+	0.6−
1997 03 11	809	(0.3− 2.3−)		1998 09 18	704	0.1−	0.2+
1997 03 11	809	1.0−	1.9−	1998 09 18	704	1.2+	1.4+
1997 03 11	809	(2.0− 2.4−)		1998 09 18	704	0.0	0.5−
1997 03 11	809	0.4+	0.9+	1998 09 18	704	1.1+	0.5−
1997 03 11	809	0.8+	1.1+	1998 09 26	704	1.1+	0.8−
1997 03 11	809	0.2−	0.7+	1998 09 26	704	0.7−	0.8−

(9642)* 1994 RU = 1979 TR₁ = 1993 FP₈₄

Discovered 1994 Sept. 1 by K. Endate and K. Watanabe at Kitami.

Id. G. V. Williams (*MPC* 29921)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26101276	ω	276.07806	+0.80319117	+0.59446465		
<i>a</i>	2.4249059	Ω	47.45513	−0.52369800	+0.73553873		
<i>e</i>	0.1947531	<i>i</i>	3.00905	−0.28394427	+0.32495318		
<i>P</i>	3.78	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1979 10 14	095	0.2−	1.1+	1994 10 02	400	0.2−	0.2+
1993 03 18	809	2.0+	1.7+	1996 01 12	691	0.9−	0.6−
1993 03 19	809	(3.6+ 4.3−)		1996 01 12	691	0.7−	0.2−
1993 03 23	809	0.7+	0.3+	1996 01 12	691	0.7−	0.2−
1993 04 16	413	0.3−	0.2−	1998 09 29	704	1.4+	0.5+
1994 09 01	400	0.6−	0.0	1998 09 29	704	0.4−	1.9+
1994 09 01	400	0.9+	0.8+	1998 09 29	704	0.2−	1.3+
1994 09 06	400	0.3−	0.5−	1998 09 29	704	0.1+	0.4−
1994 09 06	400	(0.5+ 2.1+)		1998 10 02	750	0.2+	0.4+
1994 09 12	675	0.2+	1.4−	1998 10 02	750	1.0−	0.4+
1994 09 12	675	0.3+	0.2−	1998 10 14	699	0.1+	0.8+
1994 10 02	400	1.2−	0.6−	1998 10 14	699	0.2+	0.4+

(9643)* 1994 RX = 1977 DQ₄ = 1987 YG₆ = 1992 CF₅

Discovered 1994 Sept. 2 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Id. T. Urata (*MPC* 23984)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26040789	ω	256.93164	+0.91378700	−0.38949719		
<i>a</i>	2.4286595	Ω	125.87572	+0.40543875	+0.85730505		
<i>e</i>	0.2500764	<i>i</i>	8.17792	+0.02475351	+0.33663036		
<i>P</i>	3.78	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1977 02 18	381	0.7+	1.1−	1994 09 09	675	1.1−	0.8+
1977 02 18	381	0.8+	0.2−	1994 09 10	905	0.5+	0.5−
1977 02 19	381	0.2−	0.6+	1994 09 10	905	0.1−	0.5−
1987 12 29	010	0.4−	0.8+	1994 10 01	675	0.4+	0.4−
1987 12 29	010	0.9−	0.3+	1994 10 01	675	0.1+	0.2+
1989 03 30	675	1.1−	1.5+	1994 10 22	385	0.7+	0.3−
1989 03 30	675	(0.3+ 2.2+)		1994 10 22	385	0.8−	0.1−
1992 02 08	372	(4.9− 3.1+)		1994 10 22	385	0.9−	0.2−
1992 02 08	372	(5.4− 1.7+)		1996 01 27	385	0.5+	0.1−
1994 09 02	905	0.2−	0.1−	1996 01 27	385	0.4+	0.0
1994 09 02	905	0.0	0.7+	1996 01 27	385	0.4+	0.3−
1994 09 05	905	0.1+	0.6+	1998 09 13	888	0.6+	0.2−
1994 09 05	905	0.3+	0.1+	1998 09 13	888	1.0+	0.0
1994 09 07	675	0.9+	0.4+	1998 09 13	888	0.7+	0.1−
1994 09 07	675	0.2+	0.0	1998 09 19	888	0.6+	0.2−
1994 09 07	905	0.5+	0.3+	1998 09 19	888	0.7+	0.0
1994 09 07	905	1.0−	0.3−	1998 09 19	888	0.8+	0.2+
1994 09 09	675	0.4−	0.4+	1998 10 11	888	0.3+	0.3+

(9644)* 1994 WQ₃

Discovered 1994 Nov. 26 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19841000	ω	170.66272	+0.93513154	+0.35310587		
<i>a</i>	2.9113451	Ω	168.53069	−0.33377131	+0.90550257		
<i>e</i>	0.1533680	<i>i</i>	8.40748	−0.11885167	+0.23533241		
<i>P</i>	4.97	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1994 11 26	905	0.8−	0.6−	1998 05 23	699	1.0−	1.2−
1994 11 26	905	0.6−	0.0	1998 05 23	699	0.8−	0.2−
1994 11 27	905	0.4+ 1.2+		1998 05 23	699	0.5−	0.6−
1994 12 06	905	1.5+ 0.9−		1998 05 24	699	0.2−	0.5−
1994 12 06	905	1.4−	1.0−	1998 05 24	699	0.3−	0.0
1994 12 23	385	0.7−	0.1+	1998 05 24	699	0.3−	0.3−
1994 12 23	385	0.6−	0.1−	1998 05 24	699	0.0	0.4+
1995 01 01	385	0.8+	0.1−	1998 05 24	699	0.6−	0.7−
1995 01 01	385	0.4+	0.0	1998 05 24	699	1.7−	0.7+
1995 01 29	385	1.5+	0.4−	1998 06 04	699	0.2+	0.1−
1995 01 29	385	0.1+	0.4+	1998 06 04	699	0.1−	0.1+
1996 01 27	385	0.0	0.1+	1998 06 04	699	0.0	0.3−
1996 01 27	385	0.2+	0.6+	1998 07 15	699	1.5+	0.5−
1996 02 10	385	1.2−	0.3−	1998 07 15	699	0.4−	0.4+
1996 02 10	385	0.3+	0.4−	1998 07 15	699	0.2−	0.1+
1996 02 10	385	0.2+	0.1−	1998 07 16	699	0.3−	0.5+
1997 05 25	385	0.8+	0.8−	1998 07 16	699	0.3−	0.2+
1997 05 25	385	0.1−	0.6+	1998 07 16	699	0.2−	0.4+

(9645)* 1995 AO₄ = 1989 VO₆ = 1991 CY₅ = 1991 DT₂ = 1993 PZ₆

Discovered 1995 Jan. 5 by F. Börngen at Tautenburg.

Id. E. Bowell (*MPC* 27917), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	48.10278		(2000.0)	P		Q	
<i>n</i>	0.21556666	ω	63.81711	+0.99861877	−0.00689479		
<i>a</i>	2.7547466	Ω	296.53957	−0.01569540	+0.90693873		
<i>e</i>	0.1036098	<i>i</i>	3.33774	+0.05014180	+0.42120614		
<i>P</i>	4.57	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1989 11 02	675	0.3−	0.5+	1993 08 17	010	0.3+	0.2−
1989 11 02	675	0.8+	0.7+	1993 08 17	010	1.2−	0.7−
1989 11 05	675	0.8−	1.5+	1993 08 17	010	0.2−	0.2−
1989 11 05	675	0.5−	1.3+	1993 08 19	010	0.4−	0.7+
1989 11 22	675	0.6+	1.0−	1993 08 19	010	0.8−	1.1+
1989 11 22	675	1.0+	0.2−	1993 08 19	010	0.7−	0.5+
1991 02 12	372	(4.5−	1.2+)	1995 01 05	033	0.8+	1.4+
1991 02 12	372	1.9−	0.6+	1995 01 05	033	0.1+	0.8+
1991 02 16	511	1.0−	1.9−	1995 01 07	033	0.1−	0.9+
1991 02 20	511	0.8−	0.1−	1995 01 30	033	0.3+	0.5+
1991 02 20	511	(1.0+	2.7−)	1995 01 30	033	0.7+	0.4+
1993 08 13	675	0.5+	0.4−	1995 02 02	033	0.3−	1.7+
1993 08 13	675	0.5+	0.1+	1996 03 23	566	1.3+	0.4+
1993 08 15	010	0.2−	1.3+	1996 03 23	566	0.9+	0.4+
1993 08 15	010	0.0	0.4+	1996 03 23	566	0.6+	0.3+
1993 08 15	010	1.1−	0.6+	1998 09 21	113	0.1−	0.1−
1993 08 16	010	(2.1+	0.4+)	1998 09 21	113	0.1+	0.1−
1993 08 17	010	0.4+	0.3−	1998 09 24	113	0.2−	0.4−
1993 08 17	010	0.5+	1.3+	1998 09 24	113	0.0	0.1−

(9646)* 1995 BV = 1992 SG₂₆

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

Id. G. V. Williams (*MPC* 24904)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	212.98385		(2000.0)	P		Q	
<i>n</i>	0.16777660	ω	94.33543	−0.97386992	−0.22445605		
<i>a</i>	3.2557306	Ω	72.69647	+0.19133982	−0.89297865		
<i>e</i>	0.0698499	<i>i</i>	2.07659	+0.12233742	−0.39013922		
<i>P</i>	5.87	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1992 09 25	691	0.4−	0.7+	1996 05 14	566	0.6−	2.0−
1992 09 25	691	0.7+	0.3−	1996 05 19	809	0.4+	0.3+
1992 09 25	691	0.4−	0.6+	1996 05 19	809	0.6−	0.7+
1992 09 26	691	0.4−	0.6+	1996 05 19	809	0.3−	0.2−
1992 09 26	691	0.4−	0.5+	1996 05 22	809	0.9+	1.8+
1995 01 25	411	0.7+	0.1−	1996 05 22	809	0.0	1.7+
1995 01 25	411	0.1+	1.1+	1996 05 22	809	(0.5−	2.3+)
1995 01 26	411	0.1+	1.2+	1998 09 14	704	0.7+	0.1+
1995 01 26	411	0.1+	0.7+	1998 09 14	704	0.9+	0.2+
1995 01 30	411	0.2−	0.9+	1998 09 14	704	0.1−	0.2−
1995 01 30	411	0.4+	1.7+	1998 09 14	704	0.2−	0.8+
1995 02 07	411	0.3−	0.5+	1998 09 14	704	0.8−	1.6+
1995 02 07	411	0.3+	0.1−	1998 09 14	704	1.2+	0.4+
1995 02 10	411	0.3+	0.6+	1998 09 14	704	0.4+	0.3+
1995 02 10	411	0.4−	0.4+	1998 09 14	704	0.7+	0.6+
1995 02 17	411	0.2+	0.0	1998 09 17	699	0.8+	1.2+
1995 02 17	411	0.6+	0.8−	1998 09 17	699	0.5+	0.3+
1996 04 17	809	0.2+	1.5+	1998 09 17	699	0.6+	1.0+
1996 04 17	809	0.9+	1.3+	1998 09 18	704	0.3−	0.1−
1996 04 17	809	0.5+	1.3+	1998 09 18	704	0.0	1.0−
1996 04 18	809	0.8+	1.0+	1998 09 18	704	0.0	1.5−
1996 04 18	809	1.2+	1.1+	1998 09 18	704	0.6+	0.4+
1996 04 18	809	1.4+	1.3+	1998 09 18	704	0.6−	0.8+
1996 05 14	566	1.2−	1.3−	1998 09 25	699	1.0+	0.9+
1996 05 14	566	1.5−	1.7−	1998 09 25	704	0.2−	0.3+

(9647)* 1995 UM₈

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

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	319.53042		(2000.0)	P		Q	
<i>n</i>	0.30039110	ω	52.86441	+0.09597798	−0.99440528		
<i>a</i>	2.2080624	Ω	31.71308	+0.88456666	+0.06488490		
<i>e</i>	0.0784281	<i>i</i>	4.81435	+0.45643186	+0.08335525		
<i>P</i>	3.28	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1988 08 16	675	0.2+	0.6+	1997 05 01	704	0.6+	0.3−
1988 08 16	675	0.5−	0.5+	1997 05 01	704	0.8+	0.2+
1988 09 11	675	0.4+	0.8+	1997 05 01	704	0.2+	0.1+
1988 09 11	675	0.6−	0.8−	1997 05 01	704	0.9+	0.2−
1995 10 27	411	0.4−	0.8−	1997 05 03	104	2.0−	0.6−
1995 10 27	411	0.3+	0.1+	1997 05 03	104	1.7−	0.4−
1995 11 01	411	0.0	0.4+	1997 05 03	104	1.0−	0.3−
1995 11 01	411	0.3−	0.3−	1997 05 07	566	0.6−	0.0
1995 11 03	411	0.1+	0.1−	1997 05 07	566	1.3−	0.1+
1995 11 03	411	0.7−	0.1+	1997 05 07	566	0.6−	0.3−
1995 11 11	411	0.3−	0.3−	1998 08 26	809	(2.9+	4.1+)
1995 11 11	411	0.1+	0.0	1998 08 26	809	(3.5+	3.9+)
1995 11 18	411	0.2+	0.9+	1998 08 26	809	(4.4+	2.3+)
1995 11 18	411	0.9+	0.2−	1998 08 27	809	(4.1+	3.6+)
1997 04 06	704	1.0+	0.0	1998 08 27	809	(3.1+	3.8+)
1997 04 06	704	0.5+	0.7−	1998 08 27	809	(2.4+	3.0+)
1997 04 08	704	0.4+	0.4+	1998 09 14	704	0.9+	0.5−
1997 04 08	704	0.8+	0.3+	1998 09 14	704	0.6+	0.6+
1997 04 30	704	1.0+	0.4+	1998 09 14	704	1.2+	0.3−
1997 04 30	704	0.2+	0.6+	1998 09 17	699	1.3−	0.2−
1997 04 30	704	0.4+	0.3+	1998 09 17	699	1.6−	0.5−
1997 04 30	704	0.0	0.4+	1998 09 17	699	1.3+	0.0
1997 05 01	704	0.6+	0.1+	1998 09 17	699	0.7−	0.8−

(9648)* 1995 UB₉ = 1978 WX₁₅

Discovered 1995 Oct. 30 by F. Uto at Kashiwara.

Id. S. Nakano (*MPC* 26182)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	48.61444		(2000.0)	P		Q	
<i>n</i>	0.28793423	ω	255.94648	+0.70097402	+0.70967865		
<i>a</i>	2.2712966	Ω	58.78698	−0.61831556	+0.65410684		
<i>e</i>	0.1729801	<i>i</i>	4.73858	−0.35541706	+0.26172593		
<i>P</i>	3.42	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1978 11 30	675	0.4+	0.8+	1997 03 03	365	0.2+	0.1−
1978 12 01	675	0.9−	0.7+	1997 03 03	365	0.4−	0.1−
1995 10 30	365	0.8+	0.4−	1997 03 31	365	0.1+	0.4+
1995 10 30	365	0.7+	0.2−	1997 03 31	365	0.8+	1.3+
1995 11 01	365	0.1−	0.9−	1998 08 29	699	1.7−	0.8+
1995 11 01	365	0.3−	0.4−	1998 08 29	699	0.2+	0.1+
1995 11 16	365	0.3−	0.1+	1998 08 29	699	0.4+	0.0
1995 11 16	365	0.5−	0.5+	1998 10 14	422	0.3+	0.4+

(9649)* 1995 XG = 1978 SO₅

Discovered 1995 Dec. 2 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 26413)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	45.81366		(2000.0)	P		Q	
<i>n</i>	0.29627967	ω	325.89938	+0.99399589	−0.10002907		
<i>a</i>	2.2284428	Ω	39.91462	+0.10929592	+0.88860605		
<i>e</i>	0.1537974	<i>i</i>	3.96283	+0.00515485	+0.44763096		
<i>P</i>	3.33	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 09 27	095	0.6−	0.1−	1997 05 08	691	0.1−	0.2−	1998 10 20	699	0.6+	0.4+
1978 10 03	095	1.5−	0.7+	1997 05 08	691	0.1−	0.0	1998 10 20	699	0.5+	0.3+
1978 10 07	095	2.0+	0.5−	1997 05 08	691	0.3−	0.1+	1998 10 20	699	1.2+	0.3+
1995 12 02	411	0.7−	0.5+	1998 09 29	704	0.9+	0.1−	1998 10 28	704	(2.3−	0.4+)
1995 12 02	411	0.1+	0.2−	1998 09 29	704	(0.9+	2.4−)	1998 10 28	704	1.2+	0.0
1995 12 04	411	0.7−	0.5+	1998 09 29	704	0.9−	0.4+	1998 10 28	704	0.8+	0.9−
1995 12 04	411	0.6+	0.0	1998 09 29	704	0.9+	1.0+	1998 10 28	704	0.0	0.4−
1995 12 16	411	0.6+	0.5−	1998 10 15	704	0.5−	0.0	1998 10 29	704	0.5−	0.2+
1995 12 16	411	0.2+	0.2−	1998 10 15	704	0.3−	0.1−	1998 10 29	704	0.3−	0.3−
1997 04 29	691	0.2+	0.3−	1998 10 15	704	0.5+	0.2−	1998 10 29	704	0.8−	0.7+
1997 04 29	691	0.1+	0.4−	1998 10 15	704	0.2+	0.7−	1998 10 29	704	1.1−	0.7−
1997 04 29	691	0.6−	0.8−	1998 10 15	704	1.2−	1.0−	1998 10 29	704	0.4−	0.6−

(9650)* 1995 YG = 1984 SN₁ = 1991 RO₂₆

Discovered 1995 Dec. 17 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 26572)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	107.25485		(2000.0)	P	Q
<i>n</i>	0.28461839	<i>ω</i>	78.64784	+0.35912418	+0.93298991
<i>a</i>	2.2889031	<i>Ω</i>	212.43000	−0.87256081	+0.32665397
<i>e</i>	0.1732134	<i>i</i>	2.52835	−0.33116076	+0.15108610
<i>P</i>	3.46	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1984 09 27	046	(1.7+	2.6−)	1997 04 15	816	0.1+	0.0	1998 10 15	704	0.3−	0.0
1984 09 27	046	1.9+	0.4+	1997 04 15	816	0.0	0.2+	1998 10 15	704	0.9−	0.2+
1991 09 11	675	0.8+	1.1−	1997 04 15	816	0.1−	0.1−	1998 10 15	704	0.5−	1.1+
1991 09 11	675	1.4−	1.8−	1997 04 15	816	0.1−	0.2+	1998 10 15	704	0.3+	0.3−
1991 09 13	675	0.2−	1.6−	1997 04 16	816	0.0	0.2−	1998 10 18	691	1.8−	0.0
1991 09 13	675	0.7+	1.3−	1997 04 16	816	0.2+	0.5−	1998 10 18	691	1.9−	0.0
1991 10 08	675	0.2+	0.2+	1997 04 16	816	0.1−	0.2−	1998 10 18	691	1.8−	0.0
1991 10 08	675	0.2+	0.5−	1997 04 16	816	0.0	0.0	1998 10 20	699	0.5+	0.1+
1991 10 13	691	0.9−	0.3+	1998 09 29	704	0.6+	0.9−	1998 10 20	699	0.4+	0.2−
1991 10 13	691	1.1−	0.7+	1998 09 29	704	0.1−	0.5−	1998 10 20	699	0.4+	0.1+
1991 10 13	691	1.4−	0.5+	1998 09 29	704	0.5−	0.8+	1998 10 28	704	0.6+	0.2+
1993 01 28	809	0.7+	1.4+	1998 09 29	704	0.0	2.1−	1998 10 28	704	0.9+	0.2−
1993 01 28	809	1.7−	1.0−	1998 10 11	699	1.9+	0.7+	1998 10 28	704	0.0	0.1+
1993 01 28	809	(3.8−	2.4−)	1998 10 11	699	2.0+	0.1−	1998 10 28	704	0.2+	0.1+
1995 12 17	411	0.9−	0.1−	1998 10 11	699	1.4+	0.0	1998 10 29	704	0.1+	0.1+
1995 12 17	411	0.6+	0.2+	1998 10 14	699	0.1−	1.2+	1998 10 29	704	0.3−	0.4+
1995 12 19	411	0.6+	0.4−	1998 10 14	699	0.1−	1.3+	1998 10 29	704	0.2−	0.3+
1995 12 19	411	0.2−	0.8−	1998 10 14	699	0.3+	0.9+	1998 10 29	704	0.3−	0.1−
1995 12 24	411	1.3+	1.0−	1998 10 15	704	0.1−	0.0	1998 10 29	704	0.1−	0.4+

(9651)* 1996 AJ = 1990 OH₃ = 1990 RT₁₀

Discovered 1996 Jan. 7 by AMOS at Haleakala.

Id. K. Ichikawa (*MPC* 26748)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	84.02263		(2000.0)	P	Q
<i>n</i>	0.25712710	<i>ω</i>	358.12036	+0.53964986	+0.84150383
<i>a</i>	2.4492746	<i>Ω</i>	304.53857	−0.77201440	+0.48256011
<i>e</i>	0.1958378	<i>i</i>	1.77268	−0.33581511	+0.24291364
<i>P</i>	3.83	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1990 07 27	675	0.1−	0.2+	1997 04 03	704	0.8+	0.5−	1998 10 14	704	0.4−	0.4−
1990 07 27	675	1.2+	0.2+	1997 04 05	704	0.4−	0.1−	1998 10 14	704	0.4−	0.1−
1990 07 30	675	0.4−	1.3−	1997 04 05	704	0.0	0.5+	1998 10 14	704	0.9+	1.3−
1990 07 30	675	0.3−	0.3−	1997 04 06	704	0.2+	0.5+	1998 10 15	704	0.1−	0.3−
1990 09 14	675	(1.2+	5.2−)	1997 04 06	704	0.3+	0.4+	1998 10 15	704	0.6+	0.1−
1990 09 14	675	(2.3+	0.5−)	1997 04 07	704	0.2+	0.3−	1998 10 15	704	0.4+	0.1−
1995 12 27	566	0.3+	0.1−	1997 04 07	704	0.1+	0.2+	1998 10 15	704	0.2−	0.3−
1995 12 27	566	0.1+	0.3−	1998 09 14	699	0.8−	0.3+	1998 10 15	704	0.0	1.2−
1995 12 27	566	0.5+	0.3−	1998 09 14	699	0.5−	1.0+	1998 10 26	104	1.3+	0.3+

1996 01 07	608	0.0	0.6+	1998 09 14	699	1.1−	0.4+	1998 10 26	104	0.1+	0.6+
1996 01 07	608	0.3+	0.2+	1998 09 26	704	0.1−	0.2+	1998 10 26	104	1.3+	0.3+
1996 01 08	608	0.8−	0.4−	1998 09 26	704	0.1−	0.3+	1998 10 26	104	1.1−	1.0+
1996 01 08	608	0.6−	0.6−	1998 09 26	704	0.6−	0.4+	1998 10 28	704	0.9+	1.4−
1996 01 12	608	0.0	0.1−	1998 09 26	704	0.1−	0.1+	1998 10 28	704	0.7−	0.6−
1996 01 12	608	0.1−	0.1+	1998 09 26	704	0.7−	0.6+	1998 10 28	704	0.2−	0.8+
1997 03 11	809	0.1−	0.6−	1998 09 27	704	0.4+	1.0−	1998 10 28	704	0.1+	0.9+
1997 03 11	809	0.4−	0.3−	1998 09 27	704	0.1+	0.1+	1998 10 28	704	0.7+	0.9+
1997 03 11	809	0.4−	1.0−	1998 09 27	704	0.4−	0.1−	1998 10 29	704	0.4+	0.9−
1997 03 13	809	0.9−	0.0	1998 09 27	704	0.3−	0.1+	1998 10 29	704	0.3+	0.9+
1997 03 13	809	0.8−	0.8+	1998 09 27	704	0.3−	0.0	1998 10 29	704	0.4−	0.4−
1997 03 13	809	1.0−	0.5+	1998 10 11	699	(2.1+	0.4+)	1998 10 29	704	0.8+	0.4+
1997 03 31	704	1.6+	0.2+	1998 10 11	699	0.2−	0.5+	1998 10 29	704	0.1+	0.4−
1997 03 31	704	0.7+	0.1−	1998 10 11	699	0.8−	0.3+				
1997 04 03	704	0.1−	0.3−	1998 10 14	704	0.3+	1.0−				

(9652)* 1996 AF₂ = 1986 OV = 1990 RV₄

Discovered 1996 Jan. 12 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 26576)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	220.41811		(2000.0)	P	Q
<i>n</i>	0.26224287	<i>ω</i>	244.31375	−0.91435530	+0.39915426
<i>a</i>	2.4173169	<i>Ω</i>	319.11554	−0.32415255	−0.82228365
<i>e</i>	0.1664194	<i>i</i>	5.96729	−0.24265101	−0.40561741
<i>P</i>	3.76	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1986 07 27	413	0.9+	1.1−	1996 01 18	399	1.0+	0.4+	1998 09 29	704	(2.3+	2.4−)
1986 07 27	413	0.9+	1.2+	1996 01 18	399	0.3+	0.1−	1998 10 28	560	0.0	1.0+
1986 08 01	413	(3.3−	0.4−)	1996 01 21	399	0.3−	0.2−	1998 10 28	560	0.9+	0.2+
1986 08 01	413	0.7+	0.9+	1996 01 21	399	0.2+	0.0	1998 10 28	560	0.6+	1.0+
1990 09 15	675	0.0	1.3−	1996 02 10	399	1.3−	0.4−	1998 10 29	560	0.9−	0.3−
1990 09 15	675	0.8−	1.1−	1996 02 10	399	1.5−	1.3−	1998 10 29	560	1.5−	0.7−
1990 09 20	675	1.1−	0.9−	1997 08 03	566	0.3−	0.0	1998 10 29	560	0.5−	0.7+
1990 09 20	675	1.0−	0.0	1997 08 03	566	0.9−	0.8+	1998 10 30	560	0.3+	0.5+
1996 01 12	399	0.3+	0.4−	1997 08 03	566	0.7+	0.3+	1998 10 30	560	0.5+	0.4+
1996 01 12	399	0.5+	0.9+	1998 09 29	704	0.2+	0.6+	1998 10 30	560	0.3+	0.1+
1996 01 13	399	0.0	0.0	1998 09 29	704	2.1+	1.4−				
1996 01 13	399	0.3+	0.8+	1998 09 29	704	0.3−	0.7−				

(9653)* 1996 AL₂ = 1997 FE

Discovered 1996 Jan. 13 by T. Urata at the Nihondaira Observatory.

Id. G. V. Williams (*MPC* 29629)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	131.65158		(2000.0)	P	Q
<i>n</i>	0.22891737	<i>ω</i>	134.55182	−0.46915074	+0.85121785
<i>a</i>	2.6465710	<i>Ω</i>	106.10849	−0.86367515	−0.38666690
<i>e</i>	0.1305273	<i>i</i>	14.17159	−0.18429003	−0.35484768
<i>P</i>	4.31	<i>H</i>	12.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1991 10 14	691	0.4−	1.3−	1996 02 21	887	0.2+	0.1+	1998 09 13	888	0.1+	0.4+
1991 10 14	691	0.2+	1.3−	1997 03 08	327	0.0	0.5−	1998 09 13	888	0.2−	0.2+
1991 10 14	691	0.4+	1.4−	1997 03 08	327	1.0−	0.3−	1998 09 19	888	0.2+	0.3+
1996 01 13	385	0.0	0.3−	1997 03 08	327	0.1+	0.3−	1998 09 19	888	0.1−	0.1+
1996 01 13	385	0.6−	0.0	1997 03 18	327	0.2−	0.5−	1998 09 21	704	0.4+	0.8−
1996 01 13	385	0.7−	0.5+	1997 03 18	327	0.1−	0.4−	1998 09 21	704	0.6+	1.2−
1996 01 17	887	0.3−	0.4+	1997 03 18	327	0.0	0.6−	1998 09 21	704	0.8+	0.9−
1996 01 17	887	0.2−	0.1−	1997 03 19	327	0.0	0.7−	1998 09 21	704	0.6−	0.9−
1996 01 17	887	0.8+	0.3−	1997 03 19	327	0.1−	0.4−	1998 10 16	704	0.9+	0.4+
1996 01 24	887	0.0	0.3−	1997 03 19	327	0.1−	0.1−	1998 10 16	704	1.2+	0.2−
1996 01 24	887	0.1+	0.1−	1997 05 25	385	0.2−	0.3+	1998 10 16	704	0.7+	0.2−
1996 01 24	887	0.2+	0.0	1997 05 25	385	0.3−	0.5+	1998 10 16	704	2.1+	0.6+
1996 01 26	887	0.0	0.4+	1997 05 27	905	0.3−	0.2+	1998 10 16	704	1.6+	0.3−
1996 01 26	887	0.2+	0.1+	1997 05 27	905	0.1−	0.2−	1998 10 23	749	0.1−	0.7−

M.P.C. 32902

1996 01 26	887	0.1+	0.1+	1997 06 11	689	0.4-	0.1-	1998 10 23	749	0.8-	1.3-
1996 02 10	385	0.4-	0.1-	1997 06 23	689	1.8+	0.7-	1998 10 23	749	1.8-	0.7-
1996 02 10	385	0.1-	0.1-	1997 08 03	566	0.6-	0.3-	1998 10 24	749	1.5-	0.2+
1996 02 10	385	0.6-	0.2-	1997 08 03	566	0.4-	0.0	1998 10 24	749	0.8-	0.3+
1996 02 21	887	0.4+	0.2+	1997 08 03	566	0.1+	0.2-	1998 10 25	385	0.1-	0.1-
1996 02 21	887	0.4+	0.3-	1998 09 13	888	0.2-	0.8+	1998 10 25	385	0.9-	0.0

(9654)* 1996 AQ₂ = 1973 UM₅ = 1991 UW₂

Discovered 1996 Jan. 13 by T. Kobayashi at Oizumi.

Id. B. G. Marsden (*MPC* 26749)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Marsden			
<i>M</i>	333.97473	(2000.0)	P	Q	
<i>n</i>	0.27488966	ω	323.83164	+0.10851719	-0.99394920
<i>a</i>	2.3425945	Ω	119.93284	+0.91660713	+0.09342469
<i>e</i>	0.1723425	<i>i</i>	1.12402	+0.38477966	+0.05776510
<i>P</i>	3.59	<i>H</i>	15.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1973 10 27	033	1.6-	0.7+	1996 02 09	120	0.9+	0.2+	1998 09 26	704	0.2-	0.6+
1973 10 27	033	(0.8+ 13.8-)		1996 02 09	120	0.4+	0.0	1998 09 26	704	0.3-	0.8+
1973 10 28	033	0.9+	1.3+	1996 02 14	120	1.1-	0.2+	1998 09 27	704	0.7-	0.2-
1991 10 31	399	0.5-	0.4-	1996 02 14	120	1.2-	0.1+	1998 09 27	704	0.1+	0.3+
1991 10 31	399	(0.9- 2.9-)		1996 02 15	120	0.6-	0.1-	1998 09 27	704	0.4-	1.2+
1991 11 04	691	0.4+ 0.0		1996 02 15	120	0.2+	0.4-	1998 09 27	704	0.3-	0.7+
1991 11 04	691	0.2-	0.2+	1996 02 15	120	0.2+	0.6-	1998 09 27	704	(3.0- 0.1+)	
1991 11 04	691	0.2+ 0.1+		1996 02 15	120	0.2+	0.3-	1998 10 14	704	0.4+	0.1+
1991 11 04	399	(6.7+ 1.6+)		1998 09 14	704	0.3+	0.1-	1998 10 14	704	1.4-	0.1+
1991 11 04	399	(4.7+ 0.8+)		1998 09 14	704	0.7+	1.1-	1998 10 14	704	1.6+	0.5+
1991 11 09	399	1.1+ 1.8-		1998 09 14	704	0.2+	0.9-	1998 10 14	704	2.4-	0.5+
1991 11 09	399	0.2-	0.4-	1998 09 17	699	0.2-	0.2+	1998 10 15	704	0.1-	0.5-
1996 01 13	411	0.4+	0.2-	1998 09 17	699	0.1+	0.3+	1998 10 15	704	0.5+	0.1+
1996 01 13	411	1.2+ 0.4+		1998 09 17	699	0.6+	0.7+	1998 10 15	704	2.3-	1.9-
1996 01 16	411	0.0	0.6-	1998 09 18	704	1.0+	1.3-	1998 10 15	704	0.4+	0.6-
1996 01 16	411	0.7-	0.9-	1998 09 18	704	1.0+	1.5-	1998 10 15	704	0.3+	1.4+
1996 01 25	411	0.5-	0.5+	1998 09 18	704	1.3-	0.0	1998 10 19	699	1.1+	0.6+
1996 01 25	411	0.5+	0.7+	1998 09 18	704	0.1+	0.3+	1998 10 19	699	0.9+	0.3+
1996 02 07	817	0.1-	0.2+	1998 09 18	704	0.0	0.1+	1998 10 19	699	1.3+	1.0+
1996 02 07	817	0.3+	0.0	1998 09 26	704	0.5-	0.7-	1998 10 27	691	0.1-	0.4-
1996 02 07	817	0.2-	1.3+	1998 09 26	704	0.6-	0.3-	1998 10 27	691	0.3-	0.6-
1996 02 09	120	0.2+	0.1-	1998 09 26	704	0.3+	0.7+	1998 10 27	691	0.2+	0.1-

(9655)* 1996 CH₁ = 1978 GU₂ = 1985 CG₁ = 1991 YG₂

Discovered 1996 Feb. 11 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 27111)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	347.40421	(2000.0)	P	Q	
<i>n</i>	0.27054552	ω	326.75412	+0.04232355	-0.99632797
<i>a</i>	2.3676045	Ω	120.71871	+0.93450463	+0.01312560
<i>e</i>	0.0684749	<i>i</i>	4.96654	+0.35342582	+0.08460672
<i>P</i>	3.64	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1978 04 11	095	1.0+	1.9+	1996 02 24	098	0.4+	0.6-	1997 06 29	704	0.1+	0.9+
1985 02 13	046	1.4-	0.4-	1996 02 24	098	(2.1+ 1.1-)		1997 07 02	704	0.2-	0.4+
1985 02 13	046	1.8+	0.8+	1996 02 27	411	0.6-	0.0	1997 07 02	704	0.4-	0.2-
1991 12 29	511	1.2-	1.5-	1996 02 27	411	0.2+	0.2-	1997 07 02	704	0.1-	0.6-
1991 12 29	511	(3.7- 2.5-)		1996 03 12	411	0.5-	1.0-	1997 07 02	704	0.3-	1.3-
1996 02 11	411	1.1+	1.8+	1996 03 12	411	0.9+	0.3-	1998 08 31	704	0.4+	0.7-
1996 02 11	411	0.5+	1.4+	1996 03 14	098	0.2+	0.4+	1998 08 31	704	0.2+	0.2+
1996 02 12	411	0.1+	0.1-	1996 03 14	098	0.1+	0.1-	1998 08 31	704	0.4-	2.1-
1996 02 12	411	0.6+	0.5+	1996 03 20	098	0.4-	1.2+	1998 08 31	704	1.0-	1.0+
1996 02 14	098	1.9-	1.5-	1996 03 20	098	1.0+	0.1-	1998 08 31	704	0.5+	1.4+
1996 02 14	098	1.0-	1.6-	1997 06 28	704	0.5+	0.9-	1998 10 29	704	0.4-	0.4+
1996 02 15	098	1.3-	0.9-	1997 06 28	704	0.1-	0.1-	1998 10 29	704	0.2+	0.2+
1996 02 15	098	(0.3+ 2.5-)		1997 06 28	704	0.9-	1.1-	1998 10 29	704	2.0+	0.5+

1998 NOV. 10

1996 02 18	411	0.0	0.1-	1997 06 29	704	0.2+	0.4+	1998 10 29	704	1.6-	0.7+
1996 02 18	411	0.2-	0.5-	1997 06 29	704	0.1-	0.6+	1998 10 29	704	0.5+	0.2+
1996 02 23	411	0.7+	0.1+	1997 06 29	704	0.1+	0.7+				
1996 02 23	411	0.0	0.2+	1997 06 29	704	0.6+	0.1-				

(9656)* 1996 DK₁ = 1963 DA = 1985 CF₁

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

Id. G. V. Williams (*MPC* 26910)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	301.83829	(2000.0)	P	Q	
<i>n</i>	0.26979318	ω	358.41887	-0.67215647	-0.73759414
<i>a</i>	2.3720039	Ω	133.80869	+0.68028934	-0.64961752
<i>e</i>	0.1680739	<i>i</i>	5.12801	+0.29225346	-0.18426061
<i>P</i>	3.65	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1963 02 18	760	(50.0+ 31.3+)	X	1996 02 15	098	0.2-	1.3+	1998 09 21	809	1.9+	1.6-
1985 02 13	046	1.6+	0.4-	1996 02 15	098	0.5+	0.5+	1998 09 21	809	0.6+	1.0-
1985 02 13	046	0.3+	0.4+	1996 02 21	894	1.5-	0.7-	1998 09 29	704	1.4+	1.0+
1985 02 15	046	0.4-	0.7+	1996 02 21	894	0.3-	1.5-	1998 09 29	704	0.2+	0.7+
1985 02 15	046	1.6+	1.0+	1996 02 22	894	(2.1- 0.4+)		1998 09 29	704	1.6-	0.5+
1985 02 16	046	0.6-	0.9+	1996 02 22	894	1.7-	0.0	1998 09 29	704	1.5-	0.1-
1985 02 16	046	1.3-	2.1+	1996 02 23	411	0.6+	0.1-	1998 10 11	699	0.5-	0.5+
1994 08 03	675	1.2+	1.9+	1996 02 23	411	0.7+	0.1-	1998 10 11	699	0.7-	0.6+
1994 08 03	675	(1.2+ 2.2+)		1996 02 24	098	0.1+	0.4-	1998 10 11	699	0.1+	0.3+
1994 09 06	691	1.0-	0.6+	1996 02 24	098	1.8+	0.2-	1998 10 15	704	0.2-	0.1+
1994 09 06	691	1.2-	0.3+	1996 02 24	411	0.5+	0.1-	1998 10 15	704	0.0	0.4+
1994 09 06	691	1.3-	0.5+	1996 02 24	411	0.5+	0.4-	1998 10 15	704	1.3+	0.2-
1994 09 12	675	0.6+	0.6+	1996 02 27	411	0.5+	0.7-	1998 10 15	704	0.1-	0.7+
1994 10 01	675	0.0	1.2-	1996 02 27	411	0.1+	0.2-	1998 10 15	704	(3.2- 2.7-)	
1994 10 01	675	0.4+	1.0+	1996 04 12	411	0.6-	0.1+	1998 10 29	704	0.5-	0.6-
1996 02 14	098	0.5-	0.3+	1996 04 12	411	0.8+	0.0	1998 10 29	704	0.5-	0.8-
1996 02 14	098	0.2-	0.2+	1998 09 20	809	(3.7+ 0.5-)		1998 10 29	704	0.1+	1.6-
1996 02 14	691	0.9-	0.3-	1998 09 20	809	(2.7+ 0.9-)		1998 10 29	704	0.5-	0.1+
1996 02 14	691	0.5-	0.4-	1998 09 20	809	1.6+	0.7-	1998 10 29	704	0.1+	0.3-
1996 02 14	691	0.6-	0.1-	1998 09 21	809	(2.1+ 1.6-)					

(9657)* 1996 DG₂ = 1981 SZ₄ = 1991 JS₃ = 1992 RB₅

Discovered 1996 Feb. 24 at Višnjan.

Id. G. V. Williams (*MPC* 26911)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	119.65166	(2000.0)	P	Q	
<i>n</i>	0.17650503	ω	113.74058	-0.23277730	+0.97248479
<i>a</i>	3.1474922	Ω	142.79486	-0.89783447	-0.21118029
<i>e</i>	0.1705183	<i>i</i>	0.88922	-0.37377532	-0.09836776
<i>P</i>	5.58	<i>H</i>	12.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1981 09 25	095	0.1+	0.1-	1996 04 20	566	0.2-	0.1+	1998 09 26	704	0.4-	1.7-
1991 05 13	033	0.5-	0.0	1998 08 31	327	0.2-	0.5+	1998 09 27	704	0.2+	0.3-
1991 05 13	033	0.1+	0.4-	1998 08 31	327	0.1-	0.7+	1998 09 27	704	0.7+	0.1-
1991 05 14	033	0.4+	0.6-	1998 08 31	327	0.3-	1.1+	1998 09 27	704	0.2-	0.5+
1992 08 31	095	(6.2+	0.6+)	1998 09 14	704	0.2-	0.4-	1998 09 27	704	0.3-	0.4-
1992 08 31	095	0.9+	1.9-	1998 09 14	704	(0.3-	2.3-)	1998 09 27	704	0.2-	0.5-
1992 09 02	809	0.9+	0.2-	1998 09 14	704	(3.7-	1.3-)	1998 09 29	327	1.0+	0.1-
1992 09 02	809	0.3+	0.3-	1998 09 15	699	1.1+	0.7+	1998 09 29	327	1.1+	0.2+
1992 09 02	809	0.0	0.6-	1998 09 15	699	0.4+	0.9+	1998 09 29	327	1.0+	0.2+
1992 09 03	809	0.8-	1.1-	1998 09 15	699	1.1+	0.6+	1998 10 10	699	0.1+	0.2-
1996 02 24	120	1.2+	1.2-	1998 09 18	120	(2.4+	1.5+)	1998 10 10	699	0.1+	0.4+
1996 02 25	120	0.7+	0.8-	1998 09 18	120	1.6+	1.8+	1998 10 10	699	0.2-	0.2+
1996 02 25	120	0.3-	1.8-	1998 09 18	120	1.9+	1.9+	1998 10 12	691	2.0-	0.5-
1996 02 27	120	0.7-	0.2-	1998 09 18	704	0.6+	0.3-	1998 10 12	691	2.0-	0.6-
1996 02 27	120	0.1+	0.8-	1998 09 18	704	0.5+	0.1+	1998 10 12	691	2.2-	0.4-
1996 02 27	120	0.0	0.9-	1998 09 18	704	0.5+	1.0-	1998 10 14	704	0.7-	0.3-
1996 03 02	120	0.4-	1.9-	1998 09 18	704	0.5-	1.3-	1998 10 14	704	1.2-	0.8+

1998 NOV. 10

M.P.C. 32903

1996 03 02	120	0.5-	1.6-	1998 09 18	704	0.3-	0.4-	1998 10 14	704	1.2-	0.2-
1996 03 02	120	0.6-	1.6-	1998 09 20	327	0.2+	0.6+	1998 10 14	704	0.5+	1.3-
1996 03 09	120	0.2+	1.3-	1998 09 20	327	0.1+	0.2+	1998 10 14	704	1.4-	0.0
1996 03 09	120	(0.1+ 2.1-)		1998 09 20	327	0.1+	0.3+	1998 10 15	704	0.5+	1.3-
1996 03 18	566	0.5+	0.6+	1998 09 20	327	0.5+	0.4-	1998 10 15	704	0.4+	1.3-
1996 03 18	566	0.1-	0.6+	1998 09 21	120	(2.2+ 0.6-)		1998 10 15	704	0.3-	0.3-
1996 03 18	566	0.4+	0.7+	1998 09 21	120	(2.5+ 0.0)		1998 10 15	704	0.1+	1.1-
1996 03 20	691	0.7-	0.7+	1998 09 23	691	0.4-	0.5-	1998 10 15	704	0.1+	0.0
1996 03 20	691	0.8-	0.3+	1998 09 23	691	0.7-	0.1-	1998 10 19	699	0.0	0.4-
1996 03 20	691	1.5-	0.2+	1998 09 23	691	0.7-	0.3-	1998 10 19	699	0.8+	0.1+
1996 03 21	566	0.6+	0.7+	1998 09 23	327	0.7-	0.3+	1998 10 19	699	0.3+	0.5-
1996 03 21	566	0.4+	1.0+	1998 09 23	327	0.8-	0.0	1998 10 28	704	1.5+	1.7+
1996 03 21	566	0.2+	0.8+	1998 09 23	327	0.1+	0.5-	1998 10 28	704	1.0+	0.1-
1996 03 28	120	0.3-	0.3+	1998 09 25	327	1.3-	0.3+	1998 10 28	704	0.8+	0.1-
1996 03 28	120	0.0	0.7+	1998 09 25	327	1.4-	0.1+	1998 10 28	704	0.0	0.6+
1996 03 28	120	0.3+	0.5+	1998 09 25	327	1.4-	0.2+	1998 10 28	704	0.1+	0.7+
1996 04 10	120	0.1-	0.6-	1998 09 26	704	0.5-	0.1+	1998 10 29	704	0.5+	1.5-
1996 04 10	120	0.2-	0.7-	1998 09 26	704	1.2+	1.8-	1998 10 29	704	1.8+	1.7+
1996 04 20	566	0.3-	0.2+	1998 09 26	704	0.2-	0.7+	1998 10 29	704	0.7-	1.8+
1996 04 20	566	0.3-	0.3+	1998 09 26	704	0.4+	1.0-	1998 10 29	704	1.1+	0.5-

(9658)* 1996 DD₃ = 1976 YT₁

Discovered 1996 Feb. 28 by A. Nakamura at Kuma.

Id. S. Nakano (*MPC* 30278)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Nakano			
<i>M</i>	300.94357	(2000.0)	P	Q	
<i>n</i>	0.26400582	ω	86.70391	-0.63190724	-0.77370479
<i>a</i>	2.4065435	Ω	42.60036	+0.68169389	-0.58279532
<i>e</i>	0.1869417	<i>i</i>	3.85795	+0.36876372	-0.24845626
<i>P</i>	3.73	<i>H</i>	14.9	<i>G</i>	0.15

Residuals in seconds of arc

1976 12 16	095	0.0	0.4-	1996 05 23	691	0.7-	0.7+	1998 10 02	360	0.1-	0.3-
1996 02 16	566	0.7-	1.1-	1996 05 23	691	0.9-	0.3+	1998 10 11	699	0.4+	0.1+
1996 02 16	566	1.0-	1.4-	1996 05 23	691	1.1-	0.3+	1998 10 11	699	0.2+	0.9+
1996 02 16	566	0.7-	1.2-	1997 06 29	360	0.2-	0.2+	1998 10 11	699	0.1+	0.8+
1996 02 28	360	0.1+	0.5+	1997 06 29	360	0.2+	1.0+	1998 10 14	704	0.6+	0.3-
1996 02 28	360	0.2+	0.4+	1997 06 29	360	0.3-	0.1+	1998 10 14	704	0.9+	0.5+
1996 02 28	360	0.3+	0.4+	1997 07 05	360	0.3+	0.3+	1998 10 14	704	1.2-	1.0+
1996 03 02	360	0.6+	1.0+	1997 07 05	360	0.3+	0.5+	1998 10 14	704	1.8+	0.5-
1996 03 02	360	0.9+	1.0+	1998 09 21	809	1.3-	2.1-	1998 10 14	360	0.2-	0.5+
1996 03 02	360	0.5+	1.0+	1998 09 21	809	(2.8- 2.2-)		1998 10 14	360	0.5-	0.8+
1996 03 13	360	0.1+	0.3+	1998 09 21	809	(2.3- 3.4-)		1998 10 21	360	0.3-	0.3+
1996 03 13	360	0.0	0.2+	1998 09 23	809	(1.1+ 2.8-)		1998 10 21	360	0.4-	0.1+
1996 03 13	360	0.1+	0.2-	1998 09 23	809	(1.2+ 3.7-)		1998 10 21	360	0.6-	0.4+
1996 03 25	360	0.7+	0.6-	1998 09 23	809	(1.0+ 3.9-)		1998 10 28	704	0.0	1.5-
1996 03 25	360	0.8+	0.3-	1998 09 26	704	0.5+	0.3-	1998 10 28	704	(0.4+ 2.3-)	
1996 03 25	360	0.4+	0.1-	1998 09 26	704	1.1+	1.3-	1998 10 28	704	0.6+	1.4+
1996 04 07	360	0.9+	0.3+	1998 09 26	704	0.2+	1.6-	1998 10 28	704	1.1-	0.8+
1996 04 07	360	0.7+	0.5+	1998 09 26	704	1.5+	0.6-	1998 10 28	704	0.2-	0.1+
1996 04 07	360	0.7+	0.4+	1998 09 26	704	0.1-	0.5-	1998 10 29	704	0.5+	1.8+
1996 05 09	360	0.3+	0.0	1998 09 27	704	0.2-	0.5+	1998 10 29	704	0.0	0.8+
1996 05 09	360	0.5+	0.6+	1998 09 27	704	0.2+	0.4-	1998 10 29	704	1.7-	0.3-
1996 05 22	691	1.2-	0.2+	1998 09 27	704	2.0-	0.2-	1998 10 29	704	0.9-	1.4+
1996 05 22	691	1.2-	0.1+	1998 09 27	704	0.8+	0.3+				
1996 05 22	691	1.0-	0.2+	1998 10 02	360	0.5-	0.1-				

(9659)* 1996 EJ = 1949 MK = 1987 BN₁

Discovered 1996 Mar. 10 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 27113)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

		(2000.0)		P	Q
<i>M</i>	230.53676	ω	29.71028	-0.99324500	+0.01299569
<i>n</i>	0.22736979	Ω	150.35613	-0.03613365	-0.97894055
<i>a</i>	2.6585666	<i>i</i>	13.48121	+0.11026665	-0.20373148
<i>e</i>	0.0906635	<i>H</i>	12.1	<i>G</i>	0.15
<i>P</i>	4.33			<i>U</i>	1

Residuals in seconds of arc

1949 06 22	024	0.1+	0.8-	1996 04 14	399	0.4-	0.2+	1998 10 14	744	0.0	0.3-
1987 01 29	054	0.1+	1.3+	1996 04 14	399	0.2-	0.7+	1998 10 15	744	0.0	0.0
1987 02 02	054	0.5+	0.9+	1997 08 01	124	0.4-	0.0	1998 10 15	744	0.0	0.5-
1992 05 04	691	1.1-	0.4+	1997 08 01	124	0.5+	0.5+	1998 10 15	744	0.4-	0.4-
1992 05 04	691	1.3-	0.5+	1997 08 01	124	1.1+	0.8+	1998 10 16	704	0.2+	0.9+
1992 05 04	691	1.2-	0.3+	1997 08 06	956	0.3+	1.2+	1998 10 16	704	1.0-	1.0+
1996 03 10	399	0.1+	1.0+	1997 08 07	956	1.3+	0.6+	1998 10 16	704	0.9-	1.2+
1996 03 10	399	(0.7- 2.7+)		1997 08 12	956	0.2+	0.9+	1998 10 16	704	0.0	1.1+
1996 03 12	399	1.0+	0.2+	1997 08 12	956	0.2-	0.5+	1998 10 16	704	0.7+	1.4+
1996 03 12	399	0.4+	0.3+	1998 10 04	761	0.2+	0.2+	1998 10 17	423	0.2+	0.5-
1996 03 20	399	1.2+	0.8-	1998 10 04	761	0.1+	0.1-	1998 10 17	423	1.1-	0.2-
1996 04 13	399	0.2+	0.8+	1998 10 14	744	0.3+	0.3-	1998 10 17	423	0.2+	0.6-
1996 04 13	399	0.4+	0.4+	1998 10 14	744	0.7-	0.2-	1998 10 27	423	0.2-	0.1+

(9660)* 1996 FW₄ = 1979 HF = 1990 FC₂

Discovered 1996 Mar. 22 at Haleakala by the JPL Near-Earth Asteroid

Tracking program.

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

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	161.27383	(2000.0)	P	Q	
<i>n</i>	0.17169143	ω	146.31037	-0.84826605	+0.52856659
<i>a</i>	3.2060501	Ω	65.63104	-0.49342393	-0.76652289
<i>e</i>	0.1092527	<i>i</i>	2.05030	-0.19229542	-0.36477394
<i>P</i>	5.74	<i>H</i>	12.9	<i>G</i>	0.15

Residuals in seconds of arc

1979 04 19	807	1.2-	0.4+	1997 07 12	608	0.2+	0.3+	1998 09 26	704	0.3+	1.4-
1979 04 26	807	0.1+	0.4-	1997 07 12	608	0.4+	0.4+	1998 09 26	704	0.4+	0.3+
1979 04 26	807	0.1+	0.8-	1997 07 13	608	0.3+	0.4+	1998 09 26	704	1.0+	1.1-
1990 03 16	046	(2.8+ 0.6-)		1997 07 13	608	0.5+	0.4+	1998 09 26	704	1.9-	0.4-
1990 03 16	046	1.9+	1.1-	1998 09 14	704	1.2+	0.1+	1998 09 26	704	0.3+	1.1-
1990 03 18	046	(1.3- 3.3-)		1998 09 14	704	1.6+	0.2+	1998 09 26	704	1.5-	0.3+
1990 03 18	046	(0.6+ 3.9-)		1998 09 14	704	0.1+	1.0-	1998 09 26	704	0.0	0.6-
1990 03 19	046	(1.6- 3.4-)		1998 09 17	699	0.6+	0.6-	1998 09 26	704	1.6-	0.7+
1990 03 19	046	(0.4- 3.8-)		1998 09 17	699	1.0+	0.4-	1998 09 27	704	0.2-	0.9-
1991 06 14	675	(2.4- 7.9+)		1998 09 17	699	0.2+	0.2-	1998 09 27	704	0.8+	0.8+
1991 06 14	675	(1.8- 7.5+)		1998 09 18	704	0.2+	1.2-	1998 09 27	704	(0.3- 2.6-)	
1991 06 16	675	(1.8- 8.8+)		1998 09 18	704	1.0+	1.8-	1998 09 27	704	0.6+	0.3-
1991 06 16	675	(1.2- 10.1+)		1998 09 18	704	(1.4+ 2.5-)		1998 09 27	704	0.3-	1.2-
1996 03 22	566	0.2-	0.3-	1998 09 18	704	0.2+	0.8-	1998 10 14	704	0.3+	0.0
1996 03 22	566	0.8-	0.6-	1998 09 18	704	1.4+	0.8-	1998 10 14	704	1.2-	0.6-
1996 03 22	566	0.2-	0.9-	1998 09 25	699	0.3+	1.4+	1998 10 14	704	0.3-	0.8+
1996 03 26	566	0.3-	0.6-	1998 09 25	704	0.3-	0.8+	1998 10 14	704	(0.3+ 2.6+)	
1996 03 26	566	0.6-	0.4-	1998 09 25	699	0.9+	0.0	1998 10 15	704	0.2+	1.6+
1996 03 26	566	0.5-	0.3-	1998 09 25	699	0.3+	0.2+	1998 10 15	704	0.8-	0.5+
1996 05 13	566	0.4-	0.1+	1998 09 25	704	0.5-	0.3-	1998 10 15	704	0.6-	1.5+
1996 05 13	566	0.2-	0.3+	1998 09 25	704	0.4+	0.5+	1998 10 17	699	0.1-	1.9+
1996 05 13	566	0.3-	0.4+	1998 09 25	704	0.7+	0.1+	1998 10 17	699	1.3-	0.0
1997 07 05	608	0.1-	0.2+	1998 09 26	704	0.1+	1.0-	1998 10 17	699	0.4-	0.1+
1997 07 05	608	0.2+	0.5+	1998 09 26	704	1.4-	1.6-				

(9661)* 1996 FU₁₃ = 1

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	15.38674		(2000.0)	P	Q
<i>n</i>	0.12456658	ω	289.87170	+0.95366999	+0.23490021
<i>a</i>	3.9707117	Ω	56.96986	-0.11300885	+0.85874886
<i>e</i>	0.2322029	<i>i</i>	12.95665	-0.27882350	+0.45538147
<i>P</i>	7.91	<i>H</i>	11.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1982 09 13	675	0.9-	1.5+	1996 06 08	809	(2.5+	4.3+)	1998 09 28	699	0.1+	0.1+
1983 12 28	033	0.8+	0.9-	1996 06 10	809	0.3-	0.2-	1998 09 28	699	0.4+	0.1+
1983 12 29	033	0.4+	0.4-	1996 06 10	809	1.0+	0.4-	1998 10 11	423	0.7-	0.6-
1983 12 29	033	0.9+	0.5-	1996 06 10	809	0.9+	0.7-	1998 10 11	423	0.4-	0.4-
1991 12 01	675	0.2-	0.1-	1997 05 13	689	0.4+	1.0-	1998 10 13	704	0.8+	0.2-
1991 12 01	675	0.1+	1.3-	1998 09 13	423	0.8+	0.7-	1998 10 13	704	0.0	2.0+
1996 03 18	691	0.4-	0.3-	1998 09 13	423	0.8+	0.2-	1998 10 13	704	0.9-	0.2-
1996 03 18	691	0.3-	0.3-	1998 09 13	423	0.8+	0.3-	1998 10 13	704	1.9-	0.1-
1996 03 18	691	0.4-	0.3-	1998 09 16	423	0.7+	0.2-	1998 10 13	704	(3.0-	0.3-)
1996 03 24	691	0.8-	0.6-	1998 09 16	423	0.6+	0.1-	1998 10 13	423	0.5-	0.6-
1996 03 24	691	0.5-	0.4-	1998 09 16	423	0.9+	0.3-	1998 10 13	423	0.5-	0.1-
1996 03 24	691	1.1-	0.4-	1998 09 21	704	0.6+	0.2+	1998 10 13	423	1.2-	0.0
1996 04 09	691	0.3-	0.0	1998 09 21	704	0.2+	0.7+	1998 10 14	423	0.6-	0.6-
1996 04 09	691	0.3-	0.0	1998 09 21	704	0.2-	0.1-	1998 10 14	423	0.1+	0.3-
1996 04 09	691	0.1-	0.1-	1998 09 21	704	0.3+	0.8-	1998 10 14	423	0.3+	0.5-
1996 06 08	809	(3.4+	4.3+)	1998 09 21	704	0.2+	0.1+				
1996 06 08	809	(3.2+	3.8+)	1998 09 28	699	0.4+	0.1+				

(9662)* 1996 GS

Discovered 1996 Apr. 12 by P. G. Comba at Prescott.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	33.32892		(2000.0)	P	Q
<i>n</i>	0.21442234	ω	182.67345	+0.97327912	-0.22767197
<i>a</i>	2.7645389	Ω	190.62990	+0.21356898	+0.94533824
<i>e</i>	0.1757659	<i>i</i>	9.32415	+0.08435662	+0.23345466
<i>P</i>	4.60	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1992 04 29	691	0.6-	0.1-	1997 05 02	684	0.1-	0.1-	1998 10 14	704	1.2-	0.1+
1992 04 29	691	0.3+	0.1+	1997 05 02	684	0.6-	0.0	1998 10 14	704	0.6+	0.5-
1992 04 29	691	0.3+	0.0	1997 05 03	684	0.2+	0.8+	1998 10 14	704	1.3-	1.6+
1996 04 12	684	0.6+	0.0	1997 05 03	684	0.8-	0.3+	1998 10 14	704	0.1-	0.3-
1996 04 12	684	0.3+	0.2-	1997 05 03	684	1.1-	0.6+	1998 10 15	704	1.2+	1.0+
1996 04 12	684	0.2+	0.2-	1997 05 30	684	0.2+	0.4-	1998 10 15	704	0.2+	0.3-
1996 04 13	684	0.3+	0.4-	1997 05 30	684	0.6+	0.3-	1998 10 15	704	0.9+	0.0
1996 04 13	684	0.5+	0.4-	1997 05 30	684	0.7+	0.4-	1998 10 15	704	0.9+	0.2+
1996 04 13	684	0.3+	0.2-	1997 06 10	684	0.6-	0.2+	1998 10 18	684	0.6-	0.6-
1996 04 14	684	0.1+	0.0	1997 06 10	684	0.3-	0.3+	1998 10 18	684	0.1-	0.6-
1996 04 14	684	0.3+	0.3-	1997 07 02	684	0.7+	1.7-	1998 10 19	684	0.2-	0.5-
1996 04 14	684	0.7+	0.3-	1997 07 02	684	1.8+	0.2+	1998 10 19	684	0.3-	0.4-
1996 04 17	684	0.2+	1.0-	1998 09 24	684	0.3-	0.2-	1998 10 22	910	0.7+	0.7+
1996 04 17	684	0.2+	0.4-	1998 09 24	684	0.3-	0.3-	1998 10 22	910	0.8+	0.7+
1996 05 07	684	0.6-	0.2-	1998 09 24	684	0.2-	0.3-	1998 10 22	910	0.8+	0.6+
1996 05 07	684	0.8-	0.0	1998 09 25	684	0.2-	0.4-	1998 10 23	910	0.8+	0.7+
1996 05 08	684	0.1+	0.3-	1998 09 25	684	0.2-	0.2-	1998 10 23	910	0.7+	0.8+
1996 05 08	684	0.1-	0.1-	1998 09 29	704	0.2+	0.3-	1998 10 23	910	0.8+	0.7+
1996 05 19	684	1.7-	0.2-	1998 09 29	704	0.1+	1.2-	1998 10 29	704	0.2+	0.2-
1996 05 19	684	1.1-	0.0	1998 09 29	704	0.4-	1.9-	1998 10 29	704	1.0-	0.3-
1996 05 20	684	0.8-	0.0	1998 09 29	704	0.7-	1.3-	1998 10 29	704	0.3-	0.1+
1996 05 20	684	0.6-	0.4-	1998 09 29	704	0.8-	1.8-	1998 10 29	704	0.1-	0.2-
1997 05 02	684	1.0-	0.1+	1998 10 14	704	0.4-	0.2+	1998 10 29	704	0.1+	0.2+

(9663)* 1996 GC₁₈ = 1987 GB₁

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

Marsden

<i>M</i>	306.74825		(2000.0)	P	Q
<i>n</i>	0.22939947	ω	2.15922	-0.58806421	-0.80871399
<i>a</i>	2.6428617	Ω	123.86080	+0.74184255	-0.54557725
<i>e</i>	0.0944941	<i>i</i>	0.87867	+0.32225784	-0.21983433
<i>P</i>	4.30	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1987 04 01	675	1.4-	0.3-	1996 04 17	809	0.8+	1.6+	1998 10 02	910	0.0	0.2+
1987 04 01	675	0.5+	0.8-	1996 04 17	809	0.7+	1.5+	1998 10 02	910	0.1+	0.1+
1987 04 03	675	(3.4-	1.1-)	1996 05 13	566	0.8+	0.2+	1998 10 12	691	0.4-	0.6+
1987 04 03	675	0.1+	0.8-	1996 05 13	566	0.8+	0.2+	1998 10 12	691	0.4-	0.7+
1996 03 24	809	(2.3+	3.7+)	1996 05 13	566	0.5+	0.3+	1998 10 12	691	0.5-	0.5+
1996 03 24	809	(1.5+	3.5+)	1997 08 01	688	1.3+	0.5-	1998 10 18	691	1.4-	0.7+
1996 03 24	809	(1.2+	2.9+)	1997 08 01	688	0.5+	0.2+	1998 10 18	691	1.3-	0.5+
1996 03 27	809	(2.5+	2.8+)	1997 08 01	691	0.8-	0.2-	1998 10 18	691	1.4-	0.4+
1996 03 27	809	(2.5+	2.2+)	1997 08 01	691	0.6-	0.6+	1998 10 18	699	1.0+	0.5+
1996 03 27	809	0.8+	1.5+	1997 08 01	691	0.5-	0.2-	1998 10 29	704	0.5+	0.9+
1996 04 15	809	1.1-	0.9+	1998 09 29	910	0.6+	0.1+	1998 10 29	704	0.8-	0.3+
1996 04 15	809	0.6-	1.0+	1998 09 29	910	0.7+	0.3+	1998 10 29	704	0.2+	0.3+
1996 04 15	809	0.3-	0.6+	1998 09 29	910	0.8+	0.1+	1998 10 29	704	0.6+	1.3+
1996 04 17	809	0.8+	1.3+	1998 10 02	910	0.3-	0.4+	1998 10 29	704	0.0	0.2+

(9664)* 1996 HT₁₄ = 1981 VE₂ = 1990 HW₃ = 1992 RW₅

Discovered 1996 Apr. 17 by E. W. Elst at the European Southern

Observatory.

Id. G. V. Williams (*MPC* 27561)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	183.27383		(2000.0)	P	Q
<i>n</i>	0.17137374	ω	89.05210	-0.91147605	+0.40971288
<i>a</i>	3.2100110	Ω	115.13393	-0.39169493	-0.83720700
<i>e</i>	0.1037316	<i>i</i>	2.32320	-0.12564433	-0.36224274
<i>P</i>	5.75	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1981 11 03	033	0.0	0.3+	1996 05 19	809	1.8+	0.4+	1998 09 25	699	0.1-	0.4-
1981 11 03	033	0.3-	0.4-	1996 05 19	809	1.3+	0.6+	1998 09 25	699	0.0	0.2+
1990 03 27	675	0.9-	1.0-	1996 05 22	809	0.5-	0.7+	1998 09 25	699	0.2-	0.1-
1990 03 27	675	0.1+	1.6-	1996 05 22	809	0.7-	0.9+	1998 09 26	704	(2.3+	0.1+)
1990 04 01	675	1.1-	0.2+	1996 05 22	809	1.1-	0.8+	1998 09 26	704	0.9-	0.3-
1990 04 01	675	0.7+	0.0	1998 09 14	704	0.5+	1.1-	1998 09 26	704	0.6+	0.5+
1990 04 18	372	(3.1-	0.9-)	1998 09 14	704	0.7+	0.1+	1998 09 26	704	0.8-	0.8-
1990 04 18	372	(3.4-	0.6-)	1998 09 14	704	1.4-	1.2+	1998 09 26	704	1.2-	0.5-
1990 04 22	675	0.0	1.6-	1998 09 17	699	0.0	0.1-	1998 09 27	704	0.9+	0.9-
1992 09 02	809	0.1-	0.9-	1998 09 17	699	0.0	0.3+	1998 09 27	704	0.2-	0.3-
1992 09 02	809	0.8+	0.6-	1998 09 17	699	0.5+	0.8-	1998 09 27	704	1.2+	0.2+
1992 09 02	809	0.6+	0.0	1998 09 18	704	0.5+	0.7-	1998 09 27	704	0.8+	0.3+
1992 09 03	809	0.3-	0.6+	1998 09 18	704	1.1-	1.7-	1998 09 27	704	0.5+	0.3-
1996 04 17	809	(2.9-	2.2-)	1998 09 18	704	0.8+	1.0+	1998 10 15	704	1.4+	0.4-
1996 04 17	809	(3.2-	2.3-)	1998 09 18	704	0.8+	1.1+	1998 10 15	704	0.2-	0.0
1996 04 17	809	(3.0-	2.6-)	1998 09 18	704	0.8-	0.1+	1998 10 15	704	1.6-	0.5+
1996 04 18	809	1.1-	1.6-	1998 09 19	402	0.2-	0.8-	1998 10 15	704	0.4+	0.9+
1996 04 18	809	0.7-	1.8-	1998 09 19	402	0.0	0.2-	1998 10 15	704	0.5-	1.3+
1996 04 18	809	(0.1+	2.1-)	1998 09 19	402	0.2+	0.5-				
1996 05 19	809	1.1+	1.0+	1998 09 19	402	0.2+	0.3-				

(9665)* 1996 LA = 1987 QJ₄ = 1990 FQ₃

Discovered 1996 June 5 at Kleť.

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

1998 NOV. 10

M.P.C. 32905

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	215.18869		(2000.0)	P		Q	
<i>n</i>	0.18246561	ω	321.81735	-0.99281414	+0.07738754		
<i>a</i>	3.0785676	Ω	222.89881	-0.04621523	-0.95153054		
<i>e</i>	0.1129765	<i>i</i>	7.70599	-0.11038218	-0.29765885		
<i>P</i>	5.40	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 08 31	010	0.9-	0.1+	1997 07 28	046	0.2+	0.4-	1998 09 20	046	0.4+	0.2-
1987 08 31	010	1.3+	0.3+	1997 07 28	046	0.1+	0.5-	1998 09 25	046	0.4-	0.3+
1987 08 31	010	0.8+	0.4-	1997 07 28	046	0.3+	0.4-	1998 09 25	046	0.3-	0.0
1990 03 20	095	1.6-	0.9-	1997 07 28	046	0.1+	0.4-	1998 09 25	046	0.3-	0.2+
1990 03 20	095	(3.1-	1.0-)	1997 07 29	046	0.2+	0.2-	1998 09 26	704	0.1+	0.5+
1996 06 05	046	0.3-	0.5-	1997 07 29	046	0.0	0.5-	1998 09 26	704	0.7-	0.8-
1996 06 05	046	0.2+	0.4-	1997 07 29	046	0.0	0.2-	1998 09 26	704	0.9-	0.1-
1996 06 05	046	0.0	0.6-	1997 07 31	046	0.1+	0.4-	1998 09 26	704	0.4-	0.7-
1996 06 05	046	0.3+	0.0	1997 07 31	046	0.0	0.2-	1998 09 26	704	0.1-	0.4-
1996 06 06	046	0.1-	0.2-	1997 07 31	046	0.2+	0.2-	1998 09 27	704	0.4-	0.2-
1996 06 06	046	0.3-	0.1+	1997 08 02	046	0.1-	0.3+	1998 09 27	704	0.7-	0.4+
1996 06 06	046	0.1-	0.1+	1997 08 02	046	0.3+	0.1+	1998 09 27	704	0.0	0.3+
1996 06 06	046	0.0	0.0	1997 08 02	046	0.6-	0.2-	1998 09 27	704	0.8-	0.2-
1996 06 06	046	0.0	0.8-	1997 08 14	046	0.6-	0.1-	1998 09 27	704	0.0	0.2+
1996 06 06	046	0.2-	0.5-	1997 08 14	046	0.7-	0.1+	1998 10 13	046	0.2-	0.3+
1996 06 06	046	0.5-	0.0	1997 08 14	046	0.6-	0.4+	1998 10 13	046	0.0	0.3+
1996 06 06	046	0.1+	0.6-	1997 08 24	046	0.7-	0.5+	1998 10 13	046	0.2-	0.4+
1996 06 06	046	0.4+	0.2-	1997 08 24	046	0.5-	0.6+	1998 10 14	704	0.0	0.4-
1996 06 07	046	0.5-	0.3-	1997 08 24	046	0.5-	0.5+	1998 10 14	704	1.3+	1.1+
1996 06 07	046	0.4-	0.7-	1997 08 25	046	1.0-	0.2+	1998 10 14	704	0.9+	0.4-
1996 06 07	046	0.7-	1.1-	1997 08 25	046	0.7-	0.1+	1998 10 14	704	0.1-	1.3-
1996 06 08	046	0.2-	0.2+	1997 08 25	046	0.8-	0.7+	1998 10 15	704	0.7+	0.4+
1996 06 08	046	0.1-	0.8+	1997 09 26	046	0.4+	0.2+	1998 10 15	704	0.0	1.4-
1996 06 08	046	1.1-	0.8+	1997 09 26	046	0.1-	0.0	1998 10 15	704	0.9-	0.9-
1996 06 11	046	0.6-	0.4-	1997 09 26	046	0.6+	0.1+	1998 10 15	704	0.2-	0.7-
1996 06 11	046	0.6+	0.1-	1997 09 26	046	0.1-	0.0	1998 10 15	704	0.5-	0.3-
1996 06 11	046	0.5-	0.3-	1997 09 27	046	0.4+	0.5-	1998 10 16	046	0.1-	0.3+
1996 06 16	046	0.7+	0.8+	1997 09 27	046	0.3+	0.1-	1998 10 16	046	0.1-	0.1+
1996 06 16	046	0.3+	0.5-	1997 09 27	046	0.5+	0.1+	1998 10 16	046	0.1-	0.4+
1996 06 16	046	1.2+	0.3+	1997 10 17	046	0.3+	0.6+	1998 10 28	704	1.1+	0.2-
1996 06 17	046	0.6+	0.2+	1997 10 18	046	0.5+	0.1-	1998 10 28	704	1.0+	0.0
1996 06 17	046	0.9+	0.2+	1997 10 18	046	0.3+	0.4-	1998 10 28	704	1.9+	0.6+
1996 06 17	046	0.6+	0.2+	1997 10 18	046	0.2+	0.1-	1998 10 28	704	1.0+	0.1-
1996 07 03	046	(2.4+	0.3-)	1997 10 18	046	0.2+	0.1+	1998 10 28	704	0.7+	0.5-
1996 07 03	046	1.8+	0.5+	1998 09 18	704	1.1+	0.9-	1998 10 29	704	0.6+	0.6-
1996 07 03	046	1.1+	0.7+	1998 09 18	704	0.0	1.1+	1998 10 29	704	0.2+	1.3+
1996 07 16	046	0.3-	0.4+	1998 09 18	704	0.6-	0.0	1998 10 29	704	0.1+	0.3-
1996 07 16	046	0.9-	0.5+	1998 09 18	704	0.2+	0.9-	1998 10 29	704	0.4-	0.2+
1996 07 16	046	0.6-	0.1+	1998 09 18	704	1.0-	0.4+	1998 10 29	704	0.5-	0.1+
1996 07 20	046	0.9+	0.8-	1998 09 20	046	0.0	0.0				
1996 07 20	046	0.1+	0.4-	1998 09 20	046	0.2-	0.1-				

(9666)* 1997 GM₂₂ = 1985 TN₁ = 1992 DV₁₃

Discovered 1997 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 29934)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.62469		(2000.0)	P		Q	
<i>n</i>	0.22980308	ω	290.69193	+0.77380211	+0.62374401		
<i>a</i>	2.6397663	Ω	31.02680	-0.47169697	+0.68367838		
<i>e</i>	0.1914169	<i>i</i>	12.36035	-0.42276738	+0.37884996		
<i>P</i>	4.29	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1985 10 12	688	0.8+	0.1+	1997 05 05	704	0.6+	0.2-	1998 09 27	704	0.6-	0.8+
1985 10 15	688	(3.4+	0.5-)	1997 05 05	704	0.7+	0.4-	1998 09 27	704	0.0	0.6+
1985 10 15	688	0.5-	0.7-	1997 05 05	704	0.3+	0.5-	1998 09 27	704	0.8-	0.7+

1992 02 24	691	0.0	0.5-	1997 05 05	704	0.1+	0.9-	1998 09 27	704	0.0	1.0+
1992 02 24	691	0.2-	0.3-	1997 05 07	566	0.7-	0.1+	1998 10 14	704	(1.3-	3.5-)
1992 02 24	691	0.1-	0.0	1997 05 07	566	0.7-	0.0	1998 10 14	704	(0.1-	4.1-)
1997 04 02	704	0.3+	1.1+	1997 05 07	566	1.0-	0.1+	1998 10 14	704	(0.3+	4.6-)
1997 04 02	704	0.6-	0.3+	1998 09 18	699	0.0	0.5-	1998 10 15	704	0.3-	0.0
1997 04 06	704	0.2-	0.3+	1998 09 18	699	0.2-	0.5-	1998 10 15	704	1.0-	0.1+
1997 04 06	704	0.6-	0.0	1998 09 18	699	0.1+	0.9-	1998 10 15	704	1.1-	0.2+
1997 04 08	704	0.7-	0.2-	1998 09 21	809	(3.2+	1.7+)	1998 10 15	704	0.2-	0.1-
1997 04 08	704	0.2-	0.1-	1998 09 21	809	2.8+	1.7+	1998 10 15	704	1.1-	1.1-
1997 04 30	704	0.6+	0.1+	1998 09 21	809	2.6+	1.3+	1998 10 28	704	0.2-	0.1-
1997 04 30	704	0.1+	0.4+	1998 09 23	809	2.2+	1.0+	1998 10 28	704	0.3-	0.3-
1997 04 30	704	0.4+	0.7+	1998 09 23	809	1.6+	0.9+	1998 10 28	704	0.0	0.7+
1997 04 30	704	0.5+	0.4+	1998 09 23	809	1.5+	1.2+	1998 10 28	704	0.8-	0.8+
1997 05 01	704	0.0	0.1-	1998 09 26	704	0.3-	0.0	1998 10 28	704	0.8+	1.9+
1997 05 01	704	0.4+	0.6-	1998 09 26	704	0.7-	0.4-	1998 10 29	704	0.8-	0.4+
1997 05 01	704	0.0	0.4+	1998 09 26	704	0.6-	0.2+	1998 10 29	704	1.2-	1.2+
1997 05 01	704	0.1+	0.3-	1998 09 26	704	0.1-	0.3+	1998 10 29	704	0.8-	0.7+
1997 05 01	704	0.1+	0.0	1998 09 26	704	0.6-	0.1-	1998 10 29	704	0.3-	0.2-
1997 05 05	704	0.8+	0.2+	1998 09 27	704	0.5-	0.2-	1998 10 29	704	1.2-	0.7+

(9667)* 1997 HC₁₆ = 1993 FV₂₁ = 1996 AS₉

Discovered 1997 Apr. 29 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 30086)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	83.89552		(2000.0)	P		Q	
<i>n</i>	0.25859090	ω	120.23990	+0.73042489	+0.68288860		
<i>a</i>	2.4400228	Ω	196.70012	-0.64005040	+0.67829242		
<i>e</i>	0.1797451	<i>i</i>	2.38208	-0.23835892	+0.27126104		
<i>P</i>	3.81	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 03 21	809	1.2+	0.6+	1997 04 12	809	0.4-	1.1-	1998 10 15	704	1.0+	0.9-
1993 03 22	809	1.8+	0.5+	1997 04 12	809	0.5-	1.2-	1998 10 15	704	1.7+	0.6+
1993 03 26	809	0.5+	0.3+	1997 04 12	809	0.6-	1.2-	1998 10 15	704	0.3+	1.7-
1993 03 27	809	0.7+	0.7+	1997 04 29	691	0.1+	0.3-	1998 10 15	704	1.9-	0.7-
1993 04 18	691	1.5-	0.1-	1997 04 29	691	0.1-	0.8-	1998 10 15	704	0.4+	0.8+
1993 04 18	691	1.3-	0.4-	1997 04 29	691	0.0	0.3-	1998 10 17	691	1.0-	0.1-
1993 04 18	691	0.9-	0.3-	1997 05 08	691	0.8+	0.1+	1998 10 17	691	0.9-	0.1-
1993 04 18	413	(1.8+	3.0-)	1997 05 08	691	0.6+	0.1+	1998 10 17	691	1.0-	0.2-
1996 01 13	691	0.2-	0.0	1997 05 08	691	0.3+	0.5+	1998 10 19	699	1.0+	0.0
1996 01 13	691	0.2+	0.1-	1998 09 29	704	0.3-	0.3+	1998 10 19	699	0.9+	0.7+
1996 01 13	691	0.1+	0.0	1998 09 29	704	(0.3-	2.6+)	1998 10 19	699	1.2+	0.4+
1996 01 19	691	0.1+	0.1-	1998 09 29	704	(0.6-	2.6+)	1998 10 29	704	0.7+	0.2+
1996 01 19	691	0.1-	0.1-	1998 09 29	704	1.5-	0.7+	1998 10 29	704	0.1+	0.3-
1996 01 19	691	0.1-	0.1+	1998 10 14	704	0.8-	0.6+	1998 10 29	704	0.4+	0.0
1997 04 11	809	0.6+	1.2+	1998 10 14	704	0.0	0.1-	1998 10 29	704	0.8+	0.9-
1997 04 11	809	0.8-	1.1+	1998 10 14	704	(0.7+	2.7-)	1998 10 29	704	0.0	0.3-
1997 04 11	809	0.5-	0.0	1998 10 14	704	1.0-	0.3+				

(9668)* 1997 LN = 1979 OB₁₂

Discovered 1997 June 3 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 30088)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

$\dot{M}$	359.56469		(2000.0)	P		Q	
n	0.21095472	ω	207.81543	+0.97491843	-0.22080197		
a	2.7947516	Ω	164.86285	+0.21885216	+0.92825652		
e	0.0684889	i	6.14183	+0.04046966	+0.29930975		
P	4.67	H	14.1	G	0.15	U	1

1993 07 23	010	0.0	0.8−	1998 08 23	704	0.4−	1.0+	1998 09 27	704	0.9+	0.4−
1993 07 23	010	0.6−	1.2−	1998 08 23	704	1.1−	0.5−	1998 09 27	704	0.3+	0.2+
1996 03 19	566	0.3+	0.0	1998 08 23	704	0.1+	0.7+	1998 09 27	704	0.8+	0.3−
1996 03 19	566	0.1−	0.6−	1998 08 23	704	0.2−	0.7+	1998 09 27	704	0.9+	0.6−
1996 03 19	566	0.5−	0.9−	1998 08 26	699	0.1+	0.1+	1998 09 27	704	0.4+	0.9−
1997 06 03	327	0.3+	0.1−	1998 08 26	699	0.1−	0.3−	1998 10 12	699	0.6−	0.9+
1997 06 03	327	0.6+	0.2−	1998 08 26	699	0.3−	0.3+	1998 10 12	699	0.2−	0.0
1997 06 03	327	0.3+	0.2+	1998 09 14	704	0.7+	0.3−	1998 10 12	699	0.4−	0.2+
1997 06 04	327	0.3+	0.7+	1998 09 14	704	0.7+	0.2−	1998 10 20	910	0.7−	0.2−
1997 06 04	327	0.1+	0.1−	1998 09 14	704	0.2−	0.8−	1998 10 20	910	0.7−	0.3−
1997 06 04	327	0.0	0.0	1998 09 14	704	0.4−	0.6+	1998 10 20	910	0.5−	0.2−
1997 06 09	658	0.1+	0.0	1998 09 14	704	0.0	0.7+	1998 10 21	910	0.6−	0.2−
1997 06 09	658	0.2−	0.1+	1998 09 18	704	0.4+	0.1+	1998 10 21	910	0.6−	0.1−
1997 06 09	658	0.6+	0.0	1998 09 18	704	1.1+	0.0	1998 10 21	910	0.5−	0.3−
1997 06 15	658	0.8−	0.0	1998 09 18	704	0.3+	1.3+	1998 10 26	910	0.9−	0.9−
1997 06 15	658	0.6−	0.2−	1998 09 18	704	0.3+	0.2+	1998 10 26	910	1.0−	0.9−
1997 06 15	658	0.8−	0.2−	1998 09 18	704	0.3−	1.2+	1998 10 26	910	1.2−	1.0−
1998 08 17	704	0.1−	0.5−	1998 09 25	704	0.6+	0.9−				

(9669)* 1997 NC₃ = 1981 WF₈ = 1986 RD₉ = 1995 FJ₂₁ = 1996 LY₅

Discovered 1997 July 8 by P. G. Comba at Prescott.

Id. G. V. Williams (*MPC* 30674)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	18.27933	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.17160121	<i>ω</i>	126.62873	+0.81421164	−0.58051644
<i>a</i>	3.2071738	<i>Ω</i>	268.85941	+0.53015546	+0.74888627
<i>e</i>	0.1974269	<i>i</i>	0.44420	+0.23663178	+0.31964045
<i>P</i>	5.74	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1981 11 25	095	(5.9−	2.0+)	1997 08 05	684	0.4−	0.5+	1998 10 15	704	1.0−	0.4−
1986 09 08	095	0.1+	0.0	1997 08 25	684	0.7+	0.1+	1998 10 15	704	(0.3+	2.1−)
1995 03 27	691	0.5−	0.1−	1997 08 25	684	1.0+	0.2−	1998 10 15	704	0.6+	0.2+
1995 03 27	691	0.5−	0.1−	1997 08 25	684	0.8+	0.1−	1998 10 18	699	0.4+	0.0
1995 03 27	691	0.2−	0.0	1997 08 30	684	1.0+	0.0	1998 10 18	699	0.7+	0.2+
1996 06 12	566	0.9+	0.1+	1997 08 30	684	1.5+	0.0	1998 10 18	699	0.2+	0.1+
1996 06 12	566	0.0	0.4−	1997 08 30	684	1.6+	0.1−	1998 10 19	691	1.2−	0.4−
1996 06 12	566	0.7+	0.2−	1998 09 17	684	0.4−	0.0	1998 10 19	691	1.0−	0.4−
1997 07 08	684	0.9−	0.4−	1998 09 17	684	0.4−	0.2−	1998 10 19	691	1.0−	0.5−
1997 07 08	684	0.9−	0.4−	1998 09 18	684	0.4−	0.1−	1998 10 20	684	0.3+	0.0
1997 07 09	684	0.7−	0.5−	1998 09 18	684	0.5−	0.2−	1998 10 20	684	0.2+	0.0
1997 07 09	684	0.7−	0.5−	1998 10 14	691	0.6−	0.0	1998 10 24	684	0.5+	0.1−
1997 07 09	684	0.8−	0.3−	1998 10 14	704	0.2−	0.2−	1998 10 24	684	0.4+	0.0
1997 07 11	684	0.6−	0.1+	1998 10 14	691	0.4−	0.3−	1998 10 29	704	0.7+	0.1+
1997 07 11	684	0.6−	0.5−	1998 10 14	704	0.2+	0.7+	1998 10 29	704	0.8+	0.6+
1997 07 11	684	0.9−	0.3−	1998 10 14	691	0.4−	0.2−	1998 10 29	704	0.8+	0.0
1997 07 29	684	0.1+	0.9+	1998 10 14	704	1.0−	0.6−	1998 10 29	704	1.3+	0.4+
1997 07 29	684	0.4−	1.2+	1998 10 14	704	0.4−	0.3−	1998 10 29	704	0.1−	0.9+
1997 08 05	684	0.1−	0.3−	1998 10 15	704	1.9+	0.2+				

(9670)* 1997 NJ₁₀ = 1986 LO = 1987 QD₁₂ = 1987 RK₄

Discovered 1997 July 10 by A. Boattini at the Astronomical Observatory, Campo Imperatore.

Id. T. B. Spahr (*MPC* 30674)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	259.41617	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.19065510	<i>ω</i>	339.92878	−0.90927547	−0.41594917
<i>a</i>	2.9897653	<i>Ω</i>	175.41580	+0.40209450	−0.88681759
<i>e</i>	0.0439684	<i>i</i>	10.30496	+0.10741574	−0.20134759
<i>P</i>	5.17	<i>H</i>	12.5	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1986 06 06	675	1.0+	1.7−	1997 09 01	566	0.2−	0.1+	1998 10 15	704	0.1+	0.8−
1986 06 08	675	1.4+	1.3+	1997 09 01	566	0.4−	0.3+	1998 10 15	704	0.1−	0.3−
1986 06 09	675	2.4−	0.0	1997 09 01	566	0.6−	0.3+	1998 10 15	704	0.6+	0.3+

1987 08 27	095	(2.0+	4.0−)	1998 09 27	104	0.5−	0.4−	1998 10 15	610	0.6+	0.8+
1987 09 02	095	0.3+	1.6−	1998 09 27	104	1.0−	0.3−	1998 10 15	610	0.6+	0.7+
1997 07 10	599	0.3+	0.2+	1998 09 27	104	0.5−	0.2−	1998 10 15	610	0.9+	0.6+
1997 07 10	599	0.2+	0.4+	1998 09 29	704	0.4−	1.2−	1998 10 15	610	1.1+	0.5+
1997 07 13	104	0.4+	0.3+	1998 09 29	704	0.6+	0.4−	1998 10 15	610	1.4+	0.4+
1997 07 13	104	0.4+	0.0	1998 09 29	704	1.2−	0.3−	1998 10 20	610	0.4+	0.8+
1997 07 13	104	0.4+	0.3−	1998 09 29	704	1.2−	0.2−	1998 10 20	610	0.8+	0.6+
1997 07 14	104	0.1+	0.0	1998 10 12	104	0.7−	0.4−	1998 10 20	610	1.1+	0.5+
1997 07 14	104	0.3+	0.5−	1998 10 12	104	0.6−	0.4−	1998 10 20	610	1.5+	0.4+
1997 07 15	104	0.4−	0.0	1998 10 12	104	0.7−	0.2−	1998 10 29	704	0.2−	0.9−
1997 07 27	104	0.0	0.0	1998 10 14	704	1.2−	0.2−	1998 10 29	704	0.8−	0.2−
1997 07 27	104	0.0	0.8+	1998 10 14	704	0.0	1.1+	1998 10 29	704	0.4+	0.6−
1997 07 29	104	0.0	0.3−	1998 10 14	704	0.9+	0.3+	1998 10 29	704	0.5−	0.3−
1997 07 29	104	0.4−	0.2−	1998 10 14	704	1.4−	0.6−	1998 10 29	704	0.1+	0.4+
1997 08 24	104	0.4−	0.6+	1998 10 15	704	0.5−	0.7+				

(9671)* 1997 TU₉ = 1959 EY = 1986 LV

Discovered 1997 Oct. 5 by L. Šarounová at Ondřejov.

Id. G. V. Williams (*MPC* 30882)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	326.68274	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.22129054	<i>ω</i>	339.85859	−0.97498383	+0.21769530
<i>a</i>	2.7070367	<i>Ω</i>	212.81778	−0.19090276	−0.92356441
<i>e</i>	0.4271487	<i>i</i>	4.75133	−0.11385373	−0.31565415
<i>P</i>	4.45	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1959 03 06	690	0.3−	0.4−	1997 10 05	557	0.6+	0.3−	1998 01 02	711	0.2+	0.4−
1959 03 07	690	0.1−	0.7−	1997 10 10	691	0.6−	0.1−	1998 01 03	711	0.1+	0.3−
1986 06 09	046	1.1−	0.7−	1997 10 10	691	0.8−	0.1−	1998 01 03	711	0.0	0.4−
1986 06 09	046	0.1−	1.8−	1997 10 10	691	0.6−	0.2−	1998 09 20	557	0.3+	0.6−
1986 06 10	046	1.1+	0.3+	1997 10 21	691	0.6−	0.2+	1998 09 20	557	0.4+	0.4+
1986 06 10	046	(3.9−	0.1−)	1997 10 21	691	(2.6−	0.6−)	1998 09 20	557	0.6+	0.0
1997 10 04	691	0.9−	0.2−	1997 10 21	691	0.9−	0.1+	1998 09 22	557	0.1+	0.5−
1997 10 04	691	1.0−	0.1+	1997 10 21	557	0.8+	0.0	1998 09 22	557	0.4+	0.2−
1997 10 04	691	1.1−	0.0	1997 10 21	557	0.6+	0.3−	1998 10 17	557	0.4−	0.3+
1997 10 05	557	0.6+	0.2−	1997 10 31	557	0.4+	0.2−	1998 10 17	557	0.5−	0.4−
1997 10 05	557	0.7+	0.8−	1997 10 31	557	0.2−	0.3−	1998 10 20	557	0.3−	0.4+
1997 10 05	557	0.1+	0.0	1997 11 01	557	0.7+	0.2+	1998 10 20	557	0.3−	0.5−
1997 10 05	557	0.7+	0.3+	1997 11 01	557	0.7+	0.2+				
1997 10 05	557	1.3+	0.2−	1998 01 02	711	0.2−	0.2−				

(9672)* 1997 TA₁₀ = 1985 QU₅ = 1985 SO₃ = 1986 XV₃

Discovered 1997 Oct. 5 by P. Pravec at Ondřejov.

Id. G. V. Williams (*MPC* 30882)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

		Williams			
<i>M</i>	91.01277	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.17357086	<i>ω</i>	349.61555	+0.91190874	−0.40873419
<i>a</i>	3.1828647	<i>Ω</i>	34.58381	+0.38103145	+0.80988007
<i>e</i>	0.0554728	<i>i</i>	3.72356	+0.15243847	+0.42075008
<i>P</i>	5.68	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1985 08 24	095	2.0+	1.0+	1997 10 29	704	(2.1+	0.5−)	1997 11 04	557	0.7+	1.0−
1985 09 20	095	2.2−	0.5−	1997 10 29	704	0.9+	0.3−	1997 11 22	691	1.8−	0.5−
1986 12 04	046	(5.5+	0.4+)	1997 10 29	704	0.8+	1.1+	1997 11 22	691	1.7−	0.5−
1986 12 04	046	(3.0+	2.1−)	1997 10 29	704	0.2+	0.2−	1997 11 22	691	1.6−	0.6−
1986 12 04	010	(4.7−	5.8−)	1997 10 29	704	0.9+	0.4+	1997 11 28	691	0.7−	0.6−
1986 12 07	046	1.8+	0.0	1997 10 30	704	0.2+	0.4−	1997 11 28	691	0.9−	0.3−
1986 12 07	046	1.7−	1.1+	1997 10 30	704	(3.8+	2.2−)	1997 11 28	691	0.9−	0.7−
1986 12 09	046	0.6−	1.5+	1997 10 30	704	0.8+	0.2+	1997 12 04	691	1.0−	0.2−
1986 12 09	046	(2.9−	1.9+)	1997 10 30	704	(3.3+	3.0−)	1997 12 04	691	1.0−	0.2−
1997 10 05	557	0.8+	0.7+	1997 10 30	704	0.2+	0.3+	1997 12 04	691	1.0−	0.7−
1997 10 05	557	1.1+	0.7+	1997 10 30	704	(3.0+	2.1−)	1998 09 20	557	0.2+	0.2−
1997 10 05	557	0.9+	0.6+	1997 10 30	704	0.2+	0.4−	1998 09 20	557	0.4+	0.1−

M.P.C. 32907

1992 02 02	385	0.3-	1.5+	1998 08 26	699	0.3+	0.2+	1998 10 13	106	0.3+	0.4-
1992 02 12	809	0.6+	1.6-	1998 08 26	106	1.0+	1.1-	1998 10 13	106	0.5+	0.4-
1992 02 12	809	(0.3-	2.2-)	1998 08 27	106	0.3+	0.1+				
1992 02 12	809	0.4-	1.4-	1998 08 27	106	1.1+	0.7-				

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

(9673)* 1997 UC₂₅ = 1997 TU₂₅ = 1977 PU₁ = 1980 LL = 1983 GQ₁
= 1987 SB₁₉ = 1987 WY₂ = 1993 HJ

Id. A. Doppler (*MPC* 32682), G. V. Williams (*ibid.*)

Williams

M	62.86703		(2000.0)	P	Q
n	0.17475088	ω	126.23602	+0.39686024	+0.91626957
a	3.1685201	Ω	166.81584	-0.89990926	+0.40006398
e	0.1067922	i	13.78124	-0.18073537	+0.01997217
P	5.64	H	13.2	G 0.15	U 1

Residuals in seconds of arc

1981 08 30	675	1.5−	2.1−	1998 08 23	704	0.2−	0.2−	1998 09 18	704	1.5+	0.9+
1981 08 31	675	1.8+	0.4+	1998 08 23	704	0.5−	1.0+	1998 09 18	704	0.0	0.8+
1982 10 24	695	(7.6+	4.3−)	1998 08 23	704	(0.0	2.3+)	1998 09 18	704	0.8+	0.9+
1982 10 25	807	0.1−	1.8−	1998 08 23	704	0.4−	1.5+	1998 09 20	691	0.2−	0.1−
1982 10 26	695	(4.6−	1.7−)	1998 08 26	699	0.2+	0.0	1998 09 20	691	0.2−	0.1−
1982 10 27	807	0.4+	0.6−	1998 08 26	699	0.1+	0.6+	1998 09 20	691	0.0	0.2+
1997 05 05	691	0.5−	0.2−	1998 08 26	699	0.5−	1.1+	1998 09 23	691	1.2−	0.3+
1997 05 05	691	0.5−	0.4−	1998 09 14	704	0.3+	0.9−	1998 09 23	691	0.9−	0.2+
1997 05 14	691	0.3+	0.4−	1998 09 14	704	0.0	0.9−	1998 09 23	691	1.0−	0.1+
1997 05 14	691	0.2+	0.2−	1998 09 14	704	0.1+	0.1−	1998 10 14	699	0.1−	0.2−
1997 05 14	691	0.2+	0.3−	1998 09 14	704	0.0	0.3+	1998 10 14	699	0.3+	0.0
1998 08 17	704	0.2−	0.4−	1998 09 14	704	0.5−	0.3−	1998 10 14	699	0.4+	0.2−
1998 08 17	704	2.0+	0.3−	1998 09 14	699	0.6+	0.5+	1998 10 20	699	0.5−	0.3−
1998 08 17	704	1.3−	0.5−	1998 09 14	699	0.1−	0.5+	1998 10 20	699	0.0	0.3+
1998 08 17	704	0.7−	1.1−	1998 09 14	699	0.8+	0.6+	1998 10 20	699	0.9+	0.5+
1998 08 17	704	0.7−	1.6−	1998 09 18	704	1.2+	0.2+				
1998 08 23	704	0.4−	1.4−	1998 09 18	704	0.5+	0.4+				

(9676)* 2023 P-L = 1987 SL₁₂

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. T. Kobayashi (*MPC* 15569)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Epoch	1999 Jan. 22.0	TT = JDT 2451200.5	Williams	
M	59.70761	(2000.0)	P	Q
n	0.18238341	ω 358.70034	+0.78063145	+0.62495761
a	3.0794925	Ω 322.61802	-0.57332166	+0.71190131
e	0.1660084	i 0.61540	-0.24883088	+0.32035060
P	5.40	H 13.5	G 0.15	U 1

Residuals in seconds of arc

1954 07 03	675	0.9-	0.2+	1991 04 19	809	0.6-	1.4-	1998 09 27	704	1.0+	0.1+
1954 07 03	675	0.5-	0.1+	1991 04 19	809	1.4-	1.5-	1998 09 27	704	1.1+	0.2-
1960 09 24	675	0.7-	0.6-	1991 04 19	675	1.1-	0.4-	1998 09 27	704	1.2+	0.6-
1960 09 26	675	0.1+	0.9-	1991 04 19	675	0.5-	0.9-	1998 09 27	704	0.3-	1.0-
1960 09 28	675	0.9+	0.7+	1992 08 02	801	0.4-	0.3+	1998 10 15	704	0.1-	0.2-
1960 09 28	675	0.3+	0.6-	1992 08 02	801	0.1+	0.4+	1998 10 15	704	0.6-	1.0-
1960 09 29	675	1.3+	1.7-	1992 08 27	675	0.9-	0.7+	1998 10 15	704	(2.4-	2.3-)
1960 10 17	675	0.2-	0.7+	1996 03 15	566	0.3-	0.1+	1998 10 15	704	0.9+	1.3-
1960 10 22	675	0.1-	0.2-	1996 03 15	566	0.1-	0.1+	1998 10 15	704	0.4-	0.0
1960 10 25	675	0.1-	0.3-	1996 03 15	566	0.2+	0.0	1998 10 27	691	0.8-	0.2+
1960 10 26	675	0.3+	0.6-	1998 09 14	704	0.3+	0.2+	1998 10 27	691	1.0-	0.3+
1977 12 07	675	0.4-	0.0	1998 09 14	704	0.2+	0.8+	1998 10 27	691	1.2-	0.0
1977 12 08	675	0.5+	0.2-	1998 09 14	704	0.2+	0.0	1998 10 28	704	0.4-	1.5+
1980 04 08	675	0.5+	0.4+	1998 09 18	704	0.3-	0.0	1998 10 28	704	1.0+	1.1-
1980 04 09	675	1.6+	0.4-	1998 09 18	704	1.3-	1.5+	1998 10 28	704	0.1-	0.8-
1987 08 28	095	(1.4+	3.2-)	1998 09 18	704	0.4-	0.2-	1998 10 28	704	0.4+	0.1+
1987 09 16	809	(0.8-	2.7+)	1998 09 18	704	0.3+	1.3-	1998 10 28	704	0.5+	0.9+
1987 09 16	809	(0.7-	2.7+)	1998 09 18	704	(2.5-	0.8+)	1998 10 29	704	1.0-	0.0

1987 09 16	809	(0.5− 2.8+)	1998 09 26	704	1.7+ 0.1−	1998 10 29	704	0.7− 0.0
1987 09 16	095	0.4+ 2.1−	1998 09 26	704	1.0+ 0.4−	1998 10 29	704	1.8− 0.8+
1987 09 18	809	0.9+ 1.1+	1998 09 26	704	(2.3+ 0.5−)	1998 10 29	704	1.1− 1.1+
1987 09 18	809	1.0+ 0.9+	1998 09 26	704	1.8+ 0.7−	1998 10 29	704	1.6− 0.3+
1987 09 18	809	1.0+ 0.8+	1998 09 26	704	1.6+ 0.6−			
1991 04 19	809	0.4+ 1.7−	1998 09 27	704	0.4+ 0.6−			

(9677)* 2532 P-L = 1987 QW₉

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 16033)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	44.50726		(2000.0)		P		Q	
<i>n</i>	0.18213880	ω	131.21829		+0.76932988		+0.63840725	
<i>a</i>	3.0822491	Ω	189.19611		−0.62164280		+0.73948700	
<i>e</i>	0.2618782	<i>i</i>	8.57429		−0.14728125		+0.21353024	
<i>P</i>	5.41	<i>H</i>	13.7		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.2+ 1.6+	1997 04 07	704	0.2+ 0.6+	1998 09 26	704	0.2− 0.6+
1960 09 26	675	0.2+ 0.3−	1997 04 07	704	0.4− 0.6+	1998 09 27	704	0.4+ 0.2+
1960 09 28	675	0.6+ 0.4−	1998 09 14	704	0.6+ 0.3+	1998 09 27	704	0.2+ 1.0+
1960 09 29	675	0.9+ 0.5−	1998 09 14	704	1.3− 1.3+	1998 09 27	704	0.2+ 0.3+
1960 10 17	675	1.3− 0.7−	1998 09 14	704	0.5+ 0.0	1998 09 27	704	0.1+ 0.8+
1960 10 22	675	0.3− 1.1−	1998 09 14	704	0.3+ 0.2+	1998 09 27	704	0.5− 1.2+
1960 10 25	675	0.1+ 0.4−	1998 09 14	704	0.7+ 0.6+	1998 09 28	691	1.3− 0.1+
1960 10 26	675	0.3− 0.4−	1998 09 16	699	0.7+ 0.4−	1998 09 28	691	1.1− 0.1+
1987 08 26	095	0.3+ 0.7+	1998 09 16	699	0.6+ 0.5−	1998 09 28	691	1.3− 0.1+
1987 09 01	095	1.6+ 0.7+	1998 09 16	699	0.5+ 0.4−	1998 10 14	704	0.3+ 0.3−
1992 05 30	801	0.7− 0.5−	1998 09 18	704	0.7+ 0.4−	1998 10 14	704	0.1+ 1.2−
1992 05 30	801	0.3− 0.3−	1998 09 18	704	0.0 0.2−	1998 10 14	704	0.2− 0.7−
1992 06 03	801	0.9− 0.3+	1998 09 18	704	1.0+ 0.3−	1998 10 14	704	0.7+ 0.8−
1992 06 03	801	0.5− 0.1+	1998 09 18	704	0.4+ 0.2−	1998 10 14	704	0.7− 1.0−
1992 06 30	801	0.4+ 0.7−	1998 09 18	704	1.0+ 0.9−	1998 10 14	699	0.8− 0.3+
1992 06 30	801	0.3− 0.2−	1998 09 24	120	0.5+ 0.3−	1998 10 14	699	0.8− 0.2−
1993 11 12	033	0.3+ 0.6+	1998 09 24	120	0.5+ 0.3−	1998 10 14	699	0.6− 0.0
1993 11 12	033	0.1+ 0.8+	1998 09 24	120	0.5+ 0.2−	1998 10 15	704	0.5− 0.3−
1997 04 02	704	0.6+ 0.2+	1998 09 26	704	0.2+ 0.2−	1998 10 15	704	0.1+ 0.2+
1997 04 02	704	0.0 0.7+	1998 09 26	704	0.0 0.4−	1998 10 15	704	0.7− 0.5+
1997 04 06	704	0.9+ 0.1+	1998 09 26	704	0.5− 0.3+	1998 10 15	704	0.8− 0.9+
1997 04 06	704	0.7+ 0.1−	1998 09 26	704	0.7− 0.7+	1998 10 15	704	0.7− 0.3+

(9678)* 2584 P-L = 1996 CL₅

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* 26911)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	60.75847		(2000.0)		P		Q	
<i>n</i>	0.23399636	ω	132.63219		+0.83693930		+0.54719825	
<i>a</i>	2.6081345	Ω	194.20288		−0.51364934		+0.77883121	
<i>e</i>	0.2123942	<i>i</i>	2.41275		−0.18893641		+0.30658772	
<i>P</i>	4.21	<i>H</i>	15.9		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.3+ 1.6−	1996 02 16	691	0.0 0.1−	1998 10 15	704	0.0 0.0
1960 09 26	675	0.2+ 1.3−	1997 04 30	691	0.1+ 0.1+	1998 10 15	704	0.8− 1.4−
1960 09 28	675	0.2− 0.1−	1997 04 30	691	0.2+ 0.5+	1998 10 15	704	1.7− 1.4−
1960 09 29	675	1.0+ 0.2−	1997 04 30	691	0.1− 0.2+	1998 10 17	699	0.8+ 0.3+
1960 10 17	675	0.4− 0.6+	1998 09 26	704	0.7− 1.4−	1998 10 17	699	1.1+ 0.4−
1960 10 22	675	0.3+ 0.5+	1998 09 26	704	0.4+ 0.6−	1998 10 17	699	0.4− 0.5+
1960 10 25	675	0.1+ 0.8+	1998 09 26	704	0.6+ 0.0	1998 10 29	704	0.5− 1.0−
1960 10 26	675	0.5− 1.2−	1998 09 26	704	1.7+ 0.9+	1998 10 29	704	0.3− 0.4+
1996 02 10	691	0.1+ 0.2−	1998 09 26	704	0.9− 1.7+	1998 10 29	704	0.4− 1.3+
1996 02 10	691	0.1− 0.3−	1998 09 27	704	1.3− 0.4+	1998 10 29	704	0.6− 0.3+
1996 02 10	691	0.1+ 0.1−	1998 09 27	704	0.7+ 1.6+	1998 10 29	704	0.8− 0.2−

1996 02 16	691	0.1− 0.1+	1998 09 27	704	1.9+ 2.2+
1996 02 16	691	0.1− 0.0	1998 09 27	704	(4.2+ 0.6−)

(9679)* 2600 P-L = 1994 PY₂₀

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* 24756)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	52.23191		(2000.0)		P		Q	
<i>n</i>	0.26005695	ω	157.72336		+0.98075590		+0.19519283	
<i>a</i>	2.4308439	Ω	191.02314		−0.18227476		+0.90772170	
<i>e</i>	0.1691091	<i>i</i>	1.25790		−0.06995551		+0.37140419	
<i>P</i>	3.79	<i>H</i>	15.6		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.8+ 0.4−	1994 09 06	809	0.6− 1.0+	1998 10 14	704	0.7+ 0.4−
1960 09 26	675	1.0+ 0.7−	1994 09 06	809	0.8− 0.8+	1998 10 14	704	1.0− 0.6+
1960 09 28	675	0.2+ 1.5−	1995 12 26	691	0.1− 0.3+	1998 10 14	704	0.6− 0.4+
1960 09 29	675	0.6+ 1.3−	1995 12 26	691	0.4+ 0.7+	1998 10 15	470	0.6+ 0.8−
1960 10 17	675	1.3− 0.4+	1995 12 26	691	0.8+ 0.1+	1998 10 15	470	(0.7− 3.2−)
1960 10 22	675	0.4− 0.0	1997 04 30	704	0.9+ 1.6−	1998 10 15	704	0.7− 0.5−
1960 10 25	675	0.3+ 0.6−	1997 04 30	704	1.2+ 0.9+	1998 10 15	704	0.5− 0.5+
1960 10 26	675	0.2− 0.2+	1997 04 30	704	0.5+ 0.8−	1998 10 15	704	0.2+ 0.1+
1992 01 09	691	1.6+ 1.3+	1997 04 30	704	1.7− 0.5−	1998 10 15	704	(0.4− 2.2+)
1994 08 12	809	0.0 0.2−	1997 05 01	704	0.1− 0.4−	1998 10 28	704	0.0 0.8+
1994 08 12	809	0.4− 0.7+	1997 05 01	704	0.1− 1.2+	1998 10 28	704	1.7− 1.3+
1994 08 12	809	0.7− 0.6+	1997 05 01	704	1.7− 0.8+	1998 10 28	704	0.8+ 1.6−
1994 08 13	809	(4.1− 0.6−)	1997 05 01	704	0.2− 0.7+	1998 10 28	704	0.0 0.6−
1994 08 13	809	(4.2− 1.1−)	1998 09 26	704	0.7− 1.4−	1998 10 29	704	0.7− 0.5−
1994 08 13	809	(4.8− 1.2−)	1998 09 26	704	(0.7+ 2.1−)	1998 10 29	704	0.7+ 1.0+
1994 09 05	809	1.0+ 0.3+	1998 09 26	704	1.7+ 0.0	1998 10 29	704	0.4+ 0.5−
1994 09 05	809	1.2+ 0.8+	1998 09 26	704	0.5+ 0.3−	1998 10 29	704	0.5+ 0.2+
1994 09 05	809	0.6+ 1.0+	1998 09 26	704	1.1− 0.9−	1998 10 29	704	0.2+ 0.0
1994 09 06	809	0.0 0.9+	1998 10 14	704	1.9− 1.5+			

(9680)* 3557 P-L = 1989 BM₁

Discovered 1960 Oct. 22 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. T. Kobayashi (*MPC* 14628)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	351.90132		(2000.0)		P		Q	
<i>n</i>	0.28799783	ω	150.02358		−0.22123063		−0.97339652	
<i>a</i>	2.2709622	Ω	312.68663		+0.87785135		−0.17213473	
<i>e</i>	0.1076414	<i>i</i>	4.65333		+0.42477524		−0.15122450	
<i>P</i>	3.42	<i>H</i>	14.1		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 10 01	675	0.1− 0.6−	1989 02 01	046	(4.9+ 3.3−)	1998 08 31	704	(2.0+ 2.3−)
1953 10 01	675	0.6+ 1.0−	1989 02 01	046	(1.8+ 3.3−)	1998 08 31	704	0.3+ 1.5−
1960 10 22	675	0.0 0.5+	1993 04 19	675	1.0− 0.1−	1998 09 29	704	0.9+ 0.7+
1960 10 24	675	0.2− 0.6+	1993 04 19	675	(3.0− 0.9+)	1998 09 29	704	0.3+ 1.8+
1960 10 26	675	0.5+ 0.4+	1996 03 18	801	0.7+ 0.2+	1998 09 29	704	0.3− 0.3+
1989 01 29	046	(3.5− 2.1−)	1996 03 18	801	0.8+ 0.1+	1998 09 29	704	(1.4+ 2.1+)
1989 01 29	046	0.9− 1.5−	1996 03 22	801	1.2+ 0.7+	1998 09 29	704	1.3− 1.9+
1989 01 30	046	1.3− 0.0	1996 03 22	801	0.9+ 0.5+			
1989 01 30	046	0.8− 1.0−	1998 08 31	704	0.1+ 1.5−			

(9681)* 4069 P-L = 1974 HQ

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. K. Hurukawa (*MPC* 9299)

1998 NOV. 10

M.P.C. 32909

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Williams						
<i>M</i>	197.90084	(2000.0)		P		Q					
<i>n</i>	0.18199677	ω	355.53994	−0.94836559		+0.31119474					
<i>a</i>	3.0838525	Ω	202.88401	−0.28591071		−0.92244954					
<i>e</i>	0.0384068	<i>i</i>	9.07326	−0.13732359		−0.22857095					
<i>P</i>	5.42	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>		1			
Residuals in seconds of arc											
1952 01 31	675	0.1+	1.0−	1996 03 27	809	0.5+	0.9−	1998 09 26	704	0.8+	1.3−
1952 01 31	675	0.3+	0.5−	1996 04 15	809	(4.8+	0.5+)	1998 09 26	704	0.7+	1.2−
1960 09 24	675	0.2−	0.6−	1996 04 15	809	(3.8+	1.5+)	1998 09 27	704	0.2+	0.1+
1960 09 25	675	0.1+	0.7+	1996 04 15	809	(3.8+	1.2+)	1998 09 27	704	1.4−	0.2+
1960 09 26	675	0.2+	0.5−	1996 04 17	809	0.6+	1.2−	1998 09 27	704	0.0	0.6+
1960 09 28	675	0.3−	0.6−	1996 04 17	809	0.5+	1.5−	1998 09 27	704	0.4−	0.1+
1960 10 17	675	0.4+	0.4+	1996 04 17	809	0.5+	1.4−	1998 09 27	704	0.0	0.1+
1960 10 22	675	0.7+	1.1−	1997 08 30	557	0.9−	0.5+	1998 10 15	704	1.2+	1.5+
1960 10 22	675	0.9+	1.8+	1997 08 30	557	0.4−	0.3+	1998 10 15	704	0.2−	0.9+
1960 10 24	675	0.1−	0.1+	1998 09 14	704	1.1+	0.4−	1998 10 15	704	0.3−	0.1−
1960 10 26	675	0.2−	0.4+	1998 09 14	704	0.1+	0.1+	1998 10 15	704	0.8−	0.6+
1974 04 22	805	1.9−	0.7+	1998 09 14	704	(1.7−	2.1+)	1998 10 15	704	0.3−	1.4+
1974 04 24	805	0.6−	0.1−	1998 09 18	704	0.5−	1.4−	1998 10 28	704	(2.1+	2.1+
1974 04 25	805	0.8−	0.6+	1998 09 18	704	1.5+	1.6−	1998 10 28	704	(1.7+	3.1+
1996 03 24	809	(0.8+	2.9+)	1998 09 18	704	0.7+	1.7−	1998 10 28	704	1.4+	1.7−
1996 03 24	809	(0.6+	3.0+)	1998 09 18	704	1.1+	1.6−	1998 10 28	704	0.6+	0.5−
1996 03 24	809	(0.5+	2.9+)	1998 09 26	704	0.8−	0.5+	1998 10 29	691	1.5−	0.1+
1996 03 27	809	0.6+	0.6+	1998 09 26	704	0.3+	1.1−	1998 10 29	691	1.5−	0.1+
1996 03 27	809	0.2−	0.6−	1998 09 26	704	0.3+	0.6+	1998 10 29	691	1.6−	0.1+

(9682)* 4073 P-L = 1997 EK₄₉

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* 30285)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Marsden					
<i>M</i>	120.89065		(2000.0)	P	Q					
<i>n</i>	0.31135088	ω	19.57587	+0.18165931	+0.98220717					
<i>a</i>	2.1559366	Ω	260.91299	−0.90852386	+0.14910219					
<i>e</i>	0.0219923	<i>i</i>	2.76497	−0.37627688	+0.11418236					
<i>P</i>	3.17	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc										
1960 09 24	675	0.2−	0.2−	1997 03 12	809	(0.9+ 2.5−)	1998 09 27	704	0.0	0.2+
1960 09 25	675	0.3+	0.2+	1997 03 12	809	(0.2− 3.1−)	1998 09 27	704	0.4+	0.2−
1960 09 26	675	0.0	0.5−	1997 03 31	704	(3.2+ 0.4−)	1998 09 27	704	0.4−	0.4−
1960 09 28	675	0.3+	0.1+	1997 03 31	704	(1.4+ 2.4−)	1998 09 27	704	1.1−	0.5+
1960 10 17	675	0.4+	0.1−	1998 09 14	704	0.6+	0.1+	1998 10 14	704	0.2−
1960 10 22	675	0.5+	0.1−	1998 09 14	704	0.5+	0.1+	1998 10 14	704	(2.3+ 0.2+)
1960 10 26	675	0.6−	0.9−	1998 09 18	704	1.2−	0.7−	1998 10 14	704	0.1−
1995 10 19	691	0.1−	0.0	1998 09 18	704	0.2−	1.1−	1998 10 14	704	0.1+
1995 10 19	691	0.1+	0.1−	1998 09 18	704	1.4+	1.3−	1998 10 14	704	0.1+
1995 10 19	691	0.1−	0.1−	1998 09 18	704	0.9−	0.3+	1998 10 14	699	0.2+
1995 11 16	691	0.5+	0.1+	1998 09 18	704	0.6+	0.3−	1998 10 14	699	0.7+
1995 11 16	691	0.0	0.0	1998 09 26	704	0.7+	0.5−	1998 10 14	699	0.8+
1995 11 16	691	0.3−	0.1−	1998 09 26	704	0.4+	1.5+	1998 10 15	704	0.0
1997 03 11	809	0.4−	0.8−	1998 09 26	704	0.9−	1.0−	1998 10 15	704	1.6+
1997 03 11	809	0.2−	0.4−	1998 09 26	704	1.6−	0.2+	1998 10 15	704	1.5−
1997 03 11	809	0.3−	1.1−	1998 09 26	704	0.9−	1.5+	1998 10 15	704	0.1−
1997 03 12	809	(0.7+ 3.2−)		1998 09 27	704	0.2−	0.7−	1998 10 15	704	1.2+

(9683)* 4099 P-L = 1991 TV₁₃ = 1993 FR₂₂

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* 23532)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5						Williams					
M	27.88203		(2000.0)			P		Q			
n	0.28709591		ω	193.31918		+0.71587355		−0.69667411			
a	2.2757159		Ω	211.00587		+0.64861558		+0.68822499			
e	0.1543961		i	5.18868		+0.25850123		+0.20246372			
P	3.43		H	15.2		G	0.15		U	1	
Residuals in seconds of arc											
1960 09 24	675	0.1−	0.9−	1993 03 21	809	0.1−	0.6−	1998 09 29	704	0.4−	0.7+
1960 09 25	675	0.6+	0.1+	1993 03 22	809	0.6+	0.8−	1998 09 29	704	(1.4+ 2.3−)	
1960 09 26	675	0.6+	1.0−	1993 03 26	809	0.6+	0.1−	1998 09 29	704	(2.3+ 0.7−)	
1960 09 28	675	0.5+	0.6−	1993 03 27	809	(6.3+ 6.8−)		1998 09 29	704	1.4+	0.1+
1960 10 17	675	0.4+	0.4+	1993 04 18	413	0.3+	1.5+	1998 09 29	704	(0.5+ 2.5+)	
1960 10 22	675	1.1−	0.0	1994 06 12	691	0.1−	0.4−	1998 10 29	704	0.7+	0.1+
1960 10 24	675	0.1−	0.1+	1994 06 12	691	0.4−	0.2+	1998 10 29	704	0.1−	0.6−
1960 10 26	675	0.1−	0.2−	1994 06 12	691	0.2−	0.2−	1998 10 29	704	0.1+	0.3−
1991 10 04	691	0.3−	0.6+	1996 02 17	691	0.5−	0.0	1998 10 29	704	0.6−	0.2+
1991 10 04	691	0.4−	0.6+	1996 02 17	691	0.6−	0.2−	1998 10 29	704	0.1−	0.4−
1991 10 04	691	0.0	1.2+	1996 02 17	691	0.3−	0.1−				

(9684)* 4113 P-L = 1981 EQ₂₅

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* 8145)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5					Marsden						
<i>M</i>	294.17115		(2000.0)		P		Q				
<i>n</i>	0.26022444	ω	286.29760		−0.64687577		−0.76247508				
<i>a</i>	2.4298007	Ω	204.02511		+0.71175664		−0.59727919				
<i>e</i>	0.1375487	<i>i</i>	1.90666		+0.27377771		−0.24877565				
<i>P</i>	3.79	<i>H</i>	14.6		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1949 11 21	675	0.3+	0.5+	1981 04 06	413	0.9+	0.5−	1998 09 27	704	0.2−	1.2+
1949 11 21	675	0.4−	1.0−	1981 04 07	413	1.5−	1.4+	1998 10 10	699	1.4+	0.5+
1960 09 24	675	0.1+	0.7−	1981 04 07	413	1.1+	0.8−	1998 10 10	699	0.7+	0.1+
1960 09 24	675	0.5+	0.7+	1981 04 10	413	0.2−	0.1+	1998 10 10	699	0.7+	1.6+
1960 09 25	675	0.1−	0.2−	1981 04 26	413	0.9+	1.1−	1998 10 14	704	0.3+	0.5+
1960 09 26	675	0.9+	0.0	1981 05 01	413	0.0	0.6−	1998 10 14	704	0.7+	0.1−
1960 09 26	675	0.0	0.4+	1981 05 01	413	1.7−	0.5−	1998 10 14	704	0.2−	1.4+
1960 09 27	675	0.2−	1.8+	1981 05 03	413	0.9−	0.6−	1998 10 14	704	0.7−	0.3−
1960 09 28	675	0.3+	0.3+	1992 01 09	894	0.7+	0.7+	1998 10 14	704	0.3+	0.4+
1960 10 17	675	1.6−	1.1−	1992 01 09	894	1.1−	0.7−	1998 10 15	704	0.2−	0.4+
1960 10 22	675	0.4−	0.3−	1992 01 12	894	0.2+	1.3−	1998 10 15	704	0.2−	0.5+
1960 10 24	675	0.4−	0.5+	1992 01 12	894	0.4−	0.2−	1998 10 15	704	0.2−	0.1−
1977 02 11	675	0.3+	1.1+	1996 04 19	566	0.3+	0.1+	1998 10 15	704	0.7+	0.7−
1977 02 12	675	1.2+	1.0+	1996 04 19	566	0.2−	0.2+	1998 10 15	704	0.3+	2.1−
1981 02 12	413	0.2−	0.1+	1996 04 19	566	0.1−	0.4+	1998 10 17	699	0.3+	0.5−
1981 02 12	413	0.1−	0.2−	1998 09 18	809	0.3+	2.7−	1998 10 17	699	0.1−	0.1−
1981 02 13	413	0.0	0.3−	1998 09 18	809	0.8−	2.7−	1998 10 17	699	0.7+	0.3−
1981 03 02	413	1.2−	0.3+	1998 09 18	809	(1.4−	3.9−)	1998 10 28	704	1.1+	0.8+
1981 03 02	413	0.6+	0.8−	1998 09 26	704	0.2+	0.4+	1998 10 28	704	0.1+	0.3−
1981 03 06	413	1.1−	0.1+	1998 09 26	704	0.2+	0.4+	1998 10 28	704	0.5+	0.0
1981 03 06	413	0.7+	0.5−	1998 09 26	704	0.1+	0.1−	1998 10 28	704	0.4+	1.2+
1981 03 11	413	1.2−	0.9+	1998 09 26	704	0.1+	0.3−	1998 10 28	704	0.5−	0.5+
1981 03 11	413	0.1+	0.0	1998 09 26	704	0.6−	0.3+	1998 10 29	704	0.7−	0.1−
1981 03 15	413	0.9+	0.5+	1998 09 27	704	0.2−	0.4−	1998 10 29	704	0.4−	0.7+
1981 04 05	413	0.2+	0.1−	1998 09 27	704	0.7+	0.8+	1998 10 29	704	0.9−	0.0
1981 04 05	413	1.7+	1.6−	1998 09 27	704	0.1−	0.8+	1998 10 29	704	0.2−	1.2−
1981 04 06	413	1.0−	1.1+	1998 09 27	704	0.6−	0.4+	1998 10 29	704	0.5−	0.4+

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	213.71128		(2000.0)	P		Q	
<i>n</i>	0.26122074	ω	303.92436	-0.92078555		+0.38945725	
<i>a</i>	2.4236186	Ω	259.00481	-0.35013670		-0.84990435	
<i>e</i>	0.1304036	<i>i</i>	1.27489	-0.17192518		-0.35494456	
<i>P</i>	3.77	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	1.2-	1.4+	1989 04 10	809	0.8-	0.8+	1998 09 21	691	0.5-	0.5+
1960 09 25	675	0.6-	0.6+	1993 05 14	809	0.2+	0.7-	1998 09 26	704	0.6-	0.0
1960 09 26	675	0.2+	1.3+	1993 05 14	809	0.6-	0.4-	1998 09 26	704	0.7-	1.0-
1960 09 28	675	0.3+	1.9+	1993 05 14	809	0.6-	1.3-	1998 09 26	704	0.6+	1.4+
1960 10 17	675	0.3-	0.8+	1993 05 15	809	0.1+	0.6-	1998 09 26	704	0.9+	0.2-
1960 10 22	675	1.5-	0.8+	1993 05 15	809	0.5+	1.4-	1998 09 26	704	0.9-	1.6-
1960 10 26	675	0.2-	0.8+	1993 05 15	809	0.8+	0.3-	1998 10 14	704	0.3-	0.2+
1989 04 03	809	0.1-	0.2-	1993 05 23	809	1.0+	1.6+	1998 10 14	704	(2.3+	0.2+)
1989 04 03	809	0.8-	0.5-	1993 05 23	809	(1.7+	2.2+)	1998 10 14	704	0.6+	1.7+
1989 04 03	809	0.1-	1.0-	1993 05 23	809	(1.6+	2.2+)	1998 10 28	704	0.1-	0.4+
1989 04 05	809	0.3+	0.2+	1993 06 17	809	0.5-	0.1+	1998 10 28	704	0.3-	0.2-
1989 04 05	809	0.4+	0.4+	1993 06 17	809	1.2-	0.1-	1998 10 28	704	0.5-	0.9-
1989 04 05	809	0.7+	0.0	1993 06 17	809	(3.0-	0.3-)	1998 10 29	704	(2.1+	1.0+)
1989 04 08	809	1.6+	1.8+	1994 10 14	691	(2.3-	0.3+)	1998 10 29	704	0.0	0.3-
1989 04 08	809	0.9+	2.4+	1994 10 14	691	(2.4-	0.8+)	1998 10 29	704	0.6+	0.9+
1989 04 08	809	1.1+	2.3+	1994 10 14	691	(2.3-	0.5+)	1998 10 29	704	1.8+	0.1-
1989 04 10	809	0.0	1.6+	1998 09 21	691	0.8-	0.6+	1998 10 29	704	0.6+	1.3-
1989 04 10	809	0.2-	1.0+	1998 09 21	691	0.8-	0.7+				

(9686)* 4604 P-L = 1953 SQ = 1991 RL₄₁

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* 22821), G. V. Williams (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	75.72964		(2000.0)	P		Q	
<i>n</i>	0.28654642	ω	304.96560	+0.88948148		+0.45657628	
<i>a</i>	2.2786243	Ω	27.88224	-0.40490911		+0.80673096	
<i>e</i>	0.1145646	<i>i</i>	2.32781	-0.21182850		+0.37513099	
<i>P</i>	3.44	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 09 17	675	0.3-	0.2+	1991 10 07	691	0.6-	0.7+	1998 10 19	691	0.7-	0.0
1953 09 17	675	1.6+	0.6+	1991 10 07	691	0.6-	0.8+	1998 10 19	691	0.5-	0.2-
1960 09 24	675	0.0	0.7-	1997 05 06	691	0.3-	0.9-	1998 10 19	699	0.7+	0.4+
1960 09 26	675	0.4-	0.1-	1997 05 06	691	0.9-	0.6-	1998 10 19	699	0.8+	0.1-
1960 09 27	675	0.3+	0.7-	1997 05 06	691	0.2-	0.6-	1998 10 19	699	0.9+	0.1-
1960 09 28	675	0.9-	0.5-	1998 09 24	910	1.5+	0.8-	1998 10 27	691	0.6-	0.3+
1960 10 17	675	0.2-	0.6-	1998 09 24	910	1.5+	0.7-	1998 10 27	691	0.2-	0.3+
1960 10 22	675	0.6+	1.3-	1998 09 24	910	1.5+	0.8-	1998 10 27	691	0.6-	0.1+
1960 10 25	675	0.3+	1.0-	1998 10 10	699	0.6+	0.3-	1998 10 29	704	0.7+	0.3-
1960 10 26	675	0.5+	0.4+	1998 10 10	699	0.4+	0.2-	1998 10 29	704	0.1+	0.1+
1990 03 27	675	0.2+	0.6-	1998 10 10	699	0.7+	0.6-	1998 10 29	704	0.1+	0.1-
1991 09 09	691	0.5-	0.5+	1998 10 13	691	1.1-	0.2-	1998 10 29	704	0.1-	0.1-
1991 09 09	691	0.3-	0.7+	1998 10 13	691	0.9-	0.0	1998 10 29	704	0.2+	0.1+
1991 09 09	691	0.3-	0.5+	1998 10 13	691	1.0-	0.0				
1991 10 07	691	0.7-	1.0+	1998 10 19	691	0.7-	0.1-				

(9687)* 4614 P-L = 1991 FE₄

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* 19318)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	306.86007		(2000.0)	P		Q	
<i>n</i>	0.20872494	ω	83.52584	-0.16274701		-0.98624173	
<i>a</i>	2.8146203	Ω	15.92917	+0.85835704		-0.15601261	
<i>e</i>	0.0053364	<i>i</i>	6.06434	+0.48655586		-0.05465635	
<i>P</i>	4.72	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1951 12 01	675	0.7-	1.9-	1993 09 23	675	0.3+	0.4+	1998 09 27	704	0.0	0.4+
1960 09 24	675	0.9-	0.3-	1995 01 04	010	1.2+	1.0+	1998 09 27	704	0.8+	0.4+
1960 09 26	675	0.2-	0.3+	1995 01 04	010	1.2+	1.2+	1998 09 27	704	0.8+	0.9-
1960 09 27	675	0.6+	0.6+	1995 01 04	010	1.2+	1.4+	1998 10 10	699	0.1+	0.1-
1960 09 28	675	0.8+	1.7+	1995 01 04	010	(0.7+	2.6+)	1998 10 10	699	0.9+	0.7+
1960 10 17	675	0.3+	0.7-	1995 01 05	010	0.6-	1.2+	1998 10 10	699	0.7+	0.2+
1960 10 22	675	0.0	1.1-	1995 01 05	010	0.3-	0.9+	1998 10 14	704	1.1+	0.3+
1960 10 25	675	0.1+	0.3-	1996 03 18	566	0.3-	0.5+	1998 10 14	704	0.4-	0.2-
1960 10 26	675	0.2-	0.4+	1996 03 18	566	0.3-	0.5+	1998 10 14	704	0.4+	0.4-
1988 08 16	675	0.9+	0.2-	1996 03 18	566	0.8-	0.5+	1998 10 14	704	0.1-	0.5-
1988 08 16	675	0.9+	0.1+	1998 09 14	699	1.2-	1.3-	1998 10 15	470	0.6-	0.4-
1988 09 11	675	0.4-	1.2+	1998 09 14	699	0.7-	0.6+	1998 10 15	470	1.1-	0.2-
1988 09 11	675	1.6-	0.1-	1998 09 14	699	0.5-	0.9+	1998 10 15	470	0.8-	0.6-
1991 03 23	809	0.2-	1.1-	1998 09 18	809	(2.1+	3.0+)	1998 10 17	699	0.5+	0.0
1991 03 23	809	0.1-	1.1-	1998 09 18	809	(1.8+	3.4+)	1998 10 17	699	0.0	0.1-
1991 03 23	809	0.2+	1.0-	1998 09 18	809	(0.8+	3.7+)	1998 10 17	699	0.3+	0.2-
1991 03 24	809	0.8-	1.1-	1998 09 20	809	(0.9+	2.1+)	1998 10 28	704	0.5-	0.8-
1991 03 24	809	1.0-	0.7-	1998 09 20	809	(0.0	2.7+)	1998 10 28	704	1.1+	0.7-
1991 03 24	809	0.8-	0.5-	1998 09 20	809	(0.3+	3.2+)	1998 10 28	704	0.8+	0.5-
1991 04 16	675	0.4-	0.0	1998 09 26	704	0.5+	0.2-	1998 10 28	704	0.2+	0.9-
1991 04 16	675	1.2+	0.2-	1998 09 26	704	0.1-	0.7-	1998 10 28	704	1.7-	1.9+
1993 09 19	675	0.3+	1.7+	1998 09 26	704	0.4+	0.1-	1998 10 29	704	1.6-	0.7-
1993 09 19	675	0.0	0.5+	1998 09 26	704	1.0+	0.8-	1998 10 29	704	0.2+	1.4-
1993 09 21	675	0.3-	0.2-	1998 09 26	704	0.1-	0.2-	1998 10 29	704	0.4-	0.0
1993 09 21	675	1.4+	0.2+	1998 09 27	704	0.1+	0.9-	1998 10 29	704	0.1+	0.6-
1993 09 23	675	0.3-	0.9+	1998 09 27	704	0.3+	1.3-	1998 10 29	704	0.9-	0.2+

(9688)* 4665 P-L = 1979 SM₇ = 1983 YQ

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. T. Kobayashi (*MPC* 12583)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	33.11709		(2000.0)	P		Q	
<i>n</i>	0.25987497	ω	328.54057	+0.98646674		-0.15643322	
<i>a</i>	2.4319786	Ω	40.55129	+0.16170062		+0.87862368	
<i>e</i>	0.1309779	<i>i</i>	4.33240	+0.02713463		+0.45116414	
<i>P</i>	3.79	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.8+	0.3-	1998 09 24	699	0.3-	0.9+	1998 10 13	327	0.7+	0.3+
1960 09 26	675	0.2+	0.6-	1998 09 24	699	0.2+	1.4+	1998 10 14	704	0.3+	0.3-
1960 09 27	675	0.6+	1.6-	1998 09 24	699	0.0	1.1+	1998 10 14	704	0.1-	0.3-
1960 10 17	675	0.3-	0.7+	1998 09 26	704	0.1-	0.5-	1998 10 14	704	0.1+	0.3-
1960 10 22	675	0.5-	1.1-	1998 09 26	704	0.3+	0.7+	1998 10 14	704	0.5-	0.8-
1960 10 25	675	0.3-	0.4-	1998 09 26	704	1.1+	0.2+	1998 10 14	704	1.0-	0.1-
1960 10 26	675	0.1-	0.4-	1998 09 26	704	1.0+	0.9-	1998 10 15	704	0.2-	0.4-
1979 09 23	095	2.2+	1.6-	1998 09 26	704	0.1+	0.8+	1998 10 15	704	0.4+	0.5-
1983 12 28	033	0.1+	1.0+	1998 09 27	704	0.1-	0.4+	1998 10 15	704	0.6-	0.3-
1983 12 29	033	0.0	0.3+	1998 09 27	704	0.3-	1.1+	1998 10 15	704	0.2-	1.0-
1983 12 29	033	1.0+	0.4+	1998 09 27	704	0.8+	0.2+	1998 10 15	704	0.3-	0.1-
1993 04 21	691	0.2-	0.2+	1998 09 27	704	0.2-	1.0+	1998 10 19	699	0.0	0.1-
1993 04 21	691	0.2-	0.1+	1998 09 27	704	0.2-	0.0	1998 10 19	699	0.1-	0.2+
1993 04 21	691	0.3-	0.0	1998 10 01	327	0.4-	0.0	1998 10 19	699	1.5+	0.1-
1995 11 22	691	0.3-	0.6-	1998 10 01	327	0.5-	0.1+	1998 10 28	704	0.6-	0.0
1995 11 22	691	0.8-	0.9-	1998 10 01	327	0.4-	0.3+	1998 10 28	704	0.2+	0.2-
1995 11 22	691	0.7-	0.7-	1998 10 10	699	0.5+	0.4+	1998 10 28	704	0.8-	0.0
1997 05 12	689	1.0+	0.4-	1998 10 10	699	0.6+	0.5+	1998 10 28	704	2.0-	0.6-

1998 09 18	704	0.1+	0.3+	1998 10 10	699	0.0	0.3+	1998 10 28	704	0.7-	0.3+
1998 09 18	704	0.1+	1.3-	1998 10 13	327	0.2-	0.3+	1998 10 29	704	0.2+	0.1-
1998 09 18	704	1.3-	0.9-	1998 10 13	327	0.5+	0.5+	1998 10 29	704	0.5-	0.4+
1998 09 18	704	(2.3-	1.4-)	1998 10 13	327	0.2-	0.2+	1998 10 29	704	0.6+	0.6+
1998 09 18	704	1.1-	0.8-	1998 10 13	327	0.6+	0.2+	1998 10 29	704	0.1-	0.2-
1998 09 21	689	0.0	0.3+	1998 10 13	327	0.3-	0.1+	1998 10 29	704	0.0	0.2+

(9689)* 4831 P-L = 2013 T-3

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. C. J. van Houten (*MPC* 12572)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		295.19246		(2000.0)		P		Q	
<i>n</i>		0.23395894	ω	109.26602		-0.51410058		-0.85635465	
<i>a</i>		2.6084126	Ω	12.03349		+0.67321694		-0.43793668	
<i>e</i>		0.1536187	<i>i</i>	13.46684		+0.53148804		-0.27362051	
<i>P</i>		4.21	<i>H</i>	14.4		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.4-	0.2-	1977 10 22	675	1.2+	1.1-	1998 09 26	704	0.0	0.3-
1960 09 26	675	0.9-	0.7-	1977 10 22	675	(2.6+	0.1+)	1998 09 26	704	1.1+	0.1-
1960 09 27	675	0.2+	0.1-	1994 11 07	675	0.0	0.4-	1998 09 26	704	0.3+	1.3-
1960 09 28	675	1.7-	0.1+	1994 11 07	675	1.2-	0.2-	1998 09 27	704	0.9-	1.1+
1960 10 22	675	1.1+	0.7+	1996 03 18	566	0.7-	0.1-	1998 09 27	704	1.2+	1.0+
1960 10 25	675	0.3-	0.7+	1996 03 18	566	0.1-	0.5-	1998 09 27	704	0.6-	0.5+
1977 10 07	675	0.3+	0.7-	1996 03 18	566	0.3-	0.7-	1998 09 27	704	0.9+	0.0
1977 10 11	675	0.2-	1.9+	1996 04 22	566	0.4-	0.4-	1998 09 27	704	1.2-	1.5-
1977 10 11	675	1.6-	2.0+	1996 04 22	566	0.3+	0.1-	1998 10 15	704	0.7+	0.2+
1977 10 12	675	0.7-	0.3+	1996 04 22	566	0.0	0.3-	1998 10 15	704	0.9+	0.2-
1977 10 12	675	0.6-	0.1+	1998 09 18	704	0.3+	0.6-	1998 10 15	704	0.2-	1.1-
1977 10 16	675	0.5+	1.6-	1998 09 18	704	1.3+	0.7-	1998 10 15	704	1.0+	0.1-
1977 10 16	675	0.1+	1.5-	1998 09 18	704	0.8-	0.4-	1998 10 29	704	(2.6-	0.3-)
1977 10 17	675	(0.1+	2.9+)	1998 09 18	704	0.3+	0.1-	1998 10 29	704	(3.2+	0.3+)
1977 10 17	675	0.3+	2.2+	1998 09 18	704	1.2+	0.1+	1998 10 29	704	0.2-	0.6+
1977 10 21	675	0.6+	0.2-	1998 09 26	704	0.5-	0.9-	1998 10 29	704	(2.2+	2.3-)
1977 10 21	675	2.0+	0.7+	1998 09 26	704	1.2-	0.0	1998 10 29	704	0.6-	0.2-

(9690)* 6039 P-L = 1953 GB₁ = 1997 OM₁

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* 30466)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		347.64907		(2000.0)		P		Q	
<i>n</i>		0.20965181	ω	265.10368		-0.02387698		-0.99955826	
<i>a</i>		2.8063186	Ω	186.34592		+0.96892202		-0.01877833	
<i>e</i>		0.1723120	<i>i</i>	9.21298		+0.24621132		-0.02303588	
<i>P</i>		4.70	<i>H</i>	13.1		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1953 04 05	760	0.1-	0.5-	1996 04 20	566	0.0	0.5+	1997 08 07	046	0.5-	0.2+
1953 04 05	760	0.7-	2.0-	1997 07 29	046	0.1+	0.4-	1997 08 07	046	0.4-	0.5+
1960 09 24	675	0.4-	0.5+	1997 07 29	046	0.1+	0.5-	1997 08 09	046	0.1-	0.3+
1960 09 25	675	0.6+	0.0	1997 07 29	046	0.0	0.3-	1997 08 09	046	0.2-	0.3+
1960 09 26	675	0.4-	0.6-	1997 07 31	046	0.2+	0.2-	1997 08 09	046	0.2-	0.3+
1960 09 28	675	0.5+	0.4-	1997 07 31	046	0.8+	0.1-	1997 08 12	046	0.3-	0.2+
1960 10 17	675	0.0	0.4-	1997 07 31	046	0.7+	0.0	1997 08 12	046	0.5-	0.2+
1960 10 22	675	0.6+	1.7-	1997 07 31	046	0.3+	0.0	1997 08 12	046	0.4-	0.1+
1960 10 25	675	1.0+	0.6-	1997 07 31	046	0.3+	0.0	1998 08 31	704	0.4-	0.3-
1960 10 26	675	0.1-	0.4+	1997 08 02	046	0.2-	0.1+	1998 08 31	704	1.8+	0.1+
1960 10 26	675	0.3-	1.0-	1997 08 02	046	0.6+	0.1-	1998 08 31	704	0.7-	0.7+
1994 01 07	691	0.9-	0.4+	1997 08 02	046	0.3+	0.2-	1998 08 31	704	0.9+	0.4+
1994 01 07	691	0.8-	0.4-	1997 08 03	046	0.2+	0.0	1998 08 31	704	(4.3-	0.2+)
1994 01 07	691	1.0-	0.0	1997 08 03	046	0.2+	0.0	1998 10 27	744	0.3+	0.3+
1996 04 20	566	0.0	0.7+	1997 08 03	046	0.3+	0.2+	1998 10 27	744	0.0	0.7+
1996 04 20	566	0.3+	0.4+	1997 08 07	046	0.7-	0.2+	1998 10 27	744	0.4-	0.3+

(9691)* 6053 P-L = 3111 T-3

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. S. Nakano (*MPC* 12699)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		82.33986		(2000.0)		P		Q	
<i>n</i>		0.23393408	ω	84.00336		+0.42811430		+0.90322158	
<i>a</i>		2.6085974	Ω	211.39965		-0.85036000		+0.39131621	
<i>e</i>		0.1961753	<i>i</i>	3.31732		-0.30595100		+0.17624531	
<i>P</i>		4.21	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.7-	0.2-	1994 11 04	675	1.3+	0.5-	1998 09 27	704	0.1-	0.2-
1960 09 25	675	0.5+	0.3-	1994 11 04	675	1.1-	0.2+	1998 09 27	704	0.1+	1.1+
1960 09 26	675	0.5-	0.0	1995 12 30	691	0.1-	0.5+	1998 09 27	704	0.8-	0.2+
1960 09 28	675	0.8-	0.8-	1995 12 30	691	1.0-	0.0	1998 09 27	704	0.6-	0.8+
1960 09 28	675	0.4-	1.0-	1997 04 01	809	0.0	0.9+	1998 09 27	704	(0.1-	3.0+)
1960 10 17	675	0.6-	0.3+	1997 04 01	809	0.3+	0.4+	1998 10 14	699	0.7-	0.3+
1960 10 22	675	0.0	1.2+	1997 04 01	809	0.6+	0.3-	1998 10 14	699	0.1-	0.2+
1960 10 24	675	0.6+	0.2+	1998 09 18	704	0.6+	0.9-	1998 10 14	699	0.6-	0.2+
1960 10 26	675	0.2+	1.5+	1998 09 18	704	0.1-	0.4+	1998 10 15	704	0.1+	0.0
1977 10 16	675	0.7+	1.4-	1998 09 18	704	0.1-	0.3-	1998 10 15	704	0.7+	1.0-
1977 10 16	675	1.5+	0.7-	1998 09 18	704	0.3-	0.1+	1998 10 15	704	(2.0-	2.4-)
1977 10 17	675	0.1+	1.2+	1998 09 18	704	(1.5-	2.2+)	1998 10 15	704	0.0	0.5+
1977 10 17	675	0.3+	0.5+	1998 09 26	704	0.7+	1.0+	1998 10 15	704	0.5+	0.6-
1977 10 21	675	(2.5+	1.7+)	1998 09 26	704	0.2+	0.5-	1998 10 28	704	0.5-	0.2+
1977 10 21	675	0.5+	1.3+	1998 09 26	704	0.2+	0.4-	1998 10 28	704	0.2-	0.1-
1977 10 22	675	0.4-	0.3-	1998 09 26	704	0.0	0.9-	1998 10 28	704	1.4-	0.5+
1977 10 22	675	0.8+	0.6-	1998 09 26	704	0.3+	0.2+				

(9692)* 6354 P-L = 1994 PD₃₆

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* 24578)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		33.97670		(2000.0)		P		Q	
<i>n</i>		0.25989567	ω	189.85730		+0.99306633		-0.11753084	
<i>a</i>		2.4318495	Ω	176.88930		+0.11064539		+0.92759441	
<i>e</i>		0.1888473	<i>i</i>	2.53744		+0.03970980		+0.35461968	
<i>P</i>		3.79	<i>H</i>	16.2		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.4+	0.2-	1994 09 08	691	0.6-	0.7-	1998 10 12	691	1.7-	0.1+
1960 09 25	675	0.5+	0.5+	1994 09 08	691	0.6-	0.1+	1998 10 12	691	1.7-	0.1+
1960 09 26	675	2.0+	1.6-	1994 09 08	691	0.5-	0.1+	1998 10 14	704	1.0+	0.4+
1960 10 17	675	0.7-	0.6+	1996 02 10	691	0.2+	0.1+	1998 10 14	704	1.3-	0.4-
1960 10 22	675	1.1-	0.3-	1996 02 10	691	0.2+	0.6+	1998 10 14	704	0.5+	0.6+
1960 10 25	675	0.6-	0.7-	1996 02 10	691	0.2-	0.1-	1998 10 14	704	2.0-	1.4-
1960 10 26	675	0.4+	1.1-	1998 09 26	704	0.7+	1.0-	1998 10 14	704	(0.8-	2.0+)
1994 08 10	809	0.6+	1.5+	1998 09 26	704	1.3+	0.8+	1998 10 15	704	0.2+	0.5+
1994 08 10	809	0.7+	0.0	1998 09 26	704	1.3+	0.3-	1998 10 15	704	1.3+	1.3-
1994 08 10	809	0.9+	0.6+	1998 09 26	704	(2.1+	0.1-)	1998 10 15	704	(2.4+	0.0)
1994 08 11	809	(2.8+	0.7+)	1998 09 26	704	0.5+	1.8+	1998 10 15	704	0.6+	0.8-
1994 08 11	809	1.6+	1.5+	1998 09 27	704	0.5-	0.8+	1998 10 15	704	0.1+	0.6+
1994 08 11	809	(2.5+	2.2+)	1998 09 27	704	1.5+	1.7+	1998 10 19	699	0.2+	0.3+
1994 09 03	809	1.0-	0.9-	1998 09 27	704	0.7-	1.0+	1998 10 19	699	0.1+	0.1-
1994 09 03	809	(1.3-	2.8-)	1998 09 27	704	1.0+	1.2+	1998 10 19	699	0.5-	0.7+
1994 09 03	809	(2.1-	2.5-)	1998 09 27	704	1.6-	1.1+	1998 10 28	704	1.3-	1.2-
1994 09 04	809	0.0	0.2+	1998 10 10	699	0.0	0.1-	1998 10 28	704	1.0-	0.8-
1994 09 04	809	0.6-	1.5-	1998 10 10	699	0.2+	0.2-	1998 10 28	704	(2.1-	1.0-)
1994 09 04	809	0.9-	0.4-	1998 10 10	699	0.9+	1.0-	1998 10 28	704	(2.4-	0.3-)

(9693)* 6547 P-L = 1979 SW₉ = 1979 VJ

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* 7602)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	48.96244	ω	319.51978	+0.99901041	+0.02892133		
<i>a</i>	2.4269081	Ω	38.86262	-0.01132001	+0.90003423		
<i>e</i>	0.2081539	<i>i</i>	3.08702	-0.04301242	+0.43485854		
<i>P</i>	3.78	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.8+	0.2-	1994 10 01	675	0.2-	1.5-	1998 10 13	120	(3.3+	0.5+)
1960 09 26	675	0.7+	0.2+	1994 10 01	675	0.2-	0.7-	1998 10 14	704	0.2-	0.5+
1960 09 27	675	0.9+	0.3+	1994 10 02	400	0.7-	0.4+	1998 10 14	704	0.1+	0.4+
1960 09 28	675	1.3+	0.3-	1994 10 02	400	0.3+	0.8+	1998 10 14	704	1.6-	1.7+
1960 10 17	675	0.0	0.7-	1997 04 06	704	0.2+	0.2+	1998 10 14	704	(1.1+	2.6+)
1960 10 22	675	1.3-	0.5-	1997 04 06	704	0.4+	1.1-	1998 10 18	699	0.2+	0.5+
1960 10 24	675	0.6+	0.3-	1997 04 11	704	0.3+	0.5+	1998 10 18	699	0.1-	0.3+
1960 10 26	675	0.0	0.4-	1997 04 11	704	0.7+	0.0	1998 10 18	699	0.2-	0.2+
1979 09 22	095	0.7-	0.1-	1998 08 28	704	1.0+	0.6+	1998 10 19	699	0.4+	0.2+
1979 09 28	095	1.7-	1.8-	1998 08 28	704	0.6-	1.7-	1998 10 19	699	0.8+	0.7+
1979 10 16	095	(2.6-	0.0)	1998 08 28	704	0.2-	1.0-	1998 10 19	699	0.3+	0.5+
1979 11 11	095	0.3-	2.2-	1998 08 31	704	0.2-	1.8+	1998 10 26	120	0.6+	0.0
1983 12 04	801	1.0+	0.2+	1998 08 31	704	1.7-	0.9-	1998 10 26	120	0.1+	0.9+
1990 04 30	413	(2.4+	0.4-)	1998 08 31	704	0.8+	0.2-	1998 10 28	120	0.2+	0.4+
1992 01 30	691	1.9-	0.1-	1998 08 31	704	(1.1-	2.4+)	1998 10 28	120	0.1+	0.5+
1992 01 30	691	1.7-	0.4-	1998 08 31	704	0.3+	0.3-	1998 10 29	704	0.1+	0.1+
1992 01 30	691	(2.3-	0.6-)	1998 10 10	699	0.5+	0.1-	1998 10 29	704	0.7-	0.1-
1994 08 03	675	1.1-	0.8+	1998 10 10	699	0.8+	0.0	1998 10 29	704	0.4+	0.2-
1994 08 03	675	1.3-	0.4+	1998 10 10	699	0.4+	0.3+	1998 10 29	704	0.2-	0.4+
1994 09 12	675	0.2-	0.1+	1998 10 13	120	(2.4+	0.0)	1998 10 29	704	1.2+	0.4+
1994 09 12	675	0.2+	0.2-	1998 10 13	120	(3.9+	0.3+)				

(9694)* 6581 P-L = 1990 DY₁

Discovered 1960 Sept. 26 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 17219)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	347.56422	ω	64.52148	+0.56578325	-0.82444471		
<i>a</i>	5.2773193	Ω	350.98567	+0.72240972	+0.50347839		
<i>e</i>	0.0395942	<i>i</i>	4.91526	+0.39750913	+0.25845780		
<i>P</i>	12.12	<i>H</i>	10.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 26	675	(0.9+	3.3-)	1991 03 09	675	1.1-	0.2-	1998 10 15	704	0.3+	0.2-
1960 09 27	675	1.5+	1.5-	1991 03 09	675	0.3+	0.7+	1998 10 15	704	0.3+	0.3+
1960 09 28	675	(0.5+	3.2-)	1991 04 17	675	0.7-	0.8-	1998 10 15	704	(0.0	2.7+)
1960 10 17	675	0.3-	0.3-	1991 04 17	675	0.2-	1.3-	1998 10 15	704	0.4-	1.2+
1960 10 22	675	0.4-	0.2+	1997 09 05	816	0.2+	0.1-	1998 10 19	699	0.4-	0.2+
1960 10 24	675	0.4+	0.4-	1997 09 05	816	0.2+	0.1-	1998 10 19	699	0.1+	0.2-
1960 10 26	675	0.5-	0.5+	1997 09 05	816	0.2+	0.2-	1998 10 19	699	0.8-	0.1+
1990 02 27	809	0.9-	0.3-	1997 09 05	816	0.2+	0.1+	1998 10 28	704	0.7+	0.2+
1990 02 27	809	0.5-	0.4-	1998 09 26	704	1.0+	0.2-	1998 10 28	704	0.2+	1.1+
1990 02 27	809	0.2-	0.5-	1998 09 26	704	0.3+	1.7-	1998 10 28	704	0.9+	1.0-
1990 02 28	809	(2.5-	2.5+)	1998 09 26	704	0.9-	1.4-	1998 10 28	704	0.2-	0.1+
1990 02 28	809	(2.3-	2.5+)	1998 09 26	704	0.0	0.6-	1998 10 29	704	0.2+	0.7+
1990 02 28	809	(1.9-	2.5+)	1998 09 26	704	1.3-	0.5-	1998 10 29	704	0.4+	0.8+
1990 03 01	809	0.7+	0.5+	1998 10 11	699	0.8-	0.1+	1998 10 29	704	0.8+	0.5+
1990 03 01	809	0.6+	0.3+	1998 10 11	699	1.1-	0.3+	1998 10 29	704	0.5-	0.3-
1990 03 01	809	0.9+	0.1-	1998 10 11	699	0.4-	0.2+	1998 10 29	704	0.7+	0.0

(9695)* 6583 P-L = 1981 UU₂₃

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* 20515)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	321.56704	ω	274.38019	+0.04024090	-0.99915435		
<i>a</i>	2.2839184	Ω	173.29609	+0.94302764	+0.03518532		
<i>e</i>	0.0980321	<i>i</i>	4.14653	+0.33027193	+0.02127382		
<i>P</i>	3.45	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 09 06	675	0.1+	0.2-	1998 09 14	704	0.5-	0.0	1998 09 26	704	0.6-	0.8-
1953 09 06	675	0.1-	0.1+	1998 09 14	704	0.9-	0.2-	1998 09 26	704	0.3-	0.1-
1960 09 24	675	0.2+	0.3-	1998 09 16	120	0.6+	0.1+	1998 09 27	704	0.1+	0.7+
1960 09 26	675	0.8+	1.2-	1998 09 16	120	0.1+	0.2-	1998 09 27	704	0.1-	1.0+
1960 09 27	675	0.0	0.4-	1998 09 16	120	0.1-	0.1-	1998 09 27	704	0.0	0.2+
1960 09 28	675	0.9+	0.3+	1998 09 16	120	0.5+	0.5+	1998 09 27	704	0.7+	0.6+
1960 10 17	675	0.9-	0.4+	1998 09 16	120	0.6+	0.1+	1998 09 27	704	0.6+	0.9+
1960 10 22	675	1.9-	0.4-	1998 09 16	120	1.1+	0.8+	1998 10 14	704	0.4+	0.4-
1960 10 24	675	0.6+	0.2+	1998 09 17	699	0.0	0.4+	1998 10 14	704	0.1+	0.8-
1960 10 26	675	0.4+	1.3+	1998 09 17	699	0.7+	0.2+	1998 10 14	699	0.8+	0.2-
1981 10 24	675	0.7-	0.1+	1998 09 17	699	0.2+	0.4+	1998 10 14	704	0.5+	0.9-
1981 10 25	675	0.6+	0.4+	1998 09 18	704	0.3-	0.2+	1998 10 14	699	1.2+	0.0
1997 05 30	691	0.1-	0.4+	1998 09 18	704	0.8-	0.0	1998 10 14	704	0.2-	2.0-
1997 05 30	691	0.2-	0.6+	1998 09 18	704	0.1-	0.3+	1998 10 14	699	0.6+	0.3-
1997 05 30	691	0.4-	0.6+	1998 09 18	704	1.0-	0.3-	1998 10 15	704	0.6-	0.6-
1997 06 28	691	0.1+	0.8-	1998 09 18	704	1.3-	0.2+	1998 10 15	704	0.5+	0.1+
1997 06 28	691	0.3+	0.4-	1998 09 26	704	0.3-	0.2+	1998 10 15	704	0.9-	1.8+
1997 06 28	691	0.3+	0.2-	1998 09 26	704	0.7-	1.0-	1998 10 15	704	0.4+	0.5+
1998 09 14	704	0.5-	0.3+	1998 09 26	704	0.0	1.4-	1998 10 15	704	0.9-	0.2+

(9696)* 6628 P-L = 1993 FU₇₉

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* 23680)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	54.32040		(2000.0)		P		Q				
n	0.26033457	ω	186.43261		+0.96665188		+0.25596557				
a	2.4291155	Ω	158.73124		-0.23395408		+0.89551994				
e	0.1888048	i	1.28108		-0.10416157		+0.36404074				
P	3.79	H	15.3		G	0.15	U	1			
Residuals in seconds of arc											
1960 09 24	675	0.8-	0.6-	1994 09 30	675	0.7+	0.4-	1998 10 10	699	0.8-	0.1-
1960 09 26	675	0.5+	0.5-	1997 04 29	691	0.2+	0.2-	1998 10 10	699	0.4-	0.4+
1960 09 27	675	0.5+	1.0+	1997 04 29	691	0.2-	0.2-	1998 10 14	704	(2.2+	1.3+)
1960 09 28	675	1.2+	0.1-	1997 04 29	691	0.1-	0.2-	1998 10 14	704	0.3+	0.7+
1960 10 17	675	0.2+	0.6-	1997 04 30	691	0.5-	0.2+	1998 10 14	704	0.7+	1.9+
1960 10 22	675	1.0-	0.8-	1997 04 30	691	0.6-	0.1-	1998 10 14	704	1.1-	1.3-
1960 10 24	675	0.1-	0.6-	1997 04 30	691	0.7-	0.0	1998 10 15	704	(2.6+	0.4-)
1960 10 26	675	0.6+	1.0-	1998 09 16	910	0.3+	0.3+	1998 10 15	704	0.6+	0.3+
1993 03 21	809	1.2+	0.7-	1998 09 16	910	0.2+	0.3+	1998 10 15	704	0.5+	0.2+
1993 03 22	809	0.6+	0.9+	1998 09 16	910	0.2+	0.2+	1998 10 15	704	0.4+	0.0
1993 04 18	413	(1.4-	1.4+)	1998 09 20	910	0.2+	0.1+	1998 10 28	704	0.2+	0.6-
1994 08 12	809	1.1+	1.5-	1998 09 20	910	0.1+	0.3+	1998 10 28	704	0.5+	0.7-
1994 08 12	809	0.0	0.6-	1998 09 20	910	0.1+	0.2+	1998 10 28	704	0.3-	0.5-
1994 08 12	809	0.3-	0.8-	1998 09 20	809	1.0+	0.8+	1998 10 28	704	0.6+	0.3-
1994 08 13	809	(2.3+	0.7+)	1998 09 20	809	0.5-	0.3+	1998 10 29	704	0.4+	0.4+
1994 08 13	809	1.1+	0.7+	1998 09 20	809	0.9-	0.7+	1998 10 29	704	0.7+	0.6-
1994 08 13	809	1.5+	1.6+	1998 09 21	809	(0.5+	2.5+)	1998 10 29	704	0.6-	0.3-
1994 09 05	809	0.3-	0.1-	1998 09 21	809	(0.0	2.9+)	1998 10 29	704	0.4-	0.4+
1994 09 05	809	0.9-	0.4-	1998 09 21	809	(0.5-	3.3+)	1998 10 29	704	0.9+	0.1+
1994 09 05	809	1.2-	0.3-	1998 09 26	704	0.0	0.2-	1998 11 07	749	0.7-	0.2-

1994 09 06	809	0.4−	1.0+	1998 09 26	704	0.5−	1.0−	1998 11 07	749	0.1+	0.2+
1994 09 06	809	1.2−	1.0+	1998 09 26	704	(0.4+	2.3−)	1998 11 07	749	0.6−	0.3−
1994 09 06	809	1.0−	1.0+	1998 09 26	704	1.1−	0.3+	1998 11 07	749	1.8−	0.2−
1994 09 30	675	1.1+	0.3−	1998 10 10	699	0.6+	0.2+				

(9697)* 1295 T-1 = 1990 BV₃ = 1991 GF₃

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. S. Nakano (*MPC* 19878), T. Kobayashi (*ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M		(2000.0)		P		Q	
<i>n</i>	0.19862945	ω	215.71732	+0.65205634	−0.75784191		
<i>a</i>	2.9092003	Ω	193.63258	+0.71574660	+0.62501282		
<i>e</i>	0.0456410	<i>i</i>	5.43393	+0.25005868	+0.18717534		
<i>P</i>	4.96	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1953 09 06	675	0.5−	1.1−	1996 04 12	691	0.0	0.2+	1998 10 10	699	0.1+	0.2+
1953 09 06	675	0.2+	0.2−	1996 04 12	691	0.1−	0.1+	1998 10 10	699	0.1+	0.1+
1971 03 24	675	1.6+	1.4−	1996 04 12	691	0.3−	0.2+	1998 10 10	699	0.6+	0.0
1971 03 25	675	0.2+	0.9−	1996 04 22	566	0.5+	0.3−	1998 10 14	704	0.2−	0.1−
1971 03 25	675	0.8+	0.1−	1996 04 22	566	0.6+	0.1−	1998 10 14	704	0.2−	0.6+
1971 03 25	675	0.1+	0.2−	1996 04 22	566	0.3+	0.8−	1998 10 14	704	(0.6+	2.3+)
1971 03 26	675	(2.7+	1.1−)	1998 09 14	704	0.8+	0.3−	1998 10 14	704	1.1+	1.6+
1971 03 26	675	0.3+	0.1−	1998 09 14	704	0.2−	0.9−	1998 10 15	704	0.6+	0.3−
1971 03 26	675	0.1−	0.8−	1998 09 14	704	0.5−	0.9+	1998 10 15	704	0.6+	0.7−
1971 03 27	675	(6.9+	4.8−)	1998 09 15	699	0.8−	0.3+	1998 10 15	704	0.3+	0.1−
1971 03 27	675	1.0−	0.0	1998 09 15	699	0.6−	0.3+	1998 10 15	704	0.2−	0.7−
1971 04 02	675	2.0−	0.9−	1998 09 15	699	0.2−	0.5−	1998 10 15	704	0.4−	0.4+
1971 04 16	675	0.2+	0.4+	1998 09 18	704	1.1+	1.3+	1998 10 22	691	1.9−	0.3−
1971 04 16	675	0.7+	0.8−	1998 09 18	704	0.2−	0.4−	1998 10 22	691	1.9−	0.6−
1990 01 24	033	0.5−	0.2+	1998 09 18	704	0.8+	0.9+	1998 10 22	691	1.9−	0.4−
1990 01 24	033	0.3−	0.3+	1998 09 18	704	0.0	0.7+	1998 10 28	704	0.6−	0.0
1991 04 08	809	(3.8−	0.8+)	1998 09 18	704	1.6+	0.4+	1998 10 28	704	0.4+	1.3−
1991 04 08	809	(2.5−	0.6+)	1998 09 26	704	1.2+	0.3−	1998 10 28	704	1.7+	1.6−
1991 04 08	809	(2.9−	0.6+)	1998 09 26	704	1.0+	0.4+	1998 10 28	704	1.2−	0.7−
1991 04 08	809	1.3−	1.7+	1998 09 26	704	1.0+	0.3−	1998 10 28	704	1.1−	0.6−
1991 04 08	809	0.5−	1.3+	1998 09 26	704	0.8+	0.6−	1998 10 29	704	0.2−	1.6−
1991 04 08	809	1.0−	2.1+	1998 09 26	704	0.8+	0.7−	1998 10 29	704	0.9−	0.3+
1991 04 10	809	0.1−	0.4+	1998 09 27	704	0.3+	0.1−	1998 10 29	704	0.2−	0.3−
1991 04 10	809	0.0	0.1−	1998 09 27	704	0.2−	1.1+	1998 10 29	704	0.7−	0.7+
1991 04 10	809	0.5−	0.3−	1998 09 27	704	1.0+	1.4+	1998 10 29	704	0.3−	0.8+
1991 04 15	675	1.7+	1.3−	1998 09 27	704	0.6+	0.5−				
1991 04 15	675	0.7−	1.7−	1998 09 27	704	0.5−	0.5−				

(9698)* 2205 T-1 = 1980 XQ₁ = 1991 XM₆

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. T. Kobayashi (*MPC* 23987)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M		(2000.0)		P		Q	
<i>n</i>	0.27074889	ω	187.64624	−0.96406024	+0.26511472		
<i>a</i>	2.3664187	Ω	7.79340	−0.23647416	−0.82641443		
<i>e</i>	0.0510034	<i>i</i>	7.36347	−0.12111078	−0.49674277		
<i>P</i>	3.64	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	1.4−	0.5−	1994 09 11	675	0.1−	0.6−	1998 10 14	704	1.6+	1.2−
1971 03 25	675	0.3−	0.3−	1994 09 11	675	0.1−	1.3−	1998 10 14	704	(2.2+	0.5+)
1971 03 25	675	1.2−	0.3+	1994 09 12	675	0.1+	0.5−	1998 10 15	704	0.4−	0.8+
1971 03 26	675	2.0−	0.2−	1994 09 12	675	1.1+	0.7−	1998 10 15	704	0.4+	0.8+
1971 03 27	675	0.9−	0.4+	1994 10 01	675	0.6+	0.8−	1998 10 15	704	1.0+	0.2+
1971 04 02	675	2.0+	0.7−	1994 10 01	675	1.0+	0.2−	1998 10 15	704	0.1−	1.1+
1971 04 16	675	0.3−	0.3−	1998 09 26	704	0.1−	0.0	1998 10 28	704	0.2+	0.1−
1971 04 16	675	0.3+	1.0−	1998 09 26	704	0.7+	0.9−	1998 10 28	704	0.4−	0.2+

1971 05 13	675	1.6+	0.3−	1998 09 26	704	0.0	0.7−	1998 10 28	704	0.5−	0.5−
1971 05 14	675	1.2+	1.2−	1998 09 26	704	0.7+	0.0	1998 10 28	704	0.2−	0.1+
1980 12 10	095	1.1+	1.1−	1998 09 26	704	0.3−	0.5+	1998 10 29	704	0.0	0.3+
1991 12 11	033	1.0−	0.4+	1998 10 11	699	0.2−	0.8+	1998 10 29	704	0.3−	0.2+
1991 12 11	033	1.1−	1.0−	1998 10 11	699	0.5−	1.4+	1998 10 29	704	0.1+	0.5−
1991 12 12	033	0.1+	0.6+	1998 10 11	699	0.2−	0.9+	1998 10 29	704	0.0	0.7−
1994 08 03	675	0.8−	0.7+	1998 10 14	704	0.9+	1.1−	1998 10 29	704	1.1−	0.5−
1994 08 03	675	1.4−	0.1−	1998 10 14	704	0.9+	0.2−				

(9699)* 3036 T-1 = 1985 SU₅ = 1985 UD₆

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* 21601), N. S. Chernykh (d, *ibid.*)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M		(2000.0)		P		Q	
<i>n</i>	0.23086178	ω	105.30898	+0.52174958	+0.85114986		
<i>a</i>	2.6316898	Ω	196.52369	−0.83962786	+0.50038021		
<i>e</i>	0.2214007	<i>i</i>	11.69084	−0.15100475	+0.15863023		
<i>P</i>	4.27	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	0.3+	1.4−	1993 06 24	801	0.2−	0.4+	1998 10 15	704	1.2+	0.2−
1971 03 25	675	0.9+	0.4−	1993 07 01	657	0.1−	0.7−	1998 10 15	704	0.6−	0.8−
1971 03 26	675	0.2+	1.6−	1993 07 01	657	0.1−	0.5−	1998 10 15	704	(2.1−	2.0−)
1971 03 26	675	0.1−	1.0−	1993 07 01	657	0.2−	0.4−	1998 10 15	704	0.0	0.3+
1971 03 27	675	(4.1+	2.5−)	1993 07 15	657	0.2+	0.7−	1998 10 20	120	0.0	0.7+
1971 03 27	675	1.7−	1.2+	1993 07 15	657	0.3+	0.8−	1998 10 20	120	0.4+	0.3−
1971 04 02	675	0.0	1.0−	1993 07 15	657	0.2+	1.0−	1998 10 22	120	0.2+	1.7+
1971 04 16	675	0.2−	1.1−	1994 11 07	675	0.2−	0.6−	1998 10 22	120	(2.3+	1.2+)
1971 04 16	675	0.0	1.6−	1994 11 07	675	(2.3+	1.0+)	1998 10 22	120	1.5+	0.8+
1971 05 13	675	0.1+	0.7+	1997 04 08	689	0.3−	0.6+	1998 10 27	120	0.5−	0.9−
1971 05 14	675	1.1−	0.2+	1998 09 29	704	0.3−	0.5+	1998 10 27	120	1.1+	0.6−
1985 09 21	095	1.3+	0.9−	1998 09 29	704	0.3+	0.5−	1998 10 29	704	0.2−	0.6−
1985 10 18	095	1.1−	0.6−	1998 09 29	704	1.1−	0.5−	1998 10 29	704	1.5−	0.7−
1993 05 24	801	(3.1+	1.8+)	1998 09 29	704	(1.1−	2.1−)	1998 10 29	704	1.0−	0.6−
1993 05 24	801	1.1+	1.8+	1998 09 29	704	0.4+	1.8−	1998 10 29	704	0.2−	0.3−
1993 06 24	801	0.6−	0.3−	1998 10 15	704	0.9+	0.3+				

(9700)* 3058 T-1 = 1985 QU₄ = 1996 CH

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* 19322, *MPC* 32291)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M		(2000.0)		P		Q	
<i>n</i>	0.30390521	ω	13.20573	+0.99490692	−0.09978690		
<i>a</i>	2.1910080	Ω	352.47762	+0.07974064	+0.86559098		
<i>e</i>	0.1654573	<i>i</i>	6.24502	+0.06165758	+0.49070850		
<i>P</i>	3.24	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	1.7+	2.2−	1997 04 07	566	0.7−	0.4+	1998 09 12	691	(2.3−	0.1+)
1971 03 25	675	1.0+	0.5−	1997 04 07	566	0.1−	0.3+	1998 09 14	704	0.5+	0.2+
1971 03 26	675	1.6−	1.9−	1998 06 29	704	(0.9−	2.1+)	1998 09 14	704	0.1−	0.4+
1971 03 26	675	0.8+	1.9−	1998 06 29	704	0.1−	0.1−	1998 09 14	704	0.2+	0.8+
1971 03 27	675	1.3−	0.1+	1998 06 29	704	0.4+	0.4−	1998 09 14	704	0.2−	0.5+
1971 04 16	675	2.1−	0.2−	1998 06 29	704	1.3+	1.8−	1998 09 18	704	0.3+	0.1−
1971 04 16	675	(4.5−	1.9−)	1998 07 26	699	1.1+	0.3−	1998 09 18	704	1.2−	0.2+
1985 08 17	095	1.4−	1.6−	1998 07 26	699	0.6+	0.2−	1998 09 18	704	0.4+	0.5−
1985 08 19	095	1.5−	0.4−	1998 07 26	699	0.8+	1.0−	1998 09 18	704	0.2−	0.1+
1985 08 24	095	0.9+	1.8+	1998 08 23	704	(2.4−	1.5+)	1998 09 18	704	0.4+	0.0
1996 02 01	327	0.2−	0.3−	1998 08 23	704	0.4+	0.4+	1998 09 25	704	0.6+	0.5−
1996 02 01	327	0.0	0.7−	1998 08 23	704	0.9−	0.7−	1998 09 25	704	0.8+	0.1+
1996 02 01	327	0.3−	0.8−	1998 08 26	809	(3.4+	1.3−)	1998 09 25	704	0.6+	0.4+
1996 02 03	327	0.4+	0.7−	1998 08 26	809	(3.4+	1.6−)	1998 09 25	704	0.8+	1.2−
1996 02 03	327	0.6+	1.0−	1998 08 26	809	(3.3+	1.9−)	1998 09 27	704	0.8+	0.6−

1996 02 03	327	0.1+	0.4-	1998 08 26	699	0.9-	0.7-	1998 09 27	704	0.1+	0.2-
1997 03 11	809	(0.3+	4.7+)	1998 08 26	699	0.5-	0.1-	1998 09 27	704	0.0	0.6-
1997 03 11	809	(1.1+	4.6+)	1998 08 26	699	0.7-	0.0	1998 09 27	704	0.3-	0.8+
1997 03 11	809	(0.5+	4.5+)	1998 08 27	809	(0.6+	3.3-)	1998 10 12	704	0.8+	0.1-
1997 03 12	809	(1.2+	4.8+)	1998 08 27	809	(1.3+	3.5-)	1998 10 12	704	(3.3-	1.3-)
1997 03 12	809	(0.7+	3.7+)	1998 08 27	809	(1.8+	3.3-)	1998 10 12	704	(3.0-	0.3-)
1997 03 12	809	(0.5+	4.0+)	1998 09 12	691	(2.4-	0.2+)	1998 10 12	704	(2.7-	0.6+)
1997 04 07	566	0.7-	0.5+	1998 09 12	691	(2.3-	0.1+)	1998 10 12	704	(2.7-	1.0+)

(9701)* 1157 T-2 = 1993 DU₁

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.
Id. G. V. Williams (*MPC* 21952)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	194.93096		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.27621821	ω	356.24992		-0.94051062		+0.33927765
a	2.3350768	Ω	203.60804		-0.31053482		-0.88007876
e	0.1299097	i	2.60164		-0.13786914		-0.33219278
P	3.57	H	15.3	G	0.15	U	1

Residuals in seconds of arc

1973 09 19	675	0.4-	1.1-	1993 03 03	691	0.0	0.2+	1997 06 08	809	1.5+	0.9+
1973 09 19	675	1.5-	1.3-	1993 03 03	691	0.1+	0.2+	1997 06 08	809	1.1+	1.1+
1973 09 20	675	0.0	0.3-	1993 03 03	691	0.1+	0.4+	1998 09 18	704	(0.6-	3.2+)
1973 09 24	675	0.4+	1.1-	1993 03 03	691	0.2+	0.2+	1998 09 18	704	1.9+	0.7+
1973 09 24	675	1.3+	0.6-	1993 03 04	691	0.3-	0.0	1998 09 18	704	1.4+	0.2-
1973 09 25	675	2.2-	0.1-	1993 03 04	691	0.2+	0.1-	1998 09 18	704	1.0-	0.7+
1973 09 25	675	0.5-	0.5-	1993 03 04	691	0.1-	0.6+	1998 09 18	704	0.5+	1.4+
1973 09 29	675	1.2+	1.1+	1993 03 19	691	0.3+	0.1+	1998 09 26	704	(2.1+	1.2-)
1973 09 29	675	1.5+	0.6+	1993 03 19	691	0.3+	0.4+	1998 09 26	704	1.7-	0.2+
1973 09 30	675	0.9-	0.3+	1993 03 19	691	0.1+	0.2+	1998 09 26	704	0.6-	0.8-
1973 09 30	675	0.8-	0.3+	1997 05 03	809	0.5-	0.2+	1998 09 26	704	0.9-	1.7+
1973 10 04	675	(3.8+	2.6-)	1997 05 03	809	0.1+	1.1+	1998 09 26	704	0.5-	0.4-
1973 10 04	675	2.2+	1.2-	1997 05 03	809	0.6-	0.6+	1998 09 27	704	0.5+	1.5+
1973 10 05	675	0.6+	1.2+	1997 05 04	809	(0.6-	3.4+)	1998 09 27	704	0.2-	0.6+
1973 10 05	675	0.3+	0.4-	1997 05 04	809	(1.4-	3.1+)	1998 09 27	704	(1.5+	2.7+)
1993 02 26	691	0.4+	0.8+	1997 05 04	809	(0.5-	2.5+)	1998 09 27	704	0.6-	1.1+
1993 02 26	691	0.2+	0.5+	1997 06 07	809	0.6-	0.2-	1998 09 27	704	0.3-	1.3+
1993 02 26	691	0.3+	0.6+	1997 06 07	809	0.6-	0.3-	1998 10 29	691	1.0-	1.4+
1993 03 03	691	0.4-	0.6+	1997 06 07	809	0.6-	0.4-	1998 10 29	691	1.0-	1.0+
1993 03 03	691	0.4+	0.1+	1997 06 08	809	1.4+	1.5+	1998 10 29	691	0.8-	1.2+

(9702)* 2108 T-2 = 1987 QB₃

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.
Id. T. Kobayashi (*MPC* 15425)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	93.24712		(2000.0)		P		Q
n	0.27763513	ω	110.41226		+0.65041786		+0.75935693
a	2.3271253	Ω	200.19505		-0.71513695		+0.60408262
e	0.1043142	i	3.03309		-0.25599952		+0.24178758
P	3.55	H	15.0	G	0.15	U	1

Residuals in seconds of arc

1973 09 19	675	0.3-	0.7-	1991 11 05	691	0.1+	0.4-	1998 09 26	704	0.1+	1.0-
1973 09 19	675	0.6+	0.1+	1991 11 05	691	1.0-	0.2-	1998 09 26	704	0.1-	0.2-
1973 09 20	675	1.9-	1.5-	1991 11 05	691	0.6-	0.5-	1998 09 26	704	0.1+	0.3-
1973 09 24	675	0.9-	1.0+	1997 04 29	691	0.3+	0.0	1998 09 26	704	0.3-	0.7-
1973 09 24	675	0.0	0.8+	1997 04 29	691	0.1+	0.3-	1998 10 10	699	0.5-	0.8+
1973 09 25	675	1.5-	0.1+	1997 04 29	691	0.5+	0.1-	1998 10 10	699	0.1+	0.0
1973 09 25	675	1.7-	0.2+	1997 04 30	691	0.1-	0.2+	1998 10 10	699	1.7-	0.7+
1973 09 29	675	0.6+	0.1-	1997 04 30	691	0.1-	0.0	1998 10 14	704	1.0-	1.2+
1973 09 29	675	0.7+	0.1+	1997 04 30	691	0.2-	0.1+	1998 10 14	704	1.7+	0.5+
1973 09 30	675	1.6+	0.8-	1998 09 14	699	0.7-	0.1+	1998 10 14	704	0.5-	0.6+
1973 09 30	675	1.2+	0.8-	1998 09 14	699	0.1-	0.6-	1998 10 14	704	0.5-	0.7+

1973 10 04	675	2.0+	0.7-	1998 09 14	699	0.5+	0.7+	1998 10 15	704	0.1-	0.1-
1973 10 04	675	1.7+	1.8-	1998 09 20	809	(0.7+	2.6+)	1998 10 15	704	0.4-	0.1-
1973 10 05	675	0.9+	1.2-	1998 09 20	809	(0.5+	2.4+)	1998 10 15	704	0.4-	0.0
1973 10 05	675	0.4+	0.7-	1998 09 20	809	(0.5+	2.9+)	1998 10 15	704	1.1-	0.5-
1987 08 27	809	0.1+	0.1-	1998 09 21	809	(3.4+	3.8+)	1998 10 15	704	0.9-	1.4-
1987 08 27	809	0.1+	0.3+	1998 09 21	809	(3.1+	3.7+)	1998 10 28	704	0.3+	0.1+
1987 08 27	809	1.8+	0.3+	1998 09 21	809	(2.1+	4.0+)	1998 10 28	704	(0.3-	2.3-)
1987 08 28	809	2.2-	0.1-	1998 09 24	120	0.2-	1.6+	1998 10 28	704	0.4+	0.3-
1987 08 28	809	1.2-	1.1+	1998 09 25	120	1.4+	1.7+	1998 10 28	704	0.4-	1.3+
1987 08 28	809	0.5-	0.0	1998 09 25	120	1.5+	0.7+	1998 10 29	704	0.1+	0.9+
1987 08 29	809	(3.9+	1.6+)	1998 09 25	691	(2.6-	0.2+)	1998 10 29	704	1.4+	0.1+
1987 08 29	809	(4.0+	2.2+)	1998 09 25	691	(2.6-	0.2+)	1998 10 29	704	1.2+	0.0
1987 08 29	809	(5.3+	3.4+)	1998 09 25	691	(2.6-	0.1+)	1998 10 29	704	1.2+	0.5-
1991 10 17	675	0.9-	0.5-	1998 09 26	704	0.1+	0.4+	1998 10 29	704	0.6-	0.4+

(9703)* 3146 T-2 = 1989 AE₄ = 1993 FE₁₀

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.
Id. G. V. Williams (*MPC* 23534, *MPC* 26416)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	350.37050		(2000.0)		P		Q
n	0.27681061	ω	311.41203		+0.53289270		-0.84388115
a	2.3317441	Ω	106.28379		+0.79445296		+0.47357843
e	0.0678181	i	3.72549		+0.29132432		+0.25216678
P	3.56	H	15.3	G	0.15	U	1

Residuals in seconds of arc

1973 09 19	675	0.8-	2.2-	1989 01 04	413	2.0-	0.4+	1998 09 18	704	(2.5-	1.4-)
1973 09 19	675	0.6-	0.1+	1993 03 17	809	1.3-	0.6-	1998 09 18	704	(4.2-	1.6+)
1973 09 20	675	0.2-	0.3-	1993 03 18	809	0.2+	1.2-	1998 09 26	704	0.4-	0.7+
1973 09 24	675	0.2-	0.0	1993 03 23	809	0.7+	1.0-	1998 09 26	704	0.7-	0.2+
1973 09 24	675	0.1+	0.6-	1995 12 23	566	0.0	0.1+	1998 09 26	704	0.7+	1.9+
1973 09 25	675	(3.2+	0.4+)	1995 12 23	566	0.5-	0.3+	1998 09 26	704	0.7+	0.3-
1973 09 25	675	2.4+	2.2-	1995 12 23	566	0.3-	0.2+	1998 09 26	704	1.6+	1.0-
1973 09 29	675	0.8+	2.2+	1995 12 30	385	1.0+	0.4+	1998 09 27	704	0.8+	0.1-
1973 09 29	675	0.6-	0.4+	1995 12 30	385	0.8+	0.4-	1998 09 27	704	0.5-	0.9+
1973 09 30	675	0.8-	0.4-	1995 12 30	385	0.6+	0.2-	1998 09 27	704	1.3+	0.8+
1973 09 30	675	0.3-	1.3+	1996 01 01	385	1.3+	0.5+	1998 09 27	704	1.4+	0.1-
1973 10 04	675	(1.1+	2.9+)	1996 01 01	385	0.1-	0.6-	1998 09 27	704	0.0	1.3-
1973 10 04	675	0.3+	0.8+	1996 01 01	385	0.1-	0.7-	1998 10 15	704	1.8-	0.2-
1973 10 05	675	(2.1+	4.4+)	1998 09 18	704	1.1-	0.3-	1998 10 15	704	1.1-	1.1-
1973 10 05	675	1.1+	0.2-	1998 09 18	704	1.7-	0.6-	1998 10 15	704	(2.2-	0.6-)
1989 01 04	413	1.1-	0.3+	1998 09 18	704	0.5+	1.7-	1998 10 15	704	0.3-	0.8+

(9704)* 5469 T-2 = 1980 RV₅

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.
Id. E. Bowell (*MPC* 18304)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	304.59298		(2000.0)		P		Q
n	0.27776712	ω	226.67861		-0.47697361		-0.87122544
a	2.3263881	Ω	252.14650		+0.83755173		-0.41052462
e	0.0571349	i	7.00164		+0.26646440		-0.26913892
P	3.55	H	14.3	G	0.15	U	2

Residuals in seconds of arc

1954 04 02	675	2.0+	0.1+	1980 09 13	675	0.3-	0.1+	1998 10 15	704	0.0	0.3-
1954 04 02	675	1.0-	0.1-	1980 09 14	675	0.2-	0.5-	1998 10 15	704	0.1-	0.0
1954 05 23	675	0.6-	0.8-	1984 11 21	010	0.2-	0.4-	1998 10 15	704	0.1+	0.4-
1954 05 23	675	1.0-	1.1-	1998 09 26	704	0.5+	0.1-	1998 10 28	704	0.4-	0.3+
1973 09 29	675	1.1+	0.7-	1998 09 26	704	1.1+	0.7-	1998 10 28	704	0.4-	0.7+
1973 09 29	675	0.8+	0.0	1998 09 26	704	0.5-	1.0+	1998 10 28	704	0.0	0.4+
1973 09 30	675	0.8+	0.7+	1998 09 26	704	0.7+	1.3-	1998 10 28	704	1.1-	0.6+
1973 09 30	675	1.6+	0.3-	1998 09 26	704	0.8-	0.2-	1998 10 29	704	0.8+	0.7-
1973 10 04	675	1.0-	0.4+	1998 10 14	704	0.4+	0.4-	1998 10 29	704	0.2-	0.4+

1973 10 04	675	1.3-	1.4+	1998 10 14	704	0.3+	0.5-	1998 10 29	704	0.5-	0.0
1973 10 05	675	1.1-	1.1+	1998 10 14	704	0.9+	2.0-	1998 10 29	704	0.2+	0.1-
1973 10 05	675	1.1-	0.5-	1998 10 15	704	0.6+	0.6-	1998 10 29	704	0.4-	0.5+

(9705)* 3137 T-3 = 1993 TH₁

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.
Id. G. V. Williams (*MPC* 22695)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	352.67550		(2000.0)		P		Q
n	0.18547779	ω	11.26898		+0.80814433		-0.58370166
a	3.0451459	Ω	24.95655		+0.52484625		+0.65303748
e	0.1352796	i	10.75122		+0.26728106		+0.48252919
P	5.31	H	13.5	G	0.15	U	1

Residuals in seconds of arc

1977 10 07	675	1.6+	0.7-	1993 11 17	801	0.6-	0.1-	1998 09 26	704	1.1-	1.0-
1977 10 11	675	0.8-	0.6+	1996 04 16	046	0.4+	0.2+	1998 09 27	704	0.2-	0.2+
1977 10 11	675	0.8-	0.9+	1996 04 16	046	0.2-	0.2+	1998 09 27	704	0.0	0.0
1977 10 12	675	0.9+	0.5-	1996 04 16	046	0.6+	0.1-	1998 09 27	704	0.0	0.4+
1977 10 12	675	0.4+	0.3-	1996 04 16	046	0.0	0.3+	1998 09 27	704	1.1-	0.4-
1977 10 16	675	1.1+	0.6-	1996 04 18	046	0.1-	0.0	1998 09 27	704	0.5-	0.5-
1977 10 16	675	0.3+	1.3-	1996 04 18	046	0.5-	0.4-	1998 09 29	704	0.6-	0.5-
1977 10 17	675	0.8-	0.0	1996 04 18	046	0.4-	0.5-	1998 09 29	704	0.3-	0.7-
1977 10 17	675	1.5-	0.5-	1996 04 18	046	0.0	0.1-	1998 09 29	704	0.3+	0.5-
1977 10 21	675	0.7+	0.1-	1998 09 14	704	0.5+	0.3-	1998 09 29	704	0.1-	0.2-
1977 10 21	675	0.9+	0.4-	1998 09 14	704	0.7+	0.8-	1998 09 29	704	0.6+	1.4-
1977 10 22	675	(0.7+ 3.0-)		1998 09 14	704	0.2+	0.8+	1998 10 12	699	0.2+	0.7+
1977 10 22	675	(0.3+ 2.8-)		1998 09 18	704	0.3+	0.1-	1998 10 12	699	0.2+	0.2+
1993 10 14	675	0.1+	0.5+	1998 09 18	704	0.9+	0.4-	1998 10 12	699	0.3+	0.2+
1993 10 14	675	0.0	0.1-	1998 09 18	704	0.6+	0.1+	1998 10 14	704	0.6+	0.2+
1993 10 15	400	(2.1+ 2.3-)		1998 09 18	704	0.7+	0.6+	1998 10 14	704	0.3-	0.8+
1993 10 15	400	1.8+	0.3+	1998 09 18	704	0.5+	0.5-	1998 10 14	704	0.5+	1.8+
1993 10 16	400	0.6+	0.9+	1998 09 24	699	0.2-	0.3+	1998 10 14	704	0.1-	0.7+
1993 10 16	400	0.8-	0.7-	1998 09 24	699	0.7-	0.1+	1998 10 14	704	1.1+	0.9+
1993 11 10	400	0.8+	0.1+	1998 09 24	699	0.1+	0.6+	1998 10 15	704	0.0	0.6+
1993 11 10	400	0.6-	0.0	1998 09 26	704	0.5-	0.1-	1998 10 15	704	1.0+	0.1+
1993 11 16	801	0.5-	0.1+	1998 09 26	704	0.6-	0.5-	1998 10 15	704	0.3-	0.6+
1993 11 16	801	1.0-	0.1-	1998 09 26	704	1.4-	0.5-	1998 10 15	704	0.1+	1.3+
1993 11 17	801	0.8-	0.0	1998 09 26	704	0.9-	0.4-	1998 10 15	704	1.1-	0.5-

(9706)* 3176 T-3 = 1990 DX₆ = 1995 BM

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.
Id. T. Kobayashi (*MPC* 24757)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	235.26090		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.18906798	ω	128.10950		-0.99987377		-0.01478339
a	3.0064735	Ω	51.04421		+0.01119543		-0.91553423
e	0.1006615	i	0.42892		+0.01127383		-0.40196832
P	5.21	H	13.5	G	0.15	U	1

Residuals in seconds of arc

1977 10 07	675	0.8+	1.4-	1995 01 25	411	0.7+	0.2-	1998 09 26	704	1.3-	0.2+
1977 10 11	675	(2.8- 1.2-)		1995 01 30	033	0.3+	0.4-	1998 09 26	704	1.1+	0.2+
1977 10 11	675	1.7-	0.6-	1995 01 31	033	0.4-	0.2+	1998 09 26	704	0.6+	1.7-
1977 10 12	675	0.4-	0.1-	1996 06 15	816	0.1-	0.5+	1998 09 26	704	0.6-	0.3-
1977 10 12	675	1.2+	1.9-	1996 06 15	816	0.1+	0.6+	1998 10 10	699	1.3-	0.8-
1977 10 16	675	0.5+	0.8-	1996 06 22	566	0.1+	0.2-	1998 10 10	699	0.3+	0.3+
1977 10 16	675	0.7+	1.7-	1996 06 22	566	0.2-	0.2-	1998 10 10	699	1.4-	0.5+
1977 10 17	675	0.4-	0.0	1996 06 22	566	0.5-	0.1-	1998 10 15	704	0.7-	0.7-
1977 10 17	675	0.2-	0.5-	1997 07 16	910	0.5+	0.1+	1998 10 15	704	1.9-	0.5-
1977 10 21	675	0.1-	1.0-	1997 07 16	910	0.3+	0.1-	1998 10 15	704	2.1-	0.3-
1977 10 21	675	0.4+	0.7-	1997 07 16	910	0.3+	0.1-	1998 10 15	704	0.1-	0.1-
1977 10 22	675	2.0+	0.7-	1998 09 20	809	(2.2+ 3.5+)		1998 10 29	704	1.0-	1.1-

1977 10 22	675	1.7+	1.7-	1998 09 20	809	1.2+	2.9+	1998 10 29	704	1.4-	0.5-
1990 02 24	046	(3.7- 0.0)		1998 09 20	809	(1.2+ 3.2+)		1998 10 29	704	0.2-	0.3-
1990 02 24	046	(8.9- 1.2+)		1998 09 21	809	(2.7+ 3.4+)		1998 10 29	704	2.0-	0.0
1995 01 23	411	0.9-	0.6-	1998 09 21	809	(0.7+ 3.3+)		1998 10 29	704	0.6-	0.5-
1995 01 23	411	0.2+	0.4+	1998 09 21	809	1.1+	2.5+				
1995 01 25	411	0.3+	0.5-	1998 09 26	704	0.2-	0.8-				

(9707)* 3226 T-3 = 1992 GR₃

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.
Id. B. G. Marsden (*MPC* 20833)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

M	326.08367		(2000.0)		P		Q
n	0.23438548	ω	58.51516		-0.00902487		-0.99458447
a	2.6052471	Ω	32.49410		+0.83958885		-0.06377816
e	0.1424532	i	11.11234		+0.54314742		+0.08206139
P	4.21	H	13.6	G	0.15	U	1

Residuals in seconds of arc

1977 10 07	675	0.7-	1.6-	1992 04 24	691	0.2-	1.0-	1998 09 26	704	0.6+	1.6+
1977 10 07	675	0.7+	0.8-	1992 04 25	809	(1.4- 2.3-)		1998 09 27	704	0.5+	0.3+
1977 10 11	675	1.3-	0.6+	1992 04 25	809	(2.2- 2.4-)		1998 09 27	704	0.5+	0.1+
1977 10 11	675	(3.3+ 1.1+)		1992 04 25	809	(0.7- 2.2-)		1998 09 27	704	0.4+	0.4+
1977 10 11	675	1.2-	1.3+	1994 11 06	675	0.6-	0.1+	1998 09 27	704	1.0-	1.5-
1977 10 11	675	(2.7+ 0.0)		1994 11 06	675	0.0	0.2+	1998 10 10	699	0.1+	0.1+
1977 10 12	675	0.2-	0.5-	1994 11 07	675	0.2-	0.1+	1998 10 10	699	0.0	0.3+
1977 10 12	675	0.1+	0.4-	1994 11 07	675	0.1-	0.4+	1998 10 10	699	0.1-	0.7+
1977 10 12	675	0.6-	1.3-	1994 11 30	675	0.2+	1.5-	1998 10 14	704	0.7+	0.5-
1977 10 12	675	0.0	0.5-	1994 11 30	675	0.2+	0.1-	1998 10 14	704	0.5-	0.7+
1977 10 16	675	1.6+	1.4-	1994 12 02	675	0.4-	0.2-	1998 10 14	704	0.7-	0.1-
1977 10 16	675	1.8+	0.7-	1994 12 02	675	0.1-	0.2+	1998 10 14	704	1.6-	0.5-
1977 10 16	675	1.4+	0.7-	1996 04 14	691	0.8-	1.7-	1998 10 14	704	0.8-	0.1+
1977 10 16	675	0.3+	0.3+	1996 04 14	691	0.9-	1.6-	1998 10 15	704	0.7-	0.6-
1977 10 17	675	0.2-	1.8-	1996 04 14	691	1.2-	1.8-	1998 10 15	704	0.1-	0.8-
1977 10 17	675	1.1+	0.1+	1996 04 15	691	0.5-	1.1-	1998 10 15	704	0.4-	0.6-
1977 10 17	675	0.6-	0.9-	1996 04 15	691	0.7-	1.3-	1998 10 15	704	0.5-	0.2+
1977 10 17	675	0.7+	0.6-	1996 04 15	691	0.4-	1.4-	1998 10 15	704	0.4-	0.9-
1977 10 21	675	1.4+	1.0-	1998 09 18	704	1.0+	0.0	1998 10 16	120	0.0	0.3+
1977 10 21	675	1.4+	0.0	1998 09 18	704	0.4+	0.2-	1998 10 16	120	0.2-	0.3+
1977 10 22	675	1.8-	1.3-	1998 09 18	704	0.8+	0.3-	1998 10 28	704	0.3+	0.1+
1977 10 22	675	1.2+	1.9-	1998 09 18	704	0.3+	0.9-	1998 10 28	704	0.3+	0.2-
1992 04 04	809	0.3-	0.5+	1998 09 18	704	0.7-	0.0	1998 10 28	704	0.6-	0.2+
1992 04 04	809	1.8-	0.6+	1998 09 24	699	0.7+	0.0	1998 10 28	704	0.3-	0.5+
1992 04 04	809	0.2+	0.7-	1998 09 24	699	1.2+	0.1-	1998 10 28	704	0.1-	0.8+
1992 04 06	809	(2.6- 1.0-)		1998 09 24	699	0.4+	0.1+	1998 10 29	704	1.0-	0.6+
1992 04 06	809	(2.4- 0.0)		1998 09 26	704	0.3+	0.3+	1998 10 29	704	0.2+	0.0
1992 04 06	809	(3.1- 0.3+)		1998 09 26	704	0.7+	0.1+	1998 10 29	704	0.6-	0.6+
1992 04 24	691	0.1-	0.3-	1998 09 26	704	0.2+	0.0	1998 10 29	704	0.4-	0.8+
1992 04 24	691	0.2-	0.8-	1998 09 26	704	0.4+	1.2+	1998 10 29	704	1.1-	1.3+

(9708)* 4140 T-3 = 1990 VF₁₁ = 1990 WX₈ = 1996 JH₁₅

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.
Id. K. Ichikawa (*MPC* 27929)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	265.36576		(2000.0)		P		Q
<i>n</i>	0.23453124	ω	35.19062		-0.87645838		-0.47259154
<i>a</i>	2.6041675	Ω	116.35441		+0.41483766		-0.83828457
<i>e</i>	0.1741707	<i>i</i>	5.89787		+0.24439810		-0.27191214
<i>P</i>	4.20	<i>H</i>	14.7		<i>G</i>	0.15	<i>U</</i>

1977 10 12	675	(3.0– 1.9–)	1990 11 18	809	(0.9– 2.8–)	1998 09 26	704	1.8+ 0.1+
1977 10 16	675	1.3– 1.7+	1996 04 20	566	0.1– 0.0	1998 09 26	704	0.4– 1.1+
1977 10 16	675	1.2+ 1.7+	1996 04 20	566	0.5– 1.1–	1998 09 27	704	1.3+ 0.5–
1977 10 17	675	0.6– 1.1–	1996 04 20	566	0.2– 0.5–	1998 09 27	704	0.0 0.0
1977 10 17	675	0.3– 0.5–	1996 05 15	327	0.2+ 0.0	1998 09 27	704	1.9– 1.9+
1977 10 21	675	0.1+ 1.0–	1996 05 15	327	0.1+ 0.6–	1998 09 27	704	0.8+ 0.8+
1977 10 21	675	0.6– 0.3–	1996 05 15	327	0.1– 0.4–	1998 10 20	046	0.3+ 0.3–
1977 10 22	675	1.9+ 0.9–	1996 05 21	327	0.3– 0.5–	1998 10 20	046	0.5– 0.3–
1990 11 11	809	0.0 1.0+	1996 05 21	327	0.0 1.0–	1998 10 20	046	0.5– 0.8–
1990 11 11	809	1.9– 1.5+	1996 05 21	327	0.5– 0.2–			

(9709)* 5192 T-3 = 1988 XN₄ = 1991 LL₁

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 18836)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	338.04587		(2000.0)	P	Q
<i>n</i>	0.18880431	ω	8.15920	+0.22952383	–0.95615097
<i>a</i>	3.0092720	Ω	68.72151	+0.88160479	+0.12503662
<i>e</i>	0.0497697	<i>i</i>	11.25799	+0.41242188	+0.26484178
<i>P</i>	5.22	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1977 10 16	675	0.6+ 0.8–	1991 06 06	809	1.3+ 0.9+	1996 05 21	566	0.6+ 0.5+
1977 10 16	675	0.0 1.5–	1991 06 06	809	1.4+ 1.2+	1996 05 21	566	0.3+ 1.2+
1977 10 17	675	0.7– 0.5–	1991 06 06	809	0.5+ 1.5+	1996 05 21	566	0.4– 0.5+
1977 10 17	675	0.4+ 0.8–	1991 06 08	809	1.7+ 1.0+	1996 05 21	566	0.2– 1.3+
1977 10 21	675	(0.8– 3.2+)	1991 06 08	809	1.5+ 1.5+	1996 05 21	566	0.3– 0.2+
1977 10 21	675	(0.6– 3.7+)	1991 06 08	809	0.7+ 1.0+	1997 08 03	566	0.4+ 1.3–
1977 10 22	675	(2.0– 3.8+)	1993 11 13	801	0.0 0.4+	1997 08 03	566	0.5+ 0.4–
1977 10 22	675	0.2+ 1.0+	1993 11 13	801	0.2– 0.5+	1997 08 03	566	0.2+ 0.6–
1988 12 11	399	1.4+ 1.2+	1993 11 17	801	0.2– 0.1+	1998 10 12	699	0.1+ 1.2+
1988 12 11	399	0.3+ 0.2–	1993 11 17	801	0.3– 0.2–	1998 10 12	699	0.6– 1.3+
1988 12 11	399	0.7+ 0.4+	1993 11 21	691	1.3– 1.0+	1998 10 12	699	0.1+ 1.4+
1988 12 11	399	1.2– 0.1–	1993 11 21	691	0.5– 1.0+	1998 10 29	704	0.2– 1.3+
1988 12 15	399	0.3– 0.5+	1993 11 21	691	1.2– 0.9+	1998 10 29	704	0.2– 0.4+
1988 12 15	399	0.8+ 0.3+	1996 05 13	691	(2.6– 0.1+)	1998 10 29	704	0.6– 0.5+
1991 05 18	809	0.4– 0.4+	1996 05 13	691	(2.5– 0.1–)	1998 10 29	704	0.5– 0.3+
1991 05 18	809	0.9– 0.1–	1996 05 13	691	(3.5– 1.2–)	1998 10 29	704	0.8– 0.1–
1991 05 18	809	1.8– 0.6–	1996 05 21	566	0.1+ 0.8+			

1971 UK₁ = 1975 XK₄ = 1998 SR₁₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	347.75192		(2000.0)	P	Q
<i>n</i>	0.25456842	ω	235.07360	+0.15265586	–0.98647128
<i>a</i>	2.4656591	Ω	206.33764	+0.94497587	+0.16340166
<i>e</i>	0.2229794	<i>i</i>	7.74042	+0.28933854	–0.01320254
<i>P</i>	3.87	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1971 10 26	029	0.4+ 0.2–	1998 09 18	809	(0.9+ 4.0–)	1998 09 27	704	0.9+ 0.2–
1971 10 27	029	0.7+ 0.7+	1998 09 18	809	(0.2– 4.0–)	1998 09 27	704	0.4+ 1.8+
1971 10 30	029	0.1– 0.2+	1998 09 20	809	(0.6+ 3.5–)	1998 09 27	704	0.2– 0.5+
1971 11 10	029	0.9+ 0.2–	1998 09 20	809	(0.4– 4.3–)	1998 09 27	704	0.1+ 1.3+
1971 11 10	029	1.0– 0.3–	1998 09 20	809	(1.2– 4.0–)	1998 09 27	704	0.3+ 0.3+
1971 11 19	029	0.8– 1.1–	1998 09 26	704	0.5+ 0.0	1998 10 17	699	0.1+ 0.1+
1975 12 03	095	0.0 0.5+	1998 09 26	704	1.4– 0.6+	1998 10 17	699	0.2+ 0.0
1998 09 16	411	0.3+ 0.8–	1998 09 26	704	0.4– 1.4–	1998 10 17	699	0.3+ 0.1+
1998 09 16	411	0.7+ 0.6–	1998 09 26	704	0.7– 0.0			
1998 09 18	809	(1.6+ 2.9–)	1998 09 26	704	1.3– 1.2–			

1973 SX = 1996 RO₁₄

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	306.92056		(2000.0)	P	Q
<i>n</i>	0.08333690	ω	120.79418	–0.41297726	–0.91060873
<i>a</i>	5.1909220	Ω	353.53955	+0.78127136	–0.34544761
<i>e</i>	0.0761000	<i>i</i>	7.93928	+0.46804364	–0.22684289
<i>P</i>	11.83	<i>H</i>	12.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1973 09 19	675	0.9+ 2.0–	1973 10 04	675	0.9– 0.7–	1996 09 12	809	0.9+ 0.1+
1973 09 19	675	0.4+ 0.4+	1973 10 04	675	0.9– 1.3+	1996 09 13	809	1.0+ 0.7–
1973 09 20	675	0.3+ 1.4+	1973 10 05	675	1.9+ 2.2–	1996 09 13	809	1.0+ 0.7–
1973 09 24	675	0.1+ 1.7–	1973 10 05	675	1.1+ 0.8–	1996 09 17	691	0.5– 0.4+
1973 09 24	675	0.0 0.3+	1996 09 08	691	1.1– 0.0	1996 09 17	691	0.2– 0.4+
1973 09 25	675	2.0– 1.0–	1996 09 08	691	0.9– 0.1–	1996 09 17	691	0.2– 0.3+
1973 09 25	675	0.1+ 1.7+	1996 09 11	691	0.1– 0.5+	1996 09 21	691	0.1– 0.1+
1973 09 29	675	0.8+ 0.4–	1996 09 11	809	0.4+ 0.4–	1996 09 21	691	0.3– 0.1+
1973 09 29	675	0.3– 1.5+	1996 09 11	691	0.3– 0.0	1996 09 21	691	0.2– 0.1–
1973 09 30	675	1.4– 0.7+	1996 09 11	691	0.2– 0.0			
1973 09 30	675	0.1+ 1.3+	1996 09 12	809	0.8+ 0.1–			

1973 SY₅ = 1977 RH₄ = 1998 RM₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	358.58886		(2000.0)	P	Q
<i>n</i>	0.23677245	ω	216.29798	+0.73680403	–0.67547198
<i>a</i>	2.5877080	Ω	186.43702	+0.66538039	+0.73211863
<i>e</i>	0.1402794	<i>i</i>	15.14046	+0.11995311	+0.08797685
<i>P</i>	4.16	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1973 09 19	675	0.7– 1.1–	1998 09 14	704	0.4+ 0.3–	1998 09 27	704	0.1+ 0.1+
1973 09 19	675	0.9– 1.0+	1998 09 14	704	0.4– 0.1+	1998 09 27	704	0.2+ 0.7+
1973 09 20	675	1.2– 1.5–	1998 09 16	699	0.0 0.9+	1998 09 27	704	0.1+ 0.8+
1973 09 24	675	0.7+ 0.4–	1998 09 16	699	0.1– 0.9+	1998 09 27	704	0.2– 0.5+
1973 09 24	675	0.1+ 1.6–	1998 09 16	699	0.0 0.8+	1998 09 27	704	0.2– 0.2+
1973 09 25	675	(2.9– 2.5–)	1998 09 18	704	0.2+ 0.3–	1998 10 14	704	0.3– 0.7+
1973 09 25	675	1.1– 0.2–	1998 09 18	704	0.3– 0.3+	1998 10 14	704	0.8+ 0.7+
1973 09 28	095	(1.2+ 3.3+)	1998 09 18	704	1.0+ 1.0+	1998 10 14	704	0.0 0.4–
1973 10 04	675	1.8+ 1.3–	1998 09 18	704	0.8+ 0.1–	1998 10 14	704	0.0 0.4+
1973 10 04	675	2.1+ 1.9–	1998 09 18	704	0.9+ 0.5+	1998 10 14	704	1.0+ 0.5–
1977 09 09	095	0.3+ 0.5+	1998 09 26	704	1.1– 0.9+	1998 10 15	704	0.3– 0.1+
1998 08 27	699	0.2– 0.2–	1998 09 26	704	1.7– 0.7–	1998 10 15	704	0.2+ 0.0
1998 08 27	699	0.2– 0.1–	1998 09 26	704	0.9– 0.5–	1998 10 15	704	0.3+ 0.9+
1998 08 27	699	0.6– 0.3–	1998 09 26	704	0.8– 0.8–	1998 10 15	704	0.9+ 0.3+
1998 09 14	704	0.2– 0.7+	1998 09 26	704	1.0– 0.2–	1998 10 15	704	0.8+ 0.7–

1975 TJ₃ = 1981 AX₃ = 1989 WK₃ = 1998 RB₇₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	350.12440		(2000.0)	P	Q
<i>n</i>	0.21346810	ω	33.58267	+0.35793142	–0.93000792
<i>a</i>	2.7727714	Ω	35.64800	+0.82208705	+0.27146701
<i>e</i>	0.2990200	<i>i</i>	8.23616	+0.44278435	+0.24777194
<i>P</i>	4.62	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1975 10 03	095	0.2– 0.0	1998 09 14	704	0.6– 0.0	1998 09 26	704	0.1+ 0.1–
1975 10 13	095	0.7– 2.2+	1998 09 14	704	0.3– 1.1–	1998 09 27	704	0.1+ 0.6–
1975 11 01	095	(4.4+ 6.4+)	1998 09 18	704	0.6+ 0.6+	1998 09 27	704	0.0 0.6+
1975 11 06	095	0.1+ 0.8–	1998 09 18	704	0.4+ 0.1–	1998 09 27	704	0.0 0.3+
1981 01 08	381	0.7+ 0.9–	1998 09 18	704	0.7+ 0.1–	1998 09 27	704	0.4– 0.4–
1981 01 08	381	0.7– 0.2+	1998 09 18	704	0.7+ 0.4+	1998 09 27	704	0.1– 0.6–
1989 11 26	364(35.2+ 6.2–)		1998 09 18	704	0.8+ 0.3+	1998 10 17	699	0.0 0.4–
1989 11 26	364(33.8+ 8.3–)		1998 09 26	704	0.0 0.1–	1998 10 17	699	0.2– 0.0
1989 12 01	364 0.9+ 0.9+		1998 09 26	704	0.1+ 0.1+	1998 10 17	699	0.2– 0.2–
1989 12 01	364 1.1– 0.7–		1998 09 26	704	0.1– 1.0+			
1998 09 14	704	0.4– 0.8–	1998 09 26	704	0.1– 0.5–			

1998 NOV. 10

M.P.C. 32917

1978 VY₅ = 1998 RV₆₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	327.24062	ω	10.52067	+0.07244693	−0.99670363		
<i>a</i>	2.2569711	Ω	75.33202	+0.91230792	+0.05142896		
<i>e</i>	0.1589930	<i>i</i>	2.16312	+0.40304553	+0.06274495		
<i>P</i>	3.39	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 11 05	675	0.6−	0.4−	1998 09 26	704	1.2+	0.9−	1998 10 02	704	0.2−	0.6−
1978 11 06	675	0.2+	0.3+	1998 09 26	704	0.2−	0.2+	1998 10 02	704	1.0−	1.2−
1978 11 07	675	0.9+	0.7−	1998 09 26	704	0.9+	0.3−	1998 10 02	704	0.9−	1.1−
1978 11 08	675	0.0	0.4+	1998 09 26	704	0.2+	0.2+	1998 10 02	704	0.7−	0.5−
1978 11 29	675	0.1+	0.5+	1998 09 26	704	1.9+	0.2−	1998 10 02	704	0.2−	0.0
1978 11 30	675	0.5−	0.8−	1998 09 26	704	0.1+	0.4+	1998 10 02	704	0.1−	1.4+
1998 09 14	704	0.3−	0.4−	1998 09 27	704	0.1+	0.2−	1998 10 02	704	0.1−	1.4+
1998 09 14	704	0.3+	0.3−	1998 09 27	704	0.1−	0.2−	1998 10 02	704	0.5−	0.5−
1998 09 14	704	0.4−	0.1−	1998 09 27	704	0.0	0.1+	1998 10 14	704	0.2−	0.3+
1998 09 18	704	0.5+	0.7−	1998 09 27	704	0.5−	0.6+	1998 10 14	704	0.2−	1.1+
1998 09 18	704	0.3−	0.1−	1998 09 27	704	0.0	0.1+	1998 10 14	704	0.6−	0.5−
1998 09 18	704	0.2+	0.5−	1998 09 27	704	0.4+	0.0	1998 10 14	704	0.7+	0.3−
1998 09 18	704	0.2−	0.3+	1998 09 27	704	0.3−	0.2−	1998 10 14	704	1.3+	0.7−
1998 09 18	704	0.1−	0.2+	1998 09 27	704	0.4+	0.6−	1998 10 15	704	0.5−	0.3+
1998 09 25	699	0.0	0.5+	1998 09 27	704	0.1+	0.3+	1998 10 15	704	0.0	0.7+
1998 09 25	699	0.3+	0.5+	1998 09 27	704	0.6+	0.5−	1998 10 15	704	1.3−	1.0+
1998 09 25	699	0.4+	0.2+	1998 09 29	704	0.3−	0.1−	1998 10 15	704	0.3−	0.9+
1998 09 26	704	0.9+	0.4−	1998 09 29	704	0.2−	0.2−	1998 10 15	704	0.9+	1.3+
1998 09 26	704	0.2+	0.1+	1998 09 29	704	0.9+	1.0−	1998 10 17	699	0.6−	0.5+
1998 09 26	704	0.9+	0.0	1998 09 29	704	1.9−	1.1−	1998 10 17	699	0.5−	0.6+
1998 09 26	704	0.5+	0.2−	1998 10 02	704	0.4−	0.2+	1998 10 17	699	1.1−	0.5+

1979 ML₆ = 1998 RX₇₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	54.70623	ω	188.56667	+0.90854163	+0.41544802		
<i>a</i>	2.4062584	Ω	146.77444	−0.37837869	+0.86308045		
<i>e</i>	0.1428235	<i>i</i>	4.62853	−0.17714872	+0.28721957		
<i>P</i>	3.73	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 06 24	413	0.1+	0.7−	1998 09 18	704	0.1+	1.1+	1998 10 15	704	1.4−	0.1+
1979 06 25	413	0.2−	0.6−	1998 09 18	704	0.6+	0.2−	1998 10 15	704	1.8−	0.8−
1979 06 29	413	0.4+	0.6−	1998 09 26	704	0.1−	0.2−	1998 10 15	704	(2.7−	0.4−)
1979 07 26	675	0.5−	1.0+	1998 09 26	704	0.2+	0.8−	1998 10 17	699	0.1+	0.6+
1979 07 27	675	0.3+	0.8+	1998 09 26	704	0.7+	0.6−	1998 10 17	699	0.4+	0.1+
1998 09 14	704	0.4+	0.2+	1998 09 26	704	0.9+	1.8+	1998 10 17	699	0.3−	0.1−
1998 09 14	704	0.1−	0.8−	1998 09 26	704	0.8−	0.5−	1998 10 28	704	0.5+	1.5−
1998 09 14	704	1.0+	0.4−	1998 09 27	704	1.1−	0.0	1998 10 28	704	0.7−	1.3+
1998 09 17	699	0.2−	0.0	1998 09 27	704	0.8−	0.1+	1998 10 28	704	0.9+	0.4+
1998 09 17	699	0.0	0.0	1998 09 27	704	0.3+	0.4+	1998 10 28	704	1.3−	0.6+
1998 09 17	699	0.6+	0.3+	1998 09 27	704	0.6−	1.0+	1998 10 29	704	1.0+	0.7+
1998 09 18	704	0.4+	0.2−	1998 09 27	704	0.2+	0.2−	1998 10 29	704	1.0+	0.1+
1998 09 18	704	0.1+	0.5−	1998 10 15	704	0.8−	0.5+	1998 10 29	704	1.8+	1.3−
1998 09 18	704	0.3+	0.5+	1998 10 15	704	1.1−	1.6−	1998 10 29	704	0.2+	0.5−

1979 MW₆ = 1998 TK₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	139.01611	ω	73.42949	+0.03577755	+0.99925463		
<i>a</i>	2.7343075	Ω	198.63893	−0.93331949	+0.02822417		
<i>e</i>	0.0378080	<i>i</i>	2.59967	−0.35725997	+0.02633577		
<i>P</i>	4.52	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1979 06 24	413	2.5−	1.7−	1979 07 27	675	0.6−	0.3+	1998 10 18	691	0.5−	0.3+
1979 06 25	413	1.8+	0.4−	1998 10 12	691	0.4+	0.3−	1998 10 18	691	0.0	0.2−
1979 06 29	413	2.4+	0.9−	1998 10 12	691	0.4+	0.0	1998 10 18	691	0.7−	0.1+
1979 07 26	675	1.0−	2.5+	1998 10 12	691	0.6+	0.2−				

1979 XL

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	20.30102	ω	7.81934	−0.22798750	−0.95800808		
<i>a</i>	2.7877341	Ω	95.48187	+0.88359866	−0.27859619		
<i>e</i>	0.1082901	<i>i</i>	10.06131	+0.40899279	+0.06785781		
<i>P</i>	4.65	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 11 17	095	1.1−	0.1+	1979 12 20	809	1.7−	0.3+	1979 12 25	809	0.8+	0.1−
1979 12 15	809	0.6−	1.5−	1979 12 20	809	0.5−	0.6+	1979 12 25	809	0.1−	0.2−
1979 12 15	809	0.0	1.3−	1979 12 20	809	0.8+	0.0	1979 12 26	809	0.7+	0.3−
1979 12 15	809	0.6−	0.6−	1979 12 21	809	(4.8−	2.1−)	1979 12 26	809	1.1−	0.1+
1979 12 16	809	0.3+	0.6+	1979 12 21	809	0.7−	0.1−	1979 12 28	809	0.4+	0.1+
1979 12 16	809	0.3+	0.6+	1979 12 22	809	0.3−	0.2+	1979 12 28	809	1.0+	0.2+
1979 12 16	809	0.8−	0.3+	1979 12 22	809	0.5−	0.1+	1998 10 02	699	0.6+	0.1+
1979 12 17	809	0.5+	0.5+	1979 12 22	809	0.0	0.7−	1998 10 02	699	0.1+	1.4+
1979 12 17	809	0.3−	0.6+	1979 12 23	809	0.5−	0.1−	1998 10 02	699	0.8−	0.8+
1979 12 17	809	0.2−	0.5+	1979 12 23	809	0.0	0.0	1998 10 11	699	0.3+	1.0−
1979 12 18	095	(1.5+	2.1+)	1979 12 23	809	0.2−	0.7−	1998 10 11	699	0.7+	0.7−
1979 12 19	809	0.6+	0.1+	1979 12 24	809	1.6+	0.2−	1998 10 11	699	0.9−	0.2+
1979 12 19	809	0.6+	0.2+	1979 12 24	809	0.4+	0.3−				
1979 12 19	809	0.9+	0.3+	1979 12 24	809	0.3−	0.4+				

1981 DF₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	85.64338	ω	341.45903	+0.49862068	+0.85653373		
<i>a</i>	2.9391322	Ω	318.16798	−0.76790594	+0.36522513		
<i>e</i>	0.0598955	<i>i</i>	11.51543	−0.40211676	+0.36463760		
<i>P</i>	5.04	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	1.3+	0.1+	1981 03 12	413	1.3−	0.1+	1998 09 19	699	1.8+	0.5+
1981 02 12	413	0.6−	0.0	1981 03 12	413	1.7+	0.4−	1998 09 19	699	0.8−	1.0+
1981 02 28	413	2.0−	0.2+	1981 04 08	413	1.3−	0.5+	1998 09 19	699	0.6−	0.1−
1981 02 28	413	0.7+	0.0	1981 04 08	413	0.8+	0.4+	1998 10 18	699	0.8−	0.8−
1981 03 06	413	1.6−	0.9+	1981 04 09	413	0.8−	0.0	1998 10 18	699	0.0	0.3−
1981 03 06	413	0.7+	0.4−	1981 04 09	413	0.7+	0.0	1998 10 18	699	0.3+	0.1−
1981 03 08	413	0.3−	0.3−	1981 05 01	413	1.0−	0.5+				
1981 03 08	413	1.5+	0.3−	1981 05 02	413	1.6+	1.3−				

1981 EK₁₇ = 1998 UA₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	131.60893	ω	76.10700	+0.21481194	+0.97566376		
<i>a</i>	2.4636272	Ω	206.42172	−0.92990823	+0.19055095		
<i>e</i>	0.1235949	<i>i</i>	5.67487	−0.29854063	+0.10849220		
<i>P</i>	3.87	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 14	413	0.1−	0.7+	1981 04 05	413	(5.8+	3.3−)	1998 10 18	699	1.0−	1.6−
1981 03 01	413	0.3−	0.1+	1981 04 10	413	1.6+	1.3−	1998 10 23	120	1.9+	0.3−
1981 03 06	413	0.1+	0.2+	1981 05 02	413	0.0	0.6−	1998 10 23	120	0.3−	0.1+
1981 03 08	413	1.5−	0.3−	1981 05 03	413	0.6−	0.7+	1998 10 23	120	0.5−	0.4+
1981 03 12	413	1.2+	0.9−	1998 10 18	699	0.8−	0.0	1998 10 24	120	0.1−	0.7+
1981 04 05	413	0.5−	1.3+	1998 10 18	699	0.2−	0.0	1998 10 24	120	0.9+	0.6+

1981 EH₂₈ = 1998 SS₁₀₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	301.88264	ω	81.23312	−0.29974428	−0.95385211				
<i>a</i>	2.4498754	Ω	26.23059	+0.85862826	−0.27789240				
<i>e</i>	0.0696884	<i>i</i>	2.31780	+0.41582554	−0.11376272				
<i>P</i>	3.83	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1981 02 12	413	0.9+	0.3−	1981 04 05	413	1.3−	0.1+	1998 09 27	704	0.2−	0.5−
1981 02 13	413	0.1+	0.6+	1981 04 05	413	1.7+	0.6−	1998 09 27	704	0.8+	0.6−
1981 03 02	413	2.0−	0.4+	1981 04 10	413	0.2−	1.6−	1998 09 27	704	1.0−	0.2+
1981 03 06	413	0.4−	0.4−	1981 05 01	413	1.0+	0.3+	1998 09 27	704	1.8−	1.2−
1981 03 06	413	1.7+	1.2−	1998 09 26	704	0.2−	1.5+	1998 10 14	699	1.7+	0.8−
1981 03 11	413	1.3−	0.0	1998 09 26	704	0.4−	1.0−	1998 10 14	699	1.1−	1.0+
1981 03 11	413	0.4−	0.6+	1998 09 26	704	0.2+	0.2−	1998 10 14	699	1.0+	1.1+
1981 03 15	413	0.9−	0.3+	1998 09 26	704	0.0	0.1+				
1981 03 15	413	1.0+	1.0+	1998 09 26	704	1.3+	0.4−				

1981 EZ₂₉ = 1998 RH₆₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	112.69131	ω	279.80027	+0.02477387	+0.99963328				
<i>a</i>	2.1839486	Ω	351.59619	−0.88537773	+0.01686081				
<i>e</i>	0.1637311	<i>i</i>	4.29057	−0.46421173	+0.02118990				
<i>P</i>	3.23	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1981 02 02	413	0.7−	1.1+	1998 09 18	704	0.8−	1.9+	1998 09 27	704	0.4+	0.0
1981 02 13	413	1.8+	0.3+	1998 09 18	704	0.1+	0.4+	1998 09 27	704	1.4+	0.0
1981 03 02	413	0.5+	0.6−	1998 09 18	704	1.0−	1.2−	1998 09 27	704	0.5−	0.4+
1981 03 02	413	0.8−	2.0−	1998 09 18	704	0.3+	1.8+	1998 10 14	704	0.5−	1.2+
1981 03 03	413	(3.0− 0.0)		1998 09 18	704	0.1+	0.2+	1998 10 14	704	(2.7+ 1.8−)	
1981 03 07	413	(4.4− 0.9+)		1998 09 26	704	0.0	0.1−	1998 10 14	704	0.5−	1.4−
1981 03 07	413	0.2+	0.8−	1998 09 26	704	1.2−	1.3−	1998 10 15	704	0.0	0.1+
1981 03 11	413	0.6−	2.2+	1998 09 26	704	2.0+	1.4−	1998 10 15	704	2.0+	0.4+
1981 04 30	413	0.2+	0.8+	1998 09 26	704	0.1+	0.1−	1998 10 15	704	0.3+	1.5−
1998 09 14	704	0.5+	0.6+	1998 09 26	704	0.7−	0.2−	1998 10 15	704	1.7−	1.0+
1998 09 14	704	0.9−	0.1+	1998 09 27	704	0.6+	0.3−	1998 10 15	704	0.6+	0.4+
1998 09 14	704	0.2+	0.3−	1998 09 27	704	1.0−	0.1−				

1981 EV₃₅ = 1998 SZ₈₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	58.95044	ω	316.31628	+0.67821715	+0.73460990				
<i>a</i>	2.9670194	Ω	356.23343	−0.56777900	+0.50722133				
<i>e</i>	0.2039178	<i>i</i>	17.02145	−0.46652814	+0.45063823				
<i>P</i>	5.11	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1981 02 09	413	1.1+	1.2−	1981 04 30	413	0.1+	1.0−	1998 09 27	704	0.4+	0.6−
1981 02 13	413	0.9+	1.2−	1981 05 02	413	1.1−	0.5−	1998 09 27	704	0.1−	0.1+
1981 03 02	413	1.4+	0.4−	1998 09 26	704	0.5−	0.1+	1998 09 27	704	0.4+	0.6+
1981 03 07	413	2.3−	0.9+	1998 09 26	704	0.9+	1.0−	1998 09 27	704	0.6−	0.3−
1981 03 07	413	(3.5+ 0.0)		1998 09 26	704	0.6+	0.6−	1998 10 14	699	0.4−	0.1−
1981 03 11	413	(3.2− 0.3−)		1998 09 26	704	0.7+	0.8−	1998 10 14	699	0.4+	1.3+
1981 03 29	413	1.4−	1.5+	1998 09 27	704	0.2−	0.3−	1998 10 14	699	0.5−	0.3+

1981 RW₄ = 1998 SY₁₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	26.02600	ω	334.00960	+0.95392944	−0.29641466				
<i>a</i>	0.23329166	Ω	43.31767	+0.28572473	+0.85026437				
<i>e</i>	0.2252996	<i>i</i>	3.88173	+0.09154235	+0.43495844				
<i>P</i>	4.22	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1981 09 08	095	0.8−	1.0+	1998 09 26	704	0.5+	0.7−	1998 09 27	704	0.1−	1.9−
1981 09 28	095	0.2+	0.3−	1998 09 26	704	0.4+	0.3−	1998 10 11	699	0.6−	1.1+
1981 10 05	095	0.5+	0.1+	1998 09 26	704	1.0+	0.8+	1998 10 11	699	0.9−	0.7+
1981 10 26	095	0.3−	0.0	1998 09 27	704	0.3+	1.6−	1998 10 11	699	0.7−	0.9+
1998 09 26	704	0.8+	0.4−	1998 09 27	704	(0.4+ 2.5−)					
1998 09 26	704	0.8−	1.0+	1998 09 27	704	0.5+	0.4−				

1984 EQ = 1987 SO₁₈ = 1998 TZ₂₉

Id. G. V. Williams, T. B. Spahr

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	333.70226	ω	96.38243	+0.11582163	−0.99175690				
<i>a</i>	3.0728410	Ω	346.58985	+0.79205262	+0.12551263				
<i>e</i>	0.1860231	<i>i</i>	13.66889	+0.59936467	+0.02578446				
<i>P</i>	5.39	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1984 03 06	688	0.4+	1.5−	1987 09 16	095	1.0+	1.2−	1998 10 20	399	0.4−	1.5+
1984 03 06	688	0.4+	0.1+	1998 10 12	699	0.1+	0.8−	1998 10 25	399	0.2−	0.6−
1984 03 09	688	1.1+	0.2+	1998 10 12	699	0.2+	1.2−	1998 10 25	399	1.2+	0.7+
1984 03 09	688	2.0−	0.4+	1998 10 12	699	0.2+	1.5−	1998 10 28	399	1.4−	0.3−
1984 03 29	688	0.2−	0.3+	1998 10 12	399	0.3−	0.6+	1998 10 28	399	0.3+	0.1−
1984 03 31	688	1.6−	0.1+	1998 10 12	399	0.8+	0.7+				
1984 03 31	688	1.0+	0.7−	1998 10 20	399	0.8−	1.1+				

1984 SS = 1998 OA₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Nakano	
<i>n</i>	31.49721	ω	114.01405	+0.85215503	+0.45700409				
<i>a</i>	2.3219301	Ω	220.16040	−0.49114584	+0.86659599				
<i>e</i>	0.2959948	<i>i</i>	23.28171	+0.18057567	+0.20039622				
<i>P</i>	3.54	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1984 09 28	675	0.9+	0.1−	1998 07 28	327	0.2+	0.0	1998 08 13	327	0.1+	0.3+
1984 09 29	675	0.2+	1.4+	1998 07 28	327	0.1+	0.3−	1998 08 13	327	0.1+	0.3+
1984 10 22	675	1.9−	1.7−	1998 07 29	327	1.1−	0.2+	1998 08 13	327	0.0	0.2+
1984 10 23	675	0.5−	0.2+	1998 07 29	327	0.1+	0.2−	1998 08 13	327	0.0	0.2+
1984 10 24	675	1.2+	0.3+	1998 07 29	327	0.0	0.2+	1998 08 22	327	0.8+	0.6+
1998 07 28	327	0.2+	0.1−	1998 08 12	327	0.0	0.1−	1998 08 22	327	0.2+	0.4−
1998 07 28	327	0.2+	0.0	1998 08 12	327	0.7−	1.1−	1998 08 22	327	0.1+	0.2−

1985 CD₂ = 1998 SF₁₅₃

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	182.11228	ω	283.58888	−0.90403264	+0.42735649				
<i>a</i>	3.0498529	Ω	281.71173	−0.38831819	−0.83038998				
<i>e</i>	0.1902760	<i>i</i>	0.55944	−0.17870077	−0.35751771				
<i>P</i>	5.33	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1985 02 12	809	0.2−	0.0	1985 02 18	809	1.2+	0.1+	1985 02 26	809	0.3−	0.2−
1985 02 12	809	0.1−	0.1+	1985 02 19	809	0.2+	0.1−	1985 02 26	809	0.1−	0.3−
1985 02 12	809	0.5−	0.0	1985 02 19	809	0.3+	0.3+	1985 02 27	809	1.6+	0.4+

1998 NOV. 10

M.P.C. 32919

1985 02 14	809	0.5+	0.4+	1985 02 19	809	0.1-	0.2+	1985 02 27	809	1.8+	0.5+
1985 02 14	809	0.8+	0.6+	1985 02 20	809	1.0-	0.1+	1985 02 27	809	1.8+	0.5+
1985 02 14	809	1.0+	0.5+	1985 02 20	809	1.0-	0.0	1985 02 28	809	0.7-	0.3+
1985 02 15	809	0.2-	0.2-	1985 02 20	809	1.0-	0.1+	1985 02 28	809	0.7-	0.3+
1985 02 15	809	0.0	0.1-	1985 02 21	809	0.2-	0.1-	1985 02 28	809	0.7-	0.3+
1985 02 15	809	0.2+	0.1-	1985 02 21	809	0.2-	0.1-	1998 09 26	704	1.6-	0.2+
1985 02 16	809	0.8-	0.5-	1985 02 21	809	0.2+	0.1-	1998 09 26	704	0.1+	0.3+
1985 02 16	809	0.6-	0.4-	1985 02 24	809	0.1+	0.6-	1998 09 26	704	0.7+	0.1+
1985 02 16	809	0.6-	0.5-	1985 02 24	809	0.2+	0.7-	1998 09 27	704	0.8-	0.7-
1985 02 17	809	0.5-	0.2+	1985 02 24	809	0.4+	0.5-	1998 09 27	704	1.2+	0.2-
1985 02 17	809	0.2-	0.1-	1985 02 25	809	0.8-	0.3-	1998 09 27	704	0.8+	0.4-
1985 02 17	809	0.3+	0.5-	1985 02 25	809	0.9-	0.0	1998 09 27	704	0.5-	0.7+
1985 02 18	809	0.8+	0.4+	1985 02 25	809	0.9-	0.3+				
1985 02 18	809	1.0+	0.2+	1985 02 26	809	0.2-	0.2-				

1985 CL₂ = 1998 SV₁₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	229.83135		(2000.0)	P	Q		
<i>n</i>	0.26224082	ω	18.35753	-0.99953769	+0.02930837		
<i>a</i>	2.4173295	Ω	163.31575	-0.03021053	-0.92739685		
<i>e</i>	0.1238720	<i>i</i>	1.61454	-0.00342605	-0.37292908		
<i>P</i>	3.76	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1985 02 14	809	0.4-	0.1+	1985 02 18	809	0.6+	0.1-	1985 02 25	809	0.7-	0.1+
1985 02 14	809	0.2-	0.1-	1985 02 19	809	0.5+	0.4+	1985 02 26	809	0.4-	0.6+
1985 02 14	809	0.1+	0.1-	1985 02 19	809	0.7+	0.4+	1985 02 26	809	0.1-	0.6+
1985 02 15	809	0.3-	0.5-	1985 02 19	809	1.1+	0.5+	1985 02 26	809	0.1+	0.6+
1985 02 15	809	0.1-	0.6-	1985 02 20	675	2.0+	0.4+	1998 09 26	704	0.4-	0.5-
1985 02 15	809	0.1+	0.6-	1985 02 21	809	1.1-	0.3-	1998 09 26	704	0.1+	0.0
1985 02 16	809	0.4-	0.4-	1985 02 21	809	0.7-	0.1+	1998 09 26	704	0.5+	0.6-
1985 02 16	809	0.0	0.5-	1985 02 21	809	0.5-	0.3+	1998 09 26	704	0.4-	0.1+
1985 02 16	809	0.2+	0.5-	1985 02 22	675	0.8+	0.7+	1998 09 26	704	0.9-	0.2+
1985 02 17	809	0.9-	0.1-	1985 02 24	809	0.2+	0.2-	1998 09 27	704	0.6+	1.0-
1985 02 17	809	0.6-	0.4-	1985 02 24	809	0.6+	0.1+	1998 09 27	704	0.0	0.4-
1985 02 17	809	0.1-	0.5-	1985 02 24	809	1.1+	0.2+	1998 09 27	704	1.2-	0.7+
1985 02 18	809	0.0	0.1-	1985 02 25	809	1.1-	0.0	1998 09 27	704	1.1+	1.3+
1985 02 18	809	0.5+	0.0	1985 02 25	809	0.8-	0.0	1998 09 27	704	0.5+	0.3+

1985 RN₃ = 1998 ST₁₁₅

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	62.92900		(2000.0)	P	Q		
<i>n</i>	0.30627140	ω	342.13215	+0.91229652	+0.40943374		
<i>a</i>	2.1797085	Ω	353.67709	-0.36519475	+0.80351412		
<i>e</i>	0.1590276	<i>i</i>	4.63102	-0.18533173	+0.43212159		
<i>P</i>	3.22	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1985 08 19	095	0.3+	0.5-	1985 09 12	809	0.3-	0.1-	1985 09 21	809	0.8+	0.5-
1985 09 07	809	0.6-	1.0+	1985 09 16	809	0.1-	0.0	1998 09 26	704	0.2-	0.1-
1985 09 07	809	0.5-	1.0+	1985 09 16	809	0.0	0.3-	1998 09 26	704	0.5-	0.5-
1985 09 07	809	0.3-	1.0+	1985 09 16	809	0.0	0.4-	1998 09 26	704	0.9-	0.1-
1985 09 10	809	0.6-	0.0	1985 09 17	809	0.8+	0.6-	1998 09 26	704	0.4-	0.0
1985 09 10	809	0.3-	0.2+	1985 09 17	809	0.9+	0.6-	1998 09 26	704	0.3+	0.2+
1985 09 10	809	0.0	0.2+	1985 09 17	809	1.1+	0.6-	1998 09 27	704	0.3+	0.0
1985 09 11	809	0.8-	0.3+	1985 09 19	809	0.2+	0.1-	1998 09 27	704	0.6-	0.1-
1985 09 11	809	0.6-	0.3+	1985 09 19	809	0.2+	0.2-	1998 09 27	704	0.2-	0.3+
1985 09 11	809	0.4-	0.4+	1985 09 19	809	0.4+	0.1-	1998 09 27	704	0.6+	0.5+
1985 09 12	809	0.9-	0.2-	1985 09 21	809	0.9+	0.5-	1998 09 27	704	1.1+	0.5+
1985 09 12	809	0.6-	0.1-	1985 09 21	809	1.0+	0.5-				

1987 GA = 1934 CP₁ = 1998 UD₂₁

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	218.89781		(2000.0)	P	Q		
<i>n</i>	0.22447060	ω	167.21544	-0.79681377	+0.58623395		
<i>a</i>	2.6814091	Ω	49.65905	-0.56989407	-0.64868319		
<i>e</i>	0.1971686	<i>i</i>	11.06983	-0.20076995	-0.48532450		
<i>P</i>	4.39	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1934 02 15	754	(1.5-	3.9+)	1987 04 18	391	1.0-	1.2+	1987 05 15	391	(1.2-	3.1+)
1934 02 15	754	0.1+	0.5+	1987 04 18	391	(3.8+	1.2+)	1987 05 20	391	(6.2-	3.7+)
1987 04 03	391	1.4-	0.8-	1987 04 18	391	1.9+	1.2-	1987 05 20	391	(15.1+	12.0-)
1987 04 04	391	0.6-	0.4-	1987 04 18	391	1.7+	2.3+	1987 05 20	391	(6.4-	3.6+)
1987 04 05	391	0.9-	0.3-	1987 04 20	391	2.0-	1.5-	1987 05 21	391	1.8-	1.9-
1987 04 05	391	1.4-	0.1-	1987 04 20	391	0.3-	0.2-	1998 10 18	699	0.2-	0.3+
1987 04 05	391	1.9+	0.8-	1987 04 24	391	(0.2-	3.2-)	1998 10 18	699	0.4-	0.6-
1987 04 15	391	0.3+	0.9-	1987 04 24	391	1.1-	1.9+	1998 10 18	699	0.4-	0.7-
1987 04 15	391	1.6+	0.2+	1987 04 26	801	(3.6-	1.3+)	1998 10 20	699	0.2-	0.2+
1987 04 15	391	0.3-	0.1-	1987 04 27	391	1.7+	0.1-	1998 10 20	699	0.6+	0.8-
1987 04 16	391	(4.5-	1.5-)	1987 04 27	391	1.1-	1.0-	1998 10 20	699	0.5-	1.9+
1987 04 16	391	2.0+	0.0	1987 04 29	391	2.2-	1.3+	1998 10 29	120	0.1-	0.3-
1987 04 16	391	(2.6+	3.3+)	1987 04 29	391	(0.9-	4.3+)	1998 10 30	120	0.7+	0.1-
1987 04 17	391	1.2+	2.0+	1987 04 30	391	0.5+	0.0	1998 10 30	120	0.1-	0.8-
1987 04 17	391	(2.8+	3.9+)	1987 04 30	391	0.2+	1.7+	1998 10 30	120	0.3+	0.2-
1987 04 17	391	(4.6+	1.5+)	1987 05 04	391	(5.7+	11.3-)	1998 10 30	120	0.5+	0.5+
1987 04 17	391	(9.7-	0.6+)	1987 05 04	391	(3.5-	0.3+)				
1987 04 17	391	0.6-	1.1-	1987 05 15	391	1.1+	1.1-				

1987 SL₅ = 1998 SH₁₀₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	346.75606		(2000.0)	P	Q		
<i>n</i>	0.26881045	ω	210.74488	+0.23758530	-0.96976671		
<i>a</i>	2.3777815	Ω	225.57671	+0.90632742	+0.24195265		
<i>e</i>	0.2029068	<i>i</i>	4.47543	+0.34946221	+0.03180315		
<i>P</i>	3.67	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1987 09 29	054	1.0+	0.2-	1987 10 25	054	0.9+	0.6-	1998 09 26	704	0.3+	0.6-
1987 09 30	054	0.5-	0.7-	1987 10 25	054	0.1-	0.5-	1998 09 27	704	0.5-	0.1+
1987 09 30	054	0.3+	0.3+	1998 09 26	704	0.3+	0.4-	1998 09 27	704	0.2+	0.2+
1987 10 02	054	0.2-	0.5-	1998 09 26	704	0.2+	0.1-	1998 09 27	704	0.0	0.5+
1987 10 17	675	0.5-	0.9+	1998 09 26	704	0.4-	0.2+	1998 09 27	704	0.7-	0.5+
1987 10 17	675	0.6-	0.6+	1998 09 26	704	1.3+	0.2-	1998 09 27	704	0.9-	0.5+

1987 SD₁₃ = 1987 TA₁ = 1987 WG₃ = 1998 SL₇₀Id. S. Nakano (d, *MPC* 15523), B. G. Marsden, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	16.40038		(2000.0)	P	Q		
<i>n</i>	0.27130422	ω	333.58376	+0.77932576	-0.62587519		
<i>a</i>	2.3631884	Ω	65.19647	+0.58069817	+0.70305367		
<i>e</i>	0.1934307	<i>i</i>	1.92688	+0.23545913	+0.33763260		
<i>P</i>	3.63	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 09 04	095	1.5-	0.3-	1998 09 23	809	1.7+	0.7+	1998 10 14	704	0.8+	1.4+
1987 09 24	809	0.2+	0.0	1998 09 23	809	1.6+	1.4+	1998 10 14	704	0.1+	0.6+
1987 09 24	809	0.8+	0.2+	1998 09 26	704	0.7-	0.6-	1998 10 15	704	0.0	0.3+
1987 09 24	809	1.5+	0.5+	1998 09 26	704	0.4-	0.3+	1998 10 15	704	0.4+	0.3+
1987 09 24	095	0.5+	0.6+	1998 09 26	704	0.1+	1.2-	1998 10 15	704	1.0+	0.4+
1987 09 27	095	1.7-	0.9-	1998 09 26	704	0.7-	0.4-	1998 10 15	704	0.4+	0.9-
1987 10 01	809	1.8+	0.5-	1998 09 26	704	1.5-	0.3-	1998 10 15	704	0.5+	1.7-
1987 10 01	809	1.8+	0.5-	1998 09 27	704	0.1+	0.2-	1998 10 28	704	0.9+	0.4+
1987 10 01	809	1.1+	0.2-	1998 09 27	704	0.0	0.7-	1998 10 28	704	0.4+	1.1+
1987 10 01	809	1.0-	0.6+	1998 09 27	704	0.0	1.0-	1998 10 28	704	0.3+	0.7+
1987 10 01	809	1.7-	0.8+	1998 09 27	704	0.0	1.3-	1998 10 28	704	0.2+	0.6+
1987 10 01	809	2.2-	0.5+	1998 09 27	704	0.4-	0.8-	1998 10 28	704	0.5-	1.7+

1987 11 17	010	0.9+	1.5-	1998 10 11	699	0.1-	0.1+	1998 10 29	704	0.5-	1.2-
1987 11 17	010	0.6-	0.8+	1998 10 11	699	0.2+	0.3+	1998 10 29	704	0.8-	0.8-
1998 09 21	809	0.5+	0.5+	1998 10 11	699	0.3-	0.1+	1998 10 29	704	0.5-	1.1-
1998 09 21	809	0.1-	0.0	1998 10 14	704	0.2-	0.1-	1998 10 29	704	0.7-	0.8-
1998 09 21	809	0.7-	0.2+	1998 10 14	704	0.1+	1.1+	1998 10 29	704	1.6-	1.1-
1998 09 23	809	(2.4+	1.2+)	1998 10 14	704	0.6+	1.5+				

1988 DB₅ = 1998 SE₁₀₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	181.59425		(2000.0)		P		Q		Williams		
<i>n</i>	0.23834415	ω	12.21794	-0.84295294			+0.53230487				
<i>a</i>	2.5763195	Ω	200.52621	-0.51042414			-0.83712194				
<i>e</i>	0.1052945	<i>i</i>	12.85088	-0.16999279			-0.12600950				
<i>P</i>	4.14	<i>H</i>	14.3	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1988 02 23	413	0.8+	0.2-	1998 09 26	704	0.0	1.1-	1998 09 27	704	0.3-	0.9+
1988 02 25	413	0.2-	0.5-	1998 09 26	704	0.1-	0.5-	1998 09 27	704	0.3-	0.8+
1988 02 25	413	0.3+	0.3+	1998 09 26	704	0.7+	0.5-	1998 09 27	704	0.2+	1.4+
1988 03 10	413	0.1-	0.6+	1998 09 26	704	0.7+	0.2-	1998 10 14	699	1.0-	0.6+
1988 03 10	413	0.8-	0.0	1998 09 27	704	0.0	0.4+	1998 10 14	699	0.2+	0.5-
1998 09 26	704	0.0	0.8-	1998 09 27	704	(3.7+	1.9+)	1998 10 14	699	0.2-	0.5-

1988 RQ₈ = 1978 TR = 1998 SA₁₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	68.86752		(2000.0)		P		Q		Williams		
<i>n</i>	0.29690860	ω	288.45809	+0.83059223			+0.55437200				
<i>a</i>	2.2252947	Ω	37.92396	-0.47301165			+0.75236395				
<i>e</i>	0.1809623	<i>i</i>	4.92855	-0.29389885			+0.35583729				
<i>P</i>	3.32	<i>H</i>	15.1	<i>G</i>	0.15		<i>U</i>	2			
Residuals in seconds of arc											
1949 11 25	675	0.2+	0.0	1988 11 03	413	1.2+	0.5+	1998 09 26	704	0.3+	0.4-
1978 10 09	095	1.6-	2.2+	1988 11 03	413	0.8+	0.9+	1998 09 26	704	0.8+	0.4+
1984 05 31	413	1.2-	0.1-	1988 11 11	071	1.6-	1.4-	1998 09 27	704	0.8+	0.4-
1984 05 31	413	0.6+	0.5-	1988 11 11	071	1.1-	1.6-	1998 09 27	704	1.0+	0.0
1988 09 12	071	0.0	0.6-	1997 01 31	910	0.0	0.2-	1998 09 27	704	0.5+	0.5+
1988 09 12	071	0.8+	0.9+	1997 01 31	910	0.0	0.2-	1998 09 27	704	0.1+	1.0+
1988 10 15	071	1.8+	0.4+	1997 01 31	910	0.0	0.2-	1998 09 27	704	0.2-	0.9+
1988 10 15	071	(1.4+	2.6+)	1998 09 26	704	1.0+	0.2-	1998 10 27	691	1.5-	0.3-
1988 10 17	071	0.7-	1.7-	1998 09 26	704	0.6+	1.5-	1998 10 27	691	1.8-	0.7-
1988 10 17	071	0.1-	1.3+	1998 09 26	704	0.4+	1.2-	1998 10 27	691	1.6-	0.3-

1988 VT₃ = 1998 SJ₁₄₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	325.66076		(2000.0)		P		Q		Williams		
<i>n</i>	0.29163563	ω	216.68068	-0.21708331			-0.97408644				
<i>a</i>	2.2520377	Ω	245.93459	+0.91131302			-0.17892685				
<i>e</i>	0.1143624	<i>i</i>	3.98695	+0.34983341			-0.13835025				
<i>P</i>	3.38	<i>H</i>	14.5	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1988 11 10	897	0.3-	0.7+	1988 11 30	399	1.0-	1.2-	1998 09 26	704	0.8+	0.5-
1988 11 10	897	0.9+	1.7-	1988 11 30	399	2.3+	0.0	1998 09 26	704	0.6+	0.8-
1988 11 14	399	1.1-	0.8+	1988 12 01	054	1.5-	0.0	1998 09 26	704	0.8-	1.3-
1988 11 14	399	0.2-	0.4-	1988 12 01	054	0.7-	0.3-	1998 09 27	704	1.0-	1.9+
1988 11 14	399	1.4+	0.1-	1988 12 02	399	2.9+	0.2-	1998 09 27	704	1.2-	0.6+
1988 11 17	399	1.2-	0.2-	1988 12 02	399	0.4+	1.8+	1998 09 27	704	0.6-	0.2-
1988 11 17	399	0.4+	0.9+	1988 12 02	399	1.5-	0.2-	1998 09 27	704	0.6+	0.3-
1988 11 17	399	0.4-	0.8+	1998 09 26	704	0.7+	0.0	1998 09 27	704	0.3+	0.3-
1988 11 30	399	0.5-	0.8-	1998 09 26	704	0.6+	0.8+				

1989 AV₆ = 1998 UJ₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	199.40316		(2000.0)		P		Q		Williams		
<i>n</i>	0.29358464	ω	172.65887	+0.32797658			+0.93837720				
<i>a</i>	2.2420596	Ω	116.43555	-0.87280153			+0.34514087				
<i>e</i>	0.1871377	<i>i</i>	6.99145	-0.36145381			+0.01805560				
<i>P</i>	3.36	<i>H</i>	13.5	<i>G</i>	0.15		<i>U</i>	6			
Residuals in seconds of arc											
1989 01 11	033	0.5-	0.4-	1989 02 03	033	0.0	0.2-	1998 10 23	910	0.0	0.2-
1989 01 11	033	0.0	0.0	1998 10 22	910	0.1-	0.0	1998 10 23	910	0.0	0.0
1989 01 14	033	0.7+	0.5+	1998 10 22	910	0.2-	0.0	1998 10 23	910	0.0	0.0
1989 02 02	033	0.2-	0.1+	1998 10 22	910	0.2+	0.1+				

1989 DB = 1978 EN₆ = 1998 SM₁₄₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	234.17702		(2000.0)		P		Q		Williams		
<i>n</i>	0.26955746	ω	150.72467	-0.99378264			+0.10611913				
<i>a</i>	2.3733866	Ω	35.41623	-0.11007202			-0.89094515				
<i>e</i>	0.1737884	<i>i</i>	3.33246	-0.01673972			-0.44153762				
<i>P</i>	3.66	<i>H</i>	14.0	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1978 03 06	095	0.1-	0.3-	1989 03 09	881	0.9+	0.1+	1998 09 26	704	1.1-	0.0
1989 02 26	881	0.0	1.9+	1989 03 10	881	1.2+	0.1-	1998 09 26	704	(2.2-	0.2-)
1989 02 26	881	0.3-	0.3+	1989 03 10	881	1.2+	0.3-	1998 09 26	704	0.6-	0.1-
1989 02 27	881	0.0	0.0	1998 09 18	809	(3.0+	0.3+)	1998 09 27	704	0.6-	0.1+
1989 02 27	881	1.7+	1.4-	1998 09 18	809	0.8+	0.5-	1998 09 27	704	1.5-	0.7+
1989 03 05	881	1.5-	0.0	1998 09 18	809	0.9+	0.1-	1998 09 27	704	0.6+	1.2+
1989 03 05	881	0.3+	2.1-	1998 09 20	809	1.1+	0.2-	1998 09 27	704	0.0	0.4+
1989 03 08	897	1.3-	0.6+	1998 09 20	809	1.0+	1.0-	1998 09 27	704	1.5-	0.2+
1989 03 08	897	1.9-	1.0+	1998 09 20	809	1.2+	0.6-				
1989 03 09	881	0.3-	0.1+	1998 09 26	704	0.0	0.3-				

1989 SK₁ = 1998 UN₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	67.49675		(2000.0)		P		Q		Williams		
<i>n</i>	0.22487639	ω	279.16103	+0.91244040			+0.40361930				
<i>a</i>	2.6781823	Ω	57.06137	-0.33678412			+0.83426046				
<i>e</i>	0.2257526	<i>i</i>	4.60697	-0.23244133			+0.37563406				
<i>P</i>	4.38	<i>H</i>	15.2	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1989 09 26	809	0.8+	0.8+	1989 10 07	809	0.2-	1.1+	1998 10 18	699	0.1+	0.0
1989 09 26	809	0.2+	0.4-	1989 10 07	809	0.0	0.8+	1998 10 18	699	0.4-	0.2+
1989 09 26	809	0.6-	0.4-	1989 10 07	809	0.2-	1.1+	1998 10 18	699	0.0	0.6-
1989 09 28	809	0.4+	0.8+	1989 10 08	809	0.1-	1.0-	1998 10 20	699	0.4+	0.3+
1989 09 28	809	0.5-	0.7-	1989 10 08	809	0.1+	0.9-	1998 10 20	699	0.2+	0.2-
1989 09 28	809	0.2-	0.6-	1989 10 08	809	0.2+	0.7-	1998 10 20	699	0.3-	0.1+

1989 SA₂ = 1998 TM₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	55.82242		(2000.0)		P		Q		Williams		
<i>n</i>	0.22189854	ω	285.51367	+0.95210191			+0.29090242				
<i>a</i>	2.7020897	Ω	57.65874	-0.21990989			+0.86551170				
<i>e</i>	0.1735276	<i>i</i>	6.40302	-0.21246550			+0.40775639				
<i>P</i>	4.44	<i>H</i>	15.7	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1989 09 26	809	0.3+	0.4+	1989 10 03	809	2.0+	0.8-	1989 10 08	809	2.2-	0.1-
1989 09 26	809	0.7-	1.0-	1989 10 03	809	2.8+	0.4+	1998 10 14	699	0.5-	0.6+
1989 09 26	809	0.4-	0.2-	1989 10 07	809	1.1+	0.3+	1998 10 14	699	0.5+	0.5+
1989 09 28	809	0.8+	0.8+	1989 10 07	809	0.3-	0.3-	1998 10 14	699	0.1-	0.2+
1989 09 28	809	0.7-	0.2+	1989 10 07	809	0.3+	0.0	1998 10 20	699	0.7-	0.9-

1989 09 28 809 1.8- 0.3- 1989 10 08 809 0.4- 0.2+ 1989 10 20 699 0.6+ 0.2-
 1989 10 03 809 (4.4+ 0.2+) 1989 10 08 809 0.9- 0.5+ 1989 10 20 699 0.2+ 0.2-

1989 SQ₄ = 1980 BV₅ = 1998 HM₁₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	118.97534		(2000.0)	P	Q
<i>n</i>	0.27866771	ω	39.09572	-0.77140056	-0.63380429
<i>a</i>	2.3213731	Ω	101.47794	+0.56831899	-0.72637496
<i>e</i>	0.1329924	<i>i</i>	3.32631	+0.28627732	-0.26584118
<i>P</i>	3.54	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 01 23	095	0.1-	0.3-	1989 09 29	675	0.3-	0.5-	1998 04 19	704	0.5+	0.0
1984 03 29	413	0.6-	1.0-	1989 10 03	809	0.9-	0.7-	1998 04 19	704	0.5+	0.2+
1984 03 29	413	0.1+	0.5-	1989 10 03	809	1.2-	1.6-	1998 04 19	704	0.2+	0.2+
1989 09 26	809	0.9+	0.5+	1989 10 03	809	(3.8- 2.0-)		1998 04 19	704	0.5-	0.7+
1989 09 26	809	0.7+	0.2+	1989 10 07	809	1.2+	1.3+	1998 04 20	704	0.7+	0.2-
1989 09 26	809	0.0	0.3-	1989 10 07	809	(1.6+ 2.6+)		1998 04 20	704	0.2-	0.3-
1989 09 28	809	0.3-	0.3-	1989 10 07	809	(1.3+ 2.5+)		1998 04 20	704	0.5+	0.3+
1989 09 28	809	0.4-	0.0	1989 10 08	809	1.9+	1.4+	1998 04 20	704	0.5-	0.0
1989 09 28	809	1.0-	0.7-	1989 10 08	809	0.6+	0.2-	1998 04 20	704	0.6-	0.3+
1989 09 29	675	0.4-	0.2-	1989 10 08	809	0.6-	0.8+				

1989 ST₄ = 1998 RJ₈₀

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	111.73831		(2000.0)	P	Q
<i>n</i>	0.21675583	ω	228.86640	+0.10594781	+0.99079484
<i>a</i>	2.7446620	Ω	47.42534	-0.87460227	+0.13317199
<i>e</i>	0.0792913	<i>i</i>	6.57071	-0.47312360	-0.02430651
<i>P</i>	4.55	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1989 09 26	809	1.2+	0.7+	1989 10 08	809	1.9-	2.1-	1998 09 18	704	0.3+	0.6+
1989 09 26	809	0.9+	0.6+	1989 10 08	809	(2.7- 2.4-)		1998 09 18	704	0.5-	0.9+
1989 09 26	809	1.5-	0.4-	1989 10 08	809	(3.5- 1.9-)		1998 09 18	704	0.3+	0.2-
1989 09 28	809	1.2+	1.0+	1998 09 14	704	1.1-	1.0-	1998 09 26	704	0.8+	0.2-
1989 09 28	809	1.2+	1.4+	1998 09 14	704	1.9-	0.7+	1998 09 26	704	0.6+	0.1+
1989 09 28	809	1.0+	1.7+	1998 09 14	704	(2.4- 0.7+)		1998 09 26	704	0.2+	0.7+
1989 09 29	675	0.9+	1.1-	1998 09 17	699	1.0+	1.3-	1998 09 26	704	0.2-	0.8+
1989 09 29	675	0.6+	1.2-	1998 09 17	699	0.2-	0.1-	1998 09 26	704	0.4+	0.4+
1989 10 03	809	0.3+	1.2+	1998 09 17	699	0.5+	0.7-	1998 09 27	704	0.8+	0.1+
1989 10 03	809	0.7-	1.1+	1998 09 17	699	1.2-	0.3+	1998 09 27	704	1.1+	0.4+
1989 10 03	809	1.0-	1.3+	1998 09 17	699	0.8-	0.0	1998 09 27	704	0.6+	0.3+
1989 10 07	809	0.5-	1.5-	1998 09 17	699	0.2-	0.5-	1998 09 27	704	0.4+	0.2-
1989 10 07	809	0.8-	1.8-	1998 09 18	704	0.6-	0.3-	1998 09 27	704	0.3+	1.0-
1989 10 07	809	1.1-	0.5-	1998 09 18	704	0.4-	0.4-				

1989 TA₄ = 1998 RE₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	325.31011		(2000.0)	P	Q
<i>n</i>	0.21154637	ω	4.26993	+0.50039089	-0.86263628
<i>a</i>	2.7895383	Ω	55.72054	+0.79168178	+0.42130860
<i>e</i>	0.0921251	<i>i</i>	5.13410	+0.35049810	+0.27992447
<i>P</i>	4.66	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1989 09 28	809	0.7-	0.1+	1989 10 03	809	1.0+	0.8+	1998 09 14	704	0.6-	1.3+
1989 09 28	809	1.6-	0.4+	1989 10 03	809	2.0+	0.0	1998 09 14	704	0.3+	0.0
1989 09 28	809	0.8-	0.8+	1989 10 07	809	1.1+	0.3+	1998 09 14	704	1.4-	0.7-
1989 09 29	675	(3.0+ 0.4+)		1989 10 07	809	0.0	0.5+	1998 09 18	704	0.6+	1.1+
1989 09 29	675	(2.3+ 0.1+)		1989 10 07	809	0.0	0.1+	1998 09 18	704	0.9+	0.3+
1989 10 03	809	0.7+	1.6-	1989 10 08	809	0.4-	0.1+	1998 09 18	704	0.4+	1.2-
1989 10 03	809	0.1+	1.6-	1989 10 08	809	0.5+	0.8+	1998 09 18	704	0.5+	0.3-

1989 10 03 809 0.7- 0.9- 1989 10 08 809 1.8- 0.4-
 1989 10 03 809 0.7+ 0.7+ 1989 09 14 704 0.6- 0.6-

1989 WH = 1998 UR₆

Id. M. Akiyama

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	1.98396		(2000.0)	P	Q
<i>n</i>	0.21506056	ω	196.75604	+0.49335206	-0.86360559
<i>a</i>	2.7590667	Ω	223.83147	+0.81426649	+0.50052828
<i>e</i>	0.1442934	<i>i</i>	8.62607	+0.30589838	+0.06047169
<i>P</i>	4.58	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1989 11 20	888	0.6+	1.1-	1989 12 20	888	0.3+	0.1-	1998 10 19	699	0.4+	1.1+
1989 11 20	888	(2.4+ 2.7-)		1989 12 20	888	(2.5- 1.2+)		1998 10 22	888	0.7-	0.4+
1989 11 21	888	1.4-	0.7-	1989 12 29	888	0.5-	0.6-	1998 10 22	888	0.4-	0.4+
1989 11 21	888	1.3-	0.2+	1989 12 29	888	0.5-	0.7-	1998 10 22	888	0.2-	0.4+
1989 11 25	888	0.2-	0.5-	1998 10 10	699	0.1+	0.4-	1998 10 29	691	0.6-	0.3-
1989 11 25	888	0.9+	0.1-	1998 10 10	699	0.3-	0.3-	1998 10 29	691	0.6-	0.5-
1989 11 29	888	0.3-	0.9+	1998 10 10	699	0.6+	0.4-	1998 10 29	691	0.7-	0.3-
1989 11 29	888	1.4+	1.5+	1998 10 18	886	1.2+	0.5+	1998 11 07	888	0.0	0.9-
1989 12 02	888	0.4-	0.0	1998 10 18	886	1.5-	0.7-	1998 11 07	888	0.4+	1.0-
1989 12 02	888	0.8-	0.5-	1998 10 18	886	0.2-	1.5+	1998 11 07	888	0.1+	0.7-
1989 12 03	888	1.4+	1.4+	1998 10 19	699	1.3+	0.4+				
1989 12 03	888	0.7+	0.7+	1998 10 19	699	1.2+	0.4+				

1990 EJ = 1998 SE₁₁₀

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	200.53617		(2000.0)	P	Q
<i>n</i>	0.17977237	ω	212.90516	-0.94551256	+0.32339471
<i>a</i>	3.1092389	Ω	345.81489	-0.25545478	-0.80866330
<i>e</i>	0.1535006	<i>i</i>	8.85149	-0.20186347	-0.49140566
<i>P</i>	5.48	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1990 03 02	809	0.2-	1.2-	1990 04 15	809	(3.4+ 0.7-)		1998 09 27	704	1.0-	0.4-
1990 03 02	809	0.1-	1.0-	1990 04 16	809	1.5+	0.3-	1998 10 12	699	0.2-	0.1-
1990 03 02	809	0.7-	1.1-	1990 04 16	809	0.6+	0.4-	1998 10 12	699	0.1+	0.6+
1990 03 02	399	1.2-	0.9+	1990 04 16	809	1.9+	0.0	1998 10 12	699	0.4-	0.4+
1990 03 02	399	(3.9- 0.5+)		1990 04 17	809	0.1+	0.0	1998 10 28	704	(0.5- 2.6+)	
1990 03 02	399	0.7-	0.7+	1990 04 17	809	0.4-	0.2-	1998 10 28	704	1.5+	1.1+
1990 03 04	809	0.4-	0.9+	1998 09 26	704	0.1+	1.0+	1998 10 28	704	1.1+	0.7+
1990 03 04	809	0.4-	0.4+	1998 09 26	704	0.7+	0.6-	1998 10 28	704	0.4+	0.2-
1990 03 04	809	0.7-	0.7+	1998 09 26	704	0.1+	0.3-	1998 10 28	704	1.1-	1.5+
1990 03 05	399	0.8+	0.5+	1998 09 26	704	0.5+	0.5-	1998 10 29	704	(0.8+ 2.5-)	
1990 03 05	399	1.2+	0.1+	1998 09 26	704	0.8+	0.1+	1998 10 29	704	0.0	1.7-
1990 03 05	399	(2.4- 0.4-)		1998 09 27	704	0.3-	0.6+	1998 10 29	704	0.5+	1.7-
1990 04 04	809	(2.4+ 1.4-)		1998 09 27	704	1.4-	0.1+	1998 10 29	704	1.6-	1.7-
1990 04 04	809	0.6+	0.1+	1998 09 27	704	0.0	1.0+				
1990 04 04	809	1.2-	0.5+	1998 09 27	704	0.3-	0.8+				

1990 EN₃ = 1998 SG₁₁₈

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	152.58440		(2000.0)	P	Q
<i>n</i>	0.29039618	ω	38.87064	-0.35910352	+0.93220271
<i>a</i>	2.2584412	Ω	210.16267	-0.87717095	-0.35365226
<i>e</i>	0.0881108	<i>i</i>	5.16085	-0.31877231	-0.07699473
<i>P</i>	3.39	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1990 03 02	809	1.0-	0.1+	1990 04 04	809	0.2+	1.3+	1998 09 26	704	0.7+	0.1+
1990 03 02	809	0.6-	1.1+	1990 04 15	809	0.6+	0.5-	1998 09 26	704	0.3+	1.0-

1990 03 02	809	1.6−	0.1−	1990 04 16	809	0.1−	0.8−	1998 09 26	704	0.2−	0.2+
1990 03 04	809	0.1−	0.3−	1990 04 16	809	1.4−	1.8−	1998 09 26	704	1.2+	0.6−
1990 03 04	809	0.8+	0.6−	1990 04 16	809	0.3+	1.2+	1998 09 27	704	1.4−	0.9+
1990 03 04	809	0.4−	0.0	1990 04 17	809	0.9−	0.1−	1998 09 27	704	0.2+	0.6+
1990 04 04	809	2.6+	0.9+	1990 04 17	809	1.9−	1.1−	1998 09 27	704	0.3−	1.3−
1990 04 04	809	3.2+	0.0	1998 09 26	704	0.4−	0.1+	1998 09 27	704	0.1+	0.4+

1990 EP₃ = 1990 GJ = 1998 SF₈₂Id. S. Nakano (d, *MPC* 16553), G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	150.74371	(2000.0)		P	Q		
<i>n</i>	0.17201944	ω	254.14277	−0.69279844	+0.71970304		
<i>a</i>	3.2019732	Ω	331.83795	−0.61938653	−0.62608863		
<i>e</i>	0.0978961	<i>i</i>	5.51556	−0.36931104	−0.30006759		
<i>P</i>	5.73	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 02 28	809	0.2+	0.9−	1990 03 04	809	1.2+	1.0+	1998 09 26	704	0.3+	1.1+
1990 02 28	809	0.5+	0.9−	1990 03 04	809	0.9+	0.9+	1998 09 26	704	0.8+	0.6−
1990 02 28	809	0.9+	0.9−	1990 03 04	809	0.1−	0.5+	1998 09 26	704	0.2−	1.2−
1990 03 01	809	0.5−	0.1−	1990 04 15	809	0.9−	0.6−	1998 09 27	704	0.7−	0.2−
1990 03 01	809	0.1−	0.4−	1990 04 16	809	0.0	0.4−	1998 09 27	704	0.4+	0.5+
1990 03 01	809	0.1+	0.6−	1990 04 16	809	0.7−	0.3−	1998 09 27	704	0.8+	0.3+
1990 03 02	809	1.2−	0.7+	1990 04 16	809	1.6+	0.7+	1998 09 27	704	1.0−	0.3+
1990 03 02	809	0.8−	0.0	1990 04 17	809	0.4+	0.4+	1998 09 27	704	0.3−	0.2−
1990 03 02	809	0.5−	0.5+	1990 04 17	809	1.1−	0.1+				

1990 QB₅ = 1992 EH₆ = 1998 TB₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	18.18629	(2000.0)		P	Q		
<i>n</i>	0.25511036	ω	337.11049	+0.71564041	−0.69197589		
<i>a</i>	2.4621659	Ω	67.03674	+0.65573967	+0.61876489		
<i>e</i>	0.1817145	<i>i</i>	5.92314	+0.24054998	+0.37188625		
<i>P</i>	3.86	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 08 24	675	0.1−	0.3−	1992 03 05	809	2.5−	0.3−	1998 09 19	809	0.3+	0.5−
1990 08 24	675	0.1−	0.4−	1992 03 07	809	1.8+	1.2−	1998 10 15	120	0.5−	0.0
1990 08 26	675	1.6+	0.2−	1998 09 18	809	2.0+	1.3+	1998 10 16	120	0.6−	0.3−
1990 08 26	675	0.3−	0.5−	1998 09 18	809	1.6+	1.0+	1998 10 16	120	1.2−	0.2−
1990 08 29	675	0.4−	0.3−	1998 09 18	809	0.7+	0.5+	1998 10 16	120	0.7−	0.2−
1992 03 01	809	2.6+	0.6+	1998 09 19	809	0.1−	0.1−	1998 10 20	120	0.4−	0.4−
1992 03 02	809	2.4−	1.0−	1998 09 19	809	0.2+	0.3−	1998 10 20	120	0.4−	0.4−

1990 QH₈ = 1988 AU₃ = 1997 VC₄ = 1998 CG₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	114.62809	(2000.0)		P	Q		
<i>n</i>	0.29019105	ω	312.93890	+0.49097260	−0.87076748		
<i>a</i>	2.2595054	Ω	107.63863	+0.80720838	+0.44320689		
<i>e</i>	0.2471180	<i>i</i>	1.60210	+0.32765916	+0.21291229		
<i>P</i>	3.40	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 01 12	033	0.5−	1.3−	1990 08 24	809	1.2−	0.5+	1997 11 02	399	1.2+	0.2−
1988 01 12	033	0.5+	1.7−	1990 08 26	809	0.7−	0.7−	1997 11 02	399	0.6+	1.3+
1990 08 16	809	0.4+	0.1−	1990 08 26	809	0.2+	0.5−	1998 02 15	327	0.0	0.1−
1990 08 16	809	0.2−	0.9−	1990 08 26	809	0.4+	0.4−	1998 02 15	327	0.1+	0.7−
1990 08 16	809	1.4−	0.9−	1997 10 23	399	0.1−	0.8+	1998 02 15	327	0.2+	0.1−
1990 08 18	809	1.1+	1.2−	1997 10 23	399	0.4+	0.9+	1998 02 16	327	0.2+	0.4−
1990 08 18	809	0.8+	0.7−	1997 10 25	399	1.4−	0.3+	1998 02 16	327	0.5+	0.9−
1990 08 18	809	1.9+	0.3−	1997 10 25	399	0.8−	0.4−	1998 02 16	327	0.4+	0.2−
1990 08 24	809	0.6+	0.3+	1997 11 01	399	1.4−	0.3+				
1990 08 24	809	0.1+	0.1+	1997 11 01	399	0.3−	0.7+				

1990 QL₉ = 1976 UM₈ = 1998 FZ₄₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Gnädig			
<i>M</i>	34.22558	(2000.0)		P	Q		
<i>n</i>	0.20392015	ω	157.12847	−0.87102274	+0.48980010		
<i>a</i>	2.8586608	Ω	52.25321	−0.45774238	−0.78144410		
<i>e</i>	0.0104149	<i>i</i>	2.72696	−0.17830116	−0.38657597		
<i>P</i>	4.83	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 10 22	381	0.1+	0.1+	1990 08 24	809	(2.6+	0.3−)	1998 03 20	704	0.2+	0.5+
1976 10 22	381	0.7+	0.1−	1990 08 24	809	1.6+	0.7−	1998 03 20	704	0.3+	0.7+
1976 10 24	381	0.8−	0.1+	1990 08 24	809	0.8+	1.5−	1998 03 22	704	0.1+	0.1+
1990 08 16	809	0.3+	0.5+	1990 08 26	809	(4.5−	1.6+)	1998 03 22	704	0.4+	0.0
1990 08 16	809	0.9−	0.3+	1990 08 26	809	(3.4−	2.1+)	1998 03 22	704	0.6+	0.5−
1990 08 16	809	0.6−	0.4+	1990 08 26	809	(3.0−	2.5+)	1998 03 22	704	1.3−	1.6−
1990 08 18	809	(5.6−	1.9−)	1998 03 20	704	0.2−	0.1+	1998 03 22	704	0.7−	0.5−
1990 08 18	809	1.1−	0.2+	1998 03 20	704	0.2+	0.6+				
1990 08 18	809	0.1−	0.9+	1998 03 20	704	0.5+	0.5+				

1990 RF₁ = 1996 SS

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Gnädig			
<i>M</i>	226.88827	(2000.0)		P	Q		
<i>n</i>	0.17536007	ω	55.15483	+0.18705971	+0.98228976		
<i>a</i>	3.1611778	Ω	225.63028	−0.90612378	+0.16830950		
<i>e</i>	0.2030027	<i>i</i>	0.86138	−0.37940526	+0.08233307		
<i>P</i>	5.62	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 09 14	675	0.1−	0.5+	1990 09 22	809	0.8+	0.5+	1990 09 24	809	0.6+	0.2+
1990 09 14	675	0.0	0.5−	1990 09 23	809	1.1−	0.5+	1996 09 20	721	0.6−	0.3−
1990 09 20	675	0.1+	0.5−	1990 09 23	809	0.8−	0.5+	1996 09 20	721	1.3+	0.7+
1990 09 20	675	0.1+	1.7−	1990 09 23	809	0.3−	0.4+	1996 09 22	721	0.0	0.3−
1990 09 22	809	0.0	0.2+	1990 09 24	809	0.1+	0.1+	1996 09 22	721	0.7−	0.2−
1990 09 22	809	0.4+	0.0	1990 09 24	809	0.3+	0.1−				

1990 SH₃ = 1979 OS₁₃ = 1979 PH

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Gnädig			
<i>M</i>	216.13426	(2000.0)		P	Q		
<i>n</i>	0.18336849	ω	251.46805	+0.92351488	+0.37096171		
<i>a</i>	3.0684537	Ω	86.66338	−0.30466313	+0.86389031		
<i>e</i>	0.2640303	<i>i</i>	5.60518	−0.23302498	+0.34070653		
<i>P</i>	5.38	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 07 20	808	0.2−	0.3+	1979 10 09	413	0.4+	0.3−	1990 09 20	675	0.1+	0.3+
1979 07 20	808	0.0	0.3+	1979 10 09	413	0.3−	0.7−	1990 09 20	675	0.1+	0.6−
1979 08 14	808	0.1−	0.3+	1990 09 18	675	0.2−	0.2+	1990 09 28	675	0.1−	0.6+
1979 08 14	808	0.2+	0.3−	1990 09 18	675	0.1−	0.0				

1990 SE₅ = 1998 SS₆₀

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	30.65423	(2000.0)		P	Q		
<i>n</i>	0.12323197	ω	291.95539	+0.96059061	+0.27096250		
<i>a</i>	3.9993289	Ω	52.37715	−0.21729211	+0.87110728		
<i>e</i>	0.1759735	<i>i</i>	4.49019	−0.17334883	+0.40957469		
<i>P</i>	8.00	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 09 15	809	1.4+	0.0	1998 09 14	704	0.5−	0.6−	1998 09 25	699	0.2+	0.2−
1990 09 15	809	1.1+	0.0	1998 09 17	699	0.6−	0.3+	1998 09 26	704	0.9+	0.2+
1990 09 15	809	0.8+	0.3+	1998 09 17	699	0.1+	0.1−	1998 09 26	704	1.0+	0.3−
1990 09 22	809	0.6+	0.4+	1998 09 17	699	0.0	0.0	1998 09 26	704	0.6+	0.8−
1990 09 22	809	0.2+	0.4+	1998 09 18	704	0.9+	0.9−	1998 09 26	704	0.6+	0.3−

1998 NOV. 10

1990 09 22	809	0.1−	0.8+	1998 09 18	704	0.3−	1.6+	1998 09 26	704	0.2+	1.0−
1990 09 25	809	1.0−	1.0−	1998 09 18	704	0.1+	0.1+	1998 09 27	704	0.1−	0.2−
1990 09 25	809	1.4−	0.9−	1998 09 18	704	0.3−	0.6+	1998 09 27	704	0.1+	0.0
1990 09 25	809	1.3−	0.6−	1998 09 18	704	0.9−	0.3+	1998 09 27	704	0.9−	0.6+
1998 09 14	704	0.6−	0.6+	1998 09 25	699	0.5+	0.3+	1998 09 27	704	1.3−	0.6+
1998 09 14	704	0.1−	0.4+	1998 09 25	699	0.5+	0.2−	1998 09 27	704	0.6−	0.3−

1990 SQ₅ = 1992 HG₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

M	30.49288		(2000.0)	P	Q
n	0.27925183	ω	349.46967	−0.46298060	−0.88417454
a	2.3181348	Ω	128.08075	+0.81887470	−0.45358023
e	0.1360647	i	4.54133	+0.33925387	−0.11180502
P	3.53	H	15.5	G 0.15	U 5

Residuals in seconds of arc

1990 09 15	809	0.7+	0.1−	1990 09 22	809	0.4−	0.9+	1990 09 25	809	0.3−	1.0−
1990 09 15	809	0.0	0.3+	1990 09 22	809	0.1−	0.6+	1992 04 30	033	0.1−	0.3+
1990 09 15	809	0.4−	0.6−	1990 09 25	809	0.9+	0.4−	1992 04 30	033	0.0	0.0
1990 09 22	809	0.5−	0.6+	1990 09 25	809	0.2+	0.3−	1992 05 04	033	0.2+	0.4−

1990 SX₆ = 1998 RR₇₀

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	69.87487		(2000.0)	P	Q
n	0.24548449	ω	214.46196	+0.63200629	+0.77095442
a	2.5261163	Ω	94.86677	−0.69204717	+0.60718297
e	0.1361422	i	4.53155	−0.34876750	+0.19224494
P	4.01	H	15.0	G 0.15	U 5

Residuals in seconds of arc

1990 09 15	809	0.3+	0.8+	1998 09 18	704	0.2−	0.4−	1998 09 27	704	0.4+	0.1−
1990 09 15	809	0.5+	1.4+	1998 09 18	704	0.1+	0.0	1998 09 27	704	0.1−	1.0−
1990 09 15	809	0.8+	1.3+	1998 09 18	704	0.9−	0.1+	1998 09 27	704	0.6−	0.4−
1990 09 22	809	1.7−	1.2+	1998 09 18	704	0.3−	0.3+	1998 10 14	704	1.9−	1.7−
1990 09 22	809	1.6−	0.3−	1998 09 18	704	0.6−	0.4−	1998 10 14	704	0.5+	0.5−
1990 09 22	809	1.0−	1.1+	1998 09 26	704	1.0+	0.2−	1998 10 14	704	0.6+	1.6+
1990 09 25	809	0.1+	0.8+	1998 09 26	704	1.4+	1.4−	1998 10 14	704	0.4+	0.7+
1990 09 25	809	0.2+	0.3−	1998 09 26	704	0.6+	0.8−	1998 10 15	704	0.4+	0.6−
1990 09 25	809	0.4−	0.2+	1998 09 26	704	1.4+	0.3−	1998 10 15	704	0.5+	0.8−
1998 09 14	704	1.0−	0.6−	1998 09 26	704	0.6+	0.5−	1998 10 15	704	1.4−	1.1−
1998 09 14	704	0.7+	0.5+	1998 09 27	704	0.5+	0.1−	1998 10 15	704	1.4+	1.3+
1998 09 14	704	0.9−	0.3+	1998 09 27	704	0.1+	0.1−				

1990 SQ₈ = 1998 MJ₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

M	319.58346		(2000.0)	P	Q
n	0.23495036	ω	306.00010	+0.45127269	−0.88839065
a	2.6010696	Ω	116.96655	+0.84618521	+0.39597389
e	0.2920139	i	5.43064	+0.28341410	+0.23230740
P	4.20	H	15.5	G 0.15	U 5

Residuals in seconds of arc

1990 09 14	809	1.2+	0.9+	1990 09 22	809	0.6−	0.2+	1998 06 24	691	0.4−	0.2+
1990 09 14	809	0.3+	0.6+	1990 09 25	809	0.4+	0.1+	1998 06 24	691	0.2−	0.1+
1990 09 14	809	0.6−	0.9−	1990 09 25	809	0.7+	0.6−	1998 06 30	691	0.3+	0.4−
1990 09 22	809	0.3−	0.3+	1990 09 25	809	0.2−	0.3−	1998 06 30	691	0.3+	0.3−
1990 09 22	809	0.6−	0.2−	1998 06 24	691	0.2−	0.7+	1998 06 30	691	0.2+	0.3−

1990 SR₈ = 1997 WE₄₀

Id. A. Gnädig, G. V. Williams

M.P.C. 32923

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

M	110.35530		(2000.0)	P	Q
n	0.29789040	ω	4.49200	+0.10333517	−0.99110635
a	2.2204025	Ω	79.59290	+0.90989405	+0.06014398
e	0.0689472	i	4.89027	+0.40176443	+0.11870512
P	3.31	H	15.5	G 0.15	U 4

Residuals in seconds of arc

1976 06 29	413	1.2−	1.2+	1990 09 22	809	0.3+	1.5−	1997 11 29	704	1.0−	0.1−
1976 06 29	413	1.6+	0.5+	1990 09 25	809	0.3+	0.9−	1997 11 29	704	1.7−	0.8+
1990 09 14	809	0.1−	1.7+	1990 09 25	809	1.0−	1.3−	1997 12 04	704	1.2+	0.4−
1990 09 14	809	1.0+	1.8+	1990 09 25	809	0.1−	1.1−	1997 12 04	704	(2.6−	1.6−)
1990 09 14	809	1.1+	0.3+	1997 11 29	704	0.4−	0.8+	1997 12 04	704	1.7+	0.2−
1990 09 22	809	0.3−	1.4+	1997 11 29	704	0.1−	0.1−	1997 12 04	704	0.9+	0.2−
1990 09 22	809	1.1−	0.5−	1997 11 29	704	0.9−	1.2+				

1990 SX₈ = 1985 SF = 1998 MV₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

M	213.50488		(2000.0)	P	Q
n	0.21392798	ω	282.36051	−0.02405087	−0.99796309
a	2.7687962	Ω	168.51553	+0.99311924	−0.03062644
e	0.1060045	i	17.26343	+0.11461122	+0.05596159
P	4.61	H	13.0	G 0.15	U 4

Residuals in seconds of arc

1985 09 17	801	0.0	0.2−	1990 09 25	809	0.9−	1.0−	1998 06 19	704	1.1−	0.3−
1990 09 14	809	0.4−	0.4+	1990 09 25	809	0.2−	0.2+	1998 06 25	704	(3.2−	0.2−)
1990 09 14	809	0.3−	0.7+	1990 09 25	809	0.7−	0.2−	1998 06 25	704	0.0	1.0+
1990 09 14	809	1.2−	0.7−	1998 06 19	704	0.3+	1.4−	1998 06 25	704	0.5+	0.2−
1990 09 22	809	0.8+	0.2+	1998 06 19	704	0.4+	1.4+	1998 06 25	704	0.9−	1.1−
1990 09 22	809	1.2+	0.1+	1998 06 19	704	1.1+	0.4+				
1990 09 22	809	1.6+	0.5+	1998 06 19	704	0.4−	0.3+				

1990 TF₈ = 1998 SO₁₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	318.46530		(2000.0)	P	Q		
n	0.24281024	ω	247.80205	−0.23947612	−0.96006717		
a	2.5446305	Ω	217.01908	+0.95557260	−0.20669528		
e	0.1372458	i	13.90083	+0.17184931	−0.18854204		
P	4.06	H	14.0	G	0.15	U	5

Residuals in seconds of arc

1990 10 13	033	0.4−	0.3−	1990 11 13	372	(4.4−	2.2+)	1998 09 27	704	0.7−	0.3−
1990 10 13	033	0.9+	0.5−	1990 11 23	372	(2.7−	2.0−)	1998 09 27	704	0.4+	0.6+
1990 10 14	033	0.5+	0.5+	1990 11 23	372	0.9+	1.7−	1998 09 27	704	0.4−	0.2+
1990 10 18	033	0.2−	0.4−	1998 09 26	704	0.9−	0.5−	1998 09 27	704	1.4−	0.9−
1990 11 10	046	(3.8−	5.4−)	1998 09 26	704	0.1+	0.5−	1998 10 20	910	0.6+	0.5+
1990 11 10	046	(3.7−	1.8−)	1998 09 26	704	0.3+	0.2−	1998 10 20	910	0.6+	0.3+
1990 11 11	372	0.9+	0.7+	1998 09 26	704	0.1−	0.7−	1998 10 20	910	0.7+	0.4+
1990 11 11	372	1.1−	0.2+	1998 09 26	704	0.7+	0.6+				
1990 11 13	372	1.5−	1.1+	1998 09 27	704	0.0	0.7+				

1991 GV = 1979 HY₆ = 1980 TM₁₁ = 1983 JL₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	258.15844		(2000.0)	P	Q
n	0.24446509	ω	232.55863	+0.43952598	+0.88668776
a	2.5331339	Ω	64.10017	−0.76547904	+0.45335995
e	0.2080667	i	9.18132	−0.46995611	+0.09082715
P	4.03	H	12.5	G 0.15	U 3

Residuals in seconds of arc

1979 04 30	095	0.8−	0.7+	1991 04 02	400	0.5+	1.3+	1991 04 14	400	1.0+	2.0+
1980 10 08	095	0.1+	0.2−	1991 04 02	400	1.3+	0.9−	1991 04 14	400	0.7−	1.8+

1983 05 07 808 0.6+ 1.1- 1991 04 09 400 2.5- 1.0- 1991 04 16 400 0.6+ 1.5-
 1983 05 07 808 0.7+ 0.2- 1991 04 09 400 1.7- 1.2- 1991 04 16 400 1.0+ 0.2-

1991 GS₅ = 1996 TH₆₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	289.63869	<i>ω</i>	38.56189	-0.16498859	+0.98390656		
<i>a</i>	2.5384196	<i>Ω</i>	222.06904	-0.92840043	-0.17840843		
<i>e</i>	0.1573408	<i>i</i>	5.87690	-0.33294355	+0.00991492		
<i>P</i>	4.04	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 04 08 809 0.9+ 0.0 1991 04 19 809 0.5+ 0.1- 1996 10 03 809 1.1- 0.7+
 1991 04 08 809 0.6+ 0.1+ 1991 04 19 809 0.7+ 0.3- 1996 10 03 809 0.7- 1.4+
 1991 04 08 809 0.5+ 0.4- 1991 04 19 809 0.4- 0.1- 1996 10 04 809 1.3+ 0.6+
 1991 04 10 809 0.7- 0.2- 1991 04 19 675 0.9- 0.4- 1996 10 04 809 0.2- 1.0-
 1991 04 10 809 1.3- 0.2+ 1991 04 19 675 0.4+ 0.9+ 1996 10 04 809 0.6+ 1.2-
 1991 04 10 809 0.4- 0.1+ 1996 10 03 809 0.0 0.5-

1991 GR₇ = 1998 KP₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29071313	<i>ω</i>	283.28789	-0.89818638	-0.43434747		
<i>a</i>	2.2567994	<i>Ω</i>	231.01170	+0.42952867	-0.83419344		
<i>e</i>	0.0689654	<i>i</i>	5.00778	+0.09362876	-0.33979932		
<i>P</i>	3.39	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 04 08 809 0.4+ 0.9- 1991 04 19 809 0.3- 0.2+ 1998 05 24 704 0.2- 0.1+
 1991 04 08 809 0.0 0.3- 1991 04 19 809 0.1+ 0.2- 1998 05 24 704 0.2+ 0.3-
 1991 04 08 809 0.2- 0.1- 1998 05 22 704 0.3- 0.0 1998 05 24 704 0.5+ 1.2+
 1991 04 10 809 0.1+ 0.5+ 1998 05 22 704 0.3- 0.0 1998 05 24 704 0.3- 0.2+
 1991 04 10 809 0.2+ 0.5+ 1998 05 22 704 0.0 0.2+ 1998 05 24 704 0.2- 0.5-
 1991 04 10 809 0.4- 0.4+ 1998 05 22 704 0.0 0.1-
 1991 04 19 809 0.3+ 0.2- 1998 05 22 704 0.6+ 0.9-

1991 GD₈ = 1998 QC₆₉

Id. A. Gnädig, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18418324	<i>ω</i>	208.55198	+0.38627798	-0.91678455		
<i>a</i>	3.0593980	<i>Ω</i>	218.96931	+0.87398038	+0.39895323		
<i>e</i>	0.0472000	<i>i</i>	9.28458	+0.29486881	+0.01850447		
<i>P</i>	5.35	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 04 08 809 0.9+ 0.8+ 1991 04 15 675 0.3- 1.2- 1998 08 24 704 0.3+ 1.0-
 1991 04 08 809 0.6- 0.3+ 1991 04 19 809 0.5+ 0.2+ 1998 08 24 704 0.2- 0.3+
 1991 04 08 809 0.4- 0.5- 1991 04 19 809 0.3+ 0.8+ 1998 08 27 704 0.0 0.2+
 1991 04 10 809 0.9+ 0.2+ 1991 04 19 809 0.1- 0.1+ 1998 08 27 704 0.2- 0.4+
 1991 04 10 809 0.2- 0.3+ 1998 08 24 704 0.1+ 1.4- 1998 08 27 704 0.2- 0.7+
 1991 04 10 809 0.1- 0.2- 1998 08 24 704 0.1+ 0.0 1998 08 27 704 0.2+ 0.3+
 1991 04 15 675 0.9- 0.6- 1998 08 24 704 0.3- 0.3+ 1998 08 27 704 0.1+ 0.3+

1991 LL₂ = 1998 SP₁₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17423656	<i>ω</i>	88.70874	+0.51266284	+0.85841717		
<i>a</i>	3.1747524	<i>Ω</i>	212.15123	-0.80005500	+0.47033379		
<i>e</i>	0.1365801	<i>i</i>	1.85515	-0.31159079	+0.20470978		
<i>P</i>	5.66	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 05 18 809 0.3+ 0.3- 1991 06 08 809 0.3+ 0.1- 1998 09 27 704 0.9- 0.3-
 1991 05 18 809 0.8- 0.7- 1991 06 08 809 1.1+ 0.5+ 1998 09 27 704 0.0 0.1+
 1991 05 18 809 1.4- 0.2+ 1998 09 26 704 0.2- 1.6+ 1998 09 27 704 0.7- 0.3-
 1991 06 06 809 0.5+ 0.1- 1998 09 26 704 0.6- 0.6- 1998 09 27 704 0.6- 0.1+
 1991 06 06 809 0.3- 0.4+ 1998 09 26 704 0.3+ 0.2+ 1998 10 17 699 (2.5+ 0.9-)
 1991 06 06 809 0.4- 0.3+ 1998 09 26 704 0.3- 1.1- 1998 10 17 699 1.0+ 0.4+
 1991 06 08 809 0.5+ 0.4- 1998 09 27 704 0.8+ 0.2+ 1998 10 17 699 1.1+ 0.3-

1991 PF₅ = 1998 RH₆₀

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29506580	<i>ω</i>	295.93252	-0.36607795	+0.92868366		
<i>a</i>	2.2345503	<i>Ω</i>	312.46067	-0.82237799	-0.35274626		
<i>e</i>	0.1210347	<i>i</i>	4.62166	-0.43552426	-0.11452830		
<i>P</i>	3.34	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 03 809 0.2- 1.2- 1991 09 07 809 0.0 0.2- 1998 09 27 704 0.2+ 0.8-
 1991 08 03 809 0.5- 1.7- 1998 08 27 699 0.5- 0.4+ 1998 09 27 704 0.2- 0.3-
 1991 08 03 809 0.3- 0.8- 1998 08 27 699 0.5- 0.6+ 1998 09 27 704 1.0+ 0.5+
 1991 08 04 809 0.5+ 0.1+ 1998 08 27 699 0.8+ 0.9+ 1998 09 27 704 0.1- 1.5-
 1991 08 05 809 1.5+ 0.3- 1998 09 14 704 0.1+ 1.1+ 1998 09 27 704 0.8- 0.9-
 1991 08 05 809 1.4+ 0.8+ 1998 09 14 704 0.8- 0.8+ 1998 10 14 704 1.1- 0.4-
 1991 08 05 809 0.2+ 0.9+ 1998 09 14 704 0.0 1.3+ 1998 10 14 704 1.2- 0.5-
 1991 09 04 809 0.7- 0.8+ 1998 09 18 704 0.5+ 1.3- 1998 10 14 704 0.6- 1.7+
 1991 09 04 809 0.4- 1.0+ 1998 09 18 704 0.4- 1.1- 1998 10 14 704 (1.0+ 2.1+)
 1991 09 04 809 0.2+ 0.9+ 1998 09 18 704 0.5+ 1.1- 1998 10 15 704 0.6+ 1.4-
 1991 09 05 809 0.1- 1.6- 1998 09 18 704 0.2- 1.6- 1998 10 15 699 0.3+ 0.8+
 1991 09 05 809 0.3+ 0.6+ 1998 09 18 704 1.3- 1.4- 1998 10 15 704 0.5+ 0.5+
 1991 09 05 809 0.2+ 1.3+ 1998 09 26 704 0.9+ 0.2- 1998 10 15 699 0.2- 1.0+
 1991 09 06 809 0.3- 0.2+ 1998 09 26 704 0.2- 0.5- 1998 10 15 704 0.4+ 0.9+
 1991 09 06 809 1.3- 0.5+ 1998 09 26 704 0.1+ 0.2- 1998 10 15 699 0.0 1.3+
 1991 09 06 809 0.5- 0.2+ 1998 09 26 704 0.8+ 0.6- 1998 10 15 704 0.4+ 1.4+
 1991 09 07 809 0.5- 0.3- 1998 09 26 704 0.8+ 0.6- 1998 10 15 704 0.6+ 0.3+

1991 PL₁₈ = 1998 SV₁₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29169582	<i>ω</i>	7.36484	+0.62093277	+0.78165232		
<i>a</i>	2.2517279	<i>Ω</i>	301.03840	-0.72263724	+0.54173406		
<i>e</i>	0.1620127	<i>i</i>	3.93774	-0.30370696	+0.30910168		
<i>P</i>	3.38	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 08 675 0.9- 0.3+ 1991 09 17 675 0.9- 0.6+ 1998 09 27 704 1.6- 1.0+
 1991 08 08 675 0.8+ 0.3- 1998 09 26 704 1.0+ 0.1- 1998 09 27 704 0.2- 0.8-
 1991 09 14 675 0.1+ 0.7+ 1998 09 26 704 0.8+ 1.3- 1998 09 27 704 1.1+ 0.5-
 1991 09 14 675 0.2- 0.5+ 1998 09 26 704 0.0 0.4+ 1998 09 27 704 1.3- 1.2+
 1991 09 16 675 0.4+ 0.2+ 1998 09 26 704 0.5- 0.1- 1998 10 11 699 0.5+ 0.5-
 1991 09 16 675 0.1- 0.4- 1998 09 26 704 0.3+ 0.8+ 1998 10 11 699 0.5+ 0.1+
 1991 09 17 675 0.8+ 1.6- 1998 09 27 704 0.4+ 0.5- 1998 10 11 699 0.9- 0.3+

1991 PO₁₈ = 1998 SQ₁₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29217000	<i>ω</i>	290.76558	+0.10769669	+0.99387056		
<i>a</i>	2.2492909	<i>Ω</i>	345.35048	-0.87151015	+0.08229967		
<i>e</i>	0.2133643	<i>i</i>	5.66265	-0.47840515	+0.07381103		
<i>P</i>	3.37	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 07 675 0.3- 0.5+ 1998 09 26 704 0.6+ 0.7- 1998 10 12 699 0.3- 0.0
 1991 08 07 675 0.2- 0.2+ 1998 09 26 704 0.2- 0.3+ 1998 10 12 699 0.1- 0.2+

1998 NOV. 10

M.P.C. 32925

1991 08 07	095	(0.1− 4.6−)	1998 09 26	704	0.9− 0.7−	1998 10 12	699	0.1− 0.0
1991 09 10	675	0.2+ 0.0	1998 09 26	704	0.0 0.5−	1998 10 28	704	0.5− 0.1−
1991 09 10	675	0.3+ 0.1+	1998 09 26	704	0.0 0.4+	1998 10 28	704	0.8− 0.2−
1991 09 12	675	0.8− 0.1+	1998 09 27	704	0.6+ 0.5+	1998 10 28	704	0.4− 0.2+
1991 09 12	675	0.6− 0.9−	1998 09 27	704	0.2+ 0.1−	1998 10 28	704	0.6− 0.2−
1991 09 16	095	(2.7− 0.8+)	1998 09 27	704	0.7+ 1.0+	1998 10 28	704	0.7+ 0.5+
1991 09 16	095	1.4+ 0.0	1998 09 27	704	1.0+ 0.3−			

1991 RE₁ = 1998 SN₆₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	290.34284		(2000.0)	P	Q
<i>n</i>	0.29370480	ω	173.67276	−0.59560188	−0.80134352
<i>a</i>	2.2414481	Ω	312.86611	+0.73362082	−0.51437639
<i>e</i>	0.0960732	<i>i</i>	4.36153	+0.32719854	−0.30539401
<i>P</i>	3.36	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1991 09 01	372	(5.4− 0.0)	1998 09 17	699	0.4− 0.4+	1998 09 26	704	0.3+ 0.9+
1991 09 01	372	(1.0− 4.0−)	1998 09 17	699	0.4− 0.4+	1998 09 27	704	0.3+ 0.6+
1991 09 07	372	1.7+ 0.7−	1998 09 25	699	0.8− 0.1+	1998 09 27	704	0.5− 0.5+
1991 09 07	372	0.5+ 0.2+	1998 09 25	699	0.7− 0.4+	1998 09 27	704	0.1− 0.2+
1991 09 09	372	1.4− 0.4−	1998 09 25	699	0.3− 0.4+	1998 09 27	704	1.3− 0.6−
1991 09 09	372	1.4− 1.4+	1998 09 26	704	0.8+ 0.3−	1998 09 27	704	0.2− 0.4−
1991 09 14	675	0.1− 0.7−	1998 09 26	704	0.7+ 1.3−	1998 10 11	699	0.2+ 0.1+
1991 09 14	675	0.8+ 0.1−	1998 09 26	704	0.7+ 1.2−	1998 10 11	699	0.0 0.0
1998 09 17	699	0.5− 0.3+	1998 09 26	704	1.8+ 0.2−	1998 10 11	699	0.4+ 0.2−

1991 RH₁ = 1998 QX₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	29.39563		(2000.0)	P	Q
<i>n</i>	0.28270903	ω	5.73695	+0.99616975	−0.08743302
<i>a</i>	2.2991974	Ω	359.27607	+0.07622108	+0.87465175
<i>e</i>	0.2026836	<i>i</i>	5.16310	+0.04285059	+0.47680163
<i>P</i>	3.49	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 08 08	675	0.1− 0.7+	1998 08 26	809	(1.6− 4.3−)	1998 09 21	691	1.0− 0.4+
1991 08 08	675	1.7− 0.7+	1998 08 27	809	(1.5− 2.8−)	1998 09 21	691	1.0− 0.4+
1991 09 07	372	(3.9+ 1.8+)	1998 08 27	809	(0.7− 3.2−)	1998 09 21	691	1.3− 0.4+
1991 09 07	372	(6.8+ 0.8−)	1998 08 27	809	(0.1− 2.8−)	1998 09 21	120	0.5+ 0.0
1991 09 07	372	(2.4− 3.4+)	1998 08 29	120	(3.0+ 0.0)	1998 09 21	120	0.3+ 0.1−
1991 09 07	372	1.5− 0.5+	1998 08 29	120	1.0− 0.0	1998 09 21	120	0.3+ 0.1−
1991 09 09	372	(0.7+ 3.9+)	1998 08 29	120	1.8+ 0.1+	1998 09 23	691	1.2− 0.6+
1991 09 09	372	0.3− 1.2+	1998 08 31	120	1.5+ 0.7−	1998 09 23	691	1.0− 0.4+
1991 09 09	372	(2.5− 4.4−)	1998 08 31	120	0.8+ 1.0−	1998 09 23	691	1.2− 0.4+
1991 09 09	372	(3.7− 3.7−)	1998 08 31	120	1.2+ 0.7−	1998 09 26	704	0.6+ 0.5+
1991 09 09	372	(2.3− 1.0+)	1998 09 14	704	0.8− 0.2−	1998 09 26	704	0.8+ 1.1−
1991 09 09	372	(2.6− 3.1+)	1998 09 14	704	0.3+ 0.6−	1998 09 26	704	1.1+ 0.8−
1991 09 11	675	0.2+ 0.0	1998 09 14	704	0.4+ 0.0	1998 09 26	704	0.7+ 0.3−
1991 09 11	675	0.2+ 0.6−	1998 09 14	704	0.3− 0.4−	1998 09 26	704	1.1+ 0.6−
1991 09 13	675	0.3+ 0.1−	1998 09 14	704	0.4+ 0.3+	1998 09 27	704	0.9+ 1.0+
1991 09 13	675	0.6− 0.7+	1998 09 18	704	0.2+ 0.2−	1998 09 27	704	1.0+ 0.4+
1991 09 15	675	(2.1+ 3.1−)	1998 09 18	704	0.3− 0.4+	1998 09 27	691	1.2− 0.5+
1991 09 15	675	1.3+ 1.2−	1998 09 18	704	1.0− 0.2+	1998 09 27	704	0.0 0.4−
1991 09 17	675	0.2+ 0.8−	1998 09 18	704	0.5− 0.5+	1998 09 27	691	1.3− 0.5+
1991 09 17	675	0.2+ 1.0−	1998 09 18	704	1.0− 0.3+	1998 09 27	704	0.7+ 0.6−
1991 09 17	675	1.5+ 0.1+	1998 09 18	120	0.3+ 0.1+	1998 09 27	704	0.4− 0.1−
1998 08 26	809	(1.5− 4.3−)	1998 09 18	120	0.4+ 0.3−	1998 09 27	691	1.2− 0.6+
1998 08 26	809	(2.1− 4.4−)	1998 09 18	120	0.5+ 0.0			

1991 RC₉ = 1998 SJ₁₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	48.68228		(2000.0)	P	Q
<i>n</i>	0.28432598	ω	337.50806	+0.99776714	+0.06271290
<i>a</i>	2.2904722	Ω	18.93957	−0.04524391	+0.88769368
<i>e</i>	0.0979503	<i>i</i>	4.05900	−0.04912957	+0.45614364
<i>P</i>	3.47	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1991 09 11	675	0.3+ 0.2+	1998 09 26	704	0.5+ 1.1−	1998 10 11	699	0.0 0.3+
1991 09 11	675	0.2− 0.8+	1998 09 26	704	1.1+ 1.7−	1998 10 12	012	0.0 0.4+
1991 09 14	675	0.7+ 0.1+	1998 09 26	704	0.1+ 0.2+	1998 10 12	012	0.1− 0.9+
1991 09 14	675	0.1− 0.5+	1998 09 27	704	0.3+ 0.5−	1998 10 12	012	0.2− 0.1+
1991 10 05	691	0.3− 0.1−	1998 09 27	704	0.3+ 0.2−	1998 10 18	012	0.4− 0.1+
1991 10 05	691	0.5− 0.2+	1998 09 27	704	0.6− 0.1−	1998 10 18	012	0.2− 0.0
1991 10 05	691	0.6− 0.2−	1998 09 27	704	0.4− 0.6−	1998 10 18	012	0.1+ 0.2+
1998 09 26	704	0.2+ 0.0	1998 10 11	699	0.2− 0.4+			
1998 09 26	704	0.5+ 0.3−	1998 10 11	699	0.1− 0.5+			

1991 RU₉ = 1998 SQ₁₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	54.81505		(2000.0)	P	Q
<i>n</i>	0.28485377	ω	64.38169	+0.96772123	+0.25123228
<i>a</i>	2.2876420	Ω	281.06268	−0.23790491	+0.88452297
<i>e</i>	0.1670267	<i>i</i>	1.16470	−0.08316770	+0.39306672
<i>P</i>	3.46	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 09 10	675	0.5− 0.3+	1998 09 26	704	0.2+ 0.1+	1998 09 27	704	0.5− 0.2+
1991 09 10	675	0.2− 0.2−	1998 09 26	704	0.2+ 0.6−	1998 09 27	704	0.4+ 0.8+
1991 09 17	675	1.3+ 0.6−	1998 09 26	704	0.5+ 0.9−	1998 09 27	704	0.3− 0.1−
1991 09 17	675	0.2− 0.1+	1998 09 26	704	0.2− 0.3+	1998 10 11	699	1.3+ 0.1−
1991 10 07	033	0.0 0.4−	1998 09 26	704	0.1− 0.0	1998 10 11	699	0.8− 0.1+
1991 10 07	033	0.3− 0.6+	1998 09 27	704	0.2− 0.1−	1998 10 11	699	0.5− 0.2−
1991 10 08	033	0.2− 0.5+	1998 09 27	704	0.0 0.1+			

1991 RW₁₇ = 1998 SC₂₂

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	83.58138		(2000.0)	P	Q
<i>n</i>	0.28845186	ω	121.43849	+0.73448393	+0.67845407
<i>a</i>	2.2685785	Ω	195.85594	−0.64006517	+0.68509228
<i>e</i>	0.0764576	<i>i</i>	3.20570	−0.22549932	+0.26523318
<i>P</i>	3.42	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1991 09 13	691	0.9− 0.7+	1998 09 27	704	0.0 0.4−	1998 10 14	691	0.8− 0.3−
1991 09 13	691	1.2− 0.4+	1998 09 27	704	0.2+ 0.9+	1998 10 14	691	0.8− 0.5−
1991 09 13	691	1.1− 0.5+	1998 09 27	704	0.4+ 0.1+	1998 10 14	691	0.8− 0.3−
1991 09 13	675	1.4+ 0.9−	1998 09 27	704	0.2− 0.6+	1998 10 15	704	2.0+ 0.4+
1991 09 13	675	0.1+ 1.3−	1998 09 29	727	0.3− 0.9+	1998 10 15	704	0.7− 1.3−
1991 09 15	675	0.4− 0.3+	1998 09 29	727	0.4− 0.0	1998 10 15	704	0.7+ 0.5−
1991 09 15	675	0.7+ 0.2+	1998 09 29	727	0.8+ 0.3−	1998 10 15	704	0.1− 0.0
1991 09 16	675	0.1− 0.2+	1998 09 29	327	0.9+ 0.4+	1998 10 19	691	1.0− 0.4−
1991 09 16	675	0.4+ 0.8+	1998 09 29	327	0.7+ 0.6+	1998 10 19	691	1.1− 0.4−
1991 09 17	675	0.8+ 0.1−	1998 09 29	327	0.6+ 0.2+	1998 10 19	691	1.0− 0.4−
1991 09 17	675	0.0 0.3+	1998 09 29	327	0.7+ 0.7+	1998 10 23	120	0.0 0.7−
1998 09 23	120	0.4− 0.9−	1998 09 29	327	1.2+ 0.2+	1998 10 23	120	0.9+ 0.7−
1998 09 23	120	0.1− 0.5−	1998 09 29	327	1.2+ 1.1+	1998 10 24	120	(2.3+ 0.1−)
1998 09 23	120	0.1− 0.5−	1998 09 30	727	0.4− 0.2+	1998 10 24	120	1.2+ 0.2−
1998 09 24	120	0.3− 0.4−	1998 09 30	727	0.0 0.2−	1998 10 28	704	0.8+ 0.4+
1998 09 24	120	1.1+ 0.4−	1998 09 30	727	0.2− 0.5+	1998 10 28	704	0.3− 0.2+
1998 09 24	120	0.2− 0.7−	1998 10 10	699	0.3+ 0.3+	1998 10 28	704	(2.1− 0.1+)
1998 09 26	704	0.5+ 0.8−	1998 10 10	699	0.1+ 0.4+	1998 10 28	704	1.0− 0.3−
1998 09 26	704	0.3− 1.0−	1998 10 10	699	0.1+ 0.4+	1998 10 28	704	1.7− 0.3+

M.P.C. 32926

1998 09 26	704	0.6−	0.5−	1998 10 11	120	0.5+	0.5−	1998 10 29	704	0.0	1.3+
1998 09 26	704	0.8−	0.0	1998 10 11	120	0.0	1.2−	1998 10 29	704	0.4+	1.1+
1998 09 26	704	0.6−	1.1−	1998 10 14	704	0.3+	0.6+	1998 10 29	704	0.3+	1.2+
1998 09 26	327	1.8−	0.4−	1998 10 14	704	0.4−	0.0	1998 10 29	704	0.3−	1.0+
1998 09 26	327	(2.1−	0.5−)	1998 10 14	704	0.4+	0.3+	1998 10 29	704	1.3+	0.6+
1998 09 26	327	1.8−	0.2−	1998 10 14	704	0.4−	0.4−				
1998 09 27	704	0.8+	0.2+	1998 10 14	704	0.6+	0.3+				

1991 UJ₂ = 1998 QV₆

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		108.28672	(2000.0)	P	Q		
<i>n</i>		0.28161056	<i>ω</i>	264.86272	+0.44219577	+0.89559928	
<i>a</i>		2.3051725	<i>Ω</i>	31.52562	−0.78166047	+0.41139369	
<i>e</i>		0.1579465	<i>i</i>	5.33641	−0.43985203	+0.16928427	
<i>P</i>		3.50	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1991 10 29	399	0.5−	1.1+	1998 09 22	910	0.5−	0.5+	1998 10 19	699	0.7+	0.1−
1991 10 29	399	0.6−	1.7+	1998 09 29	910	0.3+	0.6+	1998 10 19	699	0.6+	0.1−
1991 10 31	399	(4.2+	0.2+)	1998 09 29	910	0.2+	0.4+	1998 10 20	691	1.4−	0.3−
1991 10 31	399	(2.4+	1.4+)	1998 09 29	910	0.1+	0.3+	1998 10 20	691	1.3−	0.4−
1991 11 09	399	0.5−	0.9+	1998 10 10	699	0.9+	0.9+	1998 10 20	691	1.6−	0.6−
1991 11 09	399	0.3−	0.8+	1998 10 10	699	0.0	0.2+	1998 10 29	691	0.9−	0.5−
1998 08 24	910	0.3+	0.3−	1998 10 10	699	0.8+	0.1+	1998 10 29	691	0.9−	0.6−
1998 08 24	910	0.2+	0.3−	1998 10 13	691	0.5−	0.3−	1998 10 29	704	1.0+	0.4−
1998 08 24	910	0.3+	0.3−	1998 10 13	691	0.7−	0.4−	1998 10 29	691	0.8−	0.6−
1998 08 25	910	0.2+	0.4−	1998 10 13	691	0.6−	0.4−	1998 10 29	704	1.3+	1.1−
1998 08 25	910	0.4−	0.0	1998 10 14	704	0.9+	1.0−	1998 10 29	704	1.4+	0.2−
1998 08 25	910	0.3−	0.1+	1998 10 14	704	0.7+	0.7+	1998 10 29	704	1.4+	0.7−
1998 09 22	910	0.6−	0.6+	1998 10 14	704	0.4+	0.7+	1998 10 29	704	0.9+	0.9−
1998 09 22	910	0.6−	0.5+	1998 10 19	699	0.2+	0.1−				

1991 VR₂ = 1998 UF₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		77.62017	(2000.0)	P	Q		
<i>n</i>		0.28286085	<i>ω</i>	274.85026	+0.71208992	+0.64277240	
<i>a</i>		2.2983746	<i>Ω</i>	45.51847	−0.37598210	+0.68885856	
<i>e</i>		0.2652877	<i>i</i>	23.31979	−0.59292952	+0.33513808	
<i>P</i>		3.48	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1991 10 10	691	0.0	0.1+	1991 11 04	691	0.5+	0.1+	1998 10 29	120	0.0	0.1−
1991 10 10	691	0.1−	0.0	1991 11 04	691	0.4+	0.1−	1998 10 29	120	0.5−	0.1−
1991 10 10	691	0.0	0.2+	1991 11 04	675	1.0−	1.3+	1998 10 29	120	0.1+	0.1+
1991 11 01	675	1.6+	0.9−	1991 11 04	675	1.5−	0.4−	1998 10 29	120	0.3+	0.3−
1991 11 01	675	0.5−	0.5−	1998 10 28	120	0.6+	0.9+				
1991 11 04	691	0.5+	0.4+	1998 10 28	120	0.4−	0.5−				

1991 VA₄ = 1998 SA₆₇

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		346.51461	(2000.0)	P	Q		
<i>n</i>		0.27678945	<i>ω</i>	341.69471	+0.05675725	−0.99699395	
<i>a</i>		2.3318630	<i>Ω</i>	105.02561	+0.92269039	+0.03220311	
<i>e</i>		0.2016035	<i>i</i>	3.13041	+0.38134113	+0.07047005	
<i>P</i>		3.56	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1991 11 09	399	1.2−	1.9+	1991 12 05	399	1.0+	0.6−	1998 10 15	704	0.2−	0.1+
1991 11 09	399	(1.3+	2.6+)	1991 12 07	399	1.8+	0.3−	1998 10 15	704	1.0−	0.0
1991 11 11	399	(2.4−	0.7+)	1991 12 07	399	0.7+	1.5−	1998 10 15	704	1.8−	0.6−
1991 11 11	399	(2.8−	1.3+)	1998 09 20	809	1.7+	1.1+	1998 10 15	704	(0.2−	2.3−)
1991 11 12	894	1.1+	0.3+	1998 09 20	809	1.6+	0.2+	1998 10 28	704	0.7+	0.9−
1991 11 12	894	0.5−	0.4−	1998 09 20	809	1.0+	1.0+	1998 10 28	704	0.9+	0.4−

1998 NOV. 10

1991 11 13	399	0.6−	0.4+	1998 09 21	809	0.4−	1.4+	1998 10 28	704	0.6+	0.5−
1991 11 13	399	1.2−	0.5+	1998 09 21	809	1.3−	0.9+	1998 10 28	704	0.0	0.1+
1991 11 15	894	0.8−	1.4−	1998 09 21	809	1.0−	1.4+	1998 10 29	704	0.5+	0.3−
1991 11 15	894	0.1+	0.1+	1998 09 29	704	0.1−	1.1−	1998 10 29	704	0.5−	0.9−
1991 12 03	691	0.8−	1.2+	1998 09 29	704	0.3+	1.0−	1998 10 29	704	0.4+	0.8−
1991 12 03	691	(9.1−	0.7+)	1998 09 29	704	0.7+	0.0	1998 10 29	704	1.2+	0.6−
1991 12 03	691	0.0	1.2+	1998 09 29	704	1.3−	0.9+	1998 10 29	704	0.4−	1.2−
1991 12 05	399	0.1−	1.2+	1998 10 15	704	0.4−	0.2−				

1991 XN = 1998 VH

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		6.34253	(2000.0)	P	Q		
<i>n</i>		0.27889240	<i>ω</i>	17.25510	+0.14007556	−0.98082074	
<i>a</i>		2.3201261	<i>Ω</i>	64.86777	+0.88985823	+0.06467660	
<i>e</i>		0.2875455	<i>i</i>	8.60994	+0.43420176	+0.18386845	
<i>P</i>		3.53	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1991 12 07	675	0.0	0.5−	1992 01 09	675	0.2−	0.9+	1998 11 09	758	0.6−	0.1−
1991 12 07	675	0.2+	0.6−	1992 01 11	675	0.0	1.8−	1998 11 09	758	0.4−	0.6+
1991 12 08	675	0.1−	0.5+	1992 01 11	675	0.8−	0.6+	1998 11 09	758	0.4+	0.2+
1991 12 08	675	0.6+	0.4+	1998 11 08	758	0.1−	0.2−	1998 11 09	758	0.2−	0.7+
1991 12 08	675	0.7−	0.1+	1998 11 08	758	0.6+	0.6−				
1992 01 09	675	1.0+	0.4+	1998 11 08	758	0.3+	0.7−				

1992 AJ₁ = 1998 UA₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		187.31424	(2000.0)	P	Q		
<i>n</i>		0.24610961	<i>ω</i>	306.05957	−0.77536500	+0.62533369	
<i>a</i>		2.5218369	<i>Ω</i>	272.81568	−0.54732046	−0.73503628	
<i>e</i>		0.1053147	<i>i</i>	5.06216	−0.31503878	−0.26206763	
<i>P</i>		4.00	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1992 01 10	402	0.8+	1.2+	1992 02 02	809	0.6+	0.3−	1998 10 19	327	0.6−	0.4−
1992 01 10	402	0.6−	1.0−	1992 02 02	809	0.2−	0.4−	1998 10 19	327	0.2−	0.4−
1992 01 11	402	0.0	0.3+	1992 02 07	809	1.2+	0.2−	1998 10 19	327	0.6−	0.1−
1992 01 11	402	1.6−	0.5+	1992 02 07	809	0.9+	0.4+	1998 10 22	327	0.5+	0.4+
1992 01 24	399	1.3−	0.0	1992 02 07	809	0.5+	0.6+	1998 10 22	327	0.4+	0.2+
1992 01 24	399	0.9−	0.8−	1992 02 12	809	0.2−	0.7−	1998 10 22	327	0.5+	0.3+
1992 01 30	809	0.5−	0.7+	1992 02 12	809	0.4+	0.2−				
1992 02 02	809	1.3+	0.5+	1992 02 12	809	0.4−	0.8−				

1992 AO₁ = 1998 SR₆₆

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>		332.19435	(2000.0)	P	Q		
<i>n</i>		0.26314242	<i>ω</i>	41.39004	−0.23567506	−0.96978152	
<i>a</i>		2.4118047	<i>Ω</i>	62.32912	+0.87185296	−0.23966589	
<i>e</i>		0.2084712	<i>i</i>	4.08544	+0.42933632	−0.04565163	
<i>P</i>		3.75	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1992 01 10	877	(3.2−	3.2+)	1992 02 27	033	0.5+	0.4+	1998 09 21	809	0.5+	1.0+
1992 01 10	877	1.1+	0.9−	1992 02 27	033	0.7+	0.4+	1998 10 14	699	0.9+	0.2−
1992 01 12	877	1.7−	0.4−	1992 02 28	033	0.9−	0.3+	1998 10 14	699	0.6+	0.1−
1992 01 12	877	(0.2−	2.3+)	1992 02 29	033	0.1−	0.1+	1998 10 14	699	0.7+	0.0
1992 02 01	877	(8.5+	0.9−)	1998 09 20	809	0.1+	1.0−	1998 10 28	704	0.7−	0.7+
1992 02 01	877	0.3−	0.6+	1998 09 20	809	1.2−	1.7−	1998 10 28	704	0.7−	0.3−
1992 02 02	877	0.3−	0.4+	1998 09 20	809	1.2−	1.3−	1998 10 28	704	0.1+	0.2−
1992 02 02	877	0.6+	0.4+	1998 09 20	809	0.9+	1.0−	1998 10 28	704	1.3−	0.6+

1998 NOV. 10

M.P.C. 32927

1992 02 09	033	0.4+	0.4+	1998 09 21	809	1.1−	0.3−	1998 10 29	704	0.3−	0.5−
1992 02 24	877	0.6−	1.0−	1998 09 21	809	0.9+	0.8+				
1992 02 24	877	0.8+	0.2+	1998 09 21	809	0.7+	0.8+				

1992 BC₂ = 1998 FF₁₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	138.35674		(2000.0)		P		Q
<i>n</i>	0.18932348	ω	189.42206	−0.16087285		−0.97569484	
<i>a</i>	3.0037681	Ω	269.94131	+0.91494537		−0.09089201	
<i>e</i>	0.1267566	<i>i</i>	8.55702	+0.37012821		−0.19939465	
<i>P</i>	5.21	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 01 30	809	0.5−	1.0−	1992 02 06	809	0.3−	0.3+	1998 03 31	704	0.9−	0.0
1992 01 30	809	0.0	0.7−	1992 02 06	809	0.3−	0.7+	1998 03 31	704	0.5−	1.4−
1992 01 30	809	0.5−	0.7−	1992 02 11	809	0.4+	0.9−	1998 04 01	704	0.0	1.0+
1992 02 02	809	0.1−	0.5+	1992 02 11	809	0.2+	0.2−	1998 04 01	704	0.8+	0.4+
1992 02 02	809	0.1−	0.5+	1998 03 31	704	0.6+	0.7+	1998 04 01	704	0.8+	0.6+
1992 02 02	809	0.3+	0.3+	1998 03 31	704	1.0−	0.2+	1998 04 01	704	0.4+	0.6+
1992 02 06	809	0.8+	1.2+	1998 03 31	704	0.2−	2.2−				

1992 BP₂ = 1996 AG₁₉ = 1998 SK₈₂

Id. A. Gnädig, G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	302.18865		(2000.0)		P		Q
<i>n</i>	0.25272619	ω	244.08712	−0.19186160		−0.97969314	
<i>a</i>	2.4776268	Ω	217.12221	+0.93142934		−0.16307318	
<i>e</i>	0.0870120	<i>i</i>	5.53655	+0.30923859		−0.11665539	
<i>P</i>	3.90	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 01 30	809	1.3+	0.6−	1996 01 15	691	0.3−	0.4−	1998 09 27	704	0.2−	0.3−
1992 01 30	809	0.3−	0.4−	1996 01 15	691	0.1+	0.4−	1998 09 27	704	0.4−	0.3+
1992 01 30	809	0.1+	0.3+	1996 01 24	691	0.1−	0.2−	1998 09 27	704	0.1−	1.1+
1992 02 02	809	1.8−	1.6+	1996 01 24	691	0.3−	0.2−	1998 09 27	704	0.2−	0.3+
1992 02 02	809	1.7−	1.5+	1996 01 24	691	0.2−	0.4−	1998 09 27	704	0.2+	0.4+
1992 02 02	809	(3.0−	0.7+)	1998 09 26	704	0.2+	0.2+	1998 10 14	699	0.8+	0.4−
1992 02 12	809	(3.3+	0.9−)	1998 09 26	704	0.4+	0.2−	1998 10 14	699	0.1+	0.3−
1992 02 12	809	1.6+	0.0	1998 09 26	704	0.4−	0.7−	1998 10 14	699	0.3−	0.9−
1992 02 12	809	1.4+	0.3−	1998 09 26	704	0.0	0.6+				
1996 01 15	691	0.2+	0.5−	1998 09 26	704	0.0	0.3−				

1992 DZ₆ = 1998 SS₈₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	136.82121		(2000.0)		P		Q
<i>n</i>	0.22251067	ω	250.08977	−0.46793209		+0.88328760	
<i>a</i>	2.6971317	Ω	351.82736	−0.71510597		−0.39772657	
<i>e</i>	0.1382400	<i>i</i>	11.78223	−0.51929088		−0.24822691	
<i>P</i>	4.43	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 29	809	0.3−	0.8+	1998 09 26	704	1.4−	0.6−	1998 09 27	704	(2.2−	0.1+)
1992 03 03	809	0.2−	0.4−	1998 09 26	704	0.2+	0.5−	1998 10 14	699	0.6+	1.1+
1992 03 07	809	0.5+	0.5−	1998 09 26	704	0.1+	0.1+	1998 10 14	699	0.3+	0.8−
1992 04 07	809	0.1+	0.1+	1998 09 27	704	0.3−	0.2+	1998 10 14	699	1.0−	0.5−
1998 09 26	704	1.2+	0.6+	1998 09 27	704	1.0+	0.1+				
1998 09 26	704	1.6−	0.6−	1998 09 27	704	0.9+	0.8+				

1992 DG₇ = 1997 CT₈ = 1998 HU₁₄₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	276.80631		(2000.0)		P		Q
<i>n</i>	0.18942116	ω	216.34043	+0.99646813		−0.01343572	
<i>a</i>	3.0027354	Ω	144.15725	+0.03689826		+0.95677127	
<i>e</i>	0.1076231	<i>i</i>	8.13790	−0.07543060		+0.29053093	
<i>P</i>	5.20	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 02 29	809	0.4−	0.3+	1997 02 06	691	0.2+	0.2+	1998 04 21	704	0.1+	1.7−
1992 03 03	809	0.9+	1.1−	1997 02 06	691	0.6−	0.2−	1998 04 21	704	0.1−	1.6+
1992 03 07	809	0.5−	0.7+	1997 02 06	691	0.2+	0.0	1998 04 24	704	0.2−	0.2−
1997 02 01	691	0.3−	0.0	1998 04 21	704	0.2+	0.8−	1998 04 24	704	0.4+	0.7+
1997 02 01	691	0.2+	0.0	1998 04 21	704	0.2−	1.0+	1998 04 24	704	0.4−	0.3+
1997 02 01	691	0.4+	0.1+	1998 04 21	704	0.1+	0.3−	1998 04 24	704	0.0	0.5−

1992 DF₈ = 1998 ST₄₂

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	24.71645		(2000.0)		P		Q
<i>n</i>	0.23944643	ω	172.90102	+0.97119833		−0.23373454	
<i>a</i>	2.5684067	Ω	200.79326	+0.21170153		+0.93559735	
<i>e</i>	0.0358331	<i>i</i>	7.49104	+0.10934468		+0.26462380	
<i>P</i>	4.12	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 02 29	809	1.0+	0.6−	1998 09 18	704	0.2−	0.2+	1998 09 27	704	0.2−	0.6−
1992 03 03	809	0.0	1.0−	1998 09 18	704	0.0	0.4−	1998 09 27	704	0.3+	0.8+
1992 03 05	809	0.3−	0.7+	1998 09 18	704	0.2+	0.6+	1998 09 27	704	0.6−	1.3+
1992 03 08	809	0.2−	1.2+	1998 09 24	595	0.3+	0.1+	1998 09 27	704	0.0	0.2−
1992 04 04	691	0.6−	0.4−	1998 09 24	595	0.6+	0.4+	1998 09 29	595	0.7+	1.0+
1992 04 04	691	0.1+	0.0	1998 09 24	595	0.8−	0.4+	1998 09 29	595	0.8−	0.3−
1992 04 04	691	0.1−	0.1−	1998 09 26	704	1.4+	0.8−	1998 10 14	699	0.0	1.0+
1998 09 14	704	0.2−	0.1−	1998 09 26	704	0.0	1.1−	1998 10 14	699	0.0	0.7+
1998 09 14	704	1.5−	0.1−	1998 09 26	704	0.8+	1.4−	1998 10 14	699	1.0−	0.8+
1998 09 14	704	1.3−	1.0−	1998 09 26	704	0.5+	0.9−	1998 10 15	595	0.3−	0.1−
1998 09 18	704	0.6+	0.4+	1998 09 26	704	0.4+	0.0	1998 10 15	595	0.1−	1.7−
1998 09 18	704	1.1+	1.1+	1998 09 27	704	0.3+	0.2−				

1992 DM₉ = 1998 RV₆₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	73.87187		(2000.0)		P		Q
<i>n</i>	0.23512857	ω	129.45069	+0.73031063		+0.68280014	
<i>a</i>	2.5997551	Ω	187.56833	−0.66511111		+0.70380853	
<i>e</i>	0.0217860	<i>i</i>	9.06222	−0.15579985		+0.19605488	
<i>P</i>	4.19	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 29	809	0.3+	0.9−	1998 09 18	704	0.1−	0.5−	1998 09 27	704	0.7+	0.0
1992 03 03	809	0.3+	0.5+	1998 09 18	704	0.2−	1.7+	1998 09 27	704	1.3+	0.9−
1992 03 05	809	0.6−	0.5+	1998 09 26	704	0.3−	1.4+	1998 10 16	691	0.0	0.3−
1998 09 14	704	0.2−	0.6−	1998 09 26	704	0.4−	1.2+	1998 10 16	691	0.3−	0.2−
1998 09 14	704	0.3+	0.5−	1998 09 26	704	1.3−	1.2−	1998 10 16	691	0.3−	0.2−
1998 09 14	704	0.4+	1.2−	1998 09 26	704	1.8−	0.4−	1998 10 20	120	0.9−	0.5−
1998 09 18	704	0.4+	1.2+	1998 09 27	704	0.8+	0.3−	1998 10 20	120	1.6+	1.1+
1998 09 18	704	0.2−	1.0−	1998 09 27	704	0.1+	0.2−				
1998 09 18	704	0.0	1.5+	1998 09 27	704	0.5+	0.1−				

1992 ET₁₀ = 1985 YC₂ = 1998 HJ₇₀

Id. A. Gnädig, G. V. Williams

M.P.C. 32928

1998 NOV. 10

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	150.72352	(2000.0)	P		Q	
<i>n</i>	0.18316980	ω	356.31070	+0.08080997	-0.99634509	
<i>a</i>	3.0706723	Ω	89.05276	+0.91518859	+0.06316916	
<i>e</i>	0.2347444	<i>i</i>	1.58640	+0.39484122	+0.05749886	
<i>P</i>	5.38	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1985 12 17	010	1.9-	0.5-	1992 02 29	691	1.1-	0.4-	1998 04 21	704	0.2+	0.8+
1985 12 17	010	1.8+	0.8+	1992 03 06	809	0.4+	0.7+	1998 04 22	704	0.1-	0.2+
1985 12 19	010(14.1-	11.7+)		1992 03 08	809	1.2+	0.9+	1998 04 22	704	0.4-	0.1+
1992 02 25	675	0.4-	0.0	1992 03 09	809	1.2+	0.5+	1998 04 22	704	1.2+	0.1+
1992 02 25	675	1.4+	1.7-	1998 04 21	704	1.0+	1.2+	1998 04 22	704	1.3+	0.0
1992 02 29	691	1.7-	0.1+	1998 04 21	704	2.2-	2.1-	1998 04 22	704	0.3-	0.0
1992 02 29	691	1.2-	0.3-	1998 04 21	704	0.6-	0.1+				

1992 EW₁₇ = 1998 SH₁₆₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	154.66358	(2000.0)	P		Q	
<i>n</i>	0.23754695	ω	74.69090	-0.27192680	+0.96231580	
<i>a</i>	2.5820803	Ω	179.51593	-0.94910192	-0.26784335	
<i>e</i>	0.1229938	<i>i</i>	13.90027	-0.15893825	-0.04699195	
<i>P</i>	4.15	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1992 03 03	809	0.4-	0.2-	1998 09 18	809	1.0+	0.3-	1998 09 19	809	0.5+	1.6+
1992 03 05	809	0.0	0.1-	1998 09 18	809	0.3-	1.3-	1998 09 19	809	0.1-	1.2+
1992 03 08	809	0.4+	0.3+	1998 09 18	809	1.1-	1.2-				
1992 04 07	809	0.0	0.1-	1998 09 19	809	(0.2+	2.9+)				

1992 EZ₂₈

Id. E. Bowell (1989, 1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	167.22988	(2000.0)	P		Q	
<i>n</i>	0.24075107	ω	84.71384	-0.27671332	+0.95991700	
<i>a</i>	2.5591195	Ω	168.91054	-0.94767166	-0.26490547	
<i>e</i>	0.1242918	<i>i</i>	13.40749	-0.15921107	-0.09156659	
<i>P</i>	4.09	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1989 08 02	675	0.5-	0.3+	1992 03 02	809	0.1+	0.8+	1998 10 29	699	1.0+	0.5+
1989 08 02	675	0.5+	0.6-	1992 03 05	809	0.8-	0.8-	1998 10 29	699	0.7-	0.5-
1992 02 28	675	1.9+	0.8+	1992 03 09	809	1.0-	1.1-	1998 10 29	699	0.3-	0.3-
1992 02 28	675	0.6-	0.1-	1992 04 06	809	0.5+	0.1-				

1992 HD₁ = 1998 OA₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	84.45260	(2000.0)	P		Q	
<i>n</i>	0.18689510	ω	174.42816	-0.39995990	+0.91578844	
<i>a</i>	3.0297313	Ω	71.99181	-0.84239479	-0.35143463	
<i>e</i>	0.2489274	<i>i</i>	2.22531	-0.36111369	-0.19448709	
<i>P</i>	5.27	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1992 04 24	809	0.9+	0.0	1992 05 01	809	(1.8+	1.7-)	1998 07 26	809	0.2-	0.1-
1992 04 24	809	0.8+	0.1+	1992 05 01	809	(2.6+	1.7-)	1998 07 26	809	1.0-	0.2+
1992 04 24	809	0.8+	0.1+	1992 05 01	809	(2.7+	1.8-)	1998 07 26	809	0.7-	0.1-
1992 04 24	691	0.8-	0.1-	1992 05 08	691	0.2-	0.0	1998 07 27	809	1.3+	0.7+
1992 04 24	691	0.5-	0.1+	1992 05 08	691	0.1+	0.6-	1998 07 27	809	0.8+	0.1+
1992 04 24	691	0.8-	0.2+	1992 05 08	691	0.1-	0.0	1998 07 27	809	0.3-	0.7-

1992 HD₄ = 1998 TW₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	238.18369	(2000.0)	P		Q	
<i>n</i>	0.23800596	ω	340.80920	-0.96916158	+0.23684528	
<i>a</i>	2.5787595	Ω	213.12820	-0.20667145	-0.93159847	
<i>e</i>	0.1368419	<i>i</i>	7.15232	-0.13421157	-0.27573285	
<i>P</i>	4.14	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1992 04 04	809	1.5+	0.0	1992 04 23	809	0.2+	0.3+	1998 10 13	691	1.0-	0.1-
1992 04 04	809	0.2-	0.4-	1992 04 23	809	1.1-	0.2+	1998 10 18	691	0.2-	0.4-
1992 04 04	809	0.0	0.0	1992 04 25	809	0.0	0.3-	1998 10 18	699	1.2+	0.4+
1992 04 06	809	0.4-	0.5+	1992 04 25	809	0.8+	0.6-	1998 10 18	691	0.3-	0.4-
1992 04 06	809	0.6-	0.3-	1992 04 25	809	0.3+	0.9-	1998 10 18	699	1.8+	0.4+
1992 04 06	809	0.9-	0.2+	1998 10 13	691	1.1-	0.2-	1998 10 18	691	0.4-	0.4-
1992 04 23	809	0.3+	1.3+	1998 10 13	691	1.0-	0.1-	1998 10 18	699	1.0+	0.8+

1992 JU₂ = 1998 FC₇₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	306.82668	(2000.0)	P		Q	
<i>n</i>	0.30514291	ω	125.60494	+0.92082964	+0.38705965	
<i>a</i>	2.1850792	Ω	211.70124	-0.38061344	+0.86552829	
<i>e</i>	0.2270019	<i>i</i>	5.18770	-0.08488919	+0.31787673	
<i>P</i>	3.23	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1992 05 04	809	0.2+	0.5-	1992 05 08	809	0.7+	0.6-	1998 03 25	704	0.2+	0.2-
1992 05 04	809	0.3+	0.2-	1998 03 24	704	0.4-	0.3-	1998 03 25	704	0.3+	0.1+
1992 05 04	809	0.3+	0.1-	1998 03 24	704	0.7-	1.0+	1998 03 25	704	0.1+	0.7+
1992 05 07	809	1.2-	0.7+	1998 03 24	704	0.9+	0.1+	1998 03 25	704	1.0+	1.1+
1992 05 07	809	0.5-	0.8+	1998 03 24	704	0.2-	2.0-	1998 03 25	704	0.2-	0.5-
1992 05 07	809	0.3-	0.7+	1998 03 24	704	0.4-	0.1-	1998 03 25	704	0.2-	0.3+
1992 05 08	809	0.1+	0.3-	1998 03 25	704	0.0	0.6-	1998 03 25	704	0.2-	0.1-
1992 05 08	809	0.3+	0.5-	1998 03 25	704	0.2+	0.0	1998 03 25	704	0.3-	0.5+

1992 PM = 1992 OR₃ = 1977 RA₃ = 1985 YD₁ = 1996 RZ₂ = 1998 FN₁₉Id. S. Nakano (d, *MPC* 22572), A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	177.79823	(2000.0)	P		Q	
<i>n</i>	0.25893084	ω	190.59564	+0.64190942	-0.76634671	
<i>a</i>	2.4378867	Ω	219.47720	+0.70644080	+0.60413862	
<i>e</i>	0.1688782	<i>i</i>	2.32465	+0.29815044	+0.21847025	
<i>P</i>	3.81	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1977 09 09	095	0.3-	0.3+	1992 08 09	010	0.4+	0.8-	1998 03 20	704	0.1-	0.7-
1985 12 17	010	2.7-	0.4-	1992 08 09	010	0.5+	0.7-	1998 03 20	704	0.1+	0.5-
1985 12 17	010	3.0+	0.2+	1992 08 09	010	0.1+	0.7-	1998 03 20	704	0.3-	0.5+
1985 12 19	010(28.1+	1.4+)		1996 09 14	566	0.5+	0.9-	1998 03 20	704	0.3-	1.0-
1992 07 26	809	(7.5+	0.7-)	1996 09 14	566	0.4+	0.6-	1998 03 22	704	0.3-	0.7-
1992 07 26	809	(6.7+	0.5-)	1996 09 14	566	0.1+	0.9-	1998 03 22	704	0.4+	0.7-
1992 07 26	809	(6.2+	0.3-)	1996 09 15	566	0.2+	0.7-	1998 03 22	704	0.1+	0.2-
1992 08 08	010	0.5+	0.6+	1996 09 15	566	0.3+	0.4-	1998 03 22	704	0.6+	0.0
1992 08 08	010	0.8-	0.5+	1996 09 15	566	0.2-	0.2-	1998 03 22	704	1.5-	0.7-
1992 08 08	010	0.3-	0.3+	1998 03 20	704	0.6-	0.6-				

1992 PK₂ = 1998 RB₅₄

Id. G. V. Williams, E. Bowell

1998 NOV. 10

M.P.C. 32929

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 125.62800		(2000.0)		P		Q	
<i>n</i>	0.17882826	ω	6.25875	-0.46566651	$+0.88089456$		
<i>a</i>	3.1201725	Ω	236.01851	-0.81630203	-0.46454205		
<i>e</i>	0.1436558	<i>i</i>	5.86488	-0.34176849	-0.09069435		
<i>P</i>	5.51	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1992 07 31	675	0.1–	1.3+	1998 09 14	704	0.8–	0.2+
1992 07 31	675	0.4–	0.3+	1998 09 14	704	0.2+	0.9–
1992 08 02	675	1.4–	1.2–	1998 09 18	704	0.4–	0.8+
1992 08 02	675	0.6–	0.3+	1998 09 18	704	0.2+	0.4–
1992 08 06	675	0.0	0.2+	1998 09 18	704	0.3–	0.9+
1992 08 06	675	1.9+	0.9–	1998 09 18	704	1.0+	0.6+
1992 08 06	675	0.1–	0.6+	1998 09 18	704	0.6–	0.6+
1992 08 06	675	0.4+	0.0	1998 09 18	704	0.6+	0.3+
1992 08 07	675	0.3+	1.0–	1998 09 18	704	0.8–	0.7–
1992 08 07	675	0.1–	0.5+	1998 09 18	704	0.8+	0.5+
1998 08 27	699	0.2+	0.5–	1998 09 18	704	0.3–	0.1+
1998 08 27	699	0.0	0.6–	1998 09 18	704	1.2–	0.9+
1998 08 27	699	1.0+	0.1+	1998 09 26	704	1.1+	0.1+
1998 09 14	704	0.4–	0.4–	1998 09 26	704	0.4–	0.6–
1998 09 14	704	(2.3+	0.6–)	1998 09 26	704	0.2–	1.2–
1998 09 14	704	(3.4–	0.7–)	1998 09 26	704	1.5–	0.0

1992 RJ₇ = 1998 SP₇₄

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 97.92464		(2000.0)		P		Q	
<i>n</i>	0.17493169	ω	130.33071	$+0.30361849$	$+0.95205262$		
<i>a</i>	3.1663365	Ω	157.26048	-0.90099773	$+0.29971428$		
<i>e</i>	0.1478986	<i>i</i>	5.57790	-0.30986918	$+0.06137717$		
<i>P</i>	5.63	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1992 09 02	809	0.0	0.5–	1998 09 23	809	1.3+	0.3+
1992 09 02	809	0.7–	0.7–	1998 09 23	809	0.9+	0.9+
1992 09 02	809	0.1–	1.3–	1998 09 23	809	0.3+	0.4–
1992 09 03	809	(2.2–	0.1+)	1998 09 26	704	0.8+	0.9+
1992 09 22	809	0.4+	0.3+	1998 09 26	704	0.1+	0.8–
1992 09 22	809	0.4+	0.8+	1998 09 26	704	0.3–	0.1–
1992 09 22	809	0.1–	0.7–	1998 09 26	704	1.1–	1.2–
1992 09 23	809	0.1+	1.0+	1998 09 26	704	1.9–	1.1–
1992 09 23	809	0.4+	0.9+	1998 09 27	704	1.2–	1.5+
1992 09 23	809	0.5–	0.2+	1998 09 27	704	1.8–	1.2+
1998 09 21	809	1.1+	0.7+	1998 09 27	704	0.7+	1.0–
1998 09 21	809	1.4+	0.5–	1998 09 27	704	0.4–	1.4+
1998 09 21	809	1.0+	0.7+	1998 09 27	704	1.2–	0.4+

1993 BT₁₄ = 1998 SQ₈₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 215.16168		(2000.0)		P		Q	
<i>n</i>	0.28043076	ω	313.85086	-0.99708922	$+0.06816122$		
<i>a</i>	2.3116333	Ω	230.08781	-0.05066531	-0.92718440		
<i>e</i>	0.1229600	<i>i</i>	2.55279	-0.05697467	-0.36835192		
<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 01 23	809	1.0–	0.1–	1998 09 26	704	0.4+	0.0
1993 01 28	809	0.9+	0.3–	1998 09 26	704	1.5–	2.2–
1993 01 28	809	0.0	0.0	1998 09 26	704	1.1–	0.1+
1993 02 26	691	0.8+	0.8+	1998 09 26	704	1.4+	1.2–
1993 02 26	691	0.4–	0.2–	1998 09 26	704	0.1–	0.0
1993 02 26	691	0.3–	0.1–	1998 09 27	704	1.3+	0.3+

1993 CB = 1998 SS₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 196.75171		(2000.0)		P		Q	
<i>n</i>	0.27533455	ω	69.46167	-0.90708030	$+0.41561088$		
<i>a</i>	2.3400703	Ω	135.02605	-0.41281491	-0.84713826		
<i>e</i>	0.1308486	<i>i</i>	5.42977	-0.08239652	-0.33109571		
<i>P</i>	3.58	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 02 02	372	1.2–	0.5+	1998 09 17	327	0.6+	0.8–
1993 02 02	372	0.4+	0.2–	1998 09 20	327	(3.2–	1.5+)
1993 02 04	372	(0.0	3.3–)	1998 09 20	327	(2.9–	1.3+)
1993 02 04	372	0.2+	0.8+	1998 09 20	327	(3.2–	1.2+)
1993 02 15	399	(3.5+	0.8–)	1998 09 24	699	0.2+	0.2+
1993 02 15	399	(3.9+	1.1+)	1998 09 24	699	0.7+	0.6+
1993 02 21	399	0.1–	1.6–	1998 09 24	699	0.8+	0.2+
1993 02 21	399	0.5+	0.3+	1998 09 25	327	0.5–	0.1–
1998 09 17	699	1.4+	0.0	1998 09 25	327	0.7–	0.1–
1998 09 17	699	0.6+	1.0–	1998 09 25	327	0.3–	0.2–
1998 09 17	699	0.0	1.2+	1998 09 26	704	0.4–	0.1–
1998 09 17	327	1.7+	0.6–	1998 09 26	704	1.0–	0.6+
1998 09 17	327	(2.6+	0.7–)	1998 09 26	704	0.2+	0.6+

1993 EU = 1998 SW₆₃

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 188.92149		(2000.0)		P		Q	
<i>n</i>	0.26956025	ω	135.89747	-0.77780562	$+0.62614118$		
<i>a</i>	2.3733702	Ω	82.94747	-0.59076705	-0.69878157		
<i>e</i>	0.1670023	<i>i</i>	3.14556	-0.21450573	-0.34590684		
<i>P</i>	3.66	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 03 15	400	(2.9+	1.4–)	1998 04 16	413	(3.0+	1.2–)
1993 03 15	400	(2.5+	0.8+)	1998 09 20	809	1.1–	1.1–
1993 03 17	809	1.8–	0.3+	1998 09 20	809	1.5–	1.5–
1993 03 18	809	0.0	0.1+	1998 09 20	809	1.0–	1.7–
1993 03 19	691	1.2–	0.1+	1998 09 21	809	0.0	1.8–
1993 03 19	691	1.3–	0.0	1998 09 21	809	0.0	1.7–
1993 03 19	691	1.1–	0.1–	1998 09 21	809	(0.0	2.3–)
1993 03 20	400	1.7+	0.5+	1998 10 11	699	0.5–	1.1+
1993 03 20	400	0.3+	1.7–	1998 10 11	699	0.6+	0.9+
1993 03 23	809	0.2+	0.5+	1998 10 11	699	0.4–	1.0+
1993 03 29	400	0.5+	1.6–	1998 10 14	704	1.4–	1.2+
1993 03 29	400	1.0+	0.2–	1998 10 14	704	1.9+	0.5–
1993 04 16	400	0.5+	1.7+	1998 10 14	704	0.2–	0.6+
1993 04 16	400	1.1+	0.3+	1998 10 14	704	1.0+	1.8–

1993 FL₁ = 1998 SJ₁₄₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 193.64481		(2000.0)		P		Q	
<i>n</i>	0.27599089	ω	179.82783	-0.78033391	$+0.62029240$		
<i>a</i>	2.3363588	Ω	38.87962	-0.57391064	-0.65984322		
<i>e</i>	0.0582648	<i>i</i>	7.27410	-0.24840603	-0.42408048		
<i>P</i>	3.57	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 03 22	399	(0.1–	6.5+)	1993 03 29	399	1.3–	0.4–
1993 03 23	675	1.3+	0.2–	1993 03 29	399	1.2+	0.7+
1993 03 23	675	0.5+	0.5+	1993 04 14	675	0.1+	0.1+
1993 03 25	399	0.5–	0.0	1993 04 15	399	1.1–	0.2–
1993 03 25	399	1.0–	0.7+	1993 04 15	399	0.7–	0.8–
1993 03 26	399	0.2–	0.4–	1993 04 16	399	1.1+	0.6+
1993 03 26	399	0.1+	1.0–	1993 04 16	399	0.6+	0.4+

M.P.C. 32930

1998 NOV. 10

1993 FM₆ = 1998 RD₇₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26339493	ω	236.04508	+0.85837030	+0.51122010		
<i>a</i>	2.4102630	Ω	93.17519	−0.45532021	+0.79780224		
<i>e</i>	0.0884594	<i>i</i>	2.47190	−0.23639783	+0.31963353		
<i>P</i>	3.74	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 03 17	809	0.2−	0.3+	1998 09 26	704	0.6−	0.5+
1993 03 18	809	0.1+	0.1−	1998 09 26	704	0.2−	0.8−
1993 03 23	809	0.1+	0.0	1998 09 26	704	0.3−	0.5+
1993 04 16	413	0.1−	0.3−	1998 09 26	704	0.1−	0.3−
1998 09 14	704	0.2+	0.3−	1998 09 26	704	0.1−	0.4−
1998 09 14	704	0.7−	0.3−	1998 09 27	704	0.3−	0.8−
1998 09 14	704	0.3+	0.8−	1998 09 27	704	0.9−	0.0
1998 09 18	704	0.4+	0.4−	1998 09 27	704	0.5−	0.2−
1998 09 18	704	1.5+	0.1−	1998 09 27	704	0.1+	0.7+
1998 09 18	704	0.7−	0.0	1998 09 27	704	0.2+	0.1−
1998 09 18	704	0.8+	0.3+	1998 09 29	704	1.0+	1.1+
1998 09 18	704	0.0	0.1−	1998 09 29	704	0.6+	1.2+
				1998 10 14	704	0.4−	0.4−

1993 FW₉ = 1998 SR₇₁

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25661719	ω	222.41932	+0.34702985	+0.93652849		
<i>a</i>	2.4525181	Ω	67.94172	−0.84538904	+0.33538550		
<i>e</i>	0.1645837	<i>i</i>	3.08305	−0.40606360	+0.10213206		
<i>P</i>	3.84	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 03 17	809	0.4−	0.3+	1998 09 26	704	0.1+	0.1−
1993 03 18	809	0.7−	0.1+	1998 09 26	704	0.6−	0.7−
1993 03 23	809	0.7+	0.4−	1998 09 27	704	0.8+	0.4+
1993 04 16	413	0.4+	0.1+	1998 09 27	704	0.6+	0.7+
1998 09 21	809	(1.8+	4.6+)	1998 09 27	704	0.2+	0.9+
1998 09 21	809	(1.3+	5.2+)	1998 09 27	704	0.7−	0.3−
1998 09 21	809	(1.1+	4.0+)	1998 09 27	704	0.8+	0.8−
1998 09 23	809	(1.2+	4.0+)	1998 10 11	699	0.8+	0.2+
1998 09 23	809	(0.6+	4.8+)	1998 10 11	699	0.1−	0.1−
1998 09 23	809	(0.7+	4.8+)	1998 10 11	699	0.4+	0.0
1998 09 26	704	1.1−	0.4+	1998 10 14	704	0.7−	0.5−
1998 09 26	704	0.3+	0.3+	1998 10 14	704	0.2−	0.2−
1998 09 26	704	0.3−	1.1−	1998 10 14	704	0.3+	0.7+

1993 FS₁₁ = 1998 RT₇₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27453814	ω	307.05737	−0.31031603	−0.94983336		
<i>a</i>	2.3445937	Ω	160.90874	+0.90565542	−0.30785298		
<i>e</i>	0.0619853	<i>i</i>	6.84716	+0.28895021	−0.05516452		
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 03 17	809	0.6+	0.6−	1998 09 18	704	1.1−	0.6−
1993 03 18	809	0.7+	0.1−	1998 09 26	704	0.6−	0.1−
1993 03 23	809	0.3+	0.8+	1998 09 26	704	0.2+	0.1−
1993 04 16	413	1.5−	0.4+	1998 09 26	704	0.0	0.1+
1998 09 14	704	0.8+	0.2−	1998 09 26	704	0.0	0.5+
1998 09 14	704	0.6−	0.1+	1998 09 26	704	0.1−	0.0
1998 09 14	704	0.4−	1.4−	1998 09 27	704	0.2−	0.0
1998 09 18	704	0.9+	0.0	1998 09 27	704	0.6−	0.1+
1998 09 18	704	1.2+	0.7+	1998 09 27	704	0.8−	0.7+
				1998 10 17	699	0.1−	1.4+

1998 09 18	704	0.7+	0.8+	1998 09 27	704	0.7−	0.8+	1998 10 17	699	0.0	0.8+
1998 09 18	704	0.2+	0.9−	1998 09 27	704	0.8−	0.7+	1998 10 17	699	0.0	0.4−

1993 FO₁₂ = 1998 TA₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27643552	ω	184.08451	−0.57151567	+0.81808051		
<i>a</i>	2.3338529	Ω	51.07268	−0.75052235	−0.48951106		
<i>e</i>	0.1006265	<i>i</i>	4.72940	−0.33179217	−0.30186620		
<i>P</i>	3.57	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 03 17	809	1.1−	0.5+	1998 10 12	691	0.4+	0.0
1993 03 18	809	0.8+	0.2−	1998 10 12	691	0.1+	0.1−
1993 03 23	809	0.6+	0.1−	1998 10 12	691	0.2+	0.1−
1993 04 16	413	0.4−	0.2−	1998 10 18	691	0.2−	0.2+
				1998 10 18	691	0.1−	0.0
				1998 10 18	691	0.4−	0.0

1993 FP₁₃ = 1998 SU₉₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27525253	ω	47.23349	+0.04174799	−0.99521640		
<i>a</i>	2.3405352	Ω	40.62718	+0.87250550	−0.00675916		
<i>e</i>	0.0667160	<i>i</i>	7.79615	+0.48681747	+0.09746095		
<i>P</i>	3.58	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1993 03 17	809	0.0	0.8+	1998 09 26	704	0.7−	0.3+
1993 03 18	809	0.4+	0.3+	1998 09 26	704	0.4−	1.7−
1993 03 23	809	0.1−	1.4−	1998 09 26	704	0.4−	1.9−
1993 04 16	413	0.2−	0.5+	1998 09 27	704	1.6+	2.1+
1998 09 26	704	0.4+	1.2+	1998 09 27	704	0.2−	1.6−

1993 FS₂₈ = 1998 UJ₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28462824	ω	222.29263	−0.40780637	−0.91182502		
<i>a</i>	2.2888503	Ω	251.82495	+0.85057190	−0.36040671		
<i>e</i>	0.1194357	<i>i</i>	2.87381	+0.33199610	−0.19667773		
<i>P</i>	3.46	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1993 03 21	809	0.8+	0.2+	1998 04 17	413	1.5+	0.6+
1993 03 22	809	3.0−	0.2+	1998 10 17	327	0.3+	0.2−
1993 03 22	809	1.5+	0.3−	1998 10 17	327	0.4+	0.0
1993 03 26	809	0.5−	0.2−	1998 10 17	327	0.6+	0.1−

1993 FX₂₉ = 1998 SX₁₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27219771	ω	310.73816	−0.93754985	+0.34084959		
<i>a</i>	2.3580142	Ω	249.29317	−0.29257289	−0.88066593		
<i>e</i>	0.0474108	<i>i</i>	4.25726	−0.18815256	−0.32901227		
<i>P</i>	3.62	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1993 03 21	809	0.9−	0.6+	1998 09 26	704	0.2+	0.1+
1993 03 22	809	0.8+	0.4−	1998 09 26	704	1.4−	0.8+
1993 03 26	809	0.2−	0.2−	1998 09 26	704	0.6+	0.4+
1993 04 17	413	0.3+	0.0	1998 09 26	704	0.7+	0.4−
				1998 09 27	704	1.0+	1.3−
				1998 09 27	704	1.0+	0.3−

1993 FS₃₁ = 1998 SO₇₁

Id. B. G. Marsden

1998 NOV. 10

M.P.C. 32931

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	108.07578	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26415546	ω	241.02895	+0.38691750	+0.91993106	
<i>a</i>	2.4056346	Ω	51.87313	-0.81549032	+0.37347054	
<i>e</i>	0.0746118	<i>i</i>	4.62402	-0.43043046	+0.11935915	
<i>P</i>	3.73	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 5
Residuals in seconds of arc						
1993 03 19	809	0.4+	0.0	1998 09 26	704	0.1- 1.3- 1998 10 14 704 0.4- 0.2+
1993 03 20	809	0.9+	0.2+	1998 09 26	704	0.0 0.4- 1998 10 14 704 0.7- 0.4+
1993 03 24	809	0.3-	0.1+	1998 09 26	704	0.4+ 1.0- 1998 10 15 704 0.1+ 0.8-
1993 04 18	413	(3.8+ 0.4+)		1998 09 26	704	0.7+ 0.4+ 1998 10 15 704 1.3- 0.7+
1993 04 20	691	0.1- 0.3-		1998 09 27	704	0.1+ 0.9+ 1998 10 15 704 0.1+ 0.6+
1993 04 20	691	0.4- 0.4-		1998 09 27	704	0.6- 1.0+ 1998 10 15 704 0.0 0.1-
1993 04 20	691	0.7- 0.1-		1998 09 27	704	0.5+ 0.6+ 1998 10 28 704 0.6- 0.3+
1993 04 21	413	(4.4- 0.4-)		1998 09 27	704	0.5+ 1.3- 1998 10 28 704 0.2+ 0.8-
1998 09 21	809	(0.8+ 3.0+)		1998 09 27	704	0.6- 0.4+ 1998 10 28 704 1.5+ 0.2+
1998 09 21	809	(1.2+ 3.2+)		1998 10 11	699	(3.1+ 0.2+)
1998 09 21	809	(0.6+ 3.4+)		1998 10 11	699	0.1- 0.9- 1998 10 28 704 1.1- 0.5-
1998 09 23	809	(3.1+ 2.2+)		1998 10 11	699	0.2- 0.0 1998 10 29 704 1.0- 1.7-
1998 09 23	809	(3.4+ 3.0+)		1998 10 14	704	0.2+ 0.4- 1998 10 29 704 0.3+ 0.7+
1998 09 23	809	(2.9+ 3.2+)		1998 10 14	704	0.1+ 0.8+ 1998 10 29 704 1.5+ 0.8-
1998 09 26	704	0.6+ 0.1+		1998 10 14	704	0.1- 1.6+ 1998 10 29 704 0.3+ 0.9+

1993 FW₄₁ = 1998 TU₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	88.02523	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27187484	ω	317.79156	+0.80063170	+0.59912629	
<i>a</i>	2.3598806	Ω	5.41139	-0.53115477	+0.71439748	
<i>e</i>	0.0639405	<i>i</i>	3.67686	-0.27724267	+0.36150232	
<i>P</i>	3.63	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 5
Residuals in seconds of arc						
1993 03 19	809	0.1- 1.0+		1998 10 13	910	1.1+ 0.1+ 1998 10 21 910 0.3+ 0.4+
1993 03 20	809	1.4+ 0.2+		1998 10 13	910	1.2+ 0.1- 1998 10 21 910 0.6+ 0.4+
1993 03 24	809	(2.8+ 0.9+)		1998 10 15	910	0.2- 0.4- 1998 10 21 910 0.5+ 0.5+
1993 03 28	691	1.0- 1.7-		1998 10 15	910	0.0 0.3- 1998 10 28 704 0.4- 0.3-
1993 03 28	691	(2.0- 2.5-)		1998 10 15	910	0.0 0.2- 1998 10 28 704 0.8+ 0.8-
1993 03 28	691	0.7- 0.6-		1998 10 15	691	1.3- 0.1+ 1998 10 28 704 1.6- 1.4-
1993 04 15	691	0.4- 0.2+		1998 10 15	691	1.2- 0.0 1998 10 28 704 0.3- 0.7+
1993 04 15	691	0.9+ 0.9+		1998 10 15	691	1.4- 0.1+ 1998 10 29 704 1.1- 1.2-
1993 04 15	691	0.1- 0.1+		1998 10 20	910	0.5+ 0.6+ 1998 10 29 704 0.6+ 0.6+
1993 04 17	413	(0.2+ 3.0+)		1998 10 20	910	0.4+ 0.6+ 1998 10 29 704 1.2- 0.6+
1998 10 13	910	1.2+ 0.3-		1998 10 20	910	0.5+ 0.7+ 1998 10 29 704 1.0+ 0.3-

1993 FS₄₆ = 1998 SY₈₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	297.26449	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27800940	ω	288.37195	-0.32094223	-0.94709861	
<i>a</i>	2.3250363	Ω	180.34943	+0.89973001	-0.30470704	
<i>e</i>	0.0912570	<i>i</i>	5.23104	+0.29577356	-0.10078613	
<i>P</i>	3.55	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 7
Residuals in seconds of arc						
1993 03 19	809	1.1- 0.9+		1998 09 26	704	1.0+ 0.2- 1998 09 27 704 0.5- 0.2+
1993 03 20	809	0.1+ 0.0		1998 09 26	704	0.8+ 1.6+ 1998 09 27 704 1.4- 1.1-
1993 03 24	809	1.4+ 0.6-		1998 09 26	704	1.3+ 1.2+ 1998 09 27 704 0.7- 1.0-
1993 04 16	413	0.2- 0.1+		1998 09 27	704	0.5- 0.2+
1998 09 26	704	1.2+ 0.6-		1998 09 27	704	1.3- 0.2+

1993 FO₅₀ = 1998 SB₁₅₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	296.59029	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28005859	ω	143.42387	-0.41346015	-0.91045884	
<i>a</i>	2.3136808	Ω	330.99405	+0.83004854	-0.37204179	
<i>e</i>	0.0980623	<i>i</i>	1.26950	+0.37425945	-0.18069203	
<i>P</i>	3.52	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 6
Residuals in seconds of arc						
1993 03 19	809	0.0 0.2-		1998 09 26	704	0.9+ 0.4- 1998 09 27 704 0.3+ 0.8-
1993 03 20	809	0.3- 0.1-		1998 09 26	704	1.5- 0.6+ 1998 09 27 704 0.0 0.6+
1993 03 24	809	0.4+ 0.4-		1998 09 26	704	0.6- 1.1- 1998 09 27 704 0.3- 2.1+
1993 04 17	413	0.5- 0.0		1998 09 26	704	0.7- 1.9-
1998 09 26	704	0.1+ 1.6-		1998 09 27	704	2.3+ 1.9+

1993 FW₇₃ = 1998 TC₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	132.25120	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.25963358	ω	55.68674	+0.03056305	+0.99878861	
<i>a</i>	2.4334857	Ω	216.12445	-0.93720454	+0.01522464	
<i>e</i>	0.1940269	<i>i</i>	3.75063	-0.34743857	+0.04679223	
<i>P</i>	3.80	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 6
Residuals in seconds of arc						
1993 03 21	809	0.6- 1.2-		1998 03 26	809	1.1- 0.4+ 1998 10 13 691 0.4- 0.6+
1993 03 21	809	0.5+ 0.3+		1998 04 18	413	0.3- 2.4+ 1998 10 18 691 0.4+ 0.6-
1993 03 22	809	0.1- 0.9-		1998 10 13	691	0.4- 0.4+ 1998 10 18 691 0.5+ 0.5-
1993 03 22	809	1.8+ 0.5-		1998 10 13	691	0.3- 0.7+

1993 HX = 1998 SD₆₆

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	128.85742	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26366885	ω	145.76273	+0.16610347	+0.98535845	
<i>a</i>	2.4085934	Ω	133.76513	-0.91623436	+0.16863224	
<i>e</i>	0.0462969	<i>i</i>	3.05191	-0.36458775	+0.02513742	
<i>P</i>	3.74	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 5
Residuals in seconds of arc						
1993 04 16	675	(1.7+ 3.2-)		1998 09 21	809	(1.0+ 4.1+)
1993 04 16	675	(1.9- 2.1+)		1998 09 21	809	0.6+ 0.3- 1998 10 15 704 1.7+ 0.6-
1993 04 16	400	0.2- 0.7+		1998 09 21	809	0.7+ 0.1+ 1998 10 15 704 0.5- 0.4+
1993 04 16	400	1.0- 0.1-		1998 10 11	699	0.7+ 0.4+ 1998 10 28 704 1.5- 0.1-
1993 04 19	675	0.7- 0.6-		1998 10 11	699	1.4+ 0.3+ 1998 10 28 704 0.0 0.1+
1993 04 19	675	1.1+ 0.4-		1998 10 11	699	1.3+ 0.2- 1998 10 28 704 1.1- 0.1+
1993 04 20	400	0.3+ 0.2+		1998 10 14	704	0.7+ 0.4- 1998 10 28 704 1.2- 0.1+
1993 04 20	400	0.1- 1.4-		1998 10 14	704	1.3+ 0.7- 1998 10 29 704 0.4- 1.0-
1993 05 14	400	(0.6+ 5.1-)		1998 10 14	704	0.0 0.3- 1998 10 29 704 1.5- 0.5-
1993 05 14	400	(0.7+ 3.0-)		1998 10 14	704	0.4- 0.4- 1998 10 29 704 0.2- 0.3-
1998 09 20	809	1.4+ 1.2+		1998 10 14	704	1.5- 0.3+ 1998 10 29 704 1.2- 0.8-
1998 09 20	809	0.8+ 0.4+		1998 10 15	704	0.9+ 0.0 1998 10 29 704 0.9- 0.7-
1998 09 20	809	0.7+ 0.6+		1998 10 15	704	0.6+ 1.1+

1993 OS₁₂ = 1997 OV

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	187.65080	(2000.0)	Doppler		<i>P</i>	<i>Q</i>
<i>n</i>	0.26124624	ω	124.34814	-0.13357423	+0.99030170	
<i>a</i>	2.4234609	Ω	137.92362	-0.92696261	-0.11120424	
<i>e</i>	0.1658416	<i>i</i>	3.26928	-0.35056845	-0.08328363	
<i>P</i>	3.77	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 5
Residuals in seconds of arc						
1993 07 12	809	1.0- 0.0		1993 07 19	809	0.5- 0.8- 1993 07 26 809 0.1+ 1.2+
1993 07 12	809	0.9- 0.6+		1993 07 19	809	(1.4- 1.8-) 1993 07 26 809 1.0+ 1.2+

M.P.C. 32932

1993 07 12	809	0.7−	0.5+	1993 07 19	809	(2.1−	1.3−)	1997 07 27	910	0.1+	0.2+
1993 07 12	809	1.5+	0.7−	1993 07 19	809	(2.0−	2.2−)	1997 07 27	910	0.1+	0.2+
1993 07 12	809	0.5+	0.9−	1993 07 23	809	(0.5−	2.7−)	1997 07 27	910	0.2+	0.1+
1993 07 12	809	1.4+	0.7−	1993 07 23	809	(0.7−	2.5−)	1997 07 29	910	0.1+	0.3−
1993 07 19	809	0.8−	0.3−	1993 07 23	809	(0.0	3.1−)	1997 07 29	910	0.0	0.2−
1993 07 19	809	0.0	0.8−	1993 07 26	809	0.7+	1.2+	1997 07 29	910	0.1−	0.4−

1993 PS₅ = 1993 SV = 1998 RC₇₀Id. G. V. Williams (d, *MPC* 23981; unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20344344	<i>ω</i>	217.18218	+0.91930975	−0.39016056		
<i>a</i>	2.8631246	<i>Ω</i>	165.51763	+0.39201824	+0.89645512		
<i>e</i>	0.2505298	<i>i</i>	11.86603	+0.03451485	+0.21010223		
<i>P</i>	4.84	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 06 26	691	0.2−	0.2−	1993 09 19	691	0.2−	0.1+	1998 09 26	704	0.2+	0.7−
1993 06 26	691	0.4−	0.5+	1993 09 19	691	0.3−	0.3+	1998 09 26	704	(2.1+	1.0−)
1993 06 26	691	0.4−	0.3+	1993 09 19	691	0.1−	0.4+	1998 09 26	704	(2.3+	0.3+)
1993 08 15	010	(3.5+	1.3−)	1998 09 14	704	0.7−	0.4−	1998 09 26	704	0.8+	0.1+
1993 08 15	010	(2.8+	0.4−)	1998 09 14	704	0.1−	0.0	1998 09 26	704	0.2+	0.9−
1993 08 16	010	1.9+	1.7−	1998 09 14	704	0.1−	1.8−	1998 09 27	704	0.2+	0.0
1993 08 16	010	(3.0+	0.7−)	1998 09 17	699	0.1+	0.0	1998 09 27	704	0.5−	0.1−
1993 08 16	010	(2.2+	1.7−)	1998 09 17	699	0.3−	0.1+	1998 09 27	704	1.1+	0.5+
1993 08 19	010	(4.0+	1.5−)	1998 09 17	699	0.0	0.0	1998 09 27	704	0.2+	0.8+
1993 08 19	010	(3.3+	0.7+)	1998 09 18	704	0.4−	0.5+	1998 09 27	704	0.0	0.8+
1993 08 20	010	(3.4+	0.8+)	1998 09 18	704	0.5+	0.5+	1998 10 14	704	0.2−	1.4+
1993 09 18	691	0.4−	0.1−	1998 09 18	704	0.1+	0.6−	1998 10 14	704	0.1+	1.4−
1993 09 18	691	0.0	0.6+	1998 09 18	704	0.9−	0.1+	1998 10 14	704	(2.3−	1.7+)
1993 09 18	691	0.3−	0.4+	1998 09 18	704	0.2−	0.7+				

1993 PU₅ = 1998 RT₆₈

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20971995	<i>ω</i>	118.42858	+0.49584013	+0.86841223		
<i>a</i>	2.8057107	<i>Ω</i>	181.30012	−0.82016741	+0.46766334		
<i>e</i>	0.0890168	<i>i</i>	4.19766	−0.28542597	+0.16477620		
<i>P</i>	4.70	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 08 15	010	0.2+	0.0	1998 09 14	704	0.4+	0.1+	1998 10 15	704	0.4−	1.8+
1993 08 15	010	0.2+	1.0+	1998 09 14	704	0.4−	0.1+	1998 10 15	704	1.5−	0.0
1993 08 16	010	0.4+	0.6−	1998 09 17	699	0.8+	1.1+	1998 10 15	704	(1.2+	2.3−)
1993 08 16	010	0.0	1.1−	1998 09 17	699	1.7+	0.4+	1998 10 15	704	0.7−	0.1+
1993 08 16	010	0.2−	0.1+	1998 09 17	699	(0.3−	2.2+)	1998 10 19	699	0.6−	0.9−
1993 08 19	010	0.9+	0.9+	1998 09 18	704	1.7+	1.1+	1998 10 19	699	0.1−	0.1+
1993 08 19	010	0.9+	0.4+	1998 09 18	704	0.0	0.7+	1998 10 19	699	0.3−	0.3+
1993 08 20	010	0.9+	0.2−	1998 09 18	704	0.4−	0.8+	1998 10 28	704	0.9−	1.3−
1993 09 14	691	1.1−	0.7−	1998 09 18	704	1.2−	1.4+	1998 10 28	704	1.5+	1.9−
1993 09 14	691	1.0−	0.4−	1998 10 14	704	1.1+	0.9−	1998 10 28	704	0.5−	1.5−
1993 09 14	691	1.0−	0.7−	1998 10 14	704	1.1−	1.1−				
1998 09 14	704	0.5+	1.7+	1998 10 14	704	0.0	1.3−				

1993 QP₉ = 1998 SU₆₄

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21086179	<i>ω</i>	255.20016	+0.86740976	−0.49334017		
<i>a</i>	2.7955727	<i>Ω</i>	134.31055	+0.48427896	+0.80699583		
<i>e</i>	0.0780070	<i>i</i>	5.20608	+0.11434246	+0.32461238		
<i>P</i>	4.67	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

1998 NOV. 10

Residuals in seconds of arc

1993 08 15	809	0.3−	1.2−	1993 08 24	809	0.1+	0.4+	1998 09 21	809	0.8+	0.7+
1993 08 15	809	1.5−	1.7−	1993 08 24	809	0.3+	0.5+	1998 09 21	809	0.1−	0.1−
1993 08 15	809	(2.5−	2.5−)	1993 08 24	809	0.2+	0.7+	1998 09 21	809	0.0	0.8+
1993 08 20	809	1.5+	0.5+	1998 09 20	809	0.7+	1.7+	1998 10 29	704	(0.9+	2.7−)
1993 08 20	809	(2.4+	0.1−)	1998 09 20	809	(0.2−	2.2+)	1998 10 29	704	0.2−	1.7−
1993 08 20	809	(2.8+	1.1+)	1998 09 20	809	0.7−	0.9+	1998 10 29	704	0.5−	1.6−

1993 RT₆ = 1998 SG₁₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19942824	<i>ω</i>	126.71549	+0.95521557	−0.29535934		
<i>a</i>	2.9014267	<i>Ω</i>	250.46980	+0.26501758	+0.88104307		
<i>e</i>	0.0820071	<i>i</i>	1.09784	+0.13163925	+0.36949422		
<i>P</i>	4.94	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1993 09 15	809	1.0+	0.5+	1993 09 18	809	0.8−	0.4−	1998 09 26	704	1.2−	0.5−
1993 09 15	809	0.5+	0.1+	1993 09 18	809	0.3+	0.8+	1998 09 26	704	1.1−	0.1−
1993 09 15	809	0.2+	1.0+	1993 09 18	675	1.1−	1.8−	1998 09 27	704	1.4+	0.7−
1993 09 17	809	0.7−	0.2+	1993 09 22	675	0.4+	1.0−	1998 09 27	704	0.2+	0.0
1993 09 17	809	0.2+	0.4−	1993 09 22	675	1.3+	0.7−	1998 09 27	704	1.2−	0.0
1993 09 17	809	0.4−	0.1−	1998 09 26	704	1.6−	1.0−	1998 09 27	704	2.0+	1.3+
1993 09 18	809	0.7−	1.5+	1998 09 26	704	0.9+	0.7−	1998 09 27	704	0.4+	2.0+

1993 RY₁₁ = 1978 QM₁ = 1992 LQ₂ = 1998 RE₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19815036	<i>ω</i>	111.14201	+0.88649003	+0.46258939		
<i>a</i>	2.9138876	<i>Ω</i>	221.30625	−0.43107534	+0.81602253		
<i>e</i>	0.0832687	<i>i</i>	1.05063	−0.16825421	+0.34658085		
<i>P</i>	4.97	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1978 08 31	095	0.8−	1.9+	1998 09 14	704	0.2+	0.9−	1998 09 27	704	0.5−	1.2+
1992 06 03	809	0.0	0.4−	1998 09 14	704	0.1+	0.5−	1998 09 27	704	0.6−	0.3+
1992 06 03	809	0.5+	0.7−	1998 09 14	704	0.7+	0.4+	1998 09 27	704	0.2−	0.2−
1992 06 03	809	0.7−	0.3+	1998 09 14	704	0.1−	0.3+	1998 09 27	704	0.6−	0.3−
1993 09 14	809	0.3+	1.3+	1998 09 16	699	0.8+	0.7+	1998 09 29	120	0.2−	0.1−
1993 09 14	809	0.3+	1.4+	1998 09 16	699	0.0	0.0	1998 09 29	120	0.6+	0.1+
1993 09 14	809	0.1+	1.3+	1998 09 16	699	0.3+	0.1+	1998 10 14	704	0.0	1.6−
1993 09 19	809	0.4−	0.2−	1998 09 18	704	0.7+	0.2+	1998 10 14	704	0.4+	0.9−
1993 09 19	809	0.3−	0.5−	1998 09 18	704	1.0−	0.1+	1998 10 14	704	0.2+	1.0−
1993 09 19	809	1.1−	0.7−	1998 09 18	704	0.7+	0.2+	1998 10 14	704	1.0+	1.4−
1993 09 20	691	(4.7−	1.4−)	1998 09 18	704	0.6+	0.2+	1998 10 14	704	1.4−	0.6−
1993 09 20	691	(4.4−	1.3−)	1998 09 18	704	0.2−	0.6−	1998 10 15	704	0.3+	0.7+
1993 09 20	691	(4.1−	1.4−)	1998 09 26	704	0.2+	0.2−	1998 10 15	704	0.7+	0.4+
1993 10 10	675	(2.8−	1.1−)	1998 09 26	704	0.3+	0.2−	1998 10 15	704	0.1+	0.9+
1993 10 10	675	(2.3−	2.4−)	1998 09 26	704	0.9−	0.9−	1998 10 15	704	0.9−	1.0+
1998 09 14	704	0.5−	0.0	1998 09 26	704	0.8+	0.7−	1998 10 15	704	0.6−	1.1+
1998 09 14	704	0.1−	0.9−	1998 09 26	704	0.6+	0.4−				
1998 09 14	704	0.2+	1.2−	1998 09 27	704	0.4+	0.1−				

1993 RM₁₄ = 1991 GO₂ = 1998 QB₁₀₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	5.16521		(2000.0)	P	Q
n	0.19589137	ω	192.75756	+0.90398199	-0.42752741
a	2.9362465	Ω	192.55843	+0.39470069	+0.83986435
e	0.1051381	i	1.60038	+0.16440173	+0.33443714
P	5.03	H	13.6	G 0.15	U 4

1998 NOV. 10

M.P.C. 32933

1991 04 10	809	(0.2+ 4.3-)	1998 09 14	704	0.4- 0.2+	1998 10 14	704	0.7- 0.5-
1991 04 10	809	(2.5- 4.0-)	1998 09 14	704	0.0 1.0+	1998 10 14	704	1.1+ 0.9-
1991 04 10	809	(3.5- 4.2-)	1998 09 14	704	0.7- 0.7+	1998 10 14	704	0.9+ 0.5-
1993 09 15	809	(2.3+ 1.3-)	1998 09 18	704	0.0 0.5+	1998 10 14	704	0.4+ 0.2-
1993 09 15	809	0.7+ 1.8-	1998 09 18	704	0.5- 0.5+	1998 10 14	699	0.0 0.0
1993 09 15	809	0.4+ 1.5-	1998 09 18	704	0.5- 0.2-	1998 10 14	699	0.1+ 0.4+
1993 09 17	809	(2.1+ 0.5-)	1998 09 18	704	1.3- 0.0	1998 10 14	699	0.1- 0.6+
1993 09 17	809	1.0+ 0.4-	1998 09 25	699	0.6- 1.2+	1998 10 15	704	1.0+ 0.1+
1993 09 17	809	0.1- 0.5-	1998 09 25	699	0.5- 0.8+	1998 10 15	704	0.4+ 0.0
1993 09 18	809	1.4+ 0.4-	1998 09 25	699	0.0 1.4+	1998 10 15	704	0.8+ 1.2+
1993 09 18	809	0.4+ 0.5-	1998 09 26	704	0.4- 0.4+	1998 10 15	704	0.7+ 0.3+
1993 09 18	809	0.3+ 1.2-	1998 09 26	704	0.2- 0.0	1998 10 15	704	1.0+ 1.3-
1993 09 18	675	0.4- 0.0	1998 09 26	704	0.7- 0.2-	1998 10 22	691	1.4- 0.3-
1993 09 18	675	0.5- 0.5+	1998 09 26	704	0.4- 0.4-	1998 10 22	691	1.1- 0.4+
1993 09 22	675	0.4- 0.2-	1998 09 26	704	1.4+ 2.0-	1998 10 22	691	1.4- 0.0
1993 09 22	675	0.6- 0.5+	1998 09 27	704	0.5+ 0.5+	1998 10 27	691	0.1- 0.0
1998 08 28	704	1.1- 0.6-	1998 09 27	704	0.5+ 0.7+	1998 10 27	691	0.3- 0.9+
1998 08 28	704	0.3- 0.2-	1998 09 27	704	1.5+ 0.5+	1998 10 27	691	0.2- 0.1-

1993 SU₄ = 1977 DV₈ = 1998 SU₁₁₆

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	62.43154		(2000.0)	P	Q
n	0.21097871	ω	343.21611	+0.92517540	+0.37898638
a	2.7945397	Ω	354.38435	-0.31972393	+0.74914092
e	0.0381837	i	12.08610	-0.20451671	+0.54328372
P	4.67	H	13.6	G 0.15	U 4

Residuals in seconds of arc

1977 02 19	381	1.5+ 0.2+	1993 09 19	010	1.1+ 0.5-	1998 09 27	704	0.1+ 0.9-
1977 02 19	381	1.4- 0.1+	1993 09 19	010	0.4- 0.4-	1998 09 27	704	0.3+ 1.2-
1993 07 26	675	1.3- 0.6-	1993 09 20	010	0.4- 0.1+	1998 09 27	704	0.8+ 0.8+
1993 07 26	675	1.1- 1.3+	1993 09 20	010	0.8- 1.3+	1998 09 27	704	0.2- 1.4+
1993 08 20	809	1.8+ 0.2+	1993 09 20	010	(1.3+ 2.6+)	1998 09 27	704	0.1+ 0.7+
1993 08 20	809	0.4+ 0.4-	1998 09 26	704	0.6- 0.2-	1998 10 12	699	0.3+ 1.2+
1993 08 20	809	0.1+ 0.4-	1998 09 26	704	0.1+ 1.1-	1998 10 12	699	0.4- 0.9+
1993 08 24	809	(0.9- 3.5-)	1998 09 26	704	0.1+ 0.5-	1998 10 12	699	0.2- 0.7+
1993 08 24	809	(0.6- 3.5-)	1998 09 26	704	0.5+ 1.7-			
1993 08 24	809	(0.7- 2.8-)	1998 09 26	704	0.4- 0.5-			

1993 TF₆ = 1998 UX₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	52.55985		(2000.0)	P	Q
n	0.19674073	ω	122.65423	+0.93692384	+0.32921440
a	2.9277896	Ω	218.49030	-0.34884610	+0.90178490
e	0.1613325	i	10.87638	+0.02191161	+0.28000335
P	5.01	H	16.0	G 0.15	U 5

Residuals in seconds of arc

1993 10 09	691	0.0 0.0	1993 10 15	691	0.2+ 0.4-	1993 10 24	691	0.0 0.1-
1993 10 09	691	0.2- 0.6+	1993 10 15	691	0.1+ 0.5-	1993 10 24	691	0.1- 0.1+
1993 10 09	691	0.7+ 0.6-	1993 10 15	691	0.2- 0.4-	1993 10 24	691	0.2- 0.1-
1993 10 09	691	1.2- 0.4+	1993 10 20	691	0.0 0.1-	1998 10 20	910	0.6+ 0.0
1993 10 09	691	0.5+ 0.3-	1993 10 20	691	0.3- 0.1+	1998 10 20	910	0.4+ 0.1+
1993 10 09	691	0.1- 0.7+	1993 10 20	691	0.1+ 0.0	1998 10 20	910	0.5+ 0.0
1993 10 15	691	0.1- 0.1-	1993 10 21	691	0.2+ 0.5+	1998 10 21	910	0.4- 0.0
1993 10 15	691	0.2+ 0.3-	1993 10 21	691	0.0 0.2+	1998 10 21	910	0.8- 0.2-
1993 10 15	691	0.1+ 0.0	1993 10 21	691	0.2+ 0.3+	1998 10 22	910	0.3- 0.0

1993 TV₁₂ = 1998 SC₆₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	351.37986		(2000.0)	P	Q
n	0.21070949	ω	46.95759	+0.00721744	-0.99337597
a	2.7969196	Ω	43.03527	+0.86165874	-0.05201909
e	0.1407205	i	9.67421	+0.50743682	+0.10246071
P	4.68	H	14.0	G 0.15	U 5

Residuals in seconds of arc

1993 10 09	809	0.3+ 0.0	1993 10 13	675	0.2+ 1.6-	1998 09 25	327	0.1- 0.2+
1993 10 09	809	0.3+ 0.5+	1993 10 15	675	0.2+ 0.3+	1998 09 30	327	0.8+ 0.2-
1993 10 09	809	0.3- 0.7+	1993 10 20	809	0.5+ 0.4+	1998 09 30	327	0.8+ 0.4+
1993 10 11	809	0.5+ 0.1-	1993 10 20	809	0.6+ 0.5+	1998 09 30	327	0.7+ 0.3-
1993 10 11	809	0.3- 0.3+	1993 10 20	809	0.4- 0.0	1998 10 01	327	0.4- 0.1-
1993 10 11	809	0.9- 0.1-	1998 09 25	327	0.6- 0.4+	1998 10 01	327	0.3- 0.4-
1993 10 13	675	0.5- 1.0-	1998 09 25	327	0.3- 0.6+	1998 10 01	327	0.7- 0.4-

1993 TZ₁₃ = 1982 UC₄ = 1998 QS₇₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	349.58660		(2000.0)	P	Q
n	0.18102162	ω	191.42148	+0.95389401	-0.29952032
a	3.0949175	Ω	186.11155	+0.28769731	+0.93079645
e	0.2143761	i	10.46296	+0.08553644	+0.20953651
P	5.44	H	15.5	G 0.15	U 4

Residuals in seconds of arc

1982 10 19	033	0.5+ 1.2-	1993 10 11	809	0.2- 0.4+	1998 08 24	704	0.9- 2.1+
1982 10 19	033	0.2+ 1.6-	1993 10 20	809	1.0- 0.8-	1998 08 27	704	1.1- 1.0+
1993 10 09	809	1.0+ 0.4+	1993 10 20	809	1.2- 1.3-	1998 08 27	704	0.9+ 0.6-
1993 10 09	809	0.2+ 0.5+	1993 10 20	809	1.5- 0.6-	1998 08 27	704	2.0+ 1.7-
1993 10 09	809	0.6- 0.5+	1998 08 24	704	0.5- 0.5+	1998 08 27	704	0.3+ 1.3-
1993 10 11	809	1.6+ 1.6+	1998 08 24	704	0.5+ 0.7-	1998 08 27	704	0.4+ 0.6+
1993 10 11	809	1.0+ 1.5+	1998 08 24	704	1.7- 0.5+			

1993 TV₁₅ = 1997 RT₁

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	126.85907		(2000.0)	P	Q
n	0.24025957	ω	314.55603	+0.94592927	+0.32284429
a	2.5626084	Ω	26.65583	-0.27418261	+0.84761208
e	0.2265520	i	4.02043	-0.17332545	+0.42110014
P	4.10	H	15.7	G 0.15	U 6

Residuals in seconds of arc

1993 10 09	809	0.9- 0.3+	1993 10 20	809	1.2+ 0.8-	1997 09 05	132	0.5- 0.0
1993 10 09	809	1.0- 0.5+	1993 10 20	809	1.3+ 0.2+	1997 09 05	132	0.5- 0.3+
1993 10 09	809	1.5- 0.8-	1993 10 20	809	0.2- 0.5-	1997 09 06	132	0.2- 0.3+
1993 10 11	809	1.3+ 0.3+	1997 09 03	132	1.4+ 0.5-	1997 09 10	132	0.1- 0.4-
1993 10 11	809	0.1+ 0.3+	1997 09 04	132	0.3- 1.0-	1997 09 11	132	1.4- 1.2+
1993 10 11	809	0.3- 0.6+	1997 09 04	132	1.6+ 0.1+			

1993 TF₁₆ = 1992 HC₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	95.18251		(2000.0)	P	Q
n	0.21612896	ω	127.74433	+0.77792972	+0.62708504
a	2.7499666	Ω	193.57373	-0.61660771	+0.74964175
e	0.2127011	i	9.78107	-0.12091435	+0.21166389
P	4.56	H	16.0	G 0.15	U 5

Residuals in seconds of arc

1992 04 28	691	0.3- 0.2+	1992 05 03	691	0.4+ 0.3+	1993 10 11	809	0.6+ 0.7-
1992 04 28	691	0.6- 0.1-	1993 10 09	809	0.5- 0.3+	1993 10 11	809	0.8+ 0.5-
1992 04 28	691	0.1- 0.0	1993 10 09	809	0.2- 0.9+	1993 10 20	809	0.5+ 0.4+

M.P.C. 32934

1992 05 03	691	0.6+	0.0	1993 10 09	809	1.4−	0.4+	1993 10 20	809	0.6−	0.2+
1992 05 03	691	0.0	0.3−	1993 10 11	809	1.5+	0.4−	1993 10 20	809	0.8−	0.5−

1993 TD₁₇ = 1996 GJ₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	136.92894		(2000.0)		P		Q		Gnädig
<i>n</i>	0.21304954	ω	199.91692		+0.30273250		+0.95256901		
<i>a</i>	2.7764018	Ω	87.71477		−0.87016228		+0.28954808		
<i>e</i>	0.0407840	<i>i</i>	1.78186		−0.38880669		+0.09367067		
<i>P</i>	4.63	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1993 10 09	809	0.2−	0.2+	1993 10 11	809	1.3+	0.5+	1996 04 12	691	0.1+	0.1+
1993 10 09	809	0.4−	0.3−	1993 10 20	809	0.0	0.0	1996 04 12	691	0.0	0.2+
1993 10 09	809	1.5−	0.4−	1993 10 20	809	0.1+	0.5−	1996 04 19	691	0.0	0.2−
1993 10 11	809	(2.6+	0.6+)	1993 10 20	809	0.7−	0.0	1996 04 19	691	0.1−	0.0
1993 10 11	809	1.4+	0.4+	1996 04 12	691	0.1−	0.1+	1996 04 19	691	0.0	0.1−

1993 TL₁₈ = 1987 SP₂₈ = 1990 FH₁ = 1996 FD₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	218.50894		(2000.0)		P		Q		Gnädig
<i>n</i>	0.17021157	ω	98.61279		−0.75958965		−0.64807215		
<i>a</i>	3.2246060	Ω	41.01682		+0.55890285		−0.69364697		
<i>e</i>	0.0830514	<i>i</i>	4.80818		+0.33264270		−0.31441432		
<i>P</i>	5.79	<i>H</i>	12.5		<i>G</i>	0.15	<i>U</i>	2	

Residuals in seconds of arc

1987 09 24	095	0.5+	0.8−	1993 10 11	809	1.5+	0.2+	1996 03 22	691	0.0	0.8−
1990 03 25	413	0.2−	0.7+	1993 10 11	809	1.8+	0.8+	1996 03 22	691	0.2−	0.7−
1990 03 25	413	0.5+	0.2+	1993 10 11	809	0.7+	0.9+	1996 03 26	691	0.5−	0.5−
1993 10 09	809	0.5+	0.3−	1993 10 20	809	0.8−	1.3−	1996 03 26	691	0.4−	0.6−
1993 10 09	809	0.7+	0.0	1993 10 20	809	2.1−	1.3−	1996 03 26	691	0.6−	0.7−
1993 10 09	809	0.3+	0.3+	1993 10 20	809	1.8−	1.2−				

1993 TN₁₈ = 1996 GL₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	162.19895		(2000.0)		P		Q		Gnädig
<i>n</i>	0.21851766	ω	212.37412		+0.06826764		+0.99629617		
<i>a</i>	2.7298892	Ω	61.58820		−0.90221517		+0.08402005		
<i>e</i>	0.0341772	<i>i</i>	3.40781		−0.42584894		−0.01829141		
<i>P</i>	4.51	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1993 10 09	809	0.2+	0.7+	1993 10 20	809	0.8+	0.1+	1996 03 27	809	0.7+	0.1+
1993 10 09	809	0.9−	0.2+	1993 10 20	809	1.3+	0.1+	1996 04 15	809	0.4−	0.5+
1993 10 09	809	0.5−	0.9+	1996 03 24	809	0.5+	0.4−	1996 04 15	809	0.3−	0.6+
1993 10 11	809	0.1−	0.7−	1996 03 24	809	0.2+	0.8+	1996 04 15	809	0.2−	0.5+
1993 10 11	809	0.3−	0.8−	1996 03 24	809	0.1+	0.1−	1996 04 17	809	0.7−	0.1+
1993 10 11	809	1.4−	0.3−	1996 03 27	809	1.7+	0.1+	1996 04 17	809	1.4−	0.9−
1993 10 20	809	0.7+	0.4+	1996 03 27	809	1.5+	0.1+	1996 04 17	809	1.1−	0.6−

1993 TG₁₉ = 1981 JF₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	236.68357		(2000.0)		P		Q		Gnädig
<i>n</i>	0.26347810	ω	219.59803		−0.01327456		+0.99829883		
<i>a</i>	2.4097558	Ω	49.71863		−0.89749967		+0.01313533		
<i>e</i>	0.1885298	<i>i</i>	4.26791		−0.44081529		−0.05680595		
<i>P</i>	3.74	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1981 05 08	675	0.7+	0.0	1993 10 11	809	0.2−	0.7−	1993 10 20	809	0.3−	0.0
1981 05 09	675	0.7−	0.1+	1993 10 11	809	0.0	1.2−	1997 12 07	910	0.0	0.0
1993 10 09	809	0.6+	1.3+	1993 10 11	809	0.4−	0.6−	1997 12 07	910	0.0	0.1+

1998 NOV. 10

1993 10 09	809	0.6+	0.4+	1993 10 20	809	0.5−	0.1−	1997 12 07	910	0.0	0.1+
1993 10 09	809	0.5+	1.6+	1993 10 20	809	0.2−	0.7−				

1993 TV₁₉ = 1998 SU₇₂

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	104.37125		(2000.0)		P		Q		Williams
<i>n</i>	0.20051373	ω	215.04356		+0.48659236		+0.87159115		
<i>a</i>	2.8909460	Ω	84.14070		−0.78722341		+0.46704458		
<i>e</i>	0.0204129	<i>i</i>	3.43704		−0.37882340		+0.14899071		
<i>P</i>	4.92	<i>H</i>	13.0		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1993 10 09	809	1.5+	1.2+	1998 09 21	809	(7.0−	1.4−)	1998 10 14	704	0.1−	0.7−
1993 10 09	809	0.8+	2.2+	1998 09 23	809	1.6+	1.8−	1998 10 15	704	0.3−	0.1+
1993 10 09	809	0.5+	2.0+	1998 09 23	809	0.7+	2.2−	1998 10 15	704	0.1+	1.2+
1993 10 11	809	0.3−	0.2−	1998 09 23	809	0.1−	1.8−	1998 10 15	704	0.3+	1.0+
1993 10 11	809	1.5−	0.0	1998 10 11	699	0.7−	0.1+	1998 10 15	704	1.2+	0.2+
1993 10 11	809	1.3−	0.8−	1998 10 11	699	0.9−	0.2+	1998 10 29	704	0.8+	0.3−
1993 10 20	809	0.2−	0.5−	1998 10 11	699	1.1−	0.2+	1998 10 29	704	0.1+	0.2+
1993 10 20	809	0.2−	1.2−	1998 10 14	704	0.1−	1.3+	1998 10 29	704	0.6+	0.2−
1993 10 20	809	0.2−	1.1−	1998 10 14	704	0.2−	1.7+	1998 10 29	704	0.5−	0.5−
1998 09 21	809	(5.3−	1.4−)	1998 10 14	704	0.9−	0.8+	1998 10 29	704	0.0	0.7−
1998 09 21	809	(6.4−	1.2−)	1998 10 14	704	0.3+	0.8−				

1993 TO₂₀ = 1996 EV₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	357.90622		(2000.0)		P		Q		Gnädig
<i>n</i>	0.17666683	ω	194.54232		+0.99919215		+0.03410316		
<i>a</i>	3.1455702	Ω	163.45922		−0.02515281		+0.94330059		
<i>e</i>	0.1427318	<i>i</i>	4.28276		−0.03134304		+0.33018324		
<i>P</i>	5.58	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1993 10 09	809	1.4+	1.5−	1993 10 11	809	0.6−	0.6+	1996 03 11	691	0.1+	0.6−
1993 10 09	809	1.3+	1.1−	1993 10 20	809	(0.4−	4.5−)	1996 03 11	691	0.1−	0.6−
1993 10 09	809	0.9+	0.1+	1993 10 20	809	(1.2−	3.7−)	1996 03 18	691	0.0	0.1+
1993 10 11	809	(1.4−	3.0−)	1993 10 20	809	(1.5−	4.2−)	1996 03 18	691	0.3−	0.1+
1993 10 11	809	(1.3−	3.2−)	1993 10 20	809	0.8+	0.0	1998 07 24	910	0.2+	0.2−
1993 10 11	809	1.8−	1.8−	1993 10 20	809	0.1+	0.7+	1998 07 24	910	0.1+	0.2+
1993 10 11	809	0.6−	1.3+	1993 10 20	809	0.1−	0.6+	1998 07 24	910	0.1−	0.6−
1993 10 11	809	0.9−	0.3+	1996 03 11	691	0.2−	0.4−				

1993 TS₂₂ = 1998 SF₁₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	331.07966		(2000.0)		P		Q		Williams
<i>n</i>	0.19229979	ω	36.35054		+0.38422803		−0.91805516		
<i>a</i>	2.9726938	Ω	31.39320		+0.79667577		+0.27622182		
<i>e</i>	0.0890390	<i>i</i>	10.80925		+0.46655818		+0.28438747		
<i>P</i>	5.13	<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+	0.3+	1993 10 20	809	0.6+	0.2−	1998 09 26	704	0.2+	2.2−
1993 10 09	809	0.4−	0.2−	1993 10 20	809	0.5−	0.2−	1998 09 27	704	0.2−	0.1+
1993 10 09	809	0.3−	0.4+	1993 10 20	809	0.3−	0.0	1998 09 27	704	1.3−	1.4−
1993 10 11	809	1.2+	0.1+	1998 09 26	704	2.0+	1.6+	1998 09 27	704	1.1−	0.5+
1993 10 11	809	1.1−	0.1−	1998 09 26	704	1.5+	0.2−	1998 09 27	704	1.3−	0.7+
1993 10 11	809	0.2+	0.2−	1998 09 26	704	1.0+	0.1−	1998 09 27	704	0.7−	0.9+

1993 TY₂₂ = 1998 SK₅₆

Id. A. Gnädig

1998 NOV. 10

M.P.C. 32935

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	70.68947		(2000.0)	P	Q
<i>n</i>	0.18983599	ω	120.61730	+0.61483358	+0.78835254
<i>a</i>	2.9983593	Ω	187.43934	-0.76905968	+0.59317030
<i>e</i>	0.0801972	<i>i</i>	9.74137	-0.17471944	+0.16324604
<i>P</i>	5.19	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 10 09	809	0.0	0.6+	1998 09 16	699	0.1+	0.7-	1998 09 27	704	0.6-	0.1+
1993 10 09	809	0.2+	0.5+	1998 09 16	699	0.1+	0.2-	1998 09 27	704	0.5-	0.9+
1993 10 09	809	0.3+	1.0+	1998 09 25	699	0.2+	0.5-	1998 09 27	704	1.2-	1.5+
1993 10 11	809	0.7+	0.7-	1998 09 25	699	0.2+	0.5-	1998 09 27	704	0.1+	1.0+
1993 10 11	809	0.6-	1.0-	1998 09 25	699	0.0	0.3-	1998 09 27	704	0.1+	0.0
1993 10 11	809	0.1-	1.1-	1998 09 26	704	0.0	0.2-	1998 10 14	699	0.6+	0.4-
1993 10 20	809	0.0	0.6+	1998 09 26	704	0.6-	0.7-	1998 10 14	699	0.5+	0.4-
1993 10 20	809	0.2-	0.1+	1998 09 26	704	0.6-	0.7+	1998 10 14	699	0.2+	0.1-
1993 10 20	809	0.4-	0.0	1998 09 26	704	0.3+	0.1-				
1998 09 16	699	0.1+	0.5-	1998 09 26	704	0.9+	0.3+				

1993 TN₂₄ = 1992 OO₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	146.97949		(2000.0)	P	Q
<i>n</i>	0.16903171	ω	80.75488	-0.91960809	+0.39194957
<i>a</i>	3.2395940	Ω	122.31686	-0.37157043	-0.84605444
<i>e</i>	0.1000723	<i>i</i>	1.78955	-0.12750052	-0.36134114
<i>P</i>	5.83	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1992 07 26	809	0.6-	0.1-	1992 07 30	809	0.1-	0.1+	1993 10 11	809	1.0-	0.3+
1992 07 26	809	0.6+	0.6+	1993 10 09	809	0.0	0.5+	1993 10 11	809	1.3-	0.3+
1992 07 26	809	0.3+	0.9-	1993 10 09	809	0.8+	0.3-	1993 10 20	809	0.2-	0.7-
1992 07 30	809	0.1-	0.1-	1993 10 09	809	0.5+	0.4+	1993 10 20	809	0.8+	0.7-
1992 07 30	809	0.0	0.3+	1993 10 11	809	0.2-	0.5+	1993 10 20	809	0.5+	0.4-

1993 TQ₂₉ = 1998 RN₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	319.42221		(2000.0)	P	Q
<i>n</i>	0.18327181	ω	255.92795	+0.25513304	-0.96690531
<i>a</i>	3.0695327	Ω	179.28767	+0.91826500	+0.24193522
<i>e</i>	0.1936517	<i>i</i>	5.17185	+0.30281433	+0.08100290
<i>P</i>	5.38	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1982 07 27	413	0.5-	1.0-	1993 10 11	809	2.2+	0.5+	1998 09 14	704	0.9-	1.5+
1982 10 18	413	0.9-	0.4-	1993 10 11	809	0.3-	0.7+	1998 09 14	704	0.3+	0.6-
1982 10 18	413	1.3+	0.6+	1993 10 11	809	0.5+	0.8+	1998 09 14	704	0.2-	1.4+
1982 11 05	413	0.0	0.8+	1993 10 21	809	1.9-	1.5-	1998 09 18	704	0.8-	0.6-
1993 10 09	809	1.8+	1.8+	1993 10 21	809	0.5-	1.0-	1998 09 18	704	(3.4+	0.1-)
1993 10 09	809	(4.1+	2.4+)	1993 10 21	809	1.8-	1.5-	1998 09 18	704	0.8+	1.6-
1993 10 09	809	(3.3+	2.3+)	1998 09 14	704	0.9+	0.2-				

1993 TU₂₉

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	27.01835		(2000.0)	P	Q
<i>n</i>	0.19576794	ω	255.32415	+0.97222169	-0.22853728
<i>a</i>	2.9374806	Ω	117.86525	+0.23066834	+0.89886501
<i>e</i>	0.0587038	<i>i</i>	3.27822	+0.03971278	+0.37391496
<i>P</i>	5.03	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 10 09	809	0.1-	1.2-	1993 10 21	809	1.1+	0.7+	1998 10 11	699	0.4+	0.2-
1993 10 09	809	1.3-	0.1-	1993 10 21	809	0.8+	0.4+	1998 10 11	699	0.7-	0.2+
1993 10 09	809	1.2-	0.4-	1993 10 21	809	0.7-	0.2-	1998 10 11	699	0.1-	0.5-

1993 10 11	809	0.5+	1.4+	1998 09 18	699	0.5-	1.1+	1998 10 20	699	0.1+	0.6-
1993 10 11	809	0.7+	0.5+	1998 09 18	699	0.2-	0.9-	1998 10 20	699	0.4+	0.1-
1993 10 11	809	0.4-	0.5+	1998 09 18	699	0.6+	0.2+	1998 10 20	699	0.6+	0.7-

1993 TN₃₀ = 1982 JZ₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	79.81927		(2000.0)	P	Q
<i>n</i>	0.19971542	ω	201.11990	+0.61139676	+0.78785208
<i>a</i>	2.8986446	Ω	106.64547	-0.71449876	+0.58983747
<i>e</i>	0.1962353	<i>i</i>	4.43262	-0.34012576	+0.17714644
<i>P</i>	4.94	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1982 05 15	675	2.1+	1.1-	1993 10 09	809	0.8+	1.0+	1993 10 11	809	0.7-	1.8-
1982 05 16	675	1.0-	0.0	1993 10 09	809	0.9-	0.4+	1993 10 21	809	0.8+	0.9+
1982 05 16	675	1.3-	0.2+	1993 10 09	809	0.2-	1.1+	1993 10 21	809	0.4-	0.7+
1982 05 17	675	0.1+	0.1-	1993 10 11	809	0.4+	1.4-	1993 10 21	809	0.2-	0.2+
1982 05 18	675	0.2+	1.1+	1993 10 11	809	0.3+	1.0-				

1993 TM₃₁ = 1998 SM₆₆

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	335.60146		(2000.0)	P	Q
<i>n</i>	0.19876371	ω	320.31872	+0.24878076	-0.96736693
<i>a</i>	2.9078901	Ω	115.22766	+0.90158362	+0.21316257
<i>e</i>	0.0343229	<i>i</i>	3.04513	+0.35391398	+0.13697791
<i>P</i>	4.96	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 10 09	809	0.7-	1.5-	1998 09 21	809	0.3-	0.7+	1998 10 23	910	1.3+	0.6-
1993 10 09	809	0.9-	0.6-	1998 09 21	809	0.1-	0.9+	1998 10 28	704	0.3-	0.1+
1993 10 09	809	1.3-	0.1-	1998 09 21	809	0.6-	0.8+	1998 10 28	704	1.9-	0.9+
1993 10 11	809	0.5+	0.1-	1998 10 15	704	0.7-	0.5-	1998 10 28	704	1.6-	1.4+
1993 10 11	809	0.0	0.9+	1998 10 15	704	0.3-	0.3-	1998 10 28	704	0.9-	0.8+
1993 10 11	809	0.1+	0.5+	1998 10 15	704	0.7-	1.1-	1998 10 29	704	0.1+	0.5-
1993 10 21	809	(1.7+	2.7+)	1998 10 15	704	0.9+	1.7-	1998 10 29	704	0.2+	0.6-
1993 10 21	809	1.8+	1.6+	1998 10 22	910	1.2+	0.3-	1998 10 29	704	1.3-	0.2+
1993 10 21	809	0.1-	0.7+	1998 10 22	910	0.9+	0.4-	1998 10 29	704	1.2+	0.5+
1998 09 20	809	0.5+	0.7-	1998 10 22	910	0.9+	0.3-	1998 10 29	704	0.8-	1.0+
1998 09 20	809	0.1+	0.5-	1998 10 22	910	1.2+	0.5-				
1998 09 20	809	0.1+	0.2-	1998 10 23	910	1.3+	0.6-				

1993 TS₃₁ = 1996 JU₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	54.72048		(2000.0)	P	Q
<i>n</i>	0.21380174	ω	230.18994	+0.92961388	-0.36697238
<i>a</i>	2.7698860	Ω	151.29185	+0.35601105	+0.87043767
<i>e</i>	0.1040039	<i>i</i>	4.04712	+0.09525845	+0.32813037
<i>P</i>	4.61	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 10 09	809	1.3-	0.6-	1993 10 11	809	1.8+	0.6+	1996 05 15	691	0.1-	0.3+
1993 10 09	809	1.9-	0.8-	1993 10 21	809	1.1+	0.7+	1996 05 15	691	0.2+	0.5+
1993 10 09	809	(4.1-	2.6-)	1993 10 21	809	0.9-	0.3-	1996 05 21	691	0.1-	0.0
1993 10 11	809	0.8+	0.7+	1993 10 21	809	0.5-	0.5-	1996 05 21	691	0.3-	0.0
1993 10 11	809	0.9+	0.3+	1996 05 15	691	0.7+	0.4-	1996 05 21	691	0.4-	0.4-

1993 TW₃₈ = 1996 FU₁₀ = 1998 ST₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	89.25536		(2000.0)			P		Q			
<i>n</i>	0.19217195	ω	135.26572			+0.55896908		+0.82849309			
<i>a</i>	2.9740120	Ω	168.57635			−0.80066130		+0.54993375			
<i>e</i>	0.0554037	<i>i</i>	9.87055			−0.21562710		+0.10569799			
<i>P</i>	5.13	<i>H</i>	13.7		<i>G</i>	0.15		<i>U</i>	3		
Residuals in seconds of arc											
1993 10 09	809	0.6+	0.3−	1998 09 22	699	0.7−	0.6−	1998 09 27	704	0.5−	0.1−
1993 10 09	809	0.5+	2.0−	1998 09 22	699	0.5−	0.2+	1998 09 29	704	0.3+	0.1+
1993 10 09	809	(2.8−	2.9−)	1998 09 22	699	0.6−	1.1+	1998 09 29	704	0.5+	1.1+
1993 10 11	809	0.3+	0.3−	1998 09 24	699	0.4−	0.2+	1998 09 29	704	0.4+	0.8+
1993 10 11	809	0.3−	0.9+	1998 09 24	699	0.2−	0.3+	1998 09 29	704	0.2+	0.1+
1993 10 11	809	0.1+	0.8+	1998 09 24	699	0.2−	0.4+	1998 09 29	704	0.5+	0.0
1993 10 21	809	0.5−	0.1−	1998 09 26	704	0.3+	0.4−	1998 10 17	699	0.2−	0.2−
1993 10 21	809	0.3−	0.1+	1998 09 26	704	0.0	0.1+	1998 10 17	699	0.2+	1.0+
1993 10 21	809	0.3−	0.5+	1998 09 26	704	0.1−	0.5−	1998 10 17	699	0.6+	0.0
1996 03 20	691	0.2−	0.3+	1998 09 26	704	0.1+	0.7−	1998 10 18	428	0.2−	0.3−
1996 03 20	691	0.1−	0.4+	1998 09 26	704	0.2+	0.3−	1998 10 18	428	1.0+	0.1+
1996 03 20	691	0.2−	0.3+	1998 09 27	704	0.1−	0.1−	1998 10 19	428	0.8+	1.0−
1996 03 24	691	0.3+	0.3−	1998 09 27	704	0.2−	0.0	1998 10 19	428	1.1−	0.1+
1996 03 24	691	0.2+	0.1−	1998 09 27	704	0.5+	0.2+	1998 10 19	428	0.8−	0.0
1996 03 24	691	0.0	0.2−	1998 09 27	704	0.0	0.5−				

1993 UJ₁ = 1992 JC₄ = 1998 TP₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	343.20086			(2000.0)			P		Q		
<i>n</i>	0.39043062	ω		244.82435			−0.01450299		−0.98632274		
<i>a</i>	1.8539875	Ω		207.56823			+0.99651829		−0.00077476		
<i>e</i>	0.0845842	<i>i</i>		20.77896			+0.08210332		−0.16482369		
<i>P</i>	2.52	<i>H</i>		14.7		<i>G</i>	0.15		<i>U</i>		3
Residuals in seconds of arc											
1992 05 01	675	0.3−	0.7−	1993 11 19	675	1.4−	0.3−	1998 10 15	704	0.0	0.1+
1992 05 01	675	0.4+	0.1+	1993 11 20	675	(3.4−	2.8−)	1998 10 15	704	0.1+	0.4+
1993 10 20	675	1.1+	0.6−	1993 11 20	675	(1.4+	3.1+)	1998 10 15	704	0.7+	0.7+
1993 10 20	675	0.1+	0.7+	1993 12 08	675	0.2+	1.2+	1998 10 15	704	0.1−	0.3+
1993 10 21	675	(2.6+	7.6+)	1993 12 08	675	(4.8−	0.1−)	1998 10 15	704	0.3+	0.5+
1993 11 09	675	0.8+	0.5+	1993 12 09	675	1.3−	0.3+	1998 10 29	704	0.0	0.7−
1993 11 09	675	1.2−	0.5+	1998 10 14	699	0.3−	0.3+	1998 10 29	704	0.2+	1.1−
1993 11 10	675	0.7−	1.7−	1998 10 14	704	0.2−	0.0	1998 10 29	704	0.5−	0.8−
1993 11 10	675	(1.3−	2.1−)	1998 10 14	699	0.1−	0.3+	1998 10 29	704	0.2−	1.3−
1993 11 16	675	0.1−	0.2+	1998 10 14	699	1.1+	0.2+	1998 10 29	704	0.4−	1.4−
1993 11 16	675	1.1+	0.6−	1998 10 14	704	0.1+	0.3+				
1993 11 19	675	1.3+	1.0+	1998 10 14	704	0.6−	1.1+				

1993 UV₄ = 1998 RO₆₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	308.98432		(2000.0)		P		Q		
<i>n</i>	0.18427187	ω	269.68825		+0.11716521		−0.99288640		
<i>a</i>	3.0584170	Ω	173.46836		+0.96908348		+0.10963963		
<i>e</i>	0.0643268	<i>i</i>	10.73463		+0.21713941		+0.04643001		
<i>P</i>	5.35	<i>H</i>	14.2		<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1993 10 10	809	0.4−	0.2−	1993 10 21	809	0.0	0.1+	1998 09 26	704	0.6+	0.2−
1993 10 10	809	2.2−	0.5−	1998 09 14	704	0.2−	0.1−	1998 09 26	704	1.8+	1.8−
1993 10 10	809	1.2−	0.9−	1998 09 14	704	0.4+	1.1+	1998 09 26	704	0.2+	0.6+
1993 10 20	809	0.5−	0.2+	1998 09 14	704	0.8−	0.9−	1998 09 26	704	0.7−	0.4−
1993 10 20	809	0.7+	0.8+	1998 09 18	704	0.4−	0.1−	1998 09 27	704	1.1−	0.0
1993 10 20	809	0.4+	0.1+	1998 09 18	704	0.7−	1.5+	1998 09 27	704	1.2−	1.8+
1993 10 21	809	1.1+	0.3+	1998 09 18	704	1.8+	1.1−	1998 09 27	704	0.8+	0.6−
1993 10 21	809	2.0+	0.1+	1998 09 18	704	1.1+	0.8+	1998 09 27	704	1.6−	0.5−

1993 UX₄ = 1978 VH₃ = 1991 DE₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	116.39534		(2000.0)			P		Q		
n	0.19087187	ω	200.60253			+0.04052210		+0.98086371		
a	2.9875013	Ω	72.10830			−0.88643968		+0.12323726		
e	0.0795698	i	11.54336			−0.46106686		−0.15072812		
P	5.16	H	14.0			G	0.15	U	3	

Residuals in seconds of arc

1978 11 05	675	1.0−	0.7−	1991 02 23	493	1.1+	1.2−	1993 10 20	809	0.1−	0.3−
1978 11 06	675	0.7+	0.2+	1991 02 23	493	0.2+	0.4−	1993 10 20	809	0.6−	0.0
1978 11 07	675	0.1−	0.9+	1991 02 23	493	1.4−	1.6+	1993 10 21	809	1.3+	0.5+
1978 11 08	675	0.4+	0.3+	1993 10 10	809	0.9+	0.3−	1993 10 21	809	0.3−	0.9+
1978 11 29	675	0.5−	0.3+	1993 10 10	809	0.2+	0.1−	1993 10 21	809	0.2−	0.1−
1978 11 30	675	0.5+	1.0−	1993 10 10	809	0.2−	0.3+				
1978 11 30	675	(4.2+	0.7−)	1993 10 20	809	0.9−	1.0−				

1993 UW₆ = 1998 SN₁₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	51.90383		(2000.0)			P		Q		
n	0.18894288	ω	235.39385			+0.88843529		+0.44650138		
a	3.0078006	Ω	97.87814			−0.37807686		+0.84330150		
e	0.1142381	i	6.16579			−0.26027027		+0.29913058		
P	5.22	H	14.0			G	0.15	U	5	

Residuals in seconds of arc

1993 10 10	809	0.1−	0.1+	1993 10 21	809	0.4−	0.6+	1998 09 27	704	0.0	0.1+
1993 10 10	809	0.4−	0.4−	1993 10 21	809	0.9−	0.0	1998 09 27	704	0.3+	0.3+
1993 10 10	809	0.2+	0.4+	1998 09 26	704	0.1+	0.1+	1998 09 27	704	0.6−	0.1+
1993 10 20	809	1.0+	0.4−	1998 09 26	704	0.1+	0.7+	1998 09 27	704	0.3+	0.8−
1993 10 20	809	0.5+	0.1−	1998 09 26	704	0.0	0.3−	1998 09 27	704	1.0−	0.6−
1993 10 20	809	0.3+	0.0	1998 09 26	704	0.2+	0.4+				
1993 10 21	809	0.2−	0.3−	1998 09 26	704	0.5+	0.1+				

1993 UT₇ = 1995 FP₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	205.57330		(2000.0)		P		Q	
n	0.28277725	ω	221.68277		+0.99865263		−0.02171280	
a	2.2988276	Ω	139.48810		+0.03671809		+0.93747197	
e	0.1594067	i	4.16079		−0.03667031		+0.34738288	
P	3.49	H	17.0		G	0.15	U	5

Residuals in seconds of arc

1993 10 10	809	0.4−	0.4−	1993 10 20	809	(2.3−	1.4−)	1995 03 23	691	0.0	0.8−
1993 10 10	809	0.5+	0.8+	1993 10 21	809	1.2+	0.0	1995 03 23	691	0.1+	0.2−
1993 10 10	809	1.0−	0.3+	1993 10 21	809	1.0+	0.2+	1995 04 04	691	0.0	0.1+
1993 10 20	809	0.2−	0.4−	1993 10 21	809	0.3−	1.1+	1995 04 04	691	0.2+	0.8+
1993 10 20	809	0.9−	1.5−	1995 03 23	691	0.2+	0.2−	1995 04 04	691	0.5−	0.5+

1993 VD₄ = 1952 US = 1981 JF₅ = 1998 TY₃₃

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	63.70788		(2000.0)			P		Q		
n	0.19340752	ω	292.64649			+0.93180834		+0.31197602		
a	2.9613323	Ω	49.70603			−0.17243123		+0.83020064		
e	0.0919809	i	14.07441			−0.31937546		+0.46199336		
P	5.10	H	12.5			G	0.15	U	2	

Residuals in seconds of arc

1952 10 23	760	1.3+	1.1−	1993 11 16	399	0.2−	0.9−	1998 10 14	699	0.2+	0.1−
1952 10 23	760	1.2−	1.0+	1993 11 16	399	1.3−	0.0	1998 10 20	699	0.2−	0.1−
1981 05 08	675	0.9−	0.6+	1993 11 22	399	1.9+	0.8−	1998 10 20	699	0.2+	0.4−
1981 05 09	675	1.5+	0.4+	1993 11 22	399	0.5+	0.0	1998 10 20	699	0.1−	0.0

1998 NOV. 10

M.P.C. 32937

1993 11 11 399 0.2- 1.5+ 1998 10 14 699 0.0 0.1+
1993 11 11 399 1.2- 1.5+ 1998 10 14 699 0.2- 0.4+

1994 AA₁ = 1978 YT = 1987 YT = 1996 TG₄₀ = 1998 FP₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	130.62097		(2000.0)	P	Q
<i>n</i>	0.26642147	ω	320.57268	-0.32368279	-0.94529779
<i>a</i>	2.3919746	Ω	148.25304	+0.88638248	-0.31793274
<i>e</i>	0.1026982	<i>i</i>	4.41624	+0.33099176	-0.07301274
<i>P</i>	3.70	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1978 12 22	095	0.1+	0.8-	1996 10 08	809	1.3-	0.2-	1998 03 20	704	0.3-	0.6+
1987 03 21	046	(1.3-	4.4-)	1996 10 08	809	1.4-	0.2-	1998 03 20	691	0.2-	0.3-
1987 03 21	046	(0.8-	5.0-)	1996 10 08	809	0.2+	0.4-	1998 03 20	691	0.3-	0.1-
1994 01 04	896	1.1-	1.8+	1996 10 10	809	0.1-	0.1+	1998 03 22	704	0.1+	0.4-
1994 01 04	896	0.9-	0.5-	1996 10 10	809	1.1-	1.1-	1998 03 22	704	0.2+	0.1-
1994 01 07	896	0.9-	1.1-	Y 1996 10 10	809	1.2-	0.0	1998 03 22	704	0.1-	0.0
1994 01 07	896	1.4+	1.2-	Y 1998 03 20	704	0.7+	0.2-	1998 03 22	704	0.1+	0.2-
1994 01 14	896	1.6+	1.8+	1998 03 20	704	0.5+	0.9+	1998 03 22	704	0.0	0.1+
1996 10 07	809	1.7+	0.7+	1998 03 20	704	0.1+	0.0	1998 03 25	691	0.2-	0.4-
1996 10 07	809	1.4+	0.8+	1998 03 20	704	0.3-	0.6+	1998 03 25	691	0.2-	0.4-
1996 10 07	809	1.7+	0.4+	1998 03 20	691	0.2-	0.1+	1998 03 25	691	0.0	0.4-

1994 AC₃ = 1977 EF₇ = 1998 UV₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	321.23937		(2000.0)	P	Q
<i>n</i>	0.17026253	ω	82.76229	-0.40665970	-0.91356466
<i>a</i>	3.2239626	Ω	31.23453	+0.83415158	-0.37363900
<i>e</i>	0.1189374	<i>i</i>	0.57947	+0.37258426	-0.16060357
<i>P</i>	5.79	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1977 03 12	381	0.7-	0.9-	1994 01 16	411	0.5-	0.6+	1994 02 16	411	0.3+	0.7+
1977 03 12	381	0.4-	1.6-	1994 01 16	411	0.7-	1.4+	1994 02 16	411	0.3+	1.2+
1993 11 20	691	0.3-	0.2-	1994 01 19	411	0.7+	0.2+	1994 02 16	411	0.4-	0.7-
1993 11 20	691	0.1-	0.3-	1994 01 19	411	0.4-	1.3-	1998 10 23	120	0.2-	0.8-
1993 11 20	691	0.2+	0.2-	1994 01 19	411	0.4+	1.0-	1998 10 23	120	0.5+	1.4-
1994 01 14	411	0.4+	1.7+	1994 02 07	411	0.3-	0.3+	1998 10 28	120	0.1-	0.2-
1994 01 14	411	0.4-	0.4+	1994 02 07	411	0.8+	0.6-	1998 10 29	120	0.3+	0.5+
1994 01 16	411	0.8+	1.0+	1994 02 07	411	0.3-	1.1-				

1994 NS₁ = 1987 RN = 1998 QC₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	41.65190		(2000.0)	P	Q
<i>n</i>	0.27266681	ω	115.58193	+0.99703203	+0.07283763
<i>a</i>	2.3553089	Ω	240.24997	-0.07682078	+0.91990758
<i>e</i>	0.0989045	<i>i</i>	1.64586	-0.00506977	+0.38531121
<i>P</i>	3.61	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1987 09 02	809	0.4-	0.9+	1994 07 14	010	2.6+	1.4+	1998 09 18	704	0.6+	0.2+
1987 09 02	809	0.5+	1.7+	1998 08 27	699	0.1-	0.4+	1998 09 18	704	0.1+	0.4+
1987 09 02	809	1.4-	0.8+	1998 08 27	699	0.5-	0.5+	1998 09 18	704	0.2-	1.0+
1994 07 04	010	2.3-	0.1-	1998 08 27	699	0.4-	0.4-	1998 09 18	704	0.2-	0.7+
1994 07 04	010	1.4-	1.0-	1998 08 28	699	0.3-	0.5+	1998 09 26	704	0.3-	0.5-
1994 07 04	010	1.5-	1.3-	1998 08 28	699	0.0	0.3+	1998 09 26	704	0.0	1.0-
1994 07 05	010	0.8-	0.1-	1998 08 28	699	0.5-	0.3+	1998 09 26	704	0.2+	0.0
1994 07 05	010	0.2+	0.3-	1998 09 14	704	0.1+	0.3-	1998 09 26	704	0.1+	0.4-
1994 07 05	010	1.0-	1.3-	1998 09 14	704	0.3+	0.6-	1998 09 26	704	0.3+	0.7-
1994 07 08	010	1.0+	0.4-	1998 09 14	704	0.7-	0.6-	1998 09 27	704	0.1+	0.1+
1994 07 08	010	0.9+	0.6-	1998 09 15	699	0.9+	0.4+	1998 09 27	704	0.4+	0.5-
1994 07 08	010	1.4+	0.0	1998 09 15	699	0.5+	0.4-	1998 09 27	704	0.3+	0.4+
1994 07 14	010	1.4+	0.2-	1998 09 15	699	0.3+	0.4+	1998 09 27	704	0.8-	1.5-
1994 07 14	010	0.2-	1.5+	1998 09 18	704	0.4+	0.4-	1998 09 27	704	0.0	0.5-

1994 PS

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	231.54095		(2000.0)	P	Q
<i>n</i>	0.27380814	ω	32.06640	-0.98910579	+0.12104664
<i>a</i>	2.3487591	Ω	154.48402	-0.13733989	-0.96365033
<i>e</i>	0.1073921	<i>i</i>	11.21373	+0.05298572	-0.23817167
<i>P</i>	3.60	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1994 08 14	411	0.7+	0.2+	1994 08 27	411	0.9-	0.0	1994 10 01	675	0.7-	0.5-
1994 08 14	411	0.0	0.5-	1994 08 27	411	0.4+	0.7+	1997 06 12	688	0.0	0.1-
1994 08 15	411	0.3-	0.2+	1994 09 01	411	0.4+	0.5-	1997 06 12	688	0.0	0.0
1994 08 15	411	0.0	0.7+	1994 09 01	411	0.1+	0.0	1998 10 17	699	0.0	0.4+
1994 08 15	411	0.1+	1.1+	1994 09 11	675	0.1+	1.9-	1998 10 17	699	0.3-	0.0
1994 08 16	411	0.1-	1.1+	1994 09 11	675	0.4+	1.3-	1998 10 17	699	0.1+	0.2+
1994 08 16	411	0.3-	1.1+	1994 10 01	675	0.2+	0.8-				

1994 PC₂ = 1997 ER₅₂ = 1998 UD₃

Id. G. V. Williams, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	110.75327		(2000.0)	P	Q
<i>n</i>	0.27264566	ω	283.94692	+0.23976910	+0.97082994
<i>a</i>	2.3554307	Ω	359.92594	-0.87634134	+0.21641244
<i>e</i>	0.2274028	<i>i</i>	2.04978	-0.41777582	+0.10322247
<i>P</i>	3.61	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1994 08 09	675	0.6-	0.5-	1994 09 04	809	0.0	1.4-	1998 10 10	699	1.8-	0.5+
1994 08 09	675	0.5-	0.1-	1994 09 05	809	1.7+	1.7+	1998 10 19	699	0.9-	0.8+
1994 08 11	675	1.1-	0.2+	1994 09 05	809	(1.7+	2.1+)	1998 10 19	699	0.4-	0.5-
1994 08 11	675	1.4-	0.2-	1994 09 05	809	0.7+	1.8+	1998 10 19	699	0.7-	0.4-
1994 08 12	809	0.5-	0.6+	1994 09 06	809	(3.0+	4.8+)	1998 10 20	910	0.3+	0.3+
1994 08 12	809	0.1-	0.6+	1994 09 06	809	(2.8+	4.5+)	1998 10 20	910	0.4+	0.4+
1994 08 12	809	0.7-	1.3+	1994 09 06	809	(2.1+	5.2+)	1998 10 20	910	0.2+	0.3+
1994 08 13	809	0.4+	1.5+	1997 03 08	809	1.6+	1.5+	1998 10 21	910	1.3+	0.4+
1994 08 13	809	0.7+	1.9+	1997 03 08	809	(2.6+	1.6+)	1998 10 21	910	1.2+	0.3+
1994 08 13	809	0.3+	1.4+	1997 03 08	809	(3.0+	0.5+)	1998 10 21	910	1.2+	0.2+
1994 09 03	809	1.7-	1.4-	1997 03 09	809	0.2+	0.8+	1998 10 29	691	(2.2-	0.5-)
1994 09 03	809	0.3+	1.9-	1997 03 09	809	0.1+	0.7+	1998 10 29	691	(2.9-	0.1+)
1994 09 03	809	0.5+	1.7-	1997 03 09	809	0.3-	0.7+	1998 10 29	691	(2.9-	0.1-)
1994 09 04	809	0.8+	1.5-	1998 10 10	699	1.2-	0.3+				
1994 09 04	809	0.5+	1.5-	1998 10 10	699	1.0-	1.0+				

1994 PJ₄ = 1998 TN₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	14.20051		(2000.0)	P	Q
<i>n</i>	0.26878468	ω	177.36018	+0.70754745	-0.70646998
<i>a</i>	2.3779335	Ω	227.60340	+0.64793982	+0.65796457
<i>e</i>	0.1252165	<i>i</i>	1.29083	+0.28204716	+0.26073510
<i>P</i>	3.67	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 08 10	809	0.9-	0.4+	1994 09 03	809	0.2+	0.4-	1998 10 13	691	0.4+	0.1-
1994 08 10	809	0.6-	0.8+	1994 09 03	809	1.0+	0.6+	1998 10 18	691	0.2-	0.1-
1994 08 10	809	1.0-	0.9+	1994 09 04	809	1.1+	0.5+	1998 10 18	691	0.3-	0.2-
1994 08 11	809	0.5+	0.1-	1994 09 04	809	0.3-	0.1+	1998 10 18	691	0.0	0.1-
1994 08 11	809	1.0+	0.7-	1994 09 04	809	0.9-	0.3-	1998 10 23	691	0.1-	0.4+
1994 08 11	809	0.9+	0.6-	1998 10 13	691	0.1-	0.2-	1998 10 23	691	0.1+	0.3+
1994 09 03	809	1.1-	1.1-	1998 10 13	691	0.1-	0.2-	1998 10 23	691	0.1+	0.2+

1994 PL₄ = 1998 RZ₇₈

Id. S. Nakano

M.P.C. 32938

1998 NOV. 10

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	79.12293		(2000.0)	P		Q	
<i>n</i>	0.25991190	ω	153.56936	+0.58909309		+0.80503347	
<i>a</i>	2.4317482	Ω	152.35621	−0.76551224		+0.58369094	
<i>e</i>	0.1321706	<i>i</i>	8.66887	−0.25876697		+0.10595282	
<i>P</i>	3.79	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 10	809	0.7+	0.7+	1994 09 06	809	(2.0+	5.1+)	1998 09 24	910	1.0+	1.0+
1994 08 10	809	0.3−	0.4+	1994 09 06	809	(1.9+	5.2+)	1998 09 24	910	1.1+	1.0+
1994 08 10	809	0.2−	0.5+	1994 09 06	809	(1.6+	5.0+)	1998 09 26	704	0.0	0.8+
1994 08 11	809	0.5+	0.2−	1998 09 14	704	0.1+	0.2−	1998 09 26	704	0.6−	0.4−
1994 08 11	809	0.0	0.5−	1998 09 14	704	0.6−	0.1−	1998 09 26	704	0.3−	0.6−
1994 08 11	809	0.1+	0.0	1998 09 14	704	0.1+	0.2+	1998 09 26	704	0.0	0.0
1994 09 03	809	(0.9−	2.5−)	1998 09 18	704	0.2−	0.5−	1998 09 26	704	0.2+	0.0
1994 09 03	809	(2.1−	3.5−)	1998 09 18	704	0.1−	0.3−	1998 09 27	704	0.1−	0.1+
1994 09 03	809	(1.7−	3.1−)	1998 09 18	704	0.8+	0.1+	1998 09 27	704	0.3−	0.3+
1994 09 04	809	0.0	0.1−	1998 09 18	704	0.6−	0.1+	1998 09 27	704	0.5+	0.4+
1994 09 04	809	0.2−	0.5−	1998 09 18	704	1.4−	1.5−	1998 09 27	704	1.0−	1.2−
1994 09 04	809	0.5−	0.5−	1998 09 21	699	0.3−	0.6+	1998 10 17	699	0.3−	0.1+
1994 09 05	809	(1.9+	4.4+)	1998 09 21	699	0.5+	0.1+	1998 10 17	699	0.2+	0.2−
1994 09 05	809	(1.5+	4.3+)	1998 09 21	699	0.1−	0.1−	1998 10 17	699	0.2+	0.8−
1994 09 05	809	(1.3+	3.8+)	1998 09 24	910	1.0+	1.2+				

1994 PQ₆ = 1998 TW₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	102.19846		(2000.0)	P		Q	
<i>n</i>	0.27226320	ω	264.27217	+0.43414060		+0.90083397	
<i>a</i>	2.3576360	Ω	31.45967	−0.82307152		+0.39867776	
<i>e</i>	0.2195493	<i>i</i>	0.49227	−0.36616282		+0.17191337	
<i>P</i>	3.62	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	0.4+	0.7+	1994 09 03	809	0.6+	0.7−	1998 10 13	691	0.2+	0.7+
1994 08 10	809	0.1−	0.1+	1994 09 03	809	0.0	1.0−	1998 10 13	691	0.3+	1.3−
1994 08 10	809	1.2−	0.3−	1994 09 03	809	0.5−	0.6−	1998 10 13	691	0.1+	0.3+
1994 08 11	809	0.6+	0.0	1994 09 04	809	0.5−	0.2+	1998 10 18	691	0.6−	0.2+
1994 08 11	809	0.6+	0.3+	1994 09 04	809	0.9+	0.3−	1998 10 18	691	0.1−	0.4+
1994 08 11	809	1.0−	0.8+	1994 09 04	809	0.0	0.7+				

1994 PJ₁₁ = 1989 AF₁₀ = 1998 RP₆₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	114.80745		(2000.0)	P		Q	
<i>n</i>	0.26046675	ω	310.55789	−0.17949955		+0.98354220	
<i>a</i>	2.4282936	Ω	309.08940	−0.89436701		−0.17187777	
<i>e</i>	0.1886585	<i>i</i>	1.52136	−0.40974086		−0.05570246	
<i>P</i>	3.78	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 01 10	413	2.3+	1.8+	1994 09 04	809	0.7−	0.3−	1998 09 26	704	0.4−	0.1−
1989 01 10	413	1.1−	2.1+	1998 09 14	704	0.9+	0.3−	1998 09 27	704	0.3−	0.5−
1994 08 10	809	1.3+	1.1+	1998 09 14	704	0.3+	1.0−	1998 09 27	704	0.0	0.8+
1994 08 10	809	0.8−	1.0+	1998 09 14	704	0.5−	0.0	1998 09 27	704	0.4−	0.3+
1994 08 10	809	0.2−	0.9+	1998 09 15	699	0.9+	0.5+	1998 09 27	704	0.3−	0.1+
1994 08 11	809	1.0+	0.9+	1998 09 15	699	1.8+	0.4+	1998 09 27	704	0.1−	0.9−
1994 08 11	809	0.5+	0.5+	1998 09 15	699	1.9+	0.0	1998 10 14	704	0.3+	0.0
1994 08 11	809	0.2+	0.9+	1998 09 18	704	(2.7+	0.7−)	1998 10 14	704	(0.9+	3.3−)
1994 08 11	675	(5.9−	6.5−)	1998 09 18	704	0.8+	0.5−	1998 10 14	704	(1.0+	2.3−)
1994 08 11	675	(3.6−	2.7−)	1998 09 18	704	0.1+	0.4−	1998 10 14	704	0.8−	0.4−
1994 09 03	809	1.2−	0.1−	1998 09 18	704	0.2+	1.0−	1998 10 15	704	0.5−	0.7+
1994 09 03	809	0.9−	0.0	1998 09 26	704	0.3+	0.3+	1998 10 15	704	0.3−	0.2−
1994 09 03	809	1.2−	0.2−	1998 09 26	704	0.3+	0.1−	1998 10 15	704	1.4−	0.3−
1994 09 04	809	0.1−	0.7+	1998 09 26	704	0.0	0.1−	1998 10 15	704	1.0−	0.9−
1994 09 04	809	0.3−	0.0	1998 09 26	704	0.4−	0.1+				

1994 PP₁₇ = 1998 SU₁₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	25.07781		(2000.0)	P		Q	
<i>n</i>	0.25859819	ω	118.65858	+0.90410084		−0.42701275	
<i>a</i>	2.4399769	Ω	266.62354	+0.38618322		+0.83269041	
<i>e</i>	0.2118915	<i>i</i>	0.92867	+0.18293219		+0.35254334	
<i>P</i>	3.81	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 10	809	0.4+	0.1+	1994 09 04	809	0.5+	0.4+	1998 09 26	704	0.2−	0.4+
1994 08 10	809	1.0+	0.2−	1994 09 04	809	0.7+	1.1+	1998 09 26	704	0.1+	0.9−
1994 08 10	809	0.2−	0.3+	1998 09 18	809	1.6+	0.1+	1998 09 26	704	0.7−	0.8−
1994 08 11	809	0.1+	0.4−	1998 09 18	809	0.5+	0.3−	1998 09 27	704	0.4+	0.2−
1994 08 11	809	0.7−	0.8−	1998 09 18	809	0.0	0.0	1998 09 27	704	0.1−	0.4−
1994 08 11	809	0.3−	0.5−	1998 09 20	809	0.1−	0.2−	1998 09 27	704	0.5−	0.5+
1994 09 03	809	0.9−	0.6−	1998 09 20	809	1.4−	0.3−	1998 09 27	704	0.7+	0.4+
1994 09 03	809	0.8−	0.7−	1998 09 20	809	1.0−	0.1+	1998 09 27	704	0.5+	0.3+
1994 09 03	809	1.0−	0.2−	1998 09 26	704	0.3−	0.3+				
1994 09 04	809	1.2+	0.7+	1998 09 26	704	0.6+	0.9+				

1994 PV₁₉ = 1998 SK₉

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	330.75165		(2000.0)	P		Q	
<i>n</i>	0.26331153	ω	162.27221	−0.04219989		−0.99891617	
<i>a</i>	2.4107720	Ω	290.14280	+0.91411260		−0.03066907	
<i>e</i>	0.1713744	<i>i</i>	1.19856	+0.40325839		−0.03501270	
<i>P</i>	3.74	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.0	0.6−	1998 09 26	704	0.5−	0.2−	1998 10 15	327	0.3+	0.3+
1994 08 12	809	0.3+	0.0	1998 09 26	704	0.4−	0.3−	1998 10 15	327	0.2+	0.2+
1994 08 12	809	0.8+	0.1+	1998 09 26	704	0.4+	0.7−	1998 10 17	327	0.5+	0.3+
1994 08 13	809	0.9−	0.2+	1998 09 26	704	0.8−	0.4−	1998 10 17	327	0.4+	0.5+
1994 08 13	809	0.9−	0.6−	1998 09 26	704	0.0	1.2−	1998 10 17	327	0.3+	0.5+
1994 08 13	809	1.0−	0.9−	1998 09 27	704	0.0	0.5+	1998 10 18	327	0.5+	0.3+
1994 09 05	809	0.0	1.1+	1998 09 27	704	1.1−	0.6+	1998 10 18	327	0.4+	0.1+
1994 09 05	809	1.1+	0.9+	1998 09 27	704	0.1+	0.6+	1998 10 18	327	0.4+	0.1+
1994 09 05	809	0.6+	1.3+	1998 09 27	704	0.0	1.0−	1998 10 20	327	0.7+	0.6+
1994 09 06	809	0.2+	0.1+	1998 09 27	704	1.2−	1.2−	1998 10 20	327	0.0	0.4+
1994 09 06	809	0.5−	0.1+	1998 10 01	327	0.8−	0.3−	1998 10 20	327	0.6+	0.1+
1994 09 06	809	0.5−	0.1+	1998 10 01	327	0.5−	1.1−	1998 10 20	120	0.1+	0.1+
1998 09 17	327	1.8+	0.9−	1998 10 01	327	0.2+	0.4−	1998 10 20	120	0.7−	0.5+
1998 09 17	327	(2.9+	1.1−)	1998 10 14	704	0.6−	0.8−	1998 10 28	704	1.6−	0.1+
1998 09 17	327	(3.0+	1.2−)	1998 10 14	704	0.4+	0.7+	1998 10 28	704	0.2+	1.7−
1998 09 20	327	0.4+	0.2−	1998 10 14	704	(2.8−	0.2+)	1998 10 28	704	1.9−	1.0−
1998 09 20	327	0.2+	0.2−	1998 10 14	704	1.2+	1.7−	1998 10 28	704	0.2+	0.0
1998 09 20	327	0.3+	0.0	1998 10 14	704	0.4+	1.2+	1998 10 29	704	(1.3+	2.9+)
1998 09 23	327	1.2+	0.7−	1998 10 15	704	(2.3−	0.3+)	1998 10 29	704	0.1−	0.6+
1998 09 23	327	1.8+	0.6−	1998 10 15	704	0.9+	0.6+	1998 10 29	704	(0.8−	2.4+)
1998 09 23	327	1.8+	0.3−	1998 10 15	704	0.2+	0.9+	1998 10 29	704	0.8−	0.3+
1998 09 25	327	1.4−	0.5−	1998 10 15	704	0.6−	0.5+	1998 10 29	704	1.2−	1.8+
1998 09 25	327	1.4−	0.6−	1998 10 15	704	0.2−	1.4+				
1998 09 25	327	(2.3−	0.5−)	1998 10 15	327	0.2+	0.3+				

1994 PE₂₀ = 1998 SN₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	44.29413		(2000.0)	P		Q	
<i>n</i>	0.25526022	ω	69.92063	+0.98306503		+0.18199399	
<i>a</i>	2.4612022	Ω	279.58877	−0.17522212		+0.89915888	

Residuals in seconds of arc

1994 08 12	809	0.3+	0.3−	1998 09 15	699	0.5+	0.4−	1998 10 17	327	0.4+	0.3+
1994 08 12	809	0.4+	0.7−	1998 09 21	120	1.5+	0.4−	1998 10 18	327	0.5−	0.3+
1994 08 12	809	0.2−	0.1−	1998 09 22	120	0.1+	0.2+	1998 10 18	327	0.6−	0.0
1994 08 13	809	(2.9+ 3.4+)		1998 09 22	120	0.9−	0.0	1998 10 18	327	0.1−	0.1+
1994 08 13	809	(3.5+ 4.0+)		1998 09 22	120	0.9+	0.2−	1998 10 19	327	0.3−	0.3+
1994 08 13	809	(2.0+ 3.2+)		1998 09 22	120	0.5−	0.0	1998 10 19	327	0.1−	0.3+
1994 09 05	809	0.2+	0.7−	1998 09 22	120	0.8−	0.1−	1998 10 19	327	0.2−	0.0
1994 09 05	809	0.0	0.5−	1998 09 23	120	0.1+	0.1−	1998 10 20	327	0.3−	0.0
1994 09 05	809	0.4−	1.0−	1998 09 24	120	0.9+	0.2+	1998 10 20	327	0.1−	0.0
1994 09 06	809	0.8−	2.0+	1998 09 24	120	0.3+	0.2−	1998 10 20	327	0.3−	0.5−
1994 09 06	809	0.5+	1.6+	1998 10 15	120	0.1+	0.1+	1998 10 20	120	0.8+	0.1−
1994 09 06	809	0.5−	0.9+	1998 10 15	120	0.2−	0.1−	1998 10 20	120	0.5−	0.3+
1998 09 15	699	0.7−	2.0−	1998 10 17	327	0.4+	0.1+				
1998 09 15	699	0.0	0.1+	1998 10 17	327	0.3+	0.5+				

1994 PX₂₀ = 1998 TQ₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	136.82572	(2000.0)		P	Q		
<i>n</i>	0.27105528	ω	286.80955	−0.03716186	+0.99925951		
<i>a</i>	2.3646351	Ω	341.05234	−0.90475800	−0.03788081		
<i>e</i>	0.1051255	<i>i</i>	1.75979	−0.42430172	−0.00674373		
<i>P</i>	3.64	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.3−	0.2+	1994 09 05	809	0.1+	0.7−	1998 10 15	327	0.2−	0.1+
1994 08 12	809	0.2−	1.4−	1994 09 05	809	0.2+	0.5−	1998 10 15	327	0.6+	0.4−
1994 08 12	809	0.1+	0.3−	1994 09 05	809	0.2−	0.7−	1998 10 15	327	0.4+	0.7−
1994 08 13	809	0.0	0.3+	1994 09 06	809	0.4+	0.9+	1998 10 17	327	0.2−	0.3+
1994 08 13	809	0.6+	0.7+	1994 09 06	809	0.0	0.8+	1998 10 17	327	0.5−	0.6+
1994 08 13	809	0.4−	0.7+	1994 09 06	809	0.5−	0.1+	1998 10 17	327	0.2−	0.0

1994 PG₂₄ = 1998 SW₅₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Nakano			
<i>M</i>	330.44648	(2000.0)		P	Q		
<i>n</i>	0.26476025	ω	304.92851	+0.09546138	−0.99523110		
<i>a</i>	2.4019697	Ω	139.57898	+0.92308252	+0.08096463		
<i>e</i>	0.1518388	<i>i</i>	1.77241	+0.37256649	+0.05440398		
<i>P</i>	3.72	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.5+	1.1+	1998 09 14	704	0.6+	0.3+	1998 09 25	699	0.5+	0.8+
1994 08 12	809	0.2−	1.3+	1998 09 14	704	0.9+	1.2−	1998 09 25	699	1.0+	0.8+
1994 08 12	809	0.3+	0.2+	1998 09 14	704	0.5+	0.1−	1998 09 26	704	0.1−	0.7+
1994 08 13	809	0.7+	0.7+	1998 09 17	699	0.8−	0.2+	1998 09 26	704	0.2−	0.4−
1994 08 13	809	0.0	0.7−	1998 09 17	699	1.4+	0.8−	1998 09 26	704	0.4+	0.2+
1994 08 13	809	0.7−	0.4−	1998 09 17	699	0.4−	1.7−	1998 09 26	704	0.4+	0.4−
1994 09 03	809	1.9−	1.3−	1998 09 18	704	0.0	0.6−	1998 09 27	704	0.5−	1.0+
1994 09 03	809	0.8−	1.7−	1998 09 18	704	0.8−	0.1+	1998 09 27	704	0.5−	0.4−
1994 09 03	809	0.2+	1.2−	1998 09 18	704	0.1+	0.3−	1998 09 27	704	0.4+	1.4+
1994 09 04	809	1.1+	0.8+	1998 09 18	704	0.5−	0.2−	1998 09 27	704	0.1−	0.6+
1994 09 04	809	1.0+	1.0+	1998 09 18	704	1.2−	1.4−	1998 09 27	704	1.2−	0.5−
1994 09 04	809	0.1−	0.6+	1998 09 25	699	0.3+	1.5+				

1994 PF₂₅ = 1998 RU₇₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	47.93993	(2000.0)		P	Q		
<i>n</i>	0.25727431	ω	256.13313	+0.94605910	+0.32159808		
<i>a</i>	2.4483402	Ω	85.09601	−0.27992748	+0.87246188		
<i>e</i>	0.1956049	<i>i</i>	2.26231	−0.16313424	+0.36794692		
<i>P</i>	3.83	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 12	809	0.0	0.2+	1998 09 14	704	0.0	0.2−	1998 09 27	704	1.3+	1.0+
1994 08 12	809	1.5−	0.1−	1998 09 17	699	1.8−	1.2+	1998 09 27	704	0.3−	0.6+

1994 08 12	809	1.4−	0.4−	1998 09 17	699	1.0−	1.0+	1998 09 27	704	0.4−	0.6+
1994 08 13	809	1.2+	1.4+	1998 09 17	699	1.1−	0.6+	1998 10 15	704	1.6+	0.1−
1994 08 13	809	0.0	1.6+	1998 09 18	704	0.8−	0.3+	1998 10 15	704	0.3+	0.5+
1994 08 13	809	0.0	1.5+	1998 09 18	704	0.4−	0.8+	1998 10 15	704	0.9−	0.7−
1994 09 05	809	0.9−	1.1−	1998 09 18	704	1.2+	0.2−	1998 10 15	704	0.5−	1.0−
1994 09 05	809	0.3+	1.3−	1998 09 18	704	(2.6− 0.2−)		1998 10 15	704	0.0	0.3+
1994 09 05	809	0.3−	0.4−	1998 09 18	704	0.1+	1.0+	1998 10 19	699	0.7+	0.1+
1994 09 06	809	1.4+	1.5−	1998 09 26	704	0.5+	0.9−	1998 10 19	699	0.5+	0.6−
1994 09 06	809	1.6+	1.9−	1998 09 26	704	0.2−	0.0	1998 10 19	699	0.4+	0.2+
1994 09 06	809	0.9+	1.4−	1998 09 26	704	0.0	0.0	1998 10 28	704	0.6+	1.9−
1994 09 09	675	0.5−	1.2+	1998 09 26	704	0.0	0.4+	1998 10 28	704	1.5−	0.9−
1994 09 09	675	0.1+	0.1−	1998 09 26	704	0.8+	0.8+	1998 10 28	704	1.2+	0.1−
1998 09 14	704	0.1−	0.3−	1998 09 27	704	0.1+	0.4−	1998 10 28	704	1.6−	1.2+
1998 09 14	704	0.4−	1.0−	1998 09 27	704	0.5+	0.2−				

1994 PJ₂₇ = 1998 SM₁₀₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	113.65019	(2000.0)		P	Q		
<i>n</i>	0.26325433	ω	165.88446	−0.11954347	+0.99131687		
<i>a</i>	2.4111212	Ω	97.22849	−0.91617516	−0.08888900		
<i>e</i>	0.1931529	<i>i</i>	3.16509	−0.38253422	−0.09689998		
<i>P</i>	3.74	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 08 12	809	0.3+	0.2−	1994 09 05	809	0.2−	0.8−	1998 09 26	704	0.1−	1.3+
1994 08 12	809	0.1+	0.8−	1994 09 06	809	0.4−	1.6+	1998 09 26	704	1.0+	0.7−
1994 08 12	809	0.6+	0.6−	1994 09 06	809	0.8−	1.3+	1998 09 27	704	0.6−	0.2−
1994 08 13	809	0.9−	0.6+	1994 09 06	809	0.0	0.5+	1998 09 27	704	0.1+	0.2−
1994 08 13	809	0.2−	0.0	1994 09 09	675	1.8+	0.8−	1998 09 27	704	0.5−	0.7+
1994 08 13	809	0.4+	0.5+	1994 09 09	675	0.6−	0.3+	1998 09 27	704	0.5−	0.2−
1994 09 05	809	0.7+	0.2−	1998 09 26	704	0.5−	1.1+	1998 09 27	704	0.6+	1.5−
1994 09 05	809	0.8−	1.0−	1998 09 26	704	0.5+	0.5−				

1994 PE₂₉ = 1998 UG₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	41.27188	(2000.0)		P	Q		
<i>n</i>	0.26839847	ω	298.24054	+0.93406380	−0.35606281		
<i>a</i>	2.3802141	Ω	82.62895	+0.33652201	+0.85209201		
<i>e</i>	0.2135390	<i>i</i>	1.57613	+0.11948952	+0.38361242		
<i>P</i>	3.67	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.3−	0.7−	1994 09 05	809	0.2−	0.6+	1998 10 23	910	0.0	0.2+
1994 08 12	809	0.6−	0.9−	1994 09 05	809	0.9−	0.9+	1998 10 23	910	0.2−	0.3+
1994 08 12	809	1.1−	1.0−	1994 09 05	809	0.5−	0.8+	1998 10 23	910	0.2−	0.1+
1994 08 13	809	1.2+	0.2−	1994 09 06	809	0.6+	0.3+	1998 10 27	910	0.5−	0.4−
1994 08 13	809	1.4+	0.5−	1994 09 06	809	0.3−	0.9+	1998 10 27	910	0.3+	0.3−
1994 08 13	809	0.5+	0.5−	1994 09 06	809	0.2+	0.4+	1998 10 27	910	0.7+	0.5−

1994 PE₃₅ = 1998 TE₃₃

Id. E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	14.60128	(2000.0)		P	Q		
<i>n</i>	0.26998238	ω	234.75902	+0.67288381	−0.73971791		
<i>a</i>	2.3708956	Ω	172.93941	+0.69516928	+0.62921476		
<i>e</i>	0.1600774	<i>i</i>	3.12161	+0.25291709	+0.23855021		
<i>P</i>	3.65	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	0.0	0.1+	1994 09 03	809	0.2−	0.2−	1998 10 14	699	0.0	0.2+
1994 08 10	809	0.9+	0.2−	1994 09 03	809	0.4−	0.2+	1998 10 14	699	0.2−	0.3−
1994 08 10	809	0.4+	0.8+	1994 09 03	809	0.3−	0.9+	1998 10 14	699	0.1+	0.2−
1994 08 11	809	0.1−	0.5−	1994 09 04	809	0.6−	0.2+	1998 10 20	699	0.4+	0.3+
1994 08 11	809	0.2−	0.5−	1994 09 04	809	1.2+	0.1−	1998 10 20	699	0.1−	0.5+
1994 08 11	809	0.9−	0.4+	1994 09 04	809	0.4+	1.0−	1998 10 20	699	0.2−	0.6−

1994 PK₃₅ = 1998 RO₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	67.84702		(2000.0)			P		Q			
<i>n</i>	0.25726449	ω	43.70083			+0.65184859		+0.75757782			
<i>a</i>	2.4484025	Ω	267.01086			−0.70484327		+0.58860399			
<i>e</i>	0.1845808	<i>i</i>	1.96225			−0.27980239		+0.28217228			
<i>P</i>	3.83	<i>H</i>	16.0			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1994 08 10	809	0.8−	0.7+	1998 09 14	704	1.1−	0.9−	1998 09 26	704	0.2+	0.0
1994 08 10	809	0.5+	0.4−	1998 09 14	704	0.7+	0.6+	1998 09 27	704	0.4+	0.2+
1994 08 10	809	0.1+	0.6−	1998 09 14	704	0.1−	1.1−	1998 09 27	704	0.3+	1.8+
1994 08 11	809	0.4+	0.9+	1998 09 18	704	0.4+	0.4−	1998 09 27	704	0.6−	1.4+
1994 08 11	809	0.3−	0.5−	1998 09 18	704	0.1+	0.7−	1998 09 27	704	1.1−	0.6+
1994 08 11	809	0.2−	0.0	1998 09 18	704	0.5+	0.4−	1998 09 27	704	0.4−	1.2+
1994 09 03	809	0.0	0.4+	1998 09 18	704	0.8+	0.6−	1998 10 15	704	1.3−	1.1+
1994 09 03	809	1.3−	0.6−	1998 09 18	704	0.8−	0.7−	1998 10 15	704	(3.0−	2.6+)
1994 09 03	809	1.1−	0.1+	1998 09 26	704	0.8+	0.7−	1998 10 15	704	(2.4−	2.2+)
1994 09 04	809	0.9+	0.1−	1998 09 26	704	0.7+	0.0	1998 10 15	704	(1.7−	2.9+)
1994 09 04	809	0.5+	0.7+	1998 09 26	704	0.5+	1.7−				
1994 09 04	809	0.9+	0.3+	1998 09 26	704	0.2+	0.4−				

1994 PN₃₇ = 1998 SD₁₆₄

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	115.45634		(2000.0)		P		Q				
<i>n</i>	0.27474104	ω	126.41233		+0.24100730		+0.96966730				
<i>a</i>	2.3434392	Ω	157.43061		−0.92097045		+0.24174630				
<i>e</i>	0.1844619	<i>i</i>	6.09531		−0.30615178		+0.03611182				
<i>P</i>	3.59	<i>H</i>	14.8		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1994 08 10	809	0.4+	0.3+	1994 09 03	809	0.4−	1.1−	1998 09 18	809	1.5−	0.7+
1994 08 10	809	0.2+	0.5+	1994 09 03	809	1.0−	1.1−	1998 09 19	809	0.1−	0.5+
1994 08 10	809	0.3−	0.1+	1994 09 04	809	0.3−	1.1−	1998 09 19	809	0.7−	0.0
1994 08 11	809	0.6+	1.6+	1994 09 04	809	0.0	1.0−	1998 09 19	809	0.5−	0.0
1994 08 11	809	0.6+	1.4+	1994 09 04	809	0.5+	1.5−	1998 10 12	699	0.9+	0.7−
1994 08 11	809	0.8+	1.8+	1998 09 18	809	(0.2−	2.7+)	1998 10 12	699	0.8+	0.0
1994 09 03	809	1.2−	0.7−	1998 09 18	809	0.7−	0.9+	1998 10 12	699	1.0+	0.1

1994 PO₃₉ = 1998 RX₆₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	22.23719		(2000.0)		P		Q				
<i>n</i>	0.25868836	ω	63.05409		+0.94653893		−0.32164589				
<i>a</i>	2.4394100	Ω	315.69646		+0.28204055		+0.86223977				
<i>e</i>	0.1627416	<i>i</i>	2.02309		+0.15657964		+0.39126270				
<i>P</i>	3.81	<i>H</i>	16.1		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1994 08 10	809	1.0+	2.0+	1994 09 03	809	0.9+	0.8−	1998 09 18	704	0.3−	0.2−
1994 08 10	809	0.1−	1.4+	1994 09 04	809	0.3−	0.5+	1998 09 26	704	0.8−	0.5+
1994 08 10	809	0.6−	1.7+	1994 09 04	809	0.0	0.3−	1998 09 26	704	0.6−	0.3+
1994 08 11	809	0.3+	1.6−	1994 09 04	809	0.3−	0.2−	1998 09 26	704	1.5−	0.1+
1994 08 11	809	0.8−	1.0−	1998 09 14	704	0.6+	0.1−	1998 09 26	704	1.8−	0.0
1994 08 11	809	1.3−	1.0−	1998 09 14	704	1.1+	0.1−	1998 09 27	704	0.1+	0.4+
1994 09 02	691	(3.6−	1.0−)	1998 09 14	704	1.8−	1.1−	1998 09 27	704	0.6+	0.8+
1994 09 02	691	(4.1−	1.3−)	1998 09 18	704	1.0+	1.3−	1998 09 27	704	0.4+	0.4+
1994 09 02	691	(0.2+	4.2−)	1998 09 18	704	0.9+	0.8+	1998 09 27	704	0.0	0.2+
1994 09 03	809	1.1+	0.7−	1998 09 18	704	1.4+	1.1−	1998 09 27	704	0.6+	0.5+
1994 09 03	809	(1.4+	2.9−)	1998 09 18	704	(2.5−	1.6+)				

1994 PV₃₉ = 1990 MU₁ = 1998 SK₁₀₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	137.84483			(2000.0)	P		Q				
n	0.26840431	ω	330.40710		−0.41019807	+0.91171453					
a	2.3801796	Ω	275.36761		−0.83220293	−0.38436338					
e	0.1816834	i	1.30503		−0.37306277	−0.14505658					
P	3.67 <th>H</th> <td>15.0</td> <th>G</th> <td>0.15</td> <th>U</th> <td>4</td>	H	15.0	G	0.15	U	4				
Residuals in seconds of arc											
1990 06 28	808	0.0	1.7+	1994 08 11	809	0.4+	0.2−	1998 09 26	704	1.1−	1.1−
1990 06 28	808	(2.4−	2.6+)	1994 09 03	809	0.8+	0.8−	1998 09 26	704	0.8−	0.2−
1994 08 10	809	0.5−	0.6−	1994 09 03	809	0.1−	0.4−	1998 09 27	704	1.3+	0.1−
1994 08 10	809	0.4−	0.5+	1994 09 03	809	1.4+	0.6−	1998 09 27	704	0.1+	0.5+
1994 08 10	809	1.3−	0.2+	1994 09 04	809	0.9+	0.9−	1998 09 27	704	0.3+	1.3+
1994 08 10	809	(2.0−	3.1−)	1994 09 04	809	1.0−	0.6−	1998 09 27	704	0.3−	1.5+
1994 08 10	809	(2.0−	2.6−)	1994 09 04	809	0.7+	0.5−	1998 10 14	699	0.2−	1.4+
1994 08 10	809	(2.1−	2.7−)	1998 09 26	704	0.6−	0.1−	1998 10 14	699	0.4−	0.6+
1994 08 11	809	0.7+	0.6+	1998 09 26	704	0.2−	0.0	1998 10 14	699	0.2+	0.2+
1994 08 11	809	0.4−	0.2+	1998 09 26	704	0.4+	0.9−				

1994 RO = 1998 SD₁₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	12.63369		(2000.0)			P		Q	
n	0.25748062	ω	171.04852			+0.79451152		−0.60703000	
a	2.4470322	Ω	226.33964			+0.55573544		+0.73767608	
e	0.1991774	i	1.29186			+0.24476432		+0.29554793	
P	3.83	H	17.0	G	0.15		U	5	
Residuals in seconds of arc									
1994 08 10	809	1.5+	1.0+	1994 09 04	809	1.2+	1.8+	1998 09 26	704 (1.4− 2.9−)
1994 08 10	809	0.3−	0.4−	1994 09 04	809	2.0+	1.1+	1998 09 26	704 (1.4− 2.3−)
1994 08 10	809	1.2−	0.7+	1994 09 07	589	1.3−	1.7−	1998 09 26	704 0.8− 0.2−
1994 08 11	809	0.2−	0.7+	1994 09 07	589	(2.1− 0.1−)		1998 09 26	704 0.6+ 0.3−
1994 08 11	809	0.1−	0.1+	1994 09 07	589	1.4−	0.7−	1998 09 27	704 1.4+ 0.9−
1994 08 11	809	1.5−	0.4−	1994 09 07	589	1.6−	1.7−	1998 09 27	704 0.1− 0.8−
1994 09 03	809	(3.0+ 2.4+)		1994 09 09	589	0.2−	0.6−	1998 09 27	704 1.1+ 0.9+
1994 09 03	809	(3.4+ 3.5+)		1994 09 09	589	0.6+ 0.5−		1998 10 14	691 0.4− 1.1+
1994 09 03	809	(3.1+ 2.5+)		1994 09 09	589	0.5+ 1.0−		1998 10 14	691 0.5− 1.1+
1994 09 04	809	1.8+ 1.8+		1998 09 26	704	1.2− 1.2−		1998 10 14	691 0.3− 0.5+

1994 SZ₁ = 1998 TQ₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	78.04557		(2000.0)			P		Q			
n	0.25787499	ω	279.76058			+0.80611273		+0.59060084			
a	2.4445368	Ω	44.05166			−0.51989794		+0.73673481			
e	0.1872226	i	3.05473			−0.28264536		+0.32926049			
P	3.82	H	17.5		G	0.15		U	5		
Residuals in seconds of arc											
1994 09 27	691	0.6−	0.3+	1994 10 06	691	1.0+	0.1+	1998 10 12	691	0.2+	0.1+
1994 09 27	691	0.4−	0.1−	1994 10 12	691	0.0	0.3−	1998 10 18	691	0.2−	0.1+
1994 09 27	691	0.1−	0.1−	1994 10 12	691	0.3−	0.5−	1998 10 18	691	0.6−	0.0
1994 10 06	691	0.3+	0.6+	1998 10 12	691	0.1+	0.0	1998 10 18	691	0.1+	0.1+
1994 10 06	691	0.1+	0.0	1998 10 12	691	0.3+	0.3−				

1994 SC₆ = 1998 SO₁₄₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	

Residuals in seconds of arc

1994 09 28	691	0.6−	0.2+	1994 10 12	691	0.4−	0.0	1998 09 26	704	0.6−	0.4+
1994 09 28	691	0.2−	0.0	1994 10 12	691	0.4−	0.2+	1998 09 27	704	0.3−	0.2+
1994 09 28	691	0.2−	0.0	1994 10 12	691	0.3−	0.2+	1998 09 27	704	0.5−	1.7+
1994 10 06	691	0.8+	0.5−	1998 09 26	704	0.7−	1.0−	1998 09 27	704	1.1−	0.5+
1994 10 06	691	0.8+	0.1−	1998 09 26	704	1.5+	1.2−	1998 09 27	704	0.9+	1.6+
1994 10 06	691	0.6+	0.1−	1998 09 26	704	0.6+	2.0−				

1994 SN₉ = 1981 SE₄

Id. A. Gnädig, T. B. Spahr

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	176.15368		(2000.0)		P		Q
<i>n</i>	0.30510306	<i>ω</i>	119.06603	+0.51758750			+0.85561898
<i>a</i>	2.1852695	<i>Ω</i>	182.11989	−0.82054805			+0.49490243
<i>e</i>	0.1137339	<i>i</i>	6.82758	−0.24249551			+0.15161712
<i>P</i>	3.23	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 09 25	095	(2.7−	4.4−)	1994 10 04	691	0.3−	0.1−	1994 11 04	675	1.8+	1.0+
1981 10 01	413	0.0	0.3−	1994 10 04	691	0.5−	0.0	1997 08 31	910	1.0+	0.6+
1981 10 01	413	1.6+	0.2+	1994 10 06	691	0.2+	0.4+	1997 08 31	910	1.1+	0.7+
1984 08 21	413	0.8−	0.1+	1994 10 06	691	0.0	0.2−	1997 08 31	910	1.0+	0.7+
1984 08 21	413	0.9−	0.8−	1994 10 06	691	0.3+	0.5−	1997 12 03	910	2.0−	1.3−
1994 09 28	691	0.7−	0.2−	1994 10 13	691	0.0	0.0	1997 12 03	910	2.0−	1.2−
1994 09 28	691	0.7−	0.2−	1994 10 13	691	0.2−	0.1+	1997 12 03	910	1.9−	1.2−
1994 09 28	691	0.8−	0.4−	1994 10 13	691	0.0	0.2+				
1994 10 04	691	0.1−	0.2−	1994 11 04	675	1.1+	1.4+				

1994 TT = 1990 TU₁₅ = 1998 RY₆₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	12.92245		(2000.0)		P		Q
<i>n</i>	0.24270309	<i>ω</i>	33.02136	+0.85355137			−0.52100035
<i>a</i>	2.5453793	<i>Ω</i>	358.36941	+0.45274600			+0.74450676
<i>e</i>	0.2336711	<i>i</i>	5.94610	+0.25781991			+0.41745457
<i>P</i>	4.06	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 13	095	0.8+	1.8−	1998 09 18	704	0.8−	0.0	1998 10 14	699	1.3+	1.2+
1990 10 13	095	0.8+	1.1+	1998 09 18	704	0.0	0.5−	1998 10 15	704	0.5−	0.0
1994 10 02	400	1.2−	1.1+	1998 09 18	704	0.7+	0.4−	1998 10 15	704	0.1−	0.8−
1994 10 02	400	1.7−	0.2−	1998 09 18	704	1.3−	0.2−	1998 10 15	704	0.1+	0.2−
1994 10 03	400	(2.7+	1.3+)	1998 09 18	704	0.3−	0.2−	1998 10 15	704	0.9+	0.9−
1994 10 03	400	0.6+	1.0−	1998 09 26	704	1.5+	0.1+	1998 10 15	704	1.4+	0.6−
1994 10 25	400	0.1−	0.8−	1998 09 26	704	1.0−	0.2+	1998 10 22	589	0.4−	0.2+
1994 10 25	400	(3.2−	0.8+)	1998 09 26	704	0.1−	0.3+	1998 10 22	589	0.2−	0.4+
1998 08 02	699	0.8+	0.2−	1998 09 26	704	0.8+	0.1−	1998 10 22	589	0.3−	0.6+
1998 08 02	699	0.9+	0.6−	1998 09 26	704	0.6−	0.5−	1998 10 22	589	0.2−	0.1−
1998 08 02	699	0.7+	0.6−	1998 09 27	704	0.2+	0.9−	1998 10 23	589	0.2−	0.3+
1998 09 14	704	1.4−	0.9+	1998 09 27	704	0.5−	0.6−	1998 10 23	589	0.7−	0.2−
1998 09 14	704	0.6−	0.7+	1998 09 27	704	0.1+	0.2−	1998 10 23	589	0.7−	0.1+
1998 09 14	704	1.0−	0.5+	1998 09 27	704	0.2−	0.8−	1998 10 23	589	0.8−	0.3+
1998 09 15	699	0.0	0.4+	1998 09 27	704	1.3+	0.1−	1998 10 23	589	0.2−	0.2+
1998 09 15	699	0.3−	0.6+	1998 10 14	699	1.3+	1.3+				
1998 09 15	699	0.1−	0.5+	1998 10 14	699	1.6+	1.0+				

1994 TW = 1998 SG₁₁₂

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	26.19906		(2000.0)		P		Q
<i>n</i>	0.24472002	<i>ω</i>	351.74906	+0.97531661			−0.20416971
<i>a</i>	2.5313744	<i>Ω</i>	20.62255	+0.21376601			+0.77760414
<i>e</i>	0.1779483	<i>i</i>	13.81385	+0.05533173			+0.59468188
<i>P</i>	4.03	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 02	400	0.6+	1.0−	1998 09 26	704	0.1−	0.3+	1998 10 28	704	0.1−	1.6+
1994 10 02	400	1.7−	0.9−	1998 09 26	704	0.3+	0.4+	1998 10 28	704	0.0	0.7+
1994 10 03	400	0.5−	0.5+	1998 09 26	704	0.4+	0.3−	1998 10 28	704	0.0	0.3+
1994 10 03	400	1.9+	0.8−	1998 09 27	704	0.3−	0.0	1998 10 28	704	0.3−	0.7+
1994 10 09	691	0.2−	1.0+	1998 09 27	704	0.3−	0.0	1998 10 28	704	0.0	0.5+
1994 10 09	691	0.4−	0.8+	1998 09 27	704	1.0−	0.1−	1998 10 29	704	(0.3+	2.5−)
1994 10 09	691	0.3−	1.1+	1998 09 27	704	0.5−	0.2−	1998 10 29	704	0.2+	1.3−
1994 11 01	400	0.8−	0.0	1998 09 27	704	0.5−	0.1+	1998 10 29	704	0.6+	1.6−
1994 11 01	400	0.3+	0.5+	1998 10 14	699	1.2+	0.5−	1998 10 29	704	0.3+	1.6−
1998 09 26	704	0.3+	0.0	1998 10 14	699	0.0	0.6+	1998 10 29	704	0.3+	0.2−
1998 09 26	704	0.3+	0.3−	1998 10 14	699	0.4+	0.2−				

1994 TB₃ = 1998 SK₇₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	6.30804		(2000.0)		P		Q
<i>n</i>	0.23494998	<i>ω</i>	12.35546	+0.89291745			−0.44569984
<i>a</i>	2.6010724	<i>Ω</i>	14.62352	+0.38863889			+0.69168471
<i>e</i>	0.1506414	<i>i</i>	14.60027	+0.22728450			+0.56826394
<i>P</i>	4.19	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 10 02	400	0.3−	0.4+	1998 09 26	704	0.7+	0.6−	1998 09 27	704	1.8+	0.2−
1994 10 02	400	0.1+	0.3−	1998 09 26	704	0.4−	0.4−	1998 09 27	704	0.8−	0.6+
1994 10 03	400	0.8+	0.6−	1998 09 26	704	0.9−	0.6+	1998 09 27	704	0.4+	1.0−
1994 10 03	400	0.1+	0.5+	1998 09 26	704	1.6−	0.1+	1998 09 27	704	1.6+	0.5−
1994 10 27	400	0.4+	0.0	1998 09 26	704	1.3−	1.5+				
1994 10 27	400	1.2−	0.1−	1998 09 27	704	0.5+	0.2−				

1994 UQ = 1998 UY₂₃

Id. E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	135.96468		(2000.0)		P		Q
<i>n</i>	0.22472375	<i>ω</i>	197.46450	−0.19847174			+0.95749285
<i>a</i>	2.6793949	<i>Ω</i>	61.53117	−0.86841054			−0.07278052
<i>e</i>	0.1286263	<i>i</i>	13.77547	−0.45439201			−0.27912441
<i>P</i>	4.39	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 31	411	0.4+	1.4+	1994 11 09	411	0.1+	0.1−	1998 10 17	699	0.0	0.2−
1994 10 31	411	0.1+	0.7+	1994 11 09	411	0.0	0.0	1998 10 17	699	0.2+	0.1+
1994 11 01	411	0.1+	0.0	1994 11 27	411	0.6−	0.4+	1998 10 20	699	0.1−	0.0
1994 11 01	411	0.0	1.1−	1994 11 27	411	0.3−	0.5+	1998 10 20	699	0.5−	0.2−
1994 11 01	411	0.9−	0.7−	1994 11 28	675	0.8+	0.1+	1998 10 20	699	0.3+	0.2+
1994 11 03	411	0.4+	0.0	1994 11 28	675	0.1+	0.9−				
1994 11 03	411	0.2−	0.4−	1998 10 17	699	0.1+	0.1+				

1994 UR₆ = 1989 AX₈ = 1998 UK₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	319.65005		(2000.0)		P		Q
<i>n</i>	0.30150796	<i>ω</i>	262.27807	−0.98973405			+0.13755565
<i>a</i>	2.2026062	<i>Ω</i>	285.62228	−0.11003185			−0.90659398
<i>e</i>	0.1532490	<i>i</i>	2.30861	−0.09121132			−0.39895589
<i>P</i>	3.27	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 01 04	399	2.8+	1.4+	1994 11 05	691	0.2−	0.4−	1994 11 11	691	0.1−	0.2−
1989 01 04	399	1.4+	0.7+	1994 11 05	691	0.7+	0.1−	1998 10 20	910	0.3+	0.5+
1989 01 04	399	2.3−	0.7−	1994 11 05	691	0.4−	0.1−	1998 10 20	910	0.0	0.6+
1989 01 04	399	1.9−	1.3−	1994 11 09	691	0.2+	0.3+	1998 10 20	910	0.0	0.5+
1994 10 28	691	0.1+	0.2+	1994 11 09	691	0.5+	0.3−	1998 10 21	910	0.0	0.5−
1994 10 28	691	0.1−	0.3+	1994 11 11	691	0.3−	0.1+	1998 10 21	910	0.3−	0.5−
1994 10 28	691	0.1−	0.3+	1994 11 11	691	0.2−	0.1−	1998 10 21	910	0.1−	0.8−

1994 UQ₇ = 1998 UD₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	189.70717		(2000.0)	P		Q	
<i>n</i>	0.24375840	ω	213.88123	−0.77248459	+0.63495823		
<i>a</i>	2.5380275	Ω	5.56608	−0.55799314	−0.67133829		
<i>e</i>	0.0401142	<i>i</i>	5.78540	−0.30316862	−0.38227340		
<i>P</i>	4.04	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 10 28	691	0.3+	0.1+	1994 11 05	691	0.3−	0.4+	1998 10 19	910	0.2−	0.3+
1994 10 28	691	0.0	0.2−	1994 11 07	691	0.1+	0.2+	1998 10 20	910	0.4+	0.6−
1994 10 28	691	0.1−	0.0	1994 11 07	691	0.3+	0.5−	1998 10 20	910	0.0	0.1−
1994 11 05	691	0.0	0.2+	1994 11 07	691	0.2+	0.3−	1998 10 20	910	0.1−	0.0
1994 11 05	691	0.4−	0.2+	1998 10 19	910	0.3−	0.4+	1998 10 20	910	0.2+	0.0

1994 UE₈ = 1998 SN₉₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	137.28604		(2000.0)	P		Q	
<i>n</i>	0.23062201	ω	339.60023	−0.46921168	+0.88122695		
<i>a</i>	2.6335135	Ω	262.37918	−0.80199369	−0.45237324		
<i>e</i>	0.1878032	<i>i</i>	3.31222	−0.36965731	−0.13710398		
<i>P</i>	4.27	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 10 28	691	0.3+	0.0	1994 11 10	691	0.1−	0.3+	1998 09 27	704	0.4+	0.9−
1994 10 28	691	0.2+	0.3−	1994 11 10	691	0.3−	0.1+	1998 09 27	704	0.7+	0.0
1994 10 28	691	0.2+	0.5−	1998 09 26	704	2.1−	1.8+	1998 09 27	704	0.9+	0.8−
1994 11 05	691	0.0	0.1−	1998 09 26	704	0.1+	0.2−	1998 09 27	704	1.2+	1.2−
1994 11 05	691	0.3−	0.1+	1998 09 26	704	0.5−	0.7−	1998 09 27	704	0.4−	0.4+
1994 11 05	691	0.1+	0.4+	1998 09 26	704	0.0	0.5+				
1994 11 10	691	0.2−	0.1−	1998 09 26	704	0.4−	1.1+				

1994 UW₉ = 1998 SA₁₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	34.17256		(2000.0)	P		Q	
<i>n</i>	0.24370144	ω	47.03079	+0.99502751	−0.09698294		
<i>a</i>	2.5384230	Ω	318.51942	+0.07847412	+0.90362064		
<i>e</i>	0.2442432	<i>i</i>	1.96259	+0.06133570	+0.41720985		
<i>P</i>	4.04	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 10 28	691	0.1−	0.2+	1994 11 10	691	0.4+	0.4−	1998 09 27	704	0.6+	0.0
1994 10 28	691	0.2+	0.0	1998 09 26	704	0.8+	0.2−	1998 09 27	704	0.5−	0.6+
1994 10 28	691	0.0	0.3+	1998 09 26	704	1.0+	0.5+	1998 09 27	704	0.9−	0.6−
1994 11 05	691	0.3−	0.4+	1998 09 26	704	0.5+	0.4+	1998 10 17	699	0.1+	0.1+
1994 11 05	691	0.7−	0.3+	1998 09 26	704	0.0	0.1−	1998 10 17	699	0.2+	0.9−
1994 11 05	691	0.6−	0.2+	1998 09 26	704	0.4−	0.3−	1998 10 17	699	0.2+	0.2−
1994 11 10	691	0.4+	0.2−	1998 09 27	704	0.6−	0.1+				
1994 11 10	691	0.5+	0.3−	1998 09 27	704	0.7−	0.1+				

1994 VE₁ = 1998 TZ₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	47.52548		(2000.0)	P		Q	
<i>n</i>	0.24183392	ω	192.05478	+0.99899629	−0.04423248		
<i>a</i>	2.5514745	Ω	170.47192	+0.04382024	+0.93238468		
<i>e</i>	0.1615074	<i>i</i>	2.44583	+0.00928433	+0.35875101		
<i>P</i>	4.08	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 11 01	400	0.6−	1.8−	1994 11 08	411	0.5−	0.1−	1998 10 15	120	0.2+	0.4+
1994 11 01	400	0.2−	0.9−	1994 11 10	411	0.1−	0.5−	1998 10 16	120	0.1+	0.1+
1994 11 03	400	0.5+	0.4−	1994 11 10	411	0.4−	0.4−	1998 10 16	120	0.7+	0.4−
1994 11 03	400	(3.2+	0.5+)	1994 11 24	411	0.4+	0.5+	1998 10 20	120	0.2−	0.2+

1994 11 04	411	0.2+	0.4−	1994 11 24	411	0.3+	0.2+	1998 10 20	120	0.4−	0.3+
1994 11 04	411	0.3+	0.1−	1995 02 03	691	0.1−	0.5+	1998 10 28	120	0.1−	0.2+
1994 11 05	675	0.6+	0.6+	1995 02 03	691	0.0	0.2+	1998 10 28	120	0.2−	0.5+
1994 11 05	675	0.2+	0.5+	1995 02 03	691	0.1−	0.3+	1998 11 06	120	0.4−	0.1+
1994 11 08	411	0.2−	0.1+	1998 10 15	120	0.2+	0.3+	1998 11 06	120	0.4−	0.4+

1994 VH₁ = 1998 SE₇₄

Id. B. G. Marsden, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	271.77483		(2000.0)	P		Q	
<i>n</i>	0.23038739	ω	53.97157	−0.77622044	−0.62638627		
<i>a</i>	2.6353011	Ω	87.13333	+0.55293640	−0.73090851		
<i>e</i>	0.0594395	<i>i</i>	4.10924	+0.30289135	−0.27094833		
<i>P</i>	4.28	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 11 04	411	0.2−	0.2+	1998 09 21	809	0.7+	1.0−	1998 10 11	699	0.2+	1.0+
1994 11 04	411	0.2−	0.2+	1998 09 23	809	0.8+	0.4−	1998 10 11	699	0.0	0.5+
1994 11 05	675	0.4+	0.2−	1998 09 23	809	0.2+	0.9−	1998 10 14	704	0.7−	0.4−
1994 11 05	675	0.3+	0.8+	1998 09 23	809	0.4−	0.8−	1998 10 14	704	0.1−	0.1−
1994 11 08	411	0.1−	0.4−	1998 09 26	704	0.2−	0.2−	1998 10 14	704	0.1+	0.5+
1994 11 08	411	0.3+	0.2+	1998 09 26	704	0.5+	0.6−	1998 10 14	704	0.6−	0.3+
1994 11 10	411	1.4+	0.0	1998 09 26	704	0.2+	0.5−	1998 10 15	704	0.2−	0.5+
1994 11 10	411	0.1−	0.2+	1998 09 26	704	1.2−	0.2−	1998 10 15	704	0.4−	0.7+
1994 11 24	411	0.5−	0.7−	1998 09 26	704	0.3−	0.7+	1998 10 15	704	0.7−	0.9+
1994 11 24	411	0.1−	0.3−	1998 09 27	704	0.2+	0.4−	1998 10 15	704	0.4+	0.3+
1994 11 25	411	0.0	0.1−	1998 09 27	704	0.2−	0.2−	1998 10 15	704	(2.0−	0.1+)
1994 11 25	411	0.8−	0.3−	1998 09 27	704	0.8−	0.6+	1998 10 28	704	0.8+	0.1+
1994 11 25	411	0.2−	0.2+	1998 09 27	704	1.1−	0.7+	1998 10 28	704	0.1−	0.2+
1994 11 27	411	0.1−	0.4−	1998 09 27	704	0.1−	0.8+	1998 10 28	704	0.7−	0.2−
1994 11 27	411	0.1+	0.6−	1998 09 29	704	(3.4+	1.1−)	1998 10 29	704	0.0	0.6−
1998 09 18	699	0.4−	1.1+	1998 09 29	704	0.8+	1.9−	1998 10 29	704	0.4−	0.4−
1998 09 18	699	0.4−	0.9+	1998 09 29	704	1.0+	1.6−	1998 10 29	704	0.7+	0.2+
1998 09 18	699	0.7−	1.4+	1998 09 29	704	0.2+	0.1−	1998 10 29	704	0.3−	0.1−
1998 09 21	809	1.2+	1.1−	1998 09 29	704	0.1−	0.1+	1998 10 29	704	0.3+	1.1+
1998 09 21	809	0.6+	1.2−	1998 10 11	699	0.9+	0.4+				

1994 VR₂

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	256.96083		(2000.0)	P		Q	
<i>n</i>	0.24262666	ω	123.61810	−0.95634113	−0.25035584		
<i>a</i>	2.5459138	Ω	42.44160	+0.13276886	−0.83177802		
<i>e</i>	0.0944304	<i>i</i>	12.91036	+0.26035375	−0.49544654		
<i>P</i>	4.06	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 26	399	(1.8−	2.9+)	1994 11 07	399	0.3−	0.4+	1994 12 03	675	0.8+	0.9−
1994 10 26	399	(1.6−	2.6+)	1994 11 10	399	(4.2−	0.1+)	1998 09 18	699	0.5+	0.2−
1994 11 01	400	0.2−	0.9−	1994 11 10	399	(4.1−	0.3+)	1998 09 18	699	0.3−	0.3−
1994 11 01	400	1.2+	0.5−	1994 11 28	675	1.2+	0.4−	1998 09 18	699	0.0	0.5−
1994 11 03	400	0.3−	0.4−	1994 11 28	675	0.8+	0.9−	1998 10 14	699	0.2+	0.6+
1994 11 03	400	0.3+	1.0+	1994 11 29	691	0.7−	0.0	1998 10 14	699	0.2+	0.3+
1994 11 04	675	0.1−	0.8+	1994 11 29	691	0.9−	0.0	1998 10 14	699	0.6+	0.5+
1994 11 04	675	0.4−	0.6+	1994 11 29	691	1.1−	0.2+	1998 10 20	699	0.2−	0.1−
1994 11 06	675	0.6−	0.1−	1994 11 30	675	0.9−	0.1−	1998 10 20	699	0.7−	0.1−
1994 11 06	675	1.0+	0.1−	1994 11 30	675	0.6+	0.2+	1998 10 20	699	0.6−	0.0
1994 11 07	399	(2.5−	0.3+)	1994 12 03	675	0.0	0.7+				

1994 VY₆ = 1998 SN₁₁₆

Id. G. V. Williams, R. A. Koff (1998 observations), E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	31.01630		(2000.0)	P	Q
<i>n</i>	0.24199278	ω	101.65327	+0.98800118	-0.14511297
<i>a</i>	2.5503578	Ω	266.70694	+0.11283715	+0.91197298
<i>e</i>	0.2780280	<i>i</i>	3.03602	+0.10545830	+0.38372842
<i>P</i>	4.07	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 10 25	399	0.4-	0.6+	1998 09 26	704	0.2+	1.2+	1998 10 13	713	0.6-	0.6+
1994 10 25	399	0.3+	0.3-	1998 09 26	704	0.3-	1.2+	1998 10 13	713	0.2+	0.4-
1994 11 07	399	0.7+	0.4+	1998 09 26	704	0.8-	0.8-	1998 10 13	713	0.3+	0.8-
1994 11 07	399	0.2+	0.0	1998 09 27	704	0.6+	0.2+	1998 10 14	713	0.2+	0.7-
1994 11 10	399	0.3-	1.3-	1998 09 27	704	0.3+	0.3+	1998 10 14	713	0.6+	0.0
1994 11 10	399	0.5-	0.7+	1998 09 27	704	0.3-	0.1-	1998 10 14	713	0.1-	0.7+
1998 09 26	704	0.4+	0.4-	1998 09 27	704	0.3+	1.0-	1998 10 14	713	0.7-	0.6+
1998 09 26	704	0.2-	0.3-	1998 09 27	704	0.2-	0.4-				

1994 WF₁

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	358.56872		(2000.0)	P	Q
<i>n</i>	0.19930080	ω	97.60017	+0.99449969	-0.10338454
<i>a</i>	2.9026635	Ω	268.33500	+0.08825044	+0.91344725
<i>e</i>	0.0934598	<i>i</i>	0.96260	+0.05641114	+0.39360608
<i>P</i>	4.95	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 11 27	411	0.5-	0.2-	1994 12 04	411	0.6-	0.5+	1998 09 21	699	0.8-	0.1+
1994 11 27	411	0.3+	0.7+	1994 12 04	098	0.2+	0.3+	1998 09 21	699	0.5+	0.2-
1994 11 28	411	0.5+	0.0	1994 12 24	411	0.1-	0.3-	1998 09 21	699	0.1+	0.8-
1994 11 28	411	0.6-	0.3+	1994 12 24	411	1.1+	0.0	1998 10 20	699	0.4-	0.4-
1994 12 04	098	0.8+	0.6-	1998 08 23	699	0.3-	0.6+	1998 10 20	699	0.6+	0.9-
1994 12 04	098	0.8-	0.7-	1998 08 23	699	0.4-	0.5+	1998 10 20	699	0.4+	0.1-
1994 12 04	411	0.3-	0.5+	1998 08 23	699	0.3+	0.8+				

1994 WJ₁

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	344.18705		(2000.0)	P	Q
<i>n</i>	0.23284642	ω	19.61587	+0.10057250	-0.96589158
<i>a</i>	2.6167145	Ω	65.22868	+0.87414038	-0.02875345
<i>e</i>	0.2179146	<i>i</i>	15.23621	+0.47514606	+0.25734547
<i>P</i>	4.23	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1994 11 27	411	0.2-	0.1+	1994 12 14	411	0.3+	0.7+	1998 09 28	699	0.3-	0.6+
1994 11 27	411	0.1-	0.2-	1994 12 14	411	0.9-	0.3+	1998 09 28	699	0.1+	0.7-
1994 11 28	411	0.1+	0.2-	1994 12 22	411	0.5-	1.4+	1998 09 28	699	1.0-	0.6+
1994 11 28	411	0.1+	0.3-	1994 12 22	411	1.2+	0.1-	1998 10 17	699	0.3-	0.2-
1994 12 04	411	0.2+	0.5-	1995 01 05	411	0.3+	1.2-	1998 10 17	699	0.9+	0.2-
1994 12 04	411	0.0	0.2+	1995 01 05	411	0.7-	0.2-	1998 10 17	699	0.6+	0.1-

1994 WW₇ = 1990 SL₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	304.99912		(2000.0)	P	Q
<i>n</i>	0.28045992	ω	27.71700	-0.98422473	+0.17392670
<i>a</i>	2.3114731	Ω	162.21036	-0.17551206	-0.93674614
<i>e</i>	0.1120850	<i>i</i>	6.09167	-0.02229797	-0.30373702
<i>P</i>	3.51	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1990 09 25	809	0.1+	0.6-	1994 11 28	691	0.5+	0.5+	1994 12 10	691	0.8-	0.6-
1990 09 25	809	1.2+	0.3+	1994 12 03	691	0.1+	0.2+	1997 09 04	910	0.1-	0.1+
1990 09 25	809	1.0-	0.3-	1994 12 03	691	0.2+	0.1+	1997 09 05	910	0.1-	0.1+

1994 11 28	691	0.3+	0.0	1994 12 10	691	0.5-	0.3-	1997 09 05	910	0.0	0.3+
1994 11 28	691	0.1+	0.4+	1994 12 10	691	0.0	0.2-				

1994 XQ₄ = 1998 SF₆₅

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	19.09711		(2000.0)	P	Q
<i>n</i>	0.21655801	ω	311.93907	+0.86664148	-0.49393678
<i>a</i>	2.7463331	Ω	77.77253	+0.47643179	+0.77736837
<i>e</i>	0.1194652	<i>i</i>	4.13202	+0.14813945	+0.38951877
<i>P</i>	4.55	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 12 07	411	0.7-	0.8+	1995 01 06	411	0.2+	0.8-	1998 10 14	704	(1.4+	2.2-)
1994 12 07	411	0.3-	1.4+	1998 09 20	809	0.3-	0.9+	1998 10 15	704	0.2+	0.4-
1994 12 07	411	0.8-	0.6+	1998 09 20	809	1.1-	0.4+	1998 10 15	704	0.6+	0.3-
1994 12 09	411	0.4-	1.4+	1998 09 20	809	1.0-	1.2+	1998 10 15	704	0.2+	1.4-
1994 12 09	411	0.2-	0.6+	1998 09 21	809	1.1-	0.2+	1998 10 15	704	0.6+	0.3-
1995 01 01	411	0.8-	1.2-	1998 09 21	809	2.0-	0.2+	1998 10 28	704	1.1-	0.1-
1995 01 01	411	0.2+	0.8-	1998 09 21	809	(2.4-	0.4+)	1998 10 28	704	0.8-	0.9-
1995 01 02	010	(0.3+	3.6+)	1998 10 11	699	0.9+	0.4+	1998 10 28	704	0.7+	0.3-
1995 01 02	010	(0.1+	2.6+)	1998 10 11	699	0.8+	0.2+	1998 10 28	704	0.9-	0.3-
1995 01 03	010	0.3+	0.3-	1998 10 11	699	0.3+	0.4+	1998 10 29	704	0.2+	0.3-
1995 01 04	010	0.8+	0.3+	1998 10 14	704	1.2+	0.3+	1998 10 29	704	0.2+	0.1-
1995 01 05	411	0.4+	0.4-	1998 10 14	704	0.4+	0.6+	1998 10 29	704	0.8-	0.9+
1995 01 05	411	0.7+	0.2-	1998 10 14	704	0.7+	1.1-	1998 10 29	704	0.2-	0.5+
1995 01 06	411	0.6+	0.4-	1998 10 14	704	1.7+	1.7-	1998 10 29	704	0.5+	0.8+

1994 YM₂ = 1989 SB₁₃ = 1991 EQ

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	324.37844		(2000.0)	P	Q
<i>n</i>	0.21864208	ω	213.33085	+0.10582456	-0.97996744
<i>a</i>	2.7288534	Ω	231.17947	+0.95310562	+0.14833911
<i>e</i>	0.1243703	<i>i</i>	12.50638	+0.28353279	-0.13288839
<i>P</i>	4.51	<i>H</i>	12.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1989 09 28	493	(1.2-	5.6-)	1991 03 13	372	1.1-	1.4-	1995 01 06	399	0.1+	0.2-
1989 09 28	493	0.7+	0.3-	1994 12 25	399	0.3-	0.5-	1998 10 18	699	0.2-	0.5+
1989 10 03	493	(0.2+	4.6-)	1994 12 25	399	1.6+	0.0	1998 10 18	699	0.2-	0.7+
1989 10 03	493	0.2-	1.5-	1994 12 30	399	0.1-	0.7+	1998 10 18	699	0.1-	0.9+
1991 03 09	372	0.3-	1.9+	1994 12 30	399	0.7-	0.2+				
1991 03 09	372	1.6+	0.0	1995 01 06	399	0.7-	0.7-				

1995 BJ₁₁ = 1996 KM₄

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	132.49359		(2000.0)	P	Q
<i>n</i>	0.18747816	ω	156.64014	+0.42205848	+0.90523813
<i>a</i>	3.0234463	Ω	138.27904	-0.84296318	+0.41179877
<i>e</i>	0.1390239	<i>i</i>	4.23084	-0.33358616	+0.10471727
<i>P</i>	5.26	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1995 01 29	691	0.3+	0.2+	1995 02 01	691	0.1+	0.2-	1996 05 22	809	0.5-	0.6+
1995 01 29	691	0.0	0.1+	1995 02 07	691	0.6+	0.5+	1996 05 22	809	0.2-	0.7+
1995 01 29	691	0.2-	0.0	1995 02 07	691	0.4-	0.4-	1996 05 24	809	0.1-	0.7-
1995 02 01	691	0.1-	0.0	1995 02 07	691	0.5-	0.3-	1996 05 24	809	0.3-	0.4-
1995 02 01	691	0.2+	0.0	1996 05 22	809	0.4+	0.0	1996 05 24	809	0.7+	0.1-

1995 BP₁₁ = 1996 KG₅

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	133.67553		(2000.0)	P		Q	
<i>n</i>	0.18668514	ω	174.63988	+0.42453953	+0.90446114		
<i>a</i>	3.0320024	Ω	120.47575	-0.83247282	+0.40792335		
<i>e</i>	0.1463231	<i>i</i>	2.75517	-0.35602696	+0.12469395		
<i>P</i>	5.28	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1995 01 29	691	0.1+	0.4-	1995 02 01	691	0.6+	0.2+
1995 01 29	691	0.3-	0.3+	1995 02 07	691	0.3-	0.6+
1995 01 29	691	0.1-	0.1+	1995 02 07	691	0.0	0.1-
1995 02 01	691	0.2+	0.3-	1995 02 07	691	0.1+	0.3-
1995 02 01	691	0.3-	0.2-	1996 05 22	809	0.0	1.0+
1996 05 22	809	0.6+	0.2+	1996 05 22	809	1.1+	0.7+
1996 05 22	809	0.6+	0.2+	1996 05 24	809	0.6-	0.5-
1996 05 24	809	0.1-	1.2-	1996 05 24	809	0.1-	0.3+
1996 05 24	809	0.3+	0.6-				

1995 CC = 1998 RJ₇₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	324.12647		(2000.0)	P		Q	
<i>n</i>	0.17583369	ω	338.68835	+0.36961659	-0.92668009		
<i>a</i>	3.1554986	Ω	89.56753	+0.86206280	+0.31461329		
<i>e</i>	0.0720693	<i>i</i>	3.90918	+0.34674385	+0.20562706		
<i>P</i>	5.61	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1995 01 31	411	0.4-	0.2+	1998 09 14	704	0.2-	0.8+
1995 01 31	411	0.4+	1.1+	1998 09 14	704	0.4-	1.5-
1995 02 01	411	0.2+	0.2-	1998 09 14	704	0.3+	0.4+
1995 02 01	411	1.0+	0.5+	1998 09 18	704	0.6+	2.2-
1995 02 06	411	0.0	1.1-	1998 09 18	704	0.1-	1.4-
1995 02 06	411	0.2+	0.9-	1998 09 18	704	0.6-	0.2-
1995 02 10	411	0.6-	0.3-	1998 09 18	704	1.0-	0.6+
1995 02 10	411	0.3-	0.6-	1998 09 18	704	0.7+	0.1+
1995 02 19	411	1.1-	1.7+	1998 09 26	704	0.9+	0.6+
1995 02 19	411	0.6+	0.5-	1998 09 26	704	0.3+	0.3+
1998 09 14	704	0.2-	0.8+	1998 09 26	704	0.5-	0.2-
1998 09 26	704	1.0+	1.4-	1998 09 26	704	0.3-	0.4-
1998 09 26	704	0.1-	0.5+	1998 09 27	704	0.6-	0.7+
1998 09 27	704	0.4+	1.2+	1998 09 27	704	0.4-	1.4+
1998 09 27	704	0.0	0.5+				

1995 DL = 1998 TF₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	222.70271		(2000.0)	P		Q	
<i>n</i>	0.17430525	ω	202.29467	-0.98098124	+0.19356414		
<i>a</i>	3.1739183	Ω	348.83701	-0.16491974	-0.87043281		
<i>e</i>	0.0940963	<i>i</i>	4.27974	-0.10235865	-0.45263633		
<i>P</i>	5.65	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1995 02 21	411	1.0+	0.2-	1995 03 11	411	0.2-	0.0
1995 02 21	411	0.3+	0.3+	1995 03 11	411	0.2-	0.3+
1995 02 22	411	1.2-	0.0	1995 03 21	411	0.7-	0.5-
1995 02 22	411	0.5-	0.2+	1995 03 21	411	0.9+	0.2-
1995 02 26	411	0.1-	1.0-	1998 10 14	327	0.4+	0.2-
1995 02 26	411	0.2-	1.0+	1998 10 14	327	0.2+	0.8-
1995 03 07	411	0.6-	0.5+	1998 10 14	327	0.4+	0.9-
1995 03 07	411	1.3+	0.5-	1998 10 15	327	0.0	0.3-
1998 10 15	327	0.0	0.3-	1998 10 15	327	0.3+	0.8+
1998 10 15	327	0.0	0.5+	1998 10 15	327	0.0	0.0
1998 10 18	888	0.4-	0.0	1998 10 18	888	0.2-	0.6+
1998 10 18	888	0.2+	0.2+	1998 10 18	888	0.2+	0.2+
1998 10 18	888	0.3-	0.0	1998 10 18	888	0.3-	0.0
1998 10 18	888	0.2+	0.0	1998 10 18	888	0.2+	0.1+

1995 DE₉ = 1993 QZ₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	151.15797		(2000.0)	P		Q	
<i>n</i>	0.27579399	ω	15.45919	+0.85938473	-0.51117410		
<i>a</i>	2.3374707	Ω	15.30224	+0.46392542	+0.76910906		
<i>e</i>	0.2044795	<i>i</i>	2.73796	+0.21501418	+0.38363041		
<i>P</i>	3.57	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 08 20	809	0.2+	0.7+	1993 08 24	809	1.1+	1.2-
1993 08 20	809	0.1+	1.3+	1995 02 24	691	0.2-	0.1+
1993 08 20	809	0.9-	1.2+	1995 02 24	691	0.0	0.2-
1995 03 02	691	0.1+	0.4-	1995 03 02	691	0.0	0.1+
1995 03 02	691	0.0	0.1+	1995 03 07	691	0.4-	0.8-

1993 08 24	809	0.2+	1.3-	1995 02 24	691	0.4+	0.4+
1993 08 24	809	0.7-	0.9-	1995 03 02	691	0.3-	1.1+
1995 03 07	691	0.2+	0.7-				

1995 DM₉ = 1994 AE₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	130.56577		(2000.0)	P		Q	
<i>n</i>	0.18198876	ω	236.15046	+0.68819868	+0.72482191		
<i>a</i>	3.0839430	Ω	77.37138	-0.65439837	+0.63910299		
<i>e</i>	0.2016522	<i>i</i>	1.87170	-0.31328159	+0.25725586		
<i>P</i>	5.42	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1994 01 14	691	0.2+	0.2-	1994 01 19	691	0.3-	0.5-
1994 01 14	691	0.4-	0.3+	1995 02 24	691	0.1-	0.2+
1994 01 14	691	0.2+	0.5+	1995 02 24	691	0.3+	1.5-
1994 01 19	691	0.0	0.1+	1995 02 24	691	0.0	0.7-
1994 01 19	691	0.3+	0.1-	1995 03 02	691	0.2-	0.2+
1995 03 02	691	0.1+	0.6+	1995 03 02	691	1.5-	0.9+
1995 03 02	691	1.5-	0.9+	1995 03 07	691	0.4+	0.8+
1995 03 07	691	0.5+	0.6-	1995 03 07	691	0.5+	0.0
1995 03 07	691	0.5+	0.0				

1995 EA₈ = 1998 SO₁₁₁ = 1998 SK₁₄₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	329.45247		(2000.0)	P		Q	
<i>n</i>	0.19005845	ω	283.95095	+0.05027606	-0.99872995		
<i>a</i>	2.9960193	Ω	163.16619	+0.92064931	+0.04506875		
<i>e</i>	0.2033438	<i>i</i>	0.65058	+0.38713972	+0.02252336		
<i>P</i>	5.19	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1995 03 12	557	0.3+	0.4-	1995 04 22	557	0.4+	0.8+
1995 03 12	557	0.4+	0.3-	1995 04 22	557	0.0	1.0+
1995 03 12	557	0.5+	0.5-	1995 04 23	557	0.1-	0.6+
1995 03 12	557	0.4-	0.2+	1995 04 23	557	0.8+	0.6+
1995 03 20	557	0.0	0.8-	1995 04 23	557	0.4+	0.8+
1995 03 20	557	0.1-	0.2-	1997 07 12	557	0.8-	0.7+
1995 03 20	557	0.1+	0.2+	1997 07 13	557	0.2-	0.4+
1995 03 20	557	0.0	0.6+	1997 07 13	557	0.7+	0.1+
1995 03 23	557	0.0	0.3+	1998 09 24	120	0.4+	0.9-
1995 03 23	557	0.8-	0.3+	1998 09 24	120	(3.1-	0.0)
1995 03 24	557	0.5-	0.1+	1998 09 24	120	0.1-	0.1+
1995 03 24	557	0.1-	0.1-	1998 09 26	704	0.1+	0.3-
1995 03 24	557	0.1+	0.2+	1998 09 26	704	0.3+	0.1-
1995 04 21	557	0.5+	0.2+	1998 09 26	704	0.3-	0.1+
1995 04 21	557	0.1+	0.2+	1998 09 26	704	0.8-	1.0+
1995 04 22	557	0.2+	0.4+	1998 09 26	704	0.2-	0.4+
1998 09 27	704	0.1+	0.4+	1998 09 27	704	0.1+	0.4+
1998 09 27	704	0.1+	0.1-	1998 09 27	704	1.3-	0.7+
1998 09 27	704	0.0	0.8-	1998 09 27	704	0.0	0.8-
1998 10 13	120	0.1+	0.2+	1998 10 13	120	0.4-	0.5-
1998 10 13	120	0.4-	0.5-	1998 10 17	691	(2.4-	0.4-)
1998 10 17	691	(2.4-	0.6-)	1998 10 17	691	(2.4-	0.6-)
1998 10 17	691	(2.7-	1.0-)	1998 10 17	691	(2.7-	1.0-)
1998 10 26	120	1.4-	0.2-	1998 10 26	120	1.4-	0.2-
1998 10 26	120	0.4+	1.2+	1998 10 26	120	0.4+	1.2+
1998 10 26	120	0.2+	1.5+	1998 10 26	120	0.2+	1.5+
1998 10 26	120	0.6+	0.3+				

1995 ED₉ = 1987 UN₈ = 1998 SC₁₃₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	343.36116		(2000.0)		P		Q				
n	0.17692632	ω	263.21811		+0.42060182		-0.90654360				
a	3.1424938	Ω	161.78116		+0.87093661		+0.39244316				
e	0.1326699	i	6.55234		+0.25409356		+0.15545760				
P	5.57	H	12.9	G	0.15	U	4				
Residuals in seconds of arc											
1987 10 23	095	0.2+	0.7-	1998 09 19	888	0.4+	0.8-	1998 09 27	704	0.3-	0.8+
1995 02 24	033	0.0	0.3-	1998 09 19	888	0.3+	1.4-	1998 09 27	704	0.8-	0.4+
1995 03 05	033	0.3+	0.0	1998 09 26	704	0.1+	0.4+	1998 09 27	704	0.4-	0.1+
1995 03 05	033	0.6+	0.4+	1998 09 26	704	0.0	0.2+	1998 09 27	704	0.4-	0.4+
1995 03 07	033	1.4-	0.1+	1998 09 26	704	0.3-	0.7-	1998 10 20	699	0.9+	0.2+
1995 03 23	033	0.9+	0.2-	1998 09 26	704	0.4-	0.4+	1998 10 20	699	0.8+	0.2+
1995 03 24	033	0.3-	0.4+	1998 09 26	704	0.5-	0.7+	1998 10 20	699	0.6+	0.2+
1998 09 19	888	0.3-	0.0	1998 09 27	704	0.0	0.3-				

1998 NOV. 10

M.P.C. 32945

1995 FS = 1998 RL₆₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	249.25068		(2000.0)	P		Q	
<i>n</i>	0.17815995	ω	154.10296	−0.87855165	−0.47743501		
<i>a</i>	3.1279706	Ω	357.25202	+0.37015332	−0.66168823		
<i>e</i>	0.1450402	<i>i</i>	17.27993	+0.30188328	−0.57812152		
<i>P</i>	5.53	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1995 03 23	104	0.1+	0.2+	1995 05 03	104	0.3−	0.7+	1998 09 27	704	0.6−	0.7+
1995 03 23	104	0.1+	0.1−	1995 05 19	658	0.7−	0.7−	1998 09 27	704	1.0+	1.1−
1995 03 23	104	0.4+	0.2−	1995 05 19	658	0.7−	0.3−	1998 10 14	704	0.0	1.4+
1995 03 30	104	0.3+	0.2−	1998 09 14	704	0.1−	0.8−	1998 10 14	704	0.4−	0.2−
1995 03 30	104	0.0	0.2+	1998 09 14	704	1.0−	0.7−	1998 10 14	704	1.7−	0.3−
1995 03 30	104	0.2−	0.2+	1998 09 15	699	0.2+	0.6−	1998 10 14	704	0.6+	0.3−
1995 03 31	104	1.3−	0.5+	1998 09 15	699	0.5−	0.2+	1998 10 14	704	0.4−	0.9+
1995 03 31	104	0.8−	0.5+	1998 09 15	699	0.9+	0.6+	1998 10 14	699	0.4+	1.4+
1995 03 31	104	0.4−	0.6+	1998 09 18	704	1.4−	0.1+	1998 10 14	699	1.1+	0.3−
1995 04 05	104	0.4+	0.2−	1998 09 18	704	0.3+	0.9+	1998 10 14	699	0.2+	0.6−
1995 04 05	104	0.7+	0.3+	1998 09 18	704	0.4+	1.7−	1998 10 15	704	0.6−	0.7−
1995 04 05	104	0.7+	0.3+	1998 09 18	704	0.7−	0.9−	1998 10 15	704	0.5+	0.3−
1995 04 17	104	0.1−	1.2−	1998 09 18	704	0.7−	0.1−	1998 10 15	704	0.2+	1.9+
1995 04 17	104	0.6+	0.7−	1998 09 26	704	0.4−	0.1−	1998 10 15	704	0.6+	0.2−
1995 04 17	104	1.0+	0.1+	1998 09 26	704	0.1+	0.4+	1998 10 15	704	0.8+	0.3+
1995 04 22	658	0.1−	0.5−	1998 09 26	704	0.1+	0.0	1998 10 26	104	0.3−	0.1−
1995 04 22	658	0.0	0.6−	1998 09 26	704	1.0+	0.4−	1998 10 26	104	0.0	0.0
1995 04 22	658	0.1−	0.6−	1998 09 26	704	0.1+	0.1−	1998 10 26	104	0.2−	0.1+
1995 05 03	104	0.2−	0.4+	1998 09 27	704	0.8+	0.4−				
1995 05 03	104	0.2−	0.4+	1998 09 27	704	0.4+	0.3+				

1995 FX₁₀ = 1992 SF₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	292.89225		(2000.0)	P		Q	
<i>n</i>	0.18296221	ω	123.11188	−0.70299684	−0.71021584		
<i>a</i>	3.0729945	Ω	11.78785	+0.57648698	−0.59974754		
<i>e</i>	0.1671030	<i>i</i>	10.51120	+0.41648313	−0.36864121		
<i>P</i>	5.39	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1992 09 22	809	0.0	0.4−	1992 09 23	809	0.4−	0.4−	1995 04 01	691	1.6+	1.5−
1992 09 22	809	0.2−	0.9−	1995 03 27	691	0.6−	0.7+	1995 04 01	691	(2.5+	1.2−)
1992 09 22	809	0.4+	0.4−	1995 03 27	691	0.4−	0.7+	1995 04 07	691	0.3−	0.2+
1992 09 23	809	0.0	1.4+	1995 03 27	691	0.7−	0.1+	1995 04 07	691	0.6−	0.3+
1992 09 23	809	0.1+	0.8+	1995 04 01	691	1.2+	0.8−	1995 04 07	691	0.3−	0.4+

1995 GF₆ = 1996 PQ₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	190.50317		(2000.0)	P		Q	
<i>n</i>	0.23976121	ω	196.98539	+0.96011321	+0.27576109		
<i>a</i>	2.5661582	Ω	146.89540	−0.24569429	+0.91098304		
<i>e</i>	0.1145990	<i>i</i>	4.85697	−0.13348012	+0.30670135		
<i>P</i>	4.11	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1995 04 02	691	0.1+	0.5+	1995 04 06	691	0.1+	0.2+	1996 08 09	566	0.2+	0.1−
1995 04 02	691	0.2+	0.4+	1995 04 08	691	0.3−	0.1+	1996 08 09	566	0.2−	0.1−
1995 04 02	691	0.0	0.0	1995 04 08	691	0.2−	0.1−	1996 08 17	566	0.0	0.1+
1995 04 06	691	0.0	1.0−	1995 04 08	691	0.1+	0.0	1996 08 17	566	0.1−	0.1−
1995 04 06	691	0.0	0.0	1996 08 09	566	0.0	0.1+	1996 08 17	566	0.1+	0.1+

1995 HY₂ = 1998 TO₃₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	331.35293		(2000.0)	P		Q	
<i>n</i>	0.17109277	ω	328.60039	−0.13104272	−0.99039594		
<i>a</i>	3.2135245	Ω	128.89184	+0.92090620	−0.13807434		
<i>e</i>	0.1725499	<i>i</i>	3.24715	+0.36709615	−0.00716612		
<i>P</i>	5.76	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1995 04 26	691	0.1+	0.2−	1995 05 01	691	0.3−	0.3+	1998 10 14	699	1.0+	0.2+
1995 04 26	691	0.1+	0.2+	1995 05 04	691	1.1+	0.8−	1998 10 14	699	0.0	0.2+
1995 04 26	691	0.1+	0.1+	1995 05 04	691	0.5−	0.3−	1998 10 20	699	0.4+	0.2+
1995 05 01	691	0.1−	0.0	1995 05 04	691	0.1−	0.2+	1998 10 20	699	0.3+	0.8−
1995 05 01	691	0.4−	0.6+	1998 10 14	699	1.0−	0.0	1998 10 20	699	0.7−	0.2+

1995 OK₈ = 1987 WY₁ = 1996 TG₅₇Id. G. V. Williams (*MPC* 28593), T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.14783		(2000.0)	P		Q	
<i>n</i>	0.08177876	ω	151.24734	+0.92209319	−0.37854329		
<i>a</i>	5.2566496	Ω	231.22140	+0.33240231	+0.88107843		
<i>e</i>	0.0554092	<i>i</i>	5.91273	+0.19812333	+0.28355913		
<i>P</i>	12.05	<i>H</i>	11.0	<i>G</i> 0.15	<i>U</i> 1		

Residuals in seconds of arc

1987 11 26	033	0.1−	0.5−	1995 07 30	691	0.2+	0.4−	1997 10 02	691	0.2−	0.2+
1987 11 26	033	0.1+	0.9+	1996 09 16	809	1.6+	0.1−	1997 10 02	691	0.2−	0.0
1995 07 04	691	0.0	0.5−	1996 09 16	809	(6.9+	3.3+)	1997 10 11	691	0.3+	0.1+
1995 07 04	691	0.0	0.0	1996 10 02	809	0.2−	0.9+	1997 10 11	691	0.2+	0.0
1995 07 04	691	0.3−	0.1+	1996 10 02	809	0.2−	0.2+	1997 10 11	691	0.1−	0.0
1995 07 25	691	0.0	0.3+	1996 10 02	809	1.4−	0.3+	1998 10 24	369	0.2+	0.9−
1995 07 25	691	0.2−	0.1−	1996 10 03	809	(2.7−	0.2−)	1998 10 24	369	0.2−	0.7−
1995 07 25	691	0.1−	0.2−	1996 10 03	809	(2.8−	0.0)	1998 10 24	369	0.1+	0.1+
1995 07 30	691	0.5+	0.2−	1996 10 03	809	(3.2−	0.0)				
1995 07 30	691	0.0	0.1−	1997 10 02	691	0.3−	0.0				

1995 UG₅ = 1994 GF₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	16.82956		(2000.0)	P		Q	
<i>n</i>	0.29975054	ω	327.08446	+0.99838157	+0.04310103		
<i>a</i>	2.2112070	Ω	30.51062	−0.02155430	+0.89049719		
<i>e</i>	0.1690289	<i>i</i>	4.19082	−0.05262749	+0.45294266		
<i>P</i>	3.29	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1994 04 06	691	0.3−	0.6+	1995 10 17	114	1.0+	1.0−	1995 10 22	691	0.5+	0.2+
1994 04 06	691	0.1+	0.1+	1995 10 18	114	0.6−	0.1−	1995 10 27	691	0.1+	0.1−
1994 04 06	691	0.4−	0.6−	1995 10 19	114	(4.8+	1.1−)	1995 10 27	691	0.1−	0.0
1994 04 16	691	0.1+	0.3−	1995 10 19	114	1.1+	1.1−	1995 10 27	691	0.3+	0.0
1994 04 16	691	0.0	0.1−	1995 10 21	399	0.2+	0.1−	1995 10 27	399	1.0−	0.1−
1994 04 16	691	0.2+	0.4−	1995 10 21	399	1.5−	0.3−	1995 10 27	399	0.5−	0.6+
1995 10 16	114	0.5−	1.2+	1995 10 22	691	0.6+	0.3+				
1995 10 16	114	(6.0−	2.1−)	1995 10 22	691	0.5+	0.1+				

1995 UM₅ = 1998 TG₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	175.70465		(2000.0)	P		Q	
<i>n</i>	0.30810709	ω	265.17239	−0.75087431	+0.65855781		
<i>a</i>	2.1710421	Ω	316.00609	−0.57390529	−0.68800594		
<i>e</i>	0.0428250	<i>i</i>	4.11926	−0.32683404	−0.30487610		
<i>P</i>	3.20	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 7		

Residuals in seconds of arc

1995 10 20	552	0.9−	0.3−	1995 10 26	552	0.1+	0.6+	1998 10 14	327	0.5−	0.6+
1995 10 20	552	0.1+	0.3−	1995 10 26	552	0.3+	1.0−	1998 10 17	327	0.8+	0.5−
1995 10 20	552	0.2−	1.0+	1995 10 26	552	1.1+	0.4+	1998 10 17	327	0.4+	0.1−
1995 10 24	552	0.6−	0.5−	1998 10 14	327	0.1+	0.2−	1998 10 17	327	0.5−	0.2+
1995 10 24	552	0.0	0.1+	1998 10 14	327	0.3−	0.0				

1995 UW₁₂ = 1993 FU₇₆

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	185.72876		(2000.0)	P		Q	
<i>n</i>	0.21070576	ω	83.48974	−0.03813112		−0.99925418	
<i>a</i>	2.7969526	Ω	8.70253	+0.90016888		−0.03699553	
<i>e</i>	0.0302208	<i>i</i>	2.30733	+0.43386866		−0.01106429	
<i>P</i>	4.68	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 21	809	0.1−	0.3−	1995 10 17	691	0.1+	0.1−	1995 10 28	691	0.2+	0.0
1993 03 22	809	0.1+	0.3+	1995 10 22	691	0.2−	0.2+	1995 10 28	691	0.2−	0.1+
1995 10 17	691	0.2−	0.1+	1995 10 22	691	0.2+	0.1−	1995 10 28	691	0.2−	0.0
1995 10 17	691	0.1−	0.1+	1995 10 22	691	0.3+	0.2−				

1995 UC₅₀ = 1997 EA₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	327.46678		(2000.0)	P		Q	
<i>n</i>	0.28242943	ω	168.12643	+0.86210879		−0.50656915	
<i>a</i>	2.3007146	Ω	222.31669	+0.46337727		+0.79810155	
<i>e</i>	0.1890470	<i>i</i>	1.06345	+0.20506080		+0.32622325	
<i>P</i>	3.49	<i>H</i>	17.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 17	691	1.2−	1.4+	1995 10 22	691	0.1+	0.3−	1997 03 05	691	0.0	0.1−
1995 10 17	691	0.3+	0.0	1995 10 27	691	0.1−	0.3−	1997 03 10	691	0.0	0.3+
1995 10 17	691	0.4+	0.0	1995 10 27	691	0.0	0.2−	1997 03 10	691	0.1−	0.2+
1995 10 22	691	0.1+	0.2−	1995 10 27	691	0.2+	0.2−	1997 03 10	691	0.4+	0.2−
1995 10 22	691	0.2+	0.0	1997 03 05	691	0.1−	0.1+				

1995 VS₈ = 1997 ER₃₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	7.41008		(2000.0)	P		Q	
<i>n</i>	0.19906153	ω	219.34641	+0.13339015		+0.99006113	
<i>a</i>	2.9049890	Ω	58.36191	−0.89557220		+0.13967398	
<i>e</i>	0.0228977	<i>i</i>	3.00049	−0.42444964		+0.01643602	
<i>P</i>	4.95	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 14	691	0.0	0.0	1995 11 19	691	0.2−	0.1−	1997 03 05	704	0.2−	0.0
1995 11 14	691	0.0	0.1+	1995 11 27	691	0.2+	0.3−	1997 03 06	704	0.2−	0.6+
1995 11 14	691	0.1+	0.0	1995 11 27	691	0.0	0.1+	1997 03 06	704	0.1−	0.3+
1995 11 19	691	0.0	0.2−	1995 11 27	691	0.1−	0.3+				
1995 11 19	691	0.1+	0.1+	1997 03 05	704	0.5+	0.9−				

1995 WQ₃ = 1992 EH₃₀

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	159.85744		(2000.0)	P		Q	
<i>n</i>	0.19564523	ω	62.48994	−0.70074669		−0.71168398	
<i>a</i>	2.9387087	Ω	72.08922	+0.63477579		−0.65372934	
<i>e</i>	0.0520267	<i>i</i>	2.98786	+0.32559755		−0.25718448	
<i>P</i>	5.04	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 03 03	809	0.7−	0.3−	1995 11 21	595	0.6+	0.3+	1995 12 01	595	0.4−	0.0
1992 03 07	809	0.6+	0.3+	1995 11 22	595	0.1+	0.1+	1995 12 02	595	0.5+	0.3+
1995 11 21	595	0.5−	0.1−	1995 11 22	595	0.0	0.3−	1995 12 02	595	0.3−	0.4−

1995 WU₇ = 1998 SO₁₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	293.13465		(2000.0)	P		Q	
<i>n</i>	0.28857974	ω	48.76120	−0.47464274		−0.87786968	
<i>a</i>	2.2679083	Ω	69.68101	+0.78586510		−0.45527075	
<i>e</i>	0.0628810	<i>i</i>	3.89559	+0.39639667		−0.14857108	
<i>P</i>	3.42	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 11 24	411	0.4+	0.5+	1995 12 01	411	0.9+	0.2−	1998 09 26	704	1.3+	0.2−
1995 11 24	411	0.7+	1.3+	1995 12 01	411	0.5−	0.5+	1998 09 26	704	2.0−	0.4−
1995 11 26	411	0.3−	0.5−	1995 12 10	411	0.5−	1.0+	1998 09 26	704	2.2+	0.1−
1995 11 26	411	0.9−	0.0	1995 12 10	411	0.0	0.1+	1998 09 27	704	0.8+	0.5+
1995 11 28	411	0.5+	0.7−	1995 12 10	411	0.7+	0.2−	1998 09 27	704	0.4+	0.9+
1995 11 28	411	1.3−	1.1−	1995 12 22	411	1.0+	0.5−	1998 09 27	704	2.0−	0.1+
1995 11 29	411	0.3+	0.9−	1995 12 22	411	0.3−	0.1+	1998 09 27	704	1.4−	0.6−
1995 11 29	411	0.6−	0.5+	1998 09 26	704	0.7+	0.2−				

1995 WZ₁₇ = 1998 HS₅₄

Id. S. Nakano, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	136.12478		(2000.0)	P		Q	
<i>n</i>	0.17665910	ω	240.05827	−0.42014567		−0.89983924	
<i>a</i>	3.1456619	Ω	235.24711	+0.87402134		−0.36649405	
<i>e</i>	0.0364569	<i>i</i>	8.21030	+0.24405802		−0.23658287	
<i>P</i>	5.58	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 17	691	0.2−	0.2−	1995 11 28	691	0.2+	0.2−	1998 04 22	704	0.5−	1.1+
1995 11 17	691	0.2+	0.1−	1995 11 28	691	0.4−	0.4−	1998 04 22	704	0.3+	1.5−
1995 11 17	691	0.1+	0.1−	1998 04 21	704	0.0	0.2+	1998 04 22	704	1.0+	0.5+
1995 11 23	691	0.1+	0.3+	1998 04 21	704	0.2−	0.4+	1998 04 22	704	1.4−	0.3−
1995 11 23	691	0.0	0.2+	1998 04 21	704	(1.1−	2.4−)	1998 04 22	704	0.8+	0.5−
1995 11 23	691	0.1+	0.6+	1998 04 21	704	(0.5+	3.5−)				
1995 11 28	691	0.0	0.1−	1998 04 21	704	(3.5−	0.3+)				

1995 XL = 1998 RQ₅₅

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	349.70020		(2000.0)	P		Q	
<i>n</i>	0.30059298	ω	176.09282	+0.44220356		−0.89525760	
<i>a</i>	2.2070737	Ω	247.65562	+0.82129791		+0.42859235	
<i>e</i>	0.1529946	<i>i</i>	3.37783	+0.36045215		+0.12174737	
<i>P</i>	3.28	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 30	327	0.2−	0.1+	1998 09 14	704	1.1−	1.0+	1998 09 27	704	0.6−	0.6+
1995 11 30	327	0.3−	0.3−	1998 09 14	704	1.3−	0.3+	1998 09 27	704	0.0	0.3+
1995 11 30	327	0.1+	0.1+	1998 09 18	704	0.8−	0.2+	1998 09 27	704	1.0+	0.7−
1995 12 03	327	0.5+	1.0+	1998 09 18	704	0.9+	0.2+	1998 09 27	704	0.4+	1.0−
1995 12 03	327	0.6+	0.8+	1998 09 18	699	0.7+	1.5−	1998 10 14	327	0.2+	0.3−
1995 12 03	327	0.5−	1.5+	1998 09 18	704	1.9−	0.3+	1998 10 14	327	0.5+	0.2+
1995 12 12	817	0.1+	0.4−	1998 09 18	704	0.1+	0.4+	1998 10 14	327	0.9+	0.8+
1995 12 12	817	0.2+	0.6−	1998 09 18	699	0.5+	0.0	1998 10 15	704	1.7−	1.4+
1995 12 12	817	0.1+	0.0	1998 09 18	704	0.9+	0.5+	1998 10 15	704	0.6+	0.7+
1995 12 13	817	0.2+	0.2−	1998 09 18	699	1.0+	0.1−	1998 10 15	704	0.7+	0.3+
1995 12 13	817	0.4+	0.2−	1998 09 26	704	1.3+	1.8−	1998 10 15	704	0.3−	0.7+
1995 12 13	817	0.2+	0.5−	1998 09 26	704	0.4−	0.3−	1998 10 15	704	1.4−	0.4−
1995 12 23	817	0.5−	0.8−	1998 09 26	704	0.2−	0.0	1998 10 17	327	0.6−	0.2+
1995 12 23	817	0.6−	0.6−	1998 09 26	704	0.3−	1.2−	1998 10 17	327	0.3+	0.5+

1995 12 23 817 0.3− 0.6− 1998 09 26 704 0.3+ 0.3− 1998 10 17 327 0.6+ 0.7+
 1998 09 14 704 0.1− 1.2− 1998 09 27 704 0.2− 0.4−

1995 XP₁ = 1998 RV₅₂

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	299.65749		(2000.0)	P	Q
<i>n</i>	0.27286336	ω	350.75734	−0.34059831	−0.93922574
<i>a</i>	2.3541777	Ω	119.14563	+0.86573882	−0.33112592
<i>e</i>	0.1624085	<i>i</i>	2.82112	+0.36672754	−0.09061258
<i>P</i>	3.61	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 12 15	411	1.2+	0.5−	1996 01 09	411	0.5−	0.2−	1998 09 18	704	0.0	0.5−
1995 12 15	411	0.7−	0.6+	1996 01 24	411	0.1+	0.0	1998 09 18	704	1.6−	0.1−
1995 12 16	411	0.1−	0.1−	1996 01 24	411	0.5−	0.4−	1998 09 18	704	1.3+	0.4+
1995 12 16	411	1.2−	0.5+	1998 09 14	704	0.3+	1.8+	1998 09 18	704	0.2+	0.9+
1995 12 25	411	0.7−	0.8+	1998 09 14	704	1.0+	0.2+	1998 09 18	704	0.5−	0.9−
1995 12 25	411	0.6+	0.7−	1998 09 14	704	1.3+	0.8+	1998 09 18	704	(2.2+ 1.7+)	
1995 12 27	411	0.1−	0.6+	1998 09 14	704	0.0	0.2+	1998 09 18	704	(1.6+ 2.0−)	
1995 12 27	411	0.8+	0.7+	1998 09 14	704	1.3+	0.8−	1998 09 18	704	0.0	1.6−
1995 12 31	411	1.0+	0.0	1998 09 17	699	0.2+	0.4−	1998 09 18	704	1.0−	0.8−
1995 12 31	411	0.6−	1.2−	1998 09 17	699	0.7−	0.8+	1998 09 18	704	1.2−	0.5−
1996 01 09	411	0.6+	0.1−	1998 09 17	699	0.4−	0.3+				

1995 YX₁ = 1998 SY₁₄₀

Id. G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	294.71882		(2000.0)	P	Q
<i>n</i>	0.28176143	ω	271.35690	−0.64117405	−0.76701992
<i>a</i>	2.3043496	Ω	218.55705	+0.71850084	−0.58904005
<i>e</i>	0.1002495	<i>i</i>	2.20729	+0.26954107	−0.25438605
<i>P</i>	3.50	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 12 21	411	0.5−	1.1−	1996 01 10	411	0.7−	0.9+	1998 09 26	704	0.6+	1.2−
1995 12 21	411	0.1−	0.0	1996 01 24	411	1.4+	0.8+	1998 09 26	704	0.2+	0.8−
1995 12 22	411	0.5+	1.2−	1996 01 24	411	1.1+	0.4+	1998 09 26	704	0.2+	0.3−
1995 12 22	411	0.2+	0.3−	1998 09 18	809	0.2−	0.1+	1998 09 26	704	0.3+	0.4−
1995 12 22	411	0.1−	0.5−	1998 09 18	809	1.4−	0.1+	1998 09 27	704	0.2−	0.9−
1995 12 26	411	0.8−	0.1+	1998 09 18	809	(2.0− 0.6+)		1998 09 27	704	0.2−	1.0−
1995 12 26	411	0.3−	0.1−	1998 09 20	809	(2.6+ 1.5+)		1998 09 27	704	1.4−	0.3+
1995 12 30	411	1.1−	1.5+	1998 09 20	809	1.8+	1.7+	1998 09 27	704	1.1−	1.5+
1995 12 30	411	0.6+	0.2−	1998 09 20	809	1.6+	1.3+	1998 09 27	704	0.3−	0.5+
1996 01 10	411	0.4−	0.2−	1998 09 26	704	0.0	0.4−				

1995 YS₂ = 1994 PD₃₇ = 1998 RH₆₂

Id. G. V. Williams, S. Nakano, A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	281.48267		(2000.0)	P	Q
<i>n</i>	0.26586685	ω	220.66698	−0.55838690	−0.82953249
<i>a</i>	2.3953001	Ω	263.27914	+0.76343967	−0.50962142
<i>e</i>	0.1197593	<i>i</i>	0.51575	+0.32459813	−0.22838969
<i>P</i>	3.71	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 10	809	(2.1+ 3.2−)		1995 12 29	385	0.5+	0.5+	1998 09 18	704	1.6+	1.9−
1994 08 10	809	0.5+	1.8−	1995 12 29	385	0.8+	0.3+	1998 09 18	704	(1.0− 2.7+)	
1994 08 10	809	(0.8+ 2.4−)		1995 12 29	385	1.4+	1.8+	1998 09 18	704	0.9+	0.6−
1994 08 11	809	0.5+	0.0	1995 12 31	385	0.7+	0.3−	1998 09 18	704	0.7+	0.9+
1994 08 11	809	1.2−	1.1+	1996 01 01	385	0.1−	0.1+	1998 09 26	704	1.1−	0.8−
1994 08 11	809	0.9+	1.2−	1996 01 01	385	0.6−	0.1+	1998 09 26	704	0.6−	0.8+
1995 12 22	385	0.9+	0.5−	1996 01 01	385	0.3−	0.2+	1998 09 26	704	1.4+	0.5−
1995 12 22	385	0.8+	1.4−	1996 01 11	887	0.7−	0.1−	1998 09 26	704	0.0	0.3−

1995 12 22	385	0.1−	0.4−	1996 01 11	887	0.8−	0.1−	1998 09 27	704	0.5+	0.1−
1995 12 23	566	0.7−	0.6−	1996 01 11	887	0.8−	0.1−	1998 09 27	704	0.2−	0.4+
1995 12 23	566	0.9−	0.7−	1996 01 13	385	0.7−	0.9+	1998 09 27	704	(0.2+ 2.7+)	
1995 12 23	566	0.5−	0.7−	1996 01 13	385	(2.2+ 1.5+)		1998 09 27	704	1.4+	0.1+
1995 12 26	887	0.6−	0.2−	1996 01 27	385	0.4−	0.1+	1998 09 27	704	0.3−	0.0
1995 12 26	887	0.0	0.5−	1996 01 27	385	0.9−	0.5−	1998 10 12	691	1.1−	0.1+
1995 12 26	887	0.6+	0.2−	1996 01 27	385	0.9+	0.8+	1998 10 12	691	1.1−	0.4+
1995 12 27	887	0.6+	0.0	1998 09 14	704	0.1−	1.1+	1998 10 15	691	0.2−	0.6+
1995 12 27	887	0.1+	0.2+	1998 09 14	704	0.5−	0.3−	1998 10 15	691	1.0−	0.6+
1995 12 27	887	0.6+	0.1−	1998 09 14	704	(1.0− 2.4+)		1998 10 15	691	1.2−	0.8+

1995 YG₃ = 1998 RG₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	5.82994		(2000.0)	P	Q
<i>n</i>	0.27815755	ω	66.92995	+0.78365108	−0.62066660
<i>a</i>	2.3242106	Ω	331.41500	+0.54841626	+0.71071938
<i>e</i>	0.1288984	<i>i</i>	3.08713	+0.29177146	+0.33113582
<i>P</i>	3.54	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 12 26	411	0.6−	0.9+	1998 09 14	704	0.5+	0.4+	1998 09 26	704	0.1+	0.3−
1995 12 26	411	0.3+	0.1−	1998 09 14	704	0.0	0.1−	1998 09 26	704	0.5+	0.3+
1995 12 27	411	0.8+	1.0+	1998 09 18	704	0.7−	0.0	1998 09 26	704	0.8+	0.3+
1995 12 27	411	1.3+	0.5+	1998 09 18	704	0.8−	0.5+	1998 09 27	704	0.2+	0.5−
1995 12 29	411	0.7−	1.1−	1998 09 18	704	0.2+	0.0	1998 09 27	704	0.3+	0.8−
1995 12 29	411	1.4−	0.3+	1998 09 18	704	1.2−	0.4+	1998 09 27	704	1.5+	0.4−
1996 01 10	411	0.5+	1.2−	1998 09 18	704	1.1−	0.6−	1998 09 27	704	0.3+	0.3−
1996 01 10	411	0.3−	0.1−	1998 09 26	704	0.4+	0.3−	1998 09 27	704	0.2−	0.8+
1998 09 14	704	1.2−	0.9+	1998 09 26	704	0.5+	0.3−				

1996 AA

Id. E. Bowell (1989, 1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Bowell

<i>M</i>	277.30049		(2000.0)	P	Q
<i>n</i>	0.26851955	ω	206.67605	−0.77397531	−0.62633437
<i>a</i>	2.3794985	Ω	294.23014	+0.59767201	−0.67402531
<i>e</i>	0.0558725	<i>i</i>	5.85972	+0.20916593	−0.39165691
<i>P</i>	3.67	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1989 03 07	675	0.0	0.3+	1996 01 02	411	1.1+	0.9−	1998 09 20	699	0.2−	0.5+
1989 03 07	675	0.1−	0.5−	1996 01 02	411	0.2+	0.1+	1998 09 20	699	0.5−	0.3−
1995 12 27	566	0.3−	0.0	1996 01 10	411	0.3+	0.2+	1998 10 11	699	0.3+	0.3−
1995 12 27	566	0.2−	0.1−	1996 01 10	411	0.6−	1.0+	1998 10 11	699	0.5+	0.1+
1995 12 27	566	0.1−	0.3−	1996 01 18	411	0.0	0.3−	1998 10 11	699	0.5+	0.4+
1996 01 01	411	0.3−	0.2+	1996 01 18	411	0.3+	0.3+				
1996 01 01	411	0.1−	0.1−	1998 09 20	699	0.8−	0.6−				

1996 AV₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	216.18315		(2000.0)	P	Q
<i>n</i>	0.26044311	ω	78.10583	−0.93036683	+0.36536634
<i>a</i>	2.4284405	Ω	123.31727	−0.34895223	−0.85700698
<i>e</i>	0.1314672	<i>i</i>	2.08579	−0.11247180	−0.36338200
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 01 14	540	1.3−	0.2−	1996 01 17	540	1.2+	0.6−	1996 02 24	540	0.5−	0.6+
1996 01 14	540	(0.3− 2.1−)		1996 01 17	540	0.3−	0.8−	1996 04 16	540	0.1−	1.0−
1996 01 15	540	0.7+	0.4+	1996 01 21	540	(1.1+ 2.2+)		1996 04 16	540	(2.8+ 2.6+)	
1996 01 15	540	0.1+	0.5+	1996 01 21	540	0.3+	0.4−	1998 09 20	809	0.4+	0.8−
1996 01 15	540	0.7+	0.3−	1996 02 09	540	0.5+	0.9+	1998 09 20	809	0.4+	1.3−
1996 01 16	540	0.2−	0.2+	1996 02 09	540	0.1+	0.3+	1998 09 20	809	0.8−	0.0
1996 01 16	540	0.6+	0.5+	1996 02 09	540	0.1−	0.7+	1998 09 21	809	0.1+	1.7+
1996 01 17	540	0.4+	0.6−	1996 02 09	540	0.0	0.4−	1998 09 21	809	0.2−	0.5+

1996 01 17	540	0.8−	0.0	1996 02 09	540	0.3−	0.0	1998 09 21	809	0.1+	0.2−
1996 01 17	540	0.6−	1.0+	1996 02 24	540	0.3+	0.1−				
1996 01 17	540	0.5−	0.6−	1996 02 24	540	0.1−	0.3−				

1996 AB₄ = 1991 UT₁ = 1998 TQ₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	325.61334		(2000.0)	P	Q						
<i>n</i>	0.28297275	ω	249.96228	−0.31869122	−0.94672645						
<i>a</i>	2.2977687	Ω	218.71905	+0.89496767	−0.28445516						
<i>e</i>	0.1036968	<i>i</i>	4.24617	+0.31219991	−0.15097774						
<i>P</i>	3.48	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1991 10 29	399	0.2+	0.8−	1996 01 19	098	1.4+	0.3+	1998 10 20	120	0.0	0.3+
1991 10 29	399	0.2+	0.8−	1996 02 15	098	1.9−	0.2+	1998 10 24	120	0.2−	0.8+
1996 01 15	098	0.5+	1.4+	1996 02 17	098	1.1−	0.6−	1998 10 24	120	0.9−	0.2+
1996 01 15	098	(0.5+	2.6+)	1998 10 13	120	1.0+	0.4−	1998 10 26	120	0.3−	0.4+
1996 01 16	098	0.8+	0.7−	1998 10 13	120	0.4+	1.1−	1998 10 26	120	0.4−	0.8+
1996 01 17	098	(2.5+	1.3+)	1998 10 13	120	1.1+	0.7−	1998 10 27	120	0.6−	0.6+
1996 01 17	098	0.0	0.8−	1998 10 15	120	0.8+	0.5−	1998 10 27	120	0.9−	0.6+
1996 01 18	098	0.6+	0.3−	1998 10 15	120	0.3+	0.3−	1998 10 28	120	0.7−	0.4+
1996 01 19	098	0.2−	0.1+	1998 10 20	120	0.3+	0.1−	1998 10 28	120	0.3−	0.6+

1996 AH₆ = 1998 SK₁₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	36.24757		(2000.0)	P	Q						
<i>n</i>	0.27495894	ω	302.92853	+0.98771440	−0.14745949						
<i>a</i>	2.3422009	Ω	65.59751	+0.15550402	+0.89472716						
<i>e</i>	0.1812470	<i>i</i>	3.25640	+0.01545231	+0.42156733						
<i>P</i>	3.58	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1996 01 12	691	0.5−	0.3+	1996 01 25	691	0.2−	0.0	1998 09 27	704	1.0+	1.3+
1996 01 12	691	0.1−	0.0	1996 01 25	691	0.3−	0.1−	1998 09 27	704	1.7−	0.3+
1996 01 12	691	0.0	0.1−	1998 09 26	704	0.1−	0.5+	1998 10 11	699	0.1−	1.3+
1996 01 18	691	0.0	0.2+	1998 09 26	704	0.1+	0.9−	1998 10 11	699	0.2−	0.2+
1996 01 18	691	0.0	0.0	1998 09 26	704	0.4+	0.6−	1998 10 11	699	0.9+	1.0−
1996 01 18	691	0.2−	0.0	1998 09 26	704	0.5+	0.0	1998 10 20	699	0.5+	0.5−
1996 01 24	360	1.1+	0.0	1998 09 27	704	0.5−	0.6−	1998 10 20	699	0.5+	0.0
1996 01 24	360	0.9+	0.2−	1998 09 27	704	0.5+	1.0−	1998 10 20	699	0.9−	0.0
1996 01 25	691	0.6−	0.0	1998 09 27	704	1.0−	1.2+				

1996 AL₁₉ = 1998 SH₁₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	317.53371		(2000.0)	P	Q						
<i>n</i>	0.26328641	ω	258.91072	−0.13671754	−0.99004354						
<i>a</i>	2.4109253	Ω	199.04509	+0.94422691	−0.12001531						
<i>e</i>	0.0779933	<i>i</i>	5.89213	+0.29957280	−0.07355350						
<i>P</i>	3.74	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6				

Residuals in seconds of arc

1996 01 15	691	0.2+	0.2−	1996 01 29	691	0.0	0.1+	1998 09 27	704	0.7+	1.7+
1996 01 15	691	0.0	0.2−	1998 09 26	704	0.1−	0.5−	1998 09 27	704	1.0−	0.8+
1996 01 15	691	0.1−	0.1−	1998 09 26	704	1.4+	0.8+	1998 09 27	704	1.2+	1.3−
1996 01 24	691	0.2−	0.1−	1998 09 26	704	0.1+	0.0	1998 09 27	704	1.3−	1.6−
1996 01 24	691	0.1−	0.1−	1998 09 26	704	(0.5+	2.5+)	1998 10 11	699	0.9−	0.0
1996 01 29	691	0.0	0.2+	1998 09 26	704	0.1−	1.0+	1998 10 11	699	0.1−	0.1+
1996 01 29	691	0.2+	0.2+	1998 09 27	704	1.0−	1.1−	1998 10 11	699	0.9+	0.2+

1996 BQ₁ = 1998 RD₆₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	338.04631		(2000.0)	P	Q						
<i>n</i>	0.27126575	ω	19.27484	+0.28901851	−0.95549240						
<i>a</i>	2.3634119	Ω	53.96879	+0.86843812	+0.23566791						
<i>e</i>	0.2031402	<i>i</i>	4.19681	+0.40284430	+0.17746805						
<i>P</i>	3.63	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6				

Residuals in seconds of arc

1996 01 23	411	0.3−	0.1−	1996 01 30	411	0.9−	0.4+	1998 09 14	704	2.1−	0.6−
1996 01 23	411	1.4+	0.9−	1996 01 30	411	0.1−	0.2+	1998 09 18	704	0.9+	0.7+
1996 01 24	411	0.2+	0.2+	1996 02 12	411	0.2−	0.9+	1998 09 18	704	0.8−	0.1+
1996 01 24	411	0.1+	0.4−	1996 02 12	411	0.8+	0.7−	1998 09 18	704	1.9+	0.2+
1996 01 27	411	0.2−	0.5+	1998 09 14	704	0.0	0.6−	1998 09 18	704	0.4+	0.2−
1996 01 27	411	0.7−	0.1−	1998 09 14	704	1.1+	1.1+	1998 09 18	704	1.5−	0.6−

1996 BR₈ = 1976 UM₄ = 1992 FB₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	86.43655		(2000.0)	P	Q						
<i>n</i>	0.21915996	ω	204.66687	+0.51384177	+0.85121950						
<i>a</i>	2.7245529	Ω	96.41357	−0.76818864	+0.51192792						
<i>e</i>	0.0930154	<i>i</i>	6.16578	−0.38190687	+0.11556462						
<i>P</i>	4.50	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1976 10 28	095	0.0	0.1+	1996 01 19	691	0.5−	0.4−	1996 01 29	691	0.1+	1.3+
1992 03 24	399	0.1+	0.6+	1996 01 19	691	0.0	0.1−	1996 01 29	691	0.6+	1.1+
1992 03 24	399	0.1−	0.6−	1996 01 24	691	0.4−	1.6−	1996 01 29	691	0.1+	0.9+
1996 01 19	691	0.0	0.3−	1996 01 24	691	0.0	0.8−				

1996 CP₂ = 1998 SS₇₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	204.36476		(2000.0)	P	Q						
<i>n</i>	0.21681361	ω	169.84769	−0.92145719	+0.37785662						
<i>a</i>	2.7441743	Ω	32.81481	−0.36707853	−0.77085904						
<i>e</i>	0.2091970	<i>i</i>	9.58407	−0.12716131	−0.51283596						
<i>P</i>	4.55	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1996 02 12	411	(2.7+	0.9−)	1996 02 27	411	0.9−	1.1+	1998 09 21	809	0.2−	0.8+
1996 02 12	411	0.8+	0.1−	1996 02 28	411	0.5+	0.4+	1998 09 21	809	1.3−	0.4−
1996 02 18	411	1.1−	0.1−	1996 02 28	411	0.8+	0.3−	1998 09 21	809	0.2−	0.9+
1996 02 18	411	0.1−	0.0	1996 02 28	411	0.2−	0.4+	1998 09 23	809	1.0+	1.3−
1996 02 18	411	0.5+	0.8−	1996 03 22	411	0.4+	0.4+	1998 09 23	809	0.7+	0.1+
1996 02 27	411	0.3−	0.3−	1996 03 22	411	0.4−	0.8−	1998 09 23	809	0.0	0.1−

1996 DO = 1998 RC₆₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	265.58514		(2000.0)	P	Q						
<i>n</i>	0.23099770	ω	146.00267	−0.72353463	−0.69021308						
<i>a</i>	2.6306573	Ω	350.33010	+0.61909015	−0.64231686						
<i>e</i>	0.1164069	<i>i</i>	3.47303	+0.30532774	−0.33321908						
<i>P</i>	4.27	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1996 02 19	411	0.3−	0.6−	1998 09 18	704	0.6+	0.1+	1998 09 27	704	0.2+	0.0
1996 02 19	411	0.1+	0.1−	1998 09 18	704	0.9+	1.2−	1998 09 27	704	0.4+	0.7−
1996 02 21	411	0.4−	0.3+	1998 09 18	704	(1.3−	2.2+)	1998 10 14	704	0.1+	0.2+
1996 02 21	411	0.1+	1.0+	1998 09 18	704	0.3−	1.3+	1998 10 14	704	(3.1−	0.7−)
1996 02 27	411	0.4−	1.2−	1998 09 18	704	0.4+	0.3+	1998 10 14	704	0.2−	1.0−
1996 02 27	411	0.5+	0.3−	1998 09 26	704	0.2+	0.3+	1998 10 14	704	2.0−	0.5−
1996 03 09	411	0.2−	0.2+	1998 09 26	704	0.9−	0.1+	1998 10 15	704	1.4+	0.1−
1996 03 09	411	0.8+	0.2+	1998 09 26	704	0.7−	0.5+	1998 10 15	704	1.5+	0.1+
1996 03 22	411	0.1−	0.3+	1998 09 26	704	0.8−	0.6+	1998 10 15	704	1.4+	0.2+

1996 03 22	411	0.2−	0.4+	1998 09 26	704	(5.7−	0.8−)	1998 10 15	704	1.3+	0.2+
1998 09 14	704	1.4+	1.4−	1998 09 27	704	0.8−	0.4+	1998 10 29	691	0.5−	0.4−
1998 09 14	704	0.2+	0.6−	1998 09 27	704	0.6−	0.7+	1998 10 29	691	0.9−	0.1−
1998 09 14	704	1.7−	0.2+	1998 09 27	704	0.0	0.8+	1998 10 29	691	0.8−	0.3+

1996 DX = 1998 SF₇₅

Id. B. G. Marsden, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	320.39670		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26826956	ω	8.42791	−0.33883931	−0.93938406		
<i>a</i>	2.3809766	Ω	101.39077	+0.86006164	−0.33184299		
<i>e</i>	0.1676238	<i>i</i>	3.06395	+0.38142091	−0.08624283		
<i>P</i>	3.67	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 02 21	411	1.0+	0.8+	1998 09 18	699	0.5+	1.0−	1998 10 14	704	1.0+	0.7−
1996 02 21	411	0.7−	0.1+	1998 09 18	699	0.5+	0.0	1998 10 14	704	0.7+	1.4+
1996 02 22	411	0.1+	0.4+	1998 09 21	809	(3.3+	0.7−)	1998 10 14	704	0.2+	0.5−
1996 02 22	411	0.3+	0.3−	1998 09 21	809	(3.4+	0.1−)	1998 10 14	704	0.6−	0.5−
1996 02 24	566	0.4−	0.3−	1998 09 21	809	(2.6+	0.1+)	1998 10 14	704	1.5−	0.3−
1996 02 24	566	0.4−	0.5−	1998 09 23	809	(12.0+	0.7+)	1998 10 15	704	0.1+	0.7−
1996 02 24	566	0.2−	0.2−	1998 09 23	809	(11.3+	0.6+)	1998 10 15	704	0.7−	0.1+
1996 02 27	411	0.1−	0.1−	1998 09 23	809	(10.9+	1.0+)	1998 10 15	704	1.6−	1.3+
1996 02 27	411	0.2+	0.6+	1998 10 11	699	0.1+	0.1−	1998 10 15	704	1.1−	0.6+
1996 03 09	411	0.1−	0.2−	1998 10 11	699	0.3−	0.1+	1998 10 15	704	0.2+	1.7+
1996 03 09	411	0.2−	0.2+	1998 10 11	699	0.0	0.2−	1998 10 28	704	0.7+	0.2+
1996 03 22	411	0.8+	0.7−	1998 10 13	610	0.9+	1.2−	1998 10 28	704	0.3−	0.2+
1996 03 22	411	0.3−	0.2−	1998 10 13	610	1.2+	0.8−	1998 10 28	704	0.5−	0.1+
1998 09 18	699	0.3−	0.3+	1998 10 13	610	1.5+	0.6−	1998 10 28	704	0.7−	0.1+

1996 DU₁ = 1996 DA₁ = 1998 UT₁₁Id. G. V. Williams (d, *MPC* 26884; unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	314.22868		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27193735	ω	298.04740	−0.61515184	−0.78832267		
<i>a</i>	2.3595190	Ω	189.94077	+0.74496496	−0.57635690		
<i>e</i>	0.1639081	<i>i</i>	3.86751	+0.25809964	−0.21531394		
<i>P</i>	3.62	<i>H</i>	17.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 02 16	589	0.3+	0.7+	1996 02 25	589	3.0+	0.8−	1998 10 17	691	0.5+	0.2−
1996 02 16	589	0.5−	0.6−	1996 02 25	589	0.3−	1.0−	1998 10 17	691	0.5+	0.3−
1996 02 16	589	0.3−	0.2+	1996 02 25	589	0.2+	0.4−	1998 10 17	691	0.0	0.2−
1996 02 22	589	0.6−	0.4−	1996 02 25	589	0.3−	0.7+	1998 10 24	691	0.2−	0.4+
1996 02 22	589	0.2+	0.8+	1996 03 19	589	0.3+	1.8+	1998 10 24	691	0.3−	0.1+
1996 02 22	589	0.1−	0.1+	1996 03 21	589	0.1−	0.5−	1998 10 24	691	0.5−	0.2+
1996 02 25	589	1.1−	0.2+	1996 03 21	589	0.8−	0.6−				

1996 DV₁ = 1998 SP₁₅₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	227.38345		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21459101	ω	208.39912	−0.96879896	−0.24232185		
<i>a</i>	2.7630901	Ω	317.47300	+0.23946694	−0.86102383		
<i>e</i>	0.0304268	<i>i</i>	4.41597	+0.06390743	−0.44712200		
<i>P</i>	4.59	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 02 22	589	0.2−	0.5+	1996 03 21	589	1.2+	2.1−	1998 09 26	704	0.5−	1.0−
1996 02 22	589	0.2+	0.0	1996 03 23	589	0.5−	0.8+	1998 09 26	704	1.8+	1.3−
1996 02 22	589	0.0	0.2−	1996 03 23	589	1.2−	0.0	1998 09 26	704	0.8+	1.0−
1996 02 25	589	1.4+	0.9+	1996 03 23	589	1.4−	0.3−	1998 09 27	704	0.1−	0.9+
1996 02 25	589	0.2+	0.1−	1996 03 23	589	1.0−	0.1+	1998 09 27	704	0.4−	0.3−
1996 02 25	589	0.3+	0.7−	1996 04 07	589	1.1−	0.4+	1998 09 27	704	0.1−	0.6+
1996 02 25	589	0.9−	1.2+	1996 05 20	589	0.6−	0.3−	1998 09 27	704	0.2−	0.0

1996 03 21	589	1.2+	1.0−	1996 05 20	589	0.2+	0.6+
1996 03 21	589	1.6+	0.5−	1998 09 26	704	1.0−	1.4+

1996 DM₂ = 1998 SE₁₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	177.65767		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21747077	ω	117.53227	−0.71557549	+0.69174273		
<i>a</i>	2.7386432	Ω	106.41723	−0.67130629	−0.64253168		
<i>e</i>	0.0519624	<i>i</i>	5.81457	−0.19313102	−0.32961347		
<i>P</i>	4.53	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 02 23	411	0.5−	0.4+	1996 03 22	411	0.1+	1.1−	1998 09 27	704	0.1+	0.8−
1996 02 23	411	0.3−	0.2+	1998 09 26	704	0.8−	0.3+	1998 10 17	699	0.4−	0.4+
1996 02 27	411	0.5+	0.2+	1998 09 26	704	0.4−	0.5+	1998 10 17	699	0.7−	0.5+
1996 02 27	411	0.6+	0.3−	1998 09 26	704	0.2−	0.6−	1998 10 17	699	0.1+	0.2−
1996 02 28	411	0.8−	0.5−	1998 09 26	704	0.6+	0.3−	1998 10 20	699	0.5+	0.4−
1996 02 28	411	1.2+	0.4−	1998 09 26	704	0.1+	0.5+	1998 10 20	699	0.4+	0.4−
1996 03 09	411	0.5+	0.3+	1998 09 27	704	0.6−	0.9−	1998 10 20	699	0.8+	0.2−
1996 03 09	411	0.5−	0.7+	1998 09 27	704	1.0+	0.6+				
1996 03 22	411	0.9−	0.6+	1998 09 27	704	0.6−	0.8+				

1996 DT₃ = 1998 RK₇₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	332.72237		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.25348312	ω	117.52612	+0.27652020	−0.96047017		
<i>a</i>	2.4726920	Ω	316.38161	+0.86445233	+0.26321320		
<i>e</i>	0.0744146	<i>i</i>	2.67120	+0.41983181	+0.09064139		
<i>P</i>	3.89	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 18	327	0.8−	0.7−	1996 02 20	566	(0.0	3.8−)	1998 09 26	704	0.4+	1.1+
1996 01 18	327	0.5−	0.9−	1998 09 14	704	0.3+	0.0	1998 09 26	704	0.3−	0.3−
1996 01 18	327	0.8−	0.4−	1998 09 14	704	0.3−	0.6−	1998 09 27	704	0.1+	0.9+
1996 02 16	010	0.0	0.8−	1998 09 14	704	0.0	1.6−	1998 09 27	704	0.7+	0.8+
1996 02 16	010	0.6−	0.3−	1998 09 18	704	0.6+	0.9−	1998 09 27	704	0.5+	1.0+
1996 02 16	010	0.3−	0.2−	1998 09 18	704	1.0−	0.9+	1998 09 27	704	0.1+	0.9+
1996 02 17	010	1.7+	0.9+	1998 09 18	704	1.3+	0.2−	1998 09 27	704	1.0−	0.6+
1996 02 17	010	0.2−	1.1+	1998 09 18	704	0.5+	0.5−	1998 10 14	699	0.6−	1.3−
1996 02 17	010	1.4+	1.6+	1998 09 18	704	0.9−	1.0+	1998 10 14	699	1.1−	0.2+
1996 02 20	566	(0.3−	3.7−)	1998 09 26	704	1.7+	0.0	1998 10 14	699	1.4−	1.2−
1996 02 20	566	(0.8−	4.2−)	1998 09 26	704	0.4+	0.6−				

1996 EB = 1997 JL₁₇ = 1997 LL₁₂

Id. A. Doppler, G. V. Williams (d)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	319.91739		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23452444	ω	345.89261	+0.50156849	−0.83005630		
<i>a</i>	2.6042179	Ω	73.49354	+0.81634365	+0.36082413		
<i>e</i>	0.1466176	<i>i</i>	14.73053	+0.28637753	+0.42522050		
<i>P</i>	4.20	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 02	595	0.3−	0.5+	1996 03 10	595	0.7−	1.7−	1997 05 04	809	0.1+	0.2+
1996 03 02	595	0.9+	0.4+	1996 03 10	595	0.4−	1.1−	1997 06 07	809	0.6+	1.3+
1996 03 02	595	0.3+	0.2+	1997 05 03	809	0.2−	0.2+	1997 06 07	809	1.0+	1.0+
1996 03 03	595	0.3−	0.6+	1997 05 03	809	0.3+	0.3−	1997 06 07	809	0.7+	1.0+
1996 03 04	595	0.3−	0.5+	1997 05 03	809	0.4−	0.6−	1997 06 08	809	0.5−	0.8−
1996 03 09	595	0.2+	0.4+	1997 05 04	809	0.2+	0.1−	1997 06 08	809	1.0−	1.3−
1996 03 09	595	0.7+	0.0	1997 05 04	809	0.2−	0.9+	1997 06 08	809	0.5−	1.4−

1996 EW

Id. E. Bowell (1988, 1998 observations)

M.P.C. 32950

1998 NOV. 10

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	249.01283	(2000.0)	P		Q	
<i>n</i>	0.24183046	ω 2.48394	−0.97031107	−0.23244289		
<i>a</i>	2.5514989	Ω 163.60233	+0.21762142	−0.95964738		
<i>e</i>	0.1179891	<i>i</i> 13.69449	+0.10553362	−0.15826311		
<i>P</i>	4.08	<i>H</i> 14.7	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1988 03 18	675	0.4+	0.3−	1996 03 18	566	0.2−	0.3+	1996 03 25	608	0.2−	0.1−
1988 03 18	675	0.3−	0.8+	1996 03 23	608	0.1−	0.3+	1996 05 01	327	0.4−	0.1+
1996 03 15	566	0.2+	0.2+	1996 03 23	608	0.1−	0.1+	1996 05 01	327	0.4−	0.7+
1996 03 15	566	0.0	0.3+	1996 03 24	691	0.7−	0.4−	1996 05 01	327	0.2+	0.5+
1996 03 15	566	0.1−	0.1+	1996 03 24	691	0.7−	0.4−	1998 09 24	699	1.2−	0.2+
1996 03 17	566	0.2−	0.1+	1996 03 24	691	1.1−	0.5−	1998 09 24	699	0.4+	0.5−
1996 03 17	566	0.1−	0.5+	1996 03 24	566	1.7+	0.4−	1998 09 24	699	0.7+	0.1+
1996 03 17	566	0.1−	0.3+	1996 03 24	566	1.6+	0.8−	1998 10 17	699	0.0	0.5+
1996 03 18	566	0.5−	0.1−	1996 03 24	566	1.4+	0.7−	1998 10 17	699	0.4+	0.3−
1996 03 18	566	0.1−	0.0	1996 03 25	608	0.2−	0.0	1998 10 17	699	0.5−	0.4+

1996 EB₁ = 1998 SE₄₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	349.42893	(2000.0)	P		Q	
<i>n</i>	0.21451332	ω 40.13908	+0.73536450	−0.67766558		
<i>a</i>	2.7637571	Ω 2.52811	+0.60366337	+0.65310360		
<i>e</i>	0.1016734	<i>i</i> 3.77208	+0.30794415	+0.33797196		
<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 15	566	0.3+	1.4+	1998 09 14	704	0.3+	0.3+	1998 09 26	704	1.2−	0.9+
1996 03 15	566	0.8+	1.3+	1998 09 14	704	1.1+	0.3−	1998 09 27	704	0.3−	0.4+
1996 03 15	566	0.5+	1.2+	1998 09 14	704	1.3+	0.3−	1998 09 27	704	0.0	1.1+
1996 03 17	566	0.6−	0.6−	1998 09 14	704	0.7+	0.1−	1998 09 27	704	1.0−	1.8+
1996 03 17	566	0.2−	0.5−	1998 09 14	704	0.5−	0.4−	1998 09 27	704	0.0	0.8+
1996 03 17	566	1.0−	0.5−	1998 09 18	704	0.3+	0.2−	1998 09 27	704	0.1−	1.1+
1996 03 18	566	0.2−	0.5+	1998 09 18	704	0.0	0.3−	1998 09 29	120	0.1−	0.0
1996 03 18	566	0.2−	0.2−	1998 09 18	704	0.7+	1.1−	1998 09 29	120	1.1−	0.4+
1996 03 18	566	0.2−	0.1−	1998 09 18	704	0.1+	0.2−	1998 09 29	120	0.6+	0.5−
1996 03 18	566	0.7+	0.4−	1998 09 18	704	0.2+	0.2−	1998 09 29	120	(2.3−	1.5+)
1996 03 18	566	0.8−	0.3+	1998 09 24	120	0.2+	0.4−	1998 10 14	704	0.4−	1.1−
1996 03 18	566	0.4−	0.1+	1998 09 24	120	0.1−	0.1+	1998 10 14	704	0.1−	0.4−
1996 03 19	566	0.3−	0.3+	1998 09 24	120	0.5−	0.3−	1998 10 14	704	(2.4+	1.0−)
1996 03 19	566	0.1−	0.1+	1998 09 25	699	1.1+	0.0	1998 10 14	704	(3.8−	1.7+)
1996 03 19	566	0.5−	0.2+	1998 09 25	699	0.1+	0.5+	1998 10 15	704	1.5+	0.3+
1996 03 19	566	0.1−	0.6−	1998 09 25	699	0.4+	0.2−	1998 10 15	704	(2.0+	1.4−)
1996 03 19	566	0.7+	0.7−	1998 09 26	704	0.3−	0.7−	1998 10 15	704	0.8+	0.4+
1996 03 19	566	0.3−	0.6−	1998 09 26	704	0.9−	0.4−	1998 10 15	704	1.1+	0.7−
1996 03 20	098	0.4+	0.9−	1998 09 26	704	1.6−	0.3−	1998 10 15	704	0.7−	0.9−
1996 03 20	098	1.0+	1.1−	1998 09 26	704	1.2−	0.2+				

1996 EH₁ = 1979 HV₃ = 1990 DS₈ = 1998 SV₁₄₃

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	151.34550	(2000.0)	P		Q	
<i>n</i>	0.17468681	ω 43.09842	−0.49438774	+0.86580381		
<i>a</i>	3.1692948	Ω 197.71983	−0.85045286	−0.50016162		
<i>e</i>	0.1568562	<i>i</i> 14.69919	−0.17975175	−0.01490339		
<i>P</i>	5.64	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 2		

Residuals in seconds of arc

1979 04 25	095	0.2+	1.9+	1996 03 24	566	0.3−	0.2+	1998 09 26	704	0.6−	0.0
1990 02 24	809	0.5+	0.6−	1996 03 24	566	0.1+	0.4+	1998 09 26	704	(2.6−	0.3+)
1990 02 24	809	0.0	0.3+	1996 03 24	566	0.0	0.4+	1998 09 27	704	0.7+	0.0
1990 02 24	809	0.6−	0.2−	1996 03 24	608	0.3+	0.3+	1998 09 27	704	0.2+	0.9+
1996 03 15	566	(2.8−	3.7−)	1996 03 24	608	0.0	0.2+	1998 09 27	704	(1.1−	2.5+)
1996 03 15	566	(2.3−	3.1−)	1996 03 25	608	0.1+	0.3+	1998 09 27	704	0.7−	0.7+

1996 03 15	566	(2.1−	3.8−)	1996 03 25	608	0.1−	0.1+	1998 10 28	704	0.4+	0.0
1996 03 17	566	0.4+	0.1+	1998 09 18	809	1.7+	0.1−	1998 10 28	704	1.0+	1.9+
1996 03 17	566	0.1+	0.0	1998 09 18	809	0.3+	0.5−	1998 10 28	704	1.9−	0.4−
1996 03 17	566	0.1+	0.1+	1998 09 18	809	0.1−	0.6−	1998 10 28	704	(2.2−	1.1+)
1996 03 18	566	0.0	0.7+	1998 09 20	809	1.4+	0.7+	1998 10 29	704	0.9−	1.0+
1996 03 18	566	0.1−	0.2+	1998 09 20	809	0.4+	1.1−	1998 10 29	704	0.9−	0.7−
1996 03 18	566	0.2−	0.4+	1998 09 20	809	1.3+	0.1−	1998 10 29	704	0.3−	0.8+
1996 03 20	566	0.2−	0.5+	1998 09 26	704	(1.3−	2.1+)	1998 10 29	704	1.6−	1.6+
1996 03 20	566	0.2+	0.4+	1998 09 26	704	0.2−	1.2+	1998 10 29	704	1.0−	0.1−
1996 03 20	566	0.1+	0.3+	1998 09 26	704	0.5+	1.2+				

1996 EB₂ = 1977 DG₄ = 1998 RA₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	314.35194	(2000.0)	P		Q	
<i>n</i>	0.21010733	ω 71.64534	+0.40940658	−0.91223525		
<i>a</i>	2.8022610	Ω 354.12472	+0.77396331	+0.35573386		
<i>e</i>	0.1444083	<i>i</i> 8.19880	+0.48308078	+0.20317545		
<i>P</i>	4.69	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1977 02 18	381	0.8−	1.0+	1996 03 19	566	0.2−	0.1−	1998 09 18	704	0.8+	1.3+
1977 02 18	381	(3.1+	0.4−)	1996 03 20	098	1.3−	1.2−	1998 09 18	704	0.3+	2.0−
1977 02 19	381	1.0+	0.8−	1996 03 20	098	(0.2+	2.5−)	1998 09 18	704	0.3+	0.6+
1977 02 19	381	0.9−	1.2−	1996 03 23	566	0.3+	0.5+	1998 09 19	428	0.2−	0.2−
1996 03 15	566	0.1+	0.2+	1996 03 23	566	0.7+	0.4+	1998 09 20	428	0.4+	0.8−
1996 03 15	566	0.4−	0.6+	1996 03 23	566	0.8+	0.1+	1998 09 20	428	0.1+	0.3−
1996 03 15	566	0.0	0.4+	1998 09 14	704	0.4−	0.4+	1998 09 21	699	0.1+	0.4−
1996 03 19	566	0.0	0.4−	1998 09 14	704	0.5−	0.9−	1998 09 21	699	0.0	0.1−
1996 03 19	566	0.1−	0.6−	1998 09 14	704	0.6−	0.4+	1998 09 21	699	0.0	0.8−
1996 03 19	566	0.2−	0.5−	1998 09 14	704	1.0+	0.2+	1998 09 22	428	0.9−	1.2−
1996 03 19	566	0.3+	0.0	1998 09 14	704	0.7−	1.2+				
1996 03 19	566	0.2−	0.2+	1998 09 18	704	1.7+	1.2+				

1996 EQ₂ = 1997 GX₄₁ = 1998 MT₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	284.37293	(2000.0)	P		Q	
<i>n</i>	0.17996939	ω 206.57024	+0.73934890	−0.66804013		
<i>a</i>	3.1069692	Ω 196.24494	+0.65883130	+0.74355826		
<i>e</i>	0.2126806	<i>i</i> 17.51187	+0.13894072	+0.02904317		
<i>P</i>	5.48	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1996 03 15	608	1.0−	0.8+	1997 04 09	809	0.1+	0.5+	1998 06 19	704	1.8+	0.2+
1996 03 15	608	1.4−	0.8+	1997 04 09	809	0.9+	0.6+	1998 06 19	704	0.4−	0.7−
1996 03 16	608	0.8+	0.4−	1997 04 09	809	0.6+	0.0	1998 06 25	704	0.0	0.4−
1996 03 16	608	0.6+	0.2−	1997 04 10	809	1.1−	0.3−	1998 06 25	704	0.5−	0.0
1996 03 17	608	0.3+	0.7+	1997 04 10	809	0.1−	0.5−	1998 06 25	704	0.7−	0.6−
1996 03 17	608	0.4+	0.9+	1997 04 10	809	0.5−	0.2−	1998 06 25	704	0.1−	0.6+
1996 03 18	608	0.3+	1.2−	1998 06 19	704	0.5−	0.6+	1998 06 25	704	0.3+	0.8+
1996 03 18	608	0.1+	1.4−	1998 06 19	704	0.1+	0.6−				

1996 EE₈ = 1998 SP₁₄₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.71074	(2000.0)	P		Q	
<i>n</i>	0.19141554	ω 333.84291	+0.88031026	+0.47433989		
<i>a</i>	2.9818417	Ω 357.79809	−0.39412302	+0.72251684		
<i>e</i>	0.1050381	<i>i</i> 11.18150	−0.26404714	+0.50296230		
<i>P</i>	5.15	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1996 03 11	691	0.4+	0.3−	1996 03 27	691	0.3−	0.3−	1998 09 27	704	1.1+	1.2+
1996 03 11	691	0.2−	0.5+	1996 03 27	691	0.5+	0.5−	1998 09 27	704	1.5−	2.5+
1996 03 11	691	0.5−	0.2+	1996 03 27	691	0.2−	0.3−	1998 09 27	704	0.6−	0.7+
1996 03 18	691	0.2+	0.2+	1998 09 26	704	2.2+	0.9−	1998 09 27	704	0.1−	0.7+

1998 NOV. 10

1996 03 18 691 0.1- 0.0 1998 09 26 704 1.5- 2.9-
 1996 03 18 691 0.2- 0.1+ 1998 09 26 704 0.5+ 1.6-

1996 EM₁₁ = 1997 NA₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	290.98448	(2000.0)	P	Q
<i>n</i>	0.28099960	ω 16.53341	-0.97720955	-0.20697952
<i>a</i>	2.3085126	Ω 151.39064	+0.18191668	-0.93096112
<i>e</i>	0.0964005	<i>i</i> 5.64823	+0.10939756	-0.30078376
<i>P</i>	3.51	<i>H</i> 17.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 03 12	691	0.3-	0.1+	1996 03 17	691	0.6+	0.3-	1997 07 11	691	0.0	0.4-
1996 03 12	691	0.3-	0.2-	1996 03 23	691	0.4-	0.0	1997 07 11	691	0.3+	0.3+
1996 03 12	691	0.2-	0.1-	1996 03 23	691	0.1-	0.1-	1997 07 14	691	0.3-	0.1+
1996 03 17	691	0.5+	0.3+	1996 03 23	691	0.3-	0.0	1997 07 14	691	0.2-	0.1+
1996 03 17	691	0.5+	0.3+	1997 07 11	691	0.5+	0.2+	1997 07 14	691	0.2-	0.1-

1996 FA₂ = 1997 SK₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	257.92932	(2000.0)	P	Q
<i>n</i>	0.29898325	ω 261.02303	-0.37267627	+0.92769920
<i>a</i>	2.2149885	Ω 347.02992	-0.80810015	-0.33613285
<i>e</i>	0.1513306	<i>i</i> 5.64032	-0.45616504	-0.16244661
<i>P</i>	3.30	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 03 20	566	0.1+	0.1-	1996 03 21	566	0.0	0.1-	1997 09 23	691	0.1+	0.3+
1996 03 20	566	0.1-	0.1+	1996 03 21	566	0.1+	0.2+	1997 09 23	691	0.1+	0.0
1996 03 20	566	0.1+	0.0	1996 03 21	566	0.2-	0.3-	1997 09 23	691	0.0	0.2+
1996 03 21	566	0.2+	0.3+	1996 03 24	566	0.0	0.0	1997 09 29	691	0.1-	0.1-
1996 03 21	566	0.2-	0.5-	1996 03 24	566	0.1+	0.1-	1997 09 29	691	0.1-	0.2-
1996 03 21	566	0.2+	0.3+	1996 03 24	566	0.4-	0.2+	1997 09 29	691	0.0	0.1-

1996 FA₄ = 1981 UK₅ = 1998 SW₁₄₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	298.75789	(2000.0)	P	Q
<i>n</i>	0.22849175	ω 77.63347	-0.47081871	-0.86903814
<i>a</i>	2.6498565	Ω 41.57899	+0.69398556	-0.47119433
<i>e</i>	0.1111973	<i>i</i> 13.23986	+0.54471441	-0.15082647
<i>P</i>	4.31	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1981 10 30	381	0.4-	0.6+	1996 04 09	608	0.8+	0.1-	1998 09 26	704	0.3+	0.2+
1981 10 30	381	0.4+	0.2-	1996 04 22	691	0.2-	0.6-	1998 09 27	704	0.1-	0.2+
1981 10 30	381	0.8-	0.5-	1996 04 22	691	0.1-	0.4-	1998 09 27	704	0.3-	0.2+
1981 10 30	381	1.1+	0.4-	1996 04 22	691	0.0	0.4-	1998 09 27	704	0.5-	0.1+
1996 03 20	608	0.1+	0.7+	1996 04 23	691	0.9-	0.2-	1998 09 27	704	0.6+	1.8+
1996 03 20	608	0.1-	0.5+	1996 04 23	691	0.9-	0.7-	1998 10 11	699	0.1+	0.7+
1996 03 24	608	0.2+	0.4+	1996 04 23	691	0.9-	0.7-	1998 10 11	699	0.1+	0.1-
1996 03 24	608	0.0	0.2+	1998 09 26	704	0.7-	0.7-	1998 10 11	699	1.0+	0.3+
1996 04 08	608	(0.0	3.2-)	1998 09 26	704	1.2+	1.9-	1998 10 20	699	0.3+	0.4-
1996 04 08	608	(0.6+	2.7-)	1998 09 26	704	0.1-	0.7-	1998 10 20	699	0.1-	1.0-
1996 04 09	608	0.9+	0.2-	1998 09 26	704	0.3-	0.6+	1998 10 20	699	0.7-	0.3-

1996 GA₁ = 1998 TO₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	174.95952	(2000.0)	P	Q
<i>n</i>	0.17742073	ω 179.20531	-0.65496565	+0.75534188
<i>a</i>	3.1366530	Ω 49.87731	-0.69346101	-0.58930135
<i>e</i>	0.1893274	<i>i</i> 1.63953	-0.30021963	-0.28667503
<i>P</i>	5.56	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 4

M.P.C. 32951

Residuals in seconds of arc

1996 04 15	684	0.1+	0.7-	1996 04 19	684	0.2+	0.0	1998 10 12	691	0.2-	0.7-
1996 04 15	684	0.4-	0.4-	1996 04 19	684	0.3+	0.0	1998 10 12	691	0.9-	0.2+
1996 04 16	684	0.1-	0.3+	1996 04 23	684	0.3+	0.2-	1998 10 12	691	0.9+	0.2+
1996 04 16	684	0.1-	0.1+	1996 04 23	684	0.0	0.2-	1998 10 13	691	0.3+	0.0
1996 04 16	684	0.1-	0.1+	1996 04 23	684	0.2+	0.1-	1998 10 13	691	0.5+	0.1+
1996 04 17	684	0.2-	0.3+	1996 05 10	684	0.2-	0.1+	1998 10 18	691	0.1+	0.4+
1996 04 17	684	0.2-	0.4+	1996 05 10	684	0.1-	0.2+	1998 10 18	691	0.1+	0.2-
1996 04 19	684	0.4+	0.0	1998 10 12	691	0.6-	0.2-	1998 10 18	691	0.0	0.0

1996 GV₁ = 1983 ES₃ = 1991 BH₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	285.92784	(2000.0)	P	Q
<i>n</i>	0.23020450	ω 101.77626	-0.75930767	-0.63451730
<i>a</i>	2.6366967	Ω 39.09246	+0.47136117	-0.68924756
<i>e</i>	0.1196033	<i>i</i> 13.23429	+0.44863181	-0.34975077
<i>P</i>	4.28	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1983 03 15	095	0.0	0.0	1996 04 12	400	1.5+	0.2+	1996 04 20	691	0.7-	0.5+
1991 01 18	033	0.3-	0.1+	1996 04 13	400	0.6-	1.2-	1996 04 22	400	1.0-	1.7-
1991 01 18	033	0.3+	0.1-	1996 04 13	400	0.4+	0.5+	1996 04 22	400	0.6+	0.4+
1991 01 19	033	(3.4+	0.1-)	1996 04 20	691	0.7-	0.6+	1996 04 22	400	0.9+	0.7+
1996 04 12	400	0.4+	0.5-	1996 04 20	691	0.7-	0.4+				

1996 GN₂ = 1998 SC₁₄₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	3.91626	(2000.0)	P	Q
<i>n</i>	0.21870163	ω 219.33750	+0.62972881	-0.77614913
<i>a</i>	2.7283581	Ω 191.75173	+0.74658575	+0.61614063
<i>e</i>	0.1280249	<i>i</i> 9.08467	+0.21459579	+0.13402711
<i>P</i>	4.51	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 04 12	104	0.3+	0.6-	1996 04 18	104	0.8-	0.2+	1996 05 21	104	0.9+	1.5+
1996 04 12	104	0.4-	0.1+	1996 05 06	104	0.2+	0.3-	1996 05 21	104	0.8+	1.5+
1996 04 12	104	0.8-	0.3+	1996 05 06	104	0.3+	0.5+	1998 09 20	809	0.3+	0.4+
1996 04 12	104	0.7-	0.7+	1996 05 06	104	0.3+	0.4+	1998 09 20	809	0.6-	0.7-
1996 04 12	104	0.1+	0.5+	1996 05 13	104	0.0	0.7-	1998 09 20	809	0.6-	0.1+
1996 04 14	104	0.6+	1.0+	1996 05 13	104	0.1-	1.0-	1998 09 21	809	1.0+	1.3+
1996 04 14	104	0.4+	0.3+	1996 05 13	104	0.8-	0.9-	1998 09 21	809	0.1-	0.0
1996 04 14	104	0.9+	1.0-	1996 05 16	104	0.2-	0.7-	1998 09 21	809	0.2-	0.0
1996 04 18	104	0.4-	0.3+	1996 05 16	104	0.0	0.7-				
1996 04 18	104	0.5-	0.2+	1996 05 16	104	0.3+	0.5-				

1996 GL₃

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	323.37225	(2000.0)	P	Q
<i>n</i>	0.21749858	ω 356.30211	+0.02378481	-0.99747477
<i>a</i>	2.7384098	Ω 92.32670	+0.91893220	-0.00454764
<i>e</i>	0.0351146	<i>i</i> 3.84031	+0.39369772	+0.07087600
<i>P</i>	4.53	<i>H</i> 14.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 04 09	691	0.2+	0.0	1996 04 15	691	0.5-	0.2+	1998 09 18	699	0.2+	0.3+
1996 04 09	691	0.3+	0.2+	1996 04 21	691	0.4+	0.0	1998 09 18	699	0.6+	0.5-
1996 04 09	691	0.2+	0.2+	1996 04 21	691	0.7+	1.0-	1998 10 11	699	0.2+	0.1+
1996 04 15	691	0.9-	0.2+	1996 04 21	691	0.1+	0.2-	1998 10 11	699	0.2-	0.1-
1996 04 15	691	0.5-	0.0	1998 09 18	699	0.2+	0.3+	1998 10 11	699	0.9-	0.3-

1996 GJ₄ = 1987 FQ = 1989 TD₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22348454	ω	230.60938	+0.84754771	-0.52942706		
<i>a</i>	2.6892905	Ω	161.26571	+0.51544632	+0.80454301		
<i>e</i>	0.0534800	<i>i</i>	6.61729	+0.12640400	+0.26910506		
<i>P</i>	4.41	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1987 03 21	046	0.4+	0.4+	1996 04 11	691	0.5-	0.8-
1987 03 21	046	0.4-	0.5-	1996 04 11	691	0.2-	0.7-
1989 10 03	809	0.3+	0.4-	1996 04 11	691	0.5+	0.4-
1989 10 03	809	0.2+	0.2+	1996 04 15	691	1.0-	1.6+
1989 10 03	809	0.4-	0.1+	1996 04 15	691	1.1-	1.4+

1996 GT₁₉ = 1996 LB₄ = 1998 RF₅₉Id. T. B. Spahr (d, *MPC* 30696), G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18344204	ω	248.40773	+0.08913293	-0.99499452		
<i>a</i>	3.0676334	Ω	196.67001	+0.96215156	+0.09774166		
<i>e</i>	0.0645833	<i>i</i>	9.06174	+0.25752610	-0.02079599		
<i>P</i>	5.37	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 03 24	809	1.2+	1.5+	1996 06 10	809	(1.7+	3.0+)
1996 03 24	809	0.4+	1.4+	1996 06 10	809	(2.8+	3.1+)
1996 03 24	809	(0.1-	2.7+)	1998 09 14	704	0.1+	0.2+
1996 03 27	809	0.8+	1.0+	1998 09 14	704	0.1-	0.5+
1996 03 27	809	0.3+	1.4+	1998 09 14	704	0.1-	0.3+
1996 03 27	809	1.2-	1.0+	1998 09 16	699	0.6-	0.2+
1996 04 15	809	0.9+	0.1-	1998 09 16	699	0.3+	0.6-
1996 04 15	809	1.4+	0.9-	1998 09 16	699	0.1-	0.5-
1996 04 15	809	1.2+	0.4-	1998 09 18	704	0.4-	1.3-
1996 04 17	809	0.4-	1.2-	1998 09 18	704	0.4-	1.5-
1996 04 17	809	0.9-	1.7-	1998 09 18	704	0.6+	0.5-
1996 04 17	809	1.0-	1.5-	1998 09 18	704	1.1+	0.6+
1996 06 08	809	0.4-	0.2+	1998 09 18	704	0.3-	0.2-
1996 06 08	809	1.7-	0.4+	1998 10 14	704	0.8-	0.2+
1996 06 08	809	0.7-	0.8+	1998 10 14	704	0.5-	1.5-
1996 06 10	809	(2.7+	3.3+)	1998 10 14	704	1.6-	0.4-

1996 HP

Id. T. Kobayashi (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23760814	ω	112.63593	-0.94326752	-0.26649953		
<i>a</i>	2.5816370	Ω	52.48204	+0.12762741	-0.84166724		
<i>e</i>	0.0917242	<i>i</i>	14.45967	+0.30652510	-0.46965335		
<i>P</i>	4.15	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 04 18	557	0.3-	0.1-	1996 05 18	557	0.6+	0.5-
1996 04 18	557	0.2-	0.1-	1996 05 18	557	0.4+	0.3-
1996 04 19	557	0.1-	0.0	1996 05 19	809	(0.4-	3.1+)
1996 04 20	557	0.3-	0.0	1996 05 19	809	(0.5-	2.8+)
1996 04 20	557	0.1-	0.2+	1996 05 19	809	(0.1-	3.5+)
1996 04 20	557	0.0	0.1+	1996 05 19	566	0.5-	0.3-
1996 04 21	557	0.1-	0.7-	1996 05 19	566	0.1-	0.1-
1996 04 21	557	0.2+	0.1+	1996 05 19	566	0.3+	0.0
1996 04 27	557	0.1+	0.2-	1996 05 22	809	0.7+	2.3+
1996 04 27	557	0.2+	0.0	1996 05 22	809	0.0	1.7+
1996 05 16	557	1.1+	0.1+	1996 05 22	809	0.6-	1.6+
1996 05 16	557	0.2-	0.1+	1996 05 22	557	0.4+	1.7-

1996 HY₁₀ = 1998 SB₇₅

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18322652	ω	186.28470	-0.67988066	+0.72445241		
<i>a</i>	3.0700385	Ω	40.96591	-0.66503224	-0.54376351		
<i>e</i>	0.0382393	<i>i</i>	9.98838	-0.30902169	-0.42366255		
<i>P</i>	5.38	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 04 17	809	0.5+	0.2-	1996 05 22	809	(3.2+	2.8+)
1996 04 17	809	0.3-	0.3+	1996 05 22	809	(2.7+	0.9+)
1996 04 17	809	0.4-	0.4+	1996 05 22	809	(2.9+	2.2+)
1996 04 18	809	0.3+	0.4+	1998 09 21	809	1.1+	0.4+
1996 04 18	809	0.7-	0.4+	1998 09 21	809	0.3+	0.7-
1996 04 18	809	0.0	0.3-	1998 09 21	809	0.7-	0.3-
1996 05 19	809	0.6+	0.1-	1998 09 23	809	(8.4+	0.3+)
1996 05 19	809	0.5+	0.3-	1998 09 23	809	(7.6+	1.1+)
1996 05 19	809	0.4-	0.1-	1998 09 23	809	(8.4+	1.7+)

1996 HT₁₅ = 1998 SQ₁₄₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19535362	ω	255.30481	+0.54776108	-0.83654497		
<i>a</i>	2.9416325	Ω	161.46597	+0.78167446	+0.50649871		
<i>e</i>	0.0776842	<i>i</i>	2.21048	+0.29823286	+0.20892959		
<i>P</i>	5.05	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1996 04 18	809	1.1-	1.2+	1996 05 19	809	0.3-	0.1-
1996 04 18	809	1.0-	1.6+	1996 05 19	809	0.3-	0.0
1996 04 18	809	0.2+	0.9+	1996 05 19	809	0.1-	0.8-
1996 04 20	809	1.0+	0.3-	1996 05 22	809	0.1+	0.8-
1996 04 20	809	1.2+	0.6-	1996 05 22	809	0.6+	0.5+
1996 04 20	809	0.4+	0.8-	1996 05 22	809	0.6-	0.1-

1996 HX₁₆ = 1998 UL₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19699086	ω	345.02227	+0.66286410	-0.74747382		
<i>a</i>	2.9253107	Ω	63.43810	+0.69186043	+0.58925075		
<i>e</i>	0.1002966	<i>i</i>	2.78892	+0.28625223	+0.30670252		
<i>P</i>	5.00	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1996 04 18	809	(0.9+	2.6+)	1996 05 19	809	1.2-	0.8+
1996 04 18	809	0.1-	0.9+	1996 05 22	809	1.8+	1.0-
1996 04 18	809	0.3-	1.0+	1996 05 22	809	1.4+	0.7+
1996 04 20	809	0.0	0.7-	1996 05 22	809	0.4+	0.1-
1996 04 20	809	0.3+	1.8-	1998 10 14	699	1.1+	0.3+
1996 04 20	809	(0.1-	2.2-)	1998 10 14	699	0.8+	0.3-
1996 05 19	809	0.9-	0.3+	1998 10 14	699	0.9+	0.1+
1996 05 19	809	1.4-	0.1-	1998 10 17	691	0.7-	1.1-

1996 HQ₁₉ = 1998 SG₁₄₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17101960	ω	91.98211	-0.39095224	+0.92039956		
<i>a</i>	3.2144410	Ω	155.00258	-0.84871331	-0.35856694		
<i>e</i>	0.1031603	<i>i</i>	0.62139	-0.35614892	-0.15586663		
<i>P</i>	5.76	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 04 18	809	0.4+	0.7+	1996 05 19	809	0.5−	0.6+	1996 05 23	809	1.0+	0.9+
1996 04 18	809	0.4+	0.7+	1996 05 19	809	0.8−	0.2−	1996 05 23	809	1.0+	0.0
1996 04 18	809	0.4−	0.6+	1996 05 22	809	0.9−	0.1−	1996 05 20	809	0.1+	0.2−
1996 04 20	809	0.4−	1.5−	1996 05 22	809	0.4−	0.3−	1996 05 20	809	0.2−	0.1+
1996 04 20	809	0.3−	1.9−	1996 05 22	809	0.1+	0.2−	1996 05 21	809	0.6+	0.3+
1996 04 20	809	0.2−	0.4−	1996 05 23	809	(2.3+	0.8+)	1996 05 21	809	0.5−	0.8−
1996 05 19	809	0.5+	0.1−	1996 05 23	809	1.4+	0.7+	1996 05 21	809	0.8−	0.1+

1996 HD₂₂ = 1998 SO₇₅

Id. B. G. Marsden, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	270.33105	(2000.0)		P		Q	
<i>n</i>	0.23255255	ω	107.48686	−0.83510265		−0.52859985	
<i>a</i>	2.6189185	Ω	40.96514	+0.37385095		−0.74842619	
<i>e</i>	0.1094886	<i>i</i>	13.43009	+0.40353319		−0.40055017	
<i>P</i>	4.24	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 18	327	0.3+	0.1−	1998 09 18	699	1.4+	0.4+	1998 10 14	704	1.2+	1.2+
1996 04 18	327	0.1−	0.1+	1998 09 20	809	(4.2+	1.6+)	1998 10 14	704	(2.1−	0.1+)
1996 04 18	327	0.6−	0.4+	1998 09 20	809	(3.0+	2.1+)	1998 10 15	704	0.3−	0.4+
1996 04 18	327	0.1−	0.0	1998 09 20	809	(3.4+	1.3+)	1998 10 15	704	1.0−	1.2+
1996 04 20	327	0.1−	0.1+	1998 09 21	809	1.7−	0.0	1998 10 15	704	(0.2−	2.2+)
1996 04 20	327	0.2−	0.5+	1998 09 21	809	(2.0−	0.6−)	1998 10 15	704	0.1−	1.5+
1996 04 20	327	0.1+	0.6+	1998 09 21	809	(3.0−	0.6−)	1998 10 28	704	0.9−	0.4−
1996 04 20	327	0.0	0.3−	1998 09 23	809	0.3+	0.7−	1998 10 28	704	0.0	0.3+
1996 04 20	327	0.3−	0.1−	1998 09 23	809	1.1−	1.4−	1998 10 28	704	0.1−	0.4+
1996 04 20	327	0.2+	0.2+	1998 09 23	809	0.9−	1.4−	1998 10 28	704	0.4−	1.5+
1996 04 25	327	0.9+	0.8−	1998 10 11	699	0.9−	0.5−	1998 10 29	704	1.4+	1.2−
1996 04 25	327	0.2+	0.7−	1998 10 11	699	0.3−	0.4−	1998 10 29	704	0.6−	0.5−
1996 04 25	327	0.3−	0.1−	1998 10 11	699	0.2−	0.4−	1998 10 29	704	1.6+	0.3−
1998 09 18	699	1.1+	0.4+	1998 10 14	704	0.6+	0.1−	1998 10 29	704	0.5−	0.9−
1998 09 18	699	0.4+	0.8+	1998 10 14	704	1.1+	0.2−	1998 10 29	704	(0.5−	2.1−)

1996 KY₄ = 1975 QQ = 1986 TN₂ = 1986 VD₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	166.26257	(2000.0)		P		Q	
<i>n</i>	0.27506696	ω	279.56876	+0.99764969		−0.02040479	
<i>a</i>	2.3415877	Ω	81.62106	+0.04527393		+0.91286371	
<i>e</i>	0.2599812	<i>i</i>	3.79104	−0.05143319		+0.40775421	
<i>P</i>	3.58	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1975 08 30	808	1.0−	0.1+	1986 11 05	688	1.4−	0.7+	1996 05 21	691	(2.2−	0.5+)
1975 08 30	808	0.9−	0.3+	1996 05 13	691	1.7+	0.1−	1996 05 21	691	(2.2−	0.5+)
1975 09 02	808	1.4−	0.0	1996 05 13	691	0.4−	0.2+	1996 05 22	809	1.3+	1.2+
1975 09 02	808	0.2+	0.6−	1996 05 13	691	0.8−	0.5+	1996 05 22	809	1.0−	1.6+
1986 10 07	688	0.3−	0.7−	1996 05 19	566	0.2+	0.4+	1996 05 22	809	0.9−	0.0
1986 10 07	688	0.2+	0.8−	1996 05 19	566	0.4−	0.3+	1996 05 24	809	0.4+	0.9−
1986 11 04	095	(5.9−	5.9−)	1996 05 19	566	0.0	0.7−	1996 05 24	809	0.4+	0.6−
1986 11 05	688	0.1+	0.7+	1996 05 21	691	(3.2−	0.9+)	1996 05 24	809	0.8+	1.8−

1996 PF = 1998 AU₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	79.87004	(2000.0)		P		Q	
<i>n</i>	0.26451655	ω	213.62972	−0.58049376		−0.80774642	
<i>a</i>	2.4034448	Ω	272.06252	+0.76790824		−0.50106412	
<i>e</i>	0.1035550	<i>i</i>	5.90564	+0.27082082		−0.31061306	
<i>P</i>	3.73	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 08 06	721	0.4−	0.1+	1996 08 12	721	0.0	1.0−	1998 01 02	704	0.6+	0.0
1996 08 06	721	0.5−	0.2+	1996 08 13	721	0.3+	0.1−	1998 01 02	704	0.0	0.1−
1996 08 08	721	0.4−	0.6+	1996 08 13	721	0.7+	0.2+	1998 01 06	704	0.8−	0.1−

1996 08 08	721	(1.0+	2.1−)	1998 01 02	704	0.7+	0.3+	1998 01 06	704	0.2−	0.1+
1996 08 12	721	0.1+	0.4−	1998 01 02	704	0.0	0.1−	1998 01 06	704	0.5−	0.0
1996 08 12	721	0.1+	0.5+	1998 01 02	704	0.1+	0.1−				

1996 PM₉ = 1998 AY₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	164.76754	(2000.0)		P		Q	
<i>n</i>	0.19863774	ω	162.85035	+0.93895335		+0.34403915	
<i>a</i>	2.9091193	Ω	177.02444	−0.31982184		+0.87488292	
<i>e</i>	0.0996316	<i>i</i>	2.11313	−0.12680927		+0.34090606	
<i>P</i>	4.96	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 08 08	809	1.4+	0.3−	1996 08 09	809	0.0	0.8+	1998 01 06	688	1.2+	0.1+
1996 08 08	809	0.9−	1.1−	1996 08 14	566	0.1−	0.4+	1998 01 07	688	0.2−	0.2+
1996 08 08	809	0.4−	1.0−	1996 08 14	566	0.1−	0.4+	1998 01 07	688	0.3−	0.1+
1996 08 09	809	0.2+	0.5−	1996 08 14	566	0.1−	0.4+	1998 01 08	688	0.8−	0.7−
1996 08 09	809	0.2−	0.8+	1998 01 06	688	0.8+	0.4+	1998 01 08	688	0.7−	0.1−

1996 RL₅ = 1062 T-1 = 1998 FL₃₇

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	220.78319	(2000.0)		P		Q	
<i>n</i>	0.29033472	ω	41.99257	+0.90796217		−0.41739911	
<i>a</i>	2.2587599	Ω	342.56940	+0.34381129		+0.79273011	
<i>e</i>	0.1794326	<i>i</i>	7.13075	+0.23957983		+0.44424876	
<i>P</i>	3.39	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	0.5+	0.8−	1996 09 13	620	1.3−	0.6+	1998 03 20	704	1.4+	0.5+
1971 03 25	675	0.6−	1.2+	1996 09 15	620	0.7−	0.3+	1998 03 20	704	1.4−	0.0
1971 03 25	675	0.6−	0.3−	1996 09 15	620	0.3+	1.5+	1998 03 22	704	0.2−	0.0
1971 03 26	675	1.3+	0.5+	1996 09 15	620	0.1−	0.2+	1998 03 22	704	0.6−	0.9+
1971 03 27	675	1.2−	1.7−	1996 09 19	620	0.7+	1.7−	1998 03 22	704	0.7+	1.2+
1996 09 13	620	0.7+	1.2+	1996 09 19	620	0.8+	0.9−	1998 03 22	704	1.0−	0.2+
1996 09 13	620	0.0	0.4−	1996 09 19	620	0.7−	0.6−	1998 03 22	704	0.7+	1.2+
1996 09 13	620	0.2+	0.3+	1998 03 20	704	1.4+	0.2−				
1996 09 13	620	0.6−	0.4+	1998 03 20	704	0.3+	1.5−				

1996 RW₁₀ = 1995 FR₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	243.64717	(2000.0)		P		Q	
<i>n</i>	0.23977928	ω	269.51594	+0.44912751		+0.89338025	
<i>a</i>	2.5660293	Ω	27.18275	−0.80847407		+0.41231784	
<i>e</i>	0.1406354	<i>i</i>	1.56771	−0.38033427		+0.17850974	
<i>P</i>	4.11	<i>H</i>	18.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 03 27	691	0.2−	0.2+	1995 04 05	691	0.2+	0.4−	1996 09 11	691	0.6+	0.1+
1995 03 27	691	0.1−	0.5+	1996 09 08	691	0.3−	0.1−	1996 09 11	691	0.1+	0.5−
1995 03 27	691	0.6+	0.0	1996 09 08	691	0.2−	0.5−	1996 09 17	691	0.5−	0.5+
1995 04 05	691	0.2−	0.2+	1996 09 08	691	0.2−	0.2−	1996 09 17	691	0.1−	0.3+
1995 04 05	691	0.1−	0.3−	1996 09 11	691	1.0+	0.2−	1996 09 17	691	0.4−	0.8+

1996 RE₁₇ = 1995 DD₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	309.26728	(2000.0)		P		Q	
<i>n</i>	0.26363627	ω	253.45288	−0.30357125		+0.95280847	
<i>a</i>	2.4087919	Ω	358.87415	−0.85976665		−0.27424985	
<i>e</i>	0.1858451	<i>i</i>	2.07943	−0.41066507		−0.13016542	
<i>P</i>	3.74	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 02 24	691	0.1−	0.0	1995 03 02	691	0.1+	0.0	1996 09 15	691	0.4+	0.0
1995 02 24	691	0.1+	0.0	1996 09 13	691	0.1−	0.1+	1996 09 15	691	0.2+	0.2−
1995 02 24	691	0.2−	0.3+	1996 09 13	691	0.0	0.1−	1996 09 22	691	0.1−	0.2+
1995 03 02	691	0.0	0.3−	1996 09 13	691	0.2−	0.2+	1996 09 22	691	0.2−	0.2+
1995 03 02	691	0.2+	0.2−	1996 09 15	691	0.3+	0.5−	1996 09 22	691	0.2−	0.0

1996 TL₅ = 1998 HN₄₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	121.70693		(2000.0)	P	Q
<i>n</i>	0.28095770	ω	24.15697	−0.85263297	−0.51580519
<i>a</i>	2.3087421	Ω	124.53287	+0.46139532	−0.81818637
<i>e</i>	0.1314944	<i>i</i>	5.81317	+0.24521700	−0.25400013
<i>P</i>	3.51	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 10 09	691	1.3−	0.1+	1996 10 10	566	0.3+	0.1−	1998 04 20	704	0.5+	0.3+
1996 10 09	691	1.0−	0.0	1996 10 10	566	1.1+	0.3−	1998 04 20	704	0.7−	0.0
1996 10 09	691	1.1−	0.0	1996 10 17	691	0.0	0.0	1998 04 21	704	0.0	0.1+
1996 10 09	566	1.8+	0.5+	1996 10 17	691	0.3−	0.0	1998 04 21	704	0.6+	0.3−
1996 10 09	566	0.2−	0.2+	1998 04 20	704	0.2+	0.7+	1998 04 21	704	0.3+	0.5−
1996 10 09	566	0.5+	0.4−	1998 04 20	704	0.0	0.1−	1998 04 21	704	0.6−	0.3+
1996 10 10	566	0.3+	0.0	1998 04 20	704	0.0	0.8−	1998 04 21	704	0.3−	0.3+

1996 TZ₇ = 1993 BE₁₂ = 1994 GH₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	210.87831		(2000.0)	P	Q
<i>n</i>	0.17998334	ω	286.99214	+0.66199798	+0.74927766
<i>a</i>	3.1068087	Ω	24.49044	−0.66958147	+0.60230691
<i>e</i>	0.0604225	<i>i</i>	2.55567	−0.33677788	+0.27533503
<i>P</i>	5.48	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 01 26	691	0.3−	0.4+	1994 04 06	691	0.0	0.0	1996 10 12	566	0.2−	0.1−
1993 01 26	691	0.4+	0.2−	1994 04 16	691	0.2+	0.3+	1996 10 13	817	0.1+	0.1+
1993 01 26	691	0.1+	0.2+	1994 04 16	691	0.2+	0.3+	1996 10 13	817	0.1+	0.0
1993 01 29	691	0.2−	0.0	1994 04 16	691	0.2+	0.7+	1996 10 13	817	0.3+	0.2−
1993 01 29	691	0.1−	0.1−	1996 10 12	817	0.0	0.3+	1996 10 15	817	0.2+	0.1−
1993 01 29	691	0.1+	0.3−	1996 10 12	817	0.4+	0.5+	1996 10 15	817	0.2−	0.8+
1994 04 06	691	0.1−	0.4−	1996 10 12	566	0.8−	0.2−				
1994 04 06	691	0.1−	0.1−	1996 10 12	566	0.3−	0.2−				

1996 TD₁₃ = 1998 HF₆₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	163.55316		(2000.0)	P	Q
<i>n</i>	0.25261778	ω	74.22078	+0.00417377	−0.99991500
<i>a</i>	2.4783356	Ω	15.55577	+0.89894083	−0.00165935
<i>e</i>	0.2476724	<i>i</i>	2.64002	+0.43805018	+0.01293247
<i>P</i>	3.90	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1996 10 14	400	0.2−	0.3+	1996 10 18	566	0.8−	0.3+	1998 04 21	704	0.1+	0.2+
1996 10 14	400	0.5+	0.7−	1996 10 21	400	0.1+	0.3+	1998 04 22	704	0.2+	0.1+
1996 10 17	400	0.3−	0.9+	1996 10 21	400	0.2−	0.6−	1998 04 22	704	(2.8+	0.2−)
1996 10 17	400	0.1−	0.0	1998 04 21	704	0.4−	0.1−	1998 04 22	704	0.2+	0.4−
1996 10 17	400	1.1+	0.5−	1998 04 21	704	0.2−	0.7−	1998 04 22	704	0.4+	0.3−
1996 10 18	566	0.0	0.1−	1998 04 21	704	0.1−	0.2+				
1996 10 18	566	0.3−	0.1+	1998 04 21	704	0.1−	1.0+				

1996 TP₃₅ = 1998 FS₁₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	42.16647		(2000.0)	P	Q
<i>n</i>	0.30045634	ω	72.74575	−0.69128736	+0.72124703
<i>a</i>	2.2077427	Ω	153.35903	−0.69455405	−0.64650483
<i>e</i>	0.0719573	<i>i</i>	5.61455	−0.19928988	−0.24866489
<i>P</i>	3.28	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 10 11	691	0.2−	0.2−	1996 10 18	691	0.5+	0.1−	1998 03 22	704	1.2−	0.2−
1996 10 11	691	0.3−	0.0	1996 10 18	691	0.5+	0.0	1998 03 22	704	0.0	0.2−
1996 10 11	691	0.0	0.1−	1996 10 18	691	0.6+	0.0	1998 03 26	704	0.4+	0.1−
1996 10 16	691	0.4−	0.2+	1998 03 22	704	0.1+	0.0	1998 03 26	704	0.1+	0.5+
1996 10 16	691	0.4−	0.0	1998 03 22	704	1.6+	0.1−	1998 03 26	704	1.3−	0.6+
1996 10 16	691	0.3−	0.2+	1998 03 22	704	0.3+	0.4−				

1996 TC₄₄ = 1998 DE₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	130.26766		(2000.0)	P	Q
<i>n</i>	0.21015591	ω	85.83102	+0.21271849	−0.97706081
<i>a</i>	2.8018291	Ω	351.86595	+0.86561809	+0.19325440
<i>e</i>	0.1555922	<i>i</i>	4.11372	+0.45327273	+0.08947019
<i>P</i>	4.69	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 10 06	691	0.1−	0.3+	1996 10 12	566	0.3+	0.2−	1998 02 22	691	0.2+	0.2−
1996 10 06	691	0.1−	0.1−	1996 10 12	566	1.1+	0.3−	1998 03 01	691	0.3−	0.3+
1996 10 06	691	0.1−	0.2+	1996 10 12	566	0.5+	0.2−	1998 03 01	691	0.2−	0.1+
1996 10 10	691	0.8−	0.0	1998 02 22	691	0.3+	0.0	1998 03 01	691	0.0	0.1+
1996 10 10	691	0.8−	0.3+	1998 02 22	691	0.0	0.3−				

1996 UH₄ = 1998 EM₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	266.70508		(2000.0)	P	Q
<i>n</i>	0.30696542	ω	318.39057	+0.99513564	−0.08492779
<i>a</i>	2.1764218	Ω	46.55519	+0.09825297	+0.89249906
<i>e</i>	0.2193755	<i>i</i>	3.94284	−0.00716963	+0.44298161
<i>P</i>	3.21	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1996 10 29	327	0.4+	0.6−	1996 11 01	327	0.6−	0.1−	1998 03 02	691	0.9−	0.0
1996 10 29	327	0.7+	0.1−	1996 11 02	327	0.2+	0.8+	1998 03 03	691	0.8+	0.0
1996 10 29	327	0.9−	1.2+	1996 11 02	327	0.8+	0.1−	1998 03 03	691	0.6+	0.0
1996 10 29	327	0.5+	0.7−	1996 11 02	327	0.7−	0.3−	1998 03 03	691	0.8+	0.2+
1996 11 01	327	0.0	0.2−	1998 03 02	691	0.7−	0.1+				
1996 11 01	327	0.5−	0.2+	1998 03 02	691	0.7−	0.3−				

1996 XL₁₄ = 1998 HQ₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	189.64904		(2000.0)	P	Q
<i>n</i>	0.23656500	ω	9.21032	−0.15248858	−0.98424779
<i>a</i>	2.5892206	Ω	89.59806	+0.90096112	−0.17564804
<i>e</i>	0.0399496	<i>i</i>	5.13281	+0.40622196	+0.02010108
<i>P</i>	4.17	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 12 09	691	0.3−	0.1−	1996 12 11	691	0.0	0.3−	1998 04 22	910	0.0	0.0
1996 12 09	691	0.0	0.4−	1996 12 14	691	0.0	0.1−	1998 04 22	910	0.1−	0.1−
1996 12 09	691	0.2+	0.8+	1996 12 14	691	0.1−	0.2+	1998 04 24	910	0.1−	0.3−
1996 12 11	691	0.3+	0.2+	1996 12 14	691	0.0	0.1−	1998 04 24	910	0.2−	0.1+
1996 12 11	691	0.2−	0.2−	1998 04 22	910	0.3+	0.3+	1998 04 24	910	0.2+	0.0

1998 NOV. 10

M.P.C. 32955

1996 XX₂₂ = 1998 HO₁₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	43.01648		(2000.0)	P		Q			
<i>n</i>	0.26250728	ω	70.28965	-0.67085267		+0.74018123			
<i>a</i>	2.4156934	Ω	157.37897	-0.71710451		-0.63176479			
<i>e</i>	0.0715476	<i>i</i>	6.82359	-0.18899155		-0.23022814			
<i>P</i>	3.75	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1996 12 03	691	0.2-	0.7-	1996 12 13	691	0.6+	0.2+	1998 04 19	704 0.5+ 0.2+
1996 12 03	691	0.1-	0.9-	1996 12 13	691	0.5+	0.2+	1998 04 19	704 0.0 0.4+
1996 12 03	691	0.1-	0.7-	1998 01 31	910	0.0	0.2-	1998 04 20	704 0.1- 0.4-
1996 12 12	691	0.2-	0.6+	1998 01 31	910	0.0	0.1+	1998 04 20	704 0.6+ 0.0
1996 12 12	691	0.4-	0.7+	1998 01 31	910	0.1-	0.0	1998 04 20	704 1.1+ 0.2+
1996 12 12	691	0.4-	0.3+	1998 04 19	704	0.3+	0.5+	1998 04 20	704 0.8- 0.6-
1996 12 13	691	0.3+	0.5+	1998 04 19	704	0.4+	0.0	1998 04 20	704 1.8- 0.2-

1997 AC₆ = 1998 FM₅₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	251.55416		(2000.0)	P		Q			
<i>n</i>	0.20374564	ω	289.03571	+0.99773641		+0.04410079			
<i>a</i>	2.8602929	Ω	68.46261	-0.01905017		+0.90936328			
<i>e</i>	0.0761354	<i>i</i>	3.12856	-0.06449143		+0.41365873			
<i>P</i>	4.84	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1997 01 02	327	1.0-	0.1-	1997 01 12	552	0.5+	0.2-	1998 03 20	704 (2.3- 1.1-)
1997 01 02	327	1.5+	0.8+	1997 01 13	552	0.2+	0.8+	1998 03 22	704 0.5- 0.3+
1997 01 02	327	0.5+	0.3-	1997 01 13	552	0.6-	0.2+	1998 03 22	704 0.2- 0.2+
1997 01 04	327	0.6-	0.4-	1998 03 20	704	0.9-	0.5-	1998 03 22	704 1.1+ 1.0-
1997 01 04	327	0.2-	0.5+	1998 03 20	704	0.0	0.1-	1998 03 22	704 (2.2- 2.2-)
1997 01 04	327	0.3-	0.2-	1998 03 20	704	0.8+	1.1+		
1997 01 12	552	0.0	1.0-	1998 03 20	704	0.2-	0.0		

1997 AL₁₀ = 1995 OB₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	207.84654		(2000.0)	P		Q			
<i>n</i>	0.24666033	ω	177.90455	+0.09903506		-0.99505831			
<i>a</i>	2.5180819	Ω	266.41179	+0.91286755		+0.09370712			
<i>e</i>	0.1241113	<i>i</i>	0.41005	+0.39606173		+0.03283192			
<i>P</i>	4.00	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1995 07 22	691	0.4+	0.6-	1995 07 27	691	0.6+	0.7+	1997 01 10	691 0.7- 0.1+
1995 07 22	691	0.2+	0.6-	1997 01 09	691	0.3+	0.3+	1997 01 10	691 0.7- 0.3+
1995 07 22	691	0.1+	0.7-	1997 01 09	691	0.5+	0.4+	1997 01 11	691 0.2+ 0.5-
1995 07 27	691	1.0-	0.6+	1997 01 09	691	0.6+	0.4+	1997 01 11	691 0.2+ 0.5-
1995 07 27	691	0.3-	0.5+	1997 01 10	691	0.8-	0.0	1997 01 11	691 0.2+ 0.6-

1997 AN₁₄ = 1998 HX₉₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	176.21825		(2000.0)	P		Q			
<i>n</i>	0.18998003	ω	195.45180	-0.02856239		-0.99299077			
<i>a</i>	2.9968436	Ω	256.28868	+0.92916474		+0.01592964			
<i>e</i>	0.0422217	<i>i</i>	6.77975	+0.36856081		-0.11711350			
<i>P</i>	5.19	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1997 01 09	327	1.0-	0.3+	1997 01 14	327	0.9+	0.2-	1998 04 21	704 0.7- 1.0-
1997 01 09	327	0.2+	0.4+	1997 01 14	327	0.7+	0.1-	1998 04 21	704 (2.3- 1.2+)
1997 01 09	327	0.6+	0.0	1997 01 14	327	0.5-	0.1+	1998 04 21	704 (2.8- 1.5+)
1997 01 10	327	0.7-	0.2-	1997 01 14	327	0.6-	0.1-	1998 04 22	704 1.1+ 0.2+
1997 01 10	327	0.6+	0.0	1997 01 14	327	0.5-	0.0	1998 04 22	704 0.5+ 0.5+
1997 01 10	327	0.4+	0.3-	1997 01 14	327	0.3-	0.2+	1998 04 22	704 0.1+ 1.0+

1997 01 10	327	0.1+	0.1-	1998 04 21	704	0.7-	0.1+	1998 04 22	704 0.4- 0.3-
1997 01 10	327	0.0	0.1-	1998 04 21	704	(2.6-	0.7-)		

1997 AQ₁₅ = 1998 HN₈₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	319.78871		(2000.0)	P		Q			
<i>n</i>	0.29495867	ω	286.61317	+0.99209361		+0.10783788			
<i>a</i>	2.2350913	Ω	67.23300	-0.07098903		+0.90403101			
<i>e</i>	0.2105387	<i>i</i>	3.99224	-0.10349308		+0.41364106			
<i>P</i>	3.34	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1997 01 12	566	0.2+	0.1-	1997 01 15	566	0.4+	0.9-	1998 04 21	704 0.5+ 0.7+
1997 01 12	566	0.1+	0.4+	1997 01 15	566	0.3-	0.4+	1998 04 21	704 0.5- 0.5+
1997 01 12	566	0.5+	0.1+	1997 01 15	566	0.4-	0.9+	1998 04 21	704 0.4+ 0.3+
1997 01 14	566	0.7-	0.4+	1997 01 15	566	0.1-	0.8+	1998 04 21	704 0.3- 0.1-
1997 01 14	566	0.1+	0.3+	1998 04 21	688	0.4+	0.4-	1998 04 22	704 0.8+ 0.4-
1997 01 14	566	0.1-	0.2+	1998 04 21	688	0.6-	0.5+	1998 04 22	704 0.9+ 0.3-
1997 01 15	566	0.1-	0.9-	1998 04 21	688	0.5-	0.4+	1998 04 22	704 0.6- 1.4-
1997 01 15	566	0.5+	1.5-	1998 04 21	704	0.4-	0.5+	1998 04 22	704 0.1- 0.3-

1997 AA₁₇ = 1998 MM₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	26.08097		(2000.0)	P		Q			
<i>n</i>	0.31179078	ω	129.98782	+0.71072807		+0.70346605			
<i>a</i>	2.1539083	Ω	185.30674	-0.64885825		+0.65497343			
<i>e</i>	0.1503909	<i>i</i>	0.65617	-0.27175094		+0.27594443			
<i>P</i>	3.16	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1997 01 09	691	0.1-	0.7-	1997 01 15	566	0.0	0.1-	1998 06 24	704 0.2+ 1.0+
1997 01 09	691	0.0	0.5-	1997 01 15	566	0.3-	0.3-	1998 06 26	704 0.2+ 0.0
1997 01 09	691	0.2-	0.3-	1997 01 15	566	0.2+	0.7-	1998 06 26	704 0.2- 0.5-
1997 01 13	566	0.8+	1.1+	1998 06 24	704	0.0	1.6-	1998 06 26	704 0.3- 0.3-
1997 01 13	566	0.4+	0.6+	1998 06 24	704	0.3-	0.3-	1998 06 26	704 0.4+ 1.4+
1997 01 13	566	0.7-	0.8+	1998 06 24	704	0.1-	0.2+		

1997 AJ₁₉ = 1986 WS₈ = 1998 HB₆₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	225.29686		(2000.0)	P		Q			
<i>n</i>	0.21040058	ω	156.53858	+0.75542672		-0.65452925			
<i>a</i>	2.7996566	Ω	244.38095	+0.59570597		+0.70535818			
<i>e</i>	0.0450281	<i>i</i>	1.92973	+0.27288252		+0.27214206			
<i>P</i>	4.68	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1986 11 30	381	0.4+	1.4-	1997 01 14	566	0.3-	0.6-	1998 04 21	704 0.8+ 0.4+
1986 11 30	381	0.2-	0.7+	1997 01 14	566	0.6-	0.6-	1998 04 21	704 0.3+ 0.9-
1986 12 01	381	0.4-	0.7-	1997 01 16	358	0.7+	0.4-	1998 04 22	704 0.2- 0.3-
1986 12 01	381	0.2+	1.4+	1997 01 16	358	1.0-	0.7+	1998 04 22	704 1.2- 0.8+
1997 01 13	358	1.4+	0.3-	1998 04 21	704	(2.1+ 1.2+)		1998 04 22	704 0.2+ 0.5+
1997 01 13	358	0.2+	1.7+	1998 04 21	704	0.4+	0.0	1998 04 22	704 0.4- 0.5+
1997 01 14	566	0.4-	0.4-	1998 04 21	704	0.8+	0.7-	1998 04 22	704 0.7- 0.2-

1997 AH₂₁ = 1998 GK₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

						Doppler			
<i>M</i>	158.24531		(2000.0)	P		Q			
<i>n</i>	0.17897617	ω	321.92869	+0.18048313		-0.94117135			
<i>a</i>	3.1184533	Ω	115.99428	+0.96228085		+0.10884423			
<i>e</i>	0.2021910	<i>i</i>	18.53299	+0.20357164		+0.31992096			
<i>P</i>	5.51	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1997 01 09	399	0.5−	0.0	1997 01 16	399	0.7+	0.0	1998 04 03	704	0.2−	0.8−
1997 01 09	399	0.5+	0.9+	1998 04 02	704	0.3+	0.3−	1998 04 03	704	0.2+	0.2−
1997 01 12	399	0.0	1.4−	1998 04 02	704	0.0	0.1−	1998 04 03	704	0.6+	0.8+
1997 01 12	399	(0.8+	2.4−)	1998 04 02	704	0.1−	0.3+	1998 04 03	704	0.6−	0.4+
1997 01 16	399	0.7−	0.6+	1998 04 03	704	0.3−	0.1−				

1997 CJ₁ = 1998 SB₇₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	126.76800		(2000.0)	P	Q		
n	0.27752132	ω	166.38636	−0.45164970	+0.89056615		
a	2.3277615	Ω	76.74150	−0.82366990	−0.39298342		
e	0.1886747	i	3.17404	−0.34290004	−0.22903268		
P	3.55	H	15.5	G	0.15	U	4

Residuals in seconds of arc

1997 02 01	411	0.1−	1.5+	1997 03 01	411	0.8+	0.0	1998 09 26	704	0.2+	1.2+
1997 02 01	411	0.2−	0.3−	1997 03 13	688	0.6+	0.0	1998 09 26	704	1.0+	0.4−
1997 02 03	411	0.7+	0.2−	1997 03 13	688	0.1+	0.2+	1998 09 26	704	1.4+	1.8−
1997 02 03	411	0.0	0.7−	1997 03 13	688	0.2−	0.1−	1998 09 27	704	0.6+	0.3+
1997 02 11	411	0.6+	1.0−	1997 03 13	688	0.2+	0.1−	1998 09 27	704	0.5+	0.0
1997 02 11	411	0.8−	0.5+	1998 09 26	704	1.1−	0.4−	1998 09 27	704	0.7−	1.0+
1997 03 01	411	1.6−	0.2+	1998 09 26	704	0.5−	0.5+	1998 09 27	704	1.4−	0.4−

1997 CZ₆ = 1976 SO₃ = 1991 PA₂₈ = 1995 SL₅₅ = 1998 HZ₉₈

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	326.29933		(2000.0)	P	Q
n	0.25922717	ω	164.60645	+0.96497610	+0.26233776
a	2.4360286	Ω	180.18489	−0.24490019	+0.90064910
e	0.2117948	i	2.40272	−0.09404795	+0.34642473
P	3.80	H	15.3	G 0.15	U 1

Residuals in seconds of arc

1976 09 24	095	1.1−	1.0+	1997 02 01	691	0.1−	0.3+	1998 04 21	704	0.4+	0.6+
1976 09 29	095	0.8+	0.2−	1997 02 06	566	0.4+	0.7+	1998 04 21	704	0.9−	1.6−
1991 08 05	809	(2.3+	3.8−)	1997 02 06	566	0.8+	0.1+	1998 04 21	704	0.1+	1.2+
1991 08 05	809	(1.3+	3.5−)	1997 02 06	566	0.8+	0.4−	1998 04 21	704	0.7+	0.2−
1991 08 05	809	(2.1+	3.4−)	1997 02 07	691	0.2+	0.1+	1998 04 22	704	1.2+	0.4−
1995 09 21	399	0.6−	0.6+	1997 02 07	691	0.0	0.2+	1998 04 22	704	1.1+	1.0+
1995 09 21	399	0.0	0.4−	1997 02 07	691	0.1−	0.2+	1998 04 22	704	0.5+	0.4−
1995 09 30	399	0.6−	0.7+	1997 02 08	566	1.2−	0.4+	1998 04 22	704	0.1−	0.0
1995 09 30	399	0.3+	1.3+	1997 02 08	566	0.9−	0.1+	1998 04 22	704	1.1−	1.8+
1997 02 01	691	0.1+	0.1−	1997 02 08	566	0.7+	0.6+				
1997 02 01	691	0.0	0.3+	1998 04 21	704	1.0−	1.1+				

1997 CL₂₀ = 1998 SM₇₀

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	108.73602		(2000.0)	P	Q
n	0.28146666	ω	219.79846	+0.06848298	+0.99672006
a	2.3059581	Ω	54.17057	−0.90125410	+0.08034295
e	0.2405462	i	3.04858	−0.42784475	−0.00970224
P	3.50	H	15.0	G 0.15	U 4

Residuals in seconds of arc

1997 02 12	411	1.0+	0.2+	1998 09 23	809	1.2+	0.6−	1998 10 11	699	0.6−	1.2+
1997 02 12	411	0.4−	0.6−	1998 09 23	809	1.6+	0.1−	1998 10 15	704	0.3−	0.5+
1997 02 13	411	0.1−	0.5−	1998 09 26	704	0.6−	0.1−	1998 10 15	704	0.6−	0.8+
1997 02 13	411	0.1−	0.1−	1998 09 26	704	0.2−	0.5−	1998 10 15	704	0.2+	0.3−
1997 02 16	411	0.0	0.5+	1998 09 26	704	0.3+	0.7−	1998 10 15	704	0.3−	0.5−
1997 02 16	411	1.1−	0.1+	1998 09 26	704	0.0	0.5−	1998 10 28	704	0.3+	0.1+
1997 02 26	411	0.2−	0.2−	1998 09 26	704	0.0	1.0−	1998 10 28	704	0.3+	0.2−
1997 02 26	411	0.9+	0.6+	1998 09 27	704	0.2−	0.2+	1998 10 28	704	1.3+	0.5−
1997 03 09	411	(3.5+	7.0−)	1998 09 27	704	1.0−	0.5+	1998 10 28	704	1.1+	0.2−

1997 03 09	411	(5.0+	6.8−)	1998 09 27	704	0.4+	0.4+	1998 10 29	704	0.1−	0.3−
1998 09 21	809	0.1+	0.8+	1998 09 27	704	1.2+	0.7+	1998 10 29	704	0.0	0.3−
1998 09 21	809	0.5−	0.0	1998 09 27	704	0.6−	1.0−	1998 10 29	704	0.0	0.1+
1998 09 21	809	0.9−	1.2+	1998 10 11	699	0.1−	1.1+	1998 10 29	704	0.3−	0.2−
1998 09 23	809	0.6+	0.8−	1998 10 11	699	0.3−	0.4+	1998 10 29	704	1.8−	0.1−

1997 CZ₂₁ = 1998 RR₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

M	176.75997		(2000.0)	P	Q
n	0.32036316	ω	201.76355	−0.84675762	+0.53191506
a	2.1153116	Ω	10.38323	−0.48109027	−0.75905468
e	0.0513764	i	2.62042	−0.22705436	−0.37536964
P	3.08	H	17.0	G 0.15	U 4

Residuals in seconds of arc

1997 02 13	411	0.8+	0.7+	1997 03 09	411	0.4+	1.1−	1998 09 14	704	0.9+	0.8+
1997 02 13	411	0.5+	0.5+	1997 04 28	704	0.3−	0.6+	1998 09 14	704	1.0+	1.0−
1997 02 14	411	1.1−	0.5+	1997 04 28	704	0.5−	0.3−	1998 09 14	704	0.1+	1.5+
1997 02 14	411	0.3+	0.1−	1997 04 28	704	1.5−	0.7−	1998 09 14	704	0.9−	0.3−
1997 02 16	411	0.7+	0.2−	1997 04 28	704	(3.0−	3.1+)	1998 09 18	704	1.1−	0.7−
1997 02 16	411	0.0	0.3+	1997 04 29	704	0.2+	0.6+	1998 09 18	704	(2.3+	1.3−)
1997 02 26	411	0.2−	0.3−	1997 04 29	704	0.6+	0.6+	1998 09 18	704	0.3−	0.0
1997 02 26	411	1.4−	0.4−	1997 04 29	704	0.9+	0.6+				
1997 03 09	411	0.1+	0.3−	1997 04 29	704	1.0+	0.5−				

1997 EM = 1983 EP₂ = 1990 VM₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

M	62.04809		(2000.0)	P	Q
n	0.21814753	ω	199.72598	+0.01235529	+0.99799847
a	2.7329762	Ω	71.02132	−0.90838192	+0.03712804
e	0.1444361	i	3.76041	−0.41795890	−0.05119135
P	4.52	H	13.5	G 0.15	U 4

Residuals in seconds of arc

1983 03 05	095	0.0	0.0	1997 03 02	411	0.3−	1.2−	1997 03 08	411	0.2+	0.5+
1990 11 14	372	0.8+	0.5+	1997 03 02	411	0.4−	0.3−	1997 03 09	411	0.7−	1.0+
1990 11 14	372	0.8−	0.3−	1997 03 07	411	(2.2+	0.9+)	1997 03 09	411	0.2+	1.5+
1997 03 01	411	0.5−	1.3−	1997 03 07	411	0.3+	0.4+	1997 03 12	411	1.7+	0.1−
1997 03 01	411	0.7−	0.1−	1997 03 08	411	1.0−	0.7−	1997 03 12	411	1.3+	0.3+

1997 ED₅ = 1995 TX₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

M	236.54131		(2000.0)	P	Q
n	0.23921117	ω	261.31085	+0.13290610	−0.99112762
a	2.5700905	Ω	181.05473	+0.93700279	+0.12611532
e	0.1936880	i	4.42829	+0.32305067	+0.04196399
P	4.12	H	15.5	G 0.15	U 5

Residuals in seconds of arc

1995 10 14	327	0.3−	0.1−	1995 10 15	327	0.0	0.1−	1997 03 07	691	0.3−	0.1+
1995 10 14	327	0.3+	0.0	1997 03 04	691	0.3+	0.1+	1997 03 07	691	0.4−	0.1−
1995 10 14	327	0.2+	0.4−	1997 03 04	691	0.2+	0.3+	1997 03 14	691	0.3+	0.2+
1995 10 15	327	0.6−	0.4+	1997 03 04	691	0.1+	0.1−	1997 03 14	691	0.2−	0.1+
1995 10 15	327	0.4+	0.1+	1997 03 07	691	0.1−	0.5−	1997 03 14	691	0.1+	0.1−

1997 EN₇ = 1985 RU₄ = 1998 HO₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

M	319.32222		(2000.0)	P	Q
n	0.28468796	ω	159.55174	+0.95201640	+0.30604025
a	2.2885302	Ω	182.63006	−0.28659974	+0.88916801
e	0.1918192	i	2.54374	−0.10735626	+0.34017585
P	3.46	H	15.0	G 0.15	U 3

Residuals in seconds of arc

1985 09 15	809	1.3+	0.2-	1985 09 22	809	0.2-	0.0	1998 04 20	704	1.4-	1.3-
1985 09 15	809	1.4+	0.4-	1985 09 22	809	0.2+	0.3-	1998 04 20	704	0.8+	0.0
1985 09 15	809	1.7+	0.4-	1997 03 05	118	0.1+	0.5-	1998 04 20	704	0.8-	0.2+
1985 09 16	809	0.1-	0.5-	1997 03 05	118	0.0	0.4-	1998 04 21	704	0.0	0.1+
1985 09 16	809	0.3+	0.4-	1997 03 05	118	1.0+	0.6-	1998 04 21	704	0.3-	0.6+
1985 09 16	809	0.5+	0.4-	1997 03 07	118	0.3-	0.4-	1998 04 21	704	0.3+	0.4-
1985 09 18	809	0.8-	0.4-	1997 03 07	118	0.7-	0.2-	1998 04 21	704	1.1-	0.4-
1985 09 18	809	0.5-	0.4-	1997 03 07	118	0.8-	0.0	1998 04 21	704	0.6+	0.6-
1985 09 18	809	0.1-	0.2-	1997 03 09	118	0.5+	0.6-	1998 04 22	704	0.7+	0.9+
1985 09 20	809	1.6-	0.2-	1997 03 09	118	0.2+	0.7-	1998 04 22	704	0.9+	1.0-
1985 09 20	809	1.1-	0.3-	1997 03 10	118	0.1-	0.4+	1998 04 22	704	0.4+	0.6+
1985 09 20	809	0.8-	0.2-	1997 03 10	118	0.2-	0.5+	1998 04 22	704	1.2-	1.4-
1985 09 21	809	0.1+	0.7+	1997 03 10	118	0.1+	0.4+	1998 04 22	704	0.5+	0.4-
1985 09 21	809	0.3+	0.7+	1998 04 20	704	0.3-	0.7+				
1985 09 21	809	0.4+	0.7+	1998 04 20	704	(1.2-	2.6-)				

1997 EJ₁₁ = 1995 UA₃₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	141.18672		(2000.0)	P	Q
<i>n</i>	0.30458791	ω	82.42191	-0.39316926	+0.91914115
<i>a</i>	2.1877328	Ω	164.35765	-0.87530039	-0.36601124
<i>e</i>	0.0842707	<i>i</i>	5.20126	-0.28154426	-0.14565477
<i>P</i>	3.24	<i>H</i>	17.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 10 21	691	0.0	0.2+	1997 03 08	540	0.3-	0.1+	1997 03 10	540	0.3-	0.2-
1995 10 21	691	0.1+	0.1+	1997 03 08	540	0.1+	0.3+	1997 03 11	540	0.7+	0.4+
1995 10 21	691	0.4-	0.4+	1997 03 09	540	0.1-	0.5-	1997 03 11	540	0.7-	0.6+
1995 10 26	691	0.2-	0.1-	1997 03 09	540	0.2+	0.2-	1997 03 11	540	0.2-	0.3+
1995 10 26	691	0.5+	0.0	1997 03 09	540	0.1-	0.4-	1997 03 11	540	0.6+	0.3-
1995 10 26	691	0.0	0.6-	1997 03 09	540	0.5-	0.2+	1997 03 12	540	0.1+	0.4-
1997 03 07	540	0.7+	0.2+	1997 03 09	540	0.3-	0.4+	1997 03 12	540	0.5+	0.1-
1997 03 07	540	0.3+	0.2-	1997 03 10	540	0.6-	0.1-				

1997 EM₁₅ = 1998 SY₁₃₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	132.80153		(2000.0)	P	Q
<i>n</i>	0.29374788	ω	262.66654	-0.10281438	+0.99469672
<i>a</i>	2.2412290	Ω	1.44091	-0.86373642	-0.08789861
<i>e</i>	0.1556573	<i>i</i>	6.31297	-0.49334430	-0.05340671
<i>P</i>	3.36	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 04	691	0.3-	0.3-	1997 03 27	596	0.8+	0.2-	1998 09 26	704	0.4-	0.7+
1997 03 04	691	0.6-	0.4-	1997 03 27	596	0.2+	1.0-	1998 09 26	704	0.6-	1.4-
1997 03 04	691	0.5-	0.6-	1997 03 27	596	0.7-	0.2-	1998 09 26	704	0.9-	0.1-
1997 03 05	809	(2.2+	0.5+)	1997 03 27	596	0.4+	0.0	1998 09 26	704	1.1-	0.7-
1997 03 05	809	1.3+	1.3+	1997 03 29	596	0.3+	0.1+	1998 09 26	704	0.6-	0.4-
1997 03 05	809	1.5+	1.2+	1997 03 29	596	0.1+	0.6+	1998 09 27	704	0.6-	1.5-
1997 03 06	809	(3.7+	1.6+)	1997 03 29	596	0.4+	0.0	1998 09 27	704	0.0	0.1+
1997 03 06	809	1.6+	1.5+	1997 03 30	596	0.7-	0.5-	1998 09 27	704	(0.8-	3.2+)
1997 03 06	809	(3.5+	1.7+)	1997 03 30	596	0.1-	0.3+	1998 09 27	704	1.0-	1.1+
1997 03 10	691	0.3-	0.5-	1997 04 08	691	0.9-	0.0	1998 10 19	910	1.7+	0.6+
1997 03 10	691	0.1-	0.6-	1997 04 08	691	0.7-	0.1-	1998 10 19	910	1.6+	0.4+
1997 03 10	691	0.1-	0.4-	1997 04 08	691	0.7-	0.0	1998 10 20	910	1.9+	0.6+
1997 03 15	691	0.2+	0.4-	1997 04 14	691	0.7-	0.7+	1998 10 20	910	(2.7+	0.1+)
1997 03 15	691	0.3+	0.5-	1997 04 14	691	0.6-	0.0	1998 10 20	910	(2.6+	0.0)
1997 03 15	691	0.2+	0.6-	1997 04 14	691	0.2-	0.3+	1998 10 20	910	(3.0+	0.2-)

1997 ER₁₇ = 1998 RR₄₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	136.29184		(2000.0)	P	Q
<i>n</i>	0.27119928	ω	307.24742	-0.61320383	+0.78912031
<i>a</i>	2.3637980	Ω	284.89309	-0.71256371	-0.57205960
<i>e</i>	0.1860063	<i>i</i>	2.11348	-0.34093111	-0.22368942
<i>P</i>	3.63	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 03 03	400	0.2+	0.3+	1997 04 28	704	0.3-	0.3-	1998 09 14	704	0.3+	0.7-
1997 03 03	400	0.4+	1.2+	1997 04 28	704	0.9-	0.4+	1998 09 14	704	0.1+	1.7-
1997 03 04	400	1.5+	0.5+	1997 04 28	704	1.5-	0.5-	1998 09 14	704	1.5+	0.3+
1997 03 04	400	1.2+	1.5-	1997 04 28	704	0.6-	1.3+	1998 09 14	704	0.6+	0.6+
1997 03 12	400	0.8-	1.3-	1997 04 29	704	0.7+	0.1-	1998 09 18	704	0.3-	1.1-
1997 03 12	400	1.1-	1.0-	1997 04 29	704	0.9+	0.2-	1998 09 18	704	1.1-	0.7+
1997 03 28	400	0.2-	0.2+	1997 04 29	704	1.2+	0.1+	1998 09 18	704	0.1-	0.3-
1997 03 28	400	1.5-	0.3-	1997 04 29	704	0.4-	1.0-				

1997 EQ₄₁ = 1998 KH₅₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	106.39873		(2000.0)	P	Q
<i>n</i>	0.18965689	ω	10.24057	-0.99921549	+0.02877165
<i>a</i>	3.0002467	Ω	171.26943	-0.03424337	-0.97288444
<i>e</i>	0.0275662	<i>i</i>	10.32838	+0.01989482	-0.22949524
<i>P</i>	5.20	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 03 10	704	0.1-	0.3+	1997 03 12	704	0.1-	0.2+	1998 05 26	704	0.9+	1.3-
1997 03 10	704	0.1+	0.4+	1998 05 23	704	0.1+	0.2-	1998 05 26	704	0.5+	0.2+
1997 03 11	704	0.2+	0.6-	1998 05 23	704	0.5+	0.5+	1998 05 26	704	0.4+	1.0+
1997 03 11	704	0.0	0.5-	1998 05 23	704	0.2-	0.0	1998 05 26	704	0.3-	0.3-
1997 03 12	704	0.1-	0.2+	1998 05 23	704	0.4-	0.0	1998 05 26	704	0.8-	0.0

1997 EX₄₁ = 1995 WQ₃₀ = 1998 MD₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	59.02150		(2000.0)	P	Q
<i>n</i>	0.21381448	ω	10.57637	-0.43614920	+0.89889893
<i>a</i>	2.7697760	Ω	233.57793	-0.82937268	-0.41960425
<i>e</i>	0.0159922	<i>i</i>	2.98394	-0.34916304	-0.12614667
<i>P</i>	4.61	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 11 19	691	0.3-	0.1-	1997 03 10	704	0.5-	0.1-	1998 06 24	704	0.1-	0.3+
1995 11 19	691	0.3-	0.1+	1997 03 11	704	0.2-	0.3+	1998 06 24	704	2.0-	0.6+
1995 11 19	691	0.2-	0.1-	1997 03 11	704	1.1+	0.4-	1998 06 24	704	0.4+	1.1+
1995 11 27	691	0.1+	0.5+	1997 03 12	704	0.3-	0.4+	1998 06 26	704	1.0-	0.2-
1995 11 27	691	0.2+	0.2+	1997 03 12	704	0.1+	0.1-	1998 06 26	704	0.1+	0.0
1995 11 27	691	0.2+	0.1+	1998 06 24	704	0.0	0.0	1998 06 26	704	0.9+	0.1+
1997 03 10	704	0.1-	0.2+	1998 06 24	704	1.3+	0.7+	1998 06 26	704	0.4+	1.8-

1997 FA = 1998 TC₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	162.47526		(2000.0)	P	Q
<i>n</i>	0.28037303	ω	38.71737	-0.81896231	+0.57384626
<i>a</i>	2.3119506	Ω	176.30099	-0.53064244	-0.75657228
<i>e</i>	0.1962558	<i>i</i>	0.97614	-0.21844756	-0.31352648
<i>P</i>	3.52	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 03 16	610	0.2-	0.1+	1997 04 02	610	0.2+	0.5+	1997 04 12	610	0.4-	0.4-
1997 03 16	610	0.3+	0.1+	1997 04 02	610	0.1+	0.5+	1997 04 12	610	0.5-	0.4-
1997 03 16	610	0.8+	0.1+	1997 04 03	610	0.6-	0.2+	1997 04 12	610	0.6-	0.4-
1997 03 17	610	0.1-	0.8-	1997 04 03	610	0.2-	0.1-	1998 10 14	910	0.5-	0.4+
1997 03 17	610	0.2-	0.6-	1997 04 03	610	0.4+	0.8-	1998 10 14	910	0.0	0.4+

M.P.C. 32958

1997 03 17	610	0.4−	0.2−	1997 04 07	610	0.3+	0.6−	1998 10 14	910	0.2−	1.1+
1997 03 17	610	0.5−	0.0	1997 04 07	610	0.7+	0.5+	1998 10 18	910	0.4−	0.1−
1997 03 29	610	0.0	0.7+	1997 04 07	610	1.2+	1.7+	1998 10 18	910	0.4+	0.4−
1997 03 29	610	0.0	0.7+	1997 04 08	610	0.3+	0.3+	1998 10 18	910	0.3+	0.3−
1997 03 29	610	0.0	0.6+	1997 04 08	610	0.1−	0.4−				
1997 04 02	610	0.4+	0.6+	1997 04 08	610	0.3−	1.0−				

1997 FF₁ = 1998 SK₈₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	142.21098		(2000.0)	P	Q
<i>n</i>	0.27457568	ω	201.74340	−0.52638424	+0.84932542
<i>a</i>	2.3443800	Ω	36.52800	−0.76996201	−0.45642119
<i>e</i>	0.1267060	<i>i</i>	3.81205	−0.36066347	−0.26519056
<i>P</i>	3.59	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 03 29	327	0.0	0.6+	1997 04 13	327	0.1−	0.1−	1998 09 26	704	0.5−	3.3−
1997 03 29	327	0.3+	0.1−	1997 04 13	327	0.1−	0.3+	1998 09 27	704	0.9+	0.2−
1997 03 29	327	0.4+	0.4−	1997 04 13	327	0.0	0.1−	1998 09 27	704	0.0	0.2−
1997 03 30	327	0.0	0.4−	1998 09 26	704	0.3+	0.2−	1998 09 27	704	1.4+	2.0+
1997 03 30	327	0.2+	0.0	1998 09 26	704	0.1+	0.0	1998 09 27	704	1.2−	2.0+
1997 03 30	327	0.6−	0.2+	1998 09 26	704	1.4−	0.7+	1998 09 27	704	0.4+	0.7−

1997 FN₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	148.60074		(2000.0)	P	Q
<i>n</i>	0.27494909	ω	9.29957	−0.48987472	+0.86988364
<i>a</i>	2.3422569	Ω	231.39071	−0.80452294	−0.47656298
<i>e</i>	0.2325377	<i>i</i>	4.23197	−0.33580590	−0.12724064
<i>P</i>	3.58	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 03 31	587	0.1−	0.0	1997 04 07	587	0.1+	0.0	1997 04 30	587	0.1+	0.2−
1997 03 31	587	0.2−	1.0+	1997 04 07	587	0.5+	0.0	1997 05 27	587	0.4+	0.3+
1997 03 31	587	0.1+	0.2+	1997 04 09	587	0.5−	0.0	1997 05 27	587	0.4−	0.0
1997 04 01	587	0.4−	0.2−	1997 04 12	587	0.3−	0.4+	1998 10 12	587	0.3−	0.7+
1997 04 01	587	0.1+	0.0	1997 04 12	587	0.3−	0.1+	1998 10 12	587	0.3+	0.4+
1997 04 01	587	0.2−	0.1−	1997 04 17	587	0.7+	0.0	1998 10 14	587	0.5+	0.1−
1997 04 02	587	0.3+	0.1−	1997 04 17	587	0.1−	0.0	1998 10 14	587	0.2−	0.6−
1997 04 02	587	0.2+	0.9−	1997 04 30	587	0.1−	0.4−	1998 10 14	587	0.4−	0.4−

1997 FQ₁

Id. A. Nakamura (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	141.70969		(2000.0)	P	Q
<i>n</i>	0.27507964	ω	292.78418	−0.36812905	+0.92881253
<i>a</i>	2.3415158	Ω	315.54293	−0.82937788	−0.34859644
<i>e</i>	0.1231074	<i>i</i>	3.46158	−0.42025389	−0.12564952
<i>P</i>	3.58	<i>H</i>	16.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 03 31	360	0.7+	0.3+	1997 04 12	360	0.4−	0.6−	1998 09 17	360	0.1−	0.0
1997 03 31	360	0.6+	0.3+	1997 04 28	360	1.6−	1.2−	1998 09 17	360	0.0	0.2+
1997 03 31	360	0.4+	0.5+	1997 04 28	360	0.6−	0.9−	1998 09 17	360	0.2−	0.3+
1997 04 01	360	0.4−	0.9+	1997 05 04	360	0.5+	0.0	1998 10 14	360	0.0	0.0
1997 04 01	360	1.1−	0.4+	1997 05 04	360	0.5+	0.1+	1998 10 14	360	0.2+	0.2+
1997 04 01	360	0.0	0.4+	1997 05 09	360	0.2+	0.6+	1998 10 14	360	0.4−	0.5+
1997 04 07	360	0.4+	0.1−	1997 05 09	360	0.1+	0.1+	1998 10 24	360	0.3+	0.3−
1997 04 07	360	0.4+	0.0	1997 06 04	360	0.1−	0.0	1998 10 24	360	0.1−	0.3−
1997 04 07	360	0.4+	0.1+	1997 06 04	360	0.2+	0.0	1998 10 24	360	0.0	0.2+
1997 04 12	360	0.1−	0.4−	1997 06 04	360	0.2+	0.3+				

1997 FY₁

Id. E. Bowell (1998 observations)

1998 NOV. 10

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	60.17170		(2000.0)	P	Q
<i>n</i>	0.21834853	ω	289.29511	+0.52071768	+0.85229598
<i>a</i>	2.7312987	Ω	12.44999	−0.67158255	+0.44468981
<i>e</i>	0.2018269	<i>i</i>	13.25840	−0.52709579	+0.27539524
<i>P</i>	4.51	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	0.5−	1.5−	1997 03 31	704	0.7−	0.4−	1997 04 07	704	0.8+	0.9+
1997 03 11	809	0.1+	1.3−	1997 03 31	704	0.4−	0.2+	1997 04 07	704	1.1+	0.0
1997 03 11	809	0.1+	1.9−	1997 04 02	327	1.1−	0.3−	1998 08 19	699	0.1−	0.7+
1997 03 13	809	0.7+	0.4+	1997 04 02	327	0.0	0.1−	1998 08 19	699	0.9+	0.4+
1997 03 13	809	0.3−	0.4+	1997 04 03	704	0.7+	0.3−	1998 08 19	699	0.6+	0.1−
1997 03 13	809	0.4+	0.0	1997 04 03	704	0.0	0.9+	1998 10 12	699	1.5−	1.0−
1997 03 29	327	1.1−	0.2+	1997 04 05	704	0.5+	0.0	1998 10 12	699	0.4+	0.8−
1997 03 29	327	0.9−	0.2+	1997 04 05	704	1.1+	0.2+	1998 10 12	699	0.2+	0.0
1997 03 29	327	1.3−	0.3−	1997 04 06	704	1.2+	0.7+				
1997 03 29	327	0.7−	0.1−	1997 04 06	704	0.2−	1.0+				

1997 FN₃ = 1998 TG₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	89.18841		(2000.0)	P	Q
<i>n</i>	0.26996921	ω	275.85801	+0.57429792	+0.81758235
<i>a</i>	2.3709727	Ω	29.31657	−0.71333512	+0.52477693
<i>e</i>	0.2117783	<i>i</i>	4.88851	−0.40166515	+0.23699847
<i>P</i>	3.65	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 03 10	809	0.4−	0.3+	1997 04 06	704	1.4+	0.6−	1998 10 13	691	0.0	0.2−
1997 03 10	809	1.4−	0.4−	1997 04 06	704	0.7+	0.1−	1998 10 13	691	0.0	0.3−
1997 03 10	809	0.2−	0.2+	1997 04 06	566	0.1−	0.5−	1998 10 19	691	1.2−	0.1−
1997 03 11	809	0.2−	0.6+	1997 04 06	566	0.9−	0.0	1998 10 19	691	1.1−	0.2−
1997 03 11	809	0.6−	0.1−	1997 04 06	566	0.8−	0.5−	1998 10 19	691	1.1−	0.0
1997 03 11	809	0.6+	0.6+	1997 04 06	566	0.5−	0.2−	1998 10 19	699	1.1+	0.1−
1997 03 31	704	0.6+	0.2−	1997 04 06	566	0.8−	0.7−	1998 10 19	699	0.9+	0.3−
1997 03 31	704	1.3+	0.3−	1997 04 06	566	1.1−	0.3+	1998 10 19	699	0.6+	0.2+
1997 04 03	704	0.9+	0.1+	1998 10 10	699	1.7+	0.1+	1998 10 27	691	1.1−	0.2+
1997 04 03	704	0.3+	0.3+	1998 10 10	699	1.3+	0.1−	1998 10 27	691	1.0−	0.3+
1997 04 05	704	0.1+	0.5+	1998 10 10	699	1.3+	0.2+	1998 10 27	691	1.0−	0.2+
1997 04 05	704	0.6+	0.1+	1998 10 13	691	0.0	0.4−				

1997 FR₃ = 1997 GH₂₀ = 1998 SS₁₅₀Id. G. V. Williams (d, *MPC* 31295; unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	147.82434		(2000.0)	P	Q
<i>n</i>	0.28261635	ω	41.51355	−0.53562361	+0.84374278
<i>a</i>	2.2997001	Ω	196.19773	−0.80388274	−0.52204835
<i>e</i>	0.0695136	<i>i</i>	7.14984	−0.25861144	−0.12475435
<i>P</i>	3.49	<i>H</i>	16.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 03 31	704	0.2−	1.7+	1997 04 06	704	1.4+	0.4+	1998 09 26	704	0.3−	0.5+
1997 03 31	704	0.5+	1.3−	1997 04 06	704	0.1−	0.3−	1998 09 27	704	0.5+	0.2−
1997 04 03	704	0.4−	0.4−	1997 04 07	704	0.6−	0.3−	1998 09 27	704	0.7−	0.8+
1997 04 03	704	0.5−	0.1+	1997 04 07	704	0.1+	0.7+	1998 09 27	704	0.8+	0.3+
1997 04 05	704	0.3−	0.3−	1998 09 26	704	0.7+	0.4−	1998 09 27	704	1.4−	1.1−
1997 04 05	704	0.2+	0.2−	1998 09 26	704	0.4+	0.1+				

1998 NOV. 10

M.P.C. 32959

1997 FW₃ = 1998 SG₁₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	89.74290		(2000.0)			P		Q			
<i>n</i>	0.29248676	ω	322.90366			+0.64668736		+0.76259145			
<i>a</i>	2.2476667	Ω	347.36276			−0.68134120		+0.56822444			
<i>e</i>	0.1152999	<i>i</i>	4.14229			−0.34288429		+0.30915249			
<i>P</i>	3.37	<i>H</i>	15.8			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1997 03 11	809	0.8+	0.2+	1997 04 05	704	0.0	0.9−	1998 09 27	704	0.7−	0.7+
1997 03 11	809	1.1+	0.6+	1997 04 05	704	0.0	0.6+	1998 09 27	704	0.7+	0.2−
1997 03 11	809	0.5+	0.3+	1997 04 06	704	1.0−	0.5−	1998 09 27	704	0.3−	1.4+
1997 03 13	809	0.9−	0.0	1997 04 06	704	0.5+	0.0	1998 09 27	704	0.6−	0.5+
1997 03 13	809	0.4−	0.4−	1997 04 07	704	0.5+	0.7+	1998 10 11	699	(2.9+	0.4+)
1997 03 13	809	0.7−	0.1−	1997 04 07	704	0.2+	0.2−	1998 10 11	699	0.2+	0.1+
1997 03 31	704	0.0	0.6+	1998 09 26	704	0.2+	0.2−	1998 10 11	699	0.4+	0.4+
1997 03 31	704	0.3+	0.2−	1998 09 26	704	0.3+	0.4−	1998 10 17	699	0.0	0.6−
1997 04 03	704	0.4+	0.4−	1998 09 26	704	(2.5+	1.0+)	1998 10 17	699	0.9−	0.9−
1997 04 03	704	0.7−	0.1+	1998 09 26	704	(0.2+	2.1−)	1998 10 17	699	0.5+	0.1+
1997 04 03	704	0.2+	0.9−	1998 09 26	704	0.1−	0.5−				
1997 04 03	704	0.3−	1.4+	1998 09 27	704	0.1−	0.4+				

1997 GL = 1998 UO₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	56.71507		(2000.0)		P		Q				
<i>n</i>	0.23835446	ω	136.75092		+0.62264768		+0.78250092				
<i>a</i>	2.5762452	Ω	171.75844		−0.72071026		+0.57421290				
<i>e</i>	0.1059324	<i>i</i>	0.59024		−0.30477301		+0.24077346				
<i>P</i>	4.14	<i>H</i>	16.0		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1997 04 03	704	0.5+	0.3−	1997 04 05	704	0.8+	0.6+	1998 10 20	910	0.0	0.1−
1997 04 03	704	1.5+	0.3−	1997 04 05	566	0.5−	0.2−	1998 10 20	910	0.1−	0.2−
1997 04 04	566	1.1−	0.4−	1997 04 05	566	0.7−	0.5−	1998 10 20	910	0.2+	0.0
1997 04 04	566	0.8−	0.2−	1997 04 05	566	1.1−	0.1+	1998 10 21	910	0.1−	0.1+
1997 04 04	566	0.8+	0.1+	1997 04 11	704	0.9+	0.7+	1998 10 21	910	0.1+	0.2+
1997 04 05	704	0.5−	0.1+	1997 04 11	704	0.2+	0.2+	1998 10 21	910	0.0	0.1−

1997 GM₆ = 1998 SW₁₀₈

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	82.66201		(2000.0)		P		Q				
n	0.22413531	ω	89.77143		+0.46238721		+0.88239997				
a	2.6840825	Ω	208.29142		-0.86890233		+0.43138357				
e	0.1811885	i	10.57682		-0.17665452		+0.18782577				
P	4.40	H	14.5	G	0.15	U	4				
Residuals in seconds of arc											
1997 04 02	704	0.1+	0.3-	1997 05 01	704	0.6-	0.3+	1998 10 17	327	0.6+	0.1+
1997 04 02	704	1.4+	1.4+	1998 09 26	704	0.2-	0.1+	1998 10 19	327	0.4+	0.5-
1997 04 06	704	0.3+	0.1+	1998 09 26	704	0.2+	0.1+	1998 10 19	327	0.8+	0.2-
1997 04 06	704	1.0+	0.0	1998 09 26	704	0.1-	1.6-	1998 10 19	327	0.7+	0.0
1997 04 30	704	0.2-	0.3+	1998 09 26	704	0.1-	1.1-	1998 10 28	704	1.6-	0.8+
1997 04 30	704	0.2+	0.2+	1998 09 26	704	0.1-	0.6-	1998 10 28	704	(2.2-	0.1-)
1997 04 30	704	0.2-	0.1-	1998 09 27	704	0.2-	0.6+	1998 10 28	704	(2.7-	0.4-)
1997 04 30	704	0.5-	0.1-	1998 09 27	704	0.4+	0.8+	1998 10 28	704	0.6+	1.2-
1997 04 30	704	1.1-	0.4+	1998 09 27	704	0.1-	0.4+	1998 10 29	704	0.3+	0.2-
1997 05 01	704	0.1+	0.3-	1998 09 27	704	0.1-	0.3+	1998 10 29	704	1.5-	1.3+
1997 05 01	704	0.0	0.0	1998 09 27	704	0.3-	0.0	1998 10 29	704	0.2-	0.5+
1997 05 01	704	0.0	0.2-	1998 10 17	327	0.6+	0.2+	1998 10 29	704	0.8-	0.5+
1997 05 01	704	0.2-	0.4-	1998 10 17	327	0.4+	0.1+	1998 10 29	704	0.0	0.9+

1997 GU₆ = 1997 GO₂₁ = 1998 SM₁₃₄Id. G. V. Williams (d, *MPC* 29886; unpublished), E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	102.23828		(2000.0)		P		Q				
n	0.25851553	ω	269.37528		+0.38829531		+0.91979757				
a	2.4404971	Ω	23.72185		-0.77967243		+0.36062074				
e	0.1100315	i	8.08233		-0.49126128		+0.15467742				
P	3.81	H	15.0		G	0.15	U	4			
Residuals in seconds of arc											
1997 04 02	704	0.2+	0.0	1997 05 01	704	0.0	0.2-	1998 09 27	704	0.0	0.2-
1997 04 02	704	1.0-	0.1+	1997 05 01	704	0.3+	0.1+	1998 09 27	704	1.3-	1.9-
1997 04 06	704	0.1-	0.3-	1997 05 01	704	0.3-	0.1-	1998 10 10	699	0.2+	0.7+
1997 04 06	704	0.7-	0.9+	1997 05 01	704	0.1+	0.3+	1998 10 10	699	0.8-	1.6+
1997 04 07	704	0.5-	0.3+	1997 05 01	704	0.0	0.3+	1998 10 10	699	0.5-	0.8+
1997 04 07	704	0.6+	0.4-	1998 09 26	704	0.7+	1.0+	1998 10 11	699	0.6-	0.7+
1997 04 08	704	0.2+	0.1+	1998 09 26	704	1.1+	1.5-	1998 10 11	699	0.5-	0.0
1997 04 08	704	0.4+	0.6+	1998 09 26	704	0.8+	0.2-	1998 10 11	699	0.0	0.2+
1997 04 30	704	0.1-	0.2-	1998 09 26	704	0.3+	0.2+	1998 10 17	699	0.4+	0.0
1997 04 30	704	0.2+	0.2+	1998 09 26	704	0.4+	0.3+	1998 10 17	699	0.2-	0.4-
1997 04 30	704	0.3+	0.4-	1998 09 27	704	0.1-	0.5-	1998 10 17	699	0.3-	0.4-
1997 04 30	704	0.2+	0.7-	1998 09 27	704	0.5-	0.2+				
1997 04 30	704	0.5+	0.3+	1998 09 27	704	0.7+	0.1-				

1997 GH₈ = 1998 SB₁₀₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	146.28204		(2000.0)			P		Q			
<i>n</i>	0.27429570	ω	27.06376			-0.32878327		+0.94315866			
<i>a</i>	2.3459750	Ω	223.78829			-0.87866802		-0.32432290			
<i>e</i>	0.0616015	<i>i</i>	4.01989			-0.34618504		-0.07256995			
<i>P</i>	3.59	<i>H</i>	15.4			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1997 04 02	704	0.3+	0.6-	1997 04 30	704	0.5+	0.1-	1998 09 26	704	0.0	1.1-
1997 04 02	704	0.4-	0.1-	1997 04 30	704	0.3-	0.2-	1998 09 26	704	0.4-	0.9-
1997 04 06	704	0.7+	0.1-	1997 04 30	704	0.3-	0.2+	1998 09 26	704	0.8+	0.4+
1997 04 06	704	0.5-	0.4+	1997 05 01	704	0.2-	0.1+	1998 09 27	704	0.8+	0.8-
1997 04 08	704	0.2-	0.5+	1997 05 01	704	0.2-	0.1-	1998 09 27	704	1.4-	0.4+
1997 04 08	704	0.0	0.8-	1997 05 01	704	0.1+	0.2-	1998 09 27	704	0.3-	1.0-
1997 04 08	704	0.0	0.7+	1997 05 01	704	0.3-	0.3+	1998 09 27	704	0.6-	1.5+
1997 04 08	704	0.5+	0.3-	1997 05 01	704	0.3-	0.1+	1998 10 14	699	0.9+	0.6+
1997 04 30	704	0.2+	0.0	1998 09 26	704	0.8+	0.4+	1998 10 14	699	0.2-	0.6+
1997 04 30	704	0.5+	0.2+	1998 09 26	704	0.0	0.3-	1998 10 14	699	0.7-	0.4+

1997 GM₈ = 1998 RX₅₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	25.67467		(2000.0)		P		Q				
n	0.25817407	ω	145.65911		+0.98735357		-0.14272136				
a	2.4426485	Ω	222.71454		+0.11275373		+0.93823012				
e	0.1479362	i	5.83968		+0.11144295		+0.31520605				
P	3.82	H	15.2	G	0.15	U	4				
Residuals in seconds of arc											
1997 04 02	704	0.5+	0.6-	1997 05 05	704	0.2-	0.4+	1998 09 18	704	0.7+	0.3-
1997 04 02	704	0.7+	0.3-	1997 05 05	704	0.6+	0.5-	1998 09 18	704	0.5+	0.0
1997 04 06	704	2.1-	1.8+	1997 05 05	704	(3.1-	0.3-)	1998 09 18	704	0.0	0.1+
1997 04 06	704	0.5+	0.0	1998 09 14	704	0.7-	0.5-	1998 09 26	704	0.1+	0.5-
1997 04 30	704	0.5-	0.5+	1998 09 14	704	0.6+	0.2+	1998 09 26	704	0.5-	0.2-
1997 04 30	704	0.8+	0.3-	1998 09 14	704	0.3-	0.5-	1998 09 26	704	0.0	0.1-
1997 04 30	704	0.3-	0.1+	1998 09 14	704	0.6+	0.2+	1998 09 26	704	0.9-	0.4-
1997 04 30	704	0.0	0.1+	1998 09 14	704	1.0-	0.7-	1998 09 26	704	0.4-	0.0
1997 04 30	704	0.5+	0.2-	1998 09 14	704	0.2-	0.7+	1998 09 27	704	0.0	0.2-
1997 05 01	704	0.2-	0.7-	1998 09 14	704	0.3-	0.0	1998 09 27	704	0.4+	0.1-
1997 05 01	704	0.1+	0.1+	1998 09 14	704	0.5+	1.5+	1998 09 27	704	0.0	0.1+
1997 05 01	704	0.1-	0.1-	1998 09 14	704	1.1-	0.0	1998 09 27	704	0.0	0.5-
1997 05 01	704	0.6-	0.2-	1998 09 14	704	1.0+	1.4+	1998 09 27	704	0.3-	0.5-

M.P.C. 32960

1998 NOV. 10

1997 05 01 704 0.1− 0.5+ 1998 09 18 704 0.8+ 0.1+
 1997 05 05 704 0.3+ 0.5− 1998 09 18 704 0.5+ 0.1+

1997 GH₉ = 1998 RW₆₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	84.17885		(2000.0)		P		Q
<i>n</i>	0.26119833	ω	309.14071	+0.48601473		+0.87375689	
<i>a</i>	2.4237572	Ω	349.88911	−0.76602083		+0.41576371	
<i>e</i>	0.1458624	<i>i</i>	6.01646	−0.42071579		+0.25236766	
<i>P</i>	3.77	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	(0.0	2.7+)	1998 09 18	704	0.5−	0.5+	1998 09 27	704	0.3+	0.3+
1997 03 11	809	0.3+	0.9+	1998 09 18	704	(0.5+	2.5+)	1998 09 27	704	0.9+	1.8+
1997 03 11	809	0.3+	1.7+	1998 09 18	704	0.0	0.2−	1998 10 14	699	0.0	0.3−
1997 03 13	809	0.5+	1.8+	1998 09 18	704	1.0+	1.9+	1998 10 14	699	0.5−	1.1+
1997 03 13	809	1.0−	1.4+	1998 09 18	704	0.9−	0.2−	1998 10 14	699	0.7+	0.6+
1997 03 13	809	0.0	0.8+	1998 09 26	704	0.6+	1.4+	1998 10 15	704	0.0	0.3+
1997 04 03	704	1.1+	1.4−	1998 09 26	704	(2.3−	0.3−)	1998 10 15	704	0.2−	1.2+
1997 04 03	704	0.1−	0.8−	1998 09 26	704	0.5−	1.7−	1998 10 15	704	1.2−	0.6+
1997 04 05	704	0.9+	0.5−	1998 09 26	704	0.4−	0.3+	1998 10 15	704	0.1+	0.1−
1997 04 05	704	0.1−	0.2+	1998 09 26	704	0.1+	0.4+	1998 10 28	704	0.4−	0.7−
1998 09 14	704	0.1−	0.9−	1998 09 27	704	0.6−	0.8−	1998 10 28	704	0.8+	1.0−
1998 09 14	704	0.1−	0.6+	1998 09 27	704	0.5+	0.3+	1998 10 28	704	0.6−	0.9−
1998 09 14	704	0.7−	1.7−	1998 09 27	704	0.3−	0.4+				

1997 GJ₁₃ = 1998 TW₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	65.57672		(2000.0)		P		Q
<i>n</i>	0.27822481	ω	127.64824	+0.89999304		+0.43553995	
<i>a</i>	2.3238360	Ω	206.54592	−0.41144102		+0.83527386	
<i>e</i>	0.2432011	<i>i</i>	2.28493	−0.14397506		+0.33559282	
<i>P</i>	3.54	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	0.2−	0.4−	1997 05 05	691	0.9−	1.3−	1998 10 20	120	1.2−	0.4−
1997 04 03	704	0.0	0.3−	1997 05 05	691	0.9−	1.2−	1998 10 20	120	0.4−	0.4−
1997 04 05	704	1.1+	0.1−	1997 05 05	691	0.9−	0.6−	1998 10 28	120	0.7+	0.5−
1997 04 05	704	0.5−	0.3−	1998 10 13	120	0.2−	0.1−	1998 10 28	120	0.3+	0.1+
1997 04 06	704	0.6−	0.1−	1998 10 14	120	0.3+	0.7−	1998 10 29	120	0.2−	0.0
1997 04 06	704	0.7+	1.1+	1998 10 15	120	0.1+	0.3−	1998 10 29	120	0.4−	0.4+
1997 04 07	704	0.2+	0.1+	1998 10 15	120	0.3+	0.2−	1998 11 06	120	0.0	0.0
1997 04 07	704	0.5+	1.0+	1998 10 18	699	0.2+	0.2+	1998 11 06	120	0.5−	0.5+
1997 04 07	704	1.3+	0.5+	1998 10 18	699	0.4+	0.3+				
1997 04 07	704	0.6−	0.1+	1998 10 18	699	0.9+	0.1−				

1997 GP₁₃ = 1998 RD₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	161.01729		(2000.0)		P		Q
<i>n</i>	0.27303772	ω	10.84564	−0.80845733		+0.58796605	
<i>a</i>	2.3531753	Ω	205.22378	−0.54450565		−0.76417590	
<i>e</i>	0.0496165	<i>i</i>	3.54075	−0.22340623		−0.26520014	
<i>P</i>	3.61	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	1.0−	0.7+	1997 04 05	704	1.0+	1.1+	1998 09 14	704	0.3−	0.2+
1997 03 11	809	0.7−	0.1+	1997 04 05	704	0.3−	0.3+	1998 09 14	704	0.8−	0.7−
1997 03 11	809	0.1+	0.4−	1997 04 06	704	0.2+	0.1−	1998 09 18	704	1.3−	0.0
1997 03 13	809	1.3+	0.1+	1997 04 06	704	0.0	1.1−	1998 09 18	704	0.6−	0.6−
1997 03 13	809	0.1−	0.4−	1997 04 07	704	0.4+	0.2−	1998 09 18	704	0.3+	0.3+
1997 03 13	809	0.7+	0.1−	1997 04 07	704	0.2−	0.1+	1998 09 18	704	0.7+	0.4+
1997 04 03	704	0.8−	0.3+	1998 09 14	704	1.1+	1.0+	1998 09 18	704	1.4+	0.8−
1997 04 03	704	0.6−	0.4−	1998 09 14	704	0.3−	0.1+				

1997 GL₁₄ = 1998 SE₁₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	108.91601		(2000.0)		P		Q
<i>n</i>	0.27735591	ω	345.72872	+0.26924603		+0.96218626	
<i>a</i>	2.3286869	Ω	299.87627	−0.87886677		+0.22795059	
<i>e</i>	0.1393779	<i>i</i>	2.72880	−0.39382708		+0.14911782	
<i>P</i>	3.55	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	0.0	1.7−	1997 04 07	704	0.4−	0.4+	1998 09 27	704	0.4−	1.8+
1997 04 03	704	0.5+	0.2+	1998 09 26	704	0.2+	0.5−	1998 09 27	704	(1.0−	2.4+)
1997 04 05	704	0.3+	0.3−	1998 09 26	704	0.7+	1.7−	1998 09 27	704	1.6−	1.1+
1997 04 05	704	0.2−	0.7+	1998 09 26	704	1.7+	0.3−	1998 10 17	699	0.1−	0.8−
1997 04 06	704	0.1−	0.4+	1998 09 26	704	0.0	0.5+	1998 10 17	699	0.4−	0.1−
1997 04 06	704	0.4−	0.7−	1998 09 26	704	0.6−	0.6−	1998 10 17	699	0.8+	1.1+
1997 04 07	704	0.3+	0.8+	1998 09 27	704	0.3−	0.5−				

1997 GC₁₅ = 1998 SV₁₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	93.81891		(2000.0)		P		Q
<i>n</i>	0.27879258	ω	304.43993	+0.49863563		+0.86679389	
<i>a</i>	2.3206799	Ω	355.45920	−0.77049060		+0.44028144	
<i>e</i>	0.1234725	<i>i</i>	4.02369	−0.39712308		+0.23413799	
<i>P</i>	3.54	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	2.0+	1.0+	1997 04 06	704	0.4+	0.1+	1998 09 27	704	0.9−	1.2+
1997 03 11	809	(2.6+	1.1+)	1997 04 07	704	(2.4+	2.6−)	1998 10 11	699	0.6+	0.0
1997 03 11	809	1.2+	1.8+	1997 04 07	704	1.1+	0.7−	1998 10 11	699	0.3+	0.2+
1997 03 13	809	0.9−	0.7−	1998 09 26	704	1.0−	1.9−	1998 10 11	699	0.4−	0.2+
1997 03 13	809	0.9−	0.9−	1998 09 26	704	0.5+	0.9+	1998 10 15	327	0.0	0.4+
1997 03 13	809	1.0−	1.1−	1998 09 26	704	0.5−	0.7−	1998 10 15	327	0.2+	0.4−
1997 04 03	704	0.5−	0.6+	1998 09 26	704	0.2−	1.3−	1998 10 15	327	0.2+	0.3−
1997 04 03	704	0.2−	0.6−	1998 09 26	704	0.3−	0.1+	1998 10 17	327	0.0	0.1−
1997 04 05	704	0.1+	1.1+	1998 09 27	704	0.1−	0.4−	1998 10 17	327	0.2−	0.5−
1997 04 05	704	0.9−	0.4−	1998 09 27	704	0.8+	1.5+	1998 10 17	327	0.1−	0.1+
1997 04 06	704	0.2−	0.1−	1998 09 27	704	1.0+	1.0+				

1997 GU₁₅ = 1998 SR₁₅₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	112.84415		(2000.0)		P		Q
<i>n</i>	0.30280683	ω	101.26407	+0.26353068		+0.96461998	
<i>a</i>	2.1963031	Ω	184.04042	−0.92235790		+0.24961954	
<i>e</i>	0.0325429	<i>i</i>	6.30480	−0.28250219		+0.08484323	
<i>P</i>	3.25	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	0.2+	0.4−	1997 04 07	704	0.9+	1.0−	1998 09 26	704	0.9−	0.6+
1997 03 11	809	0.0	0.2+	1997 04 07	704	0.0	0.5+	1998 09 27	704	1.0+	1.3−
1997 03 11	809	0.2−	0.1−	1997 04 07	704	0.3+	0.8−	1998 09 27	704	2.5+	0.2−
1997 04 03	704	0.8−	0.0	1997 04 07	704	0.1+	0.6−	1998 09 27	704	0.5−	1.3+
1997 04 03	704	0.4+	0.3+	1998 09 26	704	0.2−	0.5−	1998 09 27	704	0.5+	1.0+
1997 04 06	704	1.0−	1.2+	1998 09 26	704	1.2−	0.9−				
1997 04 06	704	0.2+	0.7+	1998 09 26	704	1.1−	0.2−				

1997 GA₁₇ = 1998 RD₅₇

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	39.29297		(2000.0)		P		Q
<i>n</i>	0.29254321	ω	6.37343	+0.99522337		+0.09735379	
<i>a</i>	2.2473775	Ω	348.03249	−0.09104285		+0.89872879	
<i>e</i>	0.1022063	<i>i</i>	2.00591	−0.03523688		+0.42756147	
<i>P</i>	3.37	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

1998 NOV. 10

M.P.C. 32961

Residuals in seconds of arc

1997 03 12	809	(2.9− 2.7+)	1997 04 07	704	1.4+ 0.4+	1998 09 26	704	1.2− 0.1+
1997 03 12	809	0.2− 1.6+	1997 04 07	704	1.5+ 0.7+	1998 09 26	704	1.0− 0.3+
1997 03 12	809	(0.4− 2.7+)	1998 09 14	704	0.4+ 0.8−	1998 09 27	704	0.4− 0.4+
1997 03 13	809	1.7− 0.5−	1998 09 14	704	1.5+ 0.5−	1998 09 27	704	0.7− 0.9+
1997 03 13	809	1.0− 1.1−	1998 09 14	704	0.7− 0.7−	1998 09 27	704	1.1− 1.0+
1997 03 13	809	0.6− 1.5−	1998 09 18	704	1.6+ 0.4−	1998 09 27	704	0.0 0.1−
1997 04 03	704	0.4+ 0.4+	1998 09 18	704	0.5+ 0.4+	1998 09 27	704	0.3+ 0.2−
1997 04 03	704	0.4+ 0.9+	1998 09 18	704	1.2+ 0.4+	1998 10 15	120	0.4+ 1.3+
1997 04 04	566	0.2− 0.3+	1998 09 18	704	0.8+ 0.4−	1998 10 15	120	0.6− 0.8+
1997 04 04	566	0.2+ 0.5+	1998 09 18	704	0.0 0.8−	1998 10 15	120	1.9− 0.4+
1997 04 04	566	0.5− 0.4+	1998 09 26	704	0.1− 0.1+	1998 10 15	120	1.1− 0.5+
1997 04 06	704	0.8+ 0.3+	1998 09 26	704	0.1+ 0.6−			
1997 04 06	704	0.4+ 0.3−	1998 09 26	704	0.8+ 0.4−			

1997 GF₁₇ = 1990 DW₇ = 1998 RT₇₃

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		171.76197		(2000.0)		P		Q	
<i>n</i>		0.29200635	ω	9.10882	−0.73203796	+0.67935928			
<i>a</i>		2.2501312	Ω	213.86467	−0.63065928	−0.70402821			
<i>e</i>		0.1345628	<i>i</i>	5.24153	−0.25766120	−0.20691845			
<i>P</i>		3.38	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1990 02 18	399	1.5− 0.5+	1998 09 14	704	0.4+ 0.2−	1998 09 26	704	0.5− 0.9−
1990 02 18	399	1.5+ 0.5−	1998 09 14	704	0.3− 0.9−	1998 09 26	704	0.1+ 0.7−
1990 02 18	399	(6.3+ 1.7−)	1998 09 15	699	0.2+ 1.5+	1998 09 26	704	0.1− 0.6−
1997 04 03	704	0.4− 1.0+	1998 09 15	699	0.6− 0.2+	1998 09 27	704	0.7+ 0.3−
1997 04 03	704	0.1− 0.2−	1998 09 15	699	0.1− 1.1+	1998 09 27	704	0.2− 0.6+
1997 04 05	704	0.2+ 0.5−	1998 09 18	704	0.2+ 1.2−	1998 09 27	704	0.6+ 0.6+
1997 04 05	704	0.2+ 0.2−	1998 09 18	704	1.5− 0.4−	1998 09 27	704	0.0 0.2+
1997 04 06	704	0.0 0.8+	1998 09 18	704	0.1+ 0.6+	1998 09 27	704	0.2− 0.3+
1997 04 06	704	0.1− 0.0	1998 09 18	704	0.3− 0.8+	1998 10 14	699	0.1− 0.4+
1997 04 07	704	0.1− 0.2−	1998 09 18	704	0.6+ 0.6+	1998 10 14	699	0.2− 0.3+
1997 04 07	704	0.4+ 0.5−	1998 09 26	704	0.9+ 1.1−	1998 10 14	699	0.2− 0.3+
1998 09 14	704	0.7+ 0.2−	1998 09 26	704	0.1− 1.0−			

1997 GY₁₇ = 1998 RG₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		214.50670		(2000.0)		P		Q	
<i>n</i>		0.29289397	ω	148.83234	−0.98706227	−0.15415349			
<i>a</i>		2.2455829	Ω	22.42683	+0.11268591	−0.86261789			
<i>e</i>		0.0600445	<i>i</i>	6.63792	+0.11406124	−0.48179567			
<i>P</i>		3.37	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1997 04 03	704	0.5+ 0.6+	1997 04 07	704	1.0+ 0.6−	1998 09 14	704	1.1− 0.2−
1997 04 03	704	0.2+ 0.3+	1997 04 07	704	0.0 0.4−	1998 09 14	704	(2.5− 0.1−)
1997 04 05	704	0.6+ 0.1−	1997 04 10	327	0.2+ 0.0	1998 09 14	704	0.6+ 0.1+
1997 04 05	704	0.2+ 0.2−	1997 04 10	327	0.2+ 0.2+	1998 09 18	704	0.7+ 0.0
1997 04 06	327	0.9− 0.1+	1997 04 10	327	0.1− 0.1+	1998 09 18	704	1.0− 0.1+
1997 04 06	327	0.8− 0.1−	1997 04 10	327	0.1+ 0.3+	1998 09 18	704	0.3− 0.3+
1997 04 06	327	1.1− 0.0	1998 09 14	704	0.2+ 0.6−	1998 09 18	704	1.0+ 0.3+

1997 GB₁₉ = 1980 LZ = 1998 SD₁₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		134.80057		(2000.0)		P		Q	
<i>n</i>		0.28485057	ω	46.44161	−0.16501573	+0.98376230			
<i>a</i>		2.2876592	Ω	214.24725	−0.93720641	−0.17869553			
<i>e</i>		0.1171089	<i>i</i>	7.20481	−0.30726853	+0.01672264			
<i>P</i>		3.46	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1980 06 10	675	0.0 0.3+	1998 09 26	704	0.7+ 0.2+	1998 10 17	327	0.3− 0.3+
1997 04 03	704	0.2+ 0.1+	1998 09 26	704	0.2− 0.2+	1998 10 19	327	0.1− 0.1+
1997 04 03	704	0.1+ 0.4+	1998 09 27	704	0.2+ 0.1−	1998 10 19	327	0.1− 0.1+
1997 04 05	704	0.2+ 0.2+	1998 09 27	704	0.8+ 0.3+	1998 10 19	327	0.0 0.2+
1997 04 05	704	0.3+ 0.3+	1998 09 27	704	1.0+ 1.9−	1998 10 20	327	0.2+ 0.0
1997 04 06	704	0.2+ 0.4+	1998 09 27	704	0.3+ 0.4+	1998 10 20	327	0.2− 0.1+
1997 04 06	704	0.6− 0.1+	1998 10 15	327	0.2− 0.3+	1998 10 20	327	0.0 0.1+
1997 04 07	704	0.1+ 0.2+	1998 10 15	327	0.2− 0.2+	1998 10 24	120	1.6− 0.5−
1997 04 07	704	0.2− 0.2−	1998 10 15	327	0.2− 0.3+	1998 10 24	120	0.1+ 0.8+
1998 09 26	704	0.6− 0.2+	1998 10 17	327	0.2− 0.3+			
1998 09 26	704	0.5+ 0.3−	1998 10 17	327	0.6− 0.4+			

1997 GX₂₀ = 1998 SA₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		30.61498		(2000.0)		P		Q	
<i>n</i>		0.30938634	ω	154.11960	+0.98645172	−0.16080678			
<i>a</i>		2.1650535	Ω	215.18195	+0.13902905	+0.92451354			
<i>e</i>		0.1012151	<i>i</i>	3.23041	+0.08708576	+0.34556604			
<i>P</i>		3.19	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	6	

Residuals in seconds of arc

1997 04 03	704	0.8+ 1.1+	1998 09 16	699	0.5+ 0.2+	1998 09 26	704	0.1+ 0.3−
1997 04 03	704	0.5− 0.1−	1998 09 16	699	1.6+ 0.2+	1998 09 26	704	1.3− 0.6+
1997 04 05	704	0.1+ 1.1+	1998 09 16	699	1.6+ 0.0	1998 09 26	704	1.2− 0.6+
1997 04 05	704	0.1− 1.7−	1998 09 18	704	0.2− 1.3−	1998 09 27	704	0.4− 0.2−
1997 04 05	704	0.2− 0.4+	1998 09 18	704	0.5+ 0.7−	1998 09 27	704	0.2− 0.4−
1997 04 05	704	0.4− 0.4+	1998 09 18	704	0.2+ 1.5−	1998 09 27	704	0.7− 0.5+
1997 04 06	704	1.3+ 0.0	1998 09 18	704	0.7+ 2.7−	1998 09 27	704	1.3− 0.2−
1997 04 06	704	0.1+ 0.5+	1998 09 18	704	0.3− 1.6−	1998 09 27	704	0.8− 0.3+
1997 04 07	704	0.3− 0.1+	1998 09 25	699	0.2+ 0.8+	1998 10 14	699	0.1− 0.6+
1997 04 07	704	0.0 0.6+	1998 09 25	699	0.2+ 1.2+	1998 10 14	699	0.4+ 0.8+
1998 09 14	704	0.6+ 0.3+	1998 09 25	699	0.1+ 1.7+	1998 10 14	699	0.1+ 0.7+
1998 09 14	704	0.4− 0.8+	1998 09 26	704	0.2+ 0.1−			
1998 09 14	704	0.1+ 1.2+	1998 09 26	704	0.8− 0.7+			

1997 GM₂₁ = 1998 SE₁₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		93.69656		(2000.0)		P		Q	
<i>n</i>		0.21678190	ω	286.35873	+0.21920482	+0.97567810			
<i>a</i>		2.7444419	Ω	356.30296	−0.88779410	+0.19894122			
<i>e</i>		0.2014548	<i>i</i>	1.08374	−0.40468615	+0.09205775			
<i>P</i>		4.55	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1997 04 02	704	1.1+ 0.1+	1997 05 01	704	1.8+ 0.6−	1998 09 26	704	0.2− 0.4−
1997 04 02	704	(0.2− 2.3+)	1997 05 01	704	0.6+ 0.5+	1998 09 26	704	1.7+ 0.1−
1997 04 06	704	0.3− 0.3+	1997 05 01	704	1.0+ 0.2−	1998 09 26	704	1.1+ 0.4−
1997 04 06	704	0.4− 0.3+	1997 05 01	704	0.7− 0.4−	1998 09 26	704	0.3− 0.3−
1997 04 08	704	0.7− 0.0	1997 05 01	704	(0.7− 2.7−)	1998 09 27	704	0.4+ 2.0−
1997 04 08	704	0.7− 0.4+	1997 05 05	704	0.3− 0.0	1998 09 27	704	0.6− 0.9+
1997 04 30	704	0.1+ 0.5+	1997 05 05	704	0.3− 0.2+	1998 09 27	704	1.2− 1.3+
1997 04 30	704	0.1+ 0.2+	1997 05 05	704	0.6− 0.4+	1998 09 27	704	(3.1− 0.5−)
1997 04 30	704	0.6+ 0.3+	1997 05 05	704	0.8− 0.2+	1998 10 27	691	0.3− 0.6+
1997 04 30	704	0.4+ 0.1+	1997 05 05	704	0.4− 1.0−	1998 10 27	691	0.6− 1.0+
1997 04 30	704	0.3− 0.2−	1998 09 26	704	0.1+ 0.5−	1998 10 27	691	0.4− 0.7+

1997 GS₂₁ = 1990 RQ₁₁ = 1998 SD₁₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		57.39805		(2000.0)		P		Q	
<i>n</i>		0.25336313	ω	292.32744	+0.90968471	+0.40386258			
<i>a</i>		2.4734726	Ω	44.01378	−0.31096688	+0.81687421			
<i>e</i>		0.1305903	<i>i</i>	8.00753	−0.27526955	+0.41183921			
<i>P</i>		3.89	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1990 09 14	675	0.6–	0.7+	1997 04 30	704	0.2–	0.2–	1997 05 05	704	0.3–	0.3–
1990 09 14	675	0.0	0.5+	1997 04 30	704	0.1+	0.2–	1998 09 26	704	0.6–	0.2–
1997 04 02	704	0.2–	0.5–	1997 04 30	704	0.2+	0.3–	1998 09 26	704	0.4+	0.4+
1997 04 02	704	0.9–	1.4–	1997 05 01	704	(5.9–	0.6–)	1998 09 26	704	0.0	0.4–
1997 04 06	704	0.0	0.3–	1997 05 01	704	0.1+	0.1–	1998 09 26	704	0.0	0.5–
1997 04 06	704	0.7–	0.7+	1997 05 01	704	0.0	0.4–	1998 09 26	704	0.2+	0.4+
1997 04 07	809	0.4+	1.3+	1997 05 01	704	0.6+	0.5–	1998 09 27	704	0.1+	0.4–
1997 04 07	809	0.3+	1.0+	1997 05 01	704	0.1+	0.0	1998 09 27	704	0.1+	0.1–
1997 04 07	809	1.0+	1.1+	1997 05 01	704	0.0	0.3+	1998 09 27	704	0.1+	0.5–
1997 04 08	809	(0.5+	2.7+)	1997 05 01	704	0.4–	0.1+	1998 09 27	704	1.1+	0.3+
1997 04 08	809	(2.0+	3.2+)	1997 05 01	704	0.8+	0.7–	1998 09 27	704	0.3+	1.0–
1997 04 08	809	(0.3+	2.3+)	1997 05 01	704	0.2–	0.3+	1998 10 17	699	0.3–	0.2+
1997 04 08	704	0.0	0.5+	1997 05 05	704	0.4–	0.2–	1998 10 17	699	0.0	0.0
1997 04 08	704	0.3–	0.1+	1997 05 05	704	0.4–	0.2–	1998 10 17	699	0.5–	0.1+
1997 04 30	704	0.1+	0.2–	1997 05 05	704	0.0	0.5–				
1997 04 30	704	0.0	0.2–	1997 05 05	704	0.3–	0.2–				

1997 GJ₂₃ = 1998 SW₁₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	81.11177		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.23439316	ω	265.17350	+0.59181092	+0.79137924
a	2.6051901	Ω	42.37251	−0.61963321	+0.56821487
e	0.1753430	i	13.14160	−0.51557203	+0.22550113
P	4.20	H	14.6	G 0.15	U 3

Residuals in seconds of arc

1997 04 06	704	0.6–	0.5+	1997 04 30	704	0.1–	0.6+	1998 09 26	704	0.0	0.6+
1997 04 06	704	0.2+	0.7+	1997 04 30	704	0.2+	0.5+	1998 09 26	704	0.4–	0.6+
1997 04 07	809	0.4+	0.7–	1997 05 01	704	0.2+	0.1–	1998 09 27	704	0.2+	0.2–
1997 04 07	809	0.2–	0.6–	1997 05 01	704	0.4+	0.3+	1998 09 27	704	0.4–	1.1–
1997 04 07	704	0.0	0.8+	1997 05 01	704	0.2–	0.2–	1998 09 27	704	0.9+	0.4–
1997 04 07	809	0.6–	0.4–	1997 05 01	704	0.2–	0.1+	1998 09 27	704	0.3–	0.3–
1997 04 07	704	(9.9–	0.6–)	1997 05 01	704	0.3–	0.2+	1998 09 27	704	0.2–	0.2–
1997 04 08	809	(0.6–	2.3–)	1997 05 05	704	0.1+	0.2–	1998 10 11	699	1.0–	0.5+
1997 04 08	809	0.1–	1.5–	1997 05 05	704	0.2+	0.1+	1998 10 11	699	0.2–	0.2+
1997 04 08	809	(0.3–	2.6–)	1997 05 05	704	0.2–	0.4–	1998 10 11	699	0.2+	0.4+
1997 04 08	704	0.2+	0.7+	1997 05 05	704	0.3–	0.7–	1998 10 20	699	0.3–	0.3+
1997 04 08	704	0.5+	0.5+	1997 05 05	704	0.3–	0.5–	1998 10 20	699	0.8+	0.2+
1997 04 30	704	0.6+	0.3–	1998 09 26	704	0.3+	0.2+	1998 10 20	699	0.2–	0.2+
1997 04 30	704	0.1+	0.6+	1998 09 26	704	0.4+	0.5–				
1997 04 30	704	0.1+	0.3+	1998 09 26	704	0.1–	0.1+				

1997 GP₂₃ = 1998 RQ₆₂

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	76.03820		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21393014	ω	278.84632	+0.44181493	+0.89668673
a	2.7687776	Ω	17.45278	−0.78294311	+0.40033784
e	0.1459265	i	5.24771	−0.43794937	+0.18889816
P	4.61	H	14.5	G 0.15	U 3

Residuals in seconds of arc

1997 04 06	704	0.5+	0.9–	1998 09 14	704	0.7–	0.0	1998 09 27	704	0.2+	0.7–
1997 04 06	704	0.3+	0.1–	1998 09 14	704	0.9–	0.3+	1998 09 27	704	0.5–	1.8–
1997 04 08	704	0.5–	0.8–	1998 09 14	704	0.7–	0.2+	1998 10 14	704	1.6–	1.2+
1997 04 08	704	0.7–	0.3–	1998 09 18	704	0.4+	0.1–	1998 10 14	704	0.6+	1.0–
1997 04 30	704	0.5–	0.5+	1998 09 18	704	0.4+	0.8+	1998 10 14	704	1.5+	1.2+
1997 04 30	704	0.5+	0.1–	1998 09 18	704	0.4+	0.0	1998 10 14	704	1.2–	0.3–
1997 04 30	704	0.1–	0.0	1998 09 18	704	1.0+	1.7+	1998 10 14	704	0.4+	1.1+
1997 04 30	704	0.0	0.5–	1998 09 18	704	0.0	0.6+	1998 10 15	704	0.5–	0.3–
1997 04 30	704	0.4+	0.7–	1998 09 25	699	0.6+	1.0–	1998 10 15	704	0.6–	0.3+
1997 05 01	704	0.2+	0.4+	1998 09 25	699	0.2–	0.1+	1998 10 15	704	0.9–	0.5–
1997 05 01	704	0.4+	0.4+	1998 09 25	699	0.4+	1.2+	1998 10 15	704	(2.5–	0.6+)
1997 05 01	704	0.1–	0.4+	1998 09 26	704	0.5+	0.7+	1998 10 15	704	1.7–	0.9–
1997 05 01	704	0.1+	0.1–	1998 09 26	704	0.4–	0.3–	1998 10 15	610	0.4+	0.1–

1997 05 01	704	0.0	0.1+	1998 09 26	704	0.1–	0.3–	1998 10 15	610	1.2+	0.4–
1997 05 05	704	0.0	0.1+	1998 09 26	704	0.3–	0.5–	1998 10 15	610	1.9+	0.7–
1997 05 05	704	0.2–	0.3+	1998 09 26	704	0.2–	0.6+	1998 10 20	610	(4.0+	1.4–)
1997 05 05	704	0.1+	0.3+	1998 09 27	704	0.1+	0.1–	1998 10 20	610	1.2+	0.4–
1997 05 05	704	0.4–	0.3+	1998 09 27	704	0.3+	0.9–	1998 10 20	610	0.6–	0.2+
1997 05 05	704	0.1–	0.1–	1998 09 27	704	0.1–	0.4–	1998 10 20	610	(2.5–	0.9+)

1997 GK₂₅ = 1998 RX₆₅

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	134.33078		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26888474	ω	51.48141	-0.42116203	$+0.90694336$
a	2.3773435	Ω	193.61863	-0.84326199	-0.39509972
e	0.1743050	i	2.12597	-0.33396373	-0.14611624
P	3.67	H	15.0	G 0.15	U 4

Residuals in seconds of arc

1997 03 05	809	1.2+	1.4+	1997 04 16	691	0.5–	0.6–	1998 09 26	704	0.7+	0.3+
1997 03 05	809	1.5+	1.0+	1997 06 03	566	0.4+	1.0+	1998 09 26	704	1.6+	1.1–
1997 03 05	809	0.4+	1.3+	1997 06 03	566	0.8+	1.2+	1998 09 26	704	1.1+	0.1+
1997 03 06	809	(2.0+	3.8+)	1997 06 03	566	0.5+	1.1+	1998 09 26	704	0.1–	0.4–
1997 03 06	809	(2.6+	2.9+)	1998 09 14	704	1.3–	0.4+	1998 09 27	704	0.7+	0.7–
1997 03 06	809	(1.7+	2.4+)	1998 09 14	704	1.2–	0.8–	1998 09 27	704	0.5–	1.4+
1997 04 02	691	0.5–	0.2–	1998 09 14	704	0.7–	1.0–	1998 09 27	704	0.2–	0.3+
1997 04 02	691	0.3–	0.4–	1998 09 18	704	0.1–	1.1+	1998 09 27	704	0.5+	0.4+
1997 04 08	691	0.2–	0.4–	1998 09 18	704	0.3–	0.9+	1998 09 27	704	0.0	0.8–
1997 04 08	691	0.2–	0.7–	1998 09 18	704	0.8+	1.4–	1998 10 15	704	0.1+	1.1+
1997 04 08	691	0.1–	0.5–	1998 09 18	704	1.9–	0.4–	1998 10 15	704	0.5+	0.8–
1997 04 12	691	0.6–	0.5–	1998 09 18	704	0.9+	0.5+	1998 10 15	704	1.0+	0.2+
1997 04 12	691	0.5–	0.7–	1998 09 25	699	0.1+	0.7+	1998 10 15	704	1.1+	0.5–
1997 04 12	691	0.3–	0.8–	1998 09 25	699	0.2+	0.1–	1998 10 24	691	0.7–	0.0
1997 04 16	691	0.5–	0.5–	1998 09 25	699	0.7–	0.8+	1998 10 24	691	0.9–	0.0
1997 04 16	691	0.5–	0.4–	1998 09 26	704	0.0	0.0	1998 10 24	691	0.7–	0.1–

1997 GA₂₆ = 1998 SM₆₇

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	162.35807		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29484080	ω	191.65146	-0.45003957	$+0.88758160$
a	2.2356870	Ω	51.68240	-0.80892522	-0.35855622
e	0.1556996	i	7.19759	-0.37829139	-0.28919948
P	3.34	H	14.5	G 0.15	U 4

Residuals in seconds of arc

1997 04 12	367	0.2–	0.4+	1997 05 01	355	0.2–	0.2–	1998 09 20	809	0.9+	0.6+
1997 04 12	367	0.1–	0.1+	1997 05 01	355	0.4–	0.0	1998 09 20	809	0.6–	0.0
1997 04 12	367	0.3–	0.2+	1997 05 06	402	0.0	0.3+	1998 09 20	809	1.7–	0.9+
1997 04 13	367	0.3+	0.3+	1997 05 06	402	0.2+	0.4+	1998 09 21	809	0.5+	0.1–
1997 04 13	367	0.5+	0.4+	1997 05 06	402	0.0	0.4+	1998 09 21	809	0.5–	0.2–
1997 04 13	367	1.4+	0.5+	1997 05 09	900	0.2–	0.7+	1998 09 21	809	0.4–	0.4+
1997 04 15	367	0.9+	0.1–	1997 05 09	900	0.3–	0.2–	1998 10 14	704	1.1+	1.2+
1997 04 15	367	0.5+	0.2–	1997 05 17	900	0.6+	0.1+	1998 10 14	704	0.6–	0.5–
1997 04 16	402	0.9+	0.4–	1997 05 17	367	0.4+	0.2+	1998 10 14	704	0.6–	0.7–
1997 04 16	402	0.8+	0.4–	1997 05 17	367	0.1+	0.7+	1998 10 15	704	0.1–	0.5+
1997 04 16	402	1.1+	0.5–	1997 05 17	367	0.2+	0.2+	1998 10 15	704	(2.6–	0.1+)

1998 NOV. 10

M.P.C. 32963

1997 04 28	367	0.6−	0.2+	1997 05 31	402	0.2−	0.1+	1998 10 29	704	0.4−	0.1+
1997 04 28	367	0.8−	0.4−	1997 05 31	402	0.3−	0.4−	1998 10 29	704	0.1−	0.8−
1997 04 29	355	0.7−	0.3+	1997 06 07	402	0.3−	0.0	1998 10 29	704	0.1+	0.3−
1997 04 29	355	0.7−	0.1+	1997 06 07	402	0.1−	0.5+				
1997 05 01	355	0.0	0.9−	1997 06 07	402	0.6+	0.1−				

1997 GP₂₇ = 1998 SM₁₅₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	119.14531		(2000.0)	P	Q		
<i>n</i>	0.28230263	ω	339.96365	−0.03687467	+0.99879239		
<i>a</i>	2.3014035	Ω	287.91223	−0.91214536	−0.04691092		
<i>e</i>	0.1382616	<i>i</i>	1.95529	−0.40820474	+0.01459914		
<i>P</i>	3.49	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1997 04 02	327	0.5−	0.2+	1997 04 10	327	0.8−	0.2+
1997 04 02	327	0.1−	0.0	1997 04 10	327	0.3−	0.3+
1997 04 02	327	0.2+	0.2+	1997 04 10	327	0.5−	0.2+
1997 04 05	566	0.3+	0.9−	1998 09 26	704	0.4+	0.4−
1997 04 05	566	1.4+	0.2+	1998 09 26	704	1.2+	0.9+
1997 04 05	566	0.1+	0.5−	1998 09 26	704	2.0−	0.5−
				1998 09 27	704	0.3−	0.7+

1997 GX₃₅ = 1998 SF₁₄₇

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	73.75255		(2000.0)	P	Q		
<i>n</i>	0.27127541	ω	150.99839	+0.87907482	+0.47668313		
<i>a</i>	2.3633557	Ω	180.53459	−0.45227844	+0.83353404		
<i>e</i>	0.1094085	<i>i</i>	4.94112	−0.15057113	+0.27927441		
<i>P</i>	3.63	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 04 06	704	0.7+	0.1+	1997 04 30	704	0.1−	0.2+
1997 04 06	704	0.6−	0.5−	1997 04 30	704	0.3+	0.5+
1997 04 07	809	(2.8+ 1.2+)		1997 04 30	704	0.3+	0.2+
1997 04 07	809	(2.4+ 1.7+)		1997 04 30	704	0.2+	0.1−
1997 04 07	809	(2.7+ 1.8+)		1997 05 01	704	0.4−	0.2+
1997 04 08	809	0.7+ 0.2+		1997 05 01	704	0.4−	0.2+
1997 04 08	809	0.9− 0.4+		1997 05 01	704	0.1−	0.4+
1997 04 08	809	0.9− 1.3−		1997 05 01	704	0.4−	0.2+
1997 04 11	704	0.3+ 1.3−		1997 05 01	704	0.4−	0.3+
1997 04 11	704	1.0+ 0.5−		1998 09 20	809	0.3+	0.2+
1997 04 30	704	0.4+ 0.2+		1998 09 20	809	0.7−	1.0−

1997 GD₄₂ = 1998 RH₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	205.38554		(2000.0)	P	Q		
<i>n</i>	0.26558050	ω	356.61557	−0.99401393	−0.10913538		
<i>a</i>	2.3970215	Ω	177.10423	+0.10245037	−0.94725464		
<i>e</i>	0.0776911	<i>i</i>	5.76849	+0.03795044	−0.30132727		
<i>P</i>	3.71	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1997 04 09	809	0.6+	0.7−	1997 04 11	809	0.4−	0.6−
1997 04 09	809	0.5+	0.1+	1997 04 11	809	0.4−	0.1−
1997 04 09	809	0.0	0.0	1997 04 12	809	0.2+	0.4+
1997 04 10	809	0.9−	1.7−	1997 04 12	809	0.1+	0.8+
1997 04 10	809	(1.3− 2.4−)		1997 04 12	809	0.4+	1.3+
1997 04 10	809	(0.8− 2.6−)		1998 09 14	704	0.3−	0.3−
1997 04 11	809	0.2−	0.4+	1998 09 14	704	0.2−	0.5+
				1998 09 18	704	1.0+	0.4+

1997 HV₂ = 1998 SH₁₅₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	120.59822		(2000.0)	P	Q		
<i>n</i>	0.28452889	ω	262.84916	+0.03109253	+0.99946919		
<i>a</i>	2.2893831	Ω	8.94991	−0.89059534	+0.03212030		
<i>e</i>	0.1193263	<i>i</i>	3.58443	−0.45373251	+0.00544338		
<i>P</i>	3.46	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 03 10	809	0.8+	0.3+	1997 04 28	691	0.3+	0.2−
1997 03 10	809	0.4+	1.1−	1997 05 03	691	0.5−	0.3−
1997 03 10	809	0.6+	0.4+	1997 05 03	691	0.4−	0.0
1997 03 11	809	1.2−	0.9+	1997 05 03	691	0.4−	0.1−
1997 03 11	809	0.7−	0.8−	1997 05 09	691	0.7−	0.1+
1997 03 11	809	1.4−	0.9−	1997 05 09	691	0.9−	0.0
1997 04 05	566	0.6+	0.3+	1997 05 09	691	0.4+	0.4−
1997 04 05	566	0.6+	0.1−	1998 09 26	704	1.3+	0.2−
1997 04 05	566	0.6+	0.1+	1998 09 26	704	1.5−	0.2−
1997 04 28	691	0.3+	0.2−	1998 09 26	704	0.1−	0.0
1997 04 28	691	0.1+	0.2−	1998 09 26	704	0.7+	0.7−

1997 HR₇ = 1992 EO₃₁ = 1998 RJ₃₀

Id. A. Doppler, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	73.10364		(2000.0)	P	Q		
<i>n</i>	0.22210011	ω	305.99769	+0.46104903	+0.88733871		
<i>a</i>	2.7004545	Ω	351.44591	−0.79589154	+0.40952010		
<i>e</i>	0.0847071	<i>i</i>	3.07839	−0.39241617	+0.21195117		
<i>P</i>	4.44	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1992 03 01	809	1.2+	0.6+	1997 05 01	704	0.4+	0.3−
1992 03 03	809	0.7−	0.5+	1997 05 01	704	0.4+	0.1−
1997 04 30	704	0.6−	0.4−	1997 05 05	704	0.9−	0.7+
1997 04 30	704	0.1+	0.4+	1997 05 05	704	0.3+	0.0
1997 04 30	704	0.2−	0.4−	1997 05 05	704	0.1+	0.2−
1997 04 30	704	1.3+	0.7+	1997 05 05	704	0.8+	1.5+
1997 04 30	704	1.1−	0.0	1997 05 05	704	1.3+	0.5−
1997 05 01	704	0.1+	0.5−	1997 05 05	704	0.5−	0.7−
1997 05 01	704	1.0−	0.0	1997 05 05	704	0.5−	0.7−
1997 05 01	704	0.5−	0.3+	1997 05 05	704	(2.6− 0.8−)	

1997 HX₇ = 1990 VT₈ = 1990 WH₃ = 1994 US₇

Id. A. Doppler, S.Nakano (d, *MPC* 20913)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	70.55484		(2000.0)	P	Q		
<i>n</i>	0.23513438	ω	88.64827	+0.65063576	+0.74006334		
<i>a</i>	2.5997123	Ω	223.57199	−0.75708511	+0.61470011		
<i>e</i>	0.1215043	<i>i</i>	14.29875	−0.05912061	+0.27285530		
<i>P</i>	4.19	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1990 11 12	809	1.3−	0.4−	1994 10 28	691	0.0	0.2−
1990 11 12	809	1.2−	0.2−	1994 10 28	691	0.0	0.3−
1990 11 12	809	(2.2− 0.9−)		1994 11 01	691	0.0	0.5−
1990 11 18	809	0.5−	1.0−	1994 11 01	691	0.2+	0.4−
1990 11 18	809	0.9+	0.5+	1994 11 01	691	0.0	0.8−
1990 11 18	809	1.1+	0.7+	1997 04 30	704	0.5+	0.1−
1990 11 19	809	0.1+	0.1+	1997 04 30	704	0.2+	0.1−
1990 11 19	809	0.4+	0.5−	1997 04 30	704	0.5+	0.1−
1990 11 19	809	0.5+	0.8−	1997 04 30	704	0.3+	0.2−
1994 10 28	691	0.1+	0.2−	1997 04 30	704	1.0+	0.6−

1997 HJ₈ = 1998 RE₇₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 27.65439 (2000.0)			Williams	
			P	Q
<i>n</i>	0.26852254	ω 198.22756	+0.96650450	−0.25664054
<i>a</i>	2.3794809	Ω 176.64101	+0.23982876	+0.90012460
<i>e</i>	0.2355830	<i>i</i> 2.11695	+0.09138499	+0.35201042
<i>P</i>	3.67	<i>H</i> 15.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 30	704	0.3+	0.0	1998 09 14	704	0.1+	0.5+	1998 09 26	704	0.3+	0.2−
1997 04 30	704	1.4+	0.1+	1998 09 14	704	0.8+	0.7−	1998 09 26	704	1.7+	1.2−
1997 04 30	704	0.7+	1.3+	1998 09 14	704	0.1−	0.1−	1998 09 26	704	0.2+	0.0
1997 04 30	704	0.3−	0.3−	1998 09 15	699	0.4−	0.4+	1998 09 27	704	0.1−	0.8−
1997 05 01	704	0.9+	1.1+	1998 09 15	699	0.4+	0.1+	1998 09 27	704	0.8−	0.2+
1997 05 01	704	0.1+	0.7+	1998 09 15	699	0.7−	0.9+	1998 09 27	704	0.4+	0.0
1997 05 01	704	0.5+	0.3−	1998 09 18	704	0.1−	0.0	1998 09 27	704	0.2−	0.3−
1997 05 01	704	0.8−	0.6−	1998 09 18	704	0.2+	0.0	1998 09 27	704	0.0	0.3−
1997 05 05	704	0.4−	0.7+	1998 09 18	704	0.1−	0.3+	1998 10 14	699	0.1+	0.9+
1997 05 05	704	1.5−	0.9−	1998 09 18	704	0.0	0.3−	1998 10 14	699	0.3−	0.5+
1997 05 05	704	0.0	0.4−	1998 09 18	704	1.2−	0.6+	1998 10 14	699	0.0	0.6+
1997 05 05	704	0.8−	1.0−	1998 09 26	704	0.4−	0.3+				
1997 05 05	704	(2.4−	0.7−)	1998 09 26	704	0.1+	1.0−				

1997 HP₈ = 1998 OS₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 317.34768 (2000.0)			Doppler	
			P	Q
<i>n</i>	0.22706025	ω 217.00306	+0.71017098	−0.70397485
<i>a</i>	2.6609822	Ω 187.76201	+0.66045551	+0.67047093
<i>e</i>	0.0983531	<i>i</i> 3.71529	+0.24383540	+0.23428216
<i>P</i>	4.34	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1997 04 30	704	0.9+	1.1+	1997 04 30	704	1.1+	0.4+	1997 05 05	704	0.3+	0.2−
1997 04 30	704	0.2−	1.2−	1997 05 01	704	0.2+	0.2−	1997 05 05	704	1.4−	0.8+
1997 04 30	704	0.2−	0.5−	1997 05 01	704	0.5−	0.7−	1997 07 24	910	0.3−	0.1+
1997 04 30	704	0.0	0.2−	1997 05 01	704	0.2+	0.1−	1998 07 24	910	0.3−	0.0
1997 04 30	704	0.2+	0.4−	1997 05 01	704	0.2−	0.3+	1998 07 24	910	0.2−	0.0
1997 04 30	704	0.8−	0.7−	1997 05 01	704	0.0	0.3−	1998 07 27	910	0.3+	0.0
1997 04 30	704	0.3+	1.1+	1997 05 05	704	0.6+	0.1−	1998 07 27	910	0.3+	0.1−
1997 04 30	704	0.7−	1.0+	1997 05 05	704	0.5−	0.4−	1998 07 27	910	0.2+	0.1−
1997 04 30	704	(2.5−	1.8−)	1997 05 05	704	0.7+	0.3+				

1997 HD₉ = 1998 SV₁₆₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 107.52371 (2000.0)			Williams	
			P	Q
<i>n</i>	0.24225171	ω 14.07508	+0.19173873	+0.98097287
<i>a</i>	2.5485402	Ω 266.98580	−0.90338510	+0.16426935
<i>e</i>	0.1588471	<i>i</i> 1.74855	−0.38357739	+0.10347849
<i>P</i>	4.07	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 08	704	0.5−	0.0	1997 05 01	704	0.1+	0.2+	1998 09 26	704	0.0	0.9+
1997 04 08	704	0.2−	0.0	1997 05 01	704	0.2+	0.3+	1998 09 26	704	0.3+	0.8−
1997 04 30	704	0.5+	0.1+	1997 05 05	704	0.5+	0.1−	1998 09 26	704	0.4+	0.2+
1997 04 30	704	0.3+	0.3+	1997 05 05	704	0.6+	0.0	1998 09 26	704	0.5+	0.1−
1997 04 30	704	0.5+	0.3+	1997 05 05	704	0.1+	0.3+	1998 09 27	704	0.3−	0.4−
1997 04 30	704	0.1+	0.4+	1997 05 05	704	0.2−	0.8−	1998 09 27	704	1.4−	0.4−
1997 04 30	704	0.1+	0.2+	1997 05 05	704	0.3+	0.1+	1998 09 27	704	0.4+	1.1+
1997 05 01	704	0.4+	0.1−	1997 05 07	566	1.2−	0.3−	1998 09 27	704	0.1+	0.4−
1997 05 01	704	0.7+	0.1−	1997 05 07	566	1.3−	0.1−				
1997 05 01	704	0.6+	0.2−	1997 05 07	566	1.5−	0.1−				

1997 HA₁₀ = 1998 RA₇₁

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 46.11871 (2000.0)			Williams	
			P	Q
<i>n</i>	0.21899806	ω 251.85841	+0.89399472	+0.44329749
<i>a</i>	2.7258955	Ω 81.78424	−0.38213189	+0.83036012
<i>e</i>	0.1905744	<i>i</i> 3.78149	−0.23398432	+0.33762317
<i>P</i>	4.50	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 30	704	0.2+	0.2−	1997 05 05	704	0.1−	0.5−	1998 09 26	704	0.2+	0.0
1997 04 30	704	0.5+	0.0	1998 09 14	704	0.7−	0.5−	1998 09 26	704	0.1+	0.2+
1997 04 30	704	0.5−	0.4+	1998 09 14	704	0.4−	0.0	1998 09 26	704	0.1+	0.6+
1997 04 30	704	0.6+	0.8+	1998 09 14	704	0.8+	1.1−	1998 09 26	704	0.3−	0.8+
1997 04 30	704	0.2−	0.8+	1998 09 17	699	0.1−	1.0−	1998 09 27	704	0.7+	0.2−
1997 05 01	704	0.7+	1.5−	1998 09 17	699	0.1−	0.2−	1998 09 27	704	0.4−	0.1+
1997 05 01	704	(2.9+	0.5+)	1998 09 17	699	0.2−	0.9+	1998 09 27	704	0.7+	0.7−
1997 05 01	704	0.5−	0.6−	1998 09 18	704	0.4+	0.1+	1998 09 27	704	0.5−	0.6−
1997 05 01	704	(3.6−	0.2−)	1998 09 18	704	0.8+	0.6+	1998 09 27	704	0.1−	0.4−
1997 05 05	704	0.0	0.3+	1998 09 18	704	0.6−	0.4−	1998 10 17	699	0.7+	0.3−
1997 05 05	704	0.1+	0.3+	1998 09 18	704	0.3+	0.4−	1998 10 17	699	0.5−	0.3+
1997 05 05	704	0.9−	0.2+	1998 09 18	704	0.4−	1.7+	1998 10 17	699	0.4−	0.5+
1997 05 05	704	0.0	0.3+	1998 09 26	704	0.3−	0.3+				

1997 HZ₁₀ = 1996 AW₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 106.64139 (2000.0)			Doppler	
			P	Q
<i>n</i>	0.28346644	ω 295.70973	+0.76175170	+0.64745206
<i>a</i>	2.2951000	Ω 23.96220	−0.57201278	+0.68897257
<i>e</i>	0.2227643	<i>i</i> 3.28065	−0.30419686	+0.32576467
<i>P</i>	3.48	<i>H</i> 16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 01 12	691	0.1+	0.7+	1997 04 30	704	0.0	0.3−	1997 05 01	704	0.1−	0.2+
1996 01 12	691	0.2−	0.5+	1997 04 30	704	0.3+	0.3−	1997 05 01	704	0.2−	0.2−
1996 01 12	691	0.1−	0.7+	1997 04 30	704	0.5+	0.2−	1997 05 05	704	0.0	0.4−
1996 01 18	691	0.3+	0.5+	1997 04 30	704	0.0	0.0	1997 05 05	704	0.1−	0.6−
1996 01 18	691	0.1−	3.2−	1997 05 01	704	0.1+	0.1+	1997 05 05	704	0.1−	1.6+
1996 01 18	691	0.1+	0.8+	1997 05 01	704	0.0	0.3−	1997 05 05	704	0.2−	0.3−
1997 04 30	704	0.4+	0.3+	1997 05 01	704	0.5−	0.1−	1997 05 05	704	0.0	0.6+

1997 HM₁₁ = 1998 SX₇₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 138.68816 (2000.0)			Williams	
			P	Q
<i>n</i>	0.23651412	ω 255.40401	−0.56865984	+0.82248283
<i>a</i>	2.5895920	Ω 339.92463	−0.74039724	−0.51823771
<i>e</i>	0.1083529	<i>i</i> 2.03099	−0.35838236	−0.23441774
<i>P</i>	4.17	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 7

Residuals in seconds of arc

1997 04 30	704	0.4−	0.3+	1997 05 01	704	0.1+	0.3+	1998 09 26	704	1.0−	0.3+
1997 04 30	704	0.6+	0.0	1997 05 05	704	0.5+	0.1−	1998 09 26	704	0.2−	0.8+
1997 04 30	704	0.2−	0.1−	1997 05 05	704	0.3−	0.0	1998 09 27	704	0.4+	1.0+
1997 04 30	704	1.4−	0.6−	1997 05 05	704	0.1−	0.2−	1998 09 27	704	1.5+	1.6+
1997 04 30	704	0.0	0.3−	1997 05 05	704	0.2−	0.2+	1998 09 27	704	0.6+	0.7−
1997 05 01	704	1.0+	0.1+	1997 05 05	704	0.5−	0.5−	1998 09 27	704	0.7−	1.5−
1997 05 01	704	0.8+	0.3+	1998 09 26	704	0.5+	0.4−	1998 09 27	704	0.9−	1.1−
1997 05 01	704	0.0	0.6+	1998 09 26	704	0.2−	0.0				

1997 JL

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	104.99910		(2000.0)	P		Q	
<i>n</i>	0.25336957	ω	162.93482	+0.35253539	+0.93467186		
<i>a</i>	2.4734307	Ω	127.68371	−0.86520733	+0.34424075		
<i>e</i>	0.0818327	<i>i</i>	3.32534	−0.35656006	+0.08880774		
<i>P</i>	3.89	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 05 02	691	0.2−	1.0−	1997 06 07	809	0.7+	1.3+	1998 09 18	699	1.5+	1.0+
1997 05 02	691	0.4−	0.1−	1997 06 07	809	0.2+	0.6+	1998 09 18	699	1.6+	0.1−
1997 05 02	691	0.4−	0.6−	1997 06 07	809	0.7−	0.8+	1998 09 18	699	0.6+	0.6−
1997 05 03	691	1.1−	1.6−	1997 06 08	809	0.6+	0.2+	1998 10 19	699	1.0−	1.3−
1997 05 03	691	0.5−	0.9−	1997 06 08	809	1.3+	0.9+	1998 10 19	699	0.5−	0.0
1997 05 03	691	0.9−	1.1−	1997 06 08	809	1.5+	0.4+	1998 10 19	699	1.5−	0.5−

1997 JN = 1998 RK₇₈

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	355.10787		(2000.0)	P		Q	
<i>n</i>	0.29857632	ω	300.73425	+0.49887521	−0.86432622		
<i>a</i>	2.2170006	Ω	119.20760	+0.81803961	+0.44531168		
<i>e</i>	0.1494549	<i>i</i>	4.18820	+0.28624241	+0.23374709		
<i>P</i>	3.30	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 02	691	1.0−	0.1+	1998 09 17	699	0.3+	0.1+	1998 10 15	704	0.1+	0.2+
1997 05 02	691	0.8−	0.2−	1998 09 18	704	0.3+	0.8−	1998 10 15	704	0.3+	0.7−
1997 05 02	691	0.7−	0.2+	1998 09 18	704	0.3+	0.2+	1998 10 15	704	(2.1+ 0.8−)	
1997 05 03	691	1.4−	0.2−	1998 09 18	704	0.6−	0.5+	1998 10 15	704	0.1−	0.3−
1997 05 03	691	1.2−	0.5−	1998 09 18	704	0.5+	0.2−	1998 10 15	704	0.9+	1.4−
1997 05 03	691	1.2−	0.2−	1998 09 18	704	0.0	0.4+	1998 10 17	699	0.4−	0.9+
1997 05 04	809	(3.8+ 0.7−)		1998 09 26	704	0.1+	0.5+	1998 10 17	699	0.4−	0.2−
1997 05 04	809	(3.8+ 1.6−)		1998 09 26	704	0.1−	0.6+	1998 10 17	699	0.0	0.6−
1997 05 04	809	(4.3+ 2.5−)		1998 09 26	704	0.5−	1.0+	1998 10 28	704	0.1+	1.2+
1997 06 07	809	1.9+	0.7−	1998 09 26	704	0.1−	0.0	1998 10 28	704	0.1+	1.5−
1997 06 07	809	1.4+	0.5−	1998 09 26	704	0.6+	0.6+	1998 10 28	704	0.8−	0.3−
1997 06 07	809	0.5+	0.7−	1998 09 27	704	0.0	0.8+	1998 10 28	704	0.6−	1.9−
1997 06 08	809	(2.4+ 2.2+)		1998 09 27	704	0.3−	0.7+	1998 10 28	704	0.9−	0.3−
1997 06 08	809	1.3+	0.4+	1998 09 27	704	0.4+	0.5+	1998 10 29	704	0.1−	0.3−
1997 06 08	809	1.0+	0.3+	1998 09 27	704	0.4+	0.3+	1998 10 29	704	0.8−	0.3−
1998 09 14	704	0.1+	0.2+	1998 09 27	704	0.9−	0.9+	1998 10 29	704	0.5+	1.0+
1998 09 14	704	1.4−	0.1−	1998 10 14	704	0.3+	0.4−	1998 10 29	704	0.9+	1.5−
1998 09 14	704	0.2−	0.3+	1998 10 14	704	1.3+	0.0	1998 10 29	704	1.4−	0.3+
1998 09 17	699	1.1+	0.0	1998 10 14	704	0.6+	0.2−				
1998 09 17	699	0.7+	0.0	1998 10 14	704	0.2−	1.7−				

1997 JQ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	88.74286		(2000.0)	P		Q	
<i>n</i>	0.21798673	ω	201.34820	+0.20492262	+0.96950722		
<i>a</i>	2.7343200	Ω	80.67278	−0.87713650	+0.24283341		
<i>e</i>	0.2248069	<i>i</i>	7.82786	−0.43432508	−0.03298010		
<i>P</i>	4.52	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 05 01	552	1.4+	0.5+	1997 05 28	552	1.5−	0.1+	1998 10 13	552	0.0	0.8−
1997 05 01	552	1.2+	0.1−	1997 05 28	552	0.7−	0.3−	1998 10 18	699	0.6−	0.1+
1997 05 03	552	0.2+	0.1−	1998 10 10	552	0.7+	0.2+	1998 10 18	699	0.3−	0.5+
1997 05 03	552	0.1+	0.1+	1998 10 10	552	0.1−	0.2−	1998 10 18	699	0.8−	0.6+
1997 05 10	552	0.6−	0.2−	1998 10 13	552	0.1+	0.6−	1998 10 26	552	0.6+	0.6+
1997 05 10	552	0.2−	0.8+	1998 10 13	552	0.4−	0.2−	1998 10 26	552	0.5+	0.5+

1997 JR

Id. K. Korlević (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	60.03706		(2000.0)	P		Q	
<i>n</i>	0.26157566	ω	280.99317	+0.91563805	+0.34715256		
<i>a</i>	2.4214258	Ω	58.97667	−0.20871077	+0.84148388		
<i>e</i>	0.2590497	<i>i</i>	13.68290	−0.34357935	+0.41399272		
<i>P</i>	3.77	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 01	552	0.3+	0.2−	1997 05 28	552	0.1−	0.3−	1998 10 26	120	0.8−	0.1−
1997 05 01	552	0.5−	0.2−	1997 05 28	552	0.1−	0.0	1998 10 29	704	0.8+	0.1+
1997 05 03	552	0.2−	1.0+	1998 10 22	120	0.7−	0.1−	1998 10 29	704	1.1+	0.9−
1997 05 03	552	0.4−	0.2−	1998 10 22	120	0.9−	0.2−	1998 10 29	704	0.1+	0.1+
1997 05 10	552	0.6+	0.0	1998 10 22	120	0.4−	0.3−	1998 10 29	704	1.4+	1.2+
1997 05 10	552	0.5+	0.0	1998 10 26	120	0.4−	0.4−	1998 10 29	704	0.3−	0.6+

1997 JZ

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	110.83102		(2000.0)	P		Q	
<i>n</i>	0.26675976	ω	74.03650	+0.35504363	+0.92363543		
<i>a</i>	2.3899520	Ω	217.77975	−0.92225981	+0.32080166		
<i>e</i>	0.1285614	<i>i</i>	13.62999	−0.15290803	+0.20972337		
<i>P</i>	3.69	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 02	704	1.2+	1.3+	1997 04 30	704	0.9+	0.2+	1997 05 05	704	0.4+	0.5+
1997 04 02	704	0.1−	0.5+	1997 05 01	704	0.3+	0.1+	1997 05 05	704	0.5+	0.6+
1997 04 06	704	0.5−	0.6−	1997 05 01	704	0.3+	0.0	1997 05 05	704	0.5+	0.2+
1997 04 06	704	0.3−	0.1−	1997 05 01	704	0.2+	0.1−	1997 05 05	704	0.1+	0.6+
1997 04 06	704	0.7−	0.3+	1997 05 01	704	0.3+	0.1−	1997 05 08	327	0.2−	0.4−
1997 04 06	704	(0.4+ 2.9−)		1997 05 01	704	0.3+	0.1+	1997 05 08	327	0.8−	0.2−
1997 04 06	704	0.9+	1.8−	1997 05 02	327	0.1−	0.2+	1997 05 08	327	0.3−	0.5−
1997 04 06	704	0.4−	1.2+	1997 05 02	327	1.1−	0.5+	1998 10 11	699	1.0+	0.4+
1997 04 08	704	0.0	0.5−	1997 05 02	327	0.9−	0.1−	1998 10 11	699	0.1+	0.2−
1997 04 08	704	1.0−	0.3−	1997 05 03	327	0.6−	0.2−	1998 10 11	699	0.2−	0.4−
1997 04 30	704	0.6+	0.1+	1997 05 03	327	0.7−	0.1−	1998 10 19	699	0.2−	0.2+
1997 04 30	704	0.8+	0.1−	1997 05 03	327	0.6−	0.1−	1998 10 19	699	0.7−	0.2+
1997 04 30	704	0.6+	0.3−	1997 05 03	327	0.8−	0.1−	1998 10 19	699	0.1−	0.1+
1997 04 30	704	1.1+	0.8−	1997 05 05	704	0.1−	0.4+				

1997 JZ₇ = 1998 SC₁₁₆

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	116.42216		(2000.0)	P		Q	
<i>n</i>	0.22368522	ω	59.45382	−0.06937692	+0.99240399		
<i>a</i>	2.6876819	Ω	207.13459	−0.97449754	−0.08920386		
<i>e</i>	0.1687608	<i>i</i>	12.87071	−0.21340428	+0.08471717		
<i>P</i>	4.41	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 08	327	0.1+	0.1−	1997 05 18	327	0.2−	0.2+	1998 09 26	704	0.3+	0.6−
1997 05 08	327	0.1+	0.1+	1997 05 18	327	0.2−	0.2+	1998 09 27	704	0.2−	0.4−
1997 05 08	327	0.3+	0.1+	1997 05 18	327	0.0	0.1+	1998 09 27	704	0.3−	0.3+
1997 05 08	327	0.1−	0.3+	1997 05 20	327	0.2+	0.1+	1998 09 27	704	0.5−	0.5+
1997 05 09	327	0.7+	0.8−	1997 05 20	327	0.5+	0.8−	1998 09 27	704	0.2−	1.0+
1997 05 09	327	0.4−	0.2+	1997 05 20	327	0.1−	0.1−	1998 09 27	704	0.0	0.9+
1997 05 09	327	0.0	0.1−	1998 09 26	704	0.4−	0.1−	1998 10 11	699	0.1+	0.2+
1997 05 16	327	0.2−	0.1+	1998 09 26	704	0.1+	0.5−	1998 10 11	699	0.0	0.1−
1997 05 16	327	0.3−	0.3+	1998 09 26	704	0.8+	0.4−	1998 10 11	699	0.0	0.0
1997 05 16	327	0.4−	0.1+	1998 09 26	704	0.1+	0.6−				

1997 JH₁₀ = 1998 SF₁₅₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28097849	ω	324.41276	-0.97571126	-0.21846293		
<i>a</i>	2.3086282	Ω	202.98447	+0.20935040	-0.90818330		
<i>e</i>	0.0867432	<i>i</i>	2.37341	+0.06449767	-0.35703926		
<i>P</i>	3.51	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 05 04	809	0.1+	1.1-	1997 05 29	684	0.4-	0.6+	1997 06 09	684	1.3-	0.6+
1997 05 04	809	0.5-	0.4-	1997 05 29	684	0.2-	0.3+	1997 06 09	684	1.0-	0.7+
1997 05 04	809	1.0-	0.3-	1997 06 07	809	1.5+	1.7-	1997 06 09	684	1.2-	0.8+
1997 05 11	684	0.1+	0.1+	1997 06 07	809	1.3+	2.2-	1998 09 26	704	0.4+	0.4+
1997 05 11	684	0.5+	0.2+	1997 06 07	809	0.4+	2.0-	1998 09 26	704	0.8+	0.5-
1997 05 13	684	0.1+	0.1+	1997 06 07	684	1.4-	1.1+	1998 09 26	704	1.4-	1.3+
1997 05 13	684	0.2+	0.3+	1997 06 07	684	0.6-	0.8+	1998 09 26	704	0.1-	0.7-
1997 05 13	684	0.2+	0.3+	1997 06 07	684	0.4-	0.7+	1998 09 27	704	0.0	0.4-
1997 05 14	684	0.2+	0.2-	1997 06 08	809	0.5+	1.2+	1998 09 27	704	0.2-	0.3+
1997 05 14	684	0.2+	0.3-	1997 06 08	809	1.6+	0.4+	1998 09 27	704	0.6+	0.7-
1997 05 14	684	0.1+	0.2-	1997 06 08	809	1.0+	0.1+				

1997 JX₁₃ = 1995 UL₄₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30189414	ω	89.50838	-0.99014427	-0.13072916		
<i>a</i>	2.2007275	Ω	82.97925	+0.09967271	-0.90978102		
<i>e</i>	0.1223447	<i>i</i>	2.90162	+0.09838539	-0.39396494		
<i>P</i>	3.26	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 10 27	046	0.9-	0.3-	1997 05 03	809	0.5-	0.6-	1997 05 07	704	0.4-	0.1-
1995 10 27	046	0.3-	0.3-	1997 05 03	809	0.5-	0.3+	1997 05 07	704	0.3-	0.0
1995 10 27	046	0.5+	0.8+	1997 05 04	809	1.6+	1.2-	1997 05 07	704	0.3-	0.1-
1995 10 27	046	0.7+	0.2-	1997 05 04	809	1.0+	0.8-	1997 05 07	704	0.1+	0.0
1997 05 03	809	1.6-	0.6+	1997 05 04	809	0.7+	1.6+	1997 05 07	704	0.2+	0.3+

1997 JB₁₅ = 1998 RL₇₇

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29190502	ω	92.92855	-0.99106134	-0.11701314		
<i>a</i>	2.2506520	Ω	80.35784	+0.08111711	-0.90985341		
<i>e</i>	0.0909082	<i>i</i>	3.72634	+0.10591237	-0.39808880		
<i>P</i>	3.38	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 03	809	0.4-	1.2+	1998 09 18	704	1.3+	0.2+	1998 10 14	704	(1.7+	2.5-)
1997 05 03	809	0.7+	0.1+	1998 09 18	704	0.8+	0.8+	1998 10 15	704	0.8-	0.4+
1997 05 03	809	0.0	0.3+	1998 09 18	704	0.7+	0.5-	1998 10 15	704	1.4+	1.4-
1997 05 04	809	0.2+	0.3-	1998 09 18	704	1.0+	0.8+	1998 10 15	704	0.9-	1.3+
1997 05 04	809	0.2-	0.0	1998 09 26	704	0.2-	0.1+	1998 10 15	704	0.3+	0.5+
1997 05 04	809	0.2-	1.5-	1998 09 26	704	0.4-	1.4-	1998 10 15	704	0.4+	0.2-
1997 06 07	809	0.1-	0.5+	1998 09 26	704	0.1+	0.1-	1998 10 17	699	0.1-	1.2+
1997 06 07	809	0.4-	0.5+	1998 09 26	704	1.3-	0.8-	1998 10 17	699	0.9-	0.2+
1997 06 07	809	0.7-	0.1-	1998 09 26	704	0.3-	0.9-	1998 10 17	699	0.7-	0.1-
1997 06 08	809	0.3+	0.5-	1998 09 27	704	0.4-	0.4-	1998 10 28	704	(2.7+	1.0+)
1997 06 08	809	0.8+	0.1+	1998 09 27	704	0.4-	0.3-	1998 10 28	704	0.6+	0.4+
1997 06 08	809	0.1+	0.4-	1998 09 27	704	1.1-	0.4+	1998 10 28	704	(0.9+	2.1-)
1998 09 14	704	0.1-	0.4-	1998 09 27	704	0.5-	0.1-	1998 10 28	704	0.9+	0.5-
1998 09 14	704	0.5+	0.6-	1998 09 27	704	1.1-	0.1-	1998 10 28	704	0.8+	0.4+
1998 09 14	704	0.6+	1.5+	1998 10 14	704	0.3-	1.1-				
1998 09 18	704	0.3+	0.1-	1998 10 14	704	(0.0	3.0-)				

1997 JD₁₅ = 1991 PF₂₄ = 1998 RM₇₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30056160	ω	67.47837	-0.88248329	-0.46601263		
<i>a</i>	2.2072273	Ω	84.69528	+0.40461401	-0.82120129		
<i>e</i>	0.0869974	<i>i</i>	3.66694	+0.23981396	-0.32933367		
<i>P</i>	3.28	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 02	809	(0.1+	2.1-)	1997 06 08	809	(0.1-	2.1+)	1998 09 27	704	0.3-	0.4-
1991 08 02	809	0.3+	1.2-	1998 09 14	704	0.3+	0.5-	1998 09 27	704	0.2+	1.1+
1991 08 02	809	(0.9-	2.7-)	1998 09 14	704	0.5-	1.1+	1998 09 27	704	1.2-	0.1+
1997 05 03	809	0.5+	0.6+	1998 09 14	704	1.0+	1.5+	1998 09 27	704	0.3-	0.9-
1997 05 03	809	0.3+	0.5-	1998 09 18	704	1.5+	0.1-	1998 10 15	704	0.5+	1.4+
1997 05 03	809	0.3+	0.1+	1998 09 18	704	1.2+	0.1-	1998 10 15	704	0.1+	1.4-
1997 05 04	809	0.7-	0.8-	1998 09 18	704	0.3+	0.6+	1998 10 15	704	1.8-	1.7-
1997 05 04	809	0.3-	0.3-	1998 09 18	704	0.1-	1.3+	1998 10 15	704	0.2-	1.2-
1997 05 04	809	0.2-	0.9-	1998 09 18	704	1.3+	1.9+	1998 10 15	704	1.3-	0.6-
1997 06 07	809	1.1+	1.3+	1998 09 26	704	0.8+	0.3-	1998 10 28	704	(3.1+	1.0+)
1997 06 07	809	0.6-	0.8+	1998 09 26	704	0.7-	1.3-	1998 10 28	704	(3.4+	1.7+)
1997 06 07	809	0.2-	0.7+	1998 09 26	704	0.3+	0.5+	1998 10 28	704	0.7-	1.0-
1997 06 08	809	(0.5-	2.3+)	1998 09 26	704	0.9-	0.0	1998 10 28	704	0.4-	0.8+
1997 06 08	809	(1.0+	2.1+)	1998 09 26	704	0.5-	0.7-	1998 10 28	704	1.0+	1.0+

1997 JN₁₆ = 1998 SG₁₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23384041	ω	151.21790	+0.97789991	+0.20801138		
<i>a</i>	2.6092940	Ω	196.81562	-0.20304402	+0.92086988		
<i>e</i>	0.1788035	<i>i</i>	4.17236	-0.04984862	+0.32974221		
<i>P</i>	4.21	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 05 03	809	0.2+	0.1-	1997 05 04	809	(0.8-	3.1+)	1997 06 08	809	(2.7+	0.2-)
1997 05 03	809	0.2-	0.4+	1997 06 07	809	0.3-	1.3+	1997 06 08	809	(2.4+	0.8+)
1997 05 03	809	0.6+	0.4-	1997 06 07	809	0.1+	1.0+	1998 09 18	809	0.8+	1.2+
1997 05 04	809	0.5-	0.3+	1997 06 07	809	0.3+	0.6+	1998 09 18	809	0.3-	0.3-
1997 05 04	809	0.1-	0.2+	1997 06 07	809	0.4-	1.2-	1998 09 18	809	0.5-	0.6+
1997 05 04	809	0.0	0.3-	1997 06 07	809	0.8-	1.1-	1998 09 20	809	0.8+	0.0
1997 05 04	809	(2.2-	3.9+)	1997 06 07	809	0.7-	1.5-	1998 09 20	809	0.3-	0.9-
1997 05 04	809	(0.6-	3.3+)	1997 06 08	809	1.9+	0.8+	1998 09 20	809	0.5-	0.6-

1997 KO₂ = 1997 JC₁₈Id. G. V. Williams (d, *MPC* 30246), E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28542502	ω	316.76833	+0.67535472	-0.72858365		
<i>a</i>	2.2845887	Ω	90.40031	+0.70395336	+0.59065075		
<i>e</i>	0.1278205	<i>i</i>	6.56275	+0.21987648	+0.34683937		
<i>P</i>	3.45	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 03	809	0.4-	0.4-	1997 05 29	691	1.1-	0.4+	1997 06 08	809	0.5+	0.5+
1997 05 03	809	0.3-	1.0-	1997 06 05	691	0.5-	0.2-	1997 06 08	809	1.2+	0.5-
1997 05 03	809	0.3+	1.1-	1997 06 05	691	0.5-	0.2-	1998 09 22	699	0.3+	0.6-
1997 05 04	809	(2.4+	2.3+)	1997 06 05	691	0.7-	0.0	1998 09 22	699	0.4+	0.1-
1997 05 04	809	(2.6+	2.8+)	1997 06 07	809	0.0	0.1-	1998 09 22	699	0.0	0.0
1997 05 04	809	1.4+	1.3+	1997 06 07	809	0.2+	0.2-	1998 10 17	699	0.2-	0.4+
1997 05 29	691	1.3-	0.6+	1997 06 07	809	1.1+	0.3-	1998 10 17	699	0.1-	0.2+
1997 05 29	691	1.1-	0.4+	1997 06 08	809	1.5+	0.9+	1998 10 17	699	0.3-	0.1+

1997 KE₃ = 1998 UR₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.22304646	ω	143.85019	+0.98707825	−0.07521661				
<i>a</i>	2.6928107	Ω	221.17753	+0.03949783	+0.96994877				
<i>e</i>	0.2114101	<i>i</i>	12.40962	+0.15529470	+0.23139111				
<i>P</i>	4.42	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 05 30	691	0.1+	0.3−	1997 06 11	691	0.3+	0.6−	1998 10 28	704	0.5−	0.4−
1997 05 30	691	0.4−	0.1−	1997 06 11	691	0.2+	0.1−	1998 10 28	704	0.6−	0.6+
1997 05 30	691	0.1+	1.0+	1998 10 12	699	0.1−	0.2−	1998 10 29	704	0.0	0.3−
1997 06 07	691	0.1−	0.3+	1998 10 12	699	0.7+	0.0	1998 10 29	704	0.4−	0.4+
1997 06 07	691	0.0	0.2−	1998 10 12	699	0.4−	0.3+	1998 10 29	704	0.1−	0.2+
1997 06 07	691	0.0	0.1−	1998 10 28	704	0.1+	0.6−	1998 10 29	704	0.0	1.3−
1997 06 11	691	0.2−	0.1+	1998 10 28	704	0.8+	0.1−	1998 10 29	704	0.5+	1.3+

1997 KH₄

Id. E. Bowell (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.28993497	ω	73.03065	−0.99248689	−0.05919593				
<i>a</i>	2.2608356	Ω	103.47663	+0.01524604	−0.92818162				
<i>e</i>	0.0791864	<i>i</i>	6.32163	+0.12139743	−0.36738907				
<i>P</i>	3.40	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 05 31	691	0.2−	0.1+	1997 06 11	691	0.3+	0.4+	1997 07 02	691	0.0	0.3−
1997 05 31	691	0.1−	0.1+	1997 06 11	691	0.3+	0.0	1998 09 21	699	0.7−	0.6+
1997 06 08	809	(3.9+	4.2+)	1997 06 11	691	0.4+	0.0	1998 09 21	699	0.3+	0.6+
1997 06 08	809	(3.4+	4.4+)	1997 06 27	691	0.4−	0.0	1998 09 21	699	0.6−	0.1+
1997 06 08	809	(3.7+	3.7+)	1997 06 27	691	0.3−	0.1−	1998 10 17	699	0.5+	0.6−
1997 06 09	809	(3.9+	2.0+)	1997 06 27	691	0.3−	0.0	1998 10 17	699	0.3+	0.6−
1997 06 09	809	(4.0+	2.3+)	1997 07 02	691	0.2+	0.3−	1998 10 17	699	0.3+	0.0
1997 06 09	809	(4.3+	2.8+)	1997 07 02	691	0.0	0.0				

1997 LC = 1998 RZ₆₈

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.20312327	ω	156.89193	+0.95825664	+0.28588833				
<i>a</i>	2.8661325	Ω	186.49905	−0.26687537	+0.89003662				
<i>e</i>	0.0967200	<i>i</i>	1.75882	−0.10257554	+0.35510939				
<i>P</i>	4.85	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 06 01	684	0.0	0.4+	1998 09 14	704	0.0	0.8+	1998 09 27	704	1.3+	0.5−
1997 06 01	684	0.1−	0.2+	1998 09 14	704	(2.3−	0.8+)	1998 09 27	704	0.6+	0.3+
1997 06 02	684	0.8+	0.1+	1998 09 18	704	0.3−	0.7−	1998 09 27	704	0.1+	1.3+
1997 06 02	684	0.6+	0.2−	1998 09 18	704	0.7−	1.0−	1998 09 27	704	0.9−	0.8−
1997 06 02	684	0.1+	0.0	1998 09 18	704	0.9−	1.1−	1998 09 27	704	0.4−	1.1−
1997 06 05	684	0.1+	0.0	1998 09 18	704	0.9−	0.8+	1998 10 11	684	0.4−	0.2−
1997 06 05	684	0.0	0.0	1998 09 18	704	1.3−	0.8−	1998 10 11	684	0.3−	0.1−
1997 06 05	684	0.1−	0.0	1998 09 26	704	1.7+	0.4+	1998 10 24	691	0.2−	0.4+
1997 06 09	684	0.2+	0.1+	1998 09 26	704	0.9+	0.1−	1998 10 24	691	0.4−	0.3+
1997 06 09	684	0.5−	0.4+	1998 09 26	704	0.1+	0.9+	1998 10 24	691	0.2−	0.5+
1997 06 09	684	1.1−	0.7−	1998 09 26	704	1.2+	0.5+				
1998 09 14	704	0.2+	0.9+	1998 09 26	704	0.7+	0.5−				

1997 LF = 1994 RK₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Doppler	
<i>n</i>	0.29444617	ω	162.58916	+0.80588824	+0.59093028				
<i>a</i>	2.2376841	Ω	161.04684	−0.55576822	+0.77638607				
<i>e</i>	0.2122212	<i>i</i>	6.48472	−0.20412211	+0.21914853				
<i>P</i>	3.35	<i>H</i>	17.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1994 09 03	809	0.3−	0.6+	1994 09 04	809	0.6+	0.0	1997 06 04	691	0.0	0.1−
1994 09 03	809	0.3−	0.3−	1997 06 01	691	0.1−	0.4+	1997 06 04	691	0.1+	0.2−
1994 09 03	809	0.8−	0.5−	1997 06 01	691	0.3+	0.5+	1997 06 08	691	0.2−	0.1−
1994 09 04	809	0.5+	0.1−	1997 06 01	691	0.1+	0.8+	1997 06 08	691	0.2+	0.5−
1994 09 04	809	0.3+	0.5+	1997 06 04	691	0.5−	0.9−	1997 06 08	691	0.1+	0.1+

1997 LH₄ = 1998 ST₈₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.23561883	ω	351.10743	−0.99776482	−0.06208681				
<i>a</i>	2.5961476	Ω	185.51616	+0.06509792	−0.98659276				
<i>e</i>	0.0284373	<i>i</i>	14.89557	−0.01508710	−0.15093030				
<i>P</i>	4.18	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 06 09	824	0.3−	0.0	1997 06 29	824	0.8+	0.6−	1998 09 26	704	0.1+	0.6+
1997 06 09	824	0.4−	0.0	1997 06 29	824	0.3−	0.7−	1998 09 26	704	0.5+	0.7−
1997 06 09	824	0.0	0.1+	1997 06 29	824	0.2+	0.5−	1998 09 26	704	0.7−	0.5−
1997 06 11	824	0.2−	0.1+	1997 07 06	824	0.0	0.1−	1998 09 26	704	0.1−	0.5−
1997 06 11	824	0.1+	0.2+	1997 07 06	824	0.3−	0.0	1998 09 27	704	0.4−	0.2−
1997 06 11	824	0.1+	0.0	1997 07 06	824	0.1+	0.1+	1998 09 27	704	0.5+	0.8+
1997 06 15	824	0.1+	0.2+	1997 07 08	824	0.1−	0.0	1998 09 27	704	0.1+	0.7+
1997 06 15	824	0.5+	0.0	1997 07 08	824	0.0	0.0	1998 09 27	704	0.1+	0.2+
1997 06 15	824	0.1+	0.1−	1997 07 08	824	0.1−	0.1+	1998 09 27	704	1.0−	0.5−
1997 06 28	824	0.2−	0.3+	1997 07 23	824	0.2−	0.2−	1998 09 29	824	0.2+	0.0
1997 06 28	824	0.1−	0.4+	1997 07 23	824	0.1+	0.4+	1998 09 29	824	0.4+	0.1+
1997 06 28	824	0.1+	0.3+	1997 07 23	824	0.2−	0.3−	1998 09 29	824	0.2+	0.1−

1997 MO = 1996 HK₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Doppler	
<i>n</i>	0.18668526	ω	70.52956	−0.26903554	+0.96301975				
<i>a</i>	3.0320012	Ω	183.95115	−0.94386945	−0.26663922				
<i>e</i>	0.1461077	<i>i</i>	12.22319	−0.19165159	−0.03868442				
<i>P</i>	5.28	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1996 04 18	691	0.2+	0.0	1996 04 23	691	0.1−	0.2−	1997 06 29	691	0.2−	0.2+
1996 04 18	691	0.2+	0.0	1997 06 27	691	0.1+	0.0	1997 06 29	691	0.6−	0.1+
1996 04 18	691	0.1+	0.0	1997 06 27	691	0.4+	0.4+	1997 07 05	691	0.0	0.3−
1996 04 23	691	0.1−	0.1−	1997 06 27	691	0.3+	0.0	1997 07 05	691	0.3+	0.6−
1996 04 23	691	0.2−	0.3+	1997 06 29	691	0.3−	0.1+	1997 07 05	691	0.0	0.1+

1997 MZ₂ = 1994 WN₁₂

Id. K. Ichikawa, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q		Doppler	
<i>n</i>	0.22766215	ω	316.26707	+0.54678014	+0.83719263				
<i>a</i>	2.6562900	Ω	346.86474	−0.75315896	+0.48562535				
<i>e</i>	0.0827797	<i>i</i>	2.98443	−0.36576367	+0.25154826				
<i>P</i>	4.33	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1994 11 27	010	0.3+	0.6+	1997 06 28	704	0.7+	0.3−	1997 07 02	704	0.3+	0.0
1994 11 27	010	0.1−	0.7+	1997 06 28	704	0.0	0.1−	1997 07 02	704	0.0	0.1+

M.P.C. 32968

1994 11 28	010	0.7−	0.4+	1997 06 29	704	0.8+	0.3−	1997 07 02	704	0.2−	0.0
1994 11 28	010	0.7+	0.6−	1997 06 29	704	0.3−	0.1−	1997 07 02	704	0.1+	0.2+
1994 11 28	010	0.3+	0.3−	1997 06 29	704	0.9−	0.3−	1997 07 02	704	0.3−	0.4−
1994 11 29	010	0.5−	0.8−	1997 06 29	704(	2.4+	1.0−)				
1997 06 28	704	0.4−	0.9+	1997 06 29	704	0.1+	0.3+				

1997 MQ₄ = 1995 AG₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	56.64373		(2000.0)	P		Q	
<i>n</i>	0.24023967	ω	290.78697	+0.90964031		−0.34461659	
<i>a</i>	2.5627499	Ω	89.96322	+0.41132660		+0.82522099	
<i>e</i>	0.1872616	<i>i</i>	13.41103	−0.05800809		+0.44749271	
<i>P</i>	4.10	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 01 02	010	0.1+	0.7−	1997 06 28	704	0.6−	0.6+	1997 07 02	704	0.0	0.1−
1995 01 02	010	0.1−	0.6−	1997 06 29	704	0.3−	0.0	1997 07 02	704	0.9−	0.9+
1995 01 03	010	0.0	1.2+	1997 06 29	704	0.9−	0.1−	1997 07 02	704	0.6+	0.3+
1995 01 04	010(	2.9+	0.5−)	1997 06 29	704	1.6+	0.4+	1997 07 02	704	0.5+	0.4−
1997 06 28	704	0.8+	0.9−	1997 06 29	704	0.2−	0.6−	1997 07 02	704	0.2+	0.5−
1997 06 28	704	0.6−	0.4+	1997 06 29	704	0.1−	0.2−				

1997 MB₅ = 1996 FT₁₆

Id. S. Nakano, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	31.44512		(2000.0)	P		Q	
<i>n</i>	0.17979520	ω	43.41586	+0.98690314		−0.16122751	
<i>a</i>	3.1089757	Ω	325.86125	+0.14531188		+0.90273906	
<i>e</i>	0.1739514	<i>i</i>	0.53900	+0.07004741		+0.39883315	
<i>P</i>	5.48	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 03 22	809	1.9+	0.4+	1997 06 28	704	0.0	1.2−	1997 06 29	704	0.2−	0.5−
1996 03 22	809	0.8−	0.3−	1997 06 28	704	0.5+	0.8−	1997 06 29	704	(2.4−	1.5−)
1996 03 22	809	0.9−	0.1+	1997 06 28	704	0.2+	0.3−	1997 07 02	704	0.6+	1.1+
1996 03 26	809	0.9+	0.1+	1997 06 29	704	0.5−	0.3+	1997 07 02	704	0.6+	1.1+
1996 03 26	809	0.0	0.4−	1997 06 29	704	0.3−	0.1−	1997 07 02	704	0.8−	0.5−
1996 03 26	809	1.1−	0.1+	1997 06 29	704	0.0	0.5−	1997 07 02	704	0.2−	1.4+

1997 NU₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	48.88855		(2000.0)	P		Q	
<i>n</i>	0.20471992	ω	140.81357	+0.98174708		−0.18962171	
<i>a</i>	2.8512107	Ω	230.12351	+0.16932669		+0.90664152	
<i>e</i>	0.1031759	<i>i</i>	1.09802	+0.08660909		+0.37688827	
<i>P</i>	4.81	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 07 07	684	0.4−	0.1+	1997 07 11	684	0.0	0.0	1998 10 18	699	0.0	1.4−
1997 07 07	684	0.6−	0.3−	1997 07 11	684	0.2+	0.1−	1998 10 18	699	0.0	0.2−
1997 07 08	684	0.5+	0.1+	1997 07 31	684	0.4+	0.1+	1998 10 18	699	0.2+	0.3−
1997 07 08	684	0.2−	0.1+	1997 07 31	684	0.4+	0.0	1998 10 29	120	1.4−	1.5+
1997 07 08	684	0.1+	0.1−	1997 07 31	684	0.3−	0.1−	1998 10 30	120	1.7+	0.6−
1997 07 09	684	0.6+	0.3−	1997 08 01	684	0.2−	0.0	1998 10 30	120	0.4−	1.0+
1997 07 09	684	0.1−	0.2+	1997 08 01	684	0.2−	0.1+				
1997 07 11	684	0.1+	0.1−	1997 08 01	684	0.4−	0.2+				

1997 OY = 1986 AP

Id. A. Nakamura (1998 observations), S. Nakano

1998 NOV. 10

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	323.25171		(2000.0)	P		Q	
<i>n</i>	0.21803250	ω	149.09606	−0.31227622		−0.94533746	
<i>a</i>	2.7339374	Ω	318.89167	+0.83981403		−0.22849438	
<i>e</i>	0.1434380	<i>i</i>	8.21250	+0.44406752		−0.23265296	
<i>P</i>	4.52	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 01 07	046	0.8−	0.3−	1997 08 03	360	0.5−	0.0	1997 10 21	360	0.4+	0.0
1986 01 07	046	0.4+	0.6−	1997 08 03	360	0.1+	0.2−	1998 10 14	360	0.0	0.1−
1997 07 24	360	0.3−	0.8+	1997 08 27	360	0.2+	0.2−	1998 10 14	360	0.1−	0.0
1997 07 24	360	0.2−	0.3+	1997 08 27	360	0.6+	0.1−	1998 10 18	704	0.1+	0.1+
1997 07 24	360	0.1−	0.4+	1997 08 28	360	0.5+	0.5−	1998 10 18	704	0.9+	0.0
1997 07 30	360	0.1−	0.1−	1997 08 28	360	0.1+	0.5−	1998 10 18	704	0.3−	0.3+
1997 07 30	360	0.2+	0.1−	1997 09 04	360	0.2+	0.5−	1998 10 18	704	0.2+	0.8+
1997 07 30	360	0.3−	0.3−	1997 09 04	360	0.1+	0.3−	1998 10 21	360	0.3−	0.4−
1997 08 01	360	0.1−	0.1+	1997 09 28	360	0.2−	0.3−	1998 10 21	360	0.7−	0.2−
1997 08 01	360	0.1+	0.1+	1997 09 28	360	0.3−	0.6−				
1997 08 01	360	0.1+	0.3+	1997 10 21	360	0.0	0.4+				

1997 PJ₄

Id. P. Dupouy (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	21.68495		(2000.0)	P		Q	
<i>n</i>	0.22612888	ω	145.87814	+0.35808765		−0.90858981	
<i>a</i>	2.6682838	Ω	282.31207	+0.80000968		+0.41731602	
<i>e</i>	0.1366283	<i>i</i>	12.71442	+0.48141224		−0.01766069	
<i>P</i>	4.36	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 08 11	132	0.3−	0.0	1997 08 23	124	0.0	0.3+	1997 09 08	141	0.2+	0.4+
1997 08 11	132	0.8+	0.1+	1997 08 23	124	0.4+	0.4+	1997 09 18	132	0.5−	0.3+
1997 08 12	132	0.0	0.2−	1997 08 24	132	0.8+	0.0	1997 09 19	132	1.0−	0.7−
1997 08 13	132	0.8−	0.0	1997 08 24	132	1.2−	0.2+	1997 09 30	132	0.2−	0.1−
1997 08 13	132	0.5+	1.0−	1997 08 24	132	1.0−	0.2+	1998 10 26	958	0.2+	0.2+
1997 08 13	132	0.4+	0.0	1997 08 29	132	1.5+	0.2−	1998 10 26	958	1.3+	0.2+
1997 08 22	958	(3.0−	0.0)	1997 08 29	132	1.4−	0.3−	1998 10 31	958	0.6−	0.4+
1997 08 22	958	(3.5−	0.0)	1997 08 30	132	0.2+	0.5−	1998 10 31	958	0.0	0.3+
1997 08 22	958	(3.9−	0.2+)	1997 08 30	132	0.1−	0.8+	1998 10 31	958	0.9−	1.2−
1997 08 22	958	(3.1−	0.3+)	1997 08 30	132	1.6+	0.1−				
1997 08 23	124	0.1−	0.1+	1997 09 08	141	0.2−	0.4+				

1997 QV = 1992 ED₃₁

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Gnädig			
<i>M</i>	92.69003		(2000.0)	P		Q	
<i>n</i>	0.27863901	ω	229.14821	+0.81705914		−0.57479904	
<i>a</i>	2.3215325	Ω	165.74804	+0.56851318		+0.79023727	
<i>e</i>	0.1764355	<i>i</i>	10.52018	+0.09595376		+0.21244086	
<i>P</i>	3.54	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1983 10 26	413	0.4+	0.4−	1997 08 26	824	0.6−	0.3−	1997 09 19	824	0.5+	1.1−
1983 10 26	413	0.3−	0.1−	1997 08 30	910	0.7+	1.1+	1997 09 28	824	0.5+	0.1−
1992 03 01	809	1.3−	1.0+	1997 08 30	910	0.7+	1.1+	1997 09 28	824	0.7+	0.0
1992 03 03	809	1.1+	1.7−	1997 08 30	910	0.5+	1.1+	1997 09 28	824	0.9+	0.1−
1997 08 25	824	0.4−	1.0−	1997 09 09	824	0.5−	0.0	1997 10 04	910	0.5−	0.6+
1997 08 25	824	0.1−	0.9−	1997 09 09	824	0.3−	0.3+	1997 10 04	910	0.4−	0.6+
1997 08 25	824	0.3−	0.7−	1997 09 09	824	0.0	0.6+	1997 10 04	910	0.7−	0.7+
1997 08 26	824	0.1−	0.1−	1997 09 19	824	0.2−	0.9−				
1997 08 26	824	0.3−	0.0	1997 09 19	824	0.2−	1.0−				

1997 QU₁ = 1995 EN₂

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	259.79139		(2000.0)	P		Q	
<i>n</i>	0.19783675	ω	7.39276	−0.98512288	−0.17137545		
<i>a</i>	2.9169662	Ω	162.72357	+0.15538597	−0.92003701		
<i>e</i>	0.0641311	<i>i</i>	2.46662	+0.07340373	−0.35236678		
<i>P</i>	4.98	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1995 03 01	691	0.0	0.7−	1997 08 29	552	0.0	0.1−
1995 03 01	691	0.1+	0.7−	1997 08 29	552	0.6−	0.8+
1995 03 01	691	0.1−	0.8−	1997 08 29	552	0.3−	0.5−
1995 03 07	691	0.0	0.3+	1997 08 30	552	0.0	0.2+
1995 03 07	691	0.6−	0.6+	1997 08 30	552	0.5−	0.8−
1995 03 07	691	0.4+	0.4+	1997 08 31	552	0.6+	0.3+
				1998 10 18	699	0.1+	0.8+

1997 TM₂ = 1996 RH₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	322.05518		(2000.0)	P		Q	
<i>n</i>	0.08259446	ω	118.99002	−0.31910585	−0.94762709		
<i>a</i>	5.2219828	Ω	349.59328	+0.84209970	−0.27712330		
<i>e</i>	0.1008602	<i>i</i>	4.19207	+0.43478680	−0.15876264		
<i>P</i>	11.93	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1996 09 13	809	0.2−	0.4−	1997 10 03	910	0.2−	0.1+
1996 09 14	809	0.2+	0.4+	1997 10 03	910	0.2+	0.0
1997 10 02	910	0.2−	0.3+	1997 10 03	910	0.0	0.1+
1997 10 02	910	0.0	0.4+	1997 10 03	910	0.2+	0.0

1997 TB₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	10.74165		(2000.0)	P		Q	
<i>n</i>	0.08222628	ω	194.35677	+0.59676096	−0.79505115		
<i>a</i>	5.2375593	Ω	219.17098	+0.75210848	+0.60132996		
<i>e</i>	0.0702846	<i>i</i>	9.89015	+0.27965907	+0.07934705		
<i>P</i>	11.99	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 10 07	046	0.0	0.2+	1997 10 18	046	0.4+	0.1+
1997 10 07	046	0.0	0.2+	1997 10 19	046	0.1−	0.1−
1997 10 07	046	0.2−	0.0	1997 10 19	046	0.4+	0.1+
1997 10 07	046	0.0	0.2−	1997 10 19	046	0.1+	0.3+
1997 10 09	046	0.5−	0.0	1997 10 22	046	0.4+	0.0
1997 10 09	046	0.6−	0.2−	1997 10 22	046	0.2−	0.1−
1997 10 09	046	0.6−	0.0	1997 10 22	046	0.6−	0.0
1997 10 09	046	0.3+	0.3+	1997 10 29	046	0.1+	0.5+
1997 10 10	046	0.6+	0.0	1997 10 29	046	0.1+	0.4+
1997 10 10	046	0.7+	0.3−	1997 10 29	046	0.0	0.5+
1997 10 18	046	0.4−	0.4−	1997 11 04	046	0.3−	0.4−
1997 10 18	046	0.2+	0.0	1997 11 04	046	0.1−	0.3−

1997 TX₁₈ = 1987 QP₁₁ = 1995 FM₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	184.45822		(2000.0)	P		Q	
<i>n</i>	0.20506566	ω	156.64711	+0.18204279	+0.98234093		
<i>a</i>	2.8480051	Ω	123.81569	−0.91015283	+0.18496885		
<i>e</i>	0.0464002	<i>i</i>	2.98088	−0.37213204	+0.02815712		
<i>P</i>	4.81	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1987 08 31	095	0.0	0.1+	1995 03 29	691	1.0+	0.4−
1995 03 23	691	0.8−	0.7+	1997 10 08	327	1.1−	0.1−
1995 03 23	691	0.6−	0.4+	1997 10 08	327	0.4−	0.2+
1995 03 23	691	0.9−	0.7+	1997 10 08	327	0.1−	0.2−
				1997 10 11	327	0.8+	0.7+
				1997 10 11	327	0.8+	0.4−

1995 03 29	691	0.5+	0.8−	1997 10 09	327	0.0	0.1−
1995 03 29	691	0.9+	0.5−	1997 10 09	327	0.2−	0.0

1997 UB₁₁

Id. T. Urata (1998 observations)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Urata

<i>M</i>	48.67881		(2000.0)	P		Q	
<i>n</i>	0.17109137	ω	27.12999	+0.88549190	−0.46463922		
<i>a</i>	3.2135420	Ω	0.59829	+0.33194923	+0.62684050		
<i>e</i>	0.0409511	<i>i</i>	21.38346	+0.32513659	+0.62544495		
<i>P</i>	5.76	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1997 10 26	385	0.4+	0.1−	1997 11 18	385	0.2−	0.4−
1997 10 26	385	0.1−	0.5+	1997 11 18	385	0.5−	0.8+
1997 11 01	385	0.7+	0.3−	1997 12 05	385	1.8−	0.3−
1997 11 01	385	0.7+	0.2−	1997 12 05	385	1.6+	1.0+
1997 11 04	385	0.0	0.1+	1997 12 05	385	0.6+	1.4−
1997 11 04	385	1.2−	0.2−	1998 01 02	385	0.3−	0.0
				1998 10 31	385	0.6−	0.6+
				1998 11 01	888	0.4+	0.2−
				1998 11 01	888	0.5+	0.4−
				1998 11 01	888	0.4−	0.3+
				1998 11 01	888	0.2+	0.4−

1997 UZ₁₄ = 1981 JP₄

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	43.66269		(2000.0)	P		Q	
<i>n</i>	0.27337930	ω	87.50912	−0.71545761	−0.69635156		
<i>a</i>	2.3512147	Ω	48.34839	+0.60706324	−0.65978254		
<i>e</i>	0.1314174	<i>i</i>	4.35200	+0.34582457	−0.28245619		
<i>P</i>	3.61	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1981 05 08	675	1.7−	0.1−	1997 10 31	704	1.7+	1.6+
1981 05 09	675	1.4+	0.6−	1997 10 31	704	0.7+	0.7+
1982 08 21	413	1.0−	0.3−	1997 10 31	704	1.0+	0.1−
1982 08 21	413	1.1+	0.1−	1997 10 31	704	0.2+	0.5+
1997 10 26	905	0.2+	0.0	1997 11 01	557	0.1+	0.0
1997 10 26	905	0.8−	1.1−	1997 11 01	557	0.1+	0.1+
1997 10 28	905	0.1−	0.6−	1997 11 01	557	0.1−	0.1+
1997 10 28	905	2.0+	1.1−	1997 11 01	557	0.1+	0.2+
1997 10 29	704	0.5−	0.6−	1997 11 04	557	0.5+	0.3+
1997 10 29	704	1.3−	1.3+	1997 11 04	557	0.5+	0.1+
1997 10 29	704	1.4−	0.1+	1997 11 04	557	0.5+	0.1+
1997 10 29	704	1.0−	0.3−	1997 11 04	905	0.0	1.0+
1997 10 29	704	0.7−	0.1+	1997 11 04	905	0.9−	0.6+
1997 10 31	704	1.3+	0.2+	1997 11 06	704	1.2−	0.2−
				1997 11 06	704	0.4−	0.1+
				1997 11 06	704	0.8−	0.4−
				1997 11 06	704	0.4+	0.6+
				1997 11 07	886	0.3+	1.3−
				1997 11 07	886	0.0	0.3+
				1997 11 08	385	0.1+	0.5−
				1997 11 08	385	0.5+	0.7−
				1997 11 28	691	0.2+	0.2+
				1997 11 28	691	1.2−	0.3+
				1997 11 28	691	0.6−	1.0−
				1997 12 31	385	0.9+	0.9−
				1997 12 31	385	0.3+	0.4−

1997 VS₃ = 1986 WN₄

Id. A. Gnädig, S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	128.12008		(2000.0)	P		Q	
<i>n</i>	0.27004984	ω	329.45810	+0.74622384	−0.66321887		
<i>a</i>	2.3705008	Ω	72.20187	+0.62229548	+0.66437428		
<i>e</i>	0.2020440	<i>i</i>	3.45406	+0.23642826	+0.34459766		
<i>P</i>	3.65	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1982 07 16	413	0.4+	0.0	1997 11 07	411	0.0	0.3−
1982 07 16	413	0.4−	0.1+	1997 11 07	411	0.0	0.1−
1986 11 25	010	(4.9−	6.0−)	1997 11 09	411	1.0+	0.4+
1986 11 25	010	(0.5−	5.4−)	1997 11 09	411	0.5−	0.3+
1986 11 25	010	(4.0−	5.4−)	1997 11 19	411	0.1+	0.1−
1986 11 25	010	(0.2−	5.4−)	1997 11 19	411	0.4−	0.6−
1986 11 30	381	(2.7+	0.4−)	1997 11 29	704	0.1+	0.2−
1986 11 30	381	0.4−	0.8+	1997 11 29	704	0.9+	0.5−
1986 12 01	381	0.0	0.5+	1997 11 29	704	0.4−	0.3−
				1997 12 05	704	0.1−	0.1−
				1997 12 05	704	0.2+	0.3−
				1997 12 05	704	0.8+	0.0

M.P.C. 32970

1986 12 01	381	0.2+	0.2-	1997 11 29	704	0.8+	0.2-	1997 12 05	704	0.4+	0.8+
1997 11 06	411	0.3+	0.4-	1997 11 29	704	0.1-	0.8-	1997 12 05	704	0.0	0.4+
1997 11 06	411	0.0	0.1-	1997 11 30	411	0.3-	0.0				

1998 AG₁₁ = 1996 TX₄₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	313.76044		(2000.0)	P	Q
n	0.25862998	ω	182.25818	-0.19019022	+0.98052941
a	2.4397770	Ω	76.78076	-0.89994662	-0.15422805
e	0.0799366	i	2.87836	-0.39233119	-0.12155571
P	3.81	H	15.0	G 0.15	U 6

Residuals in seconds of arc

1996 10 07	809	1.3+	0.3+	1996 10 10	809	0.3-	0.0	1998 01 06	327	0.4+	0.2-
1996 10 07	809	0.5+	0.1+	1998 01 05	327	0.2+	0.0	1998 01 06	327	0.0	0.2+
1996 10 07	809	0.1-	0.7-	1998 01 05	327	0.1-	0.4+	1998 01 06	327	0.3-	0.1+
1996 10 08	809	1.1-	0.1-	1998 01 05	327	0.6-	0.7-	1998 01 06	327	0.1+	0.3+
1996 10 08	809	1.0-	0.1-	1998 01 05	327	0.0	0.1+	1998 01 08	327	0.1-	0.4-
1996 10 08	809	0.1-	0.5+	1998 01 05	327	0.0	0.2-	1998 01 08	327	0.5+	0.2-
1996 10 10	809	0.6+	0.3-	1998 01 05	327	0.0	0.0	1998 01 08	327	0.3-	0.5+
1996 10 10	809	0.2+	0.3+	1998 01 05	327	0.2+	0.1+				

1998 BK₂ = 1996 PS₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	182.28019		(2000.0)	P	Q
n	0.28482528	ω	255.36559	+0.80868974	-0.58717850
a	2.2877946	Ω	140.57395	+0.55880200	+0.74812885
e	0.0378372	i	3.18149	+0.18374227	+0.30907060
P	3.46	H	14.5	G 0.15	U 4

Residuals in seconds of arc

1996 08 10	566	0.0	0.3-	1998 01 20	704	0.1+	0.5-	1998 01 22	704	0.6+	0.4-
1996 08 10	566	0.2-	0.0	1998 01 20	704	0.3-	0.1-	1998 01 22	704	0.8-	1.4+
1996 08 10	566	0.2-	0.0	1998 01 20	704	0.2-	0.2-	1998 01 22	704	0.9+	0.4-
1996 08 19	566	0.1+	0.4+	1998 01 20	704	0.0	0.4-	1998 01 26	566	0.3-	0.1+
1996 08 19	566	0.1+	0.2-	1998 01 20	704	0.3+	0.6-	1998 01 26	566	0.1-	0.3+
1996 08 19	566	0.3+	0.2+	1998 01 22	704	0.1+	0.6+	1998 01 26	566	0.2-	0.2+

1998 BW₁₂ = 1995 QL₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	12.31307		(2000.0)	P	Q		
n	0.21638160	ω	260.61645	-0.88549256	+0.42450745		
a	2.7478256	Ω	304.27740	-0.28296535	-0.81517752		
e	0.1690264	i	13.21736	-0.36855601	-0.39405461		
P	4.56	H	15.0	G	0.15	U	5

Residuals in seconds of arc

1995 08 22	691	0.3-	0.1+	1998 01 23	691	0.9-	0.2-	1998 01 24	704	0.3+	0.3-
1995 08 22	691	0.0	0.1-	1998 01 23	704	0.2+	0.5+	1998 01 25	704	0.5+	0.6-
1995 08 22	691	0.2-	0.2-	1998 01 23	691	0.9-	0.0	1998 01 25	704	0.1+	0.2+
1995 09 03	691	0.2+	0.1+	1998 01 23	704	0.5+	0.2+	1998 01 25	704	0.6-	0.5+
1995 09 03	691	0.3+	0.2+	1998 01 23	704	0.1-	0.8-	1998 01 25	704	0.2-	0.0
1995 09 03	691	0.1+	0.1-	1998 01 24	704	0.4-	0.1-	1998 01 30	691	0.6-	0.1+
1998 01 23	704	0.7+	0.2-	1998 01 24	704	1.5+	0.4+	1998 01 30	691	0.2-	0.2+
1998 01 23	691	1.0-	0.1+	1998 01 24	704	0.4-	0.1-				
1998 01 23	704	0.7+	0.4+	1998 01 24	704	0.7+	0.4-				

1998 BZ₁₂ = 1992 UL₇ = 1996 SM₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	46.50447		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.23728865	ω	122.13167	-0.98372804	-0.17882588		
a	2.5839538	Ω	47.57326	+0.15591561	-0.89765213		
e	0.1107199	i	1.34557	+0.08927186	-0.40279271		
P	4.15	H	15.5	G	0.15	U	5

1998 NOV. 10

Residuals in seconds of arc

1992 10 18	691	0.1+	0.1-	1996 09 22	327	0.2+	0.0	1998 01 24	704	0.1-	0.9-
1992 10 18	691	0.1+	0.0	1996 09 22	327	0.2+	0.3+	1998 01 24	704	0.2+	0.3-
1992 10 21	691	0.0	0.0	1996 09 22	327	0.4+	0.4-	1998 01 24	704	0.6+	0.1-
1992 10 21	691	0.1+	0.3+	1998 01 23	704	1.1+	0.1-	1998 01 25	704	1.2-	0.2+
1992 10 21	691	0.2-	0.3-	1998 01 23	704	0.0	1.2+	1998 01 25	704	0.2+	0.3-
1996 09 21	327	0.3-	0.1+	1998 01 23	704	1.0+	0.4+	1998 01 25	704	1.9-	0.4-
1996 09 21	327	0.3-	0.3+	1998 01 23	704	1.0+	0.1-	1998 01 25	704	2.0-	0.1+
1996 09 21	327	0.3-	0.4-	1998 01 23	704	0.6-	0.4+				
1996 09 22	327	0.0	0.1+	1998 01 24	704	1.5+	0.2-				

1998 BZ₃₂ = 1996 TW₄₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	261.25438		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.28076497	ω	336.94408	+0.88248726	+0.47022171		
a	2.3097985	Ω	354.97037	-0.41097586	+0.76018824		
e	0.1523813	i	6.80055	-0.22872488	+0.44833623		
P	3.51	H	15.5	G	0.15	U	5

Residuals in seconds of arc

1996 10 04	809	0.9+	0.1+	1998 01 24	566	0.7-	0.1-	1998 01 31	910	0.5+	0.3-
1996 10 04	809	0.5-	0.2+	1998 01 24	566	0.6-	0.0	1998 02 01	327	0.4-	0.2+
1996 10 04	809	0.4-	0.3-	1998 01 29	910	1.0+	0.2-	1998 02 01	327	0.2-	0.4+
1996 10 05	809	0.6+	0.1+	1998 01 30	910	1.1+	0.2-	1998 02 01	327	0.5-	0.0
1996 10 05	809	0.2+	0.1+	1998 01 30	910	0.8+	0.1-	1998 02 01	327	0.4-	0.4+
1996 10 05	809	0.8-	0.2-	1998 01 31	910	0.4+	0.1-	1998 02 01	327	1.0-	0.1+
1998 01 24	566	0.2-	0.1+	1998 01 31	910	0.5+	0.2-	1998 02 01	327	0.4-	0.1+

1998 BN₄₈ = 1988 ER = 1995 FM₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	207.96205		(2000.0)	P	Q
n	0.28458951	ω	238.68522	+0.97501205	-0.21002886
a	2.2890580	Ω	133.32888	+0.22212205	+0.91633391
e	0.1400020	i	5.71074	+0.00364523	+0.34091062
P	3.46	H	13.5	G 0.15	U 5

Residuals in seconds of arc

1988 03 13	054	0.9+	0.6+	1995 03 31	691	(0.2-	3.1-)	1998 02 02	372	0.7+	1.1-
1988 03 13	054	0.4-	0.7+	1995 03 31	691	0.4-	0.3+	1998 02 02	372	0.3-	0.5+
1995 03 25	691	0.0	0.4-	1998 01 28	372	0.2-	1.0+	1998 02 05	372	0.3-	0.8-
1995 03 25	691	0.2-	0.2-	1998 01 28	372	0.8-	0.7+	1998 02 05	372	0.1-	0.1-
1995 03 25	691	0.0	0.7-	1998 01 30	372	0.9+	0.6-				
1995 03 31	691	0.2+	0.1-	1998 01 30	372	(0.2+	2.2+)				

1998 DT₁ = 1994 NL₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	230.78853		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.16003743	ω	185.30556	+0.83463966	+0.54975672		
a	3.3598637	Ω	141.28158	-0.50333588	+0.78622058		
e	0.0361018	i	3.09998	-0.2267304	+0.28217856		
P	6.16	H	14.0	G	0.15	U	6

Residuals in seconds of arc

1994 07 11	809	0.6+	1.0+	1998 02 21	046	0.5+	0.0	1998 02 21	046	0.1+	0.0
1994 07 11	809	0.1+	0.4-	1998 02 21	046	0.5-	0.3-	1998 02 21	046	0.5+	0.1+
1994 07 11	809	(2.5-	0.2-)	1998 02 21	046	0.4-	0.4-	1998 02 22	046	0.6+	1.3+
1994 07 12	809	0.9-	0.1+	1998 02 21	046	0.6-	0.1+	1998 02 24	046	0.2-	0.4+
1994 07 12	809	0.6+	0.3+	1998 02 21	046	0.0	0.3-	1998 02 24	046	0.4+	0.2-
1994 07 12	809	0.4-	1.1-	1998 02 21	046	0.9-	1.3-	1998 02 24	046	0.4+	0.6+
1998 02 21	046	0.1+	0.0	1998 02 21	046	0.2-	0.2+				

1998 DL₁₃ = 1992 AJ₃

Id. A. Gnädig, G. V. Williams

1998 NOV. 10

M.P.C. 32971

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	138.17046		(2000.0)	P	Q
<i>n</i>	0.17658502	ω	296.19834	+0.34307364	-0.93462461
<i>a</i>	3.1465415	Ω	133.40506	+0.90126087	+0.29943578
<i>e</i>	0.1345237	<i>i</i>	7.40919	+0.26463052	+0.19187248
<i>P</i>	5.58	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1988 08 04	413	0.2-	0.3-	1998 02 25	566	0.2+	0.4-	1998 03 24	704	0.9+	0.5+
1988 08 04	413	0.2+	0.5+	1998 02 25	566	0.2-	0.4-	1998 03 24	704	0.4+	0.2+
1992 01 11	303	1.7+	0.8+	1998 02 26	809	(3.7+	0.9+)	1998 03 24	704	0.5-	0.2+
1992 01 12	303	1.5-	0.2-	1998 02 26	809	(4.2+	0.3+)	1998 03 24	704	0.0	0.1+
1998 02 25	809	(3.6+	0.9-)	1998 02 26	809	(4.9+	1.7+)	1998 03 25	704	0.6+	0.6+
1998 02 25	809	(3.7+	2.1-)	1998 02 26	809	(4.0+	1.8-)	1998 03 25	704	0.4-	0.9+
1998 02 25	809	(2.5+	2.1-)	1998 02 26	809	(3.9+	2.2-)	1998 03 25	704	1.3-	0.6+
1998 02 25	809	(2.5+	2.3+)	1998 02 26	809	(2.8+	2.0-)	1998 03 25	704	0.2+	1.2+
1998 02 25	809	(2.0+	1.9+)	1998 02 26	566	0.3+	0.6-	1998 03 26	704	0.5+	0.5-
1998 02 25	809	(2.8+	1.7+)	1998 02 26	566	0.0	0.8-	1998 03 26	704	0.3-	0.5-
1998 02 25	566	0.1-	0.5-	1998 02 26	566	0.1+	0.6-	1998 03 26	704	0.8-	0.3-

1998 DU₁₇ = 1996 VC₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	186.62254		(2000.0)	P	Q
<i>n</i>	0.22375216	ω	350.87697	+0.77779645	-0.62702482
<i>a</i>	2.6871458	Ω	48.04555	+0.58026015	+0.68991838
<i>e</i>	0.2404437	<i>i</i>	3.33581	+0.24151778	+0.36173542
<i>P</i>	4.40	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1996 11 08	691	0.1+	0.1-	1996 11 09	691	0.1+	0.0	1998 02 28	691	0.1+	0.0
1996 11 08	691	0.0	0.3-	1998 02 23	691	0.1-	0.5+	1998 03 04	691	0.2-	0.2-
1996 11 08	691	0.1-	0.0	1998 02 23	691	0.4-	0.2-	1998 03 04	691	0.1-	0.1+
1996 11 09	691	0.1-	0.2+	1998 02 28	691	0.5+	0.2-	1998 03 04	691	0.5-	0.2-
1996 11 09	691	0.0	0.1+	1998 02 28	691	0.6+	0.1+				

1998 DP₂₂ = 1996 QH₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	149.84875		(2000.0)	P	Q
<i>n</i>	0.22321889	ω	83.72091	+0.73728568	-0.66436552
<i>a</i>	2.6914238	Ω	317.81821	+0.52486881	+0.67754592
<i>e</i>	0.2046936	<i>i</i>	10.51922	+0.42534992	+0.31551542
<i>P</i>	4.42	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 08 18	010	0.0	1.3-	1996 08 20	010	0.3+	0.8+	1998 03 01	691	0.4-	1.0-
1996 08 18	010	(2.5-	0.9-)	1998 02 24	691	0.3-	0.2+	1998 03 01	691	0.1-	0.3+
1996 08 18	010	0.6+	0.5-	1998 02 24	691	0.1+	0.3+	1998 03 04	691	0.2+	0.1-
1996 08 20	010	1.4-	0.6-	1998 02 24	691	0.2-	0.1-	1998 03 04	691	0.1-	0.0
1996 08 20	010	0.6+	1.6+	1998 03 01	691	0.2+	0.2+	1998 03 04	691	0.5+	0.2+

1998 DT₂₂ = 1996 VG₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	291.35502		(2000.0)	P	Q
<i>n</i>	0.26615255	ω	344.72309	+0.54052311	+0.83821282
<i>a</i>	2.3935856	Ω	317.92591	-0.76014741	+0.44970461
<i>e</i>	0.1148654	<i>i</i>	6.19804	-0.36056995	+0.30848831
<i>P</i>	3.70	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 11 09	691	0.2+	0.2-	1996 11 17	691	0.1-	0.2-	1998 03 01	691	0.0	0.0
1996 11 09	691	0.0	0.3-	1998 02 24	691	0.5-	0.5+	1998 03 01	691	0.2-	0.3+
1996 11 09	691	0.0	0.1-	1998 02 24	691	1.3+	1.4-	1998 03 04	691	0.0	0.1+
1996 11 17	691	0.0	0.3+	1998 02 24	691	0.5-	0.2+	1998 03 04	691	0.0	0.2+
1996 11 17	691	0.2-	0.5+	1998 03 01	691	0.3-	0.1+	1998 03 04	691	0.3+	0.0

1998 EZ₂ = 1987 MX

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	324.99974		(2000.0)	P	Q
<i>n</i>	0.24660437	ω	241.80929	+0.26808780	+0.96032181
<i>a</i>	2.5184628	Ω	43.96519	-0.84052160	+0.27214876
<i>e</i>	0.1637280	<i>i</i>	6.35837	-0.47079972	+0.06096785
<i>P</i>	4.00	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1950 03 21	675	0.3-	0.2-	1998 01 26	566	0.5+	1.5-	1998 03 04	704	(2.5-	0.4+)
1950 03 21	675	0.1-	1.1-	1998 01 26	566	0.4+	0.6-	1998 03 04	704	(2.7-	0.6-)
1987 06 25	809	0.1-	0.1+	1998 02 27	566	1.1-	0.0	1998 03 04	704	(2.1-	0.7+)
1987 06 25	809	0.1+	0.7-	1998 02 27	566	0.3-	0.2+	1998 03 04	704	(3.7-	0.1-)
1987 06 25	809	0.1-	0.5-	1998 02 27	566	0.6-	0.2-	1998 03 08	327	0.1-	0.3+
1987 06 28	675	0.8+	2.2+	1998 03 01	327	0.1+	0.2-	1998 03 08	327	0.0	0.2-
1987 06 30	675(15.4+	0.3-)		1998 03 01	327	0.0	0.4+	1998 03 08	327	0.1-	0.0
1987 07 26	675(23.3+	0.8-)		1998 03 01	327	0.2+	0.4+	1998 03 14	327	0.2-	0.0
1987 07 28	675(17.6+	0.7+)		1998 03 02	327	0.1-	0.2+	1998 03 14	327	0.2-	0.5+
1991 09 06	413	0.6-	1.3-	1998 03 02	327	0.2+	0.0	1998 03 14	327	0.3+	0.1-
1991 09 06	413	0.1-	1.7-	1998 03 02	327	0.2+	0.2+	1998 03 15	411	0.6-	0.8+
1998 01 26	566	1.2+	1.7-	1998 03 04	704	(2.1-	0.4-)	1998 03 15	411	0.0	0.4+

1998 FM₁₂ = 1995 SS₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	338.90851		(2000.0)	P	Q
<i>n</i>	0.23970529	ω	138.68649	+0.47160506	+0.88147078
<i>a</i>	2.5665573	Ω	159.41553	-0.82621110	+0.45139075
<i>e</i>	0.2099984	<i>i</i>	3.98808	-0.30816210	+0.13876475
<i>P</i>	4.11	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 09 25	691	0.2-	0.1-	1998 03 19	327	0.0	0.2+	1998 03 22	704	0.1+	0.6+
1995 09 25	691	0.0	0.3-	1998 03 20	704	0.3-	1.7-	1998 03 22	704	0.5-	0.5+
1995 09 25	691	0.1-	0.3-	1998 03 20	704	0.6+	0.0	1998 03 22	704	0.5+	0.1-
1995 09 30	691	0.1+	0.2+	1998 03 20	704	1.2+	0.4-	1998 03 26	327	0.2-	1.0-
1995 09 30	691	0.3+	0.2+	1998 03 20	704	0.1+	0.2+	1998 03 26	327	0.8-	0.2+
1995 09 30	691	0.1+	0.3+	1998 03 20	704	(2.2+	1.1+)	1998 03 26	327	0.5+	0.5+
1998 03 19	327	0.9-	0.4-	1998 03 22	704	0.5-	0.8+				
1998 03 19	327	0.4-	0.2+	1998 03 22	704	0.6+	0.4+				

1998 FN₁₂ = 1995 SA₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	333.43480		(2000.0)	P	Q
<i>n</i>	0.20422918	ω	260.69554	-0.04674122	+0.99889953
<i>a</i>	2.8557763	Ω	6.62909	-0.90281351	-0.04058605
<i>e</i>	0.0280377	<i>i</i>	1.92160	-0.42748454	-0.02350528
<i>P</i>	4.83	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 09 18	691	0.3-	0.3+	1995 09 24	809	1.3+	1.1-	1998 03 22	327	0.1-	0.3-
1995 09 18	691	0.4-	0.0	1995 09 27	691	0.1+	0.7+	1998 03 22	327	0.3-	0.2+
1995 09 18	691	0.3-	0.0	1995 09 27	691	0.2-	0.4+	1998 03 22	327	0.4+	0.1+
1995 09 19	809	(2.1+	0.3-)	1995 09 27	691	0.4-	0.5+	1998 03 22	327	0.1-	0.0
1995 09 20	809	1.5+	0.2-	1998 03 20	327	0.1-	0.5-	1998 03 22	327	0.3-	0.0
1995 09 22	691	0.8-	0.0	1998 03 20	327	0.1+	0.4-	1998 03 24	327	0.1+	0.4+
1995 09 22	691	0.5-	0.1+	1998 03 20	327	0.0	0.3-	1998 03 24	327	0.4-	0.5+
1995 09 22	691	0.4-	0.2-	1998 03 22	327	0.4+	0.2+	1998 03 24	327	0.6+	0.6+

1998 FC₆₅ = 1974 HV₁

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	49.69669	(2000.0)	P	Q
<i>n</i>	0.28703514	ω 43.90636	−0.53605880	+0.84386666
<i>a</i>	2.2760371	Ω 193.73056	−0.79881406	−0.51588202
<i>e</i>	0.1227646	<i>i</i> 5.56612	−0.27301475	−0.14749511
<i>P</i>	3.43	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1974 04 24	805	0.7−	2.7−	1998 03 24	699	0.5−	0.3+	1998 04 22	704	0.1−	0.3+
1974 04 25	805	0.1+	0.6+	1998 03 25	704	0.2−	0.1+	1998 04 22	704	0.1+	0.3+
1981 05 03	413	0.3+	0.4−	1998 03 25	704	0.6+	0.4+	1998 04 22	704	0.4+	0.2+
1981 05 03	413	0.1−	1.2+	1998 03 25	704	0.4+	0.2+	1998 04 24	699	0.6+	0.1−
1998 03 20	704	0.3+	0.3−	1998 03 25	704	0.2−	0.1−	1998 04 24	699	0.5+	0.7+
1998 03 20	704	0.2+	0.0	1998 03 25	704	0.6−	0.9−	1998 04 24	699	0.3−	0.8−
1998 03 20	704	0.4+	0.1−	1998 04 04	699	1.0+	0.0	1998 04 28	699	0.0	0.1+
1998 03 20	704	0.2+	0.4+	1998 04 04	699	1.3+	0.2+	1998 04 28	699	0.3−	0.3+
1998 03 20	704	0.5+	0.1−	1998 04 04	699	0.1−	0.6+	1998 04 28	699	0.4+	0.4+
1998 03 22	704	0.2−	1.1−	1998 04 20	704	0.0	0.2−	1998 04 30	699	0.6+	0.7−
1998 03 22	704	0.3−	1.5+	1998 04 20	704	0.5−	0.0	1998 04 30	699	0.5+	0.2−
1998 03 22	704	0.3+	0.0	1998 04 20	704	1.2−	0.3+	1998 04 30	699	0.2+	0.5−
1998 03 22	704	0.1+	0.1+	1998 04 20	704	1.0−	0.2−	1998 05 01	699	0.1−	0.1+
1998 03 22	704	0.4+	1.0−	1998 04 20	704	0.3−	0.3−	1998 05 01	699	0.2−	0.3−
1998 03 24	699	2.1−	0.9+	1998 04 22	704	0.2+	0.3+	1998 05 01	699	0.3+	0.1−
1998 03 24	699	0.3−	0.2−	1998 04 22	704	0.4−	0.6+				

1998 FL₇₅ = 1992 SD₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	346.14057	(2000.0)	P	Q
<i>n</i>	0.29470863	ω 276.48339	+0.73917045	+0.67251285
<i>a</i>	2.2363553	Ω 41.26428	−0.59379816	+0.67648507
<i>e</i>	0.1796945	<i>i</i> 3.19774	−0.31785341	+0.30015733
<i>P</i>	3.34	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 09 06	033	0.3−	0.3+	1998 03 24	704	0.6+	0.4−	1998 04 20	704	0.9+	1.1+
1992 09 07	033	0.0	0.3−	1998 03 24	704	0.7−	0.8−	1998 04 20	704	(2.5−	0.6+)
1992 09 22	033	0.5+	0.5+	1998 03 24	704	0.7−	0.5+	1998 04 22	704	0.2−	1.0+
1992 09 22	033	1.3−	0.6−	1998 03 24	704	0.5+	1.8+	1998 04 22	704	1.1−	0.5−
1992 09 24	033	0.8+	0.1+	1998 03 25	704	0.4−	0.9−	1998 04 22	704	0.1+	0.7−
1992 09 27	033	0.2+	0.1+	1998 03 25	704	0.3+	0.2+	1998 04 22	704	1.1−	0.6+
1998 03 20	704	0.3+	0.2+	1998 03 25	704	1.2−	0.3−	1998 04 22	704	1.1−	1.1−
1998 03 20	704	1.2+	0.8+	1998 03 25	704	0.5+	0.5−	1998 04 30	699	0.0	1.2−
1998 03 20	704	1.1+	1.3+	1998 03 25	704	1.3−	0.2−	1998 04 30	699	0.2+	0.4+
1998 03 20	704	1.4+	1.1−	1998 03 25	704	1.4+	1.6−	1998 04 30	699	0.1−	0.3+
1998 03 20	704	(4.4−	0.6−)	1998 03 25	704	0.5−	1.9+	1998 05 16	704	1.4+	1.0+
1998 03 22	704	0.9+	0.2+	1998 03 25	704	(1.3+	2.7−)	1998 05 16	704	0.9+	0.2+
1998 03 22	704	0.3+	0.4+	1998 03 25	704	0.4+	0.4+	1998 05 16	704	0.2+	0.7−
1998 03 22	704	0.8−	0.3−	1998 03 25	704	(2.9−	3.2−)	1998 05 16	704	0.5−	0.2+
1998 03 22	704	(4.9−	0.4−)	1998 04 20	704	1.4−	0.3−				
1998 03 24	704	1.0−	1.4−	1998 04 20	704	0.4−	0.3−				

1998 HK₂₄ = 1997 EV₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	268.44068	(2000.0)	P	Q
<i>n</i>	0.24039036	ω 211.41035	+0.85165933	−0.52409507
<i>a</i>	2.5616789	Ω 180.20315	+0.51706765	+0.84050691
<i>e</i>	0.1993960	<i>i</i> 14.12620	+0.08554202	+0.13737722
<i>P</i>	4.10	<i>H</i> 16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 03 04	691	0.1+	0.1+	1997 03 05	691	0.1+	0.3+	1998 05 03	691	0.1+	0.1+
1997 03 04	691	0.1−	0.6+	1998 04 24	568	0.3+	0.4−	1998 05 03	691	0.3−	0.0
1997 03 04	691	0.1−	0.3+	1998 04 24	568	0.2+	0.2−	1998 05 03	691	0.0	0.4−
1997 03 05	691	0.4+	0.7−	1998 04 25	568	0.5−	0.1+				
1997 03 05	691	0.4−	0.6−	1998 04 25	568	0.2+	0.7+				

1998 HG₄₀ = 1996 VD₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	66.12202	(2000.0)	P	Q
<i>n</i>	0.30598388	ω 176.93004	−0.67772418	+0.73338293
<i>a</i>	2.1810737	Ω 50.39620	−0.67610421	−0.59302105
<i>e</i>	0.1098839	<i>i</i> 3.96576	−0.28909001	−0.33237855
<i>P</i>	3.22	<i>H</i> 16.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 11 05	691	0.3+	0.5−	1998 04 20	704	0.1+	0.6−	1998 04 21	704	(0.1+	2.1−)
1996 11 05	691	0.0	0.2−	1998 04 20	704	0.8+	1.0+	1998 04 21	704	0.0	0.8−
1996 11 05	691	0.2+	0.4−	1998 04 20	704	1.0−	0.1+	1998 04 22	704	0.0	0.3−
1996 11 10	691	0.1−	0.4+	1998 04 20	704	0.1+	0.7+	1998 04 22	704	0.4+	0.4−
1996 11 10	691	0.2−	0.1+	1998 04 21	704	0.0	0.6+	1998 04 22	704	0.1+	0.3−
1996 11 10	691	0.1−	0.5+	1998 04 21	704	0.1−	0.6+	1998 04 22	704	(0.6−	2.4+)
1998 04 20	704	0.3−	0.0	1998 04 21	704	0.5−	0.1−	1998 04 22	704	0.2+	0.5−

1998 HX₈₈ = 1992 HJ₄

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	349.90515	(2000.0)	P	Q
<i>n</i>	0.16801905	ω 248.70695	+0.25740957	+0.96615149
<i>a</i>	3.2525978	Ω 36.22310	−0.87551079	+0.24066607
<i>e</i>	0.1240901	<i>i</i> 1.65594	−0.40892685	+0.09290390
<i>P</i>	5.87	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1982 11 05	413	0.4−	0.5+	1998 04 22	704	0.3−	0.5−	1998 05 01	704	(4.5−	0.5+)
1982 11 05	413	0.3+	0.3−	1998 04 22	704	0.1−	0.7−	1998 05 22	704	(2.3+	0.3−)
1992 04 25	809	(3.7+	1.9−)	1998 04 22	704	0.1−	0.8−	1998 05 22	704	0.4−	0.8−
1992 04 25	809	(4.0+	1.7−)	1998 04 22	704	0.3−	0.3−	1998 05 22	704	0.4−	0.9+
1992 04 25	809	(4.1+	2.4−)	1998 04 22	704	0.3+	0.3+	1998 05 22	704	0.5+	0.1−
1992 05 01	691	0.8+	0.1−	1998 04 30	699	0.1−	0.1+	1998 05 22	704	1.1+	0.4−
1992 05 01	691	0.1+	0.2−	1998 04 30	699	0.7+	0.7+	1998 05 23	704	0.6−	2.1−
1992 05 01	691	0.8−	0.7+	1998 04 30	699	0.8−	0.1−	1998 05 23	704	(2.5+	0.4−)
1998 04 21	704	0.1−	0.1−	1998 05 01	704	0.3−	0.4+	1998 05 23	704	0.5+	1.4+
1998 04 21	704	0.6−	0.2+	1998 05 01	704	(2.3−	1.0+)	1998 05 23	704	0.2−	0.5+
1998 04 21	704	1.1+	1.6+	1998 05 01	704	1.1−	0.3+	1998 05 23	704	0.4−	0.3+
1998 04 21	704	0.3−	0.6−	1998 05 01	704	1.7+	0.6−				

1998 HW₁₃₃ = 1996 TV₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	112.70868	(2000.0)	P	Q
<i>n</i>	0.23213955	ω 31.35486	−0.59527231	−0.79819561
<i>a</i>	2.6220238	Ω 95.33672	+0.71668240	−0.57940571
<i>e</i>	0.2078672	<i>i</i> 5.32386	+0.36334172	−0.16484171
<i>P</i>	4.25	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 10 09	691	0.1+	0.2+	1998 04 19	704	0.1−	0.5+	1998 04 20	704	(1.0−	2.2+)
1996 10 09	691	0.1+	0.1−	1998 04 19	704	1.1+	0.4−	1998 04 24	704	0.2+	0.1+
1996 10 09	691	0.2+	0.2−	1998 04 19	704	0.5−	0.6−	1998 04 24	704	0.2+	0.3+
1996 10 12	691	0.2−	0.0	1998 04 20	704	0.1+	0.0	1998 04 24	704	0.3−	0.1+
1996 10 12	691	0.0	0.1+	1998 04 20	704	1.0−	0.4+	1998 04 24	704	0.2+	1.7−
1996 10 12	691	0.2−	0.0	1998 04 20	704	0.2+	0.8+	1998 04 24	704	0.1+	0.8+
1998 04 19	704	0.1+	0.1−	1998 04 20	704	0.4−	0.3−				

1998 NOV. 10

M.P.C. 32973

1998 MR₁₆ = 1996 FE₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	309.06470		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.18099011	ω	90.37998		+0.78271006		−0.60922830				
a	3.0952767	Ω	307.15865		+0.48836593		+0.72797931				
e	0.0708578	i	9.19143		+0.38582856		+0.31446304				
P	5.45	H	16.0		G	0.15	U	5			
Residuals in seconds of arc											
1996 03 19	691	0.3+	0.1+	1996 03 27	691	0.3−	0.3−	1998 06 28	691	0.3−	0.3+
1996 03 19	691	0.3+	0.0	1998 06 27	691	0.7−	0.4−	1998 06 28	691	0.0	0.1−
1996 03 19	691	0.2+	0.7+	1998 06 27	691	0.0	0.3+	1998 07 03	691	0.0	0.1+
1996 03 27	691	0.4−	0.3−	1998 06 27	691	0.0	0.0	1998 07 03	691	0.6+	0.0
1996 03 27	691	0.1−	0.2−	1998 06 28	691	0.2+	0.1−	1998 07 03	691	0.2+	0.0

1998 MF₃₂ = 1995 YL₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>			<i>ω</i>			−0.11034467			−0.97848935		
<i>a</i>			<i>Ω</i>			+0.91473062			−0.16857073		
<i>e</i>			<i>i</i>			+0.38870548			+0.11892224		
<i>P</i>			<i>H</i>			<i>G</i>			<i>U</i>		
238.41435			14.0			0.15			5		

Residuals in seconds of arc

1995 12 22	905	0.7−	1.2−	1998 06 24	704	0.6+	1.1−	1998 07 01	809	0.3−	0.5−
1995 12 22	905	0.0	0.7+	1998 06 24	704	0.9−	0.6+	1998 07 01	809	0.1−	0.2−
1995 12 27	905	0.0	0.3+	1998 06 26	704	1.5+	0.5+	1998 07 03	699	0.0	0.2+
1995 12 27	905	0.7+	0.2+	1998 06 26	704	0.7−	0.3+	1998 07 03	699	0.3+	0.2−
1998 06 24	704	0.9−	1.0−	1998 06 26	704	0.7+	0.4+	1998 07 03	699	0.2−	0.5+
1998 06 24	704	0.3−	0.3+	1998 06 26	704	0.4+	0.3+				
1998 06 24	704	0.2+	0.4+	1998 07 01	809	0.4−	0.5−				

1998 MM₃₆ = 1959 UN = 1972 TO₅ = 1995 UA₆

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>			<i>ω</i>			+0.93304530			+0.34994461		
<i>a</i>			<i>Ω</i>			−0.34802567			+0.81922836		
<i>e</i>			<i>i</i>			−0.09112954			+0.45431670		
<i>P</i>			<i>H</i>			<i>G</i>			<i>U</i>		
32.37316			15.1			0.15			2		

Residuals in seconds of arc

1959 10 29	760	1.1−	0.8+	1998 07 03	691	1.1−	0.3+	1998 08 17	704	0.3+	0.8−
1959 10 29	760	1.4+	0.4+	1998 07 03	691	1.3−	1.0+	1998 08 23	704	0.3+	0.2−
1972 10 06	095	1.7−	1.5+	1998 07 25	691	0.6−	0.2−	1998 08 23	704	0.8+	0.5+
1995 10 21	399	0.4+	1.5−	1998 07 25	691	0.6−	0.2−	1998 08 23	704	0.5+	0.6+
1995 10 21	399	(3.6+	0.7−)	1998 07 25	691	0.3−	0.4+	1998 08 23	704	0.5+	0.7−
1998 06 26	691	0.4+	0.1+	1998 08 17	704	0.4−	0.4+	1998 08 23	704	0.4−	0.3+
1998 06 26	691	0.6+	0.1+	1998 08 17	704	0.2+	0.7−	1998 10 14	699	0.9+	0.1+
1998 06 26	691	0.3+	0.1+	1998 08 17	704	0.9+	1.3−	1998 10 14	699	0.8+	0.4+
1998 07 03	691	1.1−	0.6+	1998 08 17	704	0.3+	0.7−	1998 10 14	699	0.3+	0.4−

1998 OB = 1997 EX₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>			<i>ω</i>			+0.89405146			+0.44747946		
<i>a</i>			<i>Ω</i>			−0.42856231			+0.86794320		
<i>e</i>			<i>i</i>			−0.13040831			+0.21549185		
<i>P</i>			<i>H</i>			<i>G</i>			<i>U</i>		
339.82679			16.0			0.15			5		

Residuals in seconds of arc

1997 03 02	691	0.1−	0.5+	1998 07 16	910	0.3+	0.1−	1998 07 22	910	0.1−	0.1−
1997 03 02	691	0.2−	0.0	1998 07 16	910	0.0	0.2+	1998 07 22	910	0.3−	0.3−
1997 03 02	691	0.4−	0.3+	1998 07 16	910	0.4+	0.1+	1998 07 22	910	0.0	0.1−

1997 03 07	691	0.3+	0.7−	1998 07 17	910	0.1+	0.3−	1998 07 23	910	0.1+	0.3−
1997 03 07	691	0.1+	0.2−	1998 07 17	910	0.1+	0.1+	1998 07 23	910	0.2−	0.1+
1997 03 07	691	0.3+	0.0	1998 07 17	910	0.1+	0.3+	1998 07 23	910	0.5−	0.4+

1998 OA₄ = 1994 RW₅

Id. S. Nakano, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>			<i>ω</i>			+0.69006936			+0.72325332		
<i>a</i>			<i>Ω</i>			−0.68075049			+0.63614685		
<i>e</i>			<i>i</i>			−0.24572965			+0.26874116		
<i>P</i>			<i>H</i>			<i>G</i>			<i>U</i>		
38.55443			16.5			0.15			6		

Residuals in seconds of arc

1994 09 12	691	0.2−	0.2+	1994 09 13	691	0.4−	0.1−	1998 07 27	910	0.3−	0.5+
1994 09 12	691	0.1−	0.2+	1998 07 24	910	0.0	0.0	1998 07 27	910	0.3−	0.1+
1994 09 12	691	0.6+	0.3−	1998 07 24	910	0.3+	0.3−	1998 08 01	910	0.3+	0.5−
1994 09 13	691	0.2−	0.1−	1998 07 24	910	0.4−	0.5+	1998 08 02	910	0.3+	0.3−
1994 09 13	691	0.1+	0.1+	1998 07 27	910	0.4−	0.3+	1998 08 02	910	0.4+	0.4−

1998 OB₄ = 1994 JD₆ = 1997 EN₅₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>			<i>ω</i>			+0.07963797			−0.99667769		
<i>a</i>			<i>Ω</i>			+0.92930104			+0.08042777		
<i>e</i>			<i>i</i>			+0.36063467			+0.01284342		
<i>P</i>			<i>H</i>			<i>G</i>			<i>U</i>		
287.41532			17.0			0.15			3		

Residuals in seconds of arc

1994 05 04	691	0.9+	0.0	1994 05 11	691	0.6−	0.5−	1998 07 24	910	0.2+	0.1+
1994 05 04	691	0.6+	1.2+	1997 03 05	809	1.4+	0.0	1998 07 24	910	0.2+	0.0
1994 05 04	691	0.6+	0.1−	1997 03 05	809	1.0+	0.0	1998 07 27	910	0.8−	0.2+
1994 05 05	691	0.4−	0.2−	1997 03 05	809	0.3+	0.3−	1998 07 27	910	0.8−	0.2+
1994 05 05	691	0.2−	0.2+	1997 03 06	809	0.9−	1.5+	1998 07 27	910	0.7−	0.2+
1994 05 05	691	0.0	0.6−	1997 03 06	809	1.0−	0.2−	1998 08 01	910	0.6+	0.1−
1994 05 11	691	0.7−	0.0	1997 03 06	809	0.7−	1.0−	1998 08 02	910	0.5+	0.3−
1994 05 11	691	0.2−	0.0	1998 07 24	910	0.3+	0.1−	1998 08 02	910	0.4+	0.2−

1998 OP₇ = 1976 UA₆ = 1987 SO₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	30.25265		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26579312	ω	118.21266	+0.95034999	+0.31060423
a	2.3957430	Ω	223.69911	-0.29426574	+0.87718525
e	0.2116156	i	1.57355	-0.10120562	+0.36615713
P	3.71	H	15.5	G 0.15	U 3

1998 QM₅ = 1998 KR₁₉ = 1976 GV₁ = 1994 LA₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	20.87097		(2000.0)		P		Q	
<i>n</i>	0.27115018	ω	98.55383		+0.41353368		+0.90986769	
<i>a</i>	2.3640833	Ω	196.00135		-0.87597573		+0.38751489	
<i>e</i>	0.1830212	<i>i</i>	7.00654		-0.24830711		+0.14823292	
<i>P</i>	3.63	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3	
Residuals in seconds of arc								
1976 04 01	095	(4.6- 5.5-)	1998 05 24	704	0.3+	0.0	1998 09 10	426 0.5- 0.2+
1976 04 04	095	0.7- 2.2-	1998 05 24	704	0.7+	0.1-	1998 09 10	426 0.4- 0.4+
1994 06 07	587	0.4- 0.7+	1998 05 24	704	0.2+	0.1+	1998 09 12	426 0.2- 0.2+
1994 06 07	587	0.7- 0.3+	1998 08 23	426	0.4+	0.6-	1998 09 12	426 0.1- 0.5-
1994 06 07	587	0.2- 0.4+	1998 08 23	426	0.1-	0.0	1998 09 12	426 0.2- 0.2+
1994 06 14	587	0.7+ 0.0	1998 08 23	426	0.1-	0.2-	1998 09 28	426 0.4- 0.6-
1994 06 14	587	0.4+ 0.0	1998 08 24	426	0.9+	0.2-	1998 09 28	426 0.2+ 0.3-
1994 06 14	587	1.5+ 0.9+	1998 08 24	426	1.1+	0.0	1998 09 28	426 0.1- 0.7-
1998 05 22	704	0.5+ 0.5+	1998 08 24	426	1.3+	0.1-	1998 10 09	426 0.0 0.0
1998 05 22	704	0.2- 0.3-	1998 09 01	426	0.5-	0.2+	1998 10 09	426 0.3+ 0.0
1998 05 22	704	1.3- 0.3-	1998 09 01	426	0.1+	0.4+	1998 10 09	426 0.1+ 0.3-
1998 05 22	704	0.5- 0.8+	1998 09 01	426	0.3-	0.6+		
1998 05 22	704	0.4- 0.1+	1998 09 10	426	0.4-	0.1+		

1998 QJ₈ = 1991 JS₂

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	303.79101		(2000.0)		P		Q	
<i>n</i>	0.17428321	ω	277.03795		+0.51539308		-0.84151125	
<i>a</i>	3.1741858	Ω	140.53575		+0.85181816		+0.48241302	
<i>e</i>	0.1765939	<i>i</i>	14.76201		+0.09367921		+0.24317995	
<i>P</i>	5.66	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2	
Residuals in seconds of arc								
1950 03 21	675	0.2+ 0.5-	1998 07 14	699	0.5+	0.4-	1998 08 23	704 0.9- 0.4-
1950 03 22	675	0.2- 0.3-	1998 07 14	699	1.1+	1.5-	1998 08 23	704 (2.6- 0.6+)
1976 11 16	413	0.2+ 0.5-	1998 08 17	704	0.4+	0.6+	1998 08 23	704 (3.2- 0.9-)
1982 09 24	413	0.0 0.2+	1998 08 17	704	0.7-	0.3+	1998 08 27	699 0.0 0.9+
1982 09 24	413	0.2+ 0.7-	1998 08 17	704	0.2+	0.0	1998 08 27	699 0.8+ 1.0-
1991 05 08	413	(6.4+ 2.0-)	1998 08 17	704	0.5+	0.3-	1998 08 27	699 0.0 0.7+
1991 05 18	413	0.7- 0.3-	1998 08 17	704	0.0	0.2-	1998 09 14	699 0.6+ 0.0
1991 05 18	413	0.5+ 0.3-	1998 08 23	704	1.1-	0.3+	1998 09 14	699 0.6+ 0.8-
1998 07 14	699	0.4- 0.5+	1998 08 23	704	1.9-	0.6+	1998 09 14	699 0.6+ 0.3+

1998 QN₁₈ = 1991 EE₂ = 1996 DJ₆

Id. G. V. Williams, K. Ichikawa, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	154.67378		(2000.0)		P		Q	
<i>n</i>	0.18904044	ω	221.40732		-0.95346755		+0.29221868	
<i>a</i>	3.0067655	Ω	335.28540		-0.20808199		-0.81593384	
<i>e</i>	0.0508743	<i>i</i>	10.22453		-0.21817771		-0.49885891	
<i>P</i>	5.21	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3	
Residuals in seconds of arc								
1991 03 10	809	0.5- 0.5+	1991 03 15	809	0.8+	0.9-	1998 08 17	704 0.3+ 0.0
1991 03 10	809	0.2- 0.0	1996 02 16	010	0.2-	0.9-	1998 08 23	704 0.7+ 1.5-
1991 03 10	809	0.1- 0.2-	1996 02 16	010	0.2+	0.9-	1998 08 23	704 2.0+ 1.0-
1991 03 12	809	0.1+ 0.0	1996 02 16	010	0.4-	0.3+	1998 08 23	704 1.0- 2.9-
1991 03 12	809	0.3+ 0.0	1996 02 17	010	0.4-	2.0-	1998 08 23	704 1.1- 0.5-
1991 03 12	809	0.4+ 0.1-	1996 02 17	010	2.0-	2.1-	1998 10 20	910 0.1+ 0.9-
1991 03 14	809	1.3- 0.1-	1996 02 17	010	1.6-	2.4-	1998 10 20	910 0.1+ 0.5-
1991 03 14	809	1.1- 0.1-	1998 08 17	704	0.7+	1.0-	1998 10 20	910 0.4+ 0.3-
1991 03 14	809	1.1- 0.2+	1998 08 17	704	0.5+	0.0	1998 10 21	910 0.4+ 0.2-
1991 03 15	809	0.3+ 0.9-	1998 08 17	704	0.8+	0.9-	1998 10 21	910 0.2+ 0.5-
1991 03 15	809	0.7+ 0.9-	1998 08 17	704	2.0+	0.6-	1998 10 21	910 0.4+ 0.6-

1998 QY₁₉ = 1993 CZ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	280.80943		(2000.0)		P		Q	
<i>n</i>	0.28128022	ω	301.89078		-0.25814338		-0.96527458	
<i>a</i>	2.3069769	Ω	162.93071		+0.92610236		-0.25905774	
<i>e</i>	0.1296747	<i>i</i>	7.84942		+0.27512982		-0.03367596	
<i>P</i>	3.50	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5	
Residuals in seconds of arc								
1993 02 15	399	1.4- 0.7+	1998 08 17	704	2.3+	0.6-	1998 08 23	699 0.1+ 0.7+
1993 02 15	399	3.1- 1.3+	1998 08 17	704	1.0+	1.5-	1998 08 23	704 2.2- 0.8-
1993 02 16	399	0.9+ 0.7-	1998 08 23	699	1.0-	0.9+	1998 10 20	910 0.1+ 0.2+
1993 02 16	399	1.5+ 0.2+	1998 08 23	704	2.3-	0.8+	1998 10 20	910 0.0 0.2-
1993 02 25	399	0.0 1.2-	1998 08 23	704	0.8-	1.9-	1998 10 20	910 0.3+ 0.3+
1993 02 25	399	2.1+ 1.0-	1998 08 23	699	0.8+	0.0	1998 10 21	910 0.0 0.0
1998 08 17	704	0.7+ 0.4+	1998 08 23	704	0.5-	0.5-	1998 10 21	910 0.1+ 0.1-
1998 08 17	704	0.9+ 0.3+	1998 08 23	704	0.7+	1.8+	1998 10 21	910 0.1+ 0.5-

1998 QX₂₁ = 1951 RR = 1991 TP₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	105.83324		(2000.0)		P		Q	
<i>n</i>	0.27172874	ω	298.73204		-0.23469206		+0.96998471	
<i>a</i>	2.3607264	Ω	317.53908		-0.85574832		-0.23721694	
<i>e</i>	0.1088598	<i>i</i>	5.40877		-0.46110134		-0.05345833	
<i>P</i>	3.63	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5	
Residuals in seconds of arc								
1951 09 04	024	0.7+ 1.3-	1998 08 23	704	0.4+	0.4-	1998 09 14	704 0.2+ 0.4-
1951 09 05	024	0.3+ 0.1+	1998 08 23	704	0.7+	0.6-	1998 09 15	699 0.3- 1.1+
1991 10 04	033	0.2+ 0.2+	1998 08 23	704	1.7+	1.2-	1998 09 15	699 0.9- 0.2+
1991 10 04	033	0.2+ 0.0	1998 08 26	699	0.4+	0.0	1998 09 15	699 0.3- 0.4+
1991 10 05	033	0.5- 0.0	1998 08 26	699	0.8+	0.1+	1998 09 18	704 0.1+ 0.7+
1998 08 17	704	0.2- 0.4-	1998 08 26	699	0.4+	0.0	1998 09 18	704 0.7- 1.0-
1998 08 17	704	0.4- 0.1+	1998 09 14	704	0.0	0.4+	1998 09 18	704 0.8+ 0.5+
1998 08 17	704	0.7- 0.3+	1998 09 14	704	0.8-	0.3-	1998 09 18	704 0.8- 0.6+
1998 08 17	704	0.2+ 0.8+	1998 09 14	704	0.2-	0.3-		
1998 08 17	704	0.6- 0.9+	1998 09 14	704	0.8-	0.4-		

1998 QD₂₆ = 1998 QD₅₁ = 1979 QB₁Id. G. V. Williams (d, *MPC* 32787; unpublished)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	84.72289		(2000.0)		P		Q	
<i>n</i>	0.26100654	ω	99.83946		+0.17449061		+0.98465883	
<i>a</i>	2.4249444	Ω	180.20970		-0.91698448		+0.16244914	
<i>e</i>	0.1906305	<i>i</i>	2.07182		-0.35873734		+0.06369670	
<i>P</i>	3.78	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5	
Residuals in seconds of arc								
1979 08 22	809	0.6+ 0.7+	1998 08 23	704	1.6+	0.9-	1998 09 18	704 0.5- 0.6+
1979 08 22	809	0.1- 1.0+	1998 08 23	704	0.2+	1.2-	1998 09 18	704 0.3+ 0.5+
1979 08 22	809	0.7+ 0.2+	1998 08 25	120	(0.7+ 5.4-)		1998 09 18	704 0.1+ 0.1-
1979 08 23	809	0.1+ 0.3+	1998 08 25	120	0.7+	0.7-	1998 09 18	704 0.8- 1.2+
1979 08 23	809	(3.3+ 0.3-)	1998 08 26	120	0.3+	0.4-	1998 09 23	120 0.2- 0.1+
1979 08 30	809	0.7- 0.5-	1998 08 27	120	0.1-	1.2-	1998 09 23	120 0.3+ 0.0
1979 08 30	809	0.9- 0.7-	1998 08 27	120	0.4-	1.4-	1998 09 23	120 0.3+ 0.0
1998 08 17	704	1.2- 0.2+	1998 08 27	120	0.9+	1.6-	1998 09 29	120 0.0 0.5-
1998 08 17	704	0.5+ 1.3+	1998 08 30	120	0.5-	0.2+	1998 09 29	120 0.9- 0.7+
1998 08 17	704	0.0 0.2+	1998 08 30	120	0.2-	1.1+	1998 09 29	120 1.4- 1.3+
1998 08 17	704	0.7- 0.8-	1998 09 14	704	0.3+	0.2+	1998 09 29	120 0.5- 1.4+
1998 08 17	704	0.6+ 0.2+	1998 09 14	704	0.5-	0.2-	1998 09 29	120 0.9+ 0.7-
1998 08 23	704	0.0 0.1-	1998 09 14	704	0.1-	0.0	1998 10 10	120 0.6+ 0.1-
1998 08 23	704	0.2+ 1.0+	1998 09 14	704	0.1-	0.1+	1998 10 10	120 1.0+ 0.5+
1998 08 23	704	(2.5+ 0.7-)	1998 09 18	704	0.8-	0.4-	1998 10 10	120 0.8+ 1.5-

1998 NOV. 10

M.P.C. 32975

1998 QY₃₄ = 1998 RE₆₂ = 1994 NQ₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>		ω		+0.91090265		+0.39909651	
<i>a</i>		Ω		-0.40309081		+0.80643378	
<i>e</i>		<i>i</i>		-0.08817124		+0.43633305	
<i>P</i>	3.70	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1994 07 08	809	1.2-	0.1-	1998 08 17	704	1.1-	1.6-
1994 07 08	809	0.2-	0.2-	1998 08 17	704	0.6-	1.3-
1994 07 08	809	0.8+	0.4-	1998 08 23	704	0.2+	0.3+
1994 07 09	809	0.6-	0.2+	1998 08 23	704	(0.2-	2.2-)
1994 07 09	809	0.3+	0.2+	1998 08 23	704	0.7+	0.8+
1994 07 09	809	0.9+	0.2+	1998 08 23	704	0.3-	0.6-
1998 08 03	699	0.3+	0.4+	1998 09 02	327	0.4+	0.2-
1998 08 03	699	0.0	0.4+	1998 09 02	327	0.2+	0.1+
1998 08 03	699	0.6+	0.9+	1998 09 02	327	0.0	0.2-
1998 08 17	704	0.3-	0.2+	1998 09 02	327	0.1+	0.0
1998 08 17	704	0.5-	0.2+	1998 09 15	699	0.9+	0.1-
1998 08 17	704	0.3-	0.3-	1998 09 15	699	0.7+	0.0

1998 QS₃₇ = 1994 LJ₈

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>		ω		+0.65094244		-0.75851863	
<i>a</i>		Ω		+0.69313352		+0.61020205	
<i>e</i>		<i>i</i>		+0.30958015		+0.22869835	
<i>P</i>	3.39	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1987 06 02	413	(4.1-	0.1-)	1998 08 17	704	0.5-	0.4-
1987 06 02	413	0.3-	0.8-	1998 08 17	704	(2.2-	1.9-)
1994 06 08	809	(2.4+	1.7+)	1998 08 23	704	0.3+	0.5+
1994 06 08	809	0.5+	1.4+	1998 08 23	704	0.9-	0.4-
1994 06 08	809	0.9+	1.0+	1998 08 23	704	(0.2+	2.8+)
1994 06 09	809	0.0	0.3+	1998 08 23	704	1.5-	1.4+
1994 06 09	809	0.1-	0.8-	1998 08 26	699	(1.2+	2.1-)
1994 06 09	809	1.2-	1.8-	1998 08 26	699	0.9-	0.0
1998 08 17	704	1.7-	0.4-	1998 08 26	699	0.0	0.1+
1998 08 17	704	1.3-	0.4-	1998 09 14	704	0.4+	0.4-
1998 08 17	704	1.1-	0.9+	1998 09 14	704	1.0+	0.7+

1998 QA₃₉ = 1989 NP

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>		ω		+0.64263212		+0.75254429	
<i>a</i>		Ω		-0.68662548		+0.48234165	
<i>e</i>		<i>i</i>		-0.33995501		+0.44835659	
<i>P</i>	4.37	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1989 07 02	675	1.2-	1.0+	1998 08 17	704	0.3-	0.3+
1989 07 02	675	1.5-	1.1-	1998 08 17	704	0.6-	0.1+
1989 07 04	675	1.0+	0.7-	1998 08 23	704	0.4+	0.5+
1989 07 04	675	2.0+	0.2+	1998 08 23	704	0.3-	0.7-
1998 08 03	699	0.6-	0.5-	1998 08 23	704	0.4-	0.7-
1998 08 03	699	0.2-	0.2-	1998 08 23	704	1.2+	0.9+
1998 08 03	699	0.7-	0.3-	1998 08 23	704	0.6+	1.0+
1998 08 17	704	1.4-	0.7+	1998 09 19	704	0.5+	0.7-
1998 08 17	704	0.7-	0.2+	1998 09 19	704	0.2+	0.1+

1998 QQ₃₉ = 1978 EW₄ = 1979 PG = 1987 SN₂₁ = 1991 XV

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>		ω		-0.07441812		+0.99712879	
<i>a</i>		Ω		-0.87375485		-0.05842905	
<i>e</i>		<i>i</i>		-0.48063958		-0.04816871	
<i>P</i>	3.77	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1953 12 07	675	1.3+	1.0-	1994 07 03	413	0.5+	0.3-
1978 03 06	095	(1.7-	4.9+)	1998 08 17	704	0.4+	0.8-
1979 08 14	808	0.5-	0.4-	1998 08 17	704	0.1+	0.6-
1979 08 14	808	0.8+	0.1-	1998 08 17	704	0.2+	0.3-
1983 10 01	413	0.6-	1.1-	1998 08 17	704	0.8-	0.3-
1983 10 01	413	0.5-	0.5-	1998 08 17	704	0.0	0.7+
1987 09 18	095	0.0	1.6+	1998 08 23	704	0.0	0.1-
1991 12 04	399	0.8+	0.8-	1998 08 23	704	2.0+	0.4+
1991 12 04	399	0.7-	0.2-	1998 08 23	704	0.4-	0.0
1994 07 03	413	0.0	0.5-	1998 08 23	704	0.5+	0.0

1998 QH₄₀ = 1987 SY₂₆ = 1987 UD₂

Id. A. Gnädig, S. Nakano (d)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>		ω		+0.74147418		-0.66907772	
<i>a</i>		Ω		+0.60260103		+0.69712731	
<i>e</i>		<i>i</i>		+0.29510684		+0.25758205	
<i>P</i>	3.71	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1987 09 26	095	0.6+	1.4-	1998 08 23	704	0.8+	0.2-
1987 10 25	054	0.1+	0.3+	1998 08 23	704	1.1-	0.5+
1987 10 25	054	0.4-	0.2+	1998 08 23	704	0.4+	0.0
1998 08 17	704	0.7-	0.5-	1998 08 23	704	0.5+	1.2+
1998 08 17	704	0.6+	0.4-	1998 08 23	704	0.7+	0.8+
1998 08 17	704	0.4+	1.2-	1998 09 14	704	0.5+	0.2-
1998 08 17	704	0.2-	0.3-	1998 09 14	704	0.7-	0.6-
1998 08 17	704	0.1-	0.8-	1998 09 14	704	0.7-	0.6+

1998 QY₄₀ = 1977 SG = 1991 RP₃₃

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>		ω		+0.98062942		-0.19586114	
<i>a</i>		Ω		+0.18719499		+0.93399607	
<i>e</i>		<i>i</i>		+0.05765396		+0.29881393	
<i>P</i>	3.50	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1977 09 18	095	0.5+	1.1-	1998 08 26	699	0.4-	0.1+
1991 09 11	675	0.1+	1.3-	1998 08 26	699	0.2-	0.1+
1991 09 11	675	0.2+	1.0-	1998 09 14	704	0.2+	0.0
1998 08 17	704	0.4+	0.6-	1998 09 14	704	0.2-	0.2+
1998 08 17	704	0.5-	0.3+	1998 09 14	704	0.1+	0.5+
1998 08 17	704	0.1+	0.6+	1998 09 14	704	0.4+	0.5+
1998 08 17	704	0.0	0.4-	1998 09 14	704	0.1+	0.6+
1998 08 17	704	0.9-	0.1+	1998 09 15	699	0.1+	0.6+
1998 08 23	704	0.2+	0.5-	1998 09 15	699	0.2+	0.3+
1998 08 23	704	0.6+	0.1+	1998 09 15	699	0.1-	0.3+
1998 08 23	704	0.2+	0.7-	1998 09 18	704	0.4+	0.4+
1998 08 23	704	0.2-	0.5-	1998 09 18	704	0.6-	0.1+
1998 08 23	704	1.0-	0.4-	1998 09 18	699	0.2+	0.5+
1998 08 26	699	0.1-	0.0	1998 09 18	704	0.8+	0.1-

1998 QP₄₁ = 1979 SP₈ = 1992 HT₆
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20533704	ω	322.88853	+0.90597768	+0.42326447		
<i>a</i>	2.8454951	Ω	12.07683	-0.37968577	+0.81997097		
<i>e</i>	0.0755960	<i>i</i>	1.96802	-0.18719817	+0.38535023		
<i>P</i>	4.80	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1951 11 08	675	1.6-	0.3-	1998 08 17	704	0.1+	0.4+	1998 09 14	704	0.1+	0.0
1951 12 27	675	1.8+	0.8-	1998 08 17	704	0.3-	1.0+	1998 09 14	704	0.7+	0.9+
1979 09 24	095	1.0+	2.5-	1998 08 23	704	0.7+	0.2+	1998 09 14	704	0.5-	0.9+
1992 04 25	809	0.8-	0.1-	1998 08 23	704	0.0	0.7+	1998 09 14	704	0.1-	0.2+
1992 04 25	809	0.8-	0.4-	1998 08 23	704	0.2-	0.4-	1998 09 14	704	0.5+	0.6+
1992 04 25	809	1.1-	0.2-	1998 08 23	704	1.2-	0.7-	1998 09 18	704	0.3+	0.2-
1992 05 30	413	1.1+	2.5-	1998 08 23	704	1.7-	0.1+	1998 09 18	704	0.8+	2.1-
1992 05 30	413	0.5+	0.2-	1998 08 30	699	0.4+	1.0+	1998 09 18	704	0.4+	1.4-
1998 08 17	704	0.0	0.1+	1998 08 30	699	0.9-	1.5+	1998 09 18	704	0.5+	1.8-
1998 08 17	704	0.5-	0.3+	1998 08 30	699	1.2+	0.5+	1998 09 18	704	0.4-	1.3-

1998 QH₅₁ = 1997 LV₁₄
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21088147	ω	165.76540	+0.99695667	+0.07720289		
<i>a</i>	2.7953988	Ω	189.82593	-0.07628206	+0.93745432		
<i>e</i>	0.1112656	<i>i</i>	3.63587	-0.01607647	+0.33943941		
<i>P</i>	4.67	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1997 06 08	809	0.2+	0.7-	1998 08 23	704	0.2+	0.1-	1998 09 14	704	0.3-	0.1-
1997 06 08	809	1.4-	0.2+	1998 08 23	704	0.4+	0.4+	1998 09 14	704	1.5-	0.1-
1997 06 08	809	0.9-	0.1+	1998 08 23	704	0.6-	0.1-	1998 09 14	704	0.4-	0.2+
1997 06 09	809	1.4+	1.6+	1998 08 23	704	0.3+	0.5-	1998 09 14	704	0.0	0.1-
1997 06 09	809	0.4+	0.4+	1998 08 23	704	1.5-	0.1+	1998 09 18	704	0.1-	0.2+
1997 06 09	809	0.6+	0.3+	1998 08 26	120	0.4-	0.2+	1998 09 18	704	1.2+	0.8+
1998 08 17	704	0.3+	0.1+	1998 08 26	120	0.3-	0.1+	1998 09 18	704	0.1+	1.1+
1998 08 17	704	0.0	0.8-	1998 08 26	120	0.6-	0.4+	1998 09 18	704	0.9+	0.6+
1998 08 17	704	0.2-	0.8-	1998 08 26	120	0.2-	0.3+	1998 09 18	704	0.5-	0.6+
1998 08 17	704	1.4+	0.8-	1998 08 26	120	1.1+	0.2+				
1998 08 17	704	0.1+	0.1-	1998 08 26	120	0.1-	0.1+				

1998 QE₅₄ = 1972 EL = 1972 GQ = 1979 FK₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27879327	ω	254.14359	-0.89642343	+0.43776912		
<i>a</i>	2.3206761	Ω	311.76210	-0.36282938	-0.81449200		
<i>e</i>	0.1277739	<i>i</i>	5.32007	-0.25451889	-0.38073743		
<i>P</i>	3.54	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1972 03 14	095	0.7+	1.4+	1998 08 31	704	(2.1-	0.6+)	1998 09 27	704	1.0+	0.3+
1972 04 09	095	(8.0-	3.7+)	1998 09 14	704	0.7-	0.7+	1998 09 27	704	1.0+	0.2+
1979 03 23	095	0.6-	1.3-	1998 09 14	704	0.2+	0.2-	1998 09 27	704	1.4+	0.2-
1998 08 20	699	0.3+	1.3+	1998 09 14	704	0.5-	0.4+	1998 09 27	704	(2.1+	1.6-)
1998 08 20	699	0.5+	0.1+	1998 09 15	699	0.3-	0.0	1998 09 29	704	0.3-	0.2-
1998 08 20	699	0.8+	0.9+	1998 09 15	699	0.3+	0.9+	1998 09 29	704	0.4-	0.1+
1998 08 28	704	1.4+	0.3-	1998 09 15	699	0.1+	1.0+	1998 09 29	704	1.0-	0.0
1998 08 28	704	1.2+	1.5-	1998 09 18	704	0.4+	0.9+	1998 09 29	704	0.0	1.0-
1998 08 28	704	0.8-	1.6-	1998 09 18	704	0.5-	0.0	1998 09 29	704	0.1+	1.7-
1998 08 28	704	1.3+	1.2-	1998 09 18	704	0.6-	0.2-	1998 09 29	704	0.1+	0.4-
1998 08 28	704	(3.1-	1.3-)	1998 09 18	704	0.9-	1.3+	1998 09 29	704	0.2+	1.0-
1998 08 28	699	1.4-	0.2-	1998 09 18	704	0.9+	0.4+	1998 09 29	704	0.1+	0.9-
1998 08 28	699	0.3+	0.4-	1998 09 26	704	0.9-	0.7+	1998 09 29	704	(2.2-	0.5+)
1998 08 28	699	0.1-	0.4-	1998 09 26	704	1.0-	0.1-	1998 09 29	704	0.3-	1.2-
1998 08 31	704	0.1-	1.8+	1998 09 26	704	1.1-	0.0	1998 10 14	699	1.0+	0.3+

1998 08 31	704	0.3+	0.3-	1998 09 26	704	1.6-	0.7+	1998 10 14	699	0.1+	0.8+
1998 08 31	704	(0.8+	2.2+)	1998 09 26	704	(1.2-	2.5+)	1998 10 14	699	0.3+	0.5+

1998 QG₅₄ = 1978 WY₁₈ = 1982 VY₈
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24316188	ω	140.52772	+0.99248793	-0.09770522		
<i>a</i>	2.5421766	Ω	225.24943	+0.06834921	+0.94197021		
<i>e</i>	0.1740188	<i>i</i>	5.95103	+0.10146970	+0.32116322		
<i>P</i>	4.05	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1978 11 30	675	0.2+	0.8+	1998 09 18	704	0.0	0.5+	1998 10 14	704	0.4-	0.9-
1978 12 01	675	0.3-	0.1+	1998 09 18	704	1.2+	1.1+	1998 10 14	704	0.5-	1.2-
1982 11 09	095	0.1+	1.2-	1998 09 18	704	1.0-	1.3-	1998 10 14	704	0.6-	1.7-
1998 08 27	699	0.1+	0.1-	1998 09 26	704	0.6-	0.8+	1998 10 14	704	0.5-	0.6-
1998 08 27	699	0.2+	0.4-	1998 09 26	704	0.4-	0.4+	1998 10 14	704	0.0	0.2+
1998 08 27	699	0.6+	0.3-	1998 09 26	704	0.6-	0.2+	1998 10 14	699	0.1+	0.2+
1998 08 28	699	0.7+	0.7-	1998 09 26	704	0.5-	0.3+	1998 10 14	699	0.1+	0.1+
1998 08 28	699	0.4+	1.2-	1998 09 26	704	0.2+	0.6+	1998 10 14	699	0.0	0.9+
1998 08 28	699	0.1-	0.1-	1998 09 27	704	0.6-	1.3+	1998 10 15	704	0.2-	0.4+
1998 09 14	704	0.7-	0.2-	1998 09 27	704	0.2+	1.5+	1998 10 15	704	0.5+	0.9+
1998 09 14	704	0.0	0.5-	1998 09 27	704	0.8+	0.6+	1998 10 15	704	0.8+	0.6-
1998 09 14	704	0.1-	0.3-	1998 09 27	704	0.1-	0.5+	1998 10 15	704	0.9+	0.4-
1998 09 18	704	0.0	0.6+	1998 09 27	704	1.1-	0.8+	1998 10 15	704	1.0+	1.1-

1998 QO₅₄ = 1997 GK₃₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23190385	ω	45.17657	+0.70343500	+0.70939805		
<i>a</i>	2.6238001	Ω	269.58201	-0.66388764	+0.63369262		
<i>e</i>	0.2134471	<i>i</i>	2.52033	-0.25383537	+0.30852563		
<i>P</i>	4.25	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 05	566	0.8-	0.2-	1998 09 14	704	0.2+	1.1+	1998 09 27	704	0.8+	0.7-
1997 04 05	566	0.7-	0.3-	1998 09 14	704	0.0	0.6+	1998 09 27	704	1.0+	0.3+
1997 04 05	566	1.1-	0.3-	1998 09 14	704	0.0	1.4+	1998 09 27	704	1.1+	0.7+
1997 04 11	704	1.7+	0.2-	1998 09 16	699	0.1+	0.7+	1998 09 27	704	0.6+	0.2+
1997 04 11	704	0.6+	0.3+	1998 09 16	699	0.0	0.8+	1998 09 27	704	1.2-	0.6-
1998 08 27	699	0.2-	0.6+	1998 09 16	699	0.1+	0.8+	1998 10 14	704	0.4-	0.2+
1998 08 27	699	0.2+	0.2-	1998 09 18	704	0.0	0.1-	1998 10 14	704	1.1-	0.2+
1998 08 27	699	0.0	0.0	1998 09 18	704	0.2+	0.3-	1998 10 14	704	0.7-	0.3-
1998 08 28	704	(2.7+	0.6-)	1998 09 18	704	0.2+	0.6-	1998 10 14	704	0.2+	0.0
1998 08 28	704	(1.7+	2.2-)	1998 09 18	704	0.1-	0.3-	1998 10 14	704	1.5-	1.6+
1998 08 28	704	1.0+	1.4-	1998 09 18	704	0.3-	0.4-	1998 10 15	704	0.1-	0.1-
1998 08 28	704	1.4-	1.5-	1998 09 26	704	0.1-	0.9-	1998 10 15	704	0.7+	0.4+
1998 08 28	704	0.8-	1.4+	1998 09 26	704	0.4+	1.3-	1998 10 15	704	0.4+	0.5+
1998 08 28	699	0.4-	0.5+	1998 09 26	704	0.2+	1.4-	1998 10 15	704	0.5+	0.7-
1998 08 28	699	0.7-	0.1+	1998 09 26	704	1.2+	1.2-	1998 10 15	704	0.3-	0.7-
1998 08 28	699	0.2+	0.2+	1998 09 26	704	(1.6+	2.5-)				

1998 QQ₅₄ = 1996 FL₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17535194	ω	190.49762	+0.51748426	-0.85338094		
<i>a</i>	3.1612754	Ω	228.37102	+0.79105140	+0.50510794		
<i>e</i>	0.0105399	<i>i</i>	4.82392	+0.32626328	+0.12886790		
<i>P</i>	5.62	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc											
1996 03 22	809	0.3-	0.3+	1998 09 18	704	0.1-	1.0-	1998 10 14	704	0.2-	1.0-
1996 03 22	809	0.6-	0.3-	1998 09 18	704	0.6-	0.6-	1998 10 14	704	1.6+	0.6-
1996 03 22	809	0.3-	0.4-	1998 09 18	704	0.5-	0.6-	1998 10 14	704	0.5-	0.1+
1996 03 26	809	1.1+	0.3-	1998 09 18	704	0.4+	0.8-	1998 10 14	704	0.6-	0.4+

1996 03 26	809	0.1−	0.5+	1998 09 18	704	0.1+	0.1−	1998 10 14	704	0.5−	0.2−
1996 03 26	809	0.2+	0.1−	1998 09 26	704	0.5+	0.3−	1998 10 14	699	0.4−	0.2+
1998 08 27	699	0.2−	0.6+	1998 09 26	704	0.3+	0.3+	1998 10 14	699	0.1−	0.2+
1998 08 27	699	0.3+	0.3+	1998 09 26	704	0.3+	0.2−	1998 10 14	699	0.2+	0.5+
1998 08 27	699	0.2+	0.1+	1998 09 26	704	0.2+	0.3−	1998 10 15	704	0.0	0.6−
1998 08 28	699	0.4−	0.1−	1998 09 26	704	0.5+	0.1−	1998 10 15	704	0.5+	0.3−
1998 08 28	699	0.1+	0.6−	1998 09 27	704	0.4−	0.7+	1998 10 15	704	0.3−	0.1+
1998 08 28	699	0.2−	0.1−	1998 09 27	704	0.6−	0.4+	1998 10 15	704	0.6+	0.2+
1998 09 14	704	0.9+	0.4−	1998 09 27	704	0.2−	0.9+	1998 10 15	704	0.3+	0.8−
1998 09 14	704	0.6+	0.4+	1998 09 27	704	0.4−	1.1+				
1998 09 14	704	0.5−	0.7+	1998 09 27	704	0.8−	1.4+				

1998 QW₅₄ = 1964 WS = 1980 PW₃ = 1981 UA₁₇ = 1986 RP₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	2.74237		(2000.0)		P		Q
<i>n</i>	0.17027082	ω	175.71516	+0.90080866		−0.43227586	
<i>a</i>	3.2238580	Ω	210.00367	+0.39590896		+0.85644922	
<i>e</i>	0.0366724	<i>i</i>	4.70348	+0.17832511		+0.28219199	
<i>P</i>	5.79	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1964 11 27	330	0.2−	1.2+	1998 08 28	699	1.5+	0.3+	1998 09 26	704	0.9−	0.5+
1964 12 03	330	(8.5−	11.0+)	1998 09 14	704	0.2−	0.1+	1998 09 26	704	0.0	0.5−
1980 08 03	675	0.2+	0.9+	1998 09 14	704	0.6−	0.2−	1998 09 26	704	0.1+	0.1+
1980 08 05	675	1.0+	1.3+	1998 09 14	704	0.8−	0.6−	1998 09 26	704	0.9−	0.1−
1981 10 24	095	(3.8−	2.3+)	1998 09 15	699	0.3−	0.4+	1998 09 26	704	0.4−	1.2−
1986 09 06	071	(3.7−	0.1−)	1998 09 15	699	0.1−	0.2+	1998 09 27	704	0.8−	0.1+
1986 09 06	071	2.1−	1.3−	1998 09 15	699	0.3−	0.2+	1998 09 27	704	0.3+	0.7+
1998 08 27	699	0.7+	0.4+	1998 09 18	704	0.2−	0.2−	1998 09 27	704	0.1+	1.3+
1998 08 27	699	1.4+	0.7−	1998 09 18	704	0.6+	0.8−	1998 09 27	704	0.4+	0.1+
1998 08 27	699	0.7−	0.9+	1998 09 18	704	0.8−	0.5+	1998 09 27	704	0.2−	0.1+
1998 08 28	699	1.7+	0.8−	1998 09 18	704	0.6+	0.8−				
1998 08 28	699	1.2+	0.0	1998 09 18	704	0.2+	1.0−				

1998 QX₅₄ = 1981 UT₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	330.87202		(2000.0)		P		Q
<i>n</i>	0.28648641	ω	248.20882	+0.16989183		−0.98507135	
<i>a</i>	2.2789425	Ω	192.10931	+0.94597857		+0.17091699	
<i>e</i>	0.1053785	<i>i</i>	7.60723	+0.27615452		+0.02053837	
<i>P</i>	3.44	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 10 24	675	0.3−	0.6−	1998 09 18	704	0.3+	0.3+	1998 10 14	699	0.2+	0.9+
1981 10 25	675	0.5+	0.3+	1998 09 18	704	1.9+	0.6−	1998 10 15	704	0.3+	0.7+
1981 10 26	675	0.3−	0.3+	1998 09 26	704	1.6−	1.6−	1998 10 15	704	1.0+	0.1+
1998 08 27	699	0.2−	0.6+	1998 09 26	704	1.3−	0.3−	1998 10 15	704	0.6+	0.8+
1998 08 27	699	0.1−	0.6−	1998 09 26	704	0.3+	0.5−	1998 10 15	704	0.3+	0.5+
1998 08 27	699	0.4−	0.8+	1998 09 26	704	0.4+	0.3−	1998 10 24	691	1.4−	1.5+
1998 08 28	699	0.2+	0.1−	1998 09 26	704	0.8+	0.3−	1998 10 24	691	0.6−	0.5−
1998 08 28	699	0.5+	0.5−	1998 09 27	704	0.6+	0.0	1998 10 24	691	0.5−	0.4−
1998 08 28	699	0.3+	0.5+	1998 09 27	704	0.0	0.5+	1998 10 28	691	0.6−	0.3−
1998 09 14	704	0.2−	0.2+	1998 09 27	704	0.5+	0.1+	1998 10 28	704	(2.0+	2.5−)
1998 09 14	704	0.9−	0.1+	1998 09 27	704	0.8+	0.7−	1998 10 28	691	0.4−	0.4−
1998 09 14	704	0.3+	0.1−	1998 09 27	704	0.1+	0.4−	1998 10 28	704	0.4−	0.3−
1998 09 15	699	1.4−	0.2+	1998 10 14	704	0.4+	0.0	1998 10 28	691	0.4−	0.3−
1998 09 15	699	0.9−	0.2+	1998 10 14	704	0.7+	1.6−	1998 10 28	704	(1.6+	2.5−)
1998 09 15	699	1.0−	0.4+	1998 10 14	699	1.1+	0.0	1998 10 28	704	0.3−	0.2+
1998 09 18	704	0.3+	0.6+	1998 10 14	704	0.3+	1.2+	1998 10 28	704	0.9+	0.3−
1998 09 18	704	0.6−	0.8−	1998 10 14	699	0.2+	0.8+				
1998 09 18	704	0.9−	0.1+	1998 10 14	704	0.5+	0.3−				

1998 QY₅₄ = 1979 OD₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	10.47451		(2000.0)		P		Q
<i>n</i>	0.21384224	ω	167.22959	+0.88294328		−0.46708601	
<i>a</i>	2.7695362	Ω	220.72449	+0.42410660		+0.83679897	
<i>e</i>	0.1660320	<i>i</i>	4.16175	+0.20135726		+0.28565388	
<i>P</i>	4.61	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1979 07 24	675	0.8+	0.1+	1998 08 28	699	0.4+	1.0+	1998 09 26	704	0.8−	0.2+
1979 07 25	675	0.8−	0.1−	1998 08 28	699	0.3−	0.5+	1998 09 27	704	0.8+	0.5−
1998 08 27	699	0.0	0.5−	1998 09 26	704	1.0+	0.2+	1998 09 27	704	0.3+	0.4+
1998 08 27	699	0.2−	0.1−	1998 09 26	704	0.8+	0.2−	1998 09 27	704	0.4+	0.5+
1998 08 27	699	0.3−	0.1+	1998 09 26	704	0.9−	0.4+	1998 09 27	704	1.3−	0.6−
1998 08 28	699	0.4+	1.0−	1998 09 26	704	0.4−	0.5−				

1998 QZ₅₄ = 1996 DC₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	311.87524		(2000.0)		P		Q
<i>n</i>	0.25748003	ω	129.05489	−0.15038858		−0.98714186	
<i>a</i>	2.4470359	Ω	329.46425	+0.87092898		−0.10635740	
<i>e</i>	0.1112094	<i>i</i>	6.12022	+0.46783115		−0.11932749	
<i>P</i>	3.83	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 02 16	010	0.9−	0.6−	1998 08 28	704	0.8+	1.0−	1998 09 26	704	0.3+	0.5−
1996 02 16	010	1.0−	1.3−	1998 08 28	704	0.1−	0.4+	1998 09 26	704	0.7−	0.2+
1996 02 16	010	0.8−	0.7−	1998 08 28	704	1.1+	0.3−	1998 09 27	704	0.3+	0.0
1996 02 17	010	1.1+	1.2+	1998 08 28	704	(2.3−	1.0−)	1998 09 27	704	0.8−	0.8+
1996 02 17	010	0.5+	0.3+	1998 08 28	699	0.3−	0.5−	1998 09 27	704	0.5−	0.8+
1996 02 17	010	1.0+	0.8+	1998 08 28	699	0.2−	0.8−	1998 09 27	704	0.9+	1.2+
1998 08 27	699	0.0	0.5+	1998 08 28	699	0.1+	0.7−	1998 09 27	704	0.3−	1.2+
1998 08 27	699	0.6+	0.2−	1998 09 26	704	1.3−	1.2−	1998 10 14	699	0.0	0.6−
1998 08 27	699	0.6+	0.9+	1998 09 26	704	0.0	0.4+	1998 10 14	699	0.5+	0.5−
1998 08 28	704	(1.7+	2.4−)	1998 09 26	704	1.6−	0.2−	1998 10 14	699	0.8+	0.4−

1998 QD₅₅ = 1993 FE₆₀ = 1997 KF₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	358.38128		(2000.0)		P		Q
<i>n</i>	0.28047685	ω	222.03591	+0.59502912		−0.80347265	
<i>a</i>	2.3113801	Ω	191.49404	+0.76076453		+0.57081583	
<i>e</i>	0.1491099	<i>i</i>	5.55483	+0.25918657		+0.16911829	
<i>P</i>	3.51	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 03 19	809	0.2+	1.9+	1998 09 15	699	0.1+	1.3+	1998 10 14	704	0.9−	0.8−
1993 03 20	809	0.8+	1.4+	1998 09 18	704	0.7−	0.1−	1998 10 14	699	0.4+	0.0
1997 05 31	691	0.2+	0.8+	1998 09 18	704	1.2−	0.5−	1998 10 14	699	1.0+	0.2−
1997 05 31	691	0.7+	0.0	1998 09 18	704	1.2+	0.3−	1998 10 14	699	0.5+	0.2−
1997 05 31	691	1.2−	0.9−	1998 09 18	704	0.4−	0.8−	1998 10 15	704	0.2−	0.4+
1997 06 11	691	0.3+	0.0	1998 09 18	704	0.2−	0.5+	1998 10 15	704	0.3−	0.9−
1997 06 11	691	0.0	0.1−	1998 09 26	704	0.1+	0.6+	1998 10 15	704	0.6+	0.8−
1997 06 11	691	0.2+	0.4+	1998 09 26	704	0.2+	1.3−	1998 10 15	704	0.5−	0.7+
1998 08 27	699	0.6−	0.6−	1998 09 26	704	0.4+	0.6−	1998 10 15	704	0.8−	1.5+
1998 08 27	699	0.3+	0.1−	1998 09 26	704	0.1+	0.4−	1998 10 19	699	0.3+	0.4+
1998 08 27	699	0.1+	0.9+	1998 09 26	704	0.7−	0.9−	1998 10 19	699	0.4−	0.2+
1998 08 28	699	0.0	0.4+	1998 09 27	704	(0.2+	2.3−)	1998 10 19	699	0.8+	0.4+
1998 08 28	699	0.5−	0.6+	1998 09 27	704	0.5−	0.0	1998 10 28	704	0.1−	2.0+
1998 08 28	699	0.9−	0.0	1998 09 27	704	0.8−	0.6+	1998 10 28	704	1.0+	0.4+
1998 09 14	704	0.1−	0.5+	1998 09 27	704	0.3−	0.3+	1998 10 28	704	1.3−	0.7−
1998 09 14	704	0.5+	0.6+	1998 09 27	704	0.6−	0.2−	1998 10 28	704	0.9+	0.5−
1998 09 14	704	0.8+	0.7−	1998 10 14	704	0.2+	0.7−	1998 10 28	704	1.5−	1.4+
1998 09 15	699	0.9+	0.6+	1998 10 14	704	1.2+	0.0				
1998 09 15	699	1.1+	0.5+	1998 10 14	704	0.4−	0.1+				

1998 QH₅₅ = 1991 PW₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	353.38020		(2000.0)	P		Q	
<i>n</i>	0.29508556	ω	74.31445	+0.57747952		−0.81571618	
<i>a</i>	2.2344505	Ω	340.29904	+0.70577036		+0.51944805	
<i>e</i>	0.0575340	<i>i</i>	5.70891	+0.41037252		+0.25452081	
<i>P</i>	3.34	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 06	675	0.0	0.1+	1998 09 18	704	0.1+	0.2−	1998 10 14	699	0.7+	0.3−
1991 08 06	675	0.4−	0.3+	1998 09 26	704	0.0	0.9+	1998 10 14	699	0.5+	0.4−
1991 08 10	675	(0.8+	3.2−)	1998 09 26	704	0.0	0.4+	1998 10 15	704	0.2+	0.2−
1991 08 10	675	0.6+	0.7−	1998 09 26	704	0.1−	0.0	1998 10 15	704	0.5+	0.2−
1998 08 27	699	0.1−	0.1+	1998 09 26	704	1.2−	0.9+	1998 10 15	704	0.8+	0.2+
1998 08 27	699	0.1+	0.1−	1998 09 26	704	1.2−	0.1+	1998 10 15	704	0.8+	0.0
1998 08 27	699	0.3+	0.8−	1998 09 27	704	0.3+	0.4+	1998 10 15	704	0.2−	0.2−
1998 08 28	699	0.7−	1.1−	1998 09 27	704	0.4+	0.7+	1998 10 15	292	(3.3−	0.6−)
1998 08 28	699	0.1+	0.0	1998 09 27	704	0.3+	0.6+	1998 10 15	292	1.1−	0.3+
1998 08 28	699	0.2−	0.2+	1998 09 27	704	0.3+	0.7+	1998 10 15	292	1.7−	0.1−
1998 09 14	704	0.7+	0.2−	1998 09 27	704	0.0	1.2+	1998 10 28	704	0.1−	0.0
1998 09 14	704	0.1−	0.5−	1998 10 14	704	1.1+	0.2+	1998 10 28	704	0.2+	1.3−
1998 09 14	704	0.9−	0.6−	1998 10 14	704	0.8+	0.7+	1998 10 28	704	0.5+	0.8−
1998 09 18	704	0.6−	0.3+	1998 10 14	704	0.0	1.2−	1998 10 28	704	1.0−	0.1+
1998 09 18	704	0.6+	0.8+	1998 10 14	704	0.4+	1.1−	1998 10 28	704	0.4−	0.9+
1998 09 18	704	0.5+	0.8+	1998 10 14	704	0.1+	1.1−				
1998 09 18	704	0.8−	0.2+	1998 10 14	699	0.2−	0.4−				

1998 QG₅₇ = 1997 GH₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	154.32306		(2000.0)	P		Q	
<i>n</i>	0.23754880	ω	32.19704	−0.83166736		+0.55526952	
<i>a</i>	2.5820669	Ω	181.53785	−0.52570800		−0.78869460	
<i>e</i>	0.2017171	<i>i</i>	4.85455	−0.17877501		−0.26388745	
<i>P</i>	4.15	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 06	704	0.4−	0.7−	1998 08 31	691	0.4−	0.4−	1998 09 23	691	0.6+	0.1−
1997 04 06	704	0.7+	0.2+	1998 08 31	691	0.1−	0.0	1998 09 23	691	0.9+	0.0
1997 04 08	704	0.3+	0.4+	1998 08 31	691	0.0	0.1+	1998 09 27	691	0.8−	0.2+
1997 04 08	704	0.6−	0.1+	1998 09 16	691	0.3−	0.6−	1998 09 27	691	0.3−	0.9+
1998 08 30	691	0.2+	0.1+	1998 09 16	691	0.1−	0.3−	1998 09 27	691	0.6−	0.2−
1998 08 30	691	0.1−	0.1+	1998 09 16	691	0.1−	0.3−				
1998 08 30	691	0.3+	0.5+	1998 09 23	691	0.9+	0.1−				

1998 QL₅₇ = 1996 AL₁₆

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	353.44308		(2000.0)	P		Q	
<i>n</i>	0.29057244	ω	198.99846	+0.76751158		−0.64096949	
<i>a</i>	2.2575278	Ω	200.87402	+0.59142035		+0.71355323	
<i>e</i>	0.0211882	<i>i</i>	1.47461	+0.24728111		+0.28284254	
<i>P</i>	3.39	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 13	691	0.0	0.2−	1998 09 14	704	0.6+	0.2+	1998 09 27	704	0.5+	0.7+
1996 01 13	691	0.0	0.2+	1998 09 14	704	0.4−	1.1+	1998 09 27	704	0.4+	0.0
1996 01 13	691	0.0	0.0	1998 09 18	704	0.3+	0.3−	1998 09 27	704	1.6+	0.3−
1996 01 24	691	0.0	0.1−	1998 09 18	704	0.2−	0.1+	1998 09 27	704	0.2+	0.2−
1996 01 24	691	0.1−	0.2+	1998 09 18	704	0.7+	0.2−	1998 10 14	704	0.4−	1.0−
1998 08 30	691	0.1−	0.4+	1998 09 18	704	0.4+	0.3−	1998 10 14	704	0.3−	0.6−
1998 08 30	691	0.1+	0.3+	1998 09 18	704	0.7+	1.2−	1998 10 14	704	0.8+	0.9+
1998 08 30	691	0.1+	0.3+	1998 09 26	704	0.7−	0.6+	1998 10 14	704	0.5+	1.0+
1998 08 31	691	0.7−	0.1+	1998 09 26	704	1.0−	1.5−	1998 10 15	704	0.1−	1.9+
1998 08 31	691	0.5−	0.0	1998 09 26	704	0.6−	0.5+	1998 10 15	704	0.0	0.4+
1998 08 31	691	0.4−	0.1+	1998 09 26	704	(3.3+	1.4−)	1998 10 15	704	0.1−	0.5−

1998 09 14	704	0.1+	0.2−	1998 09 26	704	1.0−	0.6−	1998 10 15	704	0.9−	1.0−
1998 09 14	704	0.6+	0.5−	1998 09 27	704	0.1−	0.1+				

1998 QP₅₇ = 1993 VV₂

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	304.14448		(2000.0)	P		Q	
<i>n</i>	0.17585093	ω	269.19647	−0.07357864		−0.99727786	
<i>a</i>	3.1552924	Ω	185.03064	+0.93538981		−0.06734155	
<i>e</i>	0.1767166	<i>i</i>	3.13820	+0.34587872		−0.03003291	
<i>P</i>	5.60	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 11 11	399	0.4−	1.2+	1998 09 14	704	1.3+	0.4+	1998 09 25	699	0.2−	0.5+
1993 11 11	399	(4.6−	2.5+)	1998 09 14	704	0.7+	0.0	1998 09 26	704	1.2+	1.6−
1993 11 16	399	0.7+	0.1−	1998 09 14	704	0.2+	0.9+	1998 09 26	704	1.4−	0.4−
1993 11 16	399	0.3−	1.0−	1998 09 14	704	0.8+	0.1−	1998 09 26	704	(0.3+	2.4−)
1998 08 30	691	0.1−	0.1+	1998 09 18	704	0.3−	0.5−	1998 09 26	704	(0.2−	2.5−)
1998 08 30	691	0.3+	0.3+	1998 09 18	704	0.2+	0.3−	1998 09 27	704	1.0−	1.6+
1998 08 30	691	0.3−	0.1+	1998 09 18	704	0.9−	0.1−	1998 09 27	704	1.4+	1.6+
1998 08 31	691	0.6−	0.1−	1998 09 18	704	0.8+	0.6−	1998 09 27	704	0.9−	0.0
1998 08 31	691	0.6−	0.2−	1998 09 18	704	0.3−	0.7−	1998 09 27	704	0.6+	0.3−
1998 08 31	691	0.5−	0.1+	1998 09 25	699	0.4+	0.2+	1998 09 27	704	1.0−	1.1−
1998 09 14	704	0.5+	0.8−	1998 09 25	699	0.3−	0.9+				

1998 QQ₅₇ = 1996 AS₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	54.28820		(2000.0)	P		Q	
<i>n</i>	0.23232185	ω	127.20139	+0.76532843		+0.64361878	
<i>a</i>	2.6206520	Ω	192.73921	−0.59777612		+0.70776287	
<i>e</i>	0.1756483	<i>i</i>	1.35669	−0.23861287		+0.29125004	
<i>P</i>	4.24	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 13	691	0.3+	0.4+	1998 08 30	691	0.2+	0.1+	1998 09 23	691	0.4+	0.0
1996 01 13	691	0.2−	0.1−	1998 08 30	691	0.3+	0.2−	1998 09 23	691	0.6+	0.0
1996 01 13	691	0.3−	0.1−	1998 08 30	691	0.2−	0.1+	1998 09 23	691	0.9+	0.0
1996 01 19	691	0.1−	0.2−	1998 08 31	691	0.3−	0.1−	1998 09 28	691	0.8−	0.0
1996 01 19	691	0.4+	0.1+	1998 08 31	691	0.4−	0.2−	1998 09 28	691	0.3−	0.0
1996 01 19	691	0.1−	0.2−	1998 08 31	691	0.0	0.0	1998 09 28	691	0.4−	0.1+

1998 QB₆₉ = 1967 EM = 1969 OA₁ = 1988 XS₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	171.42797		(2000.0)	P		Q	
<i>n</i>	0.17137600	ω	248.42383	−0.96563566		+0.15242644	
<i>a</i>	3.2099829	Ω	299.79159	−0.02871719		−0.86757818	
<i>e</i>	0.0228115	<i>i</i>	14.03809	−0.25830814		−0.47336486	
<i>P</i>	5.75	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1967 03 09	095	(3.3−	4.5−)	1998 08 24	704	0.4−	0.3+	1998 08 27	704	0.3−	0.4−
1967 03 11	095	0.2+	0.2+	1998 08 24	704	0.5−	0.4−	1998 09 01	327	0.1+	0.2−
1969 07 17	095	0.9+	1.6−	1998 08 24	704	1.5+	0.5−	1998 09 01	327	0.1−	0.0
1988 12 10	897	1.1−	0.6−	1998 08 24	704	1.3−	1.1+	1998 09 01	327	0.1−	0.0
1988 12 10	897	0.1+	1.1−	1998 08 27	704	0.0	0.0	1998 09 01	327	0.0	0.1+
1988 12 17	897	0.7−	0.9+	1998 08 27	704	0.1+	0.4+	1998 09 01	327	0.0	0.1−
1988 12 17	897	1.5+	0.0	1998 08 27	704	0.0	0.8+	1998 09 01	327	0.2−	0.1−
1998 08 24	704	0.6+	0.0	1998 08 27	704	0.3−	0.7+				

1998 NOV. 10

M.P.C. 32979

1998 QP₆₉ = 1990 VN₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	11.18672		(2000.0)	P	Q
n	0.23608883	ω	125.70465	+0.96093635	-0.16663845
a	2.5927009	Ω	244.81814	+0.09827768	+0.95184265
e	0.1457816	i	14.13392	+0.25873314	+0.25734646
P	4.17	H	14.4	G 0.15	U 4

Residuals in seconds of arc

1990 11 11	675	0.2+	1.1+	1998 08 27	704	0.4+	0.1+	1998 09 23	704	0.4-	0.0
1990 11 11	675	0.4-	0.3+	1998 08 27	704	0.2-	0.2+	1998 09 23	704	0.0	0.2-
1990 11 13	675	0.5+	1.2-	1998 08 27	704	0.5-	0.5-	1998 09 23	704	0.3-	1.0+
1990 11 13	675	0.3-	0.7+	1998 08 27	704	0.8+	0.4-	1998 09 23	704	0.4+	1.2-
1998 08 24	704	1.0+	0.6+	1998 08 27	704	0.3-	1.7+	1998 10 18	699	0.4-	1.2-
1998 08 24	704	0.3-	0.4-	1998 09 19	704	0.2-	0.5-	1998 10 18	699	0.1+	1.3-
1998 08 24	704	0.1-	0.8+	1998 09 19	704	0.9-	0.5-	1998 10 18	699	0.2+	0.5-
1998 08 24	704	0.1+	0.5+	1998 09 19	704	0.1-	0.4-				
1998 08 24	704	0.1-	1.3+	1998 09 19	704	1.1+	0.2+				

1998 QZ₆₉ = 1997 MQ₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	5.31452		(2000.0)	P	Q
n	0.19254005	ω	152.30090	+0.99443992	-0.06857701
a	2.9702203	Ω	211.94011	+0.04407215	+0.96026113
e	0.0896024	i	8.68830	+0.09563934	+0.27054714
P	5.12	H	14.0	G 0.15	U 4

Residuals in seconds of arc

1997 06 29	691	0.1-	0.5+	1998 08 24	704	1.9-	0.2+	1998 09 19	704	1.3-	0.3-
1997 06 29	691	0.1-	0.1+	1998 08 24	704	0.1+	0.1-	1998 09 19	704	1.0+	0.4-
1997 06 29	691	0.1-	0.0	1998 08 24	704	0.1+	0.4-	1998 09 19	704	3.1-	2.6-
1997 07 06	691	0.0	0.2-	1998 08 27	704	0.9+	0.2-	1998 09 23	704	0.1+	1.2+
1997 07 06	691	0.2+	0.2-	1998 08 27	704	1.0+	0.4+	1998 09 23	704	0.3+	2.0+
1997 07 06	691	0.1+	0.3-	1998 08 27	704	0.2+	0.2+	1998 09 23	704	1.3+	1.7-
1998 08 24	704	0.6-	0.5-	1998 08 27	704	0.5+	1.2+	1998 09 23	704	0.3+	1.0+
1998 08 24	704	0.4+	0.0	1998 09 19	704	0.7+	0.3-	1998 09 23	704	0.0	0.4+

1998 QC₇₀ = 1978 WN₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	315.57150		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.18832880	ω	179.71570	+0.49972829	-0.85291430
a	3.0143352	Ω	240.29794	+0.79436307	+0.52078851
e	0.0806241	i	10.01291	+0.34533888	+0.03628390
P	5.23	H	14.0	G 0.15	U 5

Residuals in seconds of arc

1978 11 29	675	1.6-	1.3-	1998 08 27	704	0.3-	0.0	1998 09 19	704	1.1+	0.5-
1978 11 30	675	1.6+	1.3+	1998 08 27	704	0.5-	0.1+	1998 09 19	704	(5.4-	1.7-)
1998 08 24	704	0.9+	0.5+	1998 08 27	704	0.1-	0.1+	1998 09 23	704	1.0-	0.7-
1998 08 24	704	0.3-	0.3-	1998 08 27	704	1.1-	0.3+	1998 09 23	704	0.7+	0.8-
1998 08 24	704	0.8+	0.3-	1998 09 19	704	0.0	1.0+	1998 09 23	704	0.1-	0.7+
1998 08 24	704	0.5+	1.8-	1998 09 19	704	0.9+	0.5+	1998 09 23	704	0.7-	0.7-
1998 08 24	704	0.2-	1.1+	1998 09 19	704	0.6-	0.7+				

1998 QF₇₀ = 1987 SK₂₄ = 1996 FJ₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	282.33955		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.17220586	ω	239.50442	-0.02483100	-0.98887889
a	3.1996620	Ω	212.91427	+0.98453681	+0.00125354
e	0.0966997	i	15.65571	+0.17340905	-0.14871772
P	5.72	H	12.8	G 0.15	U 3

Residuals in seconds of arc

1987 09 23	095	0.2+	1.0-	1998 08 24	704	1.4-	0.2+	1998 09 19	704	0.0	0.7-
1996 03 22	809	0.6+	1.1-	1998 08 27	704	0.1-	0.4+	1998 09 19	704	0.4+	0.6-
1996 03 22	809	0.2+	0.9-	1998 08 27	704	0.3-	0.5-	1998 09 19	704	0.8+	1.5-
1996 03 22	809	1.0-	0.6-	1998 08 27	704	0.6-	1.0+	1998 09 19	704	0.4+	1.0-
1996 03 26	809	0.2-	1.0+	1998 08 27	704	0.2-	1.3+	1998 09 23	704	0.0	0.3+
1996 03 26	809	0.9+	0.2-	1998 08 27	704	0.1+	0.6+	1998 09 23	704	0.6-	0.5-
1996 03 26	809	0.5-	0.5+	1998 09 18	699	0.0	0.3+	1998 09 23	704	0.4-	0.5-
1998 08 24	704	1.0+	0.4+	1998 09 18	699	0.8+	0.3+	1998 09 23	704	0.4-	0.1-
1998 08 24	704	0.3-	0.6+	1998 09 18	699	0.0	0.8+				
1998 08 24	704	0.1+	0.5+	1998 09 19	704	0.8+	1.2-				

1998 QP₇₀ = 1997 HO₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	19.47493		(2000.0)	P	Q
n	0.22307503	ω	139.55916	+0.99080603	+0.02906405
a	2.6925808	Ω	219.38212	-0.06060023	+0.96853748
e	0.1883472	i	12.01972	+0.12095878	+0.24716478
P	4.42	H	14.9	G 0.15	U 4

Residuals in seconds of arc

1997 04 30	704	0.0	0.7+	1997 05 05	704	0.2-	0.7-	1998 08 27	704	0.6+	0.4-
1997 04 30	704	0.2-	0.3+	1997 05 05	704	0.9+	1.6-	1998 09 19	704	0.7-	0.8-
1997 04 30	704	1.2-	1.8+	1997 05 05	704	0.3-	1.9-	1998 09 19	704	0.6+	0.6+
1997 04 30	704	0.1-	0.1+	1998 08 24	704	0.9-	0.4-	1998 09 19	704	1.4-	0.1+
1997 04 30	704	0.4-	1.0+	1998 08 24	704	0.5+	0.5-	1998 09 19	704	1.2-	0.5+
1997 05 01	704	0.7+	0.2+	1998 08 24	704	0.6-	0.6+	1998 09 19	704	0.2+	1.0+
1997 05 01	704	0.7+	0.5-	1998 08 24	704	0.4-	0.6+	1998 09 23	704	0.4+	0.3-
1997 05 01	704	0.1+	0.4+	1998 08 24	704	0.1-	0.0	1998 09 23	704	0.3+	0.3+
1997 05 01	704	0.1-	0.6+	1998 08 27	704	0.1+	0.8-	1998 09 23	704	0.6+	0.2+
1997 05 01	704	0.6+	0.4+	1998 08 27	704	0.6+	0.9-	1998 10 10	699	0.7+	0.2+
1997 05 05	704	0.1+	0.3-	1998 08 27	704	0.6+	0.1-	1998 10 10	699	0.5-	0.3+
1997 05 05	704	0.7-	0.2-	1998 08 27	704	0.7+	0.6+	1998 10 10	699	0.1-	0.7-

1998 QS₇₀ = 1978 WE₁₅ = 1992 AX₃ = 1997 NV₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	237.37005		(2000.0)	P	Q
n	0.23686225	ω	266.50203	-0.76269569	-0.62286347
a	2.5870540	Ω	234.88857	+0.64497414	-0.71250787
e	0.1020695	i	12.29334	+0.04799632	-0.32306910
P	4.16	H	14.0	G 0.15	U 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-

1998 QU₇₀ = 1997 LC₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	324.07036		(2000.0)	P	Q
n	0.23630162	ω	195.99448	+0.40006797	-0.90606464
a	2.5911442	Ω	230.63621	+0.85918803	+0.42312631
e	0.1412413	i	10.26799	+0.31896951	-0.00331575
P	4.17	H	15.0	G 0.15	U 5

M.P.C. 32980

1998 NOV. 10

Residuals in seconds of arc

1997 06 05	684	0.8−	0.6+	1998 08 24	704	1.0−	0.0	1998 09 19	704	0.3−	0.8+
1997 06 05	684	0.2+	0.4+	1998 08 27	704	0.5+	1.7−	1998 09 19	704	0.7−	1.9+
1997 06 07	684	1.2+	0.1−	1998 08 27	704	0.5−	0.3−	1998 09 19	704	0.0	0.9−
1997 06 07	684	0.6−	0.6−	1998 08 27	704	0.1+	0.1−	1998 09 19	704	1.8−	0.6+
1997 06 07	684	0.0	0.1−	1998 08 27	704	0.1−	1.7+	1998 09 23	704	1.1+	1.6+
1998 08 24	704	0.8+	0.4−	1998 09 18	699	0.2−	0.6+	1998 09 23	704	0.7+	0.0
1998 08 24	704	0.4−	0.7+	1998 09 18	699	0.4+	0.7−	1998 09 23	704	0.3+	0.7−
1998 08 24	704	0.8+	1.1−	1998 09 18	699	0.8−	0.1−	1998 09 23	704	0.5+	1.8−
1998 08 24	704	0.4+	0.3+	1998 09 19	704	0.2+	0.5−				

1998 QC₇₁ = 1974 SX₃ = 1979 UW

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	23.96810		(2000.0)	P	Q
<i>n</i>	0.20471020	ω	112.34368	+0.97784218	+0.18050383
<i>a</i>	2.8513010	Ω	237.40553	−0.20594117	−0.92037516
<i>e</i>	0.2845425	<i>i</i>	7.23012	+0.03758866	+0.34688317
<i>P</i>	4.81	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1974 09 22	095	1.0−	3.0+	1998 08 27	704	0.5+	0.0	1998 09 23	704	0.0	0.8−
1979 10 19	046	0.7+	2.1+	1998 08 27	704	0.0	0.1+	1998 09 23	704	0.6+	1.3−
1979 10 19	046	0.5−	1.0+	1998 08 27	704	0.3+	0.3+	1998 09 23	704	0.0	1.0−
1979 10 20	046	1.7+	3.7−	1998 08 27	704	0.5−	0.3+	1998 09 23	704	0.5−	0.7−
1979 10 20	046	1.7−	0.2−	1998 08 27	704	0.3+	0.3−	1998 09 23	704	0.1+	1.0−
1998 08 24	704	0.0	0.2+	1998 09 19	704	0.7+	0.1+	1998 10 10	699	0.0	0.8+
1998 08 24	704	0.4−	1.3+	1998 09 19	704	0.6+	0.1+	1998 10 10	699	0.6−	0.6+
1998 08 24	704	0.0	0.2+	1998 09 19	704	0.9+	0.5−	1998 10 10	699	0.6−	0.7+
1998 08 24	704	0.8−	0.3+	1998 09 19	704	1.2+	1.1−				
1998 08 24	704	1.4−	0.1−	1998 09 19	704	0.5+	0.4−				

1998 QF₇₁ = 1997 JP₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	61.53273		(2000.0)	P	Q
<i>n</i>	0.19272274	ω	84.99785	+0.46139300	+0.88296654
<i>a</i>	2.9683429	Ω	212.92599	−0.86395658	+0.42498971
<i>e</i>	0.1126565	<i>i</i>	9.15951	−0.20173134	+0.19938364
<i>P</i>	5.11	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 05 03	809	0.1−	1.4+	1998 08 24	704	0.2−	1.5−	1998 09 18	699	0.6+	0.8+
1997 05 03	809	1.5+	1.0+	1998 08 24	704	0.8+	0.4−	1998 09 19	704	0.6+	0.8−
1997 05 03	809	1.6+	0.7−	1998 08 24	704	1.7−	0.7+	1998 09 19	704	0.2+	0.2+
1997 05 04	809	0.6+	0.6+	1998 08 24	704	0.2−	1.7+	1998 09 19	704	0.3−	0.2−
1997 05 04	809	0.8+	0.6+	1998 08 24	704	0.2+	1.6−	1998 09 19	704	0.5+	1.0−
1997 05 04	809	0.8+	1.4+	1998 08 27	704	0.5+	0.8−	1998 09 23	704	0.4+	0.9−
1997 05 07	704	1.2−	0.5−	1998 08 27	704	0.5−	0.6−	1998 09 23	704	1.1−	0.6+
1997 05 07	704	1.2−	0.5−	1998 08 27	704	1.1+	0.9+	1998 09 23	704	1.2+	0.1−
1997 05 07	704	0.7−	0.5−	1998 08 27	704	(2.4−	0.8+)	1998 09 23	704	1.6−	0.7+
1997 05 07	704	1.0−	1.8−	1998 09 18	699	0.5+	1.1+				
1997 05 07	704	1.0−	0.7−	1998 09 18	699	0.9−	1.2+				

1998 QT₇₂ = 3101 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	56.64890		(2000.0)	P	Q
<i>n</i>	0.28453606	ω	35.89189	+0.76583654	+0.63441481
<i>a</i>	2.2893446	Ω	284.38832	−0.61235273	+0.66970914
<i>e</i>	0.1385357	<i>i</i>	6.21948	−0.19626139	+0.38601492
<i>P</i>	3.46	<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+	0.7+	1998 08 27	704	0.2+	0.8+	1998 09 19	704	1.0+	0.6−
1960 09 26	675	0.5+	0.2+	1998 08 27	704	0.2+	0.7+	1998 09 23	704	0.7+	0.4−
1960 09 29	675	0.6−	1.7−	1998 08 27	704	0.5−	0.3−	1998 09 23	704	1.0+	0.7+
1998 08 24	704	0.2+	0.1+	1998 09 18	699	0.3+	0.3−	1998 09 23	704	0.4−	0.4−

1998 08 24	704	0.4+	0.2−	1998 09 18	699	0.3+	0.0	1998 09 23	704	0.6−	1.5+
1998 08 24	704	0.5−	0.5−	1998 09 18	699	0.3−	0.1−	1998 10 11	699	0.0	1.8+
1998 08 24	704	1.4−	0.8−	1998 09 19	704	0.1−	0.6−	1998 10 11	699	0.3−	1.0+
1998 08 24	704	0.8−	0.2+	1998 09 19	704	1.0+	0.4−	1998 10 11	699	1.3−	0.1−
1998 08 27	704	1.0+	0.7+	1998 09 19	704	0.0	0.0				
1998 08 27	704	0.3+	0.3−	1998 09 19	704	1.0−	1.3−				

1998 QX₇₂ = 1997 LF₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	26.31015		(2000.0)	P	Q
<i>n</i>	0.18230042	ω	156.59872	+0.94326781	+0.33145390
<i>a</i>	3.0804271	Ω	184.19330	−0.33089810	+0.93352851
<i>e</i>	0.0794942	<i>i</i>	15.54797	−0.02742794	+0.13661197
<i>P</i>	5.41	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 06 03	691	0.5−	0.1−	1998 08 24	704	0.1+	1.2−	1998 09 14	704	0.6−	0.5+
1997 06 03	691	0.0	0.2−	1998 08 27	704	1.6+	1.7+	1998 09 18	699	0.5−	1.1−
1997 06 09	691	0.2+	0.5+	1998 08 27	704	1.5−	1.1−	1998 09 18	699	1.2+	0.5+
1997 06 09	691	0.3+	0.0	1998 08 27	704	0.1−	0.6−	1998 09 18	704	0.4+	0.1−
1997 06 09	691	0.1+	0.1−	1998 08 27	704	0.3+	1.8+	1998 09 18	699	0.4+	0.1−
1998 08 24	704	1.0+	1.9−	1998 09 14	704	0.6−	1.2+	1998 09 18	704	1.1+	1.6−
1998 08 24	704	0.9+	0.6+	1998 09 14	704	0.5−	0.6+	1998 09 18	704	1.2−	0.1+
1998 08 24	704	0.2+	0.7+	1998 09 14	704	0.0	0.5+	1998 09 18	704	0.6+	0.1+
1998 08 24	704	1.9−	0.2−	1998 09 14	704	0.7−	0.3−				

1998 QB₇₃ = 1997 LF₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	17.68588		(2000.0)	P	Q
<i>n</i>	0.19016018	ω	138.97818	+0.99354236	+0.05692266
<i>a</i>	2.9949506	Ω	218.09873	−0.08228352	+0.95709068
<i>e</i>	0.1922447	<i>i</i>	9.15298	+0.07812166	+0.28414298
<i>P</i>	5.18	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 06 07	809	0.5+	0.1+	1998 08 24	704	0.8+	1.1−	1998 09 19	704	0.5−	0.3+
1997 06 07	809	0.5−	0.3+	1998 08 27	704	0.1−	0.2−	1998 09 19	704	0.1−	0.4+
1997 06 07	809	0.5−	0.5−	1998 08 27	704	0.2+	0.1−	1998 09 23	704	0.1−	0.3−
1997 06 08	809	0.1−	0.1−	1998 08 27	704	0.3−	0.2+	1998 09 23	704	1.9+	0.1−
1997 06 08	809	0.2−	0.3+	1998 08 27	704	0.6−	0.6+	1998 09 23	704	0.3−	0.9−
1997 06 08	809	0.9+	0.0	1998 08 27	704	0.7−	0.3+	1998 09 23	704	0.1−	0.3+
1998 08 24	704	0.2−	0.4−	1998 09 19	704	0.7−	0.4+	1998 09 23	704	0.6+	0.3−
1998 08 24	704	0.4+	0.2+	1998 09 19	704	0.4−	0.2+				
1998 08 24	704	0.9+	0.2+	1998 09 19	704	0.5−	0.0				

1998 QE₇₃ = 1962 UD = 1993 SG₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	60.34050		(2000.0)	P	Q
<i>n</i>	0.18890579	ω	10.91553	+0.58130194	+0.80192255
<i>a</i>	3.0081942	Ω	294.76713	−0.75751479	+0.47148291
<i>e</i>	0.0632658	<i>i</i>	8.73338	−0.29708484	+0.36691156
<i>P</i>	5.22	<i>H</i>	12.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1962 10 31	760	0.1−	0.2+	1998 08 27	704	0.5+	0.5+	1998 09 19	704	0.0	0.4+
1962 10 31	760	0.1+	0.2−	1998 08 27	704	(0.4+	2.5+)	1998 09 19	704	0.6+	0.1−
1993 09 18	675	0.3−	0.4+	1998 08 27	704	2.0−	0.6+	1998 09 19	704	1.3−	1.1−
1993 09 22	675	0.4+	0.5−	1998 08 27	704	0.8+	0.0	1998 09 19	704	0.5−	0.4+
1993 09 22	675	0.1+	0.2−	1998 08 30	699	0.4+	0.1−	1998 09 23	704	0.0	0.3+
1998 08 24	704	0.6+	0.3+	1998 08 30	699	0.1−	0.1−	1998 09 23	704	0.1+	0.8+
1998 08 24	704	0.5−	0.3−	1998 08 30	699	0.2+	0.2−	1998 09 23	704	0.2+	0.6+
1998 08 24	704	0.0	0.0	1998 09 18	699	0.1−	0.3−	1998 09 23	704	0.0	0.3+
1998 08 24	704	0.1+	1.1−	1998 09 18	699	0.3−	0.1−	1998 09 23	704	1.1+	0.2−
1998 08 24	704	0.1+	0.2+	1998 09 18	699	0.2−	0.2−				
1998 08 27	704	0.4+	0.7−	1998 09 19	704	0.1−	0.5+				

1998 NOV. 10

M.P.C. 32981

1998 QG₇₃ = 1978 WM₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	273.20149		(2000.0)	P		Q		Williams		
<i>n</i>	0.18785285	ω	216.04344	-0.22063320		-0.96607930				
<i>a</i>	3.0194246	Ω	247.04290	+0.92551996		-0.16394690				
<i>e</i>	0.0473527	<i>i</i>	8.38083	+0.30778855		-0.19952996				
<i>P</i>	5.25	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc										
1978 11 29	675	0.4-	0.5-	1998 08 27	704	0.9-	0.4+	1998 09 19	704	0.9-
1978 11 30	675	0.4+	0.4+	1998 08 27	704	0.3+	0.3-	1998 09 19	704	1.5-
1998 08 24	704	0.2+	0.2+	1998 08 30	699	0.3+	0.0	1998 09 19	704	0.7-
1998 08 24	704	0.8+	0.2-	1998 08 30	699	0.1+	0.1-	1998 09 23	704	0.3+
1998 08 24	704	0.0	0.6+	1998 08 30	699	0.2-	0.1-	1998 09 23	704	1.5+
1998 08 24	704	0.4-	0.4-	1998 09 16	699	0.1-	0.5+	1998 09 23	704	0.8+
1998 08 24	704	0.4+	0.1+	1998 09 16	699	1.3+	0.8-	1998 09 23	704	0.5-
1998 08 27	704	0.1-	0.0	1998 09 16	699	0.7+	0.6-	1998 09 23	704	0.4+
1998 08 27	704	0.6+	0.1-	1998 09 19	704	0.6-	0.2-			
1998 08 27	704	0.3-	0.1-	1998 09 19	704	1.1-	0.1-			

1998 QN₇₃ = 1954 SR = 1980 NP

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	48.08885		(2000.0)	P		Q		Williams		
<i>n</i>	0.22341618	ω	49.88190	+0.74776303		+0.63778316				
<i>a</i>	2.6898391	Ω	269.66243	-0.65140476		+0.65085906				
<i>e</i>	0.2048389	<i>i</i>	10.63894	-0.12853906		+0.41184357				
<i>P</i>	4.41	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc										
1954 09 24	760	1.6-	0.4+	1998 08 24	704	0.4+	0.8-	1998 09 19	704	0.8+
1954 09 24	760	1.1+	0.7+	1998 08 24	704	(0.9-	2.6-)	1998 09 19	704	0.3+
1980 07 11	805	0.1-	0.7-	1998 08 24	704	1.0-	1.2-	1998 09 21	699	0.8+
1980 07 12	805	1.0+	1.7+	1998 08 27	704	0.7-	0.1+	1998 09 21	699	0.3-
1980 07 12	805	0.1+	1.4+	1998 08 27	704	0.5+	1.0+	1998 09 21	699	0.4+
1980 07 12	805	(0.9+	3.2+)	1998 08 27	704	0.5+	1.5+	1998 09 23	704	0.0
1980 07 12	805	0.6-	0.9-	1998 08 27	704	0.6+	1.1+	1998 09 23	704	0.4-
1980 07 13	805	0.1+	0.7-	1998 08 27	704	0.3-	0.9+	1998 09 23	704	0.3+
1980 07 13	805	0.4-	0.8-	1998 09 19	704	0.4-	0.3+	1998 09 23	704	0.6-
1998 08 24	704	0.1-	0.5-	1998 09 19	704	0.3+	0.1-	1998 09 23	704	0.6-
1998 08 24	704	0.1-	0.4-	1998 09 19	704	0.2+	1.0-			

1998 QO₇₃ = 1997 LU

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	62.90760		(2000.0)	P		Q		Williams		
<i>n</i>	0.23548052	ω	92.97774	+0.45701723		+0.88314191				
<i>a</i>	2.5971641	Ω	205.08354	-0.88251096		+0.43538923				
<i>e</i>	0.2177622	<i>i</i>	14.45302	-0.11094890		+0.17463271				
<i>P</i>	4.19	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc										
1997 06 05	568	0.4-	0.5-	1998 08 27	704	0.3+	0.1+	1998 09 23	704	0.1-
1997 06 05	568	0.4-	0.6-	1998 08 27	704	0.0	0.6+	1998 09 23	704	0.4-
1997 06 05	568	0.2-	1.2-	1998 08 27	704	0.2+	0.9+	1998 09 23	704	0.1-
1997 06 05	568	0.5-	0.9-	1998 08 27	704	0.1+	1.2+	1998 09 23	704	0.0
1997 06 06	568	0.5+	1.8+	1998 09 19	704	0.0	0.2-	1998 09 23	704	0.1-
1997 06 06	568	1.1+	1.6+	1998 09 19	704	0.1-	0.1-	1998 09 23	704	0.1+
1998 08 24	704	0.3-	0.1-	1998 09 19	704	0.2-	0.5-	1998 09 23	704	0.6+
1998 08 24	704	0.0	0.4-	1998 09 19	704	0.1+	0.6-	1998 09 23	704	0.4-
1998 08 24	704	0.2+	0.0	1998 09 19	704	0.2+	0.5+	1998 10 11	699	0.0
1998 08 24	704	0.4-	1.1-	1998 09 21	699	0.6-	0.3+	1998 10 11	699	0.7+
1998 08 24	704	0.3+	1.0-	1998 09 21	699	0.1-	0.5+	1998 10 11	699	0.2+
1998 08 27	704	0.3+	0.3+	1998 09 21	699	0.3-	0.3+			

1998 QV₇₃ = 1990 WA₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	281.85985		(2000.0)	P		Q		Williams		
<i>n</i>	0.22826271	ω	214.39727	-0.40456908		-0.88176680				
<i>a</i>	2.6516288	Ω	260.54296	+0.88455797		-0.31000087				
<i>e</i>	0.1798366	<i>i</i>	14.23216	+0.23212295		-0.35550917				
<i>P</i>	4.32	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc										
1990 11 17	399	1.7+	1.1+	1998 08 24	704	0.1+	0.9-	1998 09 19	704	0.4-
1990 11 17	399	1.2-	1.5-	1998 08 24	704	0.7+	0.5+	1998 09 19	704	(4.8-
1990 11 17	399	1.5-	1.7-	1998 08 27	704	0.2+	0.5-	1998 09 23	704	0.5-
1990 11 19	399	1.6+	0.9+	1998 08 27	704	1.5-	1.3+	1998 09 23	704	0.9+
1990 11 19	399	0.6-	1.3+	1998 08 27	704	1.7+	0.6+	1998 09 23	704	0.0
1998 08 24	704	1.3+	0.3-	1998 09 19	704	0.2+	0.4+	1998 09 23	704	0.6+
1998 08 24	704	0.3+	0.4+	1998 09 19	704	0.4-	0.4-			
1998 08 24	704	1.7-	0.1+	1998 09 19	704	1.4-	1.2-			

1998 QW₇₃ = 2200 T-3 = 1994 UF₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	41.23162		(2000.0)	P		Q		Williams		
<i>n</i>	0.23335130	ω	114.03038	+0.84464129		+0.51997841				
<i>a</i>	2.6129388	Ω	215.02842	-0.53521393		+0.81522509				
<i>e</i>	0.2887281	<i>i</i>	12.81311	-0.01127567		+0.25501079				
<i>P</i>	4.22	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc										
1977 10 11	675	0.5-	0.7+	1994 11 01	691	0.1-	0.3-	1998 09 21	699	0.3-
1977 10 11	675	0.9-	0.5+	1998 08 24	704	0.4-	0.1-	1998 09 23	704	0.6+
1977 10 12	675	1.2-	0.8+	1998 08 24	704	1.0-	0.6-	1998 09 23	704	0.2+
1977 10 12	675	1.7-	0.1-	1998 08 24	704	0.3-	0.3+	1998 09 23	704	0.3+
1977 10 16	675	(0.7+	2.7-)	1998 08 24	704	0.6+	1.1-	1998 09 23	704	0.9+
1977 10 16	675	0.4+	1.9-	1998 08 24	704	0.0	0.5-	1998 09 23	704	0.2+
1977 10 17	675	1.1+	0.8-	1998 08 27	704	0.1+	0.1-	1998 10 12	704	1.5-
1977 10 17	675	0.9-	0.1-	1998 08 27	704	0.7+	0.3-	1998 10 12	704	0.2-
1977 10 21	675	1.6+	0.5-	1998 08 27	704	0.1+	0.3-	1998 10 12	704	(3.0-
1977 10 21	675	1.7+	0.3+	1998 08 27	704	0.7-	0.3+	1998 10 16	699	0.1-
1977 10 22	675	0.3+	1.5+	1998 09 19	704	0.0	0.4+	1998 10 16	699	0.3+
1977 10 22	675	0.2-	2.1+	1998 09 19	704	0.1-	0.2-	1998 10 16	699	0.0
1994 10 27	691	0.2+	0.6-	1998 09 19	704	0.4-	0.3+	1998 10 18	699	0.3+
1994 10 27	691	0.0	0.5-	1998 09 19	704	0.5-	0.1+	1998 10 18	699	0.7+
1994 10 27	691	0.1+	0.5-	1998 09 19	704	0.8-	0.9+	1998 10 18	699	0.0
1994 11 01	691	0.1-	0.2+	1998 09 21	699	0.9-	0.7+			
1994 11 01	691	0.1-	0.4-	1998 09 21	699	0.1-	0.3+			

1998 QB₇₄ = 1962 SN = 1992 MK = 1997 LJ₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	39.73322		(2000.0)	P			Q				
n	0.18974635	ω	104.53175		+0.84744765		+0.51759319				
a	2.9993036	Ω	224.46542		-0.52839296		+0.80088031				
e	0.1092136	i	9.70010		-0.05131625		+0.30114451				
P	5.19	H	12.8	G	0.15	U	2				
Residuals in seconds of arc											
1962 09 30	760	0.4+	1.6-	1998 08 24	704	0.2+	0.3+	1998 09 19	704	0.8-	0.2+
1962 09 30	760	0.1-	0.5+	1998 08 24	704	0.2-	0.1-	1998 09 21	699	0.1-	0.1+
1992 06 28	675	1.3-	0.9+	1998 08 24	704	0.3+	0.9+	1998 09 21	699	0.2-	0.2+
1992 06 28	675	0.1-	1.0+	1998 08 24	704	0.4+	0.2+	1998 09 21	699	0.1-	0.1+
1992 06 29	675	0.4+	0.8+	1998 08 24	704	1.5-	0.3+	1998 09 23	704	0.5+	0.1+
1992 06 29	675	0.5+	0.7+	1998 08 27	704	0.8+	0.7-	1998 09 23	704	0.1-	0.2-
1992 06 30	675	0.1-	0.3+	1998 08 27	704	0.2-	0.6-	1998 09 23	704	0.3+	0.4-
1992 06 30	675	0.3+	0.9+	1998 08 27	704	0.1+	0.2-	1998 09 23	704	0.4+	0.1-
1997 06 08	809	0.3+	1.0-	1998 08 27	704	0.2-	1.0-	1998 09 23	704	1.0+	0.2+
1997 06 08	809	0.2-	1.0-	1998 08 27	704	(0.5-	2.2-)	1998 10 11	699	0.0	0.7+
1997 06 08	809	0.2+	0.3-	1998 09 19	704	0.4-	0.4-	1998 10 11	699	0.2+	0.3+

M.P.C. 32982

1997 06 09	809	0.3−	0.9−	1998 09 19	704	0.9−	0.2−	1998 10 11	699	0.5+	0.7+
1997 06 09	809	0.4+	1.1−	1998 09 19	704	0.3+	0.1−				
1997 06 09	809	0.5−	1.1−	1998 09 19	704	0.2−	0.8−				

1998 QG₇₄ = 1993 VC₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	352.10377		(2000.0)	P		Q	
<i>n</i>	0.17906274	ω	175.60768	+0.82158034	−0.56171464		
<i>a</i>	3.1174480	Ω	219.09075	+0.51823266	+0.80704837		
<i>e</i>	0.2000969	<i>i</i>	8.88390	+0.23757240	+0.18207029		
<i>P</i>	5.50	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 11 11	399	0.9−	0.1−	1998 08 27	704	1.0−	0.1+	1998 09 19	704	0.6−	0.5−
1993 11 11	399	1.8−	0.2−	1998 08 27	704	0.1+	0.2−	1998 09 19	704	0.1−	0.5−
1993 11 16	399	1.4+	0.9+	1998 08 27	704	0.0	0.6−	1998 09 19	704	0.3+	0.1+
1993 11 16	399	1.3+	0.1−	1998 08 30	699	0.0	1.0+	1998 09 23	704	0.1+	0.3+
1998 08 24	704	0.2−	1.3+	1998 08 30	699	0.2−	0.3+	1998 09 23	704	0.4−	0.5−
1998 08 24	704	0.7+	1.2+	1998 08 30	699	0.4−	1.0+	1998 09 23	704	1.0+	0.2−
1998 08 24	704	0.4+	0.2+	1998 09 16	699	0.5+	0.7−	1998 09 23	704	1.6+	0.6−
1998 08 24	704	0.3+	0.7−	1998 09 16	699	0.2+	0.1−	1998 09 23	704	1.0+	0.7−
1998 08 24	704	0.6−	0.2+	1998 09 16	699	0.4−	0.7+	1998 10 25	867	0.4−	0.1−
1998 08 27	704	0.7−	0.2+	1998 09 19	704	0.0	0.9−	1998 10 25	867	0.5−	0.0
1998 08 27	704	0.3−	0.6+	1998 09 19	704	0.1−	0.9−	1998 10 25	867	0.5−	0.2−

1998 QV₇₄ = 1997 HE₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	133.76020		(2000.0)	P		Q	
<i>n</i>	0.24227725	ω	11.81489	−0.46684383	+0.86312700		
<i>a</i>	2.5483610	Ω	230.67793	−0.83028772	−0.50274319		
<i>e</i>	0.0494477	<i>i</i>	14.41121	−0.30443248	+0.04755071		
<i>P</i>	4.07	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 30	704	0.1+	0.1+	1998 08 24	704	(2.5−	0.8+)	1998 09 19	704	1.4+	1.1−
1997 04 30	704	0.2+	0.1+	1998 08 24	704	0.8−	0.3−	1998 09 19	704	0.2+	0.7+
1997 04 30	704	(3.6−	0.4−)	1998 08 24	704	0.7+	0.2+	1998 09 21	699	0.3−	0.4−
1997 04 30	704	0.3+	0.4−	1998 08 27	704	0.1+	0.2−	1998 09 21	699	0.1+	1.1−
1997 04 30	704	0.2−	0.6−	1998 08 27	704	1.0+	0.1−	1998 09 21	699	0.1+	0.1+
1997 05 01	704	0.1−	0.2+	1998 08 27	704	0.5−	0.7−	1998 09 23	704	1.0+	0.2−
1997 05 01	704	0.2+	0.1+	1998 08 27	704	0.3−	0.0	1998 09 23	704	1.8−	0.2+
1997 05 01	704	0.1+	0.0	1998 08 27	704	0.5+	0.0	1998 09 23	704	0.9−	0.7+
1997 05 01	704	0.6−	0.3+	1998 09 19	704	0.2+	0.7−	1998 09 23	704	(2.8−	0.7+)
1998 08 24	704	1.5−	1.0+	1998 09 19	704	(0.5+	2.5−)				
1998 08 24	704	0.2+	1.7+	1998 09 19	704	0.6+	0.3+				

1998 QN₇₅ = 1968 UN₁ = 1972 RJ₁ = 1979 HU₁ = 1991 AR₄

Id. A. Gnädig, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	355.28076		(2000.0)	P		Q	
<i>n</i>	0.22703684	ω	202.64051	+0.86290004	−0.50256363		
<i>a</i>	2.6611651	Ω	188.16454	+0.50176627	+0.86453739		
<i>e</i>	0.0956791	<i>i</i>	22.01250	+0.06028373	−0.00221500		
<i>P</i>	4.34	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1968 10 23	095	0.0	0.1+	1998 08 24	704	0.3−	0.4+	1998 09 25	704	1.4+	0.4+
1972 09 10	095	(2.4−	3.4−)	1998 08 27	704	0.1+	0.1−	1998 09 25	704	(2.3+	0.3+)
1979 04 20	095	0.1+	2.0−	1998 08 27	704	0.1+	0.2+	1998 10 11	699	0.3−	0.2−
1991 01 10	413	0.6−	0.1+	1998 08 27	704	1.2+	0.5+	1998 10 11	699	0.6−	0.3−
1991 01 10	413	0.3+	0.3−	1998 08 27	704	0.1−	0.9+	1998 10 11	699	0.5−	0.3−
1998 07 01	699	0.1−	0.3+	1998 08 27	704	0.1−	0.5−	1998 10 12	704	0.6−	0.3−
1998 07 01	699	0.3−	0.6−	1998 09 19	704	0.3−	0.6+	1998 10 12	704	0.6−	0.4−
1998 07 01	699	0.5−	0.4−	1998 09 19	704	0.2+	0.3+	1998 10 12	704	1.0−	0.9−
1998 08 24	704	0.4+	0.4+	1998 09 19	704	0.6−	0.7−	1998 10 12	704	0.2−	1.7−

1998 NOV. 10

1998 08 24	704	0.5−	0.8+	1998 09 25	704	0.9+	0.1+	1998 10 12	704	(2.4−	1.7−)
1998 08 24	704	0.4−	0.2+	1998 09 25	704	0.9+	0.4−				
1998 08 24	704	0.3+	0.3−	1998 09 25	704	1.1+	0.1−				

1998 QH₇₇ = 1989 ES₃ = 1997 MP₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	358.68591		(2000.0)	P		Q	
<i>n</i>	0.17032429	ω	92.77574	+0.85026462	−0.48131121		
<i>a</i>	3.2231832	Ω	296.07651	+0.33699856	+0.80871871		
<i>e</i>	0.1078611	<i>i</i>	13.72091	+0.40432912	+0.33810290		
<i>P</i>	5.79	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 03 02	809	1.2−	1.3+	1997 06 29	704	0.1+	0.2+	1998 08 27	704	0.2+	0.3+
1989 03 02	809	1.2−	0.5+	1997 06 29	704	0.1+	0.5+	1998 08 27	704	0.0	0.6+
1989 03 02	809	0.4−	0.8+	1997 06 29	704	0.6−	0.5+	1998 08 27	704	0.6+	0.8+
1989 03 03	809	0.9+	0.4−	1997 07 02	704	0.0	0.3+	1998 08 27	704	0.1+	0.4+
1989 03 03	809	0.7+	0.5−	1997 07 02	704	0.2+	0.9−	1998 09 19	704	0.5−	0.4+
1989 03 03	809	0.4+	0.2+	1997 07 02	704	1.7+	0.6+	1998 09 19	704	0.0	1.0+
1989 03 03	809	0.6+	0.0	1997 07 02	704	0.5−	0.8+	1998 09 19	704	0.1−	0.1−
1989 03 03	809	0.6+	0.1+	1997 07 02	704	0.3−	0.3+	1998 09 23	704	0.0	0.4−
1989 03 03	809	0.9+	0.2+	1998 08 24	704	1.5+	0.3+	1998 09 23	704	0.1+	0.0
1997 06 28	704	0.2−	0.1−	1998 08 24	704	0.1+	0.3+	1998 09 23	704	1.8−	0.1+
1997 06 28	704	0.6−	0.2+	1998 08 24	704	0.0	0.1−	1998 10 10	699	0.7−	1.8−
1997 06 28	704	0.1+	0.3−	1998 08 24	704	0.8−	0.1−	1998 10 10	699	0.1+	0.0
1997 06 29	704	0.1−	0.6−	1998 08 24	704	0.2+	0.5−	1998 10 10	699	0.4+	0.2+
1997 06 29	704	0.1−	0.0	1998 08 27	704	0.1+	0.1+				

1998 QK₇₇ = 1989 TH₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	11.72778		(2000.0)	P		Q	
<i>n</i>	0.21603555	ω	191.32886	+0.92474544	−0.36678324		
<i>a</i>	2.7507592	Ω	191.82489	+0.37629036	+0.92113152		
<i>e</i>	0.2331810	<i>i</i>	29.71201	+0.05702134	−0.13033332		
<i>P</i>	4.56	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 10 03	809	1.6−	1.2−	1998 08 24	704	1.3−	0.9+	1998 08 27	704	0.1−	0.2−
1989 10 03	809	2.1−	1.8−	1998 08 24	704	1.8+	1.8−	1998 08 27	704	0.8−	0.6+
1989 10 03	809	0.8−	2.2+	1998 08 24	704	0.7−	1.0+	1998 10 14	704	0.3−	0.4−
1989 10 07	809	0.4−	2.0−	1998 08 24	704	1.4−	1.3−	1998 10 14	704	0.6+	0.7−
1989 10 07	809	0.8+	1.3−	1998 08 24	704	0.4−	1.3−	1998 10 14	704	1.7+	0.5+
1989 10 07	809	0.4+	0.7−	1998 08 27	704	0.7+	0.1+	1998 10 14	704	0.9−	0.9−
1989 10 08	809	2.1+	1.1+	1998 08 27	704	0.7−	1.1+	1998 10 15	704	0.7+	0.8+
1989 10 08	809	1.6+	2.1+	1998 08 27	704	1.1−	0.2−	1998 10 15	704	1.0+	0.7+
1989 10 08	809	0.2−	0.3+	1998 08 27	704	0.1−	1.1+	1998 10 15	704	1.8+	1.6+
1998 08 24	704	1.9+	0.8−	1998 08 27	704	1.8+	0.3−	1998 10 15	704	0.8−	0.7+
1998 08 24	704	0.8−	0.0	1998 08 27	704	1.3−	1.0+	1998 10 15	704	1.6−	0.7−
1998 08 24	704	0.8−	1.3+	1998 08 27	704	0.1−	0.2−				
1998 08 24	704	1.2+	2.4−	1998 08 27	704	0.0	1.0+				

1998 QR₇₇ = 1990 VJ₁₂ = 1990 WX₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	215.53359		(2000.0)	P		Q	
<i>n</i>	0.22508425	ω	316.14056	−0.97727705	−0.17366433		
<i>a</i>	2.6765333	Ω	214.41271	+0.19758671	−0.95394910		
<i>e</i>	0.1086235	<i>i</i>	12.41820	−0.07674021	−0.24458498		
<i>P</i>	4.38	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 11 15	809	1.2+	0.0	1998 08 24	704	0.4+	0.9+	1998 08 27	704	0.6+	0.7+
1990 11 15	809	0.6+	0.4+	1998 08 24	704	1.0−	0.2+	1998 08 27	704	0.1+	0.1+
1990 11 15	809	1.0+	0.5−	1998 08 24	704	0.3+	0.6−	1998 08 27	704	1.1−	2.0−
1990 11 21	809	0.4+	0.2−	1998 08 24	704	0.2+	0.5+	1998 09 18	699	0.8+	0.1−

1998 NOV. 10

M.P.C. 32983

1990 11 21	809	0.3-	0.2+	1998 08 24	704	0.1+	0.6+	1998 09 18	699	0.4+	0.2-
1990 11 21	809	2.9-	0.1+	1998 08 27	704	1.0-	0.6-	1998 09 18	699	0.2+	0.5+

1998 QT₇₇ = 1995 BM₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17382848	ω	16.08502	+0.94398999	+0.28792389		
<i>a</i>	3.1797192	Ω	325.81841	-0.32544935	+0.73177836		
<i>e</i>	0.2766796	<i>i</i>	16.67311	-0.05445751	+0.61773802		
<i>P</i>	5.67	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 01 31	691	0.0	0.3+	1998 08 24	704	(2.4-	1.6+)	1998 09 18	699	0.0	0.1+
1995 01 31	691	0.1-	0.3-	1998 08 24	704	0.8-	1.1-	1998 09 19	704	0.0	0.1+
1995 01 31	691	0.0	0.1-	1998 08 27	704	0.2+	0.3-	1998 09 19	704	0.2-	0.7+
1995 02 05	691	0.1-	0.3+	1998 08 27	704	0.1+	0.3-	1998 09 19	704	0.3+	0.3-
1995 02 05	691	0.1+	0.1-	1998 08 27	704	0.4+	0.1-	1998 09 23	704	0.3-	0.6-
1995 02 05	691	0.1+	0.0	1998 08 27	704	0.6+	0.2-	1998 09 23	704	0.1-	0.7-
1998 08 24	704	0.0	0.8+	1998 08 27	704	0.6-	1.1+	1998 09 23	704	(2.7-	0.5+)
1998 08 24	704	1.2-	0.1+	1998 09 18	699	0.3+	0.6+				
1998 08 24	704	0.5+	0.2-	1998 09 18	699	0.6+	0.4+				

1998 QW₇₇ = 1992 CX

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22505936	ω	286.96894	-0.31377420	+0.94167207		
<i>a</i>	2.6767306	Ω	324.00795	-0.77323822	-0.32777773		
<i>e</i>	0.1622283	<i>i</i>	11.94707	-0.55104301	-0.07625926		
<i>P</i>	4.38	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 06	303	1.3+	0.3-	1998 08 27	704	0.7-	0.6+	1998 09 19	704	0.1+	0.2+
1992 02 07	303	1.3-	0.4+	1998 08 27	704	0.0	0.1+	1998 09 19	704	0.0	0.0
1998 08 24	704	0.5+	0.9-	1998 08 27	704	0.1-	0.4+	1998 09 19	704	0.1-	0.1-
1998 08 24	704	0.0	0.4-	1998 08 27	704	0.2-	1.0+	1998 09 23	704	0.6-	0.1-
1998 08 24	704	0.9+	0.5+	1998 08 27	699	0.4+	0.5+	1998 09 23	704	0.4-	0.2-
1998 08 24	704	0.5-	1.3-	1998 08 27	704	0.1+	0.3+	1998 09 23	704	0.6-	0.2-
1998 08 24	704	0.1-	1.5-	1998 08 27	704	0.7-	0.5+	1998 10 15	699	1.1+	0.7+
1998 08 27	704	0.1-	0.3-	1998 08 27	699	0.5+	0.7+	1998 10 15	699	0.5+	0.4+
1998 08 27	704	0.5-	0.6-	1998 08 27	704	0.7-	0.6-	1998 10 15	699	1.3+	0.3-
1998 08 27	699	0.4+	0.4+	1998 08 27	704	0.5-	0.3+				

1998 QX₇₇ = 1996 FG₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23520890	ω	40.84701	+0.98543606	-0.09865859		
<i>a</i>	2.5991632	Ω	324.09285	+0.00381740	+0.82711352		
<i>e</i>	0.1498268	<i>i</i>	13.65985	+0.17000353	+0.55330796		
<i>P</i>	4.19	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 03 23	608	0.3-	0.6+	1998 08 24	704	0.1-	0.5+	1998 08 27	704	0.4+	0.0
1996 03 23	608	0.5-	0.7+	1998 08 24	704	0.6+	0.2-	1998 09 19	704	0.9-	0.5+
1996 03 24	608	0.5+	0.2+	1998 08 24	704	0.8+	0.2+	1998 09 19	704	0.1+	0.2+
1996 03 24	608	0.4+	0.2+	1998 08 24	704	1.3+	0.1-	1998 09 19	704	0.7-	0.9+
1996 03 25	608	1.8-	1.0-	1998 08 24	704	0.0	0.1-	1998 09 23	704	0.3+	0.6+
1996 03 25	608	0.5+	0.2-	1998 08 24	704	0.9+	1.5-	1998 09 23	704	0.8-	1.1+
1996 03 26	608	0.4+	0.1-	1998 08 24	704	0.4+	0.3-	1998 09 23	704	0.4-	0.8+
1996 03 26	608	0.5+	0.2-	1998 08 27	704	0.4+	0.4-	1998 10 11	758	0.3+	0.7-
1996 03 29	608	0.5+	0.1-	1998 08 27	704	1.0-	0.1+	1998 10 11	758	0.4+	0.5-
1996 03 29	608	0.0	0.1-	1998 08 27	704	0.4-	1.2+	1998 10 11	758	0.3+	0.4-
1998 08 20	699	0.2-	0.7-	1998 08 27	704	0.4+	0.1-	1998 10 12	704	0.1+	1.0-
1998 08 20	699	0.4-	0.6-	1998 08 27	704	0.7-	0.2+	1998 10 12	704	(2.3+	0.5+)
1998 08 20	699	0.7-	0.4-	1998 08 27	704	0.0	0.6+	1998 10 12	704	0.1+	0.3-
1998 08 24	704	0.4+	0.1+	1998 08 27	704	0.2-	0.2-	1998 10 12	704	0.2+	1.0-

1998 08 24	704	0.4+	0.2+	1998 08 27	704	0.5-	0.1-	1998 10 12	704	0.4-	0.6+
1998 08 24	704	0.1+	0.6+	1998 08 27	704	0.0	0.3-				

1998 QE₇₈ = 1934 NM = 3018 P-L = 1985 QP₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23280462	ω	310.44167	-0.51691542	+0.83645987		
<i>a</i>	2.6170277	Ω	287.53525	-0.71621311	-0.53905889		
<i>e</i>	0.2465488	<i>i</i>	11.00509	-0.46886803	-0.09874413		
<i>P</i>	4.23	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1934 07 09	078	(11.8+	4.5-)X	1998 08 24	704	0.0	0.8+	1998 09 19	704	0.6+	0.2+
1960 09 24	675	0.3+	0.5-	1998 08 24	704	1.8+	0.2+	1998 09 19	704	0.2+	0.4+
1960 09 24	675	0.3+	0.5+	1998 08 24	704	0.7-	0.3+	1998 09 19	704	0.2-	0.4-
1960 09 25	675	0.5-	0.0	1998 08 24	704	1.3-	0.9-	1998 09 23	704	0.1-	0.0
1960 09 26	675	0.3+	0.4-	1998 08 24	704	0.6-	0.1+	1998 09 23	704	1.0-	0.7+
1960 09 26	675	0.2+	0.0	1998 08 27	704	0.4+	0.7-	1998 10 21	699	0.6+	0.1+
1960 09 27	675	0.8-	0.1-	1998 08 27	704	0.3+	0.1-	1998 10 21	699	0.0	0.0
1960 09 28	675	0.4+	0.1+	1998 08 27	704	0.0	0.0	1998 10 21	699	0.8-	0.4+
1985 08 23	675	0.5-	0.2-	1998 08 27	704	0.1-	0.0				
1985 08 23	675	0.4+	0.4+	1998 08 27	704	0.7+	0.7-				

1998 QE₈₃ = 1997 GW₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18473714	ω	122.62660	+0.84537030	+0.52303965		
<i>a</i>	3.0532795	Ω	206.32454	-0.53413589	+0.82503692		
<i>e</i>	0.1927487	<i>i</i>	14.16620	-0.00692149	+0.21387755		
<i>P</i>	5.34	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 06	704	1.1-	0.8+	1998 08 24	704	0.3-	0.1-	1998 09 19	704	0.2-	0.8+
1997 04 06	704	1.0-	0.0	1998 08 24	704	0.3-	0.5+	1998 09 19	704	0.2+	0.0
1997 04 07	809	0.3-	1.3+	1998 08 24	704	0.7+	0.4-	1998 09 19	704	0.2+	0.7-
1997 04 07	809	0.2+	1.1+	1998 08 24	704	0.6+	0.3-	1998 09 19	704	0.1-	1.4-
1997 04 07	809	0.7+	0.8+	1998 08 24	704	1.4-	0.5+	1998 09 23	704	0.6-	0.1+
1997 04 08	809	2.1+	0.2+	1998 08 27	704	0.4-	0.2+	1998 09 23	704	0.5-	1.3+
1997 04 08	809	0.4+	0.6+	1998 08 27	704	0.7+	0.5+	1998 09 23	704	0.4+	0.3-
1997 04 08	809	0.1-	1.3-	1998 08 27	704	0.3+	0.1-	1998 09 23	704	0.1+	0.2+
1997 04 11	704	0.4-	1.8-	1998 08 27	704	0.7+	0.4-				
1997 04 11	704	0.5-	1.5-	1998 08 27	704	0.0	0.4-				

1998 QA₈₄ = 3529 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18098362	ω	92.69417	+0.67687551	+0.71033355		
<i>a</i>	3.0953507	Ω	222.15220	-0.73607345	+0.65104289		
<i>e</i>	0.2210833	<i>i</i>	16.71740	-0.00595083	+0.26752459		
<i>P</i>	5.45	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 10 17	675	0.4-	0.1+	1998 08 24	704	1.5-	0.5-	1998 09 19	704	0.4-	1.5-
1960 10 22	675	0.6+	0.9-	1998 08 27	704	1.3-	0.6-	1998 09 23	704	0.1-	0.5-
1960 10 22	675	0.7+	1.9+	1998 08 27	704	0.1+	0.1+	1998 09 23	704	(2.3-	0.1-)
1960 10 25	675	0.4+	0.3-	1998 08 27	704	0.5+	0.1+	1998 09 23	704	0.4+	0.5-
1960 10 25	675	0.0	0.9-	1998 08 27	704	0.6-	0.3+	1998 09 23	704	0.2-	1.1-
1960 10 26	675	1.3-	0.2-	1998 08 27	704	0.2+	0.6+	1998 09 23	704	0.3-	0.8-
1998 08 24	704	0.3+	0.9-	1998 09 19	704	0.6+	0.5+	1998 10 18	699	0.9+	0.7+
1998 08 24	704	0.7+	0.2-	1998 09 19	704	0.1-	0.1+	1998 10 18	699	0.5-	1.0+
1998 08 24	704	0.6+	0.4+	1998 09 19	704	0.7+	1.1+	1998 10 18	699	0.3-	0.6+
1998 08 24	704	0.9-	1.1+	1998 09 19	704	1.3+	0.3+				

1998 QQ₈₄ = 1996 GJ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	291.19373	(2000.0)	P		Q	
<i>n</i>	0.18098819	ω	214.27989	-0.00996250	-0.98207270	
<i>a</i>	3.0952986	Ω	236.98170	+0.96036882	+0.04304293	
<i>e</i>	0.1296332	<i>i</i>	12.97324	+0.27855426	-0.18352254	
<i>P</i>	5.45	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1996 04 08	608	1.1-	0.2-	1998 08 27	704	0.1+	0.1+	1998 09 21	699	0.5-	1.7+
1996 04 08	608	1.2-	0.1+	1998 08 27	704	0.6+	1.0+	1998 09 21	699	0.1+	0.8+
1996 04 09	608	1.0+	0.2+	1998 08 27	704	0.5+	1.2+	1998 09 23	704	0.2+	0.4-
1996 04 09	608	1.2+	0.0	1998 08 27	704	0.9+	0.9-	1998 09 23	704	1.3-	0.4+
1998 08 24	704	0.1+	0.4+	1998 09 19	704	0.7-	0.0	1998 09 23	704	(2.8-	1.2+)
1998 08 24	704	0.8-	0.7-	1998 09 19	704	0.7+	0.4-	1998 09 23	704	(0.9-	2.6+)
1998 08 24	704	0.1+	1.7-	1998 09 19	704	0.1-	1.2-	1998 09 23	704	0.7-	0.7+
1998 08 24	704	(2.3+	1.7+)	1998 09 19	704	1.5+	1.7-				
1998 08 24	704	1.3-	0.7+	1998 09 21	699	0.7+	0.0				

1998 QG₈₆ = 1997 MR₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	305.38069	(2000.0)	P		Q	
<i>n</i>	0.21328474	ω	169.27110	-0.10389083	-0.97393026	
<i>a</i>	2.7743603	Ω	286.46226	+0.89623879	-0.00376180	
<i>e</i>	0.1920648	<i>i</i>	12.13873	+0.43123396	-0.22681643	
<i>P</i>	4.62	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1997 06 28	704	0.2+	0.2+	1998 08 24	704	0.8-	0.2+	1998 09 19	704	0.3-	0.1+
1997 06 28	704	0.2-	0.2+	1998 08 24	704	1.3+	0.2+	1998 09 19	704	(0.3+	2.2+)
1997 06 28	704	0.2-	0.7+	1998 08 24	704	0.2-	1.6-	1998 09 19	699	0.2-	0.1+
1997 06 29	704	0.1-	0.2+	1998 08 24	704	0.9-	0.3+	1998 09 19	699	0.0	0.4+
1997 06 29	704	0.1-	0.3-	1998 08 27	704	0.9-	0.1-	1998 09 19	699	0.2+	0.8+
1997 06 29	704	0.1-	0.5-	1998 08 27	704	0.0	0.7+	1998 09 23	704	0.2+	0.5+
1997 06 29	704	0.3-	0.1-	1998 08 27	704	(2.6-	0.9-)	1998 09 23	704	0.0	0.3+
1997 07 02	704	0.1+	0.2+	1998 08 27	704	0.4+	0.4+	1998 09 23	704	0.0	0.3-
1997 07 02	704	0.7+	0.0	1998 08 27	704	0.2-	0.6-	1998 09 23	704	0.7+	0.5-
1997 07 02	704	0.5-	0.0	1998 09 19	704	0.3-	0.1+	1998 09 23	704	0.9+	1.1-
1997 07 02	704	0.5+	0.5-	1998 09 19	704	1.0-	0.7-				
1998 08 24	704	1.6+	0.6+	1998 09 19	704	0.4-	0.3+				

1998 QK₈₆ = 1978 WZ₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	16.04640	(2000.0)	P		Q	
<i>n</i>	0.19035357	ω	114.26470	+0.98867492	-0.01095581	
<i>a</i>	2.9929218	Ω	246.65225	-0.04000038	+0.94201434	
<i>e</i>	0.1104398	<i>i</i>	9.38231	+0.14464393	+0.33539372	
<i>P</i>	5.18	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1978 11 29	675	1.2+	0.2+	1998 08 27	704	0.4+	0.8+	1998 09 19	699	0.1+	0.8-
1978 11 30	675	1.2-	0.2-	1998 08 27	704	0.3+	0.0	1998 09 19	699	0.6-	0.1-
1998 08 24	704	0.7-	0.0	1998 08 27	704	0.3-	0.3+	1998 09 19	699	0.1+	0.1+
1998 08 24	704	0.3+	0.9-	1998 08 27	704	0.6+	1.9-	1998 09 23	704	0.3+	0.1-
1998 08 24	704	0.1-	0.3+	1998 09 19	704	0.4-	0.0	1998 09 23	704	0.7-	0.6-
1998 08 24	704	0.9-	0.3-	1998 09 19	704	0.6-	0.7-	1998 09 23	704	0.4-	0.4-
1998 08 24	704	0.2+	1.2+	1998 09 19	704	0.3+	0.6+	1998 09 23	704	0.6-	0.2+
1998 08 27	704	0.1+	0.7+	1998 09 19	704	1.7+	0.5+	1998 09 23	704	0.5+	1.0+

1998 QN₈₆ = 1989 SE₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	347.85996	(2000.0)	P		Q	
<i>n</i>	0.21487888	ω	118.46139	+0.70195267	-0.69932852	
<i>a</i>	2.7606217	Ω	286.27689	+0.59439357	+0.67957431	
<i>e</i>	0.1605562	<i>i</i>	8.07958	+0.39237575	+0.22162665	
<i>P</i>	4.59	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1989 09 28	493	0.5-	1.8-	1998 08 27	704	0.0	0.1+	1998 10 12	704	0.7+	0.4+
1989 09 28	493	1.3-	0.2-	1998 08 27	704	0.4-	0.4-	1998 10 12	704	0.2-	1.2-
1989 10 03	493	1.7+	0.1+	1998 08 27	704	1.2+	1.1-	1998 10 12	704	0.9-	1.7+
1989 10 03	493	0.7+	0.6+	1998 09 19	704	0.2+	0.2+	1998 10 12	704	1.7-	0.2+
1998 08 24	704	0.5+	0.6+	1998 09 19	704	1.1-	0.5-	1998 10 16	699	0.9+	0.4+
1998 08 24	704	1.1+	0.2+	1998 09 19	704	0.2-	0.2+	1998 10 16	699	0.2-	0.9+
1998 08 24	704	0.4-	0.4+	1998 09 23	704	0.4-	0.4-	1998 10 16	699	0.3+	0.5+
1998 08 24	704	0.9+	0.3-	1998 09 23	704	0.2-	0.9-	1998 10 18	699	0.1+	0.1+
1998 08 24	704	0.5-	0.3+	1998 09 23	704	0.3+	0.7-	1998 10 18	699	0.4-	0.9+
1998 08 27	704	0.8+	0.5+	1998 09 23	704	0.1+	0.7-				
1998 08 27	704	0.5-	0.6+	1998 09 23	704	0.5-	0.3-				

1998 QB₈₇ = 1989 AK₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	343.65063	(2000.0)	P		Q	
<i>n</i>	0.17401816	ω	100.87326	+0.68794413	-0.68917321	
<i>a</i>	3.1774082	Ω	303.16340	+0.51302282	+0.68353343	
<i>e</i>	0.1329860	<i>i</i>	15.77209	+0.51336192	+0.24046275	
<i>P</i>	5.66	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1989 01 04	413	(3.9-	0.5+)	1998 08 27	704	0.4-	0.5-	1998 09 20	699	0.5-	0.9+
1989 01 04	413	0.2-	0.6-	1998 08 27	704	0.5+	0.4-	1998 09 20	699	0.2+	0.0
1989 01 10	413	0.2+	0.6+	1998 08 27	704	0.7-	0.4+	1998 09 23	704	0.0	0.6+
1989 01 10	413	(3.2+	0.1-)	1998 08 27	704	0.4-	1.0-	1998 09 23	704	0.2+	0.3+
1998 08 24	704	0.4+	0.6-	1998 08 27	704	0.6-	0.0	1998 09 23	704	0.7-	0.3+
1998 08 24	704	0.6+	1.1+	1998 09 19	704	0.3+	0.4-	1998 09 23	704	0.6-	0.4-
1998 08 24	704	1.5+	0.1+	1998 09 19	704	0.0	0.2-	1998 09 23	704	0.2+	0.3-
1998 08 24	704	0.0	0.3-	1998 09 19	704	0.4+	0.5-	1998 10 12	704	0.5+	0.1-
1998 08 24	704	0.5-	1.2+	1998 09 20	699	0.1+	0.3+	1998 10 12	704	0.5-	0.6-

1998 QL₈₉ = 1994 VL₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.87190	(2000.0)	P		Q	
<i>n</i>	0.23592548	ω	106.25519	+0.86409703	+0.47856035	
<i>a</i>	2.5938975	Ω	225.46826	-0.50321105	+0.82799450	
<i>e</i>	0.2455436	<i>i</i>	12.63549	+0.01072199	+0.29224151	
<i>P</i>	4.18	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1994 11 05	691	0.4+	0.6+	1998 08 24	704	0.9-	0.3-	1998 09 19	699	0.0	0.3+
1994 11 05	691	0.2-	0.2+	1998 08 27	704	1.1+	0.6-	1998 09 19	699	0.2-	0.2+
1994 11 05	691	0.6-	0.1+	1998 08 27	704	(1.1+	2.6-)	1998 09 23	704	0.4-	0.0
1994 11 10	691	0.3+	0.4-	1998 08 27	704	1.5+	0.9-	1998 09 23	704	0.2-	0.3-
1994 11 10	691	0.3+	0.5-	1998 08 27	704	0.5+	0.8-	1998 09 23	704	1.5-	1.1-
1994 11 10	691	0.2-	0.4-	1998 08 27	704	(0.2-	3.2-)	1998 10 18	704	1.0+	0.5-
1998 08 24	704	1.6+	0.8+	1998 09 19	704	0.9-	0.4+	1998 10 18	704	0.3-	0.6-
1998 08 24	704	0.1-	1.7-	1998 09 19	704	0.5-	1.7+	1998 10 18	704	0.6+	0.2+
1998 08 24	704	1.1-	1.2+	1998 09 19	704	1.2-	1.2+	1998 10 18	704	0.6+	0.3-
1998 08 24	704	0.9+	0.0	1998 09 19	699	0.3-	0.6+	1998 10 18	704	0.2+	0.1+

1998 NOV. 10

M.P.C. 32985

1998 QS₉₀ = 3650 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27999613	<i>ω</i>	258.07966	+0.39790219	+0.91533555		
<i>a</i>	2.3140249	<i>Ω</i>	35.56958	−0.79484820	+0.37765806		
<i>e</i>	0.1963172	<i>i</i>	6.11108	−0.45813774	+0.13976842		
<i>P</i>	3.52	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 10 17	675	0.7−	0.2+	1998 09 14	704	0.1+	1.5+	1998 09 27	704	1.6+	0.1+
1977 10 17	675	0.0	1.4+	1998 09 14	704	0.6−	0.0	1998 09 27	704	1.0+	0.5−
1977 10 21	675	0.7+	0.4−	1998 09 18	704	0.4+	0.4+	1998 09 27	704	0.5+	0.6+
1977 10 21	675	0.1−	1.1+	1998 09 18	704	0.6−	0.3+	1998 10 14	704	1.3−	0.8+
1977 10 22	675	0.3−	2.1−	1998 09 18	704	0.4−	1.2+	1998 10 14	704	1.0−	1.7−
1977 10 22	675	1.0+	1.5−	1998 09 18	704	0.0	0.3+	1998 10 14	704	0.7+	0.0
1998 08 28	704	0.6+	0.4+	1998 09 18	704	0.1+	0.3+	1998 10 14	704	0.3+	0.4−
1998 08 28	704	0.6+	0.3+	1998 09 24	699	0.7+	0.4+	1998 10 14	704	1.0+	0.8−
1998 08 28	704	0.5+	0.4+	1998 09 24	699	0.1+	0.8+	1998 10 15	704	0.5−	0.7+
1998 08 28	704	1.8−	1.6−	1998 09 24	699	0.7+	0.3+	1998 10 15	704	0.4+	0.6+
1998 08 28	704	1.4−	0.7−	1998 09 26	704	0.5+	0.2−	1998 10 15	704	0.7−	0.8−
1998 08 29	704	1.0+	0.9−	1998 09 26	704	0.1+	0.3−	1998 10 15	704	0.7−	0.1−
1998 08 29	704	0.5−	0.9−	1998 09 26	704	0.8−	0.1−	1998 10 15	704	0.5−	0.0
1998 08 29	704	(0.1+	3.1−)	1998 09 26	704	1.0−	0.3−	1998 10 17	699	0.4−	0.4+
1998 08 29	704	1.2+	1.8−	1998 09 26	704	0.3−	0.0	1998 10 17	699	0.7−	0.2−
1998 08 29	704	(1.0−	2.2−)	1998 09 27	704	0.5+	0.0	1998 10 17	699	0.9−	0.4+
1998 09 14	704	0.3−	0.5+	1998 09 27	704	0.7+	1.4+				

1998 QX₉₀ = 1994 LO

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27827969	<i>ω</i>	183.16436	+0.93997757	+0.33760976		
<i>a</i>	2.3235305	<i>Ω</i>	156.91266	−0.31023425	+0.90605314		
<i>e</i>	0.2869789	<i>i</i>	7.26912	−0.14211572	+0.25512225		
<i>P</i>	3.54	<i>H</i>	16.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 06 06	691	0.5+	0.6+	1998 08 31	704	0.2−	0.3−	1998 09 26	704	0.2+	1.3−
1994 06 06	691	0.2−	0.5+	1998 08 31	704	0.4+	1.5−	1998 09 26	704	0.0	1.5−
1994 06 06	691	0.2−	0.4+	1998 09 14	704	1.1−	1.0−	1998 09 26	704	0.1+	1.3−
1994 06 07	691	0.0	0.4−	1998 09 14	704	0.8−	0.4+	1998 09 26	704	0.5−	0.8−
1994 06 08	691	0.1−	0.1+	1998 09 14	704	0.4−	0.1−	1998 09 27	704	0.9+	0.4−
1994 06 08	691	0.2−	0.4−	1998 09 17	699	0.5−	0.6+	1998 09 27	704	1.2+	0.0
1994 06 15	691	0.1+	0.1+	1998 09 17	699	0.3−	1.0+	1998 09 27	704	0.3+	0.1−
1994 06 15	691	0.0	0.1−	1998 09 17	699	0.2−	0.8+	1998 09 27	704	0.6+	0.0
1994 06 15	691	0.1+	1.0−	1998 09 18	704	0.3−	0.5+	1998 09 27	704	1.2+	1.3−
1998 08 28	704	0.7−	0.0	1998 09 18	704	1.1−	1.0+	1998 10 16	704	0.0	0.3−
1998 08 28	704	0.1+	0.5+	1998 09 18	704	1.0−	0.0	1998 10 16	704	0.1+	0.4+
1998 08 28	704	0.3−	1.0+	1998 09 18	704	1.2−	0.9+	1998 10 16	704	0.3+	0.1+
1998 08 28	704	1.1+	1.6+	1998 09 18	704	0.3+	0.6+	1998 10 16	704	0.0	0.2+
1998 08 28	704	0.3+	1.5−	1998 09 24	910	0.1+	0.6+	1998 10 16	704	0.5−	0.1+
1998 08 31	704	0.2+	1.1+	1998 09 24	910	0.0	0.7+	1998 10 17	699	0.0	0.1+
1998 08 31	704	(2.4−	2.2−)	1998 09 24	910	0.1+	0.5+	1998 10 17	699	0.3−	1.3+
1998 08 31	704	1.8+	1.5−	1998 09 26	704	0.3−	0.3−	1998 10 17	699	0.7+	0.8−

1998 QS₉₁ = 1993 FJ₇₆

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27554792	<i>ω</i>	18.55960	+0.91121717	−0.41165707		
<i>a</i>	2.3388621	<i>Ω</i>	5.81496	+0.35688248	+0.77088732		
<i>e</i>	0.2385333	<i>i</i>	8.45133	+0.20571378	+0.48607736		
<i>P</i>	3.58	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 21	809	0.2−	0.1+	1998 09 26	704	0.2+	0.0	1998 10 15	704	0.4+	0.2−
1993 03 22	809	0.4+	0.3+	1998 09 26	704	0.1−	0.3−	1998 10 15	704	0.3+	0.6+
1998 08 28	704	0.6+	0.1−	1998 09 26	704	0.7−	0.3−	1998 10 15	704	0.2+	0.2+
1998 08 28	704	0.4−	0.4−	1998 09 26	704	0.2−	0.0	1998 10 15	704	0.1+	0.1+
1998 08 28	704	1.7+	0.5+	1998 09 26	704	0.3−	0.2+	1998 10 15	704	0.1−	0.0
1998 08 28	704	1.1+	1.0−	1998 09 27	704	(0.8+	2.1−)	1998 10 28	704	0.0	0.0
1998 08 28	704	1.6+	0.8−	1998 09 27	704	(2.7−	2.6+)	1998 10 28	704	0.1−	0.2−
1998 08 31	704	0.7−	1.1+	1998 09 27	704	0.2−	1.1+	1998 10 28	704	0.2−	0.2+
1998 08 31	704	0.8−	0.0	1998 09 27	704	0.0	1.0−	1998 10 28	704	0.0	0.1+
1998 08 31	704	1.5−	0.8−	1998 09 27	704	0.4−	1.4−	1998 10 29	704	0.8+	0.5−
1998 08 31	704	0.9+	0.6+	1998 10 14	704	0.3+	0.2−	1998 10 29	704	0.7+	0.5+
1998 08 31	704	0.2−	0.5+	1998 10 14	704	0.6+	0.4+	1998 10 29	704	0.1−	0.4−
1998 09 14	699	0.7−	0.5+	1998 10 14	704	0.7+	0.3+	1998 10 29	704	0.3+	0.1+
1998 09 14	699	1.1−	0.6+	1998 10 14	704	0.7−	0.2−	1998 10 29	704	0.4+	0.7+
1998 09 14	699	0.7−	0.4+	1998 10 14	704	1.4−	0.6−				

1998 QJ₉₂ = 1991 VX

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28101679	<i>ω</i>	325.29569	+0.79844910	−0.59960533		
<i>a</i>	2.3084184	<i>Ω</i>	71.63762	+0.56453708	+0.71426409		
<i>e</i>	0.2367226	<i>i</i>	3.28208	+0.20922934	+0.36097127		
<i>P</i>	3.51	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 10 31	400	0.8+	1.1+	1998 08 28	704	0.6−	0.7+	1998 09 19	809	(0.4+	2.5−)
1991 10 31	400	0.9+	1.1+	1998 08 28	704	0.1−	0.2+	1998 09 19	809	(0.4+	2.3−)
1991 11 02	400	2.0+	0.9+	1998 08 28	704	0.6−	0.1+	1998 10 14	699	0.0	0.9+
1991 11 02	400	1.0−	1.8−	1998 08 31	704	0.5−	0.5−	1998 10 14	699	0.1−	0.8+
1991 11 04	400	0.1−	1.3−	1998 08 31	704	0.3+	1.6+	1998 10 14	699	0.0	0.6+
1991 11 04	400	0.6−	0.7−	1998 08 31	704	0.4+	1.0−	1998 10 15	120	0.4−	0.7+
1991 11 05	691	0.6−	0.4−	1998 08 31	704	0.6+	1.0+	1998 10 16	120	0.5−	0.5+
1991 11 05	691	0.8−	0.3−	1998 08 31	704	0.9+	1.5−	1998 10 16	120	0.9+	0.6+
1991 11 05	691	0.3+	0.4−	1998 09 18	809	0.9−	0.4−	1998 10 16	120	0.3−	0.8+
1991 11 05	095	1.7−	0.2−	1998 09 18	809	0.2−	0.2−	1998 10 20	699	0.2−	0.3+
1991 11 05	095	1.8+	1.0−	1998 09 18	809	0.1+	1.2−	1998 10 20	699	0.3−	0.6+
1998 08 28	704	0.5+	0.6−	1998 09 19	809	0.4+	1.8−	1998 10 20	699	0.3−	0.3+

1998 QN₉₂ = 1992 SB

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19280432	<i>ω</i>	1.24724	+0.98564478	−0.16510619		
<i>a</i>	2.9675056	<i>Ω</i>	8.50418	+0.15276210	+0.78317833		
<i>e</i>	0.1680439	<i>i</i>	13.80007	+0.07188959	+0.59947614		
<i>P</i>	5.11	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 09 17	413	0.0	0.4+	1998 08 31	704	0.3+	0.8+	1998 10 03	699	0.4+	0.0
1992 09 18	413	0.0	0.4−	1998 09 29	704	0.3+	0.8−	1998 10 03	699	0.7+	0.2+
1998 08 28	704	0.4−	1.1+	1998 09 29	704	0.1−	1.8−	1998 10 03	699	0.3+	0.5+
1998 08 28	704	0.5−	0.7+	1998 09 29	704	0.5+	0.4+	1998 10 18	704	0.6−	0.7+
1998 08 28	704	1.3+	0.0	1998 09 29	704	1.2+	0.4−	1998 10 18	704	0.5−	0.7+
1998 08 28	704	0.2−	0.1−	1998 10 02	704	0.3+	0.3−	1998 10 18	704	0.1−	0.4−
1998 08 31	704	0.6−	0.2+	1998 10 02	704	0.7+	0.7−	1998 10 18	704	0.4−	0.2−
1998 08 31	704	0.9−	0.1−	1998 10 02	704	0.3−	0.5−	1998 10 18	704	1.3−	0.1+
1998 08 31	704	0.3+	0.8−	1998 10 02	704	0.6+	0.1+				
1998 08 31	704	0.6−	0.5−	1998 10 02	704	0.4−	1.1+				

1998 QM₉₄ = 1982 UL₃ = 1990 RY

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	18.12337		(2000.0)	P		Q	
<i>n</i>	0.24477562	ω	157.97216	+0.99938949		−0.02979949	
<i>a</i>	2.5309910	Ω	203.75743	+0.02126076		+0.93295918	
<i>e</i>	0.0917069	<i>i</i>	2.59472	+0.02772396		+0.35874664	
<i>P</i>	4.03	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1982 10 19	033	0.3+	0.3+	1998 08 17	704	0.6+	0.7+
1982 10 19	033	0.0	0.0	1998 08 23	704	0.2+	1.7−
1990 09 14	675	0.2+	1.8−	1998 08 23	704	0.7−	2.3−
1990 09 14	675	0.5+	1.8−	1998 08 23	704	0.0	2.8−
1998 08 17	704	0.6+	1.1−	1998 08 23	704	0.8−	0.3+
1998 08 17	704	0.1−	0.0	1998 08 23	704	1.0−	1.1+
1998 08 17	704	0.1+	0.9+	1998 09 14	704	0.3−	0.0
1998 08 17	704	0.2−	1.2+	1998 09 14	704	0.1−	1.6+
				1998 09 14	704	0.6+	0.2+

1998 QW₉₅ = 1994 WN₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	90.49162		(2000.0)	P		Q	
<i>n</i>	0.21154628	ω	42.98941	−0.08082898		+0.99250784	
<i>a</i>	2.7895391	Ω	222.61843	−0.94725494		−0.10509295	
<i>e</i>	0.1543888	<i>i</i>	7.77684	−0.31012055		+0.06231905	
<i>P</i>	4.66	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1994 11 29	691	0.1+	0.1−	1998 08 19	704	0.3−	0.4−
1994 11 29	691	0.0	0.1+	1998 08 19	704	1.5−	1.1+
1994 11 29	691	0.1+	0.0	1998 08 24	704	0.3+	0.3+
1994 12 03	691	0.3−	0.2+	1998 08 24	704	1.0+	1.6−
1994 12 03	691	(6.2+	4.8−)	1998 08 24	704	0.4+	1.1−
1994 12 03	691	0.1+	0.3−	1998 09 18	699	0.0	0.6−
1998 08 19	704	0.3−	1.8+	1998 09 18	699	0.8+	0.6−
1998 08 19	704	0.4−	0.4+	1998 09 18	699	0.4−	0.8+
1998 08 19	704	0.6+	0.7−	1998 09 19	704	0.5+	0.1−
				1998 09 19	704	0.6+	0.2+

1998 QB₉₆ = 1997 GE₄₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	147.99620		(2000.0)	P		Q	
<i>n</i>	0.22675857	ω	9.05548	−0.80506577		+0.58396001	
<i>a</i>	2.6633418	Ω	207.50858	−0.55738640		−0.80482108	
<i>e</i>	0.1480698	<i>i</i>	13.03943	−0.20295198		−0.10608369	
<i>P</i>	4.35	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 04 07	809	(1.2−	2.8+)	1998 08 19	704	(1.6−	2.6−)
1997 04 07	809	0.4−	0.0	1998 08 27	704	0.2−	0.6−
1997 04 07	809	0.9−	0.1−	1998 08 27	704	0.2+	1.3+
1997 04 08	809	0.7+	0.2+	1998 08 27	704	0.1−	0.8−
1997 04 08	809	0.1−	0.2+	1998 08 27	704	(0.4−	2.8−)
1997 04 08	809	0.6+	0.4−	1998 08 27	704	0.3+	0.2−
1998 08 19	704	0.7+	1.1+	1998 09 19	704	1.0−	0.1+
1998 08 19	704	0.9−	0.1+	1998 09 19	704	0.1−	0.3+
1998 08 19	704	(2.5−	0.7−)	1998 09 19	704	1.0−	0.6−
1998 08 19	704	0.4+	0.8−	1998 09 19	704	0.8−	0.4−

1998 QF₉₆ = 1991 TQ₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	102.82694		(2000.0)	P		Q	
<i>n</i>	0.27545774	ω	31.71542	−0.14688707		+0.98605567	
<i>a</i>	2.3393726	Ω	229.95999	−0.92755628		−0.16477817	
<i>e</i>	0.1669793	<i>i</i>	5.86410	−0.34360374		+0.02328905	
<i>P</i>	3.58	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	7
Residuals in seconds of arc							
1991 10 04	033	0.2+	0.2−	1998 08 19	704	0.4−	0.2+
1991 10 04	033	0.5+	0.3−	1998 08 19	704	1.8+	0.8−
1991 10 05	033	0.7−	0.5+	1998 08 19	704	1.0−	0.3−
1998 08 19	704	0.4−	1.0+	1998 08 24	704	0.4+	0.1−
1998 08 19	704	0.2−	0.6−	1998 08 24	704	0.7+	0.3+
				1998 08 24	704	0.7−	1.4+
				1998 08 24	704	0.3+	1.2−
				1998 08 30	595	0.5−	0.1−
				1998 08 30	595	0.1+	0.3+

1998 QL₉₆ = 1979 OP₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	32.42657		(2000.0)	P		Q	
<i>n</i>	0.26192856	ω	60.44951	+0.98857087		+0.08961040	
<i>a</i>	2.4192504	Ω	294.17969	−0.13476249		+0.88573929	
<i>e</i>	0.2715323	<i>i</i>	7.63680	+0.06757737		+0.45545130	
<i>P</i>	3.76	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1979 07 24	675	1.1+	0.4+	1998 08 19	704	1.3−	0.9−
1979 07 24	413	2.6−	0.0	1998 08 24	704	0.1+	1.9−
1979 07 25	675	1.6+	0.6−	1998 08 24	704	0.4+	3.0+
1998 08 19	704	0.8−	0.9+	1998 08 24	704	0.7+	1.1−
1998 08 19	704	0.4−	0.1−	1998 08 24	704	0.3+	1.7+
1998 08 19	704	0.9+	0.9−	1998 09 19	704	0.7+	0.8−
1998 08 19	704	0.1−	0.2+	1998 09 19	704	0.2−	1.6−
				1998 09 19	704	1.0+	0.7−
				1998 09 23	704	0.2−	0.3−
				1998 09 23	704	0.7−	0.5−
				1998 09 23	704	1.1+	1.5+
				1998 09 23	704	1.7−	1.8+
				1998 09 23	704	0.2+	0.2−

1998 QA₉₈ = 1997 MP₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	276.25389		(2000.0)	P		Q	
<i>n</i>	0.25665293	ω	187.18119	−0.74402556		−0.66249839	
<i>a</i>	2.4522904	Ω	310.94786	+0.61858495		−0.63394034	
<i>e</i>	0.1617508	<i>i</i>	6.59358	+0.25254432		−0.39901820	
<i>P</i>	3.84	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 06 29	704	0.5−	0.7+	1998 08 28	704	1.4+	0.3+
1997 06 29	704	0.5+	0.2−	1998 08 28	704	1.6−	0.3−
1997 06 29	704	0.2−	0.4−	1998 08 28	704	0.2−	0.8+
1997 06 29	704	0.5+	0.4−	1998 08 31	704	0.4−	0.6−
1997 06 29	704	0.2+	0.2−	1998 08 31	704	1.5+	1.3+
1997 07 02	704	0.1+	0.6+	1998 08 31	704	1.2−	0.8−
1997 07 02	704	0.4+	1.0−	1998 08 31	704	1.4−	0.3+
1997 07 02	704	0.4−	0.0	1998 09 14	704	0.3+	0.9−
1997 07 02	704	0.3−	0.2+	1998 09 14	704	0.3−	0.3−
1997 07 02	704	0.1−	0.6+	1998 09 14	704	0.9−	0.5+
1998 08 27	699	0.3+	0.7+	1998 09 18	704	0.2+	0.2+
1998 08 27	699	0.1−	0.0	1998 09 18	704	0.2+	0.8−
1998 08 27	699	0.3−	0.7+	1998 09 18	704	0.3+	0.0
1998 08 28	704	(3.1+	1.5+)	1998 09 18	704	0.4+	1.3−
1998 08 28	704	(2.2+	0.8+)	1998 09 18	704	0.1+	0.5+
				1998 09 18	704	0.7−	0.3+
				1998 10 18	704	0.4−	0.2+
				1998 10 18	704	0.4−	0.3+
				1998 10 18	704	0.7−	0.3+
				1998 10 18	704	0.7−	0.2+

1998 NOV. 10

M.P.C. 32987

1998 QC₉₈ = 1990 RC₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	352.84916	(2000.0)	P		Q		Williams	
<i>n</i>	0.25252651	ω	256.67073	+0.64042586	-0.76383956			
<i>a</i>	2.4789327	Ω	152.98792	+0.75506106	+0.60713278			
<i>e</i>	0.1156997	<i>i</i>	10.14822	+0.14049028	+0.21894958			
<i>P</i>	3.90	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1990 09 08	809	0.1-	0.2-	1998 08 28	704	0.6-	1.9+	1998 09 17	699	0.5+	0.6+
1990 09 09	809	0.3+	0.1-	1998 08 28	704	1.2+	0.8-	1998 09 18	704	0.8-	0.3+
1990 09 09	809	0.5+	0.2+	1998 08 28	704	0.2+	0.7-	1998 09 18	704	0.7-	0.1+
1990 09 09	809	0.1-	0.7+	1998 08 28	704	0.3+	0.7-	1998 09 18	704	1.1+	0.2+
1990 09 10	809	0.0	0.7+	1998 08 31	704	0.2-	1.1+	1998 09 18	704	0.0	0.7+
1990 09 10	809	0.4+	0.7+	1998 08 31	704	0.9+	0.8-	1998 09 18	704	0.4-	0.5-
1990 09 12	809	0.2-	0.3+	1998 08 31	704	0.4-	0.1-	1998 09 26	704	0.3-	0.6+
1990 09 12	809	0.2-	0.4+	1998 08 31	704	0.7-	0.7+	1998 09 26	704	0.1-	0.3-
1990 09 12	809	0.1-	0.1+	1998 08 31	704	(2.7-	1.5+)	1998 09 26	704	0.1-	0.4+
1990 09 14	675	(2.1-	1.9-)	1998 09 14	704	0.4-	0.4+	1998 09 26	704	0.3-	0.3+
1990 09 14	675	(1.4-	2.6-)	1998 09 14	704	0.7-	0.5-	1998 09 26	704	0.4-	0.1-
1990 09 14	809	0.1-	0.3-	1998 09 14	704	0.6+	1.2-	1998 09 27	704	0.3-	1.7-
1990 09 15	809	0.2-	0.4-	1998 09 15	910	0.6+	0.7+	1998 09 27	704	1.0-	0.0
1990 09 15	809	0.0	0.5-	1998 09 15	910	0.8+	0.8+	1998 09 27	704	0.4+	0.2-
1990 09 15	809	0.1-	0.7-	1998 09 15	910	0.6+	0.6+	1998 09 27	704	0.3-	1.1-
1990 09 16	809	0.3-	0.7-	1998 09 17	699	0.3+	0.2+	1998 09 27	704	0.6-	0.7-
1990 09 16	809	0.2+	0.9-	1998 09 17	699	0.8+	0.2+				

1998 QP₉₈ = 1987 YA₄ = 1992 BX₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	32.05891	(2000.0)	P		Q		Williams	
<i>n</i>	0.26869844	ω	133.30559	+0.86554148	-0.48814077			
<i>a</i>	2.3784423	Ω	256.20535	+0.41960591	+0.82892763			
<i>e</i>	0.2183943	<i>i</i>	6.62577	+0.27343887	+0.27312557			
<i>P</i>	3.67	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1987 12 23	010	0.4+	1.8-	1992 02 06	809	0.5-	0.3-	1998 08 31	704	0.9+	0.1-
1987 12 23	010	0.2-	0.5+	1998 08 28	704	1.5+	0.9-	1998 08 31	704	0.4+	0.7+
1992 01 30	809	0.4-	0.0	1998 08 28	704	1.0-	0.2-	1998 08 31	704	0.7+	0.9+
1992 01 30	809	0.1-	0.6+	1998 08 28	704	0.1+	0.0	1998 10 25	098	0.7-	1.0+
1992 01 30	809	0.5-	0.5+	1998 08 28	704	0.8-	0.0	1998 10 25	098	0.7-	0.2-
1992 02 06	809	0.6+	0.1-	1998 08 31	704	0.5-	1.3-	1998 10 31	112	0.0	0.7+
1992 02 06	809	0.9+	0.8-	1998 08 31	704	0.8-	0.8-	1998 10 31	112	1.0+	0.6+

1998 QG₁₀₀ = 5015 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	355.29445	(2000.0)	P		Q		Williams	
<i>n</i>	0.28028733	ω	265.66902	+0.58975659	-0.80472253			
<i>a</i>	2.3124219	Ω	147.88274	+0.78232203	+0.54842820			
<i>e</i>	0.2058230	<i>i</i>	7.33629	+0.20039814	+0.22726234			
<i>P</i>	3.52	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1977 10 11	675	0.5+	0.8+	1998 08 26	809	0.3+	0.8-	1998 09 18	704	0.9-	1.2+
1977 10 11	675	0.0	1.2+	1998 08 26	809	0.9+	0.2-	1998 09 26	704	0.0	0.8-
1977 10 12	675	0.4+	0.1-	1998 08 27	809	0.9-	0.6+	1998 09 26	704	0.8+	0.1-
1977 10 12	675	1.1-	0.5-	1998 08 27	809	0.1-	0.4+	1998 09 26	704	1.4+	0.6-
1977 10 16	675	1.3-	0.7+	1998 08 27	809	0.6+	1.0+	1998 09 26	704	1.5-	2.0-
1977 10 16	675	0.2-	0.3+	1998 09 14	704	0.5-	1.0-	1998 09 26	704	1.2+	1.0-
1977 10 17	675	0.0	1.5-	1998 09 14	704	0.4-	0.5-	1998 09 27	704	0.1-	0.9+
1977 10 17	675	0.9-	0.9-	1998 09 14	704	0.3-	0.8-	1998 09 27	704	0.1+	2.0+
1977 10 21	675	0.3+	0.2-	1998 09 18	704	3.4-	0.9-	1998 09 27	704	0.9-	0.2-
1977 10 21	675	2.2+	0.7+	1998 09 18	704	1.9+	1.4-	1998 09 27	704	0.7+	1.1-
1977 10 22	675	(1.5+	5.4-)	1998 09 18	704	1.1+	2.7+	1998 09 27	704	0.0	0.0
1998 08 26	809	0.9+	0.2+	1998 09 18	704	0.6-	1.8+				

1998 QQ₁₀₁ = 1971 SG₃ = 1987 QY₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	6.80141	(2000.0)	P		Q		Williams	
<i>n</i>	0.18157912	ω	213.07740	+0.94387282	-0.32183324			
<i>a</i>	3.0885795	Ω	165.13894	+0.32896076	+0.93621530			
<i>e</i>	0.1920681	<i>i</i>	16.85070	-0.02981476	+0.14115340			
<i>P</i>	5.43	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1971 09 27	805	0.7-	2.0+	1998 09 14	704	0.5+	0.9+	1998 09 26	704	0.7-	0.8-
1971 09 27	805	0.0	1.0+	1998 09 14	704	0.1+	0.5+	1998 09 26	704	1.5-	0.3-
1971 09 27	805	0.1+	0.2+	1998 09 14	704	1.3+	0.1+	1998 09 26	704	0.5-	1.4-
1987 08 26	095	0.2+	1.5+	1998 09 14	704	0.3-	1.1+	1998 09 26	704	0.4-	0.0
1998 08 26	809	(3.0+	4.8-)	1998 09 18	704	0.1+	0.7+	1998 09 27	704	1.3+	0.3-
1998 08 26	809	(2.1+	5.0-)	1998 09 18	704	0.9+	0.4+	1998 09 27	704	1.0-	0.6+
1998 08 26	809	(2.8+	4.9-)	1998 09 18	704	0.0	0.5+	1998 09 27	704	1.0+	1.6-
1998 08 26	699	0.5+	0.5-	1998 09 18	704	0.1+	0.0	1998 09 27	704	0.0	0.2-
1998 08 26	699	1.3-	0.3-	1998 09 18	704	0.3-	0.1+	1998 10 12	699	0.9+	0.1-
1998 08 26	699	1.5-	0.5-	1998 09 24	699	0.4+	0.6-	1998 10 12	699	0.2+	0.5-
1998 08 27	809	(2.7+	0.6-)	1998 09 24	699	0.3+	0.1-	1998 10 12	699	0.0	0.8-
1998 08 27	809	(3.6+	0.6-)	1998 09 24	699	0.4+	0.4-				
1998 08 27	809	(4.1+	0.8-)	1998 09 26	704	0.1-	1.3-				

1998 QV₁₀₂ = 1975 XC₁ = 1990 SF₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	9.36958	(2000.0)	P		Q		Williams	
<i>n</i>	0.12522328	ω	322.66533	+0.98260373	-0.16709916			
<i>a</i>	3.9568173	Ω	47.16150	+0.18556718	+0.86602728			
<i>e</i>	0.2925599	<i>i</i>	6.34533	+0.00739741	+0.47124794			
<i>P</i>	7.87	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1975 12 01	095	0.5+	1.1-	1998 09 17	699	0.5+	0.0	1998 09 27	704	0.2+	0.2+
1990 09 14	675	1.5+	1.7-	1998 09 17	699	0.4+	0.0	1998 09 27	704	1.2-	0.4+
1990 09 14	675	0.8+	0.9-	1998 09 18	704	0.9+	0.3+	1998 10 14	704	0.5-	0.0
1990 09 16	675	0.3-	0.8-	1998 09 18	704	0.6-	0.3+	1998 10 14	704	0.8+	0.2-
1990 09 16	675	0.8-	0.4+	1998 09 18	704	0.2+	1.4+	1998 10 14	704	0.1-	1.5-
1998 08 26	809	(2.1+	1.0+)	1998 09 18	704	0.5+	0.3+	1998 10 14	704	0.5+	0.1+
1998 08 26	809	1.4+	0.8+	1998 09 18	704	1.0-	0.1-	1998 10 14	704	0.2-	0.6-
1998 08 26	809	0.9+	0.7+	1998 09 26	704	0.2+	0.4+	1998 10 15	704	0.1-	0.4+
1998 08 27	809	(3.6+	2.5+)	1998 09 26	704	0.4-	0.0	1998 10 15	704	0.5-	0.0
1998 08 27	809	(2.7+	2.5+)	1998 09 26	704	0.7+	0.5+	1998 10 15	704	0.9-	0.7+
1998 08 27	809	(2.2+	2.5+)	1998 09 26	704	0.3-	0.6+	1998 10 15	704	0.6-	0.3-
1998 09 14	704	(0.7+	2.8+)	1998 09 26	704	0.7-	0.1+	1998 10 15	704	1.8-	0.4-
1998 09 14	704	1.7-	0.2-	1998 09 27	704	0.6+	0.4-	1998 10 17	699	0.8-	0.1-
1998 09 14	704	0.2+	0.6-	1998 09 27	704	1.3+	1.0+	1998 10 17	699	0.5-	0.6-
1998 09 17	699	0.3+	0.0	1998 09 27	704	0.6+	0.2+				

1998 QZ₁₀₂ = 1977 DY₇ = 1978 JE₃ = 1995 WK₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	65.19765	(2000.0)	P		Q		Williams	
<i>n</i>	0.20414483	ω	166.16875	+0.46360471	+0.88233556			
<i>a</i>	2.8565629	Ω	131.38350	-0.82284420	+0.46262667			
<i>e</i>	0.2252041	<i>i</i>	6.19452	-0.32863064	+0.08637431			
<i>P</i>	4.83	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2	

Residuals in seconds of arc

1977 02 19	381	0.9+	0.7+	1998 08 27	809	0.8+	1.5+	1998 09 24	699	0.2-	0.3+
1977 02 19	381	0.5-	0.8+	1998 08 27	809	0.4+	1.8+	1998 09 26	704	0.2-	0.0
1978 05 09	095	0.1-	0.5-	1998 09 14	704	0.4+	1.0-	1998 09 26	704	0.5+	1.2-
1995 11 18	691	0.1-	0.3-	1998 09 14	704	0.5+	0.6-	1998 09 26	704	0.2+	0.1-
1995 11 18	691	0.4-	0.3-	1998 09 14	704	0.5-	0.3-	1998 09 26	704	0.5-	0.6-
1995 11 27	691	0.3-	0.3-	1998 09 18	704	0.0	0.1-	1998 09 26	704	0.6-	0.5-
1995 11 27	691	0.1-	0.4-	1998 09 18	704	0.2-	0.3+	1998 09 27	704	0.4+	0.1+
1995 11 27	691	0.5+	0.1-	1998 09 18	704	0.8-	0.5+	1998 09 27	704	0.6+	1.3-

M.P.C. 32988

1998 NOV. 10

1998 08 26	809	(0.8+ 3.0+)	1998 09 18	704	0.9− 1.3+	1998 09 27	704	0.2+ 0.1+
1998 08 26	809	(1.0+ 2.8+)	1998 09 18	704	0.5+ 0.1−	1998 09 27	704	0.0 0.4−
1998 08 26	809	(0.9+ 2.5+)	1998 09 24	699	0.4− 0.6+	1998 09 27	704	0.0 0.1−
1998 08 27	809	(1.1+ 2.4+)	1998 09 24	699	0.0 0.2+			

1998 QH₁₀₃ = 1997 ET₄₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24412615	ω	320.02804	+0.91074311	+0.41057405		
<i>a</i>	2.5354780	Ω	15.90569	−0.32518878	+0.77933040		
<i>e</i>	0.2215393	<i>i</i>	9.33456	−0.25455695	+0.47336357		
<i>P</i>	4.04	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 12	809	0.2− 0.2−	1998 09 18	704	0.2+ 0.1+	1998 10 14	704	0.5− 0.4−
1997 03 12	809	0.0 0.5+	1998 09 18	704	0.5− 0.4+	1998 10 14	704	1.3− 1.1+
1997 03 12	809	1.3− 0.1+	1998 09 24	699	0.1− 0.7+	1998 10 14	704	0.2+ 0.3+
1997 03 13	809	0.3+ 0.1+	1998 09 24	699	0.6+ 0.5+	1998 10 14	704	0.5+ 0.4+
1997 03 13	809	1.3+ 0.2−	1998 09 24	699	0.2+ 0.1−	1998 10 14	704	0.3+ 0.2−
1997 03 13	809	0.1− 0.3−	1998 09 26	704	0.5− 0.1−	1998 10 14	704	0.5+ 1.1+
1998 08 26	809	(3.5+ 3.4+)	1998 09 26	704	1.0+ 0.5−	1998 10 14	704	0.0 0.6+
1998 08 26	809	(2.3+ 2.8+)	1998 09 26	704	0.4− 0.5−	1998 10 14	704	0.1+ 0.4+
1998 08 26	809	(2.8+ 3.4+)	1998 09 26	704	0.6+ 0.5−	1998 10 15	704	0.5+ 0.2−
1998 08 27	809	(4.7+ 5.0+)	1998 09 26	704	1.0+ 0.9−	1998 10 15	704	1.0− 1.4+
1998 08 27	809	(4.3+ 5.3+)	1998 09 27	704	0.1+ 0.4−	1998 10 15	704	(2.6− 0.2+)
1998 08 27	809	(4.5+ 4.8+)	1998 09 27	704	0.7− 0.3+	1998 10 15	704	1.8− 1.4+
1998 09 14	704	0.2− 0.1−	1998 09 27	704	1.0− 0.6−	1998 10 15	704	0.2− 1.5+
1998 09 14	704	0.1+ 0.0	1998 09 27	704	1.2− 0.2+	1998 10 15	704	0.0 0.6−
1998 09 14	704	0.3− 0.4−	1998 09 27	704	1.3− 0.1+	1998 10 15	704	1.8+ 0.8−
1998 09 17	699	0.4+ 0.4+	1998 10 13	704	1.7+ 0.7+	1998 10 15	704	0.3− 1.1−
1998 09 17	699	0.1+ 0.3+	1998 10 13	704	1.7+ 0.6+	1998 10 15	704	1.0− 1.3−
1998 09 17	699	0.2+ 0.5+	1998 10 13	704	0.9− 0.5−	1998 10 17	699	0.6+ 0.7−
1998 09 18	704	0.5+ 0.2+	1998 10 13	704	0.6− 1.5−	1998 10 17	699	0.0 1.0−
1998 09 18	704	0.5+ 0.3−	1998 10 13	704	(4.4− 0.5+)	1998 10 17	699	(0.7− 2.2−)
1998 09 18	704	0.1− 0.1−	1998 10 14	704	0.5+ 0.4−			

1998 QM₁₀₃ = 1982 JZ

Id. S. Nakano, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20036587	ω	227.78028	+0.75789876	+0.64991039		
<i>a</i>	2.8923680	Ω	91.60352	−0.58061494	+0.71156184		
<i>e</i>	0.0605012	<i>i</i>	3.24716	−0.29744874	+0.26701354		
<i>P</i>	4.92	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1982 05 15	675	0.1− 0.3−	1998 09 14	704	0.9− 1.1−	1998 09 26	704	0.3+ 0.1+
1982 05 16	675	1.7− 0.3+	1998 09 17	699	0.1− 0.5+	1998 09 26	704	0.3− 0.1−
1982 05 17	675	2.2+ 0.0	1998 09 17	699	0.6− 0.2+	1998 09 26	704	0.7+ 0.8−
1982 05 18	675	0.6− 0.7−	1998 09 17	699	0.5− 0.2−	1998 09 26	704	0.6+ 0.5−
1998 08 26	809	(7.8− 3.3−)	1998 09 18	704	0.0 0.5+	1998 09 26	704	0.1− 0.6−
1998 08 26	809	(7.4− 3.7−)	1998 09 18	704	0.9− 0.4+	1998 09 27	704	0.2− 0.7−
1998 08 26	809	(7.2− 3.7−)	1998 09 18	704	0.6− 0.3+	1998 09 27	704	0.7+ 0.1+
1998 08 27	809	0.7+ 1.7+	1998 09 18	704	0.1+ 0.3+	1998 09 27	704	0.8+ 0.2+
1998 08 27	809	0.3+ 1.1+	1998 09 18	704	0.9+ 0.0	1998 09 27	704	0.7− 0.1+
1998 08 27	809	0.3+ 1.8+	1998 09 24	699	0.8− 0.5−	1998 09 27	704	0.6− 0.1−
1998 09 14	704	0.0 0.4−	1998 09 24	699	0.2− 0.4−	1998 10 17	699	0.3+ 0.7−
1998 09 14	704	0.2− 1.3−	1998 09 24	699	0.4+ 0.5+	1998 10 17	699	0.7+ 0.7−

1998 QQ₁₀₃ = 1991 RB₃₆

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28644899	ω	350.35803	+0.93087958	−0.36310334		
<i>a</i>	2.2791410	Ω	31.02827	+0.34016639	+0.82132838		
<i>e</i>	0.1146250	<i>i</i>	4.47728	+0.13322924	+0.43997234		
<i>P</i>	3.44	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 09 14	675	0.2− 0.2−	1998 09 25	699	0.1− 0.2−	1998 09 27	704	0.5− 0.4+
1991 09 14	675	0.1− 0.2+	1998 09 25	699	0.1+ 0.2+	1998 09 27	704	0.2+ 0.8−
1991 10 01	413	0.3− 1.3+	1998 09 25	699	0.5+ 0.4+	1998 09 29	704	0.2+ 0.5+
1991 10 01	413	(1.0− 2.7+)	1998 09 26	704	0.0 0.2−	1998 09 29	704	0.2+ 0.2−
1998 08 26	809	0.4+ 1.4+	1998 09 26	704	0.2− 0.5−	1998 09 29	704	0.7+ 1.0+
1998 08 26	809	0.5+ 1.1+	1998 09 26	704	0.0 0.5−	1998 09 29	704	0.6− 0.3+
1998 08 26	809	0.1+ 1.3+	1998 09 26	704	0.2− 0.3−	1998 09 29	704	(5.2− 0.3+)
1998 08 27	809	0.5− 0.4+	1998 09 26	704	0.3+ 1.4−	1998 10 02	704	0.6− 0.0
1998 08 27	809	0.1− 0.2+	1998 09 26	704	0.2− 0.5−	1998 10 02	704	0.4+ 0.1+
1998 08 27	809	0.2− 0.5+	1998 09 26	704	0.5+ 1.3−	1998 10 02	704	0.8− 0.2−
1998 09 14	704	0.3− 0.7−	1998 09 26	704	0.0 0.0	1998 10 02	704	1.4− 0.5−
1998 09 14	704	0.6+ 1.5−	1998 09 26	704	0.1+ 0.7−	1998 10 02	704	(3.0− 0.1−)
1998 09 14	704	(1.9− 2.6−)	1998 09 26	704	0.6+ 0.3+	1998 10 02	704	1.3− 1.7+
1998 09 17	699	0.2− 0.2−	1998 09 27	704	0.5+ 0.7+	1998 10 02	704	0.5− 0.4−
1998 09 17	699	0.1+ 0.6−	1998 09 27	704	0.5+ 0.6−	1998 10 02	704	(2.5− 0.3+)
1998 09 17	699	0.2+ 0.3−	1998 09 27	704	1.0+ 0.1+	1998 10 02	704	(2.6− 2.0+)
1998 09 18	704	0.9− 1.4−	1998 09 27	704	0.4+ 0.5+	1998 10 17	699	(1.2− 2.6+)
1998 09 18	704	0.4+ 1.0−	1998 09 27	704	0.2+ 0.1+	1998 10 17	699	0.9− 1.9+
1998 09 18	704	0.2− 0.8−	1998 09 27	704	0.2+ 0.0	1998 10 17	699	0.8− 2.0+
1998 09 18	704	0.6+ 0.7−	1998 09 27	704	0.4+ 0.1−			
1998 09 18	704	0.4+ 0.8−	1998 09 27	704	0.5+ 0.7+			

1998 QQ₁₀₅ = 1978 WM₂₀ = 1990 RZ₁₄ = 1990 SX₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24496713	ω	7.28424	+0.77721401	−0.62593589		
<i>a</i>	2.5296718	Ω	31.75515	+0.57096974	+0.65855756		
<i>e</i>	0.2145018	<i>i</i>	7.02465	+0.26444647	+0.41773940		
<i>P</i>	4.02	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 11 28	675	0.8− 1.0−	1998 08 26	809	1.6+ 1.0+	1998 09 26	704	0.4+ 0.1−
1978 11 29	675	1.4+ 0.5+	1998 09 14	704	0.5− 0.5+	1998 09 26	704	0.5+ 0.9−
1990 09 14	809	0.6− 0.0	1998 09 14	704	1.3− 0.2−	1998 09 26	704	0.9− 1.6−
1990 09 14	809	0.5− 0.7−	1998 09 14	704	1.1− 0.9−	1998 09 26	704	(2.4+ 2.1−)
1990 09 14	809	0.6− 0.4−	1998 09 14	704	0.7− 0.7−	1998 09 27	704	1.0+ 1.0+
1990 09 22	809	1.5+ 0.9−	1998 09 18	704	0.2− 0.9+	1998 09 27	704	1.1+ 1.4+
1990 09 22	809	0.8+ 0.2−	1998 09 18	704	1.2− 0.8+	1998 09 27	704	0.7− 0.6+
1990 09 22	809	0.3+ 0.5−	1998 09 18	704	0.5− 0.3+	1998 09 27	704	0.5+ 0.3−
1998 08 25	809	1.5+ 0.2−	1998 09 18	704	1.6− 1.5+	1998 09 27	704	0.7− 0.2−
1998 08 25	809	1.2+ 0.2−	1998 09 24	699	1.0− 0.3+	1998 10 12	699	0.9+ 0.4+
1998 08 25	809	1.3+ 1.0−	1998 09 24	699	0.8− 0.5−	1998 10 12	699	0.4− 0.9+
1998 08 26	809	(2.6+ 1.2+)	1998 09 24	699	0.0 0.1−	1998 10 12	699	0.4− 1.8+
1998 08 26	809	1.8+ 0.6+	1998 09 26	704	0.5− 1.6−			

1998 QW₁₀₅ = 1994 PA₂₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25479108	ω	268.28708	+0.67588730	−0.72828761		
<i>a</i>	2.4642224	Ω	138.43172	+0.72562343	+0.63073237		
<i>e</i>	0.1689972	<i>i</i>	9.80736	+0.12902325	+0.26790639		
<i>P</i>	3.87	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	1.5− 0.4+	1998 08 25	809	2.0− 1.4−	1998 10 14	327	0.7− 0.0
1994 08 12	809	0.1− 0.5+	1998 08 25	809	2.8− 1.8−	1998 10 14	327	0.6− 0.5−
1994 08 12	809	0.3− 0.2+	1998 08 25	809	2.7− 2.3−	1998 10 14	327	0.2− 0.1−

1998 NOV. 10

1994 08 13	809	1.0+	0.1-	1998 08 26	809	2.7+	1.7+	1998 10 17	327	0.4+	0.1-
1994 08 13	809	0.6+	0.4-	1998 08 26	809	2.3+	1.9+	1998 10 17	327	0.1+	0.8+
1994 08 13	809	0.3+	0.5-	1998 08 26	809	2.8+	1.7+	1998 10 17	327	0.7+	0.1-

1998 QB₁₀₆ = 1981 UA₁₂ = 1981 UY₂₆ = 1991 PT₁₃

Id. S. Nakano, G. V. Williams (d, *MPC* 20484); 1994 YY₁ = 1981 UA₁₂
(*MPC* 24753) is invalid

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	22.56307	(2000.0)		P	Q		
<i>n</i>	0.28691395	ω	267.00933	+0.97156951	-0.22718402		
<i>a</i>	2.2766780	Ω	106.11490	+0.23526608	+0.89492487		
<i>e</i>	0.1978494	<i>i</i>	3.97720	+0.02650571	+0.38405324		
<i>P</i>	3.44	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 10 22	095	1.3+	0.4+	1998 08 25	809	1.1+	1.0-	1998 09 18	704	(2.4-	1.4+)
1981 10 25	675	0.7-	0.2-	1998 08 25	809	(0.5+	2.2-)	1998 09 18	704	1.6-	1.3+
1981 10 26	675	0.4-	0.3-	1998 08 26	809	1.1+	0.6-	1998 09 18	704	1.7-	1.7+
1991 08 06	675	0.1-	0.1-	1998 08 26	809	1.4+	1.4-	1998 11 07	910	0.3-	0.1+
1991 08 06	675	0.3-	0.5-	1998 08 26	809	0.9+	1.2-	1998 11 07	910	0.1-	0.0
1991 08 10	675	0.7-	1.0+	1998 09 14	704	0.7+	0.2-	1998 11 07	910	0.4+	0.3+
1991 08 10	675	0.5+	0.4+	1998 09 14	704	0.4+	1.0-	1998 11 08	910	0.6-	0.1-
1998 07 26	699	1.3-	0.8+	1998 09 14	704	1.2+	0.7-	1998 11 08	910	0.7-	0.1+
1998 07 26	699	0.4+	0.4+	1998 09 14	704	0.5+	0.4-	1998 11 08	910	0.5-	0.1-
1998 07 26	699	0.3-	1.2+	1998 09 18	704	0.9-	0.2+				
1998 08 25	809	1.5+	0.7-	1998 09 18	704	1.7-	1.3+				

1998 RK = 1992 RR₂

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	81.37175	(2000.0)		P	Q		
<i>n</i>	0.17243815	ω	137.15833	+0.48426683	+0.86615208		
<i>a</i>	3.1967878	Ω	160.74204	-0.86927423	+0.49233755		
<i>e</i>	0.0719768	<i>i</i>	22.00058	-0.09923683	-0.08593204		
<i>P</i>	5.72	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 09 02	809	0.0	0.1+	1998 09 03	426	0.1-	0.3-	1998 09 15	426	0.6-	0.2+
1992 09 02	809	0.1-	0.2-	1998 09 03	426	0.1+	0.2+	1998 10 13	426	0.6+	0.5-
1992 09 02	809	1.1-	0.1-	1998 09 12	426	0.2+	0.7+	1998 10 13	426	0.1-	0.8-
1992 09 03	809	1.2+	0.2+	1998 09 12	426	0.0	0.1-	1998 10 13	426	0.3-	0.1-
1998 09 01	426	0.5+	0.4-	1998 09 12	426	0.1+	0.3-	1998 10 19	426	0.1+	0.5+
1998 09 01	426	0.7-	0.4+	1998 09 15	426	0.7-	0.2+	1998 10 19	426	0.7+	0.3+
1998 09 03	426	1.2+	0.2-	1998 09 15	426	1.0-	0.1+	1998 10 19	426	0.1-	0.3+

1998 RE₂ = 1995 BG₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	337.81649	(2000.0)		P	Q		
<i>n</i>	0.18393123	ω	281.26977	+0.56691739	-0.81276454		
<i>a</i>	3.0621918	Ω	133.33799	+0.80932665	+0.51914559		
<i>e</i>	0.0923813	<i>i</i>	10.63541	+0.15360681	+0.26438923		
<i>P</i>	5.36	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 01 28	399	0.6+	0.8-	1998 09 12	426	0.1-	0.0	1998 09 24	426	0.0	0.4+
1995 01 28	399	0.3-	0.2+	1998 09 12	426	0.1-	0.3-	1998 10 13	426	0.3+	0.1+
1995 02 03	399	1.0-	0.9+	1998 09 16	426	0.1-	0.1-	1998 10 13	426	0.0	0.0
1995 02 03	399	0.1-	0.7-	1998 09 16	426	0.0	0.0	1998 10 13	426	0.3+	0.2-
1995 02 06	399	0.0	0.3+	1998 09 16	426	0.3-	0.0	1998 10 19	426	0.1+	0.2-
1995 02 06	399	0.8+	0.1+	1998 09 24	426	0.1-	0.4+	1998 10 19	426	0.3-	0.1-
1998 09 12	426	0.1-	0.1-	1998 09 24	426	0.1-	0.4+	1998 10 19	426	0.4+	0.3-

M.P.C. 32989

1998 RQ₂ = 1995 UP₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	338.01812	(2000.0)		P	Q		
<i>n</i>	0.31340069	ω	46.18254	+0.44117556	-0.89683223		
<i>a</i>	2.1465256	Ω	17.71868	+0.78968041	+0.37075190		
<i>e</i>	0.0575770	<i>i</i>	6.12964	+0.42634374	+0.24131924		
<i>P</i>	3.14	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 19	691	0.1+	0.2+	1998 09 14	704	(5.0-	1.0-)	1998 09 18	704	0.1+	0.0
1995 10 19	691	0.2+	0.2+	1998 09 16	422	0.1-	0.1-	1998 09 18	704	0.1-	0.2+
1995 10 19	691	0.3+	0.2+	1998 09 16	422	0.2+	0.2-	1998 09 18	704	0.8+	0.2-
1995 10 24	691	0.2+	0.0	1998 09 16	422	0.3-	0.1-	1998 09 18	704	0.6-	1.2+
1995 10 24	691	0.2+	0.0	1998 09 16	422	0.0	0.2+	1998 09 24	699	0.3+	0.7+
1995 10 24	691	0.2+	0.5-	1998 09 16	426	0.1-	0.0	1998 09 24	699	0.5-	0.0
1995 10 28	691	0.4-	0.3-	1998 09 16	426	0.2-	0.1-	1998 09 24	699	0.7+	0.7+
1995 10 28	691	0.3-	0.2-	1998 09 16	426	0.4-	0.1-	1998 09 26	704	0.2-	0.6+
1995 10 28	691	0.3-	0.0	1998 09 16	557	0.2+	0.2-	1998 09 26	704	0.9-	0.1+
1998 09 14	704	0.3+	0.4-	1998 09 16	557	0.0	0.2-	1998 09 26	704	1.0-	0.5-
1998 09 14	704	0.1+	0.4-	1998 09 16	557	0.3-	0.1-	1998 09 26	704	1.5-	0.3+
1998 09 14	704	0.5+	0.1-	1998 09 17	699	1.4+	0.7+	1998 09 26	704	1.4-	0.0
1998 09 14	704	0.6-	0.2-	1998 09 17	699	1.6+	0.5+	1998 09 27	704	0.5-	0.5-
1998 09 14	704	0.1+	0.9-	1998 09 17	699	0.4+	1.2+	1998 09 27	704	0.7+	0.9+
1998 09 14	704	1.1+	0.2+	1998 09 17	422	0.3-	0.1-	1998 09 27	704	0.0	0.0
1998 09 14	704	0.2-	0.6-	1998 09 17	422	0.1-	0.4-	1998 09 27	704	0.3+	0.1-
1998 09 14	704	0.7+	0.5-	1998 09 18	704	0.5-	0.2-	1998 09 27	704	0.2-	1.0-

1998 RJ₃ = 1982 SW

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	73.54372	(2000.0)		P	Q		
<i>n</i>	0.36793368	ω	330.76946	+0.75639339	+0.65092658		
<i>a</i>	1.9288110	Ω	347.94274	-0.52396243	+0.54387987		
<i>e</i>	0.0562680	<i>i</i>	17.99306	-0.39157683	+0.52961239		
<i>P</i>	2.68	<i>H</i>	16.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1982 09 20	675	(4.3-	6.2-)	1998 09 14	704	(2.1-	0.6+)	1998 09 25	704	1.6+	0.1+
1982 09 20	675	0.2-	0.1-	1998 09 14	704	(0.9+	2.7-)	1998 09 25	704	1.3-	0.1-
1982 09 24	675	(3.1-	2.3-)	1998 09 14	704	0.1-	0.1+	1998 09 25	704	(3.7-	0.2-)
1982 09 24	675	(8.1+	4.8-)	1998 09 14	704	0.8+	1.4-	1998 09 27	704	1.0-	0.5-
1982 10 11	675	0.4+	0.6+	1998 09 18	704	0.3-	0.8+	1998 09 27	704	0.4-	0.3-
1982 10 11	675	0.4-	0.3-	1998 09 18	704	0.3-	0.1+	1998 09 27	704	1.4-	0.2+
1982 10 13	675	0.3+	0.0	1998 09 18	704	0.1-	0.6+	1998 09 27	704	0.3+	0.0
1982 10 13	675	0.1+	0.4-	1998 09 18	704	(4.8-	0.5-)	1998 09 27	704	(2.1-	0.1-)
1998 09 14	704	1.1+	0.3+	1998 09 25	704	0.8+	0.3+				

1998 RL₄ = 1997 ET₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Doppler			
<i>M</i>	116.80428	(2000.0)		P	Q		
<i>n</i>	0.28273989	ω	264.25186	-0.18450450	+0.98218662		
<i>a</i>	2.2990301	Ω	354.70152	-0.67762280	-0.15336308		
<i>e</i>	0.1969818	<i>i</i>	22.67732	-0.71188864	-0.10857812		
<i>P</i>	3.49	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 13	691	0.0	0.4+	1998 09 18	704	0.4-	0.1-	1998 09 26	704	0.2-	2.0+
1997 03 13	691	0.0	0.3+	1998 09 18	704	1.6-	0.5+	1998 09 27	704	0.5+	0.4+
1997 03 13	691	0.0	0.2+	1998 09 18	704	0.9+	1.1-	1998 09 27	704	0.7+	0.3+
1997 03 18	599	0.2+	0.3-	1998 09 18	704	0.7+	0.3+	1998 09 27	704	0.3+	0.3-
1997 03 18	599	0.3-	0.5-	1998 09 18	704	(3.0-	0.9-)	1998 09 27	704	0.6+	1.5-
1998 09 14	704	0.8-	0.3-	1998 09 26	704	(1.5-	3.4+)	1998 09 27	704	0.1-	2.0-
1998 09 14	704	0.4-	0.6-	1998 09 26	704	0.3+	1.9+				
1998 09 14	704	0.3-	0.7-	1998 09 26	704	0.3-	1.4+				

M.P.C. 32990

1998 NOV. 10

1998 RC₅ = 1990 TA₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	334.85322	(2000.0)	P		Q	
<i>n</i>	0.24036375	ω	81.90580	+0.29440065	-0.95553450	
<i>a</i>	2.5618679	Ω	350.91939	+0.82956747	+0.26423679	
<i>e</i>	0.2344109	<i>i</i>	6.10889	+0.47449560	+0.13089212	
<i>P</i>	4.10	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1990 10 10	033	0.2+	0.8+	1998 09 18	120	0.5-	0.3-	1998 09 23	120	0.4+	0.5+
1990 10 11	033	0.2-	0.8-	1998 09 18	704	0.3+	0.4-	1998 09 23	120	0.1+	0.4-
1998 09 14	704	0.1+	0.6-	1998 09 18	704	0.9-	1.3+	1998 09 23	120	0.8+	0.1-
1998 09 14	704	0.2-	0.0	1998 09 18	704	0.7-	0.5-	1998 09 23	120	0.1-	0.1-
1998 09 14	704	0.4-	0.0	1998 09 18	704	1.0+	1.5+	1998 09 24	120	(5.9-	2.0+)
1998 09 14	704	0.4-	0.6-	1998 09 18	704	0.3+	0.1+	1998 09 24	120	3.2-	1.1-
1998 09 15	120	1.1+	0.2-	1998 09 22	120	0.4+	0.3+	1998 09 29	120	0.1-	0.3+
1998 09 16	120	0.6-	0.4-	1998 09 22	120	2.4+	0.4-	1998 09 29	120	0.6+	0.1+
1998 09 17	120	0.1-	0.3-	1998 09 22	120	0.7+	1.6+	1998 09 29	120	1.3-	0.5-
1998 09 17	120	0.3-	0.3+	1998 09 23	120	0.6+	0.1-				

1998 RD₅ = 1976 UQ₁₄ = 1997 GW₃₉

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	144.11203	(2000.0)	P		Q	
<i>n</i>	0.26741109	ω	169.08748	-0.39639270	+0.91251746	
<i>a</i>	2.3860696	Ω	77.49786	-0.84991566	-0.32317197	
<i>e</i>	0.1048542	<i>i</i>	5.93329	-0.34715443	-0.25074241	
<i>P</i>	3.69	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1976 10 22	381	0.3+	0.4+	1998 09 18	704	0.6+	0.3+	1998 10 14	704	0.1-	0.8+
1976 10 22	381	0.3-	0.4-	1998 09 18	704	0.7+	0.2+	1998 10 14	704	1.4-	1.7-
1997 04 07	809	0.6-	1.1-	1998 09 19	428	0.5+	0.4+	1998 10 14	704	0.3+	1.7-
1997 04 07	809	0.6-	1.2-	1998 09 19	428	0.4+	0.2-	1998 10 15	704	1.3-	0.2+
1997 04 07	809	0.9-	1.4-	1998 09 21	699	0.0	0.3-	1998 10 15	704	1.2+	0.3-
1997 04 08	809	(0.7-	4.0-)	1998 09 21	699	0.0	0.3-	1998 10 15	704	0.2-	1.2+
1997 04 08	809	(1.7-	4.2-)	1998 09 21	699	0.7+	0.4+	1998 10 15	704	1.8-	0.2-
1997 04 08	809	(1.7-	4.0-)	1998 09 26	704	0.3+	0.2-	1998 10 15	704	1.4-	0.8+
1997 04 09	809	0.5+	1.0+	1998 09 26	704	0.8+	1.1-	1998 10 17	699	0.5+	0.6+
1997 04 09	809	0.8+	0.8+	1998 09 26	704	0.0	0.9-	1998 10 17	699	0.4+	0.7+
1997 04 09	809	0.1+	1.1+	1998 09 26	704	0.5+	0.5-	1998 10 17	699	0.2+	0.4+
1997 04 10	809	0.3+	0.3+	1998 09 26	704	0.5+	0.1-	1998 10 21	428	1.3-	0.6-
1997 04 10	809	0.0	0.1+	1998 09 27	704	0.1+	0.4-	1998 10 21	428	0.1-	0.2+
1997 04 10	809	0.4+	0.4+	1998 09 27	704	0.4-	0.4+	1998 10 28	704	1.2-	0.1-
1998 09 14	704	0.6-	0.2+	1998 09 27	704	0.4+	0.2+	1998 10 28	704	0.2-	0.9+
1998 09 14	704	1.3-	0.5-	1998 09 27	704	0.3-	0.8-	1998 10 28	704	0.4+	0.1+
1998 09 15	428	0.5-	0.8+	1998 09 27	704	0.4-	0.8-	1998 10 28	704	(3.1-	1.1-)
1998 09 15	428	0.7+	0.2+	1998 09 28	428	0.5+	0.6+	1998 10 29	704	1.0+	0.2+
1998 09 16	428	0.6+	0.3+	1998 09 28	428	1.2+	0.2+	1998 10 29	704	0.3+	0.8+
1998 09 18	704	0.2-	0.1+	1998 10 10	428	1.4-	0.5+	1998 10 29	704	0.2-	0.0
1998 09 18	704	0.3-	0.0	1998 10 10	428	1.4-	0.7+	1998 10 29	704	1.5+	1.9-
1998 09 18	704	0.5+	0.2+	1998 10 14	704	0.1-	0.5+	1998 10 29	704	1.3+	0.6-

1998 RP₅ = 1988 DT₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	209.32537	(2000.0)	P		Q	
<i>n</i>	0.24011511	ω	1.16414	-0.99309663	+0.11490012	
<i>a</i>	2.5636362	Ω	185.60080	-0.10947972	-0.98017226	
<i>e</i>	0.1106178	<i>i</i>	13.99452	-0.04211022	-0.16143205	
<i>P</i>	4.10	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1988 02 23	413	0.4-	0.1-	1998 09 17	699	0.1-	0.4+	1998 09 26	704	1.5+	1.5-
1988 02 23	413	0.0	0.1-	1998 09 17	699	0.6+	0.2+	1998 09 27	704	0.4+	0.2-
1988 02 25	413	0.2-	0.1+	1998 09 18	704	0.5+	1.2+	1998 09 27	704	0.3+	1.2-

1988 02 25	413	0.5+	0.1+	1998 09 18	704	0.2-	0.4+	1998 09 27	704	0.2+	0.5-
1998 09 14	704	0.2+	0.7+	1998 09 18	704	0.6+	2.6+	1998 09 27	704	0.7-	0.4+
1998 09 14	704	0.2+	0.9-	1998 09 18	704	3.6-	1.2+	1998 09 27	704	0.6+	1.0-
1998 09 14	704	0.6-	2.4-	1998 09 18	704	1.4-	0.3-	1998 10 14	699	0.4+	0.4+
1998 09 15	699	0.5+	0.4+	1998 09 26	704	0.3+	0.4-	1998 10 14	699	1.0-	1.3+
1998 09 15	699	0.8+	0.8+	1998 09 26	704	0.3+	1.1-	1998 10 14	699	0.8-	0.5+
1998 09 15	699	0.3+	0.7+	1998 09 26	704	0.4+	1.0-				
1998 09 17	699	0.5+	0.4+	1998 09 26	704	0.0	1.0-				

1998 RW₅ = 1997 EE₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	72.82639	(2000.0)	P		Q	
<i>n</i>	0.29426542	ω	300.98586	+0.58549098	+0.81066731	
<i>a</i>	2.2386003	Ω	4.85856	-0.72522295	+0.52615688	
<i>e</i>	0.0953794	<i>i</i>	2.93626	-0.36228716	+0.25686077	
<i>P</i>	3.35	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1997 03 05	684	0.4+	1.0-	1998 09 13	699	0.2+	0.9+	1998 09 18	699	1.3+	0.2+
1997 03 05	684	0.2+	0.4-	1998 09 13	699	0.8-	0.5-	1998 09 18	704	0.0	1.8-
1997 03 06	684	0.0	0.0	1998 09 14	704	0.1+	0.1+	1998 09 18	699	0.2-	0.3+
1997 03 06	684	0.3-	0.0	1998 09 14	704	1.0-	0.2-	1998 09 18	704	0.6+	0.8+
1997 03 07	684	0.0	0.7+	1998 09 14	704	0.8-	0.1-	1998 09 18	704	0.8-	0.4-
1997 03 07	684	0.1+	0.8+	1998 09 14	704	0.5-	0.6-	1998 09 18	704	1.2+	1.4+
1997 03 07	684	0.1-	0.3+	1998 09 14	704	1.7+	1.3-	1998 09 18	704	1.3-	1.5+
1998 09 13	699	0.5+	0.6+	1998 09 18	699	0.3-	0.7-				

1998 RY₅ = 1987 FD = 1990 BC

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	232.45980	(2000.0)	P		Q	
<i>n</i>	0.29834983	ω	134.99476	-0.92391153	-0.38167564	
<i>a</i>	2.2181224	Ω	22.60831	+0.32862295	-0.82732014	
<i>e</i>	0.0877899	<i>i</i>	3.97787	+0.19594502	-0.41214693	
<i>P</i>	3.30	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1987 03 27	688	0.6-	0.0	1998 09 14	704	0.2-	0.6-	1998 09 18	704	1.5-	0.1+
1987 03 27	688	0.6+	0.0	1998 09 14	704	0.1-	0.0	1998 09 18	704	0.6-	1.1+
1990 01 17	400	1.5+	2.9+	1998 09 14	704	0.3+	0.2+	1998 09 18	704	0.1+	0.6+
1990 01 17	400	2.0+	2.0-	1998 09 14	704	0.3+	0.4-	1998 10 10	699	0.4-	0.5-
1990 01 21	400	2.9-	0.2-	1998 09 18	699	0.4-	0.7+	1998 10 10	699	0.5+	0.5+
1990 01 21	400	0.5-	0.5-	1998 09 18	699	0.0	0.1-	1998 10 10	699	0.6+	0.6-
1998 09 13	699	0.5+	0.2+	1998 09 18	704	0.0	0.3-	1998 10 12	699	0.3+	0.2-
1998 09 13	699	0.2+	0.1+	1998 09 18	699	0.4-	1.0+	1998 10 12	699	0.5+	1.0-
1998 09 13	699	0.4+	0.5-	1998 09 18	704	0.0	0.1-	1998 10 12	699	0.1+	0.2-

1998 RZ₅ = 9532 P-L = 1994 TJ₉ = 1997 HQ₁₀

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	22.39958	(2000.0)	P		Q	
<i>n</i>	0.23325535	ω	323.82563	+0.99935409	-0.01380594	
<i>a</i>	2.6136553	Ω	37.00775	+0.02694334	+0.89878702	
<i>e</i>	0.1768590	<i>i</i>	3.15976	-0.02377922	+0.43816811	
<i>P</i>	4.23	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1960 10 17	675	0.6+	0.3+	1997 04 30	704	0.6-	0.1+	1998 09 14	704	0.7-	0.3+
1960 10 22	675	1.4-	2.6-	1997 04 30	704	1.4+	1.4+	1998 09 14	704	0.1-	0.1+
1960 10 24	675	0.9+	0.4+	1997 04 30	704	0.6+	0.3-	1998 09 14	704	0.6-	0.5+
1960 10 26	675	0.9+	0.1-	1997 05 05	704	0.2+	0.3-	1998 09 18	699	0.3-	0.5+
1994 10 08	691	0.0	0.7+	1997 05 05	704	0.1+	0.6+	1998 09 18	699	0.4-	0.3+
1994 10 08	691	0.1-	0.6+	1997 05 05	704	0.1-	0.4-	1998 09 18	704	0.3+	1.0-
1994 10 08	691	0.1+	0.5+	1997 05 05	704	0.5-	0.5-	1998 09 18	699	0.2-	0.1-
1994 10 10	691	0.3-	0.7+	1997 05 05	704	0.9-	0.6+	1998 09 18	704	0.7+	0.6+
1994 10 10	691	0.8-	0.5+	1998 09 13	699	0.7+	0.1-	1998 09 18	704	0.5-	1.1-

1998 NOV. 10

M.P.C. 32991

1994 10 10	691	0.4−	0.5+	1998 09 13	699	0.5+	0.2−	1998 09 18	704	0.2−	0.8+
1997 04 30	704	0.2+	0.3+	1998 09 13	699	0.3+	0.7−	1998 09 18	704	0.1−	0.4−
1997 04 30	704	0.4+	0.7+	1998 09 14	704	0.6+	0.6+				

1998 RB₆ = 1990 UA₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.23689299	ω	195.75249			+0.99518723		−0.09431590	
<i>a</i>	2.5868301	Ω	169.55093			+0.09798764		+0.96029623	
<i>e</i>	0.1556645	<i>i</i>	8.42990			−0.00089577		+0.26255601	
<i>P</i>	4.16	<i>H</i>	15.5		<i>G</i>	0.15		<i>U</i>	5

Residuals in seconds of arc

1990 10 16	809	(2.6+	2.5+)	1990 10 19	809	0.4−	0.2−	1998 09 18	699	0.5+	0.5−
1990 10 16	809	(3.3+	2.7+)	1998 09 14	699	0.6−	0.5+	1998 09 18	699	0.1−	0.2−
1990 10 16	809	0.1−	0.3+	1998 09 14	699	0.6−	0.5−	1998 09 27	691	0.2−	0.1+
1990 10 19	809	0.2+	0.5+	1998 09 14	699	0.5+	0.4+	1998 09 27	691	0.3−	0.2+
1990 10 19	809	0.3+	0.6−	1998 09 18	699	0.5+	0.2−	1998 09 27	691	0.2+	0.2+

1998 RL₉ = 1993 FR₆₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.25456897	ω	159.16847			+0.77641220		+0.62942591	
<i>a</i>	2.4656556	Ω	161.71279			−0.59158499		+0.74524508	
<i>e</i>	0.0484851	<i>i</i>	5.80473			−0.21728163		+0.22007454	
<i>P</i>	3.87	<i>H</i>	16.0		<i>G</i>	0.15		<i>U</i>	3

Residuals in seconds of arc

1993 03 19	809	0.2−	0.9+	1998 09 19	691	0.0	0.4+	1998 10 20	910	0.0	0.3−
1993 03 20	809	0.2+	0.9−	1998 09 19	691	0.4−	0.3+	1998 10 21	910	0.1−	0.4−
1998 09 13	691	0.1+	0.0	1998 09 19	691	0.3−	0.1−	1998 10 21	910	0.0	0.3+
1998 09 13	691	0.1+	0.3−	1998 10 20	910	0.2+	0.0	1998 10 21	910	0.0	0.1+
1998 09 13	691	0.3+	0.3−	1998 10 20	910	0.0	0.1+				

1998 RN₁₃ = 1993 CS

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.26429425	ω	56.39880			−0.98545027		−0.16200566	
<i>a</i>	2.4047923	Ω	114.23129			+0.13119732		−0.91731751	
<i>e</i>	0.1213454	<i>i</i>	3.23124			+0.10805107		−0.36370695	
<i>P</i>	3.73	<i>H</i>	14.5		<i>G</i>	0.15		<i>U</i>	5

Residuals in seconds of arc

1993 01 27	010	0.4−	0.4+	1993 02 22	385	0.7+	0.3+	1998 09 20	426	0.7+	0.4+
1993 01 27	010	0.5−	0.8+	1993 02 28	385	0.8+	0.1−	1998 09 20	426	0.3−	0.1+
1993 01 27	010	0.5−	0.0	1993 02 28	385	0.2−	0.6+	1998 10 20	426	0.5+	0.0
1993 02 14	385	0.7−	0.6+	1993 02 28	385	0.2+	0.3+	1998 10 20	426	0.4+	0.4+
1993 02 14	385	0.2−	0.0	1998 09 01	426	0.1+	0.7−	1998 10 20	426	0.0	0.2−
1993 02 15	385	(0.6+	3.7−)	1998 09 01	426	0.1+	0.6−	1998 10 25	426	0.4−	0.5+
1993 02 20	010	0.1+	1.1−	1998 09 12	426	0.0	0.1−	1998 10 25	426	0.2−	0.4+
1993 02 20	010	1.0+	1.2−	1998 09 12	426	0.3−	0.3−	1998 10 25	426	0.7−	0.5−
1993 02 20	010	0.4+	1.1−	1998 09 12	426	0.0	0.2+				
1993 02 22	385	1.0−	0.8−	1998 09 20	426	0.5+	0.7−				

1998 RJ₁₅ = 1997 ES₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.26550258	ω	95.14097			+0.07842224		+0.99692015	
<i>a</i>	2.3974904	Ω	179.35648			−0.92855789		+0.07319475	
<i>e</i>	0.1346310	<i>i</i>	2.09956			−0.36280877		+0.02815573	
<i>P</i>	3.71	<i>H</i>	16.5		<i>G</i>	0.15		<i>U</i>	4

Residuals in seconds of arc

1997 03 02	691	0.1−	0.3+	1998 09 15	691	0.1−	0.1−	1998 09 23	691	0.3−	0.1+
1997 03 02	691	0.1+	0.2−	1998 09 15	691	0.1+	0.1−	1998 09 23	691	0.8−	0.4+
1997 03 02	691	0.1−	0.0	1998 09 15	691	0.1+	0.0	1998 09 26	691	0.5+	0.2+
1997 03 07	691	0.8+	0.0	1998 09 20	691	0.2+	0.0	1998 09 26	691	0.1+	0.4−
1997 03 07	691	0.2−	0.0	1998 09 20	691	0.4+	0.0	1998 09 26	691	0.2+	0.3−
1997 03 07	691	0.4−	0.1−	1998 09 23	691	0.4−	0.3+				

1998 RN₁₆ = 1981 QA₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.28931987	ω	135.98306			+0.74813922		+0.66352358	
<i>a</i>	2.2640389	Ω	182.46332			−0.63601957		+0.71497678	
<i>e</i>	0.2216512	<i>i</i>	6.56782			−0.18912119		+0.22032852	
<i>P</i>	3.41	<i>H</i>	16.5		<i>G</i>	0.15		<i>U</i>	4

Residuals in seconds of arc

1981 08 30	675	1.1−	0.4−	1998 09 14	704	0.4+	0.8−	1998 09 18	704	0.9+	0.9+
1981 08 31	675	1.0+	0.3+	1998 09 14	704	0.0	1.6−	1998 09 18	704	0.0	0.3−
1998 07 31	699	0.7+	0.9−	1998 09 14	704	0.1−	0.0	1998 09 18	704	0.6−	0.9+
1998 07 31	699	1.3−	0.9+	1998 09 15	699	0.2−	0.4+	1998 09 18	704	0.8+	0.3−
1998 07 31	699	0.3+	0.1+	1998 09 15	699	0.1−	0.6+	1998 09 22	910	0.5−	0.0
1998 09 14	704	0.7−	0.1+	1998 09 15	699	0.0	0.1+	1998 09 22	910	0.6−	0.2+
1998 09 14	704	0.9+	0.2+	1998 09 18	704	0.5+	0.4−	1998 09 22	910	0.6−	0.1−

1998 RJ₁₇ = 1987 US₃ = 1997 MP₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.26087106	ω	261.64991			+0.16217208		−0.98675731	
<i>a</i>	2.4257839	Ω	179.00013			+0.96203215		+0.15738610	
<i>e</i>	0.2306931	<i>i</i>	10.55619			+0.21953216		+0.03923795	
<i>P</i>	3.78	<i>H</i>	14.6		<i>G</i>	0.15		<i>U</i>	3

Residuals in seconds of arc

1987 10 26	054	0.9+	0.2−	1998 09 14	704	0.2−	0.3−	1998 09 18	704	0.6+	0.8+
1987 10 26	054	0.8−	0.6−	1998 09 14	704	0.7+	0.4+	1998 11 06	910	0.5−	0.3+
1997 06 30	691	0.1+	0.1+	1998 09 14	704	1.4−	1.5−	1998 11 06	910	0.5−	0.3+
1997 06 30	691	0.3+	0.1−	1998 09 14	704	0.6+	1.1+	1998 11 06	910	0.5−	0.2+
1997 06 30	691	0.4+	0.4−	1998 09 18	704	1.3+	0.0	1998 11 08	910	0.2+	1.3−
1997 07 12	691	0.3−	0.3−	1998 09 18	704	0.1+	0.5+	1998 11 08	910	0.2−	0.1−
1997 07 12	691	0.4−	0.1+	1998 09 18	704	0.2+	0.3−	1998 11 08	910	0.5−	0.4+
1997 07 12	691	0.4−	0.2−	1998 09 18	704	0.4−	0.2+				

1998 RS₁₈ = 1993 TD₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.17783445	ω	300.57064			+0.32979414		+0.94390049	
<i>a</i>	3.1317862	Ω	348.64739			−0.83396203		+0.28286806	
<i>e</i>	0.1476027	<i>i</i>	4.94309			−0.44242870		+0.17040401	
<i>P</i>	5.54	<i>H</i>	15.0		<i>G</i>	0.15		<i>U</i>	5

Residuals in seconds of arc

1993 10 10	691	0.4−	0.6+	1998 09 14	704	1.3+	1.0−	1998 10 20	910	0.1−	0.3+
1993 10 10	691	0.1−	0.5+	1998 09 14	704	1.6−	0.8+	1998 10 20	910	0.5−	0.3+
1993 10 10	691	0.2−	0.5+	1998 09 18	704	0.0	0.6−	1998 10 21	910	0.3−	0.5+
1993 10 20	691	0.1+	0.9−	1998 09 18	704	1.9+	0.4−	1998 10 21	910	0.5−	0.6+
1993 10 20	691	0.5+	0.4−	1998 09 18	704	0.3+	1.3−	1998 10 21	910	0.9−	0.0
1993 10 20	691	0.4+	0.7−	1998 09 18	704	1.3−	0.0				
1998 09 14	704	0.8+	0.6+	1998 10 20	910	0.4+	0.6+				

1998 RO₂₂ = 1997 GT₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

M	268.72994		(2000.0)	P	Q
n	0.27663452	ω	305.13060	-0.45941322	-0.88817459
a	2.3327336	Ω	172.20203	+0.83548145	-0.43564233
e	0.0720419	i	3.90538	+0.30151325	-0.14615630
P	3.56	H	15.5	G 0.15	U 4

Residuals in seconds of arc

1997 04 02	704	0.8+	1.0-	1997 04 08	704	0.8-	1.0-	1998 09 18	704	2.2+	1.2-
1997 04 02	704	0.0	1.4-	1998 08 24	910	0.1+	0.1+	1998 09 20	691	0.1+	0.1+
1997 04 06	704	0.1+	0.8-	1998 08 24	910	0.3-	0.2+	1998 09 20	691	0.0	0.3+
1997 04 06	704	0.0	0.8-	1998 08 24	910	0.0	0.2+	1998 09 20	691	0.2-	0.2+
1997 04 07	809	1.5-	1.0+	1998 09 14	704	0.5-	0.7-	1998 09 26	691	0.1-	0.0
1997 04 07	809	1.1-	1.1+	1998 09 14	704	0.7-	0.2-	1998 09 26	691	0.2+	0.1+
1997 04 07	809	1.0-	0.7+	1998 09 14	704	0.2-	0.7+	1998 09 26	691	0.3+	0.1+
1997 04 08	809	1.7+	0.7+	1998 09 14	704	0.7-	0.2+	1998 09 29	691	0.3-	0.4+
1997 04 08	809	1.1+	1.3+	1998 09 14	704	0.5-	0.0	1998 09 29	691	0.3-	0.0
1997 04 08	809	1.0+	0.6+	1998 09 18	704	0.4-	1.4-	1998 09 29	691	0.5-	0.2+
1997 04 08	704	0.3-	0.6-	1998 09 18	704	1.8+	0.4+				

1998 RD₂₄ = 1984 BK₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

M	103.98466		(2000.0)	P	Q
n	0.16925086	ω	85.31309	-0.41734632	+0.90868662
a	3.2367970	Ω	160.00958	-0.84548447	-0.38402266
e	0.1238325	i	1.76345	-0.33313369	-0.16375355
P	5.82	H	14.5	G 0.15	U 6

Residuals in seconds of arc

1984 01 25	675	0.1-	0.2-	1998 09 18	704	0.1-	0.7-	1998 09 24	691	0.2-	0.1-
1984 01 26	675	0.1+	0.2+	1998 09 18	704	(2.9+	1.4-)	1998 09 30	691	0.1-	0.5+
1998 09 14	704	0.0	0.3-	1998 09 18	704	(0.7+	3.2-)	1998 09 30	691	0.1-	0.0
1998 09 14	704	1.4+	1.1+	1998 09 18	704	0.9-	0.1-	1998 09 30	691	0.4+	0.5+
1998 09 14	704	(2.0-	2.5+)	1998 09 24	691	0.3-	0.1-				
1998 09 14	704	0.0	0.5-	1998 09 24	691	0.1-	0.3-				

1998 RO₃₁ = 1978 VJ₁ = 1995 VD₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	262.58242		(2000.0)	P	Q
n	0.28888827	ω	223.25998	-0.65879410	-0.74759623
a	2.2662933	Ω	268.13371	+0.71117357	-0.58233817
e	0.0804234	i	4.83279	+0.24540268	-0.31934643
P	3.41	H	15.0	G 0.15	U 5

Residuals in seconds of arc

1978 10 30	010	0.9-	0.8+	1995 11 16	358	0.3+	1.9-	1998 09 18	704	0.3-	0.1+
1978 11 01	010	0.1-	1.4+	1995 11 16	358	0.5+	1.2-	1998 09 18	704	0.2+	0.0
1978 11 01	010	0.0	1.1+	1998 09 14	704	0.1+	0.3-	1998 09 18	704	0.8-	0.5+
1978 11 02	010	0.7+	0.5+	1998 09 14	704	0.4+	0.3-	1998 09 18	704	0.3+	0.6+
1978 11 02	010	0.2-	0.9-	1998 09 14	704	0.2-	0.1-	1998 10 11	699	0.1-	0.9+
1995 11 12	358	1.1-	0.1+	1998 09 14	704	0.0	0.8-	1998 10 11	699	0.6+	0.1-
1995 11 12	358	1.1+	0.0	1998 09 18	704	0.3-	0.8-	1998 10 11	699	0.1-	0.5+

1998 RO₃₈ = 1988 RN₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	120.88021		(2000.0)	P	Q
n	0.29965203	ω	247.76547	-0.26700171	+0.96366461
a	2.2116916	Ω	6.76278	-0.85804846	-0.23404580
e	0.1256542	i	3.79050	-0.43870596	-0.12873648
P	3.29	H	14.5	G 0.15	U 5

Residuals in seconds of arc

1988 09 07	809	0.5-	0.8-	1988 09 14	809	0.2-	0.3+	1998 09 18	704	0.1-	0.8+
1988 09 07	809	0.1-	0.8-	1988 09 14	809	0.1-	0.1+	1998 09 18	704	0.1+	0.9+
1988 09 07	809	0.3+	0.7-	1988 09 16	809	0.5-	0.3-	1998 09 18	704	1.2-	0.4+
1988 09 08	809	0.1+	0.0	1988 09 16	809	0.6-	0.3-	1998 09 18	704	0.1+	1.5+
1988 09 08	809	0.1+	0.1+	1988 09 16	809	0.6-	0.3-	1998 10 08	120	1.6+	0.8-
1988 09 08	809	0.0	0.2+	1988 09 14	704	0.1-	0.2+	1998 10 08	120	0.0	0.7-
1988 09 11	809	1.2+	0.7+	1988 09 14	704	0.8-	0.2-	1998 10 10	120	1.1+	0.6+
1988 09 11	809	0.8+	0.4+	1988 09 14	704	0.3-	0.2-	1998 10 10	120	0.1-	0.7-
1988 09 11	809	0.7+	0.2+	1988 09 14	704	0.6-	0.2+	1998 10 10	120	0.9+	0.7-
1988 09 14	809	0.3-	0.2+	1988 09 18	704	0.8-	0.5-				

1998 RB₄₃ = 1994 PE₇

Id. G. V. Williams, B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

M	17.03250		(2000.0)	P	Q
n	0.25326756	ω	62.24206	+0.96320500	-0.26326168
a	2.4740948	Ω	312.96620	+0.21312991	+0.87085026
e	0.1449288	i	4.24174	+0.16374300	+0.41510615
P	3.89	H	16.0	G 0.15	U 5

Residuals in seconds of arc

1994 08 10	809	(2.7+	0.5-)	1998 09 18	704	1.3-	1.4-	1998 10 13	046	0.6+	0.1+
1994 08 10	809	0.1+	0.7-	1998 09 18	704	0.7-	1.6+	1998 10 16	046	0.1+	0.2+
1994 08 10	809	1.1+	0.5+	1998 09 18	704	1.4+	0.0	1998 10 16	046	0.3+	0.5-
1994 08 11	809	(2.6-	0.4+)	1998 09 18	704	0.3-	1.4-	1998 10 16	046	0.2-	0.2+
1994 08 11	809	0.8-	0.6+	1998 09 18	704	1.0+	1.5+	1998 10 16	046	0.5-	0.8-
1994 08 11	809	0.4-	0.4-	1998 10 13	046	0.3-	0.2+	1998 10 16	046	1.0-	0.6-
1998 09 14	704	1.8+	0.1-	1998 10 13	046	0.9-	0.9+	1998 10 16	046	0.1-	0.5-
1998 09 14	704	0.5-	0.1-	1998 10 13	046	0.1-	0.5+	1998 10 17	046	0.7+	0.4-
1998 09 14	704	1.0-	0.1-	1998 10 13	046	0.2+	0.7+	1998 10 17	046	0.7+	0.5-
1998 09 14	704	0.2-	0.2-	1998 10 13	046	0.1+	0.4+	1998 10 17	046	0.4+	0.2+

1998 RD₄₃ = 1993 OH₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	26.80254		(2000.0)	P	Q
n	0.21795740	ω	46.63678	+0.99650161	+0.06517503
a	2.7345654	Ω	309.55627	-0.08151743	+0.89600105
e	0.0834204	i	3.89063	+0.01842416	+0.43924292
P	4.52	H	15.0	G 0.15	U 5

Residuals in seconds of arc

1993 07 13	809	0.2-	0.7-	1998 09 14	704	1.1+	0.8+	1998 09 26	704	1.0-	0.3+
1993 07 13	809	0.2-	0.2+	1998 09 14	704	0.8+	1.5-	1998 09 26	704	0.4-	0.7+
1993 07 13	809	0.0	0.6-	1998 09 14	704	0.0	0.4-	1998 09 26	704	0.8-	0.1-
1993 07 20	809	0.4+	0.4-	1998 09 14	704	0.8-	0.3+	1998 09 26	704	1.9-	0.1-
1993 07 20	809	0.3+	0.5-	1998 09 18	704	0.1-	1.5-	1998 09 27	704	0.8+	1.3+
1993 07 20	809	0.1+	0.8-	1998 09 18	704	1.1+	1.7+	1998 09 27	704	0.2+	0.3-
1993 07 24	809	0.5+	1.8-	1998 09 18	704	2.4+	0.3-	1998 09 27	704	0.3-	0.4-
1993 07 26	809	0.5+	1.7+	1998 09 18	704	0.9+	0.2-	1998 09 27	704	0.6-	0.3-
1993 07 26	809	0.3-	1.7+	1998 09 18	704	0.9+	1.8-	1998 09 27	704	1.3-	2.6+
1993 07 26	809	1.4-	1.5+	1998 09 26	704	1.0-	0.9-				

1998 RD₄₄ = 1992 GR₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	18.64595		(2000.0)	P	Q
n	0.21757171	ω	337.72977	+0.99630506	-0.07269617
a	2.7377961	Ω	26.56375	+0.08573510	+0.87328081
e	0.0996601	i	5.86970	-0.00507148	+0.48176331
P	4.53	H	15.0	G 0.15	U 5

Residuals in seconds of arc

1992 04 05	691	0.6+	0.5-	1998 09 14	704	0.4-	1.0-	1998 09 26	704	0.2+	0.7-
1992 04 05	691	1.0+	0.5-	1998 09 14	704	0.5-	0.3-	1998 09 26	704	0.3-	1.6-
1992 04 05	691	0.9+	0.5-	1998 09 18	704	0.9-	0.2-	1998 09 26	704	0.6-	0.4-

1998 NOV. 10

M.P.C. 32993

1992 04 09	691	0.7−	0.8+	1998 09 18	704	0.8+	0.1+	1998 09 27	704	0.6+	0.6+
1992 04 09	691	1.4−	0.6+	1998 09 18	704	0.5+	0.4+	1998 09 27	704	0.7+	0.1+
1992 04 09	691	0.4−	0.1+	1998 09 18	704	0.1−	2.1+	1998 09 27	704	0.2+	0.1+
1998 09 14	704	0.2+	0.4+	1998 09 18	704	0.6+	0.3+	1998 09 27	704	0.7+	1.0−
1998 09 14	704	0.4−	1.1−	1998 09 26	704	0.6−	1.4+	1998 09 27	704	0.6−	0.8+

1998 RK₄₅ = 1996 BU₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22178744	ω	140.74060	+0.81319628	+0.58192662		
<i>a</i>	2.7029919	Ω	183.70427	−0.56173724	+0.78096891		
<i>e</i>	0.0978616	<i>i</i>	7.61047	−0.15219421	+0.22682366		
<i>P</i>	4.44	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 24	691	0.4−	0.1+	1998 09 14	704	2.2+	0.6−	1998 09 26	704	1.2+	0.9−
1996 01 24	691	0.1+	0.0	1998 09 14	704	0.2+	0.8+	1998 09 26	704	1.5+	0.9+
1996 01 24	691	0.2+	0.1+	1998 09 18	704	1.2+	0.1−	1998 09 26	704	0.9+	1.4−
1996 01 29	691	0.0	0.1+	1998 09 18	704	1.3−	1.8+	1998 09 27	704	1.4−	2.0+
1996 01 29	691	0.1+	0.3−	1998 09 18	704	0.0	0.4+	1998 09 27	704	1.0+	1.9+
1996 01 29	691	0.2+	0.0	1998 09 18	704	1.4−	1.3−	1998 09 27	704	1.2−	2.0−
1998 09 14	704	0.8−	1.1−	1998 09 18	704	0.1−	0.6+	1998 09 27	704	1.0+	0.6−
1998 09 14	704	0.5−	0.4+	1998 09 26	704	1.1−	2.6−	1998 09 27	704	1.5−	1.8+

1998 RZ₄₅ = 1994 TZ₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22875953	ω	108.65771	+0.55323467	+0.83278435		
<i>a</i>	2.6477883	Ω	194.98221	−0.79052510	+0.51727083		
<i>e</i>	0.0789128	<i>i</i>	4.44611	−0.26268131	+0.19723366		
<i>P</i>	4.31	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 10 10	691	0.1+	0.2−	1998 09 14	704	0.7+	0.4+	1998 09 26	704	0.1−	0.4−
1994 10 10	691	0.4−	0.4−	1998 09 14	704	0.6+	0.5+	1998 09 26	704	0.2+	0.8−
1994 10 10	691	0.5−	0.4+	1998 09 14	704	1.0+	1.0−	1998 09 27	704	0.6+	0.7+
1994 10 12	691	0.0	0.1+	1998 09 14	704	0.0	0.2+	1998 09 27	704	0.8−	0.7−
1994 10 12	691	0.2−	0.2+	1998 09 18	704	1.3−	0.8−	1998 09 27	704	0.0	0.0
1994 10 12	691	0.0	0.4+	1998 09 18	704	0.7−	0.4+	1998 09 27	704	0.9+	0.8+
1994 10 13	691	0.5+	0.4−	1998 09 18	704	0.6+	0.7+	1998 09 27	704	0.7−	0.6−
1994 10 13	691	0.4+	0.1−	1998 09 18	704	1.8−	0.5−				
1994 10 13	691	0.0	0.1−	1998 09 26	704	1.0+	0.9+				

1998 RW₄₆ = 1969 TA₇ = 1980 VB₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27161406	ω	104.71878	+0.99329222	+0.09922127		
<i>a</i>	2.3613909	Ω	249.61443	−0.11434446	+0.91923720		
<i>e</i>	0.2258266	<i>i</i>	3.63183	+0.01720220	+0.38099620		
<i>P</i>	3.63	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1969 10 08	033	0.1+	0.2+	1998 09 18	704	1.2−	0.4−	1998 09 27	704	0.3−	1.3+
1969 10 08	033	0.3−	0.3+	1998 09 18	704	0.8−	0.4+	1998 09 27	704	0.1+	0.4+
1980 11 01	675	0.5+	0.2+	1998 09 18	704	0.2−	0.0	1998 09 27	704	0.2+	0.0
1980 11 02	675	0.3−	0.9−	1998 09 18	704	0.6−	0.2−	1998 09 27	704	0.7+	0.3+
1998 09 14	704	0.3+	1.3−	1998 09 26	704	0.6+	0.4−	1998 09 27	704	0.2−	0.2+
1998 09 14	704	0.4+	0.2+	1998 09 26	704	0.4+	0.3−	1998 10 14	699	0.1−	0.6+
1998 09 14	704	0.2−	0.4−	1998 09 26	704	0.3+	0.3+	1998 10 14	699	0.4−	0.2+
1998 09 14	704	0.8+	0.8+	1998 09 26	704	0.2+	1.0−	1998 10 14	699	0.1−	0.6+
1998 09 18	704	0.1−	1.1−	1998 09 26	704	0.4+	0.2−				

1998 RA₄₇ = 1997 LQ₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29623821	ω	260.95861	−0.35350564	−0.93338961		
<i>a</i>	2.2286507	Ω	209.97544	+0.89947642	−0.32103844		
<i>e</i>	0.1015699	<i>i</i>	7.10368	+0.25685781	−0.16036880		
<i>P</i>	3.33	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 07	809	0.2+	0.4−	1998 09 14	704	0.3+	0.1+	1998 09 26	704	0.1+	1.5+
1997 06 07	809	0.0	0.5−	1998 09 14	704	0.2−	0.1+	1998 09 26	704	0.3−	0.8+
1997 06 07	809	0.3+	0.9+	1998 09 18	704	0.2+	2.0−	1998 09 27	704	1.4−	0.3−
1997 06 08	809	0.2−	0.2−	1998 09 18	704	1.8+	0.5+	1998 09 27	704	0.5+	0.8+
1997 06 08	809	0.8−	0.4+	1998 09 18	704	0.7−	2.0+	1998 09 27	704	0.0	1.3−
1997 06 08	809	0.5+	0.2−	1998 09 18	704	0.9−	1.3+	1998 09 27	704	0.5+	0.1−
1998 09 14	704	0.1−	0.5+	1998 09 26	704	0.8−	0.9−				
1998 09 14	704	0.3−	2.1−	1998 09 26	704	1.4+	0.7−				

1998 RE₄₇ = 1984 UH₃ = 1991 RR₃₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27832041	ω	143.24327	+0.99735223	+0.03690604		
<i>a</i>	2.3233039	Ω	214.80017	−0.05473391	+0.94828871		
<i>e</i>	0.1529086	<i>i</i>	6.30348	+0.04788243	+0.31525620		
<i>P</i>	3.54	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1984 10 29	688	3.8+	0.1+	1998 09 14	704	0.1+	1.7−	1998 09 26	704	0.7+	0.2−
1984 10 29	688	0.6+	3.8+	1998 09 14	704	0.5+	0.9−	1998 09 26	704	0.1−	0.4−
1984 10 31	688	2.1−	4.0−	1998 09 18	704	0.8−	0.2−	1998 09 26	704	0.5+	0.1−
1984 10 31	688	2.3−	0.1+	1998 09 18	704	0.3−	0.3−	1998 09 27	704	0.3+	0.6+
1991 09 14	675	0.5−	0.1+	1998 09 18	704	0.7−	0.8−	1998 09 27	704	0.2+	1.1+
1991 09 14	675	0.6+	0.6−	1998 09 18	704	0.4+	1.1+	1998 09 27	704	0.8−	0.2+
1998 09 14	704	0.2+	0.7−	1998 09 18	704	0.6−	0.1−	1998 09 27	704	0.1+	0.4+
1998 09 14	704	0.8−	0.9−	1998 09 26	704	0.2+	0.1−	1998 09 27	704	0.5+	0.7+
1998 09 14	704	0.3+	3.0+	1998 09 26	704	0.0	0.4−				

1998 RK₄₇ = 1987 NO = 1987 OHId. G. V. Williams, W. Landgraf (d, *MPC* 12432)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27643537	ω	351.77084	+0.55250586	+0.82957419		
<i>a</i>	2.3338538	Ω	311.72501	−0.75842607	+0.46010633		
<i>e</i>	0.1362630	<i>i</i>	6.22236	−0.34572702	+0.31639980		
<i>P</i>	3.57	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 06 24	809	1.1+	1.1−	1998 09 14	704	0.4−	0.1+	1998 09 26	704	0.1−	0.5−
1987 07 01	809	0.0	0.0	1998 09 14	704	0.2+	0.2+	1998 09 26	704	0.0	0.7+
1987 07 01	809	0.1−	0.5+	1998 09 14	704	0.9+	0.5−	1998 09 26	704	0.5+	0.3−
1987 07 01	809	0.6+	0.3−	1998 09 14	704	0.6+	0.7−	1998 09 26	704	0.1+	0.2+
1987 07 02	809	0.7−	1.3+	1998 09 18	704	0.0	0.7−	1998 09 27	704	0.2+	0.7+
1987 07 02	809	1.5−	0.2−	1998 09 18	704	0.3−	0.0	1998 09 27	704	0.1−	0.7+
1987 07 02	809	(5.8−	2.3+)	1998 09 18	704	0.3+	0.4+	1998 09 27	704	0.0	0.4+
1987 07 21	046	0.5+	0.2+	1998 09 18	704	0.0	0.2−	1998 09 27	704	1.1−	0.1−
1987 07 21	046	0.0	0.4−	1998 09 18	704	0.7−	0.6+	1998 09 27	704	0.8−	0.8−
1998 09 14	704	0.0	0.0	1998 09 26	704	0.7+	0.3−				

1998 RP₄₇ = 1985 CO₂ = 1996 FK₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	89.96945		(2000.0)	P		Q		Williams	
<i>n</i>	0.18428003	ω	318.40903	+0.26217011	+0.96134588				
<i>a</i>	3.0583267	Ω	326.53545	−0.84020422	+0.18449935				
<i>e</i>	0.0666165	<i>i</i>	8.77778	−0.47468273	+0.20438709				
<i>P</i>	5.35	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1985 02 15	809	1.3−	0.0	1985 02 24	809	0.5−	0.1−	1998 09 18	704	0.3+	0.8+
1985 02 15	809	1.0−	0.1+	1985 02 24	809	0.4−	0.0	1998 09 18	704	0.2+	0.5+
1985 02 15	809	0.7−	0.1+	1996 03 24	566	1.0−	0.9−	1998 09 18	704	0.1−	0.5+
1985 02 16	809	1.0−	0.0	1996 03 24	566	0.8−	0.9−	1998 09 18	704	0.1−	0.2+
1985 02 16	809	0.8−	0.0	1996 03 24	566	0.9−	0.7−	1998 09 18	704	0.6+	0.2−
1985 02 16	809	0.9−	0.1+	1996 03 25	566	1.0+	0.2+	1998 09 26	704	0.2−	0.2+
1985 02 17	809	1.1+	0.1+	1996 03 25	566	0.6+	0.3+	1998 09 26	704	0.8−	0.4−
1985 02 17	809	1.5+	0.2+	1996 03 25	566	0.5+	0.0	1998 09 26	704	0.0	0.8−
1985 02 17	809	1.6+	0.2+	1996 03 26	566	0.0	0.7+	1998 09 26	704	0.6+	1.2−
1985 02 21	809	1.0+	0.3−	1996 03 26	566	0.2+	0.7+	1998 09 26	704	0.3−	0.7−
1985 02 21	809	1.4+	0.5−	1996 03 26	566	0.2+	0.5+	1998 09 27	704	0.0	0.4+
1985 02 21	809	1.7+	0.2−	1998 09 14	704	1.0+	0.2−	1998 09 27	704	0.9−	1.7+
1985 02 22	809	0.4−	0.2+	1998 09 14	704	0.0	0.4+	1998 09 27	704	1.1+	0.4+
1985 02 22	809	0.3−	0.3+	1998 09 14	704	0.3−	0.4−	1998 09 27	704	0.2−	0.5−
1985 02 22	809	0.2−	0.0	1998 09 14	704	0.3+	0.4+	1998 09 27	704	0.3−	0.2+
1985 02 24	809	0.8−	0.2−	1998 09 14	704	0.8−	1.4−				

1998 RR₄₇ = 1996 CD₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	354.82934		(2000.0)	P		Q		Williams	
<i>n</i>	0.26506280	ω	90.82301	+0.66720624	−0.74216653				
<i>a</i>	2.4001416	Ω	317.09693	+0.64097400	+0.61544194				
<i>e</i>	0.1391262	<i>i</i>	5.34718	+0.37945773	+0.26536779				
<i>P</i>	3.72	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1996 02 10	327	0.4+	0.6+	1998 09 14	704	1.1+	0.6−	1998 09 26	704	1.1−	0.4−
1996 02 10	327	0.3+	0.6+	1998 09 14	704	1.0−	0.6+	1998 09 26	704	0.4+	0.5+
1996 02 10	327	0.6+	0.2+	1998 09 14	704	0.9+	0.9+	1998 09 26	704	0.9−	0.3+
1996 02 12	327	0.5+	0.0	1998 09 18	704	0.5+	0.0	1998 09 27	704	0.1−	0.6−
1996 02 12	327	1.1+	0.4−	1998 09 18	704	1.2−	0.5+	1998 09 27	704	0.1−	1.0+
1996 02 12	327	0.4+	0.4−	1998 09 18	704	0.3+	1.5−	1998 09 27	704	0.5+	0.6−
1996 02 17	691	1.1−	0.4−	1998 09 18	704	0.1+	1.0+	1998 09 27	704	0.4+	0.1−
1996 02 17	691	1.1−	0.0	1998 09 18	704	1.6−	0.7−	1998 09 27	704	0.2−	0.6+
1996 02 17	691	1.2−	0.2−	1998 09 26	704	1.0+	0.0				
1998 09 14	704	0.2−	0.2−	1998 09 26	704	1.1+	0.6−				

1998 RC₄₈ = 1997 JL₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	48.31887		(2000.0)	P		Q		Williams	
<i>n</i>	0.23738195	ω	107.59687	+0.81918230	+0.57227585				
<i>a</i>	2.5832766	Ω	217.51905	−0.54700691	+0.75968757				
<i>e</i>	0.2600939	<i>i</i>	3.57321	−0.17240593	+0.30882867				
<i>P</i>	4.15	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1997 05 05	691	0.4+	0.1+	1998 09 14	704	0.8−	0.6+	1998 09 26	704	0.1−	0.5+
1997 05 05	691	0.4+	0.4−	1998 09 18	704	0.2+	0.1−	1998 09 27	704	0.8+	0.0
1997 05 05	691	0.3+	0.8−	1998 09 18	704	0.1+	0.1−	1998 09 27	704	0.8+	0.5−
1997 05 08	691	0.5−	0.3−	1998 09 18	704	0.0	0.1−	1998 09 27	704	0.0	0.1−
1997 05 08	691	0.5−	0.1−	1998 09 18	704	0.3+	0.4+	1998 09 27	704	0.4+	0.6−
1997 05 08	691	0.8−	0.3−	1998 09 18	704	0.4−	0.4−	1998 10 14	699	0.1−	0.8−
1998 09 14	704	0.6−	0.2−	1998 09 26	704	0.4+	0.2−	1998 10 14	699	0.0	0.8−
1998 09 14	704	0.5−	0.0	1998 09 26	704	0.3+	0.0	1998 10 14	699	0.6−	0.6−
1998 09 14	704	0.4−	1.1+	1998 09 26	704	0.3+	0.0				
1998 09 14	704	0.3−	0.5+	1998 09 26	704	0.5+	0.1+				

1998 RS₄₈ = 1978 WH₁₈ = 1993 SG₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	347.32874		(2000.0)	P		Q		Williams	
<i>n</i>	0.19288104	ω	178.12853	+0.61408356	−0.78881076				
<i>a</i>	2.9667187	Ω	233.98511	+0.72369535	+0.57595069				
<i>e</i>	0.2147932	<i>i</i>	1.84607	+0.31490699	+0.21461219				
<i>P</i>	5.11	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1978 11 30	675	0.2−	0.4−	1993 09 24	809	1.5−	1.1−	1998 09 26	704	0.5−	0.3−
1978 12 01	675	0.3+	0.3−	1993 09 24	809	(3.2−	1.7−)	1998 09 26	704	0.6−	1.2−
1993 09 17	809	0.7+	0.3+	1998 09 14	704	1.2+	0.6−	1998 09 26	704	0.6+	0.2−
1993 09 17	809	0.3−	1.4+	1998 09 14	704	1.4+	0.2+	1998 09 26	704	0.5+	0.6+
1993 09 17	809	0.2−	1.1+	1998 09 14	704	0.2+	0.2−	1998 09 26	704	0.2−	0.5+
1993 09 18	809	0.6+	1.4+	1998 09 14	704	1.1+	0.4+	1998 09 27	704	0.8−	0.4−
1993 09 18	809	0.7+	0.7+	1998 09 14	704	0.2−	1.0+	1998 09 27	704	0.2−	0.1−
1993 09 18	809	0.0	0.8+	1998 09 18	704	0.2−	0.1−	1998 09 27	704	0.8−	0.1+
1993 09 22	809	(2.8−	1.9−)	1998 09 18	704	0.4−	0.6−	1998 10 14	699	0.3−	1.1+
1993 09 22	809	(2.7−	1.8−)	1998 09 18	704	0.5−	0.9−	1998 10 14	699	1.3+	1.2−
1993 09 22	809	(3.6−	1.7−)	1998 09 18	704	0.6−	0.5−	1998 10 14	699	0.8+	0.8−
1993 09 24	809	1.6−	0.0	1998 09 18	704	0.1+	1.0−				

1998 RV₄₈ = 1996 CC₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	337.30068		(2000.0)	P		Q		Williams	
<i>n</i>	0.24628230	ω	182.52217	+0.52572608	−0.85021133				
<i>a</i>	2.5206579	Ω	235.76205	+0.78103950	+0.49523047				
<i>e</i>	0.0762080	<i>i</i>	1.90189	+0.33703024	+0.17857066				
<i>P</i>	4.00	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1996 02 10	691	0.7+	0.1−	1998 09 14	704	0.9−	0.1−	1998 09 26	704	0.7+	1.1−
1996 02 10	691	0.6+	0.3−	1998 09 14	704	1.8−	1.1−	1998 09 27	704	0.0	0.9+
1996 02 10	691	0.6+	0.1−	1998 09 18	704	0.3+	0.3−	1998 09 27	704	0.9+	1.2+
1996 02 16	691	0.8−	0.2+	1998 09 18	704	1.3+	0.1−	1998 09 27	704	0.1−	0.6+
1996 02 16	691	0.6−	0.1+	1998 09 18	704	0.2+	0.3+	1998 09 27	704	0.0	1.4−
1996 02 16	691	0.6−	0.1+	1998 09 18	704	1.7+	0.5+	1998 09 27	704	0.2−	0.5+
1998 09 14	704	0.2+	1.5−	1998 09 26	704	0.9−	0.5+				
1998 09 14	704	0.3−	0.9+	1998 09 26	704	1.2−	0.0				

1998 RW₄₈ = 1983 QX = 1987 KT₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	44.42780		(2000.0)	P		Q		Williams	
<i>n</i>	0.19943951	ω	70.26488	+0.89485268	+0.44566789				
<i>a</i>	2.9013174	Ω	263.26231	−0.41833565	+0.81792727				
<i>e</i>	0.1018328	<i>i</i>	1.43534	−0.15567261	+0.36383390				
<i>P</i>	4.94	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1983 08 30	675	1.2−	0.5−	1998 09 14	704	0.0	0.7+	1998 09 26	704	1.0−	0.9−
1983 08 31	675	1.0−	0.2+	1998 09 14	704	1.6−	0.6+	1998 09 26	704	0.1−	0.4−
1983 09 01	675	0.5+	0.2−	1998 09 14	704	0.9−	0.5+	1998 09 26	704	0.1+	0.7+
1983 09 02	675	0.5+	0.0	1998 09 18	704	0.0	0.5+	1998 09 26	704	0.0	0.7+
1983 09 02	675	1.2+	0.5+	1998 09 18	704	1.5+	0.1+	1998 09 27	704	0.7−	0.2−
1987 05 30	413	0.9−	0.4+	1998 09 18	704	1.1+	0.3−	1998 09 27	704	1.7+	1.1+
1987 05 30	413	0.9+	0.4−	1998 09 18	704	1.2+	0.7−	1998 09 27	704	1.0−	1.1+
1998 09 14	704	0.3−	0.0	1998 09 18	704	0.5+	0.6−	1998 09 27	704	0.3−	0.8−
1998 09 14	704	0.3+	1.1−	1998 09 26	704	0.5−	0.6−	1998 09 27	704	0.1+	0.7−

1998 NOV. 10

M.P.C. 32995

1998 RB₄₉ = 1994 SB₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	31.99236	(2000.0)		P		Q					
<i>n</i>	0.24413557	ω	173.06352	+0.99448258		+0.10489185					
<i>a</i>	2.5354128	Ω	180.91928	−0.10005640		+0.94431541					
<i>e</i>	0.2583889	<i>i</i>	5.17207	−0.03151363		+0.31187514					
<i>P</i>	4.04	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1994 09 28	691	0.2−	0.0	1998 09 14	704	0.4−	0.6+	1998 09 27	704	0.7−	1.1−
1994 09 28	691	0.3−	0.1−	1998 09 18	704	0.9+	1.0−	1998 09 27	704	0.8+	0.6−
1994 09 28	691	0.2−	0.1−	1998 09 18	704	0.3−	1.0+	1998 09 27	704	0.6−	1.1+
1994 10 06	691	0.7+	0.4+	1998 09 18	704	1.3+	0.0	1998 09 27	704	0.2+	0.5+
1994 10 06	691	0.2−	0.3+	1998 09 18	704	0.0	0.6−	1998 09 27	704	0.7+	0.1+
1994 10 06	691	0.1+	0.1−	1998 09 18	704	1.2+	1.5+	1998 10 12	910	0.0	0.2+
1998 09 14	704	1.7−	1.3+	1998 09 26	704	0.2−	0.6−	1998 10 12	910	0.2+	0.3−
1998 09 14	704	0.3+	0.0	1998 09 26	704	0.6+	0.3−	1998 10 12	910	0.2−	0.4+
1998 09 14	704	0.9+	1.3−	1998 09 26	704	1.9−	0.8−				
1998 09 14	704	0.4−	0.4+	1998 09 26	704	0.7−	1.0−				

1998 RD₄₉ = 1997 GH₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	60.77624		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.27591068	ω	136.17318		+0.77443400		+0.63264640				
a	2.3368116	Ω	184.58469		−0.59104701		+0.72166515				
e	0.1568260	i	2.32400		−0.22564442		+0.28099457				
P	3.57	H	16.5		G	0.15	U	5			
Residuals in seconds of arc											
1997 04 07	691	0.6−	0.1−	1998 09 14	704	0.4+	0.0	1998 09 27	704	0.9+	0.4+
1997 04 07	691	0.4−	0.1−	1998 09 18	704	0.8−	0.1−	1998 09 27	704	0.7−	0.3+
1997 04 07	691	0.7−	0.2+	1998 09 18	704	0.6+	0.3−	1998 09 27	704	0.1−	1.0+
1997 04 16	691	0.6+	0.1−	1998 09 18	704	1.3+	1.1+	1998 09 27	704	0.6−	0.6−
1997 04 16	691	0.6+	0.1+	1998 09 18	704	1.0−	0.4+	1998 09 27	704	1.0−	0.5+
1997 04 16	691	0.6+	0.2+	1998 09 18	704	0.1+	0.5−	1998 10 18	910	0.5+	0.4−
1998 09 14	704	1.1+	0.1−	1998 09 26	704	0.4−	0.6+	1998 10 18	910	0.6+	0.4−
1998 09 14	704	1.9+	1.5−	1998 09 26	704	1.8−	0.9−	1998 10 18	910	0.8+	0.4−
1998 09 14	704	0.3+	0.8−	1998 09 26	704	1.8−	2.0+				

1998 RF₅₀ = 1975 EN₄ = 1980 DU = 1996 JB₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	280.69786		(2000.0)		P		Q	
<i>n</i>	0.19164074	ω	317.93339		−0.36809754		−0.92837919	
<i>a</i>	2.9795053	Ω	153.54337		+0.88073620		−0.36578247	
<i>e</i>	0.1040495	<i>i</i>	6.59258		+0.29800662		−0.06569061	
<i>P</i>	5.14	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	2	
Residuals in seconds of arc								
1975 03 15	095 (17.1+ 0.8−)		1996 05 09	691 0.6+ 0.0		1998 09 18	704 0.1− 0.4−	
1980 02 14	046 (2.7+ 1.6−)		1996 05 09	691 0.5+ 0.0		1998 09 26	704 0.2+ 0.1−	
1980 02 14	046 0.3− 0.3−		1996 05 15	691 0.7− 0.4−		1998 09 26	704 0.5− 0.7−	
1980 02 15	046 (3.8− 3.3+)		1996 05 15	691 0.4− 0.1−		1998 09 26	704 0.3− 0.9−	
1980 02 15	046 (4.4− 2.2+)		1996 05 15	691 0.6− 0.1−		1998 09 26	704 1.0− 0.9+	
1980 02 19	046 0.5− 0.1−		1998 09 14	704 1.6+ 0.5+		1998 09 26	704 0.4− 0.5−	
1980 02 19	046 1.2− 0.8−		1998 09 14	704 1.0+ 0.5+		1998 09 27	704 1.0− 0.7+	
1980 02 21	046 1.0− 0.3−		1998 09 14	704 0.2+ 0.9−		1998 09 27	704 0.5+ 0.1+	
1980 02 21	046 0.1− 1.5−		1998 09 14	704 0.2− 0.3+		1998 09 27	704 0.4− 0.0	
1980 02 22	046 0.4− 0.6+		1998 09 14	704 0.2− 0.0		1998 10 17	699 0.1+ 0.2+	
1980 02 22	046 2.2+ 0.5+		1998 09 18	704 0.1+ 0.5−		1998 10 17	699 0.9+ 1.1+	
1980 02 23	046 0.6+ 1.1+		1998 09 18	704 1.0− 0.1−		1998 10 17	699 0.5+ 0.3+	
1980 02 23	046 0.5+ 0.3+		1998 09 18	704 0.2+ 0.6−				
1996 05 09	691 0.4+ 0.3+		1998 09 18	704 0.2+ 0.5−				

1998 RW₅₀ = 1993 OC₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	238.39038		(2000.0)			P		Q			
n	0.22368045	ω	213.94651			−0.85697988		−0.51394420			
a	2.6877201	Ω	295.08230			+0.48166326		−0.77252992			
e	0.0214131	i	2.40701			+0.18326483		−0.37290600			
P	4.41	H	14.5	G	0.15	U	6				
Residuals in seconds of arc											
1993 07 19	691	1.9+	3.3−	1998 09 14	704	0.2+	0.6−	1998 09 26	704	1.6+	1.5+
1993 07 19	691	1.3−	0.4+	1998 09 14	704	1.2−	0.8+	1998 09 26	704	3.0−	1.8−
1993 07 20	809	0.8−	1.0+	1998 09 18	704	1.6+	0.5+	1998 09 26	704	0.2+	1.2−
1993 07 20	809	0.3−	0.8+	1998 09 18	704	1.7−	0.1+	1998 09 27	704	0.3+	1.4+
1993 07 20	809	1.5−	0.6+	1998 09 18	704	1.0+	0.6−	1998 09 27	704	1.1−	0.4+
1993 07 24	809	2.0+	0.5+	1998 09 18	704	0.2+	1.1−	1998 09 27	704	0.4+	0.4−
1998 09 14	704	0.3−	0.8−	1998 09 18	704	0.3+	1.4−	1998 09 27	704	0.9+	0.1+
1998 09 14	704	0.1+	0.3+	1998 09 26	704	0.9−	0.1−				
1998 09 14	704	1.5+	2.2+	1998 09 26	704	0.1+	0.7+				

1998 RC₅₁ = 1993 BO₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	136.44148		(2000.0)		P		Q				
n	0.26663628	ω	285.46668		−0.50794269		+0.85983659				
a	2.3906898	Ω	313.88722		−0.76024518		−0.47572191				
e	0.1627018	i	4.11549		−0.40499567		−0.18539067				
P	3.70	H	15.0		G	0.15	U	6			
Residuals in seconds of arc											
1993 01 27	010	0.4+	0.8+	1998 09 14	704	1.5+	0.7−	1998 09 26	704	0.7−	0.9−
1993 01 27	010	1.4+	0.3+	1998 09 14	704	1.3+	0.3−	1998 09 26	704	2.1−	0.1+
1993 01 27	010	1.2+	0.6−	1998 09 18	704	0.8−	1.2−	1998 09 26	704	1.1−	0.1−
1993 01 28	010	1.2−	0.6+	1998 09 18	704	0.3+	0.8−	1998 09 26	704	0.7−	0.9+
1993 01 28	010	1.3−	0.8−	1998 09 18	704	0.1+	0.8−	1998 09 27	704	1.4+	0.8+
1993 01 28	010	0.5−	0.3−	1998 09 18	704	1.5−	1.7+	1998 09 27	704	1.1+	1.0+
1998 09 14	704	0.4+	0.1−	1998 09 18	704	1.1−	1.1+	1998 09 27	704	0.4+	1.4−
1998 09 14	704	1.2−	0.6+	1998 09 26	704	0.2+	0.3+	1998 09 27	704	2.3+	0.0

1998 RD₅₁ = 1981 UA₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	109.89157		(2000.0)			P		Q			
n	0.22829120	ω	37.37252			+0.02631181		+0.99704455			
a	2.6514083	Ω	234.24710			−0.93730055		−0.00049544			
e	0.0556796	i	5.10266			−0.34752751		+0.07682391			
P	4.32	H	13.5	G	0.15	U	5				
Residuals in seconds of arc											
1981 10 24	675	0.4+	0.6+	1998 09 26	704	0.7+	1.1−	1998 10 18	327	0.0	0.1+
1981 10 25	675	0.0	0.1+	1998 09 26	704	0.6+	0.5−	1998 10 18	327	0.1+	0.5+
1981 10 26	675	0.6−	0.0	1998 09 26	704	0.1−	0.6−	1998 10 19	327	0.4−	0.4−
1998 09 14	704	0.0	0.6+	1998 09 26	704	0.9−	1.0−	1998 10 19	327	0.5−	0.1+
1998 09 14	704	0.5+	1.3+	1998 09 27	704	0.0	0.1−	1998 10 19	327	0.4−	0.3−
1998 09 14	704	0.1−	1.1+	1998 09 27	704	0.3−	0.1+	1998 10 20	327	0.3−	0.1−
1998 09 14	704	0.4−	1.6+	1998 09 27	704	1.1+	0.6−	1998 10 20	327	0.3−	0.2−
1998 09 14	704	0.0	1.6+	1998 09 27	704	0.0	0.5−	1998 10 20	327	0.0	0.1−
1998 09 18	704	0.8+	1.1−	1998 09 27	704	0.0	0.2+	1998 10 22	327	0.3−	0.8−
1998 09 18	704	0.6+	0.1+	1998 10 14	699	0.4+	0.1+	1998 10 22	327	0.3−	0.9−
1998 09 18	704	0.6+	0.1+	1998 10 14	699	0.1−	0.3+	1998 10 22	327	0.4−	0.6−
1998 09 18	704	0.9−	0.5−	1998 10 14	699	0.8+	0.3+				
1998 09 18	704	0.4−	0.4+	1998 10 18	327	0.1+	0.0				

1998 RA₅₂ = 1978 WK₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	303.28499		(2000.0)		P		Q				
<i>n</i>	0.24053023	ω	47.52945		−0.21783218		−0.97412105				
<i>a</i>	2.5606857	Ω	55.14840		+0.87250418		−0.22205507				
<i>e</i>	0.1719981	<i>i</i>	4.21459		+0.43736209		−0.04218686				
<i>P</i>	4.10	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1978 11 30	675	0.0	0.2+	1998 09 18	704	2.3−	0.9−	1998 09 26	704	0.2−	0.4+
1978 12 01	675	0.0	0.2−	1998 09 18	704	0.4−	1.5+	1998 09 27	704	1.8+	1.8−
1998 09 14	704	0.9+	1.2−	1998 09 18	704	1.2+	1.5+	1998 09 27	704	1.7−	0.3−
1998 09 14	704	0.7+	1.4+	1998 09 26	704	1.5−	0.7+	1998 09 27	704	0.1+	1.0+
1998 09 14	704	0.3−	0.5−	1998 09 26	704	1.1+	1.1−	1998 09 27	704	0.3+	0.1−
1998 09 18	704	0.2+	2.0−	1998 09 26	704	0.7−	1.5+	1998 09 27	704	1.1+	0.3−

1998 RF₅₂ = 1996 KQ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	346.85470		(2000.0)		P		Q				
<i>n</i>	0.23903124	ω	40.60167		+0.59743046		−0.80039699				
<i>a</i>	2.5713800	Ω	12.96790		+0.66690512		+0.46168281				
<i>e</i>	0.1677106	<i>i</i>	12.72013		+0.44532506		+0.38237892				
<i>P</i>	4.12	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1996 05 22	691	0.1+	0.8−	1998 09 14	704	0.1+	0.2−	1998 09 26	704	1.0+	0.3−
1996 05 22	691	0.1−	0.1−	1998 09 18	704	0.2+	0.3−	1998 09 26	704	1.1+	0.6−
1996 05 22	691	0.1+	0.3−	1998 09 18	704	0.2−	0.1−	1998 09 26	704	0.9+	1.2−
1996 05 23	691	0.0	0.8+	1998 09 18	704	0.7−	0.6+	1998 09 27	704	0.1+	0.4+
1996 05 23	691	0.0	0.0	1998 09 18	704	0.0	0.3+	1998 09 27	704	0.5−	0.1−
1996 05 23	691	0.0	0.3+	1998 09 18	704	1.0−	0.5+	1998 09 27	704	1.6−	0.9+
1998 09 14	704	0.1+	0.2−	1998 09 26	704	0.0	0.8+	1998 09 27	704	0.1+	0.2−
1998 09 14	704	0.7+	0.2−	1998 09 26	704	0.3+	0.2+	1998 09 27	704	0.7−	0.4−

**1998 RW₅₂ = 1980 FT₁₀ = 1985 DU = 1990 BL₅ = 1993 TB₂₁
= 1996 HK₂₂**

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	205.06152		(2000.0)		P		Q				
<i>n</i>	0.18609294	ω	162.32947		−0.99650440		−0.07345203				
<i>a</i>	3.0384315	Ω	13.64332		+0.04018369		−0.83909245				
<i>e</i>	0.0385781	<i>i</i>	9.71329		+0.07324104		−0.53900711				
<i>P</i>	5.30	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1980 03 16	095	0.8−	1.4−	1996 04 22	566	0.6+	0.2−	1998 09 18	704	0.4+	0.8−
1985 02 20	046	(6.3−	0.3+)	1996 04 22	566	0.4−	0.3+	1998 09 18	704	0.7+	0.1−
1985 02 20	046	(4.0−	1.7−)	1996 04 23	566	0.2−	0.2+	1998 09 18	704	0.1−	0.3−
1990 01 30	046	(3.1+	1.4−)	1996 04 23	566	0.1−	0.1+	1998 09 18	704	0.2−	1.2+
1990 01 30	046	0.2−	0.9−	1996 04 23	566	0.1+	0.3−	1998 09 26	704	0.4−	0.2−
1993 10 10	675	(1.8−	2.7−)	1998 09 14	704	0.5+	0.5−	1998 09 26	704	0.2+	0.7−
1993 10 10	675	(1.3−	3.0−)	1998 09 14	704	0.8+	1.1+	1998 09 26	704	0.4−	0.7−
1993 10 12	809	(0.1−	2.0+)	1998 09 14	704	1.4+	1.0+	1998 09 26	704	0.1+	0.6−
1993 10 12	809	0.3−	1.0+	1998 09 14	704	0.6+	0.1+	1998 09 26	704	0.3+	0.3−
1993 10 12	809	1.0−	0.0	1998 09 14	704	(2.3+	1.2+)	1998 09 27	704	0.6−	0.2−
1993 10 13	675	(1.2−	3.1−)	1998 09 18	704	0.7+	0.3+	1998 09 27	704	0.4−	0.1−
1993 10 13	675	(1.2−	2.3−)	1998 09 18	704	0.3+	0.1+	1998 09 27	704	0.5−	0.4−
1996 04 22	566	0.5+	0.4−	1998 09 18	704	0.1+	0.0	1998 09 27	704	0.3−	1.3−
1996 04 22	566	0.3−	0.1+	1998 09 18	704	0.3+	0.5−	1998 09 27	704	0.7−	0.8−
1996 04 22	566	0.1−	0.6−	1998 09 18	704	0.6−	0.0				
1996 04 22	566	0.5−	0.3+	1998 09 18	704	0.6+	0.5+				

1998 RZ₅₂ = 1977 RP₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	356.77241		(2000.0)			P		Q		
n	0.18746613	ω	223.83483			+0.89445637		−0.44536037		
a	3.0235757	Ω	162.48821			+0.43810046		+0.85490451		
e	0.0464529	i	7.64381			+0.08953096		+0.26606844		
P	5.26	H	13.7			G	0.15	U	6	
Residuals in seconds of arc										
1977 09 09	675	0.1+	0.6−	1998 09 18	704	0.1−	1.3+	1998 09 27	704	0.4− 0.7+
1977 09 10	675	0.4−	1.6+	1998 09 18	704	0.3+	0.3+	1998 09 27	704	0.4+ 0.8−
1998 09 14	704	0.3+	0.1−	1998 09 18	704	0.3+	0.3+	1998 09 27	704	1.0− 0.2−
1998 09 14	704	0.8+	0.2−	1998 09 26	704	0.2−	0.2+	1998 09 27	704	0.4− 0.9−
1998 09 14	704	0.8−	0.1+	1998 09 26	704	0.1−	0.1−	1998 10 17	699	0.5+ 0.5+
1998 09 14	704	0.8−	0.5−	1998 09 26	704	1.1+	0.0	1998 10 17	699	0.1− 0.5+
1998 09 14	704	0.5−	0.1−	1998 09 26	704	0.2+	0.0	1998 10 17	699	1.0− 0.5−
1998 09 18	704	1.6+	1.0−	1998 09 26	704	0.4+	0.8−			
1998 09 18	704	0.5+	0.3+	1998 09 27	704	0.8−	0.2+			

1998 RC₅₃ = 6842 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	308.08899		(2000.0)			P		Q			
n	0.20708292	ω	59.58137			+0.18412129		−0.98283142			
a	2.8294794	Ω	19.81924			+0.88932277		+0.16142068			
e	0.0374737	i	2.01240			+0.41857420		+0.08936313			
P	4.76	H	15.0			G	0.15	U	5		
Residuals in seconds of arc											
1960 09 24	675	0.1−	0.4−	1998 09 14	704	0.9−	0.7+	1998 10 12	910	0.2+	0.4−
1960 09 26	675	0.3−	0.4−	1998 09 18	704	1.1+	1.0−	1998 10 12	910	0.2+	0.1+
1960 09 27	675	0.9+	0.2−	1998 09 18	704	0.5+	1.1+	1998 10 12	910	1.0+	0.7+
1960 09 28	675	0.1−	0.3+	1998 09 18	704	1.9−	0.3+	1998 10 18	910	0.3−	0.1+
1998 09 14	704	0.3−	1.8+	1998 09 18	704	0.9−	0.5−	1998 10 18	910	0.3−	0.2+
1998 09 14	704	2.3+	1.1−	1998 09 18	704	0.5−	1.3−	1998 10 18	910	0.5−	0.1+

1998 RF₅₃ = 1993 RR₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	91.18586			(2000.0)			P			Q		
n	0.19775143	ω		123.64087			+0.28570884			+0.95824953		
a	2.9178052	Ω		162.94946			−0.89153541			+0.27011534		
e	0.0422742	i		2.21385			−0.35147555			+0.09378454		
P	4.98	H		14.0	G		0.15	U		6		
Residuals in seconds of arc												
1993 09 14	809	1.3+	1.7+	1998 09 14	704	0.6−	0.3−	1998 09 26	704	0.9−	0.9+	
1993 09 14	809	0.5+	1.1+	1998 09 18	704	1.1+	0.4−	1998 09 27	704	0.3+	0.4+	
1993 09 14	809	1.1−	1.2+	1998 09 18	704	1.4+	0.3−	1998 09 27	704	0.3+	1.2+	
1993 09 19	809	1.7+	0.8−	1998 09 18	704	0.4−	0.3−	1998 09 27	704	0.8−	1.7+	
1993 09 19	809	0.3−	2.2−	1998 09 18	704	0.5+	0.1−	1998 09 27	704	0.5+	1.2+	
1993 09 19	809	1.9−	1.8−	1998 09 18	704	0.5−	0.1−	1998 09 27	704	0.5−	0.6+	
1998 09 14	704	0.7+	0.4+	1998 09 26	704	1.1−	0.1+	1998 10 12	910	0.2−	0.9−	
1998 09 14	704	0.8+	0.6−	1998 09 26	704	0.0	1.0−	1998 10 12	910	0.1−	0.8−	
1998 09 14	704	0.3+	1.1−	1998 09 26	704	0.2+	0.2−	1998 10 12	910	0.2−	0.3−	
1998 09 14	704	0.5−	0.3+	1998 09 26	704	0.5−	0.0					

1998 RP₅₃ = 1997 GW₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	

1998 NOV. 10

M.P.C. 32997

Residuals in seconds of arc

1997 04 02	704	0.1+	0.2+	1998 09 14	704	0.5+	0.6-	1998 09 18	704	0.4-	1.5-
1997 04 02	704	0.1-	0.4+	1998 09 14	704	1.6+	0.7+	1998 09 18	704	0.5-	0.2+
1997 04 06	704	0.6-	0.1+	1998 09 14	704	0.3+	0.2-	1998 09 26	704	1.7+	0.9+
1997 04 06	704	0.6+	0.9+	1998 09 18	704	0.9-	0.4-	1998 09 26	704	0.1+	1.1+
1997 04 06	704	0.1+	0.2-	1998 09 18	704	1.3-	1.6+	1998 09 26	704	1.0-	0.0
1997 04 06	704	0.6+	1.0-	1998 09 18	704	0.3+	1.7+	1998 09 26	704	1.3+	0.3-
1997 04 07	704	0.3-	0.7-	1998 09 18	704	0.1-	2.9-	1998 09 27	704	0.7-	0.9-
1997 04 07	704	0.3-	0.4+	1998 09 18	704	0.6-	1.4+	1998 09 27	704	0.4+	1.0-
1998 09 14	704	0.4+	0.9-	1998 09 18	704	1.4-	1.2+	1998 09 27	704	0.5-	0.8+
1998 09 14	704	0.8-	0.3+	1998 09 18	704	2.5+	1.4-	1998 09 27	704	1.0-	0.2+

1998 RR₅₃ = 1997 GK₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams			
<i>M</i>	65.05960	(2000.0)	
<i>n</i>	0.23372190	ω 100.70492	+0.59644440 +0.80070951
<i>a</i>	2.6101759	Ω 206.16020	-0.77702031 +0.55855479
<i>e</i>	0.2003354	<i>i</i> 7.27665	-0.20123001 +0.21651982
<i>P</i>	4.22	<i>H</i> 15.5	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1997 04 05	704	1.2-	0.7-	1998 09 14	704	0.5+	1.2-	1998 09 26	704	0.6+	0.4-
1997 04 05	704	0.3-	0.1-	1998 09 14	704	0.5-	0.5-	1998 09 26	704	1.3+	0.1+
1997 04 07	704	0.6+	0.6+	1998 09 14	704	0.5+	0.4+	1998 09 26	704	0.7-	0.0
1997 04 07	704	0.9+	0.0	1998 09 14	704	0.4-	1.1+	1998 09 27	704	0.3-	0.4+
1998 09 14	704	0.6+	0.7-	1998 09 18	704	1.2-	1.3-	1998 09 27	704	0.2+	0.9+
1998 09 14	704	0.1-	0.7+	1998 09 18	704	1.0-	1.3+	1998 09 27	704	0.3-	0.2+
1998 09 14	704	0.9+	0.1+	1998 09 18	704	0.7-	0.6-	1998 09 27	704	0.1+	1.6-
1998 09 14	704	0.4-	0.4-	1998 09 18	704	0.3-	2.0+	1998 09 27	704	0.1-	1.5-
1998 09 14	704	0.2+	0.2-	1998 09 18	704	0.4-	0.1+				
1998 09 14	704	1.1+	0.2+	1998 09 26	704	0.7+	0.8+				

1998 RD₅₄ = 1989 EX₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams			
<i>M</i>	107.25237	(2000.0)	
<i>n</i>	0.26287249	ω 49.98217	+0.09892199 +0.99319990
<i>a</i>	2.4134554	Ω 225.81103	-0.93707835 +0.07222089
<i>e</i>	0.0853357	<i>i</i> 4.91118	-0.33481129 +0.09131315
<i>P</i>	3.75	<i>H</i> 15.0	<i>G</i> 0.15 <i>U</i> 6

Residuals in seconds of arc

1989 03 02	809	0.6+	1.0-	1998 09 14	704	0.6+	0.5+	1998 09 18	704	0.1-	0.5-
1989 03 02	809	0.8-	0.8-	1998 09 18	704	0.3-	0.8+	1998 09 18	704	1.5-	1.3-
1989 03 02	809	1.5-	0.5+	1998 09 18	704	1.2+	0.7-	1998 10 14	327	0.1+	0.4-
1989 03 03	809	0.7-	0.5+	1998 09 18	704	0.6+	1.4-	1998 10 14	327	0.5+	0.1-
1989 03 03	809	1.4+	0.9+	1998 09 18	704	1.5-	0.7-	1998 10 14	327	0.2-	0.3-
1989 03 03	809	1.0+	0.1+	1998 09 18	704	0.5-	0.0	1998 10 17	327	0.5-	0.1+
1998 09 14	704	0.3+	0.7+	1998 09 18	704	0.5-	0.4+	1998 10 17	327	0.2-	0.2+
1998 09 14	704	0.4-	0.3+	1998 09 18	704	1.4+	1.2+	1998 10 17	327	0.2-	0.0
1998 09 14	704	0.1+	0.2+	1998 09 18	704	1.1+	0.9+				

1998 RN₅₄ = 1892 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams			
<i>M</i>	143.80605	(2000.0)	
<i>n</i>	0.27941800	ω 297.56610	-0.42796489 +0.90019971
<i>a</i>	2.3172157	Ω 306.86680	-0.78966557 -0.41578103
<i>e</i>	0.0711507	<i>i</i> 5.77774	-0.43962977 -0.12948599
<i>P</i>	3.53	<i>H</i> 15.0	<i>G</i> 0.15 <i>U</i> 6

Residuals in seconds of arc

1977 10 16	675	2.9-	2.3-	1998 09 14	704	0.6-	0.7+	1998 09 26	704	0.2-	1.7+
1977 10 16	675	0.2-	0.4+	1998 09 18	704	0.7+	0.8+	1998 09 26	704	0.7-	2.2+
1977 10 17	675	0.1+	0.2+	1998 09 18	704	0.4-	0.3-	1998 09 27	704	1.0-	0.8-
1977 10 17	675	1.6+	1.4+	1998 09 18	704	1.1-	1.4-	1998 09 27	704	1.4+	0.3+
1977 10 22	675	0.2+	0.9-	1998 09 18	704	0.9-	2.5-	1998 09 27	704	0.1+	0.2-

1977 10 22	675	1.2+	1.2+	1998 09 18	704	0.1-	1.9-	1998 09 27	704	2.0+	1.7-
1998 09 14	704	0.0	0.6+	1998 09 26	704	0.3-	0.1+	1998 09 27	704	0.2+	1.2-
1998 09 14	704	2.3+	0.7+	1998 09 26	704	1.1+	0.6+				
1998 09 14	704	0.6-	1.0+	1998 09 26	704	1.8-	1.2+				

1998 RY₅₄ = 1997 LF₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams			
<i>M</i>	34.37955	(2000.0)	
<i>n</i>	0.21476962	ω 132.86932	+0.98319576 +0.15737553
<i>a</i>	2.7615579	Ω 218.34976	-0.17763439 +0.94160751
<i>e</i>	0.1757189	<i>i</i> 8.57518	+0.04209648 +0.29767138
<i>P</i>	4.59	<i>H</i> 13.5	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1997 06 07	809	0.3-	0.9-	1998 09 14	704	0.3+	0.3+	1998 09 26	704	1.6-	0.4-
1997 06 07	809	0.0	0.8-	1998 09 14	704	0.5+	0.0	1998 09 26	704	0.2-	0.0
1997 06 07	809	1.0-	0.4+	1998 09 18	704	0.0	0.1-	1998 09 27	704	0.8+	0.1+
1997 06 08	809	1.0+	0.0	1998 09 18	704	0.8-	0.3-	1998 09 27	704	0.4+	0.3+
1997 06 08	809	0.5+	1.3+	1998 09 18	704	0.4+	0.1-	1998 09 27	704	0.1+	0.5+
1997 06 08	809	0.2-	0.0	1998 09 18	704	0.1-	0.2+	1998 09 27	704	0.1-	0.8+
1998 09 14	704	0.2+	0.1+	1998 09 18	704	1.6-	0.3+	1998 09 27	704	0.7+	0.5-
1998 09 14	704	0.3+	0.2+	1998 09 26	704	0.5+	0.4-				
1998 09 14	704	0.1+	0.0	1998 09 26	704	0.0	0.9-				

1998 RZ₅₄ = 1989 YG₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams			
<i>M</i>	21.07458	(2000.0)	
<i>n</i>	0.30904082	ω 83.90015	+0.90741328 -0.41453197
<i>a</i>	2.1666669	Ω 300.57116	+0.34685355 +0.83151540
<i>e</i>	0.1283369	<i>i</i> 4.59823	+0.23726305 +0.36979100
<i>P</i>	3.19	<i>H</i> 15.1	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1989 12 30	413	0.5+	0.3+	1998 09 18	704	1.0-	0.7+	1998 09 26	704	0.2+	0.2+
1989 12 30	413	1.6+	0.3-	1998 09 18	704	0.2-	0.3-	1998 09 27	704	0.2+	0.3-
1989 12 31	413	1.0-	0.0	1998 09 18	704	0.4-	0.7+	1998 09 27	704	0.5+	0.9+
1989 12 31	413	1.0-	0.1+	1998 09 18	704	0.1-	0.3-	1998 09 27	704	0.2+	0.8+
1998 09 14	704	0.0	0.5-	1998 09 18	704	0.0	1.3+	1998 09 27	704	0.0	0.9+
1998 09 14	704	0.2-	0.5-	1998 09 26	704	0.5+	0.2-	1998 09 27	704	0.8+	0.4-
1998 09 14	704	0.6+	0.3+	1998 09 26	704	0.1-	1.0-	1998 10 15	699	0.6-	0.1+
1998 09 14	704	0.1+	0.5-	1998 09 26	704	0.4-	1.8-	1998 10 15	699	0.3+	0.0
1998 09 14	704	0.1-	0.4+	1998 09 26	704	0.1-	0.3-	1998 10 15	699	0.1-	0.3-

1998 RY₅₅ = 1997 GA₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams			
<i>M</i>	39.38092	(2000.0)	
<i>n</i>	0.29807993	ω 37.79678	+0.99816244 +0.04199257
<i>a</i>	2.2194612	Ω 319.72954	-0.05705512 +0.89412002
<i>e</i>	0.1266198	<i>i</i> 3.87513	+0.02040739 +0.44585426
<i>P</i>	3.31	<i>H</i> 15.5	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1997 04 06	704	(0.3-	2.7+)	1998 09 26	704	0.2+	0.4+	1998 09 27	704	0.3-	0.3+
1997 04 06	704	0.1+	0.2-	1998 09 26	704	0.1-	1.5-	1998 09 27	704	0.4-	0.9+
1997 04 07	704	0.3-	0.2-	1998 09 26	704	1.1-	0.5+	1998 09 27	704	0.5+	0.3+
1997 04 07	704	0.2+	0.3+	1998 09 26	704	0.1-	1.0-	1998 09 27	704	0.2+	0.3+
1998 09 14	704	0.1+	0.7-	1998 09 26	704	0.4-	0.0	1998 09 27	704	0.2-	0.4-
1998 09 14	704	0.6-	0.6+	1998 09 26	704	0.8+	0.2-	1998 09 27	704	0.2+	0.3+
1998 09 14	704	0.1-	0.6-	1998 09 26	704	0.1-	0.2+	1998 10 20	327	0.4+	0.0
1998 09 18	704	0.1+	0.1-	1998 09 26	704	1.4+	0.7-	1998 10 20	327	0.1+	0.0
1998 09 18	704	0.0	0.8+	1998 09 26	704	0.0	0.2+	1998 10 20	327	0.1-	0.1+
1998 09 18	704	0.0	0.5-	1998 09 27	704	0.3-	0.4-	1998 10 22	327	0.2-	0.0
1998 09 18	704	0.1-	1.0+	1998 09 27	704	0.4+	0.4+	1998 10 22	327	0.1+	0.1-
1998 09 18	704	0.5+	0.5-	1998 09 27	704	0.2+	0.0	1998 10 22	327	0.3-	0.3-
1998 09 26	704	0.4-	0.2-	1998 09 27	704	0.4-	0.8+				

1998 RC₅₆ = 1989 EU₅ = 1991 VS₁₃ = 1997 LA₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	342.45341		(2000.0)	P		Q					
<i>n</i>	0.26934428	ω	216.98813	+0.47141638	−0.88079038						
<i>a</i>	2.3746387	Ω	204.97722	+0.83223618	+0.46097121						
<i>e</i>	0.1003796	<i>i</i>	6.04119	+0.29180394	+0.10823052						
<i>P</i>	3.66	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1989 03 02	413	0.5+	0.6+	1998 09 14	704	0.1−	0.2−	1998 09 26	704	0.3−	0.8+
1989 03 02	413	(1.7+	3.5−)	1998 09 16	699	0.4+	0.1+	1998 09 26	704	0.2−	1.1+
1989 03 04	413	0.1+	1.2+	1998 09 16	699	0.7+	0.6+	1998 09 27	704	0.6+	0.0
1991 11 11	399	0.1−	0.6+	1998 09 16	699	0.4+	0.7+	1998 09 27	704	0.6+	0.0
1991 11 11	399	(2.2+	2.8+)	1998 09 18	704	0.1+	0.2−	1998 09 27	704	0.1−	0.4−
1997 06 08	809	0.4+	0.0	1998 09 18	704	0.1−	0.5+	1998 09 27	704	0.9−	0.5−
1997 06 08	809	0.6−	0.0	1998 09 18	704	0.4−	0.3−	1998 09 27	704	0.5−	1.0−
1997 06 08	809	0.4−	0.3−	1998 09 18	704	1.2−	0.2−	1998 10 14	699	0.0	0.6+
1997 06 09	809	0.2+	0.7+	1998 09 18	704	0.2−	0.2−	1998 10 14	699	0.2+	0.3+
1997 06 09	809	0.7+	0.8+	1998 09 26	704	0.3+	0.3+	1998 10 14	699	0.2+	0.7+
1997 06 09	809	0.0	0.3+	1998 09 26	704	0.0	0.2−				
1998 09 14	704	0.3+	0.7−	1998 09 26	704	0.4−	0.4+				

1998 RD₅₆ = 1995 YS₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	55.86193		(2000.0)	P		Q					
<i>n</i>	0.22767552	ω	345.26059	+0.77057594	+0.63577230						
<i>a</i>	2.6561861	Ω	335.09045	−0.57346571	+0.66095829						
<i>e</i>	0.2023885	<i>i</i>	6.10475	−0.27811832	+0.39865739						
<i>P</i>	4.33	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1995 12 20	691	0.1−	0.2+	1998 09 14	704	0.1−	0.7+	1998 09 26	704	0.5+	0.0
1995 12 20	691	0.0	0.1−	1998 09 18	704	1.3−	1.0−	1998 09 26	704	3.3+	0.8−
1995 12 20	691	0.1−	0.6+	1998 09 18	704	0.5+	0.6+	1998 09 27	704	0.7+	0.7+
1995 12 27	691	0.1−	0.3−	1998 09 18	704	1.4−	0.6−	1998 09 27	704	1.7−	1.5+
1995 12 27	691	0.1−	0.1−	1998 09 18	704	1.0+	0.7−	1998 09 27	704	0.9−	1.7+
1995 12 27	691	0.3+	0.1−	1998 09 18	704	1.7−	0.9+	1998 09 27	704	0.5+	0.1−
1998 09 14	704	0.3+	1.0+	1998 09 26	704	1.5+	0.1+	1998 09 27	704	1.6−	1.3−
1998 09 14	704	0.2+	1.2−	1998 09 26	704	0.1+	1.5−				

1998 RL₅₆ = 1994 RT₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	67.93245		(2000.0)	P		Q					
<i>n</i>	0.25434102	ω	328.75684	+0.73738032	+0.67434478						
<i>a</i>	2.4671286	Ω	348.58056	−0.57181763	+0.59235397						
<i>e</i>	0.0906010	<i>i</i>	11.39204	−0.35957595	+0.44088080						
<i>P</i>	3.88	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1994 09 05	809	0.6−	0.8−	1998 09 14	704	0.3+	1.3+	1998 09 26	704	1.4+	0.6−
1994 09 05	809	0.1−	0.8−	1998 09 18	704	0.7−	0.9−	1998 09 26	704	0.4+	0.1+
1994 09 05	809	1.9−	1.0−	1998 09 18	704	0.5+	1.0−	1998 09 27	704	0.5−	0.6+
1994 09 06	809	1.0+	0.7+	1998 09 18	704	0.0	0.8−	1998 09 27	704	0.1−	0.1+
1994 09 06	809	1.0+	1.1+	1998 09 18	704	0.7+	0.6−	1998 09 27	704	0.4−	0.4+
1994 09 06	809	0.7+	0.7+	1998 09 18	704	0.4−	0.4−	1998 09 27	704	0.6−	0.8+
1998 09 14	704	0.2−	0.7+	1998 09 26	704	0.3−	0.1+	1998 09 27	704	0.3−	0.1−
1998 09 14	704	0.6−	0.8+	1998 09 26	704	0.7+	0.3−				

1998 RU₅₆ = 1980 RJ₄ = 1992 GJ₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	270.94179		(2000.0)	P		Q					
<i>n</i>	0.22213515	ω	272.35181		−0.55960633		−0.82821805				
<i>a</i>	2.7001705	Ω	211.73564		+0.78119262		−0.51508665				
<i>e</i>	0.0666039	<i>i</i>	3.26159		+0.27672883		−0.22077272				
<i>P</i>	4.44 <th><i>H</i></th> <td>13.5<th><i>G</i></th><td>0.15<th><i>U</i></th><td>4<td></td><td></td></td></td></td>	<i>H</i>	13.5 <th><i>G</i></th> <td>0.15<th><i>U</i></th><td>4<td></td><td></td></td></td>	<i>G</i>	0.15 <th><i>U</i></th> <td>4<td></td><td></td></td>	<i>U</i>	4 <td></td> <td></td>				
Residuals in seconds of arc											
1980 09 07	095	0.5−	1.4+	1998 09 18	704	0.7+	0.9+	1998 09 27	704	0.7+	1.0−
1992 04 04	809	0.4+	0.1+	1998 09 18	704	0.1+	0.1−	1998 09 27	704	1.3+	1.4−
1992 04 04	809	0.2+	0.2−	1998 09 18	704	0.4−	0.6+	1998 09 27	704	0.0	0.1+
1992 04 04	809	0.3+	0.8−	1998 09 18	704	0.4+	0.4+	1998 09 27	704	0.1+	0.4+
1992 04 06	809	1.0−	0.4−	1998 09 18	704	0.2+	1.2+	1998 09 27	704	0.1+	0.9+
1992 04 06	809	0.4−	0.2+	1998 09 26	704	0.3−	0.8+	1998 09 27	704	0.2−	0.5+
1992 04 06	809	0.2−	0.5−	1998 09 26	704	0.2−	0.2−	1998 09 27	704	0.6+	1.1+
1992 04 25	809	0.2−	0.5+	1998 09 26	704	0.1−	0.3+	1998 10 17	327	0.7−	1.2−
1992 04 25	809	0.1−	0.4−	1998 09 26	704	0.1+	0.1+	1998 10 17	327	1.3−	1.0−
1992 04 25	809	0.5+	0.3−	1998 09 26	704	0.1+	1.0+	1998 10 17	327	0.7−	1.4−
1998 09 14	704	1.1+	0.8+	1998 09 27	704	1.6+	0.8−	1998 10 19	327	1.0−	1.0−
1998 09 14	704	0.8−	0.6−	1998 09 27	704	0.2+	0.5−	1998 10 19	327	1.2−	0.7−
1998 09 14	704	0.6+	0.0	1998 09 27	704	1.0+	1.0−	1998 10 19	327	1.2−	1.0−

1998 RA₅₇ = 1978 TC₆ = 1997 HG₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	11.33817		(2000.0)		P		Q				
<i>n</i>	0.29406140	ω	174.02134		+0.86267009		−0.50555179				
<i>a</i>	2.2396356	Ω	216.35878		+0.46299494		+0.80112037				
<i>e</i>	0.1222745	<i>i</i>	1.42614		+0.20355833		+0.32034909				
<i>P</i>	3.35	<i>H</i>	15.5	<i>G</i>	0.15		<i>U</i>	4			
Residuals in seconds of arc											
1978 10 07	095	0.0	0.0	1998 09 18	704	0.8−	0.1−	1998 09 27	704	0.0	0.2+
1997 04 29	691	0.1−	0.4−	1998 09 18	704	0.1−	0.4+	1998 09 27	704	1.3+	0.6+
1997 04 29	691	0.1−	0.2−	1998 09 18	704	0.2+	0.2−	1998 09 27	704	0.9−	0.2−
1997 04 29	691	0.7+	0.7+	1998 09 18	704	0.0	0.2−	1998 09 27	704	0.1+	0.2−
1997 05 08	691	0.1−	0.0	1998 09 18	704	0.5+	0.3−	1998 09 27	704	0.9−	0.4+
1997 05 08	691	0.2−	0.3−	1998 09 26	704	0.4+	0.5+	1998 10 14	699	0.9+	0.3−
1997 05 08	691	0.2−	0.1+	1998 09 26	704	1.2+	0.7−	1998 10 14	699	0.5−	0.2+
1998 09 14	704	0.3−	0.0	1998 09 26	704	1.4−	0.3−	1998 10 14	699	0.1−	0.4−
1998 09 14	704	0.3+	0.5+	1998 09 26	704	0.3−	0.1−				
1998 09 14	704	0.3+	0.3+	1998 09 26	704	0.0	0.1−				

1998 RB₅₇ = 1994 PB₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	273.58267		(2000.0)			P		Q			
<i>n</i>	0.26301892	<i>ω</i>	163.80827			−0.64675227		−0.76242211			
<i>a</i>	2.4125597	<i>Ω</i>	326.48087			+0.69556245		−0.57852987			
<i>e</i>	0.1335816	<i>i</i>	2.13703			+0.31289675		−0.28985464			
<i>P</i>	3.75	<i>H</i>	15.0		<i>G</i>	0.15		<i>U</i>	6		
Residuals in seconds of arc											
1994 08 10	809	0.8+	1.7+	1998 09 14	704	2.6−	1.2+	1998 09 26	704	0.6−	1.8−
1994 08 10	809	1.1−	1.1+	1998 09 18	704	0.2+	0.2−	1998 09 27	704	0.6−	1.3+
1994 08 10	809	0.2+	2.4+	1998 09 18	704	0.3+	0.5−	1998 09 27	704	0.9−	1.2+
1994 08 11	809	0.2−	1.7−	1998 09 18	704	0.1+	0.7−	1998 09 27	704	0.3+	0.7+
1994 08 11	809	0.2+	1.8−	1998 09 18	704	2.1+	1.1−	1998 09 27	704	0.4+	0.7+
1994 08 11	809	0.1+	1.7−	1998 09 26	704	1.4+	0.0	1998 09 27	704	1.4−	0.6−
1998 09 14	704	0.0	0.1−	1998 09 26	704	2.0+	0.3−				
1998 09 14	704	0.3+	0.5+	1998 09 26	704	1.1−	0.2−				

1998 NOV. 10

M.P.C. 32999

1998 RK₅₇ = 1994 PX₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	86.53509		(2000.0)	P		Q		Williams	
<i>n</i>	0.26052128	ω	128.36074	+0.22003257		+0.97529331			
<i>a</i>	2.4279547	Ω	154.32954	−0.90859196		+0.21225563			
<i>e</i>	0.1968115	<i>i</i>	2.60830	−0.35503001		+0.06124138			
<i>P</i>	3.78	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1994 08 11	894	0.4+	0.2−	1998 09 18	704	0.4+	0.7−	1998 10 13	704 (2.5+ 0.5+)
1994 08 11	894	0.6+	0.0	1998 09 26	704	0.2−	0.1+	1998 10 13	704 1.6− 0.1+
1994 08 15	894	1.0−	0.3−	1998 09 26	704	1.0−	0.4−	1998 10 13	704 1.0− 1.0+
1994 08 15	894	0.2−	0.3+	1998 09 26	704	0.8−	0.5−	1998 10 13	704 0.5− 1.7−
1994 08 16	894	0.5+	0.0	1998 09 26	704	1.0−	0.2+	1998 10 13	704 0.1+ 0.9−
1994 08 16	894	0.6−	1.1+	1998 09 26	704	0.8−	0.1+	1998 10 14	704 0.0 0.0
1998 09 14	704	0.0	0.9−	1998 09 27	704	1.0+	0.1−	1998 10 14	704 1.0− 0.8+
1998 09 14	704	0.7−	0.4−	1998 09 27	704	0.1+	1.1+	1998 10 14	704 (2.1− 3.5+)
1998 09 14	704	0.1−	0.9−	1998 09 27	704	0.6+	0.0	1998 10 14	704 0.1+ 0.8+
1998 09 18	704	1.1+	0.4−	1998 09 27	704	0.3+	0.4+	1998 10 14	704 0.3+ 0.6+
1998 09 18	704 (2.3+	1.3−)		1998 09 27	704	0.8+	0.2−	1998 10 17	699 0.3+ 1.1+
1998 09 18	704 0.1+	1.1−		1998 10 13	704	0.9+	0.7−	1998 10 17	699 0.0 0.5+
1998 09 18	704 1.2+	1.0−		1998 10 13	704	1.8+	1.9+	1998 10 17	699 0.1− 0.8+

1998 RY₅₇ = 1997 JV₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	101.45693		(2000.0)	P		Q		Williams	
<i>n</i>	0.26662534	ω	175.81034	+0.29693550		+0.95439889			
<i>a</i>	2.3907552	Ω	111.46105	−0.87706204		+0.28536740			
<i>e</i>	0.0320792	<i>i</i>	1.89995	−0.37761289		+0.08768237			
<i>P</i>	3.70	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1997 05 01	910	0.3+	0.2+	1998 09 18	704	0.8+	0.7−	1998 09 27	704 0.7+ 0.2−
1997 05 01	910	0.6+	0.1−	1998 09 18	704	0.1+	0.1−	1998 09 27	704 1.1− 0.5+
1997 05 01	910	0.4+	0.1+	1998 09 18	704	1.3+	0.4+	1998 09 27	704 0.4− 0.9−
1997 05 02	910	0.3−	0.0	1998 09 18	704	0.4−	1.2+	1998 09 27	704 0.5− 1.6−
1997 05 02	910	0.6−	0.1−	1998 09 18	704	1.4−	1.3+	1998 09 27	704 0.8− 0.6+
1997 05 03	910	0.4−	0.1−	1998 09 26	704	0.9−	0.5+	1998 09 27	704 1.0+ 0.2−
1998 09 14	704	0.1+	0.7−	1998 09 26	704	0.2+	0.2−	1998 09 27	704 0.6+ 0.2+
1998 09 14	704	0.1−	0.5−	1998 09 26	704	0.5−	1.2+	1998 09 27	704 0.9+ 1.0+
1998 09 14	704	0.2−	0.6−	1998 09 27	704	0.7+	1.3−		

1998 RZ₅₇ = 1991 TP₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	296.08523		(2000.0)	P		Q		Williams	
<i>n</i>	0.28009084	ω	107.72863	−0.34375262		−0.93904904			
<i>a</i>	2.3135032	Ω	2.39173	+0.81455938		−0.30060447			
<i>e</i>	0.1150925	<i>i</i>	6.30980	+0.46725490		−0.16680483			
<i>P</i>	3.52	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1991 10 07	033	0.1+	0.1+	1998 09 18	704	0.7+	0.8−	1998 09 27	704 0.9− 0.2+
1991 10 07	033	0.3−	0.5−	1998 09 18	704	0.7+	0.9−	1998 09 27	704 1.2− 0.4+
1991 10 08	033	0.3+	0.2+	1998 09 18	704	0.8+	0.6−	1998 09 27	704 0.4− 0.3+
1998 09 14	704	0.5+	0.3+	1998 09 18	704	1.4+	0.4−	1998 09 27	704 1.6− 0.7−
1998 09 14	704	0.1−	0.8+	1998 09 26	704	0.4−	0.0	1998 10 10	120 0.6+ 0.1+
1998 09 14	704	0.7−	1.0+	1998 09 26	704	0.2−	0.7−	1998 10 10	120 0.1+ 0.7+
1998 09 16	699	0.7+	0.0	1998 09 26	704	1.6−	0.1+	1998 10 11	120 0.9+ 0.3−
1998 09 16	699	0.9+	0.3+	1998 09 26	704	0.7−	0.0	1998 10 11	120 0.3+ 0.3−
1998 09 16	699	0.5+	0.6+	1998 09 26	704	0.4−	0.5+		
1998 09 18	704	0.2+	0.2+	1998 09 27	704	0.2−	0.5−		

1998 RB₅₈ = 1996 EU₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	19.13386		(2000.0)	P		Q		Williams	
<i>n</i>	0.20344582	ω	203.92208	+0.99526739		−0.09606834			
<i>a</i>	2.8631023	Ω	161.57294	+0.09493905		+0.92922998			
<i>e</i>	0.0056398	<i>i</i>	2.65066	+0.02072193		+0.35679479			
<i>P</i>	4.84	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1996 03 11	691	0.0	0.5−	1998 09 14	704	1.5+	0.4+	1998 10 14	910 0.4− 0.4+
1996 03 11	691	0.0	0.5−	1998 09 14	704	2.0−	0.7−	1998 10 14	910 0.5− 0.4+
1996 03 11	691	0.3−	0.6−	1998 09 18	704	1.1+	2.5−	1998 10 22	910 0.3− 0.6+
1996 03 18	691	0.2−	0.3−	1998 09 18	704	1.3+	2.2−	1998 10 22	910 0.3− 0.3+
1996 03 18	691	0.3−	0.5−	1998 09 18	704	1.7+	0.2+	1998 10 22	910 0.3+ 0.4+
1996 03 18	691	0.2−	0.3−	1998 09 18	704	0.9−	0.2−		
1998 09 14	704	0.0	0.0	1998 10 14	910	0.5−	0.5+		

1998 RC₅₈ = 1982 VC₄ = 1996 EV₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	112.83860		(2000.0)	P		Q		Williams	
<i>n</i>	0.17564657	ω	115.68516	−0.25645966		+0.96635568			
<i>a</i>	3.1577393	Ω	139.43892	−0.89726456		−0.23047634			
<i>e</i>	0.1193329	<i>i</i>	1.72948	−0.35936715		−0.11418127			
<i>P</i>	5.61	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc									
1982 11 14	381	0.6−	0.2−	1996 03 19	566	1.1+	0.0	1998 09 27	704 0.0 0.1−
1982 11 14	381	0.9+	0.7+	1998 09 14	704	0.3−	0.3−	1998 09 27	704 0.5+ 0.2−
1982 12 13	381	0.4−	1.1−	1998 09 14	704	0.0	0.0	1998 09 27	704 0.2− 0.8+
1982 12 13	381	0.7+	0.3+	1998 09 14	704	1.5−	0.5+	1998 09 27	704 0.6+ 0.6−
1982 12 14	381	0.7−	0.3−	1998 09 18	704	1.3+	0.1−	1998 09 27	704 1.1− 0.4−
1982 12 14	381	0.2+	0.2+	1998 09 18	704	1.0+	0.0	1998 10 14	910 0.3− 0.1+
1996 03 11	691	0.4−	0.0	1998 09 18	704	1.2+	0.4−	1998 10 14	910 0.3− 0.0
1996 03 11	691	0.3−	0.3+	1998 09 18	704	0.9+	0.5−	1998 10 14	910 0.2− 0.0
1996 03 11	691	0.3−	0.4+	1998 09 18	704	1.6+	0.4+	1998 10 18	910 0.4− 0.1+
1996 03 18	691	0.7−	0.4+	1998 09 26	704	0.8+	0.6−	1998 10 18	910 0.4− 0.3+
1996 03 18	691	0.7−	0.0	1998 09 26	704	0.5−	0.0	1998 10 18	910 0.2− 0.2+
1996 03 18	691	0.8−	0.2+	1998 09 26	704	0.8−	0.0	1998 10 22	910 0.4− 0.2+
1996 03 19	566	1.3+	0.3−	1998 09 26	704	0.2−	0.7+	1998 10 22	910 0.5− 0.2+
1996 03 19	566	1.1+	0.1−	1998 09 26	704	1.2−	0.8+	1998 10 22	910 0.2− 0.1+

1998 RM₅₈ = 1993 QO₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	74.09588		(2000.0)	P		Q		Williams	
<i>n</i>	0.20248906	ω	319.92033	+0.64549300		+0.76375038			
<i>a</i>	2.8721140	Ω	350.27886	−0.69307789		+0.58303587			
<i>e</i>	0.0122017	<i>i</i>	1.66759	−0.32090782		+0.27704610			
<i>P</i>	4.87	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1993 08 20	809	1.4+	0.1+	1998 09 18	704	0.1−	1.0−	1998 09 27	704 0.2− 0.4−
1993 08 20	809	0.2+	1.4+	1998 09 18	704	0.5+	0.7−	1998 09 27	704 0.2+ 0.8+
1993 08 20	809	0.4+	1.2+	1998 09 18	704	0.5−	0.4+	1998 09 27	704 1.2+ 0.3+
1993 08 24	809	1.0−	1.1−	1998 09 18	704	0.9+	0.4−	1998 09 27	704 0.3− 0.1−
1993 08 24	809	0.6−	0.2−	1998 09 18	704	1.7−	0.7−	1998 10 12	691 0.8− 0.0
1993 08 24	809	0.6−	0.7−	1998 09 26	704	0.4−	0.6−	1998 10 12	691 0.9− 0.6+
1998 09 14	704	2.0+	1.2+	1998 09 26	704	1.5+	1.0−	1998 10 12	691 1.3− 0.5+
1998 09 14	704	1.5+	0.2+	1998 09 26	704	1.1−	0.1+	1998 10 15	691 0.1+ 0.4+
1998 09 14	704	1.1−	0.4−	1998 09 27	704	0.4+	0.7−	1998 10 15	691 0.2+ 0.7+

1998 RP₅₈ = 1993 UY₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	61.97057		(2000.0)	P		Q	
<i>n</i>	0.18418721	ω	127.28292	+0.69128390	+0.72218583		
<i>a</i>	3.0593541	Ω	186.60826	-0.71119762	+0.67415347		
<i>e</i>	0.0926066	<i>i</i>	12.01826	-0.12776741	+0.15480545		
<i>P</i>	5.35	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 10 20	809	0.0	0.1-	1998 09 14	704	0.3+	0.8-
1993 10 20	809	0.1-	0.9+	1998 09 18	704	1.7-	0.2-
1993 10 20	809	0.7-	0.2+	1998 09 18	704	0.2+	0.2+
1993 10 21	809	0.7+	1.6-	1998 09 18	704	0.2+	0.4+
1993 10 21	809	0.2-	1.6-	1998 09 18	704	0.4+	0.6+
1993 10 21	809	0.6-	0.5-	1998 09 18	704	0.6+	1.1+
1993 10 21	809	(0.7+ 2.6+)		1998 09 26	704	1.0+	0.4+
1993 10 21	809	0.3+	1.2+	1998 09 26	704	0.4+	1.0+
1993 10 21	809	0.5+	1.6+	1998 09 26	704	0.3-	0.4+
1998 09 14	704	1.1+	0.1-	1998 09 26	704	0.9+	0.0
1998 09 14	704	1.1+	0.8+	1998 09 26	704	0.8-	0.2-
1998 09 27	704	0.6+	0.5-	1998 09 27	704	0.6+	0.5-
1998 09 27	704	1.5+	1.0-	1998 09 27	704	1.5+	1.0-
1998 09 27	704	1.0+	0.2+	1998 09 27	704	1.2+	0.1-
1998 09 27	704	1.3+	0.2-	1998 09 27	704	1.8-	0.4-
1998 10 12	691	1.5-	0.2-	1998 10 12	691	1.5-	0.2-
1998 10 12	691	1.6-	0.2-	1998 10 15	691	1.4-	0.3-
1998 10 15	691	1.5-	0.5-	1998 10 15	691	1.5-	0.6-

1998 RA₅₉ = 1990 HP₄ = 1995 YP₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	165.95148		(2000.0)	P		Q	
<i>n</i>	0.28042646	ω	13.09333	-0.72561262	+0.68703121		
<i>a</i>	2.3116570	Ω	210.41434	-0.63796053	-0.69259998		
<i>e</i>	0.0781326	<i>i</i>	4.34999	-0.25786174	-0.21975757		
<i>P</i>	3.51	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1990 04 22	675	1.0+	0.7+	1998 09 18	704	0.2+	0.8+
1990 04 22	675	1.0-	0.8-	1998 09 26	704	0.1+	0.4-
1995 12 22	691	0.3+	0.0	1998 09 26	704	0.4+	0.2-
1995 12 22	691	0.2+	0.0	1998 09 26	704	0.0	0.5-
1995 12 22	691	0.1+	0.1-	1998 09 26	704	0.0	0.7-
1995 12 27	691	0.3-	0.1+	1998 09 26	704	1.1+	1.0-
1995 12 27	691	0.2-	0.1+	1998 09 26	704	0.1-	1.1-
1995 12 27	691	0.1-	0.1-	1998 09 26	704	0.4+	0.0
1998 09 14	704	0.0	0.4+	1998 09 26	704	0.1-	1.0+
1998 09 14	704	0.1-	0.5+	1998 09 26	704	0.5+	0.8-
1998 09 14	704	0.5-	1.6+	1998 09 26	704	0.7-	0.1-
1998 09 18	704	0.1+	0.1-	1998 09 27	704	0.4-	0.5-
1998 09 18	704	0.0	0.6+	1998 09 27	704	0.2-	0.2-
1998 09 18	704	1.1+	1.3-	1998 09 27	704	0.7-	0.8+
1998 09 18	704	0.2+	0.4-	1998 09 27	704	0.1+	1.0+
1998 09 27	704	0.3-	0.2+	1998 09 27	704	0.3-	0.0
1998 09 27	704	0.1-	1.1-	1998 09 27	704	0.3+	0.5+
1998 09 27	704	0.5-	0.4+	1998 09 27	704	0.4-	0.5+
1998 10 14	699	0.3+	0.5+	1998 10 14	699	1.5+	0.1+
1998 10 14	699	0.3+	0.2+	1998 10 17	327	0.5-	0.3-
1998 10 17	327	0.5-	0.3-	1998 10 17	327	1.2-	0.2+
1998 10 17	327	0.4-	0.4-	1998 10 20	327	0.0	0.0
1998 10 20	327	0.4-	0.1-	1998 10 20	327	0.4-	0.1-
1998 10 20	327	0.3+	0.2-				

1998 RL₅₉ = 1989 UQ₇ = 1993 PP₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	327.87397		(2000.0)	P		Q	
<i>n</i>	0.21014629	ω	223.73549	+0.34988220	-0.93643092		
<i>a</i>	2.8019146	Ω	205.81741	+0.87511333	+0.33664927		
<i>e</i>	0.0829894	<i>i</i>	3.43171	+0.33430390	+0.09881501		
<i>P</i>	4.69	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1989 10 23	033	0.5+	0.6+	1998 09 14	704	0.4+	0.2-
1989 10 23	033	0.5+	0.2-	1998 09 14	704	0.7-	1.2+
1989 10 25	033	0.6-	0.1-	1998 09 16	699	1.2+	0.3+
1989 10 25	033	0.1-	0.1+	1998 09 16	699	0.6+	0.3+
1989 10 27	033	0.3-	0.5-	1998 09 16	699	1.5-	1.0+
1993 08 15	010	1.3+	0.5-	1998 09 18	704	0.8+	0.7-
1993 08 15	010	0.1+	0.4+	1998 09 18	704	0.2-	1.6-
1993 08 16	010	0.6-	0.1+	1998 09 18	704	0.4+	0.7-
1993 08 16	010	0.3-	0.5+	1998 09 18	704	0.2+	0.5-
1998 09 14	704	0.4+	0.2-	1998 09 26	704	0.1+	0.0
1998 09 26	704	0.8+	1.0-	1998 09 26	704	0.3-	0.1+
1998 09 26	704	0.7-	0.5+	1998 09 26	704	0.7-	0.5+
1998 09 27	704	0.0	0.2+	1998 09 27	704	0.0	0.2+
1998 09 27	704	0.8-	0.5+	1998 09 27	704	0.4-	0.7+
1998 09 27	704	0.5+	0.1+	1998 09 27	704	0.0	0.1+
1998 09 27	704	0.5-	0.3+				

1993 08 16	010	0.5-	0.4-	1998 09 18	704	0.8+	0.6-
1998 09 14	704	0.1-	0.0	1998 09 26	704	0.2-	0.2+

1998 RU₅₉ = 1994 RJ₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	93.11589		(2000.0)	P		Q	
<i>n</i>	0.25538244	ω	296.39454	+0.23189889	+0.97166920		
<i>a</i>	2.4604169	Ω	346.77203	-0.80624978	+0.16575343		
<i>e</i>	0.1646314	<i>i</i>	11.50177	-0.54422808	+0.16847780		
<i>P</i>	3.86	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1994 09 05	809	1.2-	0.3-	1998 09 18	704	0.1+	0.6-
1994 09 05	809	0.5-	0.8+	1998 09 18	704	1.1+	1.3-
1994 09 05	809	0.4-	0.5-	1998 09 18	704	0.3-	0.6-
1994 09 06	809	1.3+	0.5+	1998 09 18	704	0.4+	0.4-
1994 09 06	809	0.7+	0.4-	1998 09 18	704	0.5-	0.1+
1994 09 06	809	0.0	0.1-	1998 09 26	704	0.1+	0.4-
1998 09 14	704	0.4+	0.5+	1998 09 26	704	0.2-	0.1+
1998 09 14	704	0.2+	0.9+	1998 09 26	704	0.1-	0.7-
1998 09 14	704	0.7-	1.2+	1998 09 26	704	0.3+	0.4-
1998 09 26	704	0.1+	0.6-	1998 09 26	704	0.5-	0.1+
1998 09 26	704	0.1-	0.1-	1998 09 26	704	0.1-	0.1-
1998 09 26	704	0.4-	0.5+	1998 09 26	704	0.4-	0.5+
1998 09 26	704	0.5-	0.1+	1998 09 26	704	0.4+	0.3+
1998 09 26	704	0.1+	0.4-	1998 09 26	704	0.1+	0.2+
1998 10 15	699	(2.3+ 1.7-)		1998 10 15	699	0.4+	0.3+

1998 RA₆₀ = 1996 BP₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	248.47939		(2000.0)	P		Q	
<i>n</i>	0.19367505	ω	157.08193	-0.78097896	-0.62301854		
<i>a</i>	2.9586047	Ω	344.14223	+0.54531120	-0.64600459		
<i>e</i>	0.0186415	<i>i</i>	9.22709	+0.30447915	-0.44105099		
<i>P</i>	5.09	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 01 30	809	0.5+	0.2-	1998 09 18	704	0.1+	0.1-
1996 01 31	809	0.6-	0.2+	1998 09 26	704	0.1-	0.0
1998 09 14	704	0.0	0.2-	1998 09 26	704	0.0	0.2-
1998 09 14	704	0.2+	0.1+	1998 09 26	704	0.3+	0.7-
1998 09 14	704	0.6-	0.1+	1998 09 26	704	0.6+	0.7-
1998 09 18	704	0.3-	0.5+	1998 09 26	704	0.6-	0.9+
1998 09 18	704	0.3-	0.0	1998 09 27	704	0.3+	1.2-
1998 09 18	704	0.4-	0.7+	1998 09 27	704	0.9+	0.5-
1998 09 18	704	0.2-	0.4-	1998 09 27	704	0.8+	0.2+
1998 09 27	704	0.8+	0.2+				
1998 09 27	704	0.7+	0.7+				
1998 10 14	699	0.7+	0.1-				
1998 10 14	699	0.4+	0.2-				
1998 10 14	699	0.6-	0.4+				
1998 10 15	699	0.3-	0.7-				
1998 10 15	699	1.3-	0.4+				

1998 RF₆₀ = 1991 AN₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	346.57797		(2000.0)	P		Q	
n	0.23231353	ω	107.17376	+0.39188829	-0.91921375		
a	2.6207145	Ω	319.68654	+0.81997641	+0.36786949		
e	0.2230357	i	3.39703	+0.41720768	+0.14042120		
P	4.24	H	15.3	G	0.15	U	5
Residuals in seconds of arc							
1991 01 15	033	0.4+	0.1-	1998 09 18	704	0.8-	0.7+
1991 01 15	033	0.1-	0.0	1998 09 18	704	0.2-	0.1+
1991 01 16	033	0.3-	0.2+	1998 09 26	704	0.8+	0.7+
1998 09 14	704	0.4+	0.1+	1998 09 26	704	1.2-	0.1-
1998 09 14	704	0.1+	1.1-	1998 09 26	704	0.8-	1.0+
1998 09 14	704	1.3-	0.6-	1998 09 26	704	0.5+	0.1+
1998 09 18	704	0.5+	2.1+	1998 09 26	704	1.0-	0.4+
1998 09 18	704	1.1-	1.8-	1998 09 27	704	0.9+	0.1-

1998 NOV. 10

M.P.C. 33001

1998 RG₆₀ = 1994 UM₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	25.62527		(2000.0)	P		Q	
<i>n</i>	0.23982689	ω	157.10141	+0.98413933	−0.17291149		
<i>a</i>	2.5656897	Ω	212.93329	+0.14937842	+0.92827674		
<i>e</i>	0.2697610	<i>i</i>	4.18141	+0.09568634	+0.32924750		
<i>P</i>	4.11	<i>H</i>	16.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 26	691	0.0	0.3−	1998 09 18	704	1.2+	1.4+	1998 09 26	704	0.7−	0.8−
1994 10 26	691	0.1−	0.2−	1998 09 18	704	(0.0	2.2−)	1998 09 27	704	0.2−	0.3−
1994 10 26	691	0.4+	0.1−	1998 09 18	704	1.1+	1.8−	1998 09 27	704	0.1−	0.4+
1994 11 01	691	0.0	0.2−	1998 09 18	704	0.8+	0.9−	1998 09 27	704	0.2+	0.5+
1994 11 01	691	0.1−	0.2−	1998 09 18	704	0.9+	0.4−	1998 09 27	704	0.5−	0.3+
1994 11 01	691	0.1+	0.2−	1998 09 26	704	0.4−	0.2−	1998 09 27	704	1.0−	0.1−
1998 09 14	704	0.2+	0.6−	1998 09 26	704	1.4−	0.4−	1998 10 14	699	0.4+	0.9+
1998 09 14	704	0.3+	0.2+	1998 09 26	704	1.4−	0.2−	1998 10 14	699	0.5−	1.5+
1998 09 14	704	0.9−	0.2+	1998 09 26	704	0.3+	0.3−	1998 10 14	699	1.3+	1.8+

1998 RZ₆₀ = 1996 AQ₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	2.92451		(2000.0)	P		Q	
<i>n</i>	0.27351826	ω	192.21859	+0.66442957	−0.74560889		
<i>a</i>	2.3504184	Ω	216.17863	+0.69274878	+0.64005368		
<i>e</i>	0.1834289	<i>i</i>	4.95604	+0.28041483	+0.18546876		
<i>P</i>	3.60	<i>H</i>	16.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 15	691	0.6+	0.2+	1998 09 18	704	0.3+	0.3+	1998 09 26	704	0.5+	0.8+
1996 01 15	691	0.1+	0.1+	1998 09 18	704	0.1+	1.0+	1998 09 27	704	0.3+	0.1−
1996 01 15	691	0.0	0.1+	1998 09 18	704	2.7−	1.7+	1998 09 27	704	1.6−	0.3−
1996 01 29	691	0.3−	0.3−	1998 09 18	704	0.5+	1.3−	1998 09 27	704	0.8−	0.0
1996 01 29	691	0.2−	0.1−	1998 09 18	704	0.8−	0.6−	1998 09 27	704	0.9−	0.3−
1996 01 29	691	0.2−	0.1+	1998 09 26	704	1.6+	0.0	1998 10 14	699	0.2+	0.6−
1998 09 14	704	1.2+	1.5+	1998 09 26	704	0.5−	0.5−	1998 10 14	699	0.3+	0.4−
1998 09 14	704	0.4+	0.1+	1998 09 26	704	0.6+	0.3−	1998 10 14	699	0.6−	1.3+
1998 09 14	704	0.2+	1.2−	1998 09 26	704	1.6+	1.2−				

1998 RL₆₁ = 1987 DZ₅ = 1997 HZ₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	123.45516		(2000.0)	P		Q	
<i>n</i>	0.29528543	ω	284.29226	−0.16269751	+0.98598606		
<i>a</i>	2.2334421	Ω	336.24894	−0.86627970	−0.16064354		
<i>e</i>	0.1356910	<i>i</i>	5.25546	−0.47232298	−0.04500148		
<i>P</i>	3.34	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 02 22	809	0.4+	0.2−	1997 04 29	704	0.6+	0.6+	1998 09 26	704	0.1+	0.9−
1987 02 22	809	0.0	0.0	1997 04 29	704	0.7+	0.3−	1998 09 26	704	0.2+	0.0
1987 02 22	809	0.4−	0.2+	1998 09 14	704	0.5−	0.2+	1998 09 26	704	0.6+	0.4−
1997 04 28	704	1.5−	0.4+	1998 09 14	704	0.1+	0.2+	1998 09 26	704	0.2+	0.1−
1997 04 28	704	0.9−	1.2+	1998 09 14	704	0.1−	0.0	1998 09 26	704	0.9−	0.3+
1997 04 28	704	0.6−	0.4+	1998 09 18	704	0.0	1.0−	1998 09 27	704	0.2+	0.1−
1997 04 28	704	1.5−	0.1−	1998 09 18	704	0.4−	0.3−	1998 09 27	704	0.3+	0.0
1997 04 29	704	1.4+	0.6−	1998 09 18	704	0.5−	0.8−	1998 09 27	704	0.5+	0.4+
1997 04 29	704	0.6+	0.5−	1998 09 18	704	0.4+	0.4+	1998 09 27	704	0.2+	1.0+
1997 04 29	704	1.4+	0.9−	1998 09 18	704	0.2+	0.3+	1998 09 27	704	0.9−	0.7+

1998 RU₆₁ = 1991 TW₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	238.69058		(2000.0)	P		Q	
<i>n</i>	0.28150752	ω	184.59399	−0.95673899	−0.29010628		
<i>a</i>	2.3057349	Ω	338.50185	+0.26882456	−0.85236813		
<i>e</i>	0.0815853	<i>i</i>	3.45889	+0.11128282	−0.43509414		
<i>P</i>	3.50	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 10 07	033	0.1+	0.0	1998 09 18	704	0.5+	0.3−	1998 09 27	704	0.3−	1.2+
1991 10 07	033	0.9−	1.1+	1998 09 18	704	1.3−	1.2+	1998 09 27	704	0.6+	0.8+
1991 10 08	033	0.1−	0.6+	1998 09 18	704	1.0+	1.9+	1998 09 27	704	0.6−	0.4+
1998 09 14	704	0.8−	0.7−	1998 09 26	704	0.2+	0.8−	1998 09 27	704	0.9−	0.2−
1998 09 14	704	0.1+	0.2−	1998 09 26	704	0.1+	1.6−	1998 10 14	699	0.5+	0.0
1998 09 14	704	0.7+	1.0−	1998 09 26	704	0.2−	1.2−	1998 10 14	699	0.7−	1.0−
1998 09 18	704	0.2+	0.4+	1998 09 26	704	1.0+	1.3−	1998 10 14	699	0.8+	0.3−
1998 09 18	704	(2.2+	0.1+)	1998 09 27	704	0.2−	0.8+				

1998 RD₆₂ = 1991 PF₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	343.96627		(2000.0)	P		Q	
<i>n</i>	0.29272578	ω	85.14827	+0.32291976	−0.94626400		
<i>a</i>	2.2464430	Ω	345.97384	+0.83714138	+0.29422292		
<i>e</i>	0.1666666	<i>i</i>	4.14762	+0.44149421	+0.13422862		
<i>P</i>	3.37	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 08 06	675	0.2+	0.3+	1998 09 18	704	0.1+	0.0	1998 09 27	704	0.7−	0.5+
1991 08 06	675	0.1−	0.2−	1998 09 18	704	0.8+	0.1+	1998 09 27	704	0.0	0.8−
1991 08 10	675	0.1+	0.2+	1998 09 18	704	0.7+	0.0	1998 09 27	704	0.1+	1.2−
1991 08 10	675	0.1−	0.3−	1998 09 26	704	1.1+	0.1+	1998 09 27	704	0.0	1.0+
1998 09 14	704	0.3−	0.8−	1998 09 26	704	0.0	0.1−	1998 10 14	699	0.2+	0.4−
1998 09 14	704	0.2−	0.4+	1998 09 26	704	0.1−	0.2+	1998 10 14	699	0.0	0.1−
1998 09 14	704	0.3−	0.4−	1998 09 26	704	0.9−	0.3+	1998 10 14	699	0.1+	0.0
1998 09 18	704	0.4+	0.0	1998 09 26	704	0.4−	1.3+				
1998 09 18	704	0.1−	0.0	1998 09 27	704	0.3−	0.1−				

1998 RK₆₂ = 1997 LX₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	17.98310		(2000.0)	P		Q	
<i>n</i>	0.21155062	ω	196.89846	+0.97588171	−0.21753838		
<i>a</i>	2.7895009	Ω	175.54437	+0.21738681	+0.96078271		
<i>e</i>	0.1873446	<i>i</i>	13.56360	+0.01994671	+0.17196988		
<i>P</i>	4.66	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 02	691	0.3−	0.1−	1998 09 18	704	0.5−	0.0	1998 09 26	704	0.9+	0.0
1997 06 02	691	0.8−	0.5−	1998 09 18	704	0.2+	0.5+	1998 09 27	704	0.1+	0.0
1997 06 02	691	0.6−	0.8−	1998 09 18	704	0.4+	1.7+	1998 09 27	704	1.0−	1.6−
1997 06 09	691	1.1+	0.7+	1998 09 18	704	1.2+	1.2+	1998 09 27	704	0.5−	0.1+
1997 06 09	691	0.3+	0.5+	1998 09 18	704	0.4+	0.7+	1998 09 27	704	0.6−	1.1−
1997 06 09	691	0.2+	0.2+	1998 09 26	704	0.2+	0.7−	1998 10 17	699	0.4+	0.9−
1998 09 14	704	0.7−	0.2+	1998 09 26	704	0.1+	0.8−	1998 10 17	699	0.3−	1.9+
1998 09 14	704	0.4−	0.4−	1998 09 26	704	0.3−	1.1−	1998 10 17	699	0.3−	0.7+
1998 09 14	704	0.1+	0.6+	1998 09 26	704	0.6+	0.7−				

1998 RZ₆₂ = 1993 FU₃₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	35.24545		(2000.0)	P		Q	
<i>n</i>	0.25680171	ω	297.47740	+0.98937128	+0.13810857		
<i>a</i>	2.4513432	Ω	54.61811	−0.10574392	+0.89813968		
<i>e</i>	0.1990649	<i>i</i>	3.19935	−0.09981326	+0.41745794		
<i>P</i>	3.84	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 19	809	0.3+	0.3+	1998 09 18	704	0.1-	0.4+	1998 09 27	704	0.4-	0.2+
1993 03 20	809	0.7-	0.3+	1998 09 18	704	1.2+	0.6+	1998 09 27	704	0.8-	0.2+
1993 03 24	809	0.5+	0.7-	1998 09 18	704	0.3-	0.1+	1998 09 27	704	0.4-	0.7-
1998 09 14	704	0.3+	1.0+	1998 09 26	704	0.6-	0.5+	1998 09 27	704	0.2-	0.4+
1998 09 14	704	0.4+	0.2+	1998 09 26	704	0.2+	0.5-	1998 09 27	704	0.3+	0.7-
1998 09 14	704	1.3-	0.3+	1998 09 26	704	1.0+	0.5-	1998 10 17	699	0.7+	0.4-
1998 09 18	704	0.1+	0.1+	1998 09 26	704	0.1+	0.3-	1998 10 17	699	0.2-	1.0+
1998 09 18	704	0.7+	1.1-	1998 09 26	704	0.5-	0.6-	1998 10 17	699	0.3-	0.2+

1998 RX₆₃ = 1982 XL₄ = 1987 SA₂₈ = 1997 JZ₁₆ = 1997 LX₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	49.09492	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.17940541	ω	210.63597	+0.76808201	+0.63819463		
<i>a</i>	3.1134772	Ω	109.61284	-0.57563256	+0.72405422		
<i>e</i>	0.2009901	<i>i</i>	3.19575	-0.28053017	+0.26163543		
<i>P</i>	5.49	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 12 14	381	0.2+	0.1-	1997 06 08	809	1.3+	0.4-	1998 09 26	704	0.8+	1.0-
1982 12 14	381	0.0	0.3-	1997 06 08	809	0.2+	0.9-	1998 09 26	704	0.9+	1.1-
1987 09 24	095	0.4-	1.0+	1997 06 08	809	0.4-	1.3-	1998 09 26	704	1.6+	0.5-
1997 05 03	809	(0.1-	2.5+)	1998 09 14	704	0.4-	0.6+	1998 09 27	704	0.3-	0.1-
1997 05 03	809	0.4-	1.8+	1998 09 14	704	0.7-	0.5+	1998 09 27	704	0.8-	0.1+
1997 05 03	809	0.4+	1.5+	1998 09 14	704	0.7-	0.1+	1998 09 27	704	0.3+	0.2+
1997 05 04	809	0.2-	1.6-	1998 09 18	704	0.0	0.6-	1998 09 27	704	0.1-	0.7+
1997 05 04	809	1.3-	0.2-	1998 09 18	704	0.2-	1.0-	1998 09 27	704	0.0	0.8-
1997 05 04	809	1.4-	1.0-	1998 09 18	704	0.7-	0.6+	1998 10 17	699	0.2-	1.4+
1997 06 07	809	1.6+	1.0+	1998 09 18	704	0.1-	0.4-	1998 10 17	699	0.3-	0.8+
1997 06 07	809	0.7+	0.1+	1998 09 26	704	0.3+	0.6+	1998 10 17	699	0.6+	0.2+
1997 06 07	809	0.3+	0.5+	1998 09 26	704	0.5+	1.1-				

1998 RD₆₄ = 1994 TY₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	7.62163	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.23927226	ω	11.63298	+0.80802676	-0.58827918		
<i>a</i>	2.5696530	Ω	24.48760	+0.53416134	+0.70866473		
<i>e</i>	0.2400630	<i>i</i>	4.41990	+0.24852450	+0.38951497		
<i>P</i>	4.12	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 10 08	691	0.1+	0.0	1998 09 18	704	1.2-	1.4+	1998 09 26	704	1.9+	0.7-
1994 10 08	691	0.1+	0.0	1998 09 18	704	2.0-	0.7-	1998 09 27	704	0.0	0.5+
1994 10 08	691	0.1+	0.1+	1998 09 18	704	0.4-	1.0+	1998 09 27	704	1.5-	0.4+
1994 10 10	691	0.1-	0.3+	1998 09 18	704	0.6+	1.0-	1998 09 27	704	0.5+	0.2+
1994 10 10	691	0.2-	0.2+	1998 09 18	704	1.4-	1.3+	1998 09 27	704	0.8+	1.6-
1994 10 10	691	0.3-	0.1-	1998 09 26	704	0.2+	0.4-	1998 10 14	910	0.1-	0.1+
1998 09 14	704	1.3-	1.5+	1998 09 26	704	1.1+	0.6+	1998 10 14	910	0.3-	0.1+
1998 09 14	704	0.5-	0.4+	1998 09 26	704	1.0+	1.2-	1998 10 14	910	0.2-	0.3+
1998 09 14	704	1.4+	0.6-	1998 09 26	704	1.5+	1.9-				

1998 RG₆₄ = 1990 FP₂ = 1997 HS₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	112.96795	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.27867111	ω	98.73361	-0.13568374	+0.99037785		
<i>a</i>	2.3213542	Ω	163.39389	-0.94234539	-0.12051881		
<i>e</i>	0.1747246	<i>i</i>	5.46802	-0.30590046	-0.06802155		
<i>P</i>	3.54	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 03 17	033	0.9+	0.2+	1998 09 14	704	0.1+	0.9+	1998 09 26	704	0.8+	0.3-
1990 03 18	033	0.5-	1.0+	1998 09 14	704	0.1+	0.4+	1998 09 26	704	1.4+	0.8-
1997 04 28	704	0.1-	0.1-	1998 09 14	704	0.7-	0.3+	1998 09 26	704	1.4+	1.2-
1997 04 28	704	0.9-	0.1-	1998 09 18	704	0.1+	1.0-	1998 09 27	704	0.3+	0.3-
1997 04 28	704	0.1+	0.2-	1998 09 18	704	0.1+	1.3+	1998 09 27	704	0.5-	0.7+

1997 04 28	704	1.1-	0.2-	1998 09 18	704	1.1-	0.6-	1998 09 27	704	0.1-	0.6+
1997 04 29	704	1.1+	0.3-	1998 09 18	704	0.6-	0.9+	1998 09 27	704	0.3-	0.5+
1997 04 29	704	1.0+	0.1+	1998 09 18	704	0.6-	0.5+	1998 09 27	704	0.0	1.4-
1997 04 29	704	1.0+	0.4+	1998 09 26	704	1.3-	0.5+				
1997 04 29	704	1.1-	0.1+	1998 09 26	704	0.3+	0.0				

1998 RP₆₄ = 1987 SR₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	3.15439	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.17774992	ω	204.99417	+0.90906240	-0.41665077		
<i>a</i>	3.1327791	Ω	179.59661	+0.41665918	+0.90905371		
<i>e</i>	0.0930809	<i>i</i>	23.20715	-0.00083015	+0.00484733		
<i>P</i>	5.54	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 09 29	033	0.3-	0.4-	1998 09 16	699	0.6-	0.3+	1998 09 26	704	0.6+	0.3-
1987 09 29	033	0.4+	0.1-	1998 09 16	699	0.1+	0.5+	1998 09 26	704	0.2+	0.1-
1987 09 30	033	0.4-	0.1-	1998 09 16	699	0.5+	0.5-	1998 09 27	704	0.4+	0.9-
1987 09 30	033	0.1+	1.1-	1998 09 18	704	0.3+	0.3+	1998 09 27	704	0.4+	0.1-
1987 10 01	033	0.1+	0.1+	1998 09 18	704	0.5-	0.6+	1998 09 27	704	0.3+	0.5+
1998 08 02	699	0.4-	0.2-	1998 09 18	704	0.6-	0.2+	1998 09 27	704	0.8+	0.0
1998 08 02	699	0.1-	0.5+	1998 09 18	704	1.1-	0.1-	1998 09 27	704	0.3+	0.4+
1998 08 02	699	0.5-	0.5-	1998 09 18	704	0.2-	0.6-	1998 10 17	699	0.7+	0.1+
1998 09 14	704	0.3-	0.6+	1998 09 26	704	0.1+	0.4-	1998 10 17	699	0.1+	1.6+
1998 09 14	704	0.3-	0.4-	1998 09 26	704	0.3-	0.1+	1998 10 17	699	0.0	0.5+
1998 09 14	704	0.7-	0.2-	1998 09 26	704	0.5+	0.3-				

1998 RQ₆₄ = 1997 LB

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	25.15585	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.18439710	ω	187.49634	+0.99924332	+0.03845866		
<i>a</i>	3.0570320	Ω	170.29391	-0.03365874	+0.92985105		
<i>e</i>	0.2388919	<i>i</i>	1.97378	-0.01949041	+0.36592069		
<i>P</i>	5.35	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 01	684	0.3-	0.2+	1998 09 18	704	1.3-	0.3+	1998 09 27	704	1.9+	0.8-
1997 06 01	684	0.1-	0.4-	1998 09 18	704	0.1+	0.9-	1998 09 27	704	1.3+	0.1-
1997 06 02	684	0.1+	0.1+	1998 09 18	704	0.4-	0.1-	1998 09 27	704	1.5+	0.5+
1997 06 02	684	0.1+	0.1-	1998 09 18	704	0.6-	0.6+	1998 09 27	704	0.7+	0.3+
1997 06 02	684	0.2+	0.2+	1998 09 26	704	0.5+	0.7+	1998 09 27	704	1.2+	0.8+
1998 09 14	704	0.6-	0.0	1998 09 26	704	0.4-	0.2-	1998 10 15	691	0.6-	1.9+
1998 09 14	704	0.1-	0.3-	1998 09 26	704	0.3-	0.0	1998 10 15	691	0.7-	0.9-
1998 09 14	704	0.7-	0.5-	1998 09 26	704	0.0	0.3-	1998 10 15	691	0.9-	0.8-
1998 09 18	704	0.2+	0.2+	1998 09 26	704	0.8-	0.4-				

1998 RS₆₄ = 3331 T-2

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams				Williams			
<i>M</i>	208.47199	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.23687491	ω	180.83416	-0.99842281	+0.05502510		
<i>a</i>	2.5869617	Ω	2.40649	-0.04985035	-0.77762892		
<i>e</i>	0.0515965	<i>i</i>	15.38681	-0.02582302	-0.62631103		
<i>P</i>	4.16	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	0.6+	1.6+	1998 09 14	704	0.3+	0.0	1998 09 26	704	1.2-	1.8-
1973 09 19	675	0.8+	1.3+	1998 09 14	704	0.6+	0.8+	1998 09 27	704	0.8+	0.6-
1973 09 20	675	1.6+	2.3-	1998 09 18	704	1.7+	1.4-	1998 09 27	704	0.1-	0.5+
1973 09 24	675	1.4-	0.5+	1998 09 18	704	0.1+	0.8-	1998 09 27	704	0.3+	1.0+
1973 09 24	675	1.7-	0.9+	1998 09 18	704	2.0-	0.7+	1998 09 27	704	0.5+	0.8+
1973 09 25	675	0.6+	0.1-	1998 09 18	704	0.8+	1.5+	1998 09 27	704	1.7+	0.6+
1973 09 25	675	0.6-	1.9-	1998 09 26	704	2.1-	0.5+				
1998 09 14	704	1.6-	0.7-	1998 09 26	704	0.0	1.0-				

1998 NOV. 10

M.P.C. 33003

1998 RX₆₄ = 1983 QD₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	335.23519		(2000.0)	P		Q	
<i>n</i>	0.26601511	ω	247.01913	+0.24113355		−0.97047163	
<i>a</i>	2.3944100	Ω	189.03425	+0.90441061		+0.22705630	
<i>e</i>	0.1511938	<i>i</i>	2.29152	+0.35198873		+0.08142630	
<i>P</i>	3.71	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1983 08 30	675	0.8−	0.0	1998 09 18	704	0.2+	0.5+
1983 08 31	675	0.9−	0.6+	1998 09 18	704	0.5−	0.1+
1983 09 01	675	0.7+	1.1−	1998 09 26	704	0.2+	0.6+
1983 09 02	675	0.4+	0.0	1998 09 26	704	0.2−	0.8+
1983 09 02	675	0.7+	0.4+	1998 09 26	704	0.0	1.1−
1998 09 14	704	0.5+	1.9−	1998 09 26	704	0.9+	0.3+
1998 09 14	704	0.4−	0.5+	1998 09 26	704	1.7−	1.4−
1998 09 14	704	0.1+	0.1−	1998 09 27	704	0.2−	0.5+
1998 09 18	704	0.6−	0.2+	1998 09 27	704	0.0	0.7+
1998 09 18	704	0.1+	0.3+	1998 09 27	704	0.3+	1.4+
1998 09 18	704	1.2+	0.5−	1998 09 27	704	0.6−	0.2+

1998 RA₆₅ = 1993 RE₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	26.88117		(2000.0)	P		Q	
<i>n</i>	0.19997184	ω	177.61692	+0.99983910		−0.01783484	
<i>a</i>	2.8961663	Ω	183.40678	+0.01587614		+0.92972405	
<i>e</i>	0.0705842	<i>i</i>	1.85547	+0.00835055		+0.36782483	
<i>P</i>	4.93	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 09 15	809	(3.5+ 3.4+)		1998 09 14	704	1.0+	0.5−
1993 09 15	809	(1.5+ 2.9+)		1998 09 14	704	1.5+	0.6+
1993 09 15	809	(5.4+ 4.7+)		1998 09 18	704	1.0−	0.1−
1993 09 20	691	0.8−	0.8−	1998 09 18	704	1.3−	0.7+
1993 09 20	691	0.7−	1.0−	1998 09 18	704	1.4−	0.6+
1993 09 20	691	0.5−	1.1−	1998 09 18	704	0.8+	0.6+
1993 09 22	809	1.6+	1.6+	1998 09 18	704	1.6−	0.6+
1993 09 22	809	(3.1+ 1.3+)		1998 09 26	704	0.9+	0.0
1993 09 22	809	1.3+	1.0+	1998 09 26	704	1.1−	0.9−
1993 09 23	675	0.6+	0.1+	1998 09 26	704	0.3−	0.5−
1993 09 23	675	1.1−	0.7−	1998 09 26	704	1.3−	0.2−
1998 09 14	704	0.6+	0.1+	1998 09 27	704	0.6+	0.3+

1998 RJ₆₅ = 1954 TT = 1954 UZ₁ = 1964 PB = 1978 YS₁ = 1981 SA₆

= 1988 VQ = 1997 CG₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	30.10793		(2000.0)	P		Q	
<i>n</i>	0.29092306	ω	188.56980	+0.98318657		−0.18258910	
<i>a</i>	2.2557136	Ω	181.95536	+0.17130855		+0.92669517	
<i>e</i>	0.1654616	<i>i</i>	3.89944	+0.06322614		+0.32847722	
<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−	1.0−	1997 02 14	327	0.4+	0.2+
1954 10 25	760	2.2+	1.6−	1997 02 14	327	0.1+	0.3+
1954 10 25	760	(5.4+ 4.2+)		1998 09 14	704	0.8+	0.0
1964 08 09	760(96.3−	62.0−)	X	1998 09 14	704	0.8+	0.1+
1978 12 22	095	1.7+	0.1−	1998 09 14	704	0.5+	0.4+
1981 09 28	095	0.1−	0.7−	1998 09 18	704	0.9+	1.3+
1988 11 03	897	2.3−	0.3−	1998 09 18	704	0.9+	1.4−
1988 11 03	897	0.0	0.1+	1998 09 18	704	0.0	1.0+
1988 11 07	897	0.3−	0.2+	1998 09 18	704	0.2−	0.1−
1988 11 07	897	0.1+	0.5+	1998 09 18	704	0.3−	0.4+
1997 02 07	327	0.0	0.1+	1998 09 26	704	0.7−	0.2+
1997 02 07	327	0.4−	0.1+	1998 09 26	704	0.2−	0.8+

1997 02 07	327	0.9−	0.4+	1998 09 26	704	0.4−	0.3−
1997 02 14	327	0.5+	0.0	1998 09 26	704	0.8−	0.3+

1998 RL₆₅ = 1993 RH₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	9.00970		(2000.0)	P		Q	
<i>n</i>	0.20139330	ω	37.08445	+0.92189446		−0.38739537	
<i>a</i>	2.8825225	Ω	345.70452	+0.34943783		+0.83800552	
<i>e</i>	0.0786188	<i>i</i>	1.38135	+0.16734339		+0.38428061	
<i>P</i>	4.89	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 09 14	809	(2.4+ 1.1+)		1998 09 18	704	0.4−	0.5+
1993 09 14	809	0.8+	0.3−	1998 09 18	704	1.0+	0.7−
1993 09 14	809	1.4−	0.4−	1998 09 18	704	0.1−	0.3+
1993 09 19	809	1.5+	1.3+	1998 09 18	704	0.8−	1.7+
1993 09 19	809	0.4−	0.1−	1998 09 18	704	0.8−	0.7+
1993 09 19	809	0.7−	0.2−	1998 09 26	704	0.0	0.5+
1998 09 14	704	0.1−	0.5+	1998 09 26	704	0.0	0.5−
1998 09 14	704	0.7+	1.2−	1998 09 26	704	0.1+	1.3−
1998 09 14	704	0.8+	1.1−	1998 09 26	704	0.2+	0.4+

1998 RR₆₅ = 1977 DO₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	260.80139		(2000.0)	P		Q	
<i>n</i>	0.21075108	ω	141.06250	−0.70417394		−0.70996238	
<i>a</i>	2.7965516	Ω	353.67901	+0.62765224		−0.61608868	
<i>e</i>	0.0551172	<i>i</i>	5.01087	+0.33195140		−0.34115709	
<i>P</i>	4.68	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1977 02 18	381	0.1+	0.8−	1998 09 18	704	0.1+	0.4+
1977 02 18	381	1.4+	0.3+	1998 09 18	704	0.3+	0.4+
1977 02 19	381	0.8−	0.4+	1998 09 18	704	(3.3− 0.0)	
1977 02 19	381	0.7−	0.1+	1998 09 26	704	1.0+	0.5−
1998 09 14	704	0.3+	0.3−	1998 09 26	704	0.6+	0.3−
1998 09 14	704	0.8+	0.0	1998 09 26	704	0.3+	0.5−
1998 09 14	704	1.7−	0.1−	1998 09 26	704	0.2+	0.5−
1998 09 18	704	0.9−	0.3−	1998 09 26	704	0.8−	0.2−

1998 RS₆₅ = 1995 YQ₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	78.09489		(2000.0)	P		Q	
<i>n</i>	0.22947817	ω	320.64913	+0.56057281		+0.82791328	
<i>a</i>	2.6422574	Ω	343.42184	−0.74314531		+0.49344712	
<i>e</i>	0.1105184	<i>i</i>	3.58173	−0.36536718		+0.26658871	
<i>P</i>	4.29	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1995 12 20	691	0.1+	0.0	1998 09 18	704	1.3+	1.2+
1995 12 20	691	0.0	0.0	1998 09 18	704	1.0+	0.3−
1995 12 20	691	0.1−	0.2+	1998 09 18	704	0.7+	0.7−
1995 12 27	691	0.0	0.1−	1998 09 18	704	1.9−	0.5−
1995 12 27	691	0.1−	0.1−	1998 09 18	704	0.5−	0.3+
1995 12 27	691	0.0	0.0	1998 09 26	704	0.6−	1.1+
1998 09 14	704	0.5−	0.4+	1998 09 26	704	0.1−	0.3−
1998 09 14	704	0.9−	0.5−	1998 09 26	704	0.5+	0.1−
1998 09 14	704	0.1+	0.6−	1998 09 26	704	1.6+	0.7+

1998 RU₆₅ = 1993 FA₇₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	29.72493		(2000.0)	P		Q	
<i>n</i>	0.26512989	ω	33.94429	+0.99087786		-0.13419013	
<i>a</i>	2.3997367	Ω	333.75914	+0.11656767		+0.89966878	
<i>e</i>	0.1894205	<i>i</i>	1.60873	+0.06762431		+0.41543844	
<i>P</i>	3.72	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 21	809	0.7-	0.4-	1998 09 18	704	0.8-	0.3-	1998 09 27	704	0.3+	0.2-
1993 03 22	809	0.5+	0.1-	1998 09 18	704	0.4-	0.4+	1998 09 27	704	0.3-	0.7+
1998 09 14	704	0.2+	0.1-	1998 09 18	704	0.7-	0.0	1998 09 27	704	0.0	0.1+
1998 09 14	704	0.7-	0.6-	1998 09 18	704	0.3-	0.4+	1998 09 27	704	0.0	0.1-
1998 09 14	704	0.3-	0.8+	1998 09 26	704	0.3+	0.1-	1998 09 27	704	0.5+	0.9+
1998 09 15	699	0.2+	0.2-	1998 09 26	704	0.4-	0.8-	1998 10 14	699	0.1+	0.3+
1998 09 15	699	0.4+	0.4+	1998 09 26	704	0.2-	0.4-	1998 10 14	699	0.4-	0.2+
1998 09 15	699	0.6+	0.0	1998 09 26	704	0.9+	0.4-	1998 10 14	699	0.1+	0.5-
1998 09 18	704	0.6+	0.2-	1998 09 26	704	0.3+	0.6-				

1998 RW₆₅ = 1993 RG₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	34.99944		(2000.0)	P		Q	
<i>n</i>	0.20151684	ω	74.05420	+0.99377533		+0.11009390	
<i>a</i>	2.8813443	Ω	279.62274	-0.10767353		+0.91000720	
<i>e</i>	0.0647372	<i>i</i>	0.98955	-0.02858317		+0.39970769	
<i>P</i>	4.89	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1993 09 14	809	1.7+	1.1+	1998 09 14	704	0.8+	2.2-	1998 09 26	704	0.9-	1.2-
1993 09 14	809	1.0+	0.8+	1998 09 14	704	2.1-	1.8-	1998 09 26	704	1.1-	0.2+
1993 09 14	809	0.1-	1.3+	1998 09 15	699	0.1+	0.0	1998 09 26	704	0.0	0.0
1993 09 19	809	1.0+	0.7+	1998 09 15	699	1.1+	0.1+	1998 09 26	704	0.9+	0.6+
1993 09 19	809	0.5+	0.5-	1998 09 15	699	1.1+	0.9+	1998 09 26	704	0.2+	0.8+
1993 09 19	809	0.9-	0.1+	1998 09 18	704	0.1+	0.2-	1998 09 27	704	0.5-	1.0+
1993 09 20	691	1.5-	1.2-	1998 09 18	704	0.6-	1.0+	1998 09 27	704	1.2-	1.4+
1993 09 20	691	1.1-	0.9-	1998 09 18	704	1.4+	0.2+	1998 09 27	704	0.7-	1.1+
1993 09 20	691	1.1-	0.3-	1998 09 18	704	0.8+	0.5-	1998 09 27	704	0.6-	0.1-
1998 09 14	704	0.1+	1.3-	1998 09 18	704	0.4+	1.3-	1998 09 27	704	0.9+	0.0

1998 RP₆₆ = 1993 QG₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	145.57544		(2000.0)	P		Q	
<i>n</i>	0.21035864	ω	339.87394	-0.43631014		+0.89850456	
<i>a</i>	2.8000287	Ω	264.23177	-0.81877497		-0.41866670	
<i>e</i>	0.0362274	<i>i</i>	2.77666	-0.37315013		-0.13193843	
<i>P</i>	4.69	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 08 17	010	0.2+	0.0	1998 09 18	704	0.6-	0.9+	1998 09 27	704	0.7-	0.8-
1993 08 19	010	1.6+	1.2+	1998 09 18	704	0.7-	0.0	1998 09 27	704	0.8+	0.2+
1993 08 19	010	1.0-	0.4-	1998 09 18	704	0.6-	0.9-	1998 09 27	704	0.2+	0.8+
1993 08 19	010	0.9-	0.7-	1998 09 18	704	(3.9-	0.6+)	1998 09 27	704	0.6+	0.7+
1998 09 14	704	0.3+	0.9-	1998 09 26	704	0.5-	1.2+	1998 09 27	704	0.0	0.7+
1998 09 14	704	0.8+	0.2-	1998 09 26	704	(0.0	2.5-)	1998 10 14	699	0.4+	1.0+
1998 09 14	704	0.8+	0.0	1998 09 26	704	0.9-	1.3-	1998 10 14	699	0.7+	0.3-
1998 09 18	704	0.3-	0.3-	1998 09 26	704	0.7-	0.6-	1998 10 14	699	0.5+	0.2-

1998 RV₆₆ = 1988 NS

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	84.25104		(2000.0)	P		Q	
<i>n</i>	0.30343247	ω	48.09959	+0.51618949		+0.85467942	
<i>a</i>	2.1932831	Ω	253.05745	-0.80195620		+0.45960112	
<i>e</i>	0.1783449	<i>i</i>	3.32133	-0.30069030		+0.24143301	
<i>P</i>	3.25	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 07 11	675	0.0	0.1-	1998 09 18	704	0.4-	0.4+	1998 09 27	704	0.4+	0.3-
1988 07 14	675	0.1+	0.0	1998 09 18	704	0.5-	0.5+	1998 09 27	704	1.4+	0.0
1998 08 28	699	0.4+	0.2+	1998 09 18	704	0.7-	1.0+	1998 09 27	704	1.2+	0.2+
1998 08 28	699	0.2+	0.5+	1998 09 18	704	0.9-	1.0+	1998 09 27	704	0.7+	0.5+
1998 08 28	699	0.1+	0.0	1998 09 26	704	0.4-	0.3-	1998 09 27	704	0.7+	0.2+
1998 09 14	704	0.2+	0.7-	1998 09 26	704	0.2-	0.7-	1998 10 14	699	0.4-	0.5-
1998 09 14	704	0.2-	0.6-	1998 09 26	704	0.8-	0.3+	1998 10 14	699	0.2+	0.0
1998 09 14	704	0.1-	1.3-	1998 09 26	704	0.4-	0.0	1998 10 14	699	0.3+	0.4-
1998 09 18	704	0.7-	0.3-	1998 09 26	704	0.1+	0.4+				

1998 RL₆₇ = 1978 US₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	40.58442		(2000.0)	P		Q	
<i>n</i>	0.29526767	ω	99.26624	+0.99892415		-0.00722231	
<i>a</i>	2.2335317	Ω	261.15737	-0.01126699		+0.92040191	
<i>e</i>	0.1316755	<i>i</i>	2.65713	+0.04498438		+0.39090683	
<i>P</i>	3.34	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 10 27	675	0.7+	1.2+	1998 09 18	704	1.4+	0.5-	1998 09 27	704	0.2-	0.6+
1978 10 28	675	1.1-	0.1-	1998 09 18	704	1.6+	1.5-	1998 09 27	704	1.5-	1.6+
1978 10 29	675	0.1-	0.1+	1998 09 26	704	0.3+	0.7+	1998 10 28	704	1.7+	2.4-
1998 09 14	704	0.7-	0.7-	1998 09 26	704	0.5+	0.5-	1998 10 28	704	0.3-	0.6-
1998 09 14	704	0.5-	0.2-	1998 09 26	704	1.3-	0.6+	1998 10 28	704	1.5+	0.2-
1998 09 14	704	0.7-	0.6-	1998 09 26	704	1.2-	0.1+	1998 10 28	704	1.1-	0.5-
1998 09 18	704	0.0	1.0-	1998 09 27	704	0.2-	0.1-	1998 10 29	704	0.7+	0.0
1998 09 18	704	0.3+	1.5+	1998 09 27	704	0.3+	0.2+	1998 10 29	704	0.6-	0.2-
1998 09 18	704	1.7+	0.5+	1998 09 27	704	0.0	0.6+	1998 10 29	704	0.8-	1.2+

1998 RM₆₇ = 1981 YN = 1991 RR₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	320.61290		(2000.0)	P		Q	
<i>n</i>	0.28415207	ω	170.00988	-0.19436700		-0.97949090	
<i>a</i>	2.2914067	Ω	291.18254	+0.89600969		-0.15525087	
<i>e</i>	0.1701867	<i>i</i>	3.26431	+0.39923440		-0.12843187	
<i>P</i>	3.47	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 12 31	801	0.1+	0.5-	1998 09 17	699	0.9+	0.0	1998 09 27	704	0.1+	0.5+
1991 09 13	675	0.4+	1.4-	1998 09 17	699	0.7+	0.4+	1998 09 27	704	0.1-	0.8+
1991 09 13	675	0.5+	0.7-	1998 09 18	704	0.3+	0.9+	1998 09 27	704	0.1-	1.3+
1991 09 15	675	0.8+	1.4-	1998 09 18	704	0.6-	0.8+	1998 09 27	704	0.3-	1.0+
1991 09 15	675	0.6+	1.7-	1998 09 18	704	0.1-	0.0	1998 09 27	704	1.0-	0.9+
1998 08 27	699	0.3+	0.4+	1998 09 18	704	0.2-	0.4+	1998 10 12	292	(0.5+	3.2-)
1998 08 27	699	0.7+	0.2-	1998 09 18	704	0.9-	0.3+	1998 10 12	292	(0.4-	3.7-)
1998 08 27	699	0.2-	0.1+	1998 09 26	704	0.8-	0.5+	1998 10 12	292	(0.2+	3.1-)
1998 09 14	704	0.5+	0.1-	1998 09 26	704	0.6-	0.1+	1998 10 14	699	0.9+	0.9-
1998 09 14	704	0.2+	0.5-	1998 09 26	704	0.7-	0.0	1998 10 14	699	1.1+	1.1-
1998 09 14	704	0.5-	0.2-	1998 09 26	704	1.3-	0.2+	1998 10 14	699	0.9+	0.8-
1998 09 17	699	0.2+	0.6+	1998 09 26	704	1.6-	0.1-				

1998 NOV. 10

M.P.C. 33005

1998 RO₆₇ = 1997 GG₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 112.42536 (2000.0)			Williams			<i>P</i>			<i>Q</i>		
<i>n</i>	0.27436408	ω	61.75856	+0.09808226	+0.99327241	<i>a</i>	2.3455852	Ω	214.04242	−0.94725761	+0.07421604
<i>e</i>	0.1051371	<i>i</i>	6.31352	−0.30509487	+0.08889267	<i>P</i>	3.59	<i>H</i>	15.0	<i>G</i>	0.15
<i>U</i>	5										
Residuals in seconds of arc											
1997 04 03	704	0.2−	0.3−	1998 08 28	699	0.5−	0.1−	1998 09 26	704	0.4−	0.9−
1997 04 03	704	0.7−	0.7−	1998 09 14	704	0.6+	0.7−	1998 09 26	704	1.0+	0.3+
1997 04 05	704	0.5+	0.5+	1998 09 14	704	0.3−	0.0	1998 09 26	704	0.3−	0.6−
1997 04 05	704	0.0	0.3+	1998 09 14	704	0.4−	1.2−	1998 09 26	704	1.0−	0.5+
1997 04 06	704	0.7+	0.2+	1998 09 15	699	0.2+	0.9+	1998 09 26	704	0.7−	0.1+
1997 04 06	704	0.3+	1.3−	1998 09 15	699	0.6+	0.2+	1998 09 27	704	0.1−	0.0
1997 04 07	704	1.5−	1.0−	1998 09 15	699	1.2+	0.3+	1998 09 27	704	0.2+	0.1+
1997 04 07	704	0.9+	3.9+	1998 09 18	704	1.4−	0.7+	1998 09 27	704	0.1+	0.1−
1997 04 07	704	0.5−	0.7−	1998 09 18	704	1.3−	0.8−	1998 09 27	704	0.9+	0.7+
1997 04 07	704	0.6+	0.9−	1998 09 18	704	0.6−	0.7+	1998 09 27	704	0.5+	0.2+
1998 08 28	699	0.6−	0.0	1998 09 18	704	0.5+	0.9+				
1998 08 28	699	0.9+	0.0	1998 09 18	704	1.0+	0.9−				

1998 RA₆₈ = 1979 SP₃ = 1996 BT₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 48.96554 (2000.0)			Williams			<i>P</i>			<i>Q</i>		
<i>n</i>	0.20931861	ω	336.60988	+0.89909034	+0.43768748	<i>a</i>	2.8092959	Ω	357.39080	−0.36809764	+0.74581690
<i>e</i>	0.1689837	<i>i</i>	10.29780	−0.23694027	+0.50218205	<i>P</i>	4.71	<i>H</i>	13.4	<i>G</i>	0.15
<i>U</i>	4										
Residuals in seconds of arc											
1979 09 24	095	0.1−	0.1+	1998 09 14	704	0.6+	0.5−	1998 09 26	704	0.1−	1.0−
1996 01 27	385	0.3−	0.4+	1998 09 14	704	0.5−	0.1−	1998 09 26	704	0.4−	1.3−
1996 01 27	385	0.1+	0.2+	1998 09 15	699	0.1+	0.2+	1998 09 26	704	1.6−	1.3−
1996 01 27	385	0.1+	0.1+	1998 09 15	699	0.4+	0.4+	1998 09 26	704	0.7−	0.9−
1996 01 30	887	0.2+	0.2+	1998 09 15	699	0.1+	0.2+	1998 09 27	704	0.5+	0.2+
1996 01 30	887	0.3−	0.1−	1998 09 18	704	0.1+	0.1+	1998 09 27	704	0.7+	1.1+
1996 01 30	887	0.2+	0.2−	1998 09 18	704	0.3−	0.0	1998 09 27	704	1.2+	0.9+
1996 01 30	887	0.1+	0.0	1998 09 18	704	1.1+	0.0	1998 09 27	704	1.4+	1.5+
1996 01 30	887	0.3−	0.2−	1998 09 18	704	0.1−	0.1+	1998 09 27	704	0.6+	0.5+
1996 01 30	887	0.1+	0.4−	1998 09 18	704	1.3−	0.8−				
1998 09 14	704	0.4−	0.2+	1998 09 26	704	1.4−	0.4+				

1998 RN₆₈ = 1996 ER₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 23.16044 (2000.0)			Williams			<i>P</i>			<i>Q</i>		
<i>n</i>	0.22050140	ω	22.48707	+0.97987943	−0.19944130	<i>a</i>	2.7134916	Ω	349.00879	+0.17641534	+0.88352832
<i>e</i>	0.1297394	<i>i</i>	2.31831	+0.09334847	+0.42379344	<i>P</i>	4.47	<i>H</i>	15.1	<i>G</i>	0.15
<i>U</i>	5										
Residuals in seconds of arc											
1996 03 11	691	0.0	0.2−	1998 09 15	699	0.8+	0.1+	1998 09 27	704	0.0	0.1−
1996 03 11	691	0.0	0.2−	1998 09 18	704	1.0−	0.2+	1998 09 27	704	0.3+	1.2+
1996 03 11	691	0.2+	0.1−	1998 09 18	704	1.0−	0.4−	1998 09 27	704	1.5−	0.4+
1996 03 18	691	0.0	0.2+	1998 09 18	704	0.2+	0.4−	1998 09 27	704	0.1+	1.5+
1996 03 18	691	0.0	0.2+	1998 09 18	704	0.3−	1.1+	1998 09 27	704	1.0+	0.9+
1996 03 18	691	0.2−	0.1−	1998 09 18	704	1.1−	0.6−	1998 10 14	699	0.2+	0.1+
1998 09 14	704	0.7+	0.4−	1998 09 26	704	0.3+	0.5−	1998 10 14	699	0.4−	0.5−
1998 09 14	704	0.6−	1.1−	1998 09 26	704	0.1+	1.3−	1998 10 14	699	0.7+	0.0
1998 09 15	699	1.2+	0.3+	1998 09 26	704	1.1−	1.3−				
1998 09 15	699	1.1+	0.4+	1998 09 26	704	0.3+	0.1+				

1998 RQ₆₈ = 1993 RO₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 20.20189 (2000.0)			Williams			<i>P</i>			<i>Q</i>		
<i>n</i>	0.20201580	ω	31.76984	+0.97845082	−0.20630498	<i>a</i>	2.8765979	Ω	340.13077	+0.18381869	+0.88907593
<i>e</i>	0.0932709	<i>i</i>	1.43299	+0.09404615	+0.40863461	<i>P</i>	4.88	<i>H</i>	14.5	<i>G</i>	0.15
<i>U</i>	6										
Residuals in seconds of arc											
1993 09 14	809	1.6+	0.6+	1998 09 14	704	0.6+	0.2−	1998 09 26	704	0.1+	0.2−
1993 09 14	809	0.8+	0.3+	1998 09 18	704	0.1−	0.1+	1998 09 26	704	0.1+	0.5+
1993 09 14	809	0.6+	1.2+	1998 09 18	704	0.3+	1.3−	1998 09 26	704	0.0	0.0
1993 09 19	809	1.0−	0.2+	1998 09 18	704	0.7−	1.4−	1998 09 27	704	0.7−	0.3+
1993 09 19	809	1.2−	1.2−	1998 09 18	704	0.5−	0.7+	1998 09 27	704	0.6+	0.8+
1993 09 19	809	1.1−	0.5−	1998 09 18	704	0.8−	0.6−	1998 09 27	704	0.7+	0.3−
1998 09 14	704	1.0+	0.4−	1998 09 26	704	0.4−	0.2−	1998 09 27	704	0.6−	1.3+
1998 09 14	704	1.3+	0.4−	1998 09 26	704	0.9+	0.2−	1998 09 27	704	1.4−	0.9+

1998 RS₆₈ = 1982 BO₁₁ = 1991 RS₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 19.56036 (2000.0)			Williams			<i>P</i>			<i>Q</i>		
<i>n</i>	0.27990627	ω	21.81445	+0.91753418	−0.39763099	<i>a</i>	2.3145201	Ω	1.63678	+0.33729370	+0.77215553
<i>e</i>	0.1010537	<i>i</i>	9.14802	+0.21062761	+0.49564647	<i>P</i>	3.52	<i>H</i>	14.8	<i>G</i>	0.15
<i>U</i>	3										
Residuals in seconds of arc											
1982 01 20	095	0.0	0.1−	1998 09 15	699	0.1+	0.1+	1998 09 26	704	0.1+	0.3−
1991 09 10	675	0.2+	0.2+	1998 09 15	699	0.3+	0.5+	1998 09 26	704	0.6−	0.1−
1991 09 10	675	0.2+	0.5−	1998 09 15	699	0.4+	0.0	1998 09 27	704	0.5−	0.2+
1991 09 16	675	0.7+	0.4−	1998 09 18	704	0.0	0.0	1998 09 27	704	0.5−	0.2+
1991 09 16	675	0.4+	1.9−	1998 09 18	704	0.5+	0.5+	1998 09 27	704	0.1+	0.3+
1998 08 02	699	0.5+	0.2+	1998 09 18	704	0.3+	0.0	1998 09 27	704	0.6+	0.4+
1998 08 02	699	0.2+	0.5−	1998 09 18	704	0.1−	0.1−	1998 09 27	704	0.9−	1.3+
1998 08 02	699	0.0	0.7+	1998 09 18	704	0.7+	0.3−	1998 10 14	699	0.2−	0.2+
1998 09 14	704	0.1−	0.2+	1998 09 26	704	0.7−	0.4−	1998 10 14	699	0.4−	0.1+
1998 09 14	704	0.3+	0.3−	1998 09 26	704	0.9−	0.4+	1998 10 14	699	0.2−	0.0
1998 09 14	704	0.5−	0.5−	1998 09 26	704	0.6+	0.1−				

1998 RU₆₈ = 1976 UC₁₉ = 1995 FZ₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i> 339.80626 (2000.0)			Williams			<i>P</i>			<i>Q</i>		
<i>n</i>	0.17669668	ω	50.26537	+0.47837817	−0.87799964	<i>a</i>	3.1452158	Ω	11.19018	+0.77751830	+0.41476888
<i>e</i>	0.1445359	<i>i</i>	4.86574	+0.40819068	+0.23892134	<i>P</i>	5.58	<i>H</i>	13.9	<i>G</i>	0.15
<i>U</i>	4										
Residuals in seconds of arc											
1976 10 24	381	0.9+	0.2+	1998 09 18	704	1.0+	0.8−	1998 09 26	704	0.6−	0.0
1976 10 24	381	0.6−	0.8−	1998 09 18	704	0.7+	1.3+	1998 09 26	704	0.6−	0.1−
1995 03 23	691	0.3+	0.0	1998 09 18	704	0.4+	0.3+	1998 09 27	704	0.2+	0.1+
1995 03 23	691	0.1+	0.1+	1998 09 18	704	0.2+	1.3+	1998 09 27	704	0.7−	0.1+
1995 03 23	691	0.1+	0.1+	1998 09 18	704	0.2−	0.6+	1998 09 27	704	0.1+	0.4+
1995 04 04	691	0.2−	0.1−	1998 09 25	699	1.0+	0.7+	1998 09 27	704	0.4−	0.0
1995 04 04	691	0.1−	0.1+	1998 09 25	699	0.1−	0.4+	1998 09 27	704	0.1+	0.3+
1995 04 04	691	0.1−	0.3+	1998 09 25	699	0.4−	1.1+	1998 10 14	699	1.1−	0.2+
1998 09 14	704	0.5+	0.3−	1998 09 26	704	0.6+	0.6−	1998 10 14	699	0.4+	0.3−

1998 RX₆₈ = 1977 RX₆ = 1981 RJ₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23423005	ω	350.82990	+0.99819176	+0.05738658		
<i>a</i>	2.6063995	Ω	5.96811	-0.03817259	+0.83505827		
<i>e</i>	0.1441444	<i>i</i>	9.90654	-0.04643333	+0.54716037		
<i>P</i>	4.21	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 09 11	095	0.1+	0.3-	1998 09 18	704	0.1-	0.0	1998 09 27	704	0.6-	0.4+
1981 09 04	809	0.4-	0.0	1998 09 18	704	0.2-	0.4-	1998 09 27	704	1.0-	0.5+
1981 09 04	809	0.1+	0.2-	1998 09 18	704	0.7-	1.1+	1998 09 27	704	0.0	1.2+
1981 09 04	809	0.5+	0.0	1998 09 18	704	0.8+	0.1+	1998 09 27	704	0.2-	1.3+
1998 08 02	699	0.3+	0.5-	1998 09 18	704	0.0	0.5+	1998 09 27	704	0.1+	1.1+
1998 08 02	699	0.7-	0.3+	1998 09 26	704	1.4-	0.0	1998 10 14	699	1.4+	0.6-
1998 08 02	699	0.2+	0.2-	1998 09 26	704	0.1+	0.1+	1998 10 14	699	0.8+	0.6-
1998 09 14	704	0.6+	0.6-	1998 09 26	704	1.3-	0.3-	1998 10 14	699	1.3+	0.9-
1998 09 14	704	0.0	0.7-	1998 09 26	704	0.2+	0.3+				
1998 09 14	704	0.9+	2.1-	1998 09 26	704	0.5-	0.2+				

1998 RV₆₉ = 1997 EO₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26866704	ω	213.64597	-0.24751557	+0.96832045		
<i>a</i>	2.3786276	Ω	42.05020	-0.87770845	-0.20965182		
<i>e</i>	0.1783429	<i>i</i>	2.82741	-0.41032173	-0.13565261		
<i>P</i>	3.67	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 01	369	(2.3+	0.4+)	1998 09 14	704	0.0	0.8-	1998 09 27	704	0.9-	0.3+
1997 03 01	369	0.9-	0.8-	1998 09 14	704	0.1-	1.8+	1998 09 27	704	0.1+	0.8-
1997 03 04	369	0.8-	0.2+	1998 09 18	704	0.1+	0.4-	1998 09 27	704	0.0	0.1-
1997 03 04	369	(1.0+	3.0+)	1998 09 18	704	2.0+	0.9-	1998 10 14	910	0.5+	0.3-
1997 03 04	369	0.4-	0.1-	1998 09 18	704	0.7+	1.2-	1998 10 14	910	0.6+	0.3-
1997 03 07	369	(0.9+	3.9+)	1998 09 18	704	0.8-	0.4+	1998 10 14	910	0.5+	0.3-
1997 03 07	369	0.3+	1.4+	1998 09 26	704	0.8-	1.5+	1998 10 18	910	0.1-	0.2+
1997 03 07	369	0.5+	0.3+	1998 09 26	704	(0.3+	2.3-)	1998 10 18	910	0.3-	0.2-
1997 03 09	369	0.2+	0.3+	1998 09 26	704	0.9-	0.1-	1998 10 18	910	0.2-	0.3+
1997 03 09	369	0.8+	0.4-	1998 09 26	704	0.2-	0.0	1998 10 22	910	0.3-	0.3+
1997 03 09	369	0.3+	0.8-	1998 09 27	704	0.6+	0.5-	1998 10 22	910	0.2-	0.2+
1998 09 14	704	0.4-	1.0+	1998 09 27	704	0.5+	0.5-	1998 10 22	910	0.4-	0.4+

1998 RW₇₀ = 1990 DE₈ = 1995 YF₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30245196	ω	243.45024	+0.96316048	-0.26250730		
<i>a</i>	2.1980207	Ω	131.70792	+0.26607383	+0.89863534		
<i>e</i>	0.1472022	<i>i</i>	4.48748	+0.03907180	+0.35148889		
<i>P</i>	3.26	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 02 24	809	0.5+	1.5-	1998 09 14	704	0.8-	0.2+	1998 09 26	704	1.5+	0.7-
1990 02 24	809	0.4-	2.1-	1998 09 14	704	0.4-	0.0	1998 09 26	704	0.2+	1.4-
1990 02 24	809	1.4-	2.0-	1998 09 14	704	0.0	0.9-	1998 09 26	704	0.1+	0.9-
1995 12 20	691	0.2-	0.5+	1998 09 18	704	0.6-	0.8+	1998 09 26	704	0.6-	1.2-
1995 12 20	691	0.3-	0.7+	1998 09 18	704	1.0-	0.4+	1998 09 27	704	1.4+	0.0
1995 12 20	691	0.2-	0.5+	1998 09 18	704	0.2-	0.8+	1998 09 27	704	0.8+	0.6-
1995 12 27	691	0.2-	0.6+	1998 09 18	704	0.6-	0.2-	1998 09 27	704	1.3+	0.6-
1995 12 27	691	0.0	0.4+	1998 09 18	704	1.3-	0.0	1998 09 27	704	0.5+	0.0
1995 12 27	691	0.2-	0.4+	1998 09 26	704	0.5+	0.3-	1998 09 27	704	1.1+	0.2+

1998 RB₇₁ = 1975 XC

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21039081	ω	307.82891	-0.19000175	-0.97923378		
<i>a</i>	2.7997432	Ω	152.86982	+0.94245245	-0.20209888		
<i>e</i>	0.2159875	<i>i</i>	8.92092	+0.27510493	+0.01603916		
<i>P</i>	4.68	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1975 12 01	805	0.8+	0.1-	1998 09 18	704	1.2-	0.5+	1998 09 27	704	0.2+	0.8-
1975 12 04	805	0.8-	0.1+	1998 09 18	704	0.8+	0.7+	1998 09 27	704	0.2-	0.3-
1998 09 14	704	0.8-	0.1-	1998 09 21	910	0.7+	0.8+	1998 09 27	704	0.1+	0.0
1998 09 14	704	0.5+	0.6+	1998 09 21	910	0.8+	1.0+	1998 09 27	704	1.6-	1.6+
1998 09 14	704	1.5+	0.4-	1998 09 21	910	0.7+	0.9+	1998 09 27	704	0.3-	0.7+
1998 09 17	699	0.2+	0.2-	1998 09 26	704	0.4-	2.3-	1998 10 17	699	0.1-	0.8-
1998 09 17	699	0.0	1.1+	1998 09 26	704	0.1-	1.0-	1998 10 17	699	0.5+	1.1+
1998 09 17	699	0.3-	1.8-	1998 09 26	704	0.4+	0.0	1998 10 17	699	0.2+	0.0
1998 09 18	704	0.4-	1.2-	1998 09 26	704	0.4-	0.2-				
1998 09 18	704	0.4+	0.8+	1998 09 26	704	1.2-	0.6-				

1998 RD₇₁ = 1997 NR₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24425867	ω	273.12465	+0.41679685	-0.90690365		
<i>a</i>	2.5345609	Ω	151.98643	+0.87743539	+0.38366627		
<i>e</i>	0.1325827	<i>i</i>	7.54780	+0.23746056	+0.17414350		
<i>P</i>	4.04	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 07 05	691	0.0	0.0	1998 09 18	704	0.3-	0.5-	1998 09 26	704	0.5-	0.6+
1997 07 05	691	0.2-	0.1+	1998 09 18	704	0.8-	0.9+	1998 09 26	704	0.6+	0.9-
1997 07 05	691	0.2-	0.3+	1998 09 18	704	0.9-	0.5-	1998 09 26	704	0.2+	0.7-
1997 07 07	691	0.2+	0.2-	1998 09 18	704	1.0-	0.8-	1998 09 26	704	0.5+	0.6-
1997 07 07	691	0.2+	0.2-	1998 09 18	704	0.3+	0.6+	1998 09 26	704	1.1+	0.0
1998 09 14	704	0.3-	0.6+	1998 09 23	910	0.4+	0.6+	1998 09 27	704	0.0	0.4-
1998 09 14	704	0.9+	0.9-	1998 09 23	910	0.4+	0.5+	1998 09 27	704	1.1-	0.2-
1998 09 14	704	0.7-	1.2-	1998 09 23	910	0.3+	0.5+	1998 09 27	704	0.3-	0.3+
1998 09 17	699	1.3+	0.4+	1998 09 24	910	0.5+	0.5+	1998 09 27	704	0.8-	0.1-
1998 09 17	699	0.2-	0.6+	1998 09 24	910	0.4+	0.5+	1998 09 27	704	0.9-	0.5-
1998 09 17	699	0.4+	0.3+	1998 09 24	910	0.6+	0.4+				

1998 RF₇₁ = 1993 TF₃₁ = 1996 FN₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18958421	ω	261.92623	+0.99835062	-0.02187886		
<i>a</i>	3.0010135	Ω	99.31594	+0.04086012	+0.92024124		
<i>e</i>	0.1183486	<i>i</i>	3.08332	-0.04032965	+0.39073953		
<i>P</i>	5.20	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 10 09	809	(4.7-	3.6-)	1996 03 24	691	0.3+	0.2-	1998 09 26	704	0.4+	0.8-
1993 10 09	809	(5.1-	3.6-)	1996 03 24	691	0.5+	0.1-	1998 09 26	704	0.5+	1.1-
1993 10 09	809	(6.2-	3.3-)	1996 03 24	691	0.2+	0.1+	1998 09 26	704	0.1-	0.1+
1993 10 11	809	0.7+	0.1-	1998 09 14	704	1.1-	0.2+	1998 09 26	704	0.2-	0.0
1993 10 11	809	0.6+	0.3+	1998 09 14	704	0.7-	0.2+	1998 09 27	704	0.0	0.6+
1993 10 11	809	0.1+	0.4+	1998 09 14	704	0.5-	0.9+	1998 09 27	704	0.7-	0.2-
1993 10 21	809	0.1+	0.7+	1998 09 18	704	0.4+	0.7+	1998 09 27	704	0.3+	0.0
1993 10 21	809	0.4-	0.1-	1998 09 18	704	0.0	0.4+	1998 09 27	704	0.3+	0.0
1993 10 21	809	1.5-	0.4-	1998 09 18	704	0.0	0.1+	1998 09 27	704	1.2+	1.3-
1996 03 20	691	0.5-	0.3+	1998 09 18	704	1.0-	0.0	1998 10 17	699	0.9+	0.0
1996 03 20	691	0.1-	0.0	1998 09 18	704	0.3-	0.2+	1998 10 17	699	1.2+	0.9-
1996 03 20	691	0.2-	0.3+	1998 09 26	704	0.2-	0.3+	1998 10 17	699	(2.2+	1.3-)

1998 NOV. 10

M.P.C. 33007

1998 RH₇₁ = 1992 GP₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	24.12114		(2000.0)			P		Q			
<i>n</i>	0.21044280	ω	324.80197			+0.99495858		-0.08448293			
<i>a</i>	2.7992821	Ω	40.15091			+0.09984892		+0.88479964			
<i>e</i>	0.2175406	<i>i</i>	4.80729			-0.00936014		+0.45824910			
<i>P</i>	4.68	<i>H</i>	13.6			<i>G</i> 0.15		<i>U</i> 4			
Residuals in seconds of arc											
1992 04 04	809	0.1+	1.0+	1998 09 18	704	1.0+	0.2+	1998 09 27	704	0.1-	0.4+
1992 04 04	809	0.9-	0.1+	1998 09 18	704	1.0+	1.3-	1998 09 27	704	0.6+	0.1-
1992 04 04	809	1.5-	0.6-	1998 09 18	704	0.3-	0.4+	1998 09 27	704	0.4+	1.2-
1992 04 06	809	0.3+	0.2-	1998 09 18	704	0.3+	1.2-	1998 10 17	699	0.1-	0.2-
1992 04 06	809	0.8+	0.4+	1998 09 18	704	0.0	0.4+	1998 10 17	699	0.0	0.4-
1992 04 06	809	1.4+	0.3-	1998 09 26	704	0.9-	0.0	1998 10 17	699	0.0	0.5-
1998 09 14	704	0.8+	0.2+	1998 09 26	704	0.0	1.1+	1998 10 27	120	0.4-	0.2+
1998 09 14	704	0.2+	0.3-	1998 09 26	704	0.5-	0.3+	1998 10 27	120	0.2-	0.4+
1998 09 14	704	0.5-	1.1-	1998 09 26	704	0.4-	0.9+	1998 10 27	120	0.2+	0.2+
1998 09 17	699	0.4-	0.2+	1998 09 26	704	0.2-	0.6+	1998 10 27	120	0.0	0.0
1998 09 17	699	0.4-	0.4+	1998 09 27	704	0.2-	0.8+				
1998 09 17	699	0.4-	0.2+	1998 09 27	704	0.4+	0.5-				

1998 RL₇₁ = 1996 DV₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	11.37456			(2000.0)				P				Q			
n	0.26580565		ω	281.93438				+0.82355400				-0.56500966			
a	2.3956677		Ω	112.48821				+0.53929439				+0.75245810			
e	0.2033249		i	3.11626				+0.17584188				+0.33848322			
P	3.71		H	15.3				G	0.15			U	4		
Residuals in seconds of arc															
1996 02 16	010	0.4-	0.0	1998 09 14	704	0.6+	0.9-	1998 09 26	704	0.7+	0.1+				
1996 02 16	010	0.3-	0.8+	1998 09 14	704	0.2+	1.3-	1998 09 26	704	0.1-	0.4-				
1996 02 16	010	0.7-	0.6+	1998 09 17	699	0.0	0.3+	1998 09 26	704	0.4+	0.7-				
1996 02 17	010	0.8+	0.5-	1998 09 17	699	0.2-	0.3+	1998 09 26	704	0.4+	1.1-				
1996 02 17	010	0.6+	0.1-	1998 09 17	699	0.0	0.1+	1998 09 26	704	0.6+	0.1+				
1996 02 17	010	0.0	0.5-	1998 09 18	704	0.3-	0.3-	1998 09 27	704	0.2+	1.1+				
1998 08 04	699	0.3-	0.3+	1998 09 18	704	0.7+	1.2+	1998 09 27	704	0.1-	0.0				
1998 08 04	699	0.1-	0.7+	1998 09 18	704	0.4-	1.3-	1998 09 27	704	0.3-	1.1+				
1998 08 04	699	0.0	0.6+	1998 09 18	704	1.5-	0.1-	1998 09 27	704	0.7-	1.7+				
1998 09 14	704	0.9+	0.7-	1998 09 18	704	0.4-	0.1-	1998 09 27	704	0.5-	0.2-				

1998 RM₇₁ = 1989 TJ₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	301.20221		(2000.0)		P		Q				
<i>n</i>	0.21465505	ω	305.83289		-0.21268297		-0.97634092				
<i>a</i>	2.7625404	Ω	156.35619		+0.92495699		-0.21404895				
<i>e</i>	0.1215412	<i>i</i>	5.58674		+0.31499290		-0.03068327				
<i>P</i>	4.59	<i>H</i>	15.0		<i>G</i> 0.15		<i>U</i> 6				
Residuals in seconds of arc											
1989 10 07	809	0.5-	0.7-	1998 09 14	704	0.8+	0.4-	1998 09 26	704	0.3+	1.1-
1989 10 07	809	0.5-	0.2+	1998 09 18	704	0.3-	0.2-	1998 09 26	704	0.0	1.6-
1989 10 07	809	0.6-	0.2-	1998 09 18	704	1.5+	0.8+	1998 09 27	704	0.4+	0.8+
1989 10 08	809	2.4+	1.6+	1998 09 18	704	0.4-	2.0+	1998 09 27	704	1.0+	0.6-
1989 10 08	809	0.2+	0.5+	1998 09 18	704	0.8-	0.5+	1998 09 27	704	0.7+	1.9+
1989 10 08	809	1.0-	1.4-	1998 09 18	704	1.2-	0.3-	1998 09 27	704	1.0-	0.4-
1998 09 14	704	0.1-	0.6-	1998 09 26	704	1.0-	0.1+				
1998 09 14	704	0.4+	0.5-	1998 09 26	704	0.3-	0.4-				

1998 RP₇₁ = 2241 T-1 = 1997 GR₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	355.86121			(2000.0)			P		Q		
<i>n</i>	0.30661962	ω		27.86102			+0.59246521		-0.80495632		
<i>a</i>	2.1780579	Ω		25.84616			+0.72475868		+0.51519517		
<i>e</i>	0.1131607	<i>i</i>		4.22235			+0.35172409		+0.29431149		
<i>P</i>	3.21	<i>H</i>	15.6		<i>G</i>	0.15		<i>U</i>	4		
Residuals in seconds of arc											
1971 03 24	675	0.4+	0.4+	1998 09 14	704	0.1+	0.4-	1998 09 26	704	0.0	0.1-
1971 03 25	675	0.0	0.2+	1998 09 14	704	0.1+	0.4-	1998 09 26	704	0.5-	0.2-
1971 03 25	675	0.4+	0.3-	1998 09 14	704	0.5-	0.9-	1998 09 26	704	0.9+	0.7-
1971 03 26	675	1.7-	0.9-	1998 09 18	704	0.1-	0.1+	1998 09 27	704	0.3+	0.7+
1971 03 27	675	0.8+	0.5+	1998 09 18	704	0.4-	1.2+	1998 09 27	704	0.8+	0.7+
1971 04 02	675	(3.5+	2.0-)	1998 09 18	704	1.7-	0.5+	1998 09 27	704	0.5+	0.4+
1997 04 02	704	0.7-	0.2-	1998 09 18	704	0.0	0.3+	1998 09 27	704	0.2-	0.3+
1997 04 02	704	0.4-	0.9-	1998 09 18	704	0.5-	0.1-	1998 10 17	699	0.8+	0.1-
1997 04 06	704	0.9+	1.2+	1998 09 26	704	0.1+	0.5+	1998 10 17	699	0.8+	1.2-
1997 04 06	704	0.3-	1.0-	1998 09 26	704	0.2-	0.5-	1998 10 17	699	0.1-	0.9-

1998 RV₇₁ = 1978 WT₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	247.96000		(2000.0)			P		Q	
<i>n</i>	0.23954937	ω	40.39678			-0.86586155		-0.49959787	
<i>a</i>	2.5676709	Ω	109.61148			+0.45153721		-0.80295969	
<i>e</i>	0.0789439	<i>i</i>	1.59298			+0.21540175		-0.32505031	
<i>P</i>	4.11	<i>H</i>	14.5		<i>G</i>	0.15		<i>U</i>	7
Residuals in seconds of arc									
1978 11 29	675	0.5-	0.1+	1998 09 18	704	1.3+	0.9+	1998 09 26	704 0.0 0.5+
1978 11 30	675	0.4+	0.1+	1998 09 18	704	2.2-	1.0+	1998 09 27	704 2.2+ 0.5+
1998 09 14	704	1.2-	1.9-	1998 09 18	704	1.4-	1.2+	1998 09 27	704 0.2- 0.7+
1998 09 14	704	0.9+	0.9+	1998 09 26	704	1.4+	0.8-	1998 09 27	704 0.7- 0.4-
1998 09 14	704	1.7-	0.9-	1998 09 26	704	1.0+	1.1-	1998 09 27	704 0.2- 1.3-
1998 09 18	704	0.3-	0.8+	1998 09 26	704	0.7+	0.9-		
1998 09 18	704	0.2+	0.7+	1998 09 26	704	0.3+	0.1+		

1998 RC₇₂ = 1996 BA₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	8.02624		(2000.0)			P		Q			
n	0.31173238	ω	343.82844			+0.75627333		-0.65395610			
a	2.1541773	Ω	57.02910			+0.60285242		+0.68477657			
e	0.1144978	i	1.35241			+0.25420386		+0.32159363			
P	3.16	H	16.2		G	0.15		U	5		
Residuals in seconds of arc											
1996 01 22	327	0.1-	0.6-	1998 09 18	704	0.7-	0.4-	1998 09 26	704	0.6-	0.2+
1996 01 22	327	0.2-	0.2+	1998 09 18	704	0.1+	0.6-	1998 09 26	704	0.2-	0.3+
1996 01 22	327	0.1-	0.3+	1998 09 18	704	0.4-	0.8-	1998 09 27	704	0.6-	0.5+
1996 01 23	327	0.6-	0.2-	1998 09 18	704	0.7+	1.1-	1998 09 27	704	0.2+	1.6+
1996 01 23	327	0.0	0.2-	1998 09 25	699	1.2+	0.6+	1998 09 27	704	0.1+	1.0+
1996 01 23	327	1.0+	0.2+	1998 09 25	699	0.0	1.3+	1998 09 27	704	1.3-	0.9-
1998 09 14	704	0.4+	0.2+	1998 09 25	699	1.0+	0.3+	1998 09 27	704	0.1+	0.1-
1998 09 14	704	0.2+	0.6-	1998 09 26	704	0.7-	0.5+	1998 10 15	691	0.0	0.5-
1998 09 14	704	0.4-	0.4-	1998 09 26	704	0.0	0.7-	1998 10 15	691	0.2-	0.1+
1998 09 18	704	0.9+	0.0	1998 09 26	704	0.2+	0.3-	1998 10 15	691	0.1-	0.1+

1998 RG₇₂ = 1997 GW₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	65.22182		(2000.0)	P		Q		Williams	
<i>n</i>	0.23722299	ω	150.32727	+0.75632578		+0.65370451			
<i>a</i>	2.5844305	Ω	168.74256	-0.62286456		+0.73140387			
<i>e</i>	0.1202918	<i>i</i>	7.45601	-0.20002762		+0.19421326			
<i>P</i>	4.15	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 04 11	809	(3.3+ 0.9+)	1998 09 17	699	0.3+ 0.8-	1998 09 26	704	0.5- 0.3-
1997 04 11	809	(3.4+ 0.7+)	1998 09 17	699	0.2+ 0.0	1998 09 26	704	0.7- 0.7+
1997 04 11	809	0.0 0.5+	1998 09 18	704	0.1+ 0.5+	1998 09 27	704	0.0 0.3+
1997 04 12	809	0.1- 0.4+	1998 09 18	704	1.1- 0.7-	1998 09 27	704	0.3- 0.7+
1997 04 12	809	0.1- 0.4+	1998 09 18	704	0.6- 1.1+	1998 09 27	704	0.1- 0.9+
1997 04 12	809	0.2+ 1.3-	1998 09 18	704	1.2+ 0.6-	1998 09 27	704	0.6+ 0.7+
1998 09 14	704	0.7+ 1.0+	1998 09 18	704	0.7- 0.3+	1998 09 27	704	1.2+ 1.0+
1998 09 14	704	0.1+ 1.7-	1998 09 26	704	0.3+ 0.1+	1998 10 17	699	0.1+ 0.6-
1998 09 14	704	0.2+ 0.8-	1998 09 26	704	0.4- 0.2-	1998 10 17	699	0.2+ 0.4-
1998 09 17	699	0.0 0.7-	1998 09 26	704	0.6- 0.1-	1998 10 17	699	0.0 0.6-

1998 RJ₇₂ = 1979 JK = 1997 MP₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	112.58075		(2000.0)	P		Q		Williams	
<i>n</i>	0.17171238	ω	172.20913	-0.15906911		+0.98634964			
<i>a</i>	3.2057893	Ω	88.63087	-0.90808030		-0.12925793			
<i>e</i>	0.1304766	<i>i</i>	2.43998	-0.38741088		-0.10201361			
<i>P</i>	5.74	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1979 05 01	323	0.1+ 0.6-	1998 09 17	699	(2.6- 0.7+)	1998 09 27	704	0.1+ 0.3+
1979 05 02	323	0.1- 0.6+	1998 09 18	704	0.7+ 0.4-	1998 09 27	704	0.3- 0.3+
1997 06 29	704	0.3+ 0.2+	1998 09 18	704	0.1+ 0.6+	1998 09 27	704	0.0 0.2+
1997 06 29	704	0.0 0.1+	1998 09 18	704	0.2- 0.1-	1998 10 17	699	0.2+ 0.1+
1997 06 29	704	1.1- 1.3+	1998 09 18	704	0.2- 0.3-	1998 10 17	699	0.6- 0.3+
1997 06 29	704	0.2- 0.4+	1998 09 18	704	1.5- 0.5-	1998 10 17	699	0.1+ 0.1+
1997 06 29	704	0.4+ 0.0	1998 09 25	699	0.8+ 0.0	1998 10 28	704	0.2- 0.6+
1997 07 02	704	0.2+ 0.5-	1998 09 25	699	0.1- 0.6+	1998 10 28	704	1.3+ 0.8-
1997 07 02	704	0.1- 0.1-	1998 09 25	699	0.2+ 0.1+	1998 10 28	704	0.4+ 0.8+
1997 07 02	704	0.4+ 1.1-	1998 09 26	704	0.0 0.6-	1998 10 28	704	0.3- 1.2-
1997 07 02	704	0.2+ 0.0	1998 09 26	704	0.3+ 0.5-	1998 10 28	704	(3.7- 2.5+)
1998 09 14	704	0.0 0.8-	1998 09 26	704	0.9- 0.3-	1998 10 29	704	0.6+ 0.0
1998 09 14	704	1.1- 0.5-	1998 09 26	704	0.7- 0.6+	1998 10 29	704	0.6- 0.7+
1998 09 14	704	0.3+ 1.0-	1998 09 26	704	0.6- 0.5-	1998 10 29	704	0.9+ 1.9+
1998 09 17	699	0.3+ 0.3+	1998 09 27	704	0.0 0.4-	1998 10 29	704	0.8+ 0.3+
1998 09 17	699	0.1- 0.8+	1998 09 27	704	0.4+ 0.2-			

1998 RM₇₂ = 1997 LD₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	58.44273		(2000.0)	P		Q		Williams	
<i>n</i>	0.24752493	ω	181.07747	+0.89611520		+0.44345964			
<i>a</i>	2.5122147	Ω	152.57542	-0.40690673		+0.83703225			
<i>e</i>	0.0623089	<i>i</i>	2.22970	-0.17721305		+0.32050048			
<i>P</i>	3.98	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1997 06 07	809	0.1- 0.4-	1998 09 17	699	0.5+ 1.0+	1998 09 26	704	0.6+ 1.5-
1997 06 07	809	0.4- 0.7-	1998 09 17	699	0.8+ 0.9-	1998 09 26	704	0.7+ 0.7+
1997 06 07	809	1.1- 0.8-	1998 09 17	699	0.4- 0.2+	1998 09 26	704	0.3+ 0.0
1997 06 08	809	1.3+ 1.1+	1998 09 18	704	0.1+ 0.6-	1998 09 26	704	0.2- 0.5-
1997 06 08	809	0.2+ 0.0	1998 09 18	704	0.3+ 1.6+	1998 09 27	704	0.1+ 0.4+
1997 06 08	809	0.1+ 0.9+	1998 09 18	704	0.9+ 0.9-	1998 09 27	704	0.9- 0.5+
1998 09 14	704	0.2- 0.2-	1998 09 18	704	0.1- 0.3+	1998 09 27	704	0.9- 0.3+
1998 09 14	704	1.0- 0.3+	1998 09 18	704	(2.5- 1.2-)	1998 09 27	704	0.5- 0.2+
1998 09 14	704	0.4- 1.0-	1998 09 26	704	1.3+ 0.9+	1998 09 27	704	0.9- 0.9-

1998 RS₇₂ = 1992 LY

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	226.77993		(2000.0)	P		Q		Williams	
<i>n</i>	0.21155206	ω	12.74148	-0.97802117		-0.20622827			
<i>a</i>	2.7894883	Ω	155.29249	+0.18427030		-0.92387190			
<i>e</i>	0.0322003	<i>i</i>	4.21650	+0.09756562		-0.32238270			
<i>P</i>	4.66	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1992 06 01	809	0.6+ 0.1+	1998 09 18	704	0.2- 0.8+	1998 09 27	704	0.2+ 0.1+
1992 06 01	809	0.8- 0.8-	1998 09 25	699	0.5- 1.0+	1998 10 17	699	0.4+ 0.6+
1992 06 01	809	0.0 0.1-	1998 09 25	699	0.7+ 1.2+	1998 10 17	699	0.4+ 1.2+
1992 06 03	809	0.9+ 0.3+	1998 09 25	699	0.0 0.1+	1998 10 17	699	0.5- 0.2-
1992 06 03	809	0.3+ 0.9+	1998 09 26	704	0.2+ 0.6-	1998 10 28	704	1.0+ 0.1+
1992 06 03	809	1.0- 0.5-	1998 09 26	704	0.4- 0.4-	1998 10 28	704	0.3+ 0.7-
1998 09 14	704	0.9+ 0.1+	1998 09 26	704	0.5- 0.1+	1998 10 28	704	0.0 0.7-
1998 09 14	704	(2.4+ 0.0)	1998 09 26	704	0.6- 0.6-	1998 10 28	704	1.3- 0.5-
1998 09 14	704	0.4+ 1.3-	1998 09 26	704	0.7- 0.7-	1998 10 28	704	(2.6- 0.9+)
1998 09 18	704	0.9- 0.6-	1998 09 27	704	0.1+ 0.3+	1998 10 29	704	1.3- 0.2+
1998 09 18	704	1.6+ 0.5-	1998 09 27	704	0.5- 0.1-	1998 10 29	704	0.3+ 0.1+
1998 09 18	704	1.6- 0.0	1998 09 27	704	0.3+ 0.4+	1998 10 29	704	1.3+ 0.1-
1998 09 18	704	0.1+ 0.4+	1998 09 27	704	1.0+ 0.2+	1998 10 29	704	(2.0+ 0.2-)

1998 RT₇₂ = 1980 VR₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	359.04989		(2000.0)	P		Q		Williams	
<i>n</i>	0.27175989	ω	47.60124	+0.52815068		-0.84911150			
<i>a</i>	2.3605460	Ω	10.52725	+0.76538048		+0.47186602			
<i>e</i>	0.2261311	<i>i</i>	2.55851	+0.36776292		+0.23738601			
<i>P</i>	3.63	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1980 11 01	675	0.5- 0.2-	1998 09 26	704	0.0 0.5-	1998 10 19	426	0.5+ 0.4-
1980 11 02	675	0.5+ 0.1+	1998 09 26	704	0.6+ 1.1-	1998 10 20	426	0.2+ 0.6-
1998 09 14	704	1.0- 0.6+	1998 09 26	704	0.3- 0.4-	1998 10 20	426	0.2+ 0.6-
1998 09 14	704	0.6- 0.2+	1998 09 26	704	0.1+ 0.7+	1998 10 20	426	0.6+ 0.5-
1998 09 14	704	1.3- 0.7+	1998 09 27	704	0.4- 0.4+	1998 10 28	704	0.3+ 0.4+
1998 09 15	699	1.1+ 0.2-	1998 09 27	704	1.1- 0.4+	1998 10 28	704	1.4+ 0.7-
1998 09 15	699	1.2+ 0.9-	1998 09 27	704	0.1+ 1.1+	1998 10 28	704	0.5- 0.2-
1998 09 15	699	0.9+ 1.0-	1998 09 27	704	0.7- 0.6+	1998 10 28	704	0.2- 0.5+
1998 09 18	704	0.3+ 0.2+	1998 09 27	704	0.6- 0.6+	1998 10 28	704	1.1- 0.7-
1998 09 18	704	0.2+ 0.8-	1998 10 14	699	0.2+ 0.0	1998 10 29	704	1.0+ 0.3-
1998 09 18	704	0.2- 0.2+	1998 10 14	699	0.4+ 0.1-	1998 10 29	704	0.2- 0.5+
1998 09 18	704	1.2+ 0.1+	1998 10 14	699	0.5- 0.1+	1998 10 29	704	0.5- 1.0+
1998 09 18	704	0.0 0.5-	1998 10 19	426	0.3+ 0.4-	1998 10 29	704	1.2- 0.1-
1998 09 26	704	0.2- 0.6+	1998 10 19	426	0.4+ 0.4-	1998 10 29	704	0.5- 1.6+

1998 RH₇₃ = 1993 FN₂₁ = 1997 HB₁₇ = 1997 JL₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	14.73438		(2000.0)	P		Q		Williams	
<i>n</i>	0.27153708	ω	192.00828	+0.86302501		-0.50389290			
<i>a</i>	2.3618372	Ω	198.38178	+0.47235861		+0.83006144			
<i>e</i>	0.1205558	<i>i</i>	6.51384	+0.17906753		+0.23893503			
<i>P</i>	3.63	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1993 03 21	809	0.4- 1.3+	1997 05 10	691	0.1+ 0.4-	1998 09 18	704	0.9+ 0.6+
1993 03 22	809	0.8+ 0.7+	1997 05 10	691	0.1- 1.0+	1998 09 18	704	0.6- 1.1+
1993 03 26	809	0.4+ 0.6-	1997 05 10	691	0.6- 0.4+	1998 09 18	704	1.3+ 0.3+
1993 03 27	809	0.1- 0.9+	1998 08 28	699	0.5+ 0.6-	1998 09 26	704	0.1+ 1.1+
1993 04 18	413	(0.4- 3.0+)	1998 08 28	699	0.1- 0.1-	1998 09 26	704	0.7- 0.6+
1997 04 30	691	0.0 0.4-	1998 08 28	699	0.5- 0.5-	1998 09 26	704	1.3- 0.7+
1997 04 30	691	0.3+ 0.3-	1998 09 14	704	0.1+ 0.6-	1998 09 26	704	0.1+ 1.1+
1997 04 30	691	0.4+ 0.1-	1998 09 14	704	0.2- 1.0-	1998 09 26	704	0.7- 0.6+
1997 05 03	809	(6.2+ 3.2+)	1998 09 14	704	1.0- 1.0-	1998 09 27	704	0.1- 0.6-

1998 NOV. 10

M.P.C. 33009

1997 05 03	809	(3.9+ 3.4+)	1998 09 15	699	0.7+ 0.5-	1998 09 27	704	1.0- 0.8-
1997 05 03	809	(2.0+ 4.5+)	1998 09 15	699	0.9+ 0.1+	1998 09 27	704	0.1+ 0.5+
1997 05 04	809	(3.2- 2.7-)	1998 09 15	699	0.7+ 0.4-	1998 09 27	704	0.5- 0.2+
1997 05 04	809	(3.0- 3.6-)	1998 09 18	704	0.8+ 0.5+	1998 09 27	704	0.3+ 0.1+
1997 05 04	809	(2.6- 3.0-)	1998 09 18	704	0.4- 0.5+			

1998 RS₇₃ = 1977 RL₂ = 1997 HR₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23582391	ω	113.97526	+0.99843693	+0.03892981		
<i>a</i>	2.5946423	Ω	243.81455	-0.05125594	+0.92385832		
<i>e</i>	0.2339498	<i>i</i>	2.56131	+0.02228306	+0.38074962		
<i>P</i>	4.18	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 09 09	095	0.0	0.1-	1998 09 14	704	0.1-	0.2-	1998 09 26	704	0.1+	1.4-
1997 04 30	704	1.1+	0.6-	1998 09 14	704	1.0-	0.2+	1998 09 26	704	0.8-	1.2-
1997 04 30	704	1.1+	0.0	1998 09 18	704	0.3+	0.1+	1998 09 27	704	0.6+	1.3+
1997 04 30	704	0.4-	0.4+	1998 09 18	704	0.6+	0.3-	1998 09 27	704	0.4-	0.2+
1997 04 30	704	0.6-	0.7-	1998 09 18	704	0.3+	0.1+	1998 09 27	704	1.0+	0.2+
1997 05 01	704	0.5+	0.2-	1998 09 18	704	0.6-	0.4+	1998 09 27	704	0.4+	0.1+
1997 05 01	704	0.3-	0.6+	1998 09 18	704	0.0	0.5+	1998 09 27	704	1.3+	0.5+
1997 05 01	704	0.1-	0.7+	1998 09 26	704	0.2+	0.6-	1998 10 14	699	0.6-	0.1+
1997 05 01	704	1.2-	0.1+	1998 09 26	704	0.4+	0.2-	1998 10 14	699	0.6-	0.3+
1998 09 14	704	0.7-	0.1-	1998 09 26	704	0.1-	0.0	1998 10 14	699	0.6-	0.4+

1998 RE₇₄ = 1993 FV₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27890881	ω	86.70553	+0.81021628	-0.58366258		
<i>a</i>	2.3200351	Ω	308.99550	+0.50656523	+0.74340260		
<i>e</i>	0.1587891	<i>i</i>	3.96466	+0.29485802	+0.32663522		
<i>P</i>	3.53	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 21	809	1.8-	0.1+	1998 09 18	704	0.8+	0.1+	1998 09 26	704	0.1-	0.5-
1993 03 22	809	0.2-	0.6-	1998 09 18	704	0.5+	0.1+	1998 09 27	704	0.3+	0.1+
1993 03 26	809	1.1+	1.3-	1998 09 18	704	0.4+	1.1+	1998 09 27	704	0.3+	0.2-
1998 08 20	699	0.7+	0.4-	1998 09 18	704	0.4+	0.8+	1998 09 27	704	0.3+	0.2+
1998 08 20	699	0.3+	0.6-	1998 09 18	704	0.0	0.4-	1998 09 27	704	0.3-	0.5+
1998 08 20	699	0.8-	0.2-	1998 09 26	704	1.1-	0.3-	1998 09 27	704	0.9+	1.1-
1998 09 14	704	0.4-	0.3-	1998 09 26	704	0.5-	0.5+	1998 10 18	699	0.7+	0.0
1998 09 14	704	1.5-	0.3+	1998 09 26	704	0.7-	1.3-	1998 10 18	699	0.6+	0.5+
1998 09 14	704	0.3-	0.3-	1998 09 26	704	0.3-	0.5-	1998 10 18	699	0.6+	0.2+

1998 RL₇₄ = 1992 PD₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17519402	ω	16.52996	+0.85306330	+0.51958542		
<i>a</i>	3.1631749	Ω	312.06525	-0.48578339	+0.75712970		
<i>e</i>	0.1828549	<i>i</i>	3.71518	-0.19051902	+0.39596162		
<i>P</i>	5.63	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 08 02	675	0.5+	0.4-	1998 09 18	704	0.5+	0.4-	1998 09 27	704	0.7+	0.0
1992 08 02	675	0.2-	0.3-	1998 09 18	704	0.2-	0.8+	1998 09 27	704	0.2+	0.1+
1992 08 06	675	1.2-	1.2-	1998 09 25	699	0.3+	0.5-	1998 09 27	704	0.6+	0.1+
1992 08 06	675	1.0+	1.9+	1998 09 25	699	0.9+	0.6-	1998 09 27	704	0.1+	0.8+
1998 09 14	704	0.9+	0.7-	1998 09 25	699	0.2+	1.1+	1998 09 27	704	1.4-	0.0
1998 09 14	704	0.3+	0.7+	1998 09 26	704	0.0	0.2+	1998 10 11	699	0.4+	0.4-
1998 09 14	704	1.2-	0.9-	1998 09 26	704	0.5-	0.1-	1998 10 11	699	0.1+	0.1+
1998 09 18	704	0.7-	0.8+	1998 09 26	704	1.1-	1.0-	1998 10 11	699	0.3+	0.4+
1998 09 18	704	0.2-	0.2+	1998 09 26	704	0.2-	0.6-				
1998 09 18	704	0.7+	0.9+	1998 09 26	704	0.7-	1.0-				

1998 RP₇₄ = 1990 EQ₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28728594	ω	283.75334	-0.18789791	+0.98162158		
<i>a</i>	2.2747123	Ω	335.34079	-0.86741616	-0.18178240		
<i>e</i>	0.1375223	<i>i</i>	4.58728	-0.46074243	-0.05808811		
<i>P</i>	3.43	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 03 03	809	0.6-	0.4-	1998 09 15	699	0.4+	0.3+	1998 09 27	704	0.9+	0.1+
1990 03 03	809	0.1-	0.4-	1998 09 18	704	1.0-	0.4-	1998 09 27	704	0.1+	0.2+
1990 03 03	809	0.5+	0.2-	1998 09 18	704	0.2+	1.9+	1998 09 27	704	0.5-	2.0+
1990 03 05	809	0.3-	0.3+	1998 09 18	704	0.7+	0.0	1998 09 27	704	1.1-	0.2-
1990 03 05	809	0.0	0.4+	1998 09 18	704	0.8+	1.9-	1998 09 27	704	0.2-	0.4+
1990 03 05	809	0.4+	0.4-	1998 09 18	704	1.6-	0.5+	1998 10 14	699	0.3+	0.1+
1998 09 14	704	0.7+	0.5-	1998 09 26	704	0.5+	0.1+	1998 10 14	699	0.5-	0.3-
1998 09 14	704	0.4-	0.4-	1998 09 26	704	0.1-	0.3-	1998 10 14	699	0.5+	0.2-
1998 09 14	704	0.0	0.3-	1998 09 26	704	0.0	0.6-	1998 10 14	360	0.4+	0.3-
1998 09 15	699	0.2-	0.5+	1998 09 26	704	0.4-	0.2-	1998 10 14	360	0.2+	0.0
1998 09 15	699	0.2-	0.1+	1998 09 26	704	0.2+	0.2-	1998 10 14	360	0.1+	0.2-

1998 RT₇₄ = 1987 YV₃ = 1996 AB₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26033695	ω	195.41945	-0.86245335	-0.50563222		
<i>a</i>	2.4291006	Ω	314.18444	+0.46763924	-0.77898704		
<i>e</i>	0.1100613	<i>i</i>	1.80517	+0.19361755	-0.37083049		
<i>P</i>	3.79	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1987 12 23	010	0.5-	0.5+	1998 09 14	704	1.9-	0.1+	1998 09 26	704	1.0-	0.9-
1987 12 23	010	0.1+	0.7+	1998 09 18	704	1.0+	0.7+	1998 09 26	704	0.3+	0.4-
1996 01 15	107	0.0	0.2-	1998 09 18	704	1.3+	0.6-	1998 09 27	704	1.9+	0.2-
1996 01 15	107	0.1+	2.1-	1998 09 18	704	1.4-	1.7-	1998 09 27	704	0.8-	0.9+
1996 01 16	107	0.2-	0.7+	1998 09 18	704	1.2-	0.4+	1998 09 27	704	0.2-	1.8+
1996 01 16	107	0.1-	0.6+	1998 09 26	704	1.2+	0.3+	1998 09 27	704	0.8+	2.6+
1998 09 14	704	0.9+	0.5-	1998 09 26	704	0.2-	1.9-				
1998 09 14	704	1.9+	0.2-	1998 09 26	704	2.1-	1.4-				

1998 RX₇₄ = 1991 AP₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22920596	ω	141.92728	-0.13342605	-0.99090889		
<i>a</i>	2.6443490	Ω	315.73275	+0.90311434	-0.11440557		
<i>e</i>	0.1617008	<i>i</i>	1.41493	+0.40814455	-0.07078803		
<i>P</i>	4.30	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 01 09	033	0.3+	0.3+	1998 09 18	704	0.1-	0.7+	1998 10 14	699	0.5-	0.1+
1991 01 15	033	0.3+	0.1-	1998 09 18	704	0.5-	1.5+	1998 10 14	699	1.3-	0.8+
1991 01 15	033	0.0	0.1-	1998 09 18	704	(1.2- 2.2+)		1998 10 28	704	1.0+	0.5+
1991 01 16	033	0.6-	0.1+	1998 09 26	704	1.2+	0.0	1998 10 28	704	1.5+	0.2+
1998 09 14	704	0.9+	1.1-	1998 09 26	704	0.8-	0.1-	1998 10 28	704	0.8+	0.2-
1998 09 14	704	0.2+	1.9-	1998 09 26	704	0.8-	0.1+	1998 10 28	704	2.0-	0.2-
1998 09 14	704	(0.8- 2.8-)		1998 09 27	704	0.4+	0.0	1998 10 28	704	0.1+	0.8-
1998 09 15	699	0.3+	0.7-	1998 09 27	704	(2.8+ 0.6+)		1998 10 29	704	1.5+	1.6-
1998 09 15	699	0.2-	0.6+	1998 09 27	704	0.7-	0.1+	1998 10 29	704	0.3-	0.8-
1998 09 15	699	0.6-	0.0	1998 09 27	704	0.5+	0.4+	1998 10 29	704	0.3+	0.8+
1998 09 18	704	0.8+	0.7-	1998 09 27	704	0.4+	0.1+	1998 10 29	704	0.6-	0.1+
1998 09 18	704	0.1+	1.6+	1998 10 14	699	0.7-	0.3+				

1998 RJ₇₅ = 1980 GD₁ = 1995 VW₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29241752	ω	120.13600	−0.99959145	+0.00432204		
<i>a</i>	2.2480215	Ω	60.12488	−0.01559643	−0.91084363		
<i>e</i>	0.0826871	<i>i</i>	1.86722	+0.02395187	−0.41272897		
<i>P</i>	3.37	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1980 04 14	805	0.7+	0.7+	1998 09 14	704	0.1+	0.9+	1998 09 26	704	0.1+	0.3+
1980 04 15	805	0.3−	0.1+	1998 09 14	704	0.6−	1.4−	1998 09 26	704	0.2+	0.3−
1980 04 16	805	0.0	0.2+	1998 09 18	704	0.6−	0.4−	1998 09 27	704	0.2+	0.4−
1995 11 15	691	0.0	0.1−	1998 09 18	704	0.7−	0.6−	1998 09 27	704	0.2+	0.9+
1995 11 15	691	0.1+	0.0	1998 09 18	704	1.1−	0.8−	1998 09 27	704	0.2−	1.2+
1995 11 15	691	0.0	0.2−	1998 09 18	704	0.3+	1.0−	1998 09 27	704	0.5+	0.5+
1995 11 27	691	0.0	0.1−	1998 09 18	704	(2.7−	1.1−)	1998 09 27	704	0.4−	0.3+
1995 11 27	691	0.1+	0.0	1998 09 26	704	0.2+	1.0+	1998 10 17	699	0.6+	0.2−
1995 11 27	691	0.1−	0.2+	1998 09 26	704	1.4+	1.0−	1998 10 17	699	0.1+	1.1+
1998 09 14	704	0.4−	1.3−	1998 09 26	704	0.4+	1.1+	1998 10 17	699	0.9−	1.1+

1998 RW₇₅ = 1996 HN₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18513367	ω	78.09256	−0.92930834	−0.36665358		
<i>a</i>	3.0489183	Ω	80.38548	+0.31899747	−0.85722124		
<i>e</i>	0.1244081	<i>i</i>	2.56779	+0.18608232	−0.36157559		
<i>P</i>	5.32	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 04 20	809	0.1+	0.0	1998 09 18	704	1.3−	0.3+	1998 09 26	704	0.3+	0.2−
1996 04 20	809	0.3−	0.5+	1998 09 18	704	0.7+	0.6−	1998 09 26	704	0.9−	0.5−
1996 04 20	809	0.7+	0.7−	1998 09 18	704	0.9+	1.3−	1998 09 26	704	0.1+	0.5+
1996 04 21	809	0.7+	0.1−	1998 09 18	704	0.2+	0.4+	1998 09 26	704	0.6−	0.9+
1996 04 21	809	0.6−	0.3+	1998 09 18	704	0.6−	1.4+	1998 09 27	704	0.3−	0.3−
1996 04 21	809	0.6−	0.0	1998 09 25	699	0.0	1.4+	1998 09 27	704	0.7+	0.1+
1998 09 14	704	0.4−	1.2+	1998 09 25	699	0.8+	1.5−	1998 09 27	704	0.4+	0.1+
1998 09 14	704	0.8+	1.2−	1998 09 25	699	0.0	0.0	1998 09 27	704	0.2−	0.7−
1998 09 14	704	0.4−	0.1−	1998 09 26	704	0.2−	0.1−	1998 09 27	704	0.0	0.2+

1998 RC₇₆ = 1979 HK₆ = 1991 VH₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26785197	ω	131.11118	+0.18200296	+0.98229462		
<i>a</i>	2.3834506	Ω	149.29034	−0.92621520	+0.18642650		
<i>e</i>	0.2244923	<i>i</i>	4.98874	−0.33015198	+0.01850504		
<i>P</i>	3.68	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 04 30	095	0.4+	1.6+	1998 09 14	704	0.2−	0.0	1998 09 26	704	0.4−	0.1+
1991 11 02	691	0.7−	0.1−	1998 09 14	704	0.5−	0.6−	1998 09 26	704	0.5+	0.2+
1991 11 02	691	1.1−	0.1−	1998 09 14	704	0.1+	0.2+	1998 09 26	704	0.1+	0.2+
1991 11 02	691	0.8+	0.0	1998 09 18	704	0.0	0.1−	1998 09 27	704	0.4−	0.3−
1991 11 13	691	0.3+	0.3+	1998 09 18	704	0.0	0.8+	1998 09 27	704	0.2+	0.4+
1991 11 13	691	0.2−	0.7+	1998 09 18	704	0.7+	0.5+	1998 09 27	704	0.0	1.1+
1991 11 13	691	0.5+	0.5+	1998 09 18	704	0.2+	0.1+	1998 09 27	704	0.0	0.5+
1998 08 02	699	0.7−	1.5−	1998 09 18	704	0.4+	0.3−	1998 09 27	704	0.0	0.7−
1998 08 02	699	0.8−	0.3−	1998 09 26	704	0.2+	0.4+				
1998 08 02	699	0.5−	0.1−	1998 09 26	704	0.2+	0.5−				

1998 RH₇₆ = 1989 YB₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19486347	ω	335.78782	+0.72093365	−0.69102266		
<i>a</i>	2.9465632	Ω	68.03037	+0.64467562	+0.64101517		
<i>e</i>	0.1050011	<i>i</i>	3.23710	+0.25425972	+0.33404675		
<i>P</i>	5.06	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 12 30	413	1.0−	0.5−	1998 09 18	704	0.8+	0.1+	1998 09 27	704	1.0−	0.3+
1989 12 30	413	0.8+	0.5+	1998 09 18	704	0.6+	0.2−	1998 09 27	704	1.2−	1.3+
1989 12 31	413	1.1−	0.6−	1998 09 18	704	0.3+	1.4+	1998 09 27	704	0.5+	0.6−
1989 12 31	413	1.3+	0.5+	1998 09 18	704	0.6+	0.7+	1998 09 29	704	1.0+	0.1−
1998 09 14	704	0.5+	0.6−	1998 09 26	704	0.9−	0.0	1998 09 29	704	1.4+	0.7−
1998 09 14	704	0.2+	1.5−	1998 09 26	704	1.5−	0.1−	1998 09 29	704	0.7+	0.4+
1998 09 14	704	0.0	0.8−	1998 09 26	704	1.4−	0.3+	1998 09 29	704	0.5+	0.3−
1998 09 17	699	0.6+	0.2−	1998 09 26	704	1.1−	0.1+	1998 10 17	699	0.4−	0.7−
1998 09 17	699	1.1+	0.3−	1998 09 26	704	1.1−	0.8+	1998 10 17	699	0.2+	0.8−
1998 09 17	699	0.4+	0.4−	1998 09 27	704	0.5−	0.3+	1998 10 17	699	0.6+	0.6+
1998 09 18	704	0.5+	0.3−	1998 09 27	704	1.2−	1.4+				

1998 RU₇₆ = 1976 OY = 1976 PD = 1980 TO₁₄ = 1991 VB₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27121780	ω	167.97128	+0.73897631	+0.67151363		
<i>a</i>	2.3636904	Ω	149.62060	−0.62674482	+0.71492232		
<i>e</i>	0.2535444	<i>i</i>	6.20037	−0.24719412	+0.19482179		
<i>P</i>	3.63	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1976 07 28	095	0.0	0.2−	1991 11 12	809	0.7−	1.0+	1998 09 18	704	0.9−	0.2−
1976 08 01	095	(1.8−	4.6−)	1998 08 02	699	1.2+	0.2−	1998 09 26	704	0.4−	0.4+
1980 10 13	095	(0.4−	8.6−)	1998 08 02	699	1.1+	0.3+	1998 09 26	704	0.5−	0.9−
1991 11 02	809	0.8+	0.2+	1998 08 02	699	0.2+	0.1+	1998 09 26	704	0.9−	0.1+
1991 11 02	809	0.6+	0.2+	1998 09 14	704	0.3+	0.4+	1998 09 26	704	0.1−	0.1+
1991 11 02	809	1.1−	0.1−	1998 09 14	704	0.3+	0.0	1998 09 26	704	0.1+	0.5−
1991 11 06	809	1.4+	1.0−	1998 09 14	704	0.3+	0.0	1998 09 27	704	0.5−	0.1+
1991 11 06	809	0.9−	0.7−	1998 09 17	699	0.1−	0.2+	1998 09 27	704	0.7−	0.2+
1991 11 06	809	0.3+	0.1+	1998 09 17	699	0.1+	0.2+	1998 09 27	704	0.7−	0.1+
1991 11 09	809	0.3+	0.6−	1998 09 17	699	0.1+	0.3+	1998 09 27	704	0.9−	0.4−
1991 11 09	809	0.3+	0.2−	1998 09 18	704	0.3+	0.1+	1998 09 27	704	0.6−	0.1−
1991 11 09	809	1.0−	0.3−	1998 09 18	704	0.3−	0.2−	1998 10 17	699	1.0+	0.6−
1991 11 12	809	0.9+	0.8+	1998 09 18	704	0.2−	0.6+	1998 10 17	699	1.1+	0.6−
1991 11 12	809	0.6−	0.8+	1998 09 18	704	0.3+	0.7+	1998 10 17	699	1.1+	0.4−

1998 RC₇₇ = 1984 JP = 1992 EV₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22446123	ω	192.33443	+0.47466164	+0.87797492		
<i>a</i>	2.6814837	Ω	106.03082	−0.80194914	+0.46047793		
<i>e</i>	0.1870984	<i>i</i>	3.70458	−0.36273116	+0.13084384		
<i>P</i>	4.39	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1984 05 07	675	0.3+	0.3+	1998 09 18	704	1.4−	0.0	1998 10 17	699	0.2−	0.2−
1984 05 08	675	0.0	0.1−	1998 09 18	704	0.6−	0.1+	1998 10 17	699	0.1+	0.6−
1984 05 09	675	0.1−	0.3+	1998 09 18	704	0.5+	0.6−	1998 10 17	699	0.0	0.5+
1992 03 01	809	0.9+	0.3+	1998 09 26	704	0.2−	0.0	1998 10 28	704	(1.7+	2.3−)
1992 03 04	809	0.4−	1.1+	1998 09 26	704	0.0	0.3−	1998 10 28	704	0.6−	1.2−
1998 09 14	704	0.3−	0.3−	1998 09 26	704	0.1−	0.2+	1998 10 28	704	1.1+	0.0
1998 09 14	704	0.3+	0.7+	1998 09 26	704	0.1−	0.5−	1998 10 28	704	0.9−	1.1+
1998 09 14	704	0.6−	1.2+	1998 09 26	704	0.3−	1.1−	1998 10 29	704	1.1+	0.1+
1998 09 17	699	0.3+	0.2+	1998 09 27	704	0.5−	0.4−	1998 10 29	704	0.1+	0.7−
1998 09 17	699	0.7+	1.1+	1998 09 27	704	0.9−	0.6+	1998 10 29	704	1.2+	0.5+
1998 09 17	699	0.2+	0.2+	1998 09 27	704	0.1−	0.2−	1998 10 29	704	1.7+	1.2+

1998 NOV. 10

M.P.C. 33011

1998 09 18 704 0.3+ 0.4+ 1998 09 27 704 0.2- 0.2-
 1998 09 18 704 0.2+ 1.0+ 1998 09 27 704 0.9- 1.1-

1998 RJ₇₇ = 1997 LE₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	40.86888	(2000.0)	P	Williams	Q
<i>n</i>	0.24355101	ω	206.64166	+0.99043997	+0.12593235
<i>a</i>	2.5394681	Ω	145.97712	-0.10165245	+0.94220502
<i>e</i>	0.0688046	<i>i</i>	5.77496	-0.09324933	+0.31046858
<i>P</i>	4.05	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 06 10	327	0.0	0.1-	1998 09 17	699	0.6+	0.5-	1998 09 26	704	0.0	0.3+
1997 06 10	327	0.1-	0.3+	1998 09 17	699	0.2+	0.1-	1998 09 26	704	0.1+	1.2-
1997 06 10	327	0.4-	0.1-	1998 09 18	704	0.5-	0.7-	1998 09 27	704	0.2+	0.9-
1997 06 14	327	0.2+	0.1+	1998 09 18	704	1.1+	0.0	1998 09 27	704	0.2-	0.0
1997 06 14	327	0.0	0.3-	1998 09 18	704	1.1-	1.8+	1998 09 27	704	0.1+	0.2+
1997 06 14	327	0.2+	0.1+	1998 09 18	704	0.5-	0.5-	1998 09 27	704	0.4+	0.2-
1998 09 14	704	0.4+	0.2-	1998 09 18	704	1.6+	0.7+	1998 09 27	704	1.0-	0.9-
1998 09 14	704	0.1-	1.0+	1998 09 26	704	0.9-	0.5+	1998 10 17	699	0.5-	1.3+
1998 09 14	704	0.3-	0.6+	1998 09 26	704	0.9-	1.3-	1998 10 17	699	0.8+	1.3-
1998 09 17	699	0.5-	0.2-	1998 09 26	704	0.9+	0.9+	1998 10 17	699	0.1+	0.8+

1998 RZ₇₇ = 1995 WK₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	47.61359	(2000.0)	P	Williams	Q
<i>n</i>	0.30956244	ω	221.37345	+0.98495059	+0.16711541
<i>a</i>	2.1642323	Ω	128.95183	-0.13989119	+0.92066390
<i>e</i>	0.1769803	<i>i</i>	3.25082	-0.10150271	+0.35277533
<i>P</i>	3.18	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 11 17	691	0.3-	0.2-	1998 09 25	699	0.1+	0.3+	1998 10 17	699	0.6+	0.8-
1995 11 17	691	0.3-	0.0	1998 09 25	699	0.2-	0.5+	1998 10 17	699	0.2-	0.3-
1995 11 17	691	0.1-	0.1-	1998 09 25	699	0.1-	0.2+	1998 10 28	704	0.0	1.0+
1995 11 21	691	0.2+	0.2-	1998 09 26	704	0.3-	0.0	1998 10 28	704	0.2-	0.2-
1995 11 21	691	0.3+	0.0	1998 09 26	704	0.1+	0.8-	1998 10 28	704	1.3+	0.9-
1995 11 21	691	0.3+	0.1-	1998 09 26	704	1.7+	1.1-	1998 10 28	704	1.5-	1.1+
1998 09 14	704	0.4+	1.6+	1998 09 26	704	1.2+	1.0-	1998 10 28	704	0.3-	0.5+
1998 09 14	704	(0.4-	2.2+)	1998 09 26	704	0.0	0.8-	1998 10 29	704	0.8+	1.2+
1998 09 14	704	(0.7-	2.4+)	1998 09 27	704	0.2+	0.3-	1998 10 29	704	(0.4-	2.1+)
1998 09 18	704	0.4+	0.2-	1998 09 27	704	0.2-	0.2-	1998 10 29	704	(0.3+	2.3+)
1998 09 18	704	0.8-	0.4-	1998 09 27	704	0.0	0.7+	1998 10 29	704	1.5-	1.1+
1998 09 18	704	0.5-	0.8+	1998 09 27	704	0.2+	0.3-	1998 10 29	704	(0.3-	2.8+)
1998 09 18	704	0.2-	1.0+	1998 09 27	704	0.2-	0.9-				
1998 09 18	704	0.1+	0.3-	1998 10 17	699	0.0	0.7-				

1998 RG₇₈ = 1997 GN₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	92.10145	(2000.0)	P	Williams	Q
<i>n</i>	0.19020604	ω	114.25151	+0.08159687	+0.99512170
<i>a</i>	2.9944692	Ω	160.18952	-0.96346054	+0.09299752
<i>e</i>	0.2128239	<i>i</i>	9.41674	-0.25511907	-0.03292823
<i>P</i>	5.18	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 13	691	0.0	0.0	1998 09 14	704	0.9-	1.2+	1998 09 26	704	1.3-	0.7+
1997 04 13	691	0.1+	0.1-	1998 09 18	704	2.5+	1.3+	1998 09 26	704	0.7-	0.4-
1997 04 13	691	0.1-	0.0	1998 09 18	704	1.5+	1.6-	1998 09 26	704	1.3-	0.2+
1997 04 15	691	0.2-	0.1+	1998 09 18	704	0.7+	0.1+	1998 09 27	704	0.1+	0.3-
1997 04 15	691	0.0	0.0	1998 09 18	704	2.2-	0.9-	1998 09 27	704	1.0+	0.4+
1997 04 15	691	0.2+	0.0	1998 09 18	704	2.0-	0.7-	1998 09 27	704	0.1+	1.2+
1998 09 14	704	0.7+	0.5-	1998 09 26	704	1.4-	1.3-	1998 09 27	704	0.6+	0.2-
1998 09 14	704	0.2+	0.6+	1998 09 26	704	0.8+	0.6+	1998 09 27	704	1.7+	0.4-

1998 RN₇₈ = 1997 LP₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	134.59530	(2000.0)	P	Williams	Q
<i>n</i>	0.24551487	ω	164.50750	-0.32346143	+0.94319792
<i>a</i>	2.5259080	Ω	86.57345	-0.87603141	-0.26820427
<i>e</i>	0.0939429	<i>i</i>	4.35679	-0.35768934	-0.19607179
<i>P</i>	4.01	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1997 06 07	809	0.3-	0.3-	1998 09 18	704	0.2+	0.8-	1998 09 26	704	1.0+	0.9-
1997 06 07	809	0.9-	0.0	1998 09 18	704	1.0-	0.1-	1998 09 27	704	0.4-	0.1+
1997 06 07	809	1.0-	0.4-	1998 09 18	704	0.3-	0.3+	1998 09 27	704	0.9-	0.1-
1997 06 08	809	1.2+	0.3+	1998 09 18	704	0.7-	0.6+	1998 09 27	704	0.2-	0.1-
1997 06 08	809	0.6+	0.1-	1998 09 18	704	0.4-	0.6+	1998 09 27	704	0.9-	0.1-
1997 06 08	809	0.4+	0.3+	1998 09 26	704	0.5+	0.2-	1998 09 27	704	0.7-	0.9-
1998 09 14	704	0.6-	0.8+	1998 09 26	704	0.9+	0.8-	1998 10 17	699	0.4-	0.3-
1998 09 14	704	1.0+	0.3+	1998 09 26	704	1.3+	0.6+	1998 10 17	699	0.1+	0.1-
1998 09 14	704	0.4+	0.3+	1998 09 26	704	0.5+	0.2-	1998 10 17	699	0.6+	0.7+

1998 RO₇₈ = 1994 NA₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	62.57214	(2000.0)	P	Williams	Q
<i>n</i>	0.26862070	ω	228.43438	+0.74870482	+0.66012803
<i>a</i>	2.3789011	Ω	90.16291	-0.58874302	+0.70417436
<i>e</i>	0.2184056	<i>i</i>	3.47413	-0.30466826	+0.26147555
<i>P</i>	3.67	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1994 07 08	809	1.1-	0.1-	1998 09 14	704	0.7-	0.7-	1998 09 26	704	0.1-	0.7+
1994 07 08	809	0.1-	0.0	1998 09 18	704	0.2+	0.3-	1998 09 26	704	0.5+	1.0+
1994 07 08	809	1.1+	0.1-	1998 09 18	704	1.0-	0.0	1998 09 26	704	0.2+	1.5+
1994 07 09	809	1.1-	0.3+	1998 09 18	704	0.1+	0.1+	1998 09 27	704	0.3-	0.3+
1994 07 09	809	0.2+	0.0	1998 09 18	704	0.7-	0.0	1998 09 27	704	0.9+	0.6-
1994 07 09	809	1.1+	0.2-	1998 09 18	704	0.2+	0.3+	1998 09 27	704	0.6+	1.1-
1998 09 14	704	0.4-	0.5-	1998 09 26	704	0.7-	0.3+	1998 09 27	704	0.6-	2.0-
1998 09 14	704	1.9+	0.9+	1998 09 26	704	0.1-	0.1+				

1998 RA₇₉ = 1996 FX₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	23.60548	(2000.0)	P	Williams	Q
<i>n</i>	0.23694047	ω	222.69545	+0.96786436	-0.24223106
<i>a</i>	2.5864845	Ω	151.11689	+0.25140950	+0.92603295
<i>e</i>	0.1898829	<i>i</i>	8.03878	+0.00564268	+0.28946001
<i>P</i>	4.16	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 17	691	0.2+	0.3+	1998 09 18	704	0.3-	0.3+	1998 09 26	704	0.0	0.1+
1996 03 17	691	0.2-	0.7-	1998 09 18	704	0.2+	0.7-	1998 09 27	704	0.5+	0.8-
1996 03 17	691	0.2-	0.1+	1998 09 18	704	0.7-	1.6-	1998 09 27	704	0.4+	0.5+
1996 03 23	691	0.1-	0.0	1998 09 18	704	0.5-	0.2-	1998 09 27	704	0.2+	0.1+
1996 03 23	691	0.2+	0.0	1998 09 18	704	1.3+	0.8+	1998 09 27	704	0.6+	1.6+
1996 03 23	691	0.0	0.0	1998 09 26	704	0.3+	0.3+	1998 10 18	699	0.0	0.0
1998 09 14	704	1.1-	1.3-	1998 09 26	704	0.8+	1.2-	1998 10 18	699	0.3-	0.1+
1998 09 14	704	1.8-	0.2-	1998 09 26	704	0.2+	0.5+	1998 10 18	699	0.9-	0.1-
1998 09 14	704	1.0+	1.7+	1998 09 26	704	0.3+	0.1-				

1998 RD₇₉ = 1977 CA₃ = 1991 OD

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	150.57128	(2000.0)	P	Williams	Q
<i>n</i>	0.29911292	ω	186.60499	-0.50908106	+0.85643111
<i>a</i>	2.2143483	Ω	52.82784	-0.78468524	-0.42083276
<i>e</i>	0.1325185	<i>i</i>	6.18170	-0.35370263	-0.29904103
<i>P</i>	3.30	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 4

M.P.C. 33012

1998 NOV. 10

Residuals in seconds of arc

1977 02 12	675	0.1−	0.2+	1998 09 18	704	0.8−	0.1−	1998 09 26	704	1.0−	0.5−
1977 02 13	675	0.1+	0.2−	1998 09 18	704	0.5−	0.5−	1998 09 26	704	0.3+	0.2−
1991 07 13	675	0.5−	0.5+	1998 09 18	704	0.3−	1.0−	1998 09 27	704	1.5+	0.6+
1991 07 13	675	0.2−	0.3−	1998 09 18	704	0.1+	1.6−	1998 09 27	704	1.3−	0.4+
1991 07 16	675	0.0	0.5−	1998 09 21	699	1.4+	0.0	1998 09 27	704	1.1+	1.7+
1991 07 16	675	0.7+	0.4+	1998 09 21	699	0.4−	0.3+	1998 09 27	704	0.0	1.1+
1998 09 14	704	1.0−	0.9−	1998 09 21	699	0.2+	0.3+	1998 09 27	704	0.0	1.1+
1998 09 14	704	0.9+	0.1+	1998 09 26	704	0.4−	0.2+	1998 10 17	699	1.3−	0.5−
1998 09 14	704	1.3+	0.1+	1998 09 26	704	0.6−	0.4−	1998 10 17	699	0.3+	0.5−
1998 09 18	704	0.1−	0.5+	1998 09 26	704	0.2−	0.8+	1998 10 17	699	0.7+	1.1−

1998 RL₇₉ = 1977 TM₅ = 1980 NL = 1989 AW = 1991 TZ₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	49.23479		(2000.0)	P	Q		
n	0.27996137	ω	229.02053	+0.96089362	+0.27041540		
a	2.3142165	Ω	115.21362	−0.23012658	+0.89960947		
e	0.1785228	i	3.78079	−0.15402990	+0.34289695		
P	3.52	H	14.8	G	0.15	U	2

Residuals in seconds of arc

1977 10 08	095	0.1−	1.6+	1998 09 14	704	0.4+	0.3−	1998 09 26	704	0.8+	1.2+
1980 07 11	805	1.0−	0.5−	1998 09 14	704	0.4+	0.3+	1998 09 26	704	0.1+	0.1−
1980 07 11	805	0.1−	1.3−	1998 09 17	699	0.1+	0.3−	1998 09 26	704	0.1+	1.2−
1980 07 12	805	0.8+	0.9+	1998 09 17	699	0.2+	0.1−	1998 09 27	704	0.3−	0.7−
1980 07 12	805	0.2+	0.2+	1998 09 17	699	0.1+	0.1−	1998 09 27	704	0.8+	0.6+
1989 01 02	675	0.8−	0.3−	1998 09 18	704	0.3+	0.4+	1998 09 27	704	0.2−	0.7+
1989 01 05	675	0.8+	0.9−	1998 09 18	704	0.2+	0.6−	1998 09 27	704	0.3+	0.4−
1991 10 06	046	(3.8−	2.9−)	1998 09 18	704	0.1−	0.1+	1998 09 27	704	1.3−	0.7+
1991 10 06	046	(3.1−	2.7−)	1998 09 18	704	0.4−	1.2+	1998 10 17	699	0.5−	0.6−
1991 10 07	046	0.9−	0.7−	1998 09 18	704	1.2−	1.6+	1998 10 17	699	0.0	0.9−
1991 10 07	046	(0.8−	2.7−)	1998 09 26	704	0.4+	0.6−	1998 10 17	699	0.2−	0.5−
1998 09 14	704	0.5+	0.9−	1998 09 26	704	0.4+	0.0				

1998 RM₇₉ = 1995 WR₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	50.28379		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.31175320	ω	290.48776	+0.96933816	+0.23950858
a	2.1540814	Ω	55.69249	−0.19329803	+0.88126069
e	0.2093345	i	3.81412	−0.15172146	+0.40744967
P	3.16	H	15.7	G 0.15	U 4

Residuals in seconds of arc

1995 11 19	691	0.0	0.1−	1998 09 18	704	0.1−	0.5+	1998 10 17	699	0.4+	0.5−
1995 11 19	691	0.3+	0.1−	1998 09 25	699	0.3−	0.4−	1998 10 17	699	1.1+	0.2−
1995 11 19	691	0.0	0.1−	1998 09 25	699	0.2+	0.2−	1998 10 17	699	0.4+	0.1+
1995 11 27	691	0.0	0.2−	1998 09 25	699	0.3−	0.3+	1998 10 28	704	0.5−	0.9+
1995 11 27	691	0.2−	0.1+	1998 09 26	704	0.2−	0.3+	1998 10 28	704	0.3−	0.8−
1995 11 27	691	0.0	0.3+	1998 09 26	704	0.2−	0.1−	1998 10 28	704	0.5−	0.5+
1998 09 14	704	0.1+	0.6−	1998 09 26	704	0.1+	0.5+	1998 10 28	704	0.3−	0.4+
1998 09 14	704	0.2+	0.5−	1998 09 26	704	0.1−	0.3+	1998 10 28	704	1.6−	0.0
1998 09 14	704	0.2+	0.1−	1998 09 27	704	0.3+	0.5−	1998 10 29	704	1.1+	0.4−
1998 09 18	704	0.3−	0.4−	1998 09 27	704	0.2−	0.7+	1998 10 29	704	1.0+	0.5+
1998 09 18	704	0.7+	0.4−	1998 09 27	704	0.3+	0.3−	1998 10 29	704	0.4−	0.6−
1998 09 18	704	0.7−	0.1+	1998 09 27	704	0.1+	0.5+	1998 10 29	704	0.1−	0.0
1998 09 18	704	0.3+	0.6+	1998 09 27	704	0.5−	0.1−	1998 10 29	704	(2.2+	0.5+)

1998 RZ₇₉ = 1997 MG₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	313.03487		(2000.0)	P	Q
n	0.21145704	ω	357.04236	+0.00757018	−0.99621095
a	2.7903239	Ω	92.51277	+0.91922652	−0.02717547
e	0.0638320	i	4.97511	+0.39365632	+0.08261498
P	4.66	H	13.5	G 0.15	U 5

Residuals in seconds of arc

1997 06 28	704	0.4−	0.5+	1997 07 02	704	0.2−	0.4−	1998 09 18	704	1.4+	0.4−
1997 06 28	704	0.8−	0.3−	1997 07 02	704	0.3−	0.4−	1998 09 18	704	0.2+	0.5−
1997 06 28	704	0.8+	0.7+	1997 07 02	704	0.0	0.1+	1998 09 26	704	0.5+	0.2+
1997 06 29	704	0.3−	0.2−	1997 07 02	704	0.2−	0.1+	1998 09 26	704	0.7−	0.4−
1997 06 29	704	0.2−	0.1−	1997 07 02	704	0.3+	0.4+	1998 09 26	704	1.2+	0.8+
1997 06 29	704	0.6−	0.9−	1997 07 02	704	0.1+	0.6+	1998 09 26	704	0.0	0.1+
1997 06 29	704	0.2−	0.4−	1998 09 14	704	0.5−	0.1−	1998 09 26	704	0.5+	0.2−
1997 06 29	704	0.2+	0.1+	1998 09 14	704	0.0	0.6−	1998 09 27	704	0.2+	0.1−
1997 07 02	704	0.7+	0.5+	1998 09 14	704	0.0	0.2−	1998 09 27	704	0.6−	0.8+
1997 07 02	704	0.5+	0.8+	1998 09 17	699	0.1−	0.2−	1998 09 27	704	0.2−	1.2+
1997 07 02	704	0.2−	0.2−	1998 09 17	699	0.1+	0.3−	1998 09 27	704	0.4−	0.7+
1997 07 02	704	0.3−	1.2−	1998 09 17	699	0.0	0.4−	1998 09 27	704	0.5−	0.2−
1997 07 02	704	0.1−	0.5−	1998 09 18	704	0.0	0.4−	1998 10 17	699	0.5−	0.1+
1997 07 02	704	0.7+	0.6+	1998 09 18	704	0.6+	0.2−	1998 10 17	699	0.2−	0.6+
1997 07 02	704	0.5+	0.4+	1998 09 18	704	0.6−	0.6−	1998 10 17	699	0.4−	0.1+

1998 RA₈₀ = 1995 WG₃₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	119.73252		(2000.0)	P	Q
n	0.29386121	ω	211.49738	+0.00012321	+0.99631229
a	2.2406527	Ω	58.63904	−0.89533480	+0.03832511
e	0.1210390	i	5.76684	−0.44539374	−0.07676588
P	3.35	H	14.9	G 0.15	U 5

Residuals in seconds of arc

1995 11 20	691	0.1−	0.4−	1998 09 17	699	0.2+	0.2−	1998 09 26	704	0.2+	0.7−
1995 11 20	691	0.1−	0.1−	1998 09 17	699	0.3+	0.4−	1998 09 26	704	0.5−	0.5+
1995 11 20	691	0.3−	0.3−	1998 09 18	704	0.6−	0.4−	1998 09 26	704	0.3−	0.9+
1995 11 27	691	0.1+	0.2+	1998 09 18	704	1.1+	0.0	1998 09 27	704	0.0	0.3−
1995 11 27	691	0.2+	0.3+	1998 09 18	704	1.6−	0.3−	1998 09 27	704	0.9+	0.4+
1995 11 27	691	0.1+	0.2+	1998 09 18	704	0.4+	0.9+	1998 09 27	704	0.3−	1.0+
1998 09 14	704	1.1−	0.0	1998 09 18	704	0.6+	1.1+	1998 09 27	704	0.4+	0.6−
1998 09 14	704	1.0+	0.4−	1998 09 26	704	0.7−	0.1+	1998 09 27	704	0.3+	0.6−
1998 09 17	699	0.2+	0.2−	1998 09 26	704	0.5−	0.7−				

1998 RH₈₀ = 1987 SZ₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	42.96204		(2000.0)	P	Q
n	0.17967265	ω	294.83450	+0.93520005	+0.34645015
a	3.1103892	Ω	44.99287	−0.27579361	+0.84241223
e	0.1807278	i	5.95097	−0.22212328	+0.41269108
P	5.49	H	13.4	G 0.15	U 5

Residuals in seconds of arc

1987 09 29	033	0.0	0.4+	1998 09 17	699	0.0	0.2+	1998 09 26	704	0.6+	0.9−
1987 09 29	033	0.8+	0.0	1998 09 17	699	0.1−	0.2+	1998 09 26	704	1.2+	0.0
1987 09 30	033	0.1−	0.3+	1998 09 18	704	0.1−	0.3−	1998 09 26	704	0.2−	1.4−
1987 09 30	033	0.1−	0.0	1998 09 18	704	0.4−	0.0	1998 09 27	704	0.2−	0.3+
1987 10 01	033	0.6−	0.5−	1998 09 18	704	0.2−	0.2−	1998 09 27	704	0.1−	1.5+
1998 09 14	704	0.0	0.1+	1998 09 18	704	0.8−	0.0	1998 09 27	704	0.5−	0.6+
1998 09 14	704	0.3+	0.0	1998 09 18	704	1.2−	0.5−	1998 09 27	704	0.0	0.1−
1998 09 14	704	1.3+	0.5+	1998 09 26	704	0.4+	0.2+	1998 09 27	704	0.6−	0.0
1998 09 17	699	0.0	0.1−	1998 09 26	704	0.7+	0.0				

1998 RO₈₀ = 1994 RO₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	215.22158		(2000.0)	P	Q
n	0.27311703	ω	183.80789	−0.98085235	+0.19417241
a	2.3527197	Ω	7.43947	−0.17547685	−0.84767222
e	0.0961747	i	6.66367	−0.08447807	−0.49370930
P	3.61	H	15.0	G 0.15	U 5

1998 NOV. 10

M.P.C. 33013

Residuals in seconds of arc

1994 09 05	809	0.0	0.3+	1998 09 18	704	0.1+	0.5+	1998 09 27	704	0.5-	1.0-
1994 09 05	809	1.0-	0.6+	1998 09 18	704	0.4+	1.6+	1998 09 27	704	0.9-	0.6-
1994 09 05	809	0.0	0.5-	1998 09 18	704	0.7-	1.2-	1998 10 28	704	1.2+	0.7-
1994 09 06	809	0.3+	0.1+	1998 09 18	704	0.3+	0.3+	1998 10 28	704	0.3-	0.1+
1994 09 06	809	0.3+	0.1+	1998 09 26	704	0.6+	0.2-	1998 10 28	704	1.5-	1.1+
1994 09 06	809	0.3+	0.6-	1998 09 26	704	1.0+	1.9-	1998 10 29	704	0.5-	0.2+
1998 09 14	704	0.5-	1.4+	1998 09 26	704	1.5+	0.9+	1998 10 29	704	1.0+	0.8+
1998 09 14	704	0.2+	0.3-	1998 09 26	704	0.1+	0.8-	1998 10 29	704	0.8+	0.7-
1998 09 14	704	(3.5-	1.3-)	1998 09 27	704	0.9-	0.1+	1998 10 29	704	0.9-	0.2+
1998 09 18	704	0.3-	0.6+	1998 09 27	704	(2.8-	0.0)				

1998 ST = 1981 UA₃ = 1991 RS₁₈ = 1994 LP₉ = 1997 GN₃₃

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	68.09205	(2000.0)	P	Q	
<i>n</i>	0.28797219	ω	304.78157	+0.88461383	+0.46616100
<i>a</i>	2.2710970	Ω	27.43915	-0.41861834	+0.80549828
<i>e</i>	0.1572321	<i>i</i>	1.53464	-0.20546791	+0.36587762
<i>P</i>	3.42	<i>H</i>	16.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1981 10 30	381	0.5+	0.5+	1997 04 04	566	0.2-	0.1+	1998 09 20	910	0.3-	0.0
1981 10 30	381	0.6+	0.2+	1997 04 11	704	(1.0+	2.2-)	1998 09 20	809	1.3+	0.2-
1991 09 13	675	1.8-	0.6-	1997 04 11	704	1.1-	0.7-	1998 09 20	809	0.7+	0.0
1991 09 13	675	(2.7-	0.7-)	1997 04 11	704	0.0	0.7+	1998 09 20	809	0.6+	0.0
1991 09 16	675	0.0	0.9-	1997 04 11	704	0.6+	0.2-	1998 09 26	704	0.7+	0.2-
1991 09 16	675	0.5-	1.1-	1998 09 16	910	0.8-	0.5-	1998 09 26	704	1.4-	0.9+
1994 06 08	809	0.6-	0.8+	1998 09 16	910	0.7-	0.4-	1998 09 26	704	0.5-	0.4-
1994 06 08	809	0.8+	0.5+	1998 09 16	910	1.1-	0.8-	1998 09 26	704	0.5+	0.3-
1994 06 08	809	0.0	0.2-	1998 09 18	910	0.3+	0.0	1998 09 27	704	0.6-	0.3+
1994 06 09	809	(3.0+	0.0)	1998 09 18	910	0.2+	0.0	1998 09 27	704	0.1-	0.7+
1994 06 09	809	1.8+	0.7-	1998 09 18	910	0.5+	0.1+	1998 09 27	704	0.0	0.7+
1994 06 09	809	0.8+	0.3+	1998 09 18	809	1.1+	1.2+	1998 09 27	704	0.7-	0.1-
1997 04 03	704	0.5+	0.5+	1998 09 18	809	1.4+	1.1+	1998 09 27	704	(2.2-	0.1-)
1997 04 03	704	0.0	0.9+	1998 09 18	809	1.3+	1.2+	1998 10 23	731	0.4-	0.8-
1997 04 04	566	1.3-	0.0	1998 09 20	910	0.6+	0.1-	1998 10 23	731	1.3-	0.2+
1997 04 04	566	0.5-	0.4+	1998 09 20	910	0.2-	0.0	1998 10 23	731	0.1+	0.1+

1998 SV = 1997 GA₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Doppler		
<i>M</i>	93.25029	(2000.0)	P	Q	
<i>n</i>	0.30806306	ω	289.80606	+0.68494784	+0.72833580
<i>a</i>	2.1712490	Ω	23.46017	-0.64899033	+0.62195414
<i>e</i>	0.0862192	<i>i</i>	2.78216	-0.33114650	+0.28757608
<i>P</i>	3.20	<i>H</i>	17.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	0.5+	0.6-	1998 09 16	910	0.1+	0.1+	1998 09 20	910	0.4-	0.1-
1997 04 03	704	0.5-	0.3+	1998 09 16	910	0.1-	0.1+	1998 09 20	910	0.6+	0.0
1997 04 07	704	0.6-	0.2-	1998 09 18	910	0.4-	0.4-	1998 09 20	910	0.3+	0.6+
1997 04 07	704	0.6+	0.5+	1998 09 18	910	0.4-	0.1-				
1998 09 16	910	0.6+	0.1-	1998 09 18	910	0.4-	0.1-				

1998 SK₁ = 1992 SN₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Marsden		
<i>M</i>	320.22636	(2000.0)	P	Q	
<i>n</i>	0.17737593	ω	36.85351	-0.18804190	-0.98183892
<i>a</i>	3.1371811	Ω	63.99734	+0.89430731	-0.18175173
<i>e</i>	0.1405626	<i>i</i>	1.60356	+0.40602300	-0.05439337
<i>P</i>	5.56	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	8

Residuals in seconds of arc

1992 09 22	809	0.7+	0.7+	1998 09 16	910	0.5+	0.6-	1998 09 20	809	0.8+	1.6+
1992 09 22	809	0.5+	0.0	1998 09 16	910	0.3+	0.7-	1998 09 20	809	0.3-	1.5+

1992 09 22	809	0.2-	0.3+	1998 09 16	910	0.6+	0.4-	1998 09 20	809	0.8-	2.3+
1992 09 23	809	0.4-	0.6-	1998 09 18	910	0.0	1.3-	1998 09 21	809	1.2+	0.1+
1992 09 23	809	0.5-	0.1-	1998 09 18	910	0.0	1.3-	1998 09 21	809	0.4-	0.4-
1992 09 23	809	0.2-	0.2-	1998 09 18	910	0.1-	1.2-	1998 09 21	809	1.8-	0.4+

1998 SA₂ = 1996 JL₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Doppler		
<i>M</i>	340.87033	(2000.0)	P	Q	
<i>n</i>	0.23688219	ω	353.29090	+0.15065954	-0.98368232
<i>a</i>	2.5869087	Ω	88.01111	+0.91152112	+0.09972080
<i>e</i>	0.2683626	<i>i</i>	5.64701	+0.38266298	+0.14974928
<i>P</i>	4.16	<i>H</i>	17.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 05 11	691	0.5+	0.1-	1996 05 18	691	0.4-	0.0	1998 09 18	910	0.2+	0.0
1996 05 11	691	0.1+	0.2+	1998 09 17	910	0.2-	0.1+	1998 09 18	910	0.0	0.1+
1996 05 11	691	0.4+	0.4+	1998 09 17	910	0.0	0.4-	1998 09 22	910	0.1+	0.3+
1996 05 18	691	0.2-	0.1-	1998 09 17	910	0.5-	0.4-	1998 09 23	910	0.2+	0.0
1996 05 18	691	0.5-	0.4-	1998 09 17	910	0.0	0.1+	1998 09 23	910	0.2+	0.3+

1998 SD₂ = 1998 MA₁₃ = 1982 UN₃ = 1988 UD₁ = 1997 GC₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Doppler		
<i>M</i>	141.28273	(2000.0)	P	Q	
<i>n</i>	0.17103562	ω	332.85748	-0.94164281	-0.33387762
<i>a</i>	3.2142403	Ω	188.00304	+0.33653965	-0.93645309
<i>e</i>	0.1009618	<i>i</i>	17.91722	-0.00706332	-0.10761664
<i>P</i>	5.76	<i>H</i>	12.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1982 10 19	033	0.1-	0.1-	1998 06 25	704	(3.1+	0.5+)	1998 09 24	426	0.2+	0.7-
1982 10 19	033	0.1+	0.2-	1998 06 25	704	(1.3+	3.1+)	1998 09 24	426	0.9-	0.3-
1988 10 17	071	(1.6+	2.5+)	1998 06 25	704	1.6+	0.5+	1998 09 24	118	0.1-	0.2+
1988 10 17	071	0.1+	0.2+	1998 06 25	704	0.2-	0.2+	1998 09 24	118	0.1+	0.5+
1997 04 03	704	0.0	0.2+	1998 09 16	703	0.9-	0.6+	1998 09 24	557	0.2-	0.2-
1997 04 03	704	0.0	0.4+	1998 09 16	703	0.9-	0.6+	1998 09 24	557	0.4-	0.4-
1997 04 05	704	0.3-	0.9-	1998 09 16	703	(2.0+	2.0+)	1998 09 24	118	0.1-	0.5+
1997 04 05	704	0.1+	0.2+	1998 09 18	703	0.4-	1.0+	1998 09 24	557	0.0	0.3-
1998 06 19	704	0.1+	0.7-	1998 09 18	703	0.0	1.0+	1998 09 24	557	0.1+	0.8-
1998 06 19	704	1.4+	0.2+	1998 09 18	703	0.2+	0.9+	1998 09 24	046	0.1+	0.2-
1998 06 19	704	(1.9-	0.9-)	1998 09 23	703	(0.7+	12.4+)	1998 09 24	046	0.2-	0.6-
1998 06 19	704	(0.7-	1.9-)	1998 09 23	703	(0.5-	12.8+)	1998 09 24	046	0.1+	0.6-
1998 06 25	704	0.4-	0.2-	1998 09 24	426	0.3-	0.7-	1998 09 24	046	0.1+	0.7-

1998 SL₂ = 1990 TN₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	8.66693	(2000.0)	P	Q	
<i>n</i>	0.24253544	ω	67.37256	+0.80342544	-0.59286295
<i>a</i>	2.5465522	Ω	328.90762	+0.49970837	+0.72160700
<i>e</i>	0.2695414	<i>i</i>	6.10977	+0.32372691	+0.35748687
<i>P</i>	4.06	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1990 10 13	095	1.7+	0.2-	1998 09 18	108	0.3+	0.2-	1998 09 26	704	0.1-	0.8+
1990 10 13	095	0.3+	0.3+	1998 09 19	108	0.4+	0.6+	1998 09 26	704	0.3+	0.1-
1990 10 17	095	1.2-	1.7-	1998 09 19	108	0.6+	0.0	1998 09 26	704	0.3+	0.3-
1990 10 17	095	0.4-	0.8+	1998 09 19	108	0.2+	0.6+	1998 09 27	704	0.2+	0.3-
1998 09 14	704	0.1+	0.9+	1998 09 19	108	0.4+	1.0-	1998 09 27	704	1.1+	0.5+
1998 09 14	704	0.4-	0.7+	1998 09 19	108	0.7-	0.9-	1998 09 27	704	(2.0-	0.8-)
1998 09 14	704	0.5-	1.0+	1998 09 19	108	0.9-	1.0-	1998 09 27	704	0.7+	0.8+
1998 09 14	704	0.2-	0.2+	1998 09 19	108	0.0	1.0-	1998 09 27	108	0.2+	1.1+
1998 09 14	704	1.1+	0.5+	1998 09 19	108	0.1-	1.3-	1998 09 27	108	1.1+	0.4+
1998 09 16	699	0.4+	0.1+	1998 09 21	596	0.0	0.2+	1998 10 03	108	0.3-	0.4-
1998 09 16	699	0.2+	0.0	1998 09 21	596	0.2+	0.1-	1998 10 03	108	1.0-	1.3-
1998 09 16	699	0.2+	0.1+	1998 09 21	596	0.0	0.0	1998 10 15	699	0.4+	0.3+
1998 09 18	704	0.5-	0.3+	1998 09 22	108	0.8-	0.5-	1998 10 15	699	0.6+	0.2+

M.P.C. 33014

1998 NOV. 10

1998 09 18	704	0.2−	0.4+	1998 09 22	108	0.1−	1.4−	1998 10 15	699	0.6+	0.2+
1998 09 18	704	1.4−	0.2+	1998 09 22	108	(0.5+	2.1−)	1998 10 22	108	0.4+	1.0+
1998 09 18	704	0.1−	0.1−	1998 09 22	104	1.2−	0.2+	1998 10 22	108	2.0−	1.2−
1998 09 18	704	1.1−	0.1−	1998 09 22	104	0.6−	0.0	1998 10 22	108	1.3−	1.1−
1998 09 18	108	1.7+	0.3−	1998 09 22	104	0.7−	0.1+	1998 10 26	108	1.0−	0.5+
1998 09 18	108	0.5−	0.4−	1998 09 22	104	0.7−	0.0	1998 10 26	108	0.3−	1.4+
1998 09 18	108	0.6+	0.4−	1998 09 26	704	0.4+	0.5+	1998 10 27	108	0.9+	0.5+
1998 09 18	108	1.7+	0.3−	1998 09 26	704	0.1−	0.1+	1998 10 27	108	0.7+	0.3+

1998 SK₃ = 1997 GB₄₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Doppler

<i>M</i>	177.68204		(2000.0)	P	Q
<i>n</i>	0.26846860	ω	140.42357	−0.86971826	+0.48356622
<i>a</i>	2.3797996	Ω	68.76008	−0.47541896	−0.76708902
<i>e</i>	0.1740858	<i>i</i>	6.08244	−0.13254039	−0.42159002
<i>P</i>	3.67	<i>H</i>	17.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 07	809	0.6−	0.3+	1997 04 11	809	0.4+	1.3+	1998 09 18	910	0.4+	0.2+
1997 04 07	809	0.8−	0.2−	1997 04 11	809	1.2+	1.1+	1998 09 19	910	0.2+	0.1−
1997 04 07	809	0.6−	0.9+	1997 04 12	809	0.5+	0.2+	1998 09 19	910	0.2+	0.2+
1997 04 08	809	0.6−	1.3−	1997 04 12	809	0.1−	0.7−	1998 09 20	910	0.1−	0.1+
1997 04 08	809	0.4−	1.2−	1997 04 12	809	0.3−	0.6−	1998 09 22	910	1.2−	0.3−
1997 04 08	809	0.1−	1.4−	1998 09 17	910	1.2+	0.1+	1998 09 23	910	1.0−	0.2−
1997 04 11	809	1.4+	1.4+	1998 09 18	910	1.2+	0.1−	1998 09 23	910	1.0−	0.1−

1998 SL₄ = 1997 HL₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	94.53847		(2000.0)	P	Q
<i>n</i>	0.30859913	ω	307.10861	+0.42442469	+0.90543171
<i>a</i>	2.1687338	Ω	347.99871	−0.81879252	+0.38022253
<i>e</i>	0.1553280	<i>i</i>	2.08262	−0.38657793	+0.18874386
<i>P</i>	3.19	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 28	704	0.4−	0.5−	1998 09 20	684	0.7−	0.5−	1998 09 27	704	0.2−	0.6+
1997 04 28	704	1.7−	1.6+	1998 09 20	684	0.6−	0.4−	1998 09 27	704	0.1−	0.4+
1997 04 28	704	0.3−	0.9−	1998 09 21	684	0.1+	0.1−	1998 09 27	704	0.8−	0.1−
1997 04 28	704	1.3−	0.3+	1998 09 21	684	0.3+	0.0	1998 09 27	704	0.5+	0.2−
1997 04 28	704	(3.3−	0.3−)	1998 09 24	684	0.1−	0.0	1998 09 27	704	0.3+	0.1−
1997 04 29	704	0.4−	0.5−	1998 09 24	684	0.1+	0.0	1998 10 14	699	0.0	0.1+
1997 04 29	704	1.5+	0.1−	1998 09 25	684	0.2+	0.1−	1998 10 14	699	0.7+	0.5+
1997 04 29	704	1.2+	0.1−	1998 09 25	684	0.3+	0.1−	1998 10 14	699	0.2+	0.4+
1997 04 29	704	1.4+	0.2+	1998 09 26	704	0.5+	0.3−	1998 10 16	684	0.1−	0.0
1998 09 15	699	0.1+	0.3+	1998 09 26	704	0.3−	0.1−	1998 10 16	684	0.2−	0.1−
1998 09 15	699	0.2+	0.5+	1998 09 26	704	0.4−	0.2−	1998 10 17	684	0.0	0.3−
1998 09 15	699	(4.1−	1.6+)	1998 09 26	704	0.0	0.4−	1998 10 17	684	0.1+	0.1−

1998 SR₄ = 1989 CM₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	321.65797		(2000.0)	P	Q
<i>n</i>	0.27898831	ω	244.89517	−0.13901629	−0.98866673
<i>a</i>	2.3195944	Ω	213.24968	+0.94174085	−0.11428320
<i>e</i>	0.1819718	<i>i</i>	5.93357	+0.30626565	−0.09735218
<i>P</i>	3.53	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1989 02 04	809	1.2−	1.0−	1998 09 20	589	0.1+	0.1−	1998 10 14	704	0.5−	1.6−
1989 02 04	809	2.1−	0.3−	1998 09 20	589	0.7−	0.4−	1998 10 14	704	0.7+	0.4+
1989 02 04	809	1.1−	0.9−	1998 09 23	589	0.9−	0.6−	1998 10 15	704	0.8+	0.5+
1989 02 07	809	2.0+	0.7+	1998 09 23	589	0.8+	1.1−	1998 10 15	704	2.0+	0.2+
1989 02 07	809	1.4+	0.9+	1998 09 23	589	0.7−	0.8−	1998 10 15	704	0.3+	0.3−
1989 02 07	809	1.0+	0.6+	1998 09 26	704	1.7+	0.4−	1998 10 15	704	1.5−	1.0−
1998 09 14	704	0.9−	0.6+	1998 09 26	704	1.2+	0.0	1998 10 15	704	1.4−	0.4+
1998 09 14	704	0.2−	0.2+	1998 09 26	704	1.4+	0.3−	1998 10 20	589	0.7+	1.0−

1998 09 14	704	1.0+	0.5−	1998 09 27	704	0.1+	0.0	1998 10 20	589	0.5−	0.2−
1998 09 18	704	1.5−	0.6+	1998 09 27	704	0.2+	0.0	1998 10 20	589	0.1+	0.1+
1998 09 18	704	1.3−	0.3+	1998 09 27	704	0.7+	0.4+	1998 10 23	589	0.9+	0.4+
1998 09 18	704	1.3−	1.5−	1998 09 27	704	0.7+	0.4+	1998 10 23	589	0.2−	0.1+
1998 09 18	704	0.4−	0.3−	1998 09 27	704	0.1−	0.5−	1998 10 23	589	0.4−	0.4+
1998 09 18	704	0.1−	0.8+	1998 09 28	589	0.7−	0.3+	1998 10 26	589	0.7−	0.8+
1998 09 19	589	0.1+	0.4+	1998 09 28	589	0.2+	0.2−	1998 10 26	589	1.2−	0.2−
1998 09 19	589	0.1+	0.8+	1998 10 12	589	0.0	0.1−	1998 10 26	589	0.2+	0.6+
1998 09 19	589	0.5−	0.7+	1998 10 12	589	0.6+	0.1−				
1998 09 20	589	0.3+	0.9+	1998 10 14	704	0.6+	0.8+				

1998 SX₄ = 1992 SH₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	25.81889		(2000.0)	P	Q
<i>n</i>	0.17369395	ω	192.77808	+0.99242354	−0.12099557
<i>a</i>	3.1813608	Ω	174.04653	+0.12281004	+0.97176452
<i>e</i>	0.1185560	<i>i</i>	11.87574	+0.00363535	+0.20256798
<i>P</i>	5.67	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 09 22	809	0.8+	0.5+	1998 09 19	699	0.3−	0.1−	1998 09 26	704	0.1−	1.0−
1992 09 22	809	0.2+	0.4+	1998 09 19	699	0.6+	0.5−	1998 09 26	704	0.3+	0.1+
1992 09 22	809	0.2−	0.2−	1998 09 22	699	0.1+	0.3+	1998 09 26	704	0.1−	0.0
1992 09 23	809	0.0	0.1+	1998 09 22	699	0.1+	0.6+	1998 09 27	704	0.5−	0.3−
1992 09 23	809	0.4−	0.5−	1998 09 22	699	0.5−	0.3+	1998 09 27	704	0.4−	0.5+
1992 09 23	809	0.4−	0.4−	1998 09 24	699	0.1−	0.6+	1998 09 27	704	0.2−	1.6−
1998 09 17	699	0.2−	0.2+	1998 09 24	699	0.6+	0.4+	1998 09 27	704	0.6−	0.0
1998 09 17	699	0.1+	0.1−	1998 09 24	699	0.7+	0.6+	1998 10 17	699	0.0	0.5+
1998 09 17	699	0.0	0.5+	1998 09 26	704	0.1+	0.3−	1998 10 17	699	0.6+	0.2+
1998 09 19	699	0.2−	0.5−	1998 09 26	704	0.4−	0.4−	1998 10 17	699	0.3+	0.1−

1998 SG₅ = 1979 GO

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	23.47516		(2000.0)	P	Q
<i>n</i>	0.22587299	ω	179.55025	+0.99877345	−0.04787408
<i>a</i>	2.6702988	Ω	183.27495	+0.04470928	+0.98166114
<i>e</i>	0.1730441	<i>i</i>	12.77898	+0.02127624	+0.18452503
<i>P</i>	4.36	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1979 04 01	809	0.0	0.1−	1998 09 18	343	0.5−	0.1+	1998 10 01	343	1.1−	1.3+
1979 04 02	809	0.1−	0.1−	1998 09 19	343	0.1−	0.0	1998 10 12	910	0.5+	0.5−
1998 09 14	704	0.0	0.3−	1998 09 19	343	0.3−	0.5+	1998 10 12	910	0.2+	0.4−
1998 09 14	704	0.1−	0.4−	1998 09 25	699	0.3−	0.1−	1998 10 12	910	0.6+	0.3−
1998 09 14	704	0.7+	0.1+	1998 09 25	699	0.1−	0.1−	1998 10 14	704	0.4+	0.1−
1998 09 14	704	0.8+	0.3+	1998 09 25	699	0.5−	0.4−	1998 10 14	704	0.5+	0.9−
1998 09 14	704	0.6+	0.2+	1998 09 26	704	0.4−	0.1−	1998 10 14	704	0.7+	1.5+
1998 09 16	699	0.4+	0.2+	1998 09 26	704	0.9−	0.7+	1998 10 14	704	0.9+	0.1+
1998 09 16	699	0.4+	0.1−	1998 09 26	704	1.6−	0.1−	1998 10 14	704	0.9−	1.3+
1998 09 16	699	0.5+	0.3+	1998 09 26	704	1.4−	0.5−	1998 10 15	704	0.3−	0.2−
1998 09 18	704	1.2+	0.3+	1998 09 26	704	0.2−	1.2−	1998 10 15	704	0.0	0.6+
1998 09 18	704	0.8+	0.3+	1998 09 27	704	0.9−	0.6−	1998 10 15	704	0.9−	0.3−
1998 09 18	704	0.2−	0.3+	1998 09 27	704	0.1−	1.6−	1998 10 15	704	0.5−	0.4+
1998 09 18	704	0.7+	0.5+	1998 09 27	704	0.2+	0.4−	1998 10 15	704	0.5+	0.8−
1998 09 18	704	0.1+	0.3+	1998 09 27	704	0.8+	0.2+				
1998 09 18	343	0.1−	0.1+	1998 10 01	343	0.1+	0.3−				

1998 NOV. 10

M.P.C. 33015

1998 SP₇ = 1997 GZ₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	134.21558		(2000.0)	P	Doppler	Q
<i>n</i>	0.24163368	ω	58.69787	-0.62308730		+0.78213955
<i>a</i>	2.5528839	Ω	172.75524	-0.72910994		-0.57875570
<i>e</i>	0.1939515	<i>i</i>	2.02951	-0.28312704		-0.23086698
<i>P</i>	4.08	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 03	704	0.0	0.2+	1997 04 07	566	(2.9- 0.8-)	1998 09 20	691	0.5-	0.3+	
1997 04 03	704	0.1+	0.0	1997 04 07	566	(3.5- 0.9-)	1998 09 20	691	0.6-	0.1+	
1997 04 05	704	0.5+	0.5-	1998 09 14	704	0.1+ 0.4+	1998 09 21	691	0.3-	0.0	
1997 04 05	704	0.1-	0.6+	1998 09 14	704	0.2-	0.0	1998 09 21	691	0.7-	0.0
1997 04 06	704	0.7+	0.2-	1998 09 14	704	0.6-	0.3-	1998 09 21	691	0.6-	0.0
1997 04 06	704	0.6+	0.3-	1998 09 14	704	1.3+	0.7-	1998 09 23	691	0.6+	0.2+
1997 04 07	704	0.8-	0.6+	1998 09 18	704	0.6+	0.6+	1998 09 23	691	0.2+	0.5+
1997 04 07	704	0.9-	0.4-	1998 09 18	704	(2.3- 1.2+)		1998 09 23	691	0.5+	0.4+
1997 04 07	566	(2.5- 1.5-)		1998 09 18	704	0.3+	1.5-				

1998 SN₈ = 1995 UR₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	140.00340		(2000.0)	P	Doppler	Q
<i>n</i>	0.30125175	ω	64.18294	-0.28594982		+0.95816592
<i>a</i>	2.2038549	Ω	189.22677	-0.90431523		-0.27407270
<i>e</i>	0.1088560	<i>i</i>	4.39194	-0.31693321		-0.08247557
<i>P</i>	3.27	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1995 10 20	691	0.5-	0.1+	1998 09 20	691	0.6+	0.4+	1998 09 23	691	0.6-	0.0
1995 10 20	691	0.3-	0.2+	1998 09 20	691	0.2-	0.3+	1998 09 23	691	0.4-	0.0
1995 10 20	691	0.1-	0.2-	1998 09 20	691	0.2+	0.4-	1998 09 23	691	0.3-	0.2+
1995 10 25	691	0.7+	0.1+	1998 09 21	691	0.2+	0.3-	1998 09 27	691	0.1-	0.3-
1995 10 25	691	0.0	0.2+	1998 09 21	691	0.3+	0.2+	1998 09 27	691	0.2-	0.1-
1995 10 25	691	0.2+	0.4-	1998 09 21	691	0.2+	0.1+	1998 09 27	691	0.1+	0.2

1998 SS₈ = 1993 TU₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	212.73361		(2000.0)	P	Williams	Q
<i>n</i>	0.19549442	ω	168.17211	-0.99591395		+0.08797071
<i>a</i>	2.9402199	Ω	16.91512	-0.08751771		-0.88444112
<i>e</i>	0.1362931	<i>i</i>	4.02244	-0.02227217		-0.45828491
<i>P</i>	5.04	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1993 10 09	809	1.7+	1.3+	1993 10 22	809	0.3+	0.4+	1998 09 26	704	0.9-	0.3-
1993 10 09	809	1.8+	0.3+	1993 10 22	809	0.8-	0.1-	1998 09 26	704	0.6+	0.3-
1993 10 09	809	2.4+	0.7+	1998 09 20	691	0.1-	0.0	1998 09 27	704	1.1+	0.4+
1993 10 10	809	0.3+	2.7+	1998 09 20	691	0.4-	0.6-	1998 09 27	704	0.1+	0.2+
1993 10 10	809	0.5-	1.1+	1998 09 20	691	0.1+	0.2-	1998 09 27	704	0.2+	1.0-
1993 10 10	809	1.4-	0.8+	1998 09 21	691	0.6-	0.0	1998 10 12	691	0.4-	1.3+
1993 10 11	809	0.8-	2.8-	1998 09 21	691	0.1-	0.5-	1998 10 12	691	0.2-	1.0+
1993 10 11	809	2.3-	3.3-	1998 09 21	691	0.4-	0.4-	1998 10 12	691	0.7-	1.4+
1993 10 11	809	2.8-	2.5-	1998 09 26	704	0.4+	0.5-				
1993 10 22	809	2.8+	0.2-	1998 09 26	704	0.5+	1.0+				

1998 SL₉ = 1997 HW₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	115.63760		(2000.0)	P	Williams	Q
<i>n</i>	0.24192069	ω	289.33511	+0.01766432		+0.99979928
<i>a</i>	2.5508644	Ω	341.66935	-0.90568742		+0.01199459
<i>e</i>	0.1427741	<i>i</i>	1.72250	-0.42357793		+0.01604762
<i>P</i>	4.07	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 30	704	0.1-	0.2-	1997 05 01	704	0.1+	0.3-	1998 10 15	327	0.4+	0.3+
1997 04 30	704	0.1+	0.1+	1997 05 01	704	0.4+	0.6-	1998 10 15	327	0.1+	0.1-
1997 04 30	704	0.2-	0.3+	1998 09 17	327	0.8-	0.2+	1998 10 15	327	0.6+	0.0
1997 04 30	704	1.1-	0.3+	1998 09 17	327	1.6-	0.3+	1998 10 19	327	0.1-	0.3+
1997 04 30	704	0.4-	0.7+	1998 09 17	327	1.0-	0.1-	1998 10 19	327	0.4-	0.8-
1997 05 01	704	0.3+	0.2+	1998 09 20	327	0.8+	0.1+	1998 10 19	327	0.5-	0.1+
1997 05 01	704	0.4+	0.1-	1998 09 20	327	1.3+	0.1-				
1997 05 01	704	0.6+	0.3-	1998 09 20	327	1.4+	0.2-				

1998 SA₁₀ = 1997 GV₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	27.06981		(2000.0)	P	Williams	Q
<i>n</i>	0.20395614	ω	131.24222	+0.89372869		+0.31913526
<i>a</i>	2.8583245	Ω	213.98826	-0.30292929		+0.94769245
<i>e</i>	0.2120519	<i>i</i>	34.33181	+0.33088196		+0.00563181
<i>P</i>	4.83	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 01	608	1.8-	0.3+	1997 04 08	704	1.1+	1.6-	1998 09 24	703	0.5-	0.0
1997 04 01	608	1.9-	0.2+	1997 04 08	704	1.0+	0.0	1998 09 24	703	0.1-	0.3-
1997 04 06	704	0.8+	0.3-	1998 09 21	703	0.8+	0.9-	1998 09 24	704	0.9-	1.2-
1997 04 06	704	1.0+	0.4+	1998 09 21	703	0.9+	0.2+	1998 09 28	704	0.1-	0.8+
1997 04 07	809	1.6-	0.3-	1998 09 21	703	1.1+	0.1+	1998 09 28	704	0.5-	0.9+
1997 04 07	809	1.7-	0.3-	1998 09 21	703	1.4+	0.2+	1998 09 28	704	0.4-	1.1+
1997 04 07	704	1.9+	0.2-	1998 09 22	703	0.3-	0.3-	1998 09 28	704	0.9+	0.9+
1997 04 07	809	1.5-	1.0-	1998 09 22	703	0.4-	0.0	1998 09 28	704	0.2-	1.0+
1997 04 07	704	(6.5+ 0.6+)		1998 09 24	704	1.3-	0.9+	1998 10 14	703	0.0	0.6-
1997 04 08	809	1.3+	1.3+	1998 09 24	704	0.1+	0.4+	1998 10 14	703	0.1+	0.6-
1997 04 08	809	0.4+	1.0+	1998 09 24	704	0.3+	0.7-				
1997 04 08	809	1.0+	0.5+	1998 09 24	704	0.9-	1.8-				

1998 SF₁₀ = 1996 FD₁₀

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	19.76231		(2000.0)	P	Williams	Q
<i>n</i>	0.23411803	ω	3.35293	+0.79527762		-0.60388626
<i>a</i>	2.6072308	Ω	33.97973	+0.55397153		+0.68807418
<i>e</i>	0.1741223	<i>i</i>	5.48590	+0.24627027		+0.40233731
<i>P</i>	4.21	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 20	691	0.2+	0.4+	1998 09 16	910	0.3+	0.0	1998 09 23	910	0.3+	0.0
1996 03 20	691	0.1+	0.1-	1998 09 16	910	0.0	0.2-	1998 09 23	910	0.3+	0.3+
1996 03 20	691	0.0	0.4+	1998 09 16	910	0.7+	0.3+	1998 09 23	910	0.2+	0.3+
1996 03 24	691	0.2-	0.1+	1998 09 22	910	0.6-	0.3-	1998 10 17	691	0.1+	0.0
1996 03 24	691	0.1+	0.4-	1998 09 22	910	0.6-	0.2-	1998 10 17	691	0.1+	0.2+
1996 03 24	691	0.3-	0.3-	1998 09 22	910	0.7-	0.3-	1998 10 17	691	0.1+	0.1-

1998 SG₁₀ = 4384 T-3 = 1993 CH

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	221.18736		(2000.0)	P	Williams	Q
<i>n</i>	0.27917799	ω	118.62484	-0.99481630		-0.01549174
<i>a</i>	2.3185436	Ω	60.64710	-0.03123452		-0.89399803
<i>e</i>	0.1397044	<i>i</i>	6.62119	+0.09677255		-0.44780299
<i>P</i>	3.53	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1977 10 16	675	0.2-	0.1-	1998 09 17	699	0.3-	0.8+	1998 09 27	704	(1.0-	2.3+)
1977 10 16	675	0.0	0.4-	1998 09 17	699	0.5-	0.6+	1998 09 27	704	0.6-	0.3+
1977 10 17	675	1.8+	0.4+	1998 09 17	699	0.2-	0.3+	1998 10 14	704	1.3+	0.3+
1977 10 17	675	0.0	0.7-	1998 09 18	704	0.2+	0.2+	1998 10 14	704	0.0	0.3+
1977 10 21	675	0.4-	0.8-	1998 09 18	704	0.5-	0.1-	1998 10 14	704	(2.1-	0.9-)
1977 10 21	675	0.0	0.2+	1998 09 18	704	0.0	0.1+	1998 10 15	704	0.1+	0.7+
1977 10 22	675	1.0-	1.1+	1998 09 18	704	1.2+	0.3-	1998 10 15	704	1.8-	0.2-

1977 10 22	675	(0.3+ 3.0+)	1998 09 21	910	0.9+ 0.2+	1998 10 15	704	0.2+ 1.3-
1993 02 13	402	0.2+ 1.2-	1998 09 21	910	0.8+ 0.3+	1998 10 15	704	1.7+ 0.2+
1993 02 13	402	0.2- 0.2+	1998 09 21	910	1.0+ 0.4+	1998 10 15	704	(0.3+ 2.5-)
1993 02 14	402	1.6+ 0.6+	1998 09 26	704	0.4- 0.4-	1998 10 17	699	1.1+ 0.0
1993 02 14	402	1.7- 0.4+	1998 09 26	704	0.1- 0.9-	1998 10 17	699	0.7+ 0.1+
1998 09 14	704	0.7- 0.0	1998 09 26	704	0.3- 0.9-	1998 10 17	699	0.8+ 0.2+
1998 09 14	704	1.6- 0.5+	1998 09 26	704	0.2- 1.6-	1998 10 28	704	1.4- 0.2+
1998 09 14	704	1.6- 0.5-	1998 09 26	704	0.5+ 1.6-	1998 10 28	704	0.6- 0.7+
1998 09 17	910	0.6+ 0.3+	1998 09 27	704	0.3- 0.3-	1998 10 28	704	1.0- 1.2+
1998 09 17	910	0.6+ 0.5+	1998 09 27	704	0.1- 0.2+	1998 10 28	704	(0.4- 2.6-)
1998 09 17	910	0.6+ 0.2+	1998 09 27	704	0.6- 0.3+	1998 10 28	704	0.2- 0.8-

1998 SH₁₀ = 1991 EF₃Id. G. V. Williams; 1993 SQ₁₃ = 1991 EF₃ (*MPC* 27916) is invalid

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	3.61684		(2000.0)	P	Q
<i>n</i>	0.21142425	ω	351.32289	+0.62043794	-0.78412290
<i>a</i>	2.7906124	Ω	60.32767	+0.72053295	+0.56266760
<i>e</i>	0.0638456	<i>i</i>	0.95119	+0.30965954	+0.26183287
<i>P</i>	4.66	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 03 11	809	0.3- 0.1-	1998 09 22	910	0.4+ 0.0	1998 09 29	704	0.5- 0.5+
1991 03 11	809	0.0 0.1-	1998 09 22	910	0.4+ 0.2-	1998 10 12	691	0.2- 0.0
1991 03 11	809	0.1+ 0.2-	1998 09 22	910	0.4+ 0.0	1998 10 12	691	0.3- 0.3+
1991 03 13	809	0.4- 0.1-	1998 09 23	910	0.2+ 0.1+	1998 10 12	691	1.2- 0.7+
1991 03 13	809	0.0 0.1+	1998 09 23	910	0.4+ 0.1-	1998 10 18	691	0.0 0.2+
1991 03 13	809	0.3+ 0.0	1998 09 23	910	0.3+ 0.1+	1998 10 18	691	0.0 0.3+
1998 09 17	910	0.3- 0.6-	1998 09 29	704	1.9+ 0.1-	1998 10 18	691	0.1+ 0.3+
1998 09 17	910	0.5- 0.6-	1998 09 29	704	(2.4+ 2.3-)	1998 11 06	132	1.3- 0.3-
1998 09 17	910	0.2- 0.7-	1998 09 29	704	0.6+ 1.0-	1998 11 06	132	0.1+ 0.2+

1998 SP₁₀ = 1997 JN₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	18.16826		(2000.0)	P	Q
<i>n</i>	0.22433183	ω	208.53176	+0.93600838	-0.34976447
<i>a</i>	2.6825147	Ω	171.64866	+0.35179745	+0.92606336
<i>e</i>	0.2148232	<i>i</i>	15.74383	+0.01126352	+0.14167381
<i>P</i>	4.39	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 05 06	691	0.1+	0.3-	1998 09 18	704	0.8+	1.1-	1998 09 27	704	0.8-	0.1-
1997 05 06	691	0.8+	0.0	1998 09 19	428	0.6-	0.0	1998 09 29	910	0.9+	0.9+
1997 05 06	691	1.4-	0.1+	1998 09 19	428	0.2+	1.5+	1998 09 29	910	1.1+	0.9+
1997 05 10	691	0.0	0.3-	1998 09 20	428	0.8+	0.2+	1998 09 29	910	1.0+	0.9+
1997 05 10	691	0.4+	0.2+	1998 09 26	704	0.6-	0.7+	1998 10 13	428	0.1-	0.1+
1997 05 10	691	0.1+	0.3+	1998 09 26	704	0.0	1.6-	1998 10 13	428	0.5+	0.2+
1998 09 14	704	1.1+	0.8+	1998 09 26	704	0.1-	0.8-	1998 10 16	704	0.9-	0.6+
1998 09 14	704	0.3+	0.1+	1998 09 26	704	0.6+	1.2-	1998 10 16	704	0.8+	0.9-
1998 09 14	704	1.2-	0.1-	1998 09 26	704	0.4-	0.1+	1998 10 16	704	0.6+	0.3-
1998 09 18	704	0.2+	0.7-	1998 09 27	704	1.8-	0.1+	1998 10 16	704	1.0+	0.8-
1998 09 18	704	0.2-	1.6-	1998 09 27	704	0.3-	0.8-	1998 10 16	704	0.7-	0.9-
1998 09 18	704	0.1-	1.1+	1998 09 27	704	0.1+	0.6+	1998 10 21	428	1.1-	0.3+
1998 09 18	704	0.8-	0.4+	1998 09 27	704	0.3-	0.2+	1998 10 21	428	0.1-	1.2+

1998 SV₁₀ = 1998 QH₂₆ = 1993 QK

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	40.82553		(2000.0)	P	Q
<i>n</i>	0.20490929	ω	165.72643	+0.89122309	+0.45348854
<i>a</i>	2.8494538	Ω	167.29599	-0.41976863	+0.83164031
<i>e</i>	0.2545522	<i>i</i>	2.17329	-0.17180134	+0.32050358
<i>P</i>	4.81	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 08 17	691	0.4+	0.3-	1998 09 22	610	1.5+	0.5+	1998 10 10	610	0.5-	0.4-
1993 08 17	691	0.3+	0.1-	1998 09 22	610	1.5+	0.5+	1998 10 10	610	1.0-	0.4-
1993 08 17	691	0.2+	0.1-	1998 09 22	610	1.5+	0.4+	1998 10 10	610	1.3-	0.5-
1993 08 18	691	0.1-	0.6-	1998 09 22	610	1.4+	0.4+	1998 10 10	610	1.6-	0.5-
1993 08 18	691	0.0	0.4-	1998 09 22	610	1.4+	0.4+	1998 10 10	610	1.6-	0.5-
1993 08 18	691	0.3-	0.2-	1998 09 25	699	0.4-	0.1+	1998 10 13	610	0.2-	1.0-
1998 08 26	120	1.2-	0.3+	1998 09 25	699	0.1+	0.1+	1998 10 13	610	0.1+	0.9-
1998 08 26	120	0.1+	0.4+	1998 09 25	699	0.4-	0.1-	1998 10 13	610	0.4+	0.7-
1998 08 26	120	1.2-	0.0	1998 09 26	704	0.4-	0.7-	1998 10 13	610	0.7+	0.6-
1998 08 27	120	1.9+	1.6+	1998 09 26	704	0.9-	0.6-	1998 10 13	610	1.2+	0.4-
1998 08 27	120	0.7+	1.4+	1998 09 26	704	1.2-	0.7-	1998 10 14	610	1.7+	0.4+
1998 08 27	120	1.5-	1.2+	1998 09 26	704	1.1-	0.9-	1998 10 14	610	1.1+	0.1-
1998 09 14	704	0.5-	0.5+	1998 09 26	704	0.5-	0.6-	1998 10 14	610	0.5+	0.6-
1998 09 14	704	0.1-	0.5+	1998 09 27	704	0.5-	0.6-	1998 10 15	610	0.4+	0.0
1998 09 14	704	0.3-	0.3-	1998 09 27	704	0.5-	0.5-	1998 10 15	610	1.1+	0.0
1998 09 18	704	0.9-	1.1+	1998 09 27	704	0.5-	0.2+	1998 10 15	610	1.9+	0.0
1998 09 18	704	1.4-	0.3-	1998 09 27	704	0.3+	0.6-	1998 10 17	699	1.8-	1.2-
1998 09 18	704	0.9-	0.5-	1998 09 27	704	0.3+	1.0-	1998 10 17	699	1.7-	0.8+
1998 09 18	704	1.8-	0.0	1998 09 28	610	1.6+	0.1+	1998 10 17	699	1.6-	0.6+
1998 09 18	704	0.9-	0.0	1998 09 28	610	1.4+	0.1+	1998 10 20	610	1.3-	0.7+
1998 09 21	610	1.0+	0.6+	1998 09 28	610	1.3+	0.1+	1998 10 20	610	0.4-	0.8+
1998 09 21	610	0.7+	0.5+	1998 09 28	610	1.1+	0.1+	1998 10 20	610	0.2+	0.8+
1998 09 22	610	0.3+	0.4+	1998 09 28	610	1.1+	0.1+	1998 10 20	610	0.9+	0.9+

1998 SL₁₂ = 1993 RA₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	89.41710		(2000.0)	P	Q
<i>n</i>	0.20562415	ω	146.50660	+0.50400622	+0.86351776
<i>a</i>	2.8428458	Ω	153.74577	-0.80097349	+0.47498968
<i>e</i>	0.0728715	<i>i</i>	2.29873	-0.32313959	+0.16947533
<i>P</i>	4.79	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 09 14	809	0.8+	0.6-	1998 09 21	120	3.8+	0.6-	1998 09 26	704	0.4-	0.2-
1993 09 14	809	0.2-	1.1-	1998 09 21	120	0.3+	1.0-	1998 09 26	704	1.2+	0.3+
1993 09 14	809	1.1-	0.8-	1998 09 22	120	0.7-	0.5+	1998 09 26	704	0.5+	0.6-
1993 09 19	809	0.8+	1.3+	1998 09 22	120	0.3-	0.4-	1998 09 26	704	0.6+	0.6-
1993 09 19	809	0.5+	0.8+	1998 09 22	120	1.8-	0.2-	1998 09 26	691	1.4-	0.4-
1993 09 19	809	0.8-	0.5+	1998 09 22	120	0.7-	0.3-	1998 09 26	691	1.3-	0.1+
1998 09 14	704	0.0	0.9+	1998 09 22	120	3.7+	1.3+	1998 09 26	691	1.1-	0.4+
1998 09 14	704	0.2+	0.8+	1998 09 22	120	0.3-	0.1+	1998 09 27	704	0.3+	0.1-
1998 09 14	704	1.5-	0.9-	1998 09 23	327	0.1+	0.6+	1998 09 27	704	0.4-	0.6+
1998 09 18	704	0.2-	0.6+	1998 09 23	327	0.2-	0.3+	1998 09 27	704	0.4-	1.0+
1998 09 18	704	0.5+	0.1-	1998 09 23	327	0.0	0.9+	1998 09 27	704	0.6+	0.1+
1998 09 18	704	0.9-	0.6-	1998 09 23	120	0.4-	0.2-	1998 09 27	704	0.9-	1.1-
1998 09 18	704	0.1+	1.2-	1998 09 24	120	0.3+	0.1+				
1998 09 18	704	0.5+	0.5+	1998 09 26	704	0.0	1.0-				

1998 SO₁₂ = 4761 P-L = 1997 EC₅₉

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	354.92658		(2000.0)	P	Q
<i>n</i>	0.36360040	ω	63.24551	+0.37449597	-0.92675072
<i>a</i>	1.9441054	Ω	5.04727	+0.68413579	+0.25450476
<i>e</i>	0.0965868	<i>i</i>	19.77377	+0.62586818	+0.27633390
<i>P</i>	2.71	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1960 09 24	675	0.6- 1.4+	1998 09 22	120	0.5+ 0.3-	1998 09 27	704	0.2+ 0.6+
1960 09 26	675	0.6- 1.2+	1998 09 22	120	(2.8- 2.0+)	1998 09 27	704	0.3- 0.4+
1960 09 28	675	2.1- 0.9+	1998 09 22	120	0.7+ 0.2+	1998 09 27	704	0.3- 0.6+
1997 03 11	809	1.4+ 1.1+	1998 09 22	120	1.1+ 0.1+	1998 09 27	704	0.3+ 0.2+
1997 03 11	809	0.2- 0.6+	1998 09 22	120	0.6- 0.2-	1998 09 27	704	1.2- 0.5+
1997 03 11	809	1.0+ 1.0+	1998 09 23	120	0.3+ 0.8-	1998 10 13	120	(6.9+ 2.2-)
1997 03 13	809	1.4+ 1.4+	1998 09 24	120	1.6+ 0.5+	1998 10 18	704	(0.5- 2.2+)

1998 NOV. 10

1997 03 13	809	(2.3+ 0.8+)	1998 09 24	120	0.2- 0.5+	1998 10 18	704	0.7+ 1.6+
1997 03 13	809	0.6+ 0.5+	1998 09 26	704	0.5- 0.8+	1998 10 18	704	0.8+ 1.1+
1998 09 15	699	1.8- 1.5-	1998 09 26	704	1.5- 0.9-	1998 10 18	704	0.7+ 0.3+
1998 09 15	699	0.1+ 0.7-	1998 09 26	704	0.7- 0.8-	1998 10 18	704	0.1+ 0.5-
1998 09 15	699	1.3- 0.2+	1998 09 26	704	0.2+ 0.5-			
1998 09 22	120	0.3- 0.3+	1998 09 26	704	0.6+ 1.7-			

1998 SF₁₃ = 1993 VJ₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17184908	<i>ω</i>	240.68778	+0.98909755	+0.11944434		
<i>a</i>	3.2040890	<i>Ω</i>	112.33862	-0.08041527	+0.92808749		
<i>e</i>	0.0921272	<i>i</i>	5.34328	-0.12336703	+0.35268492		
<i>P</i>	5.74	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 11 11	033	0.3+ 0.5-	1998 09 21	910	0.8+ 0.3+	1998 10 15	704	0.7+ 0.6+
1993 11 12	033	0.5+ 1.6+	1998 09 23	910	0.6+ 0.3+	1998 10 15	704	(2.9+ 0.1+)
1993 11 12	033	1.1- 0.4-	1998 09 23	910	0.8+ 0.0	1998 10 15	704	0.3+ 0.4-
1993 11 13	033	0.2+ 0.4-	1998 09 23	910	0.7+ 0.2+	1998 10 15	704	0.4- 0.3-
1998 09 14	704	0.1- 0.1+	1998 09 26	704	0.4- 0.2-	1998 10 15	704	0.4+ 1.3+
1998 09 14	704	0.3- 0.9+	1998 09 26	704	0.9- 0.8-	1998 10 28	704	0.8- 0.9+
1998 09 14	704	0.4- 0.5-	1998 09 26	704	0.6+ 0.8-	1998 10 28	704	1.3+ 1.9-
1998 09 18	704	0.1- 0.5+	1998 09 26	704	0.2- 0.2+	1998 10 28	704	1.2- 0.6-
1998 09 18	704	0.6- 0.2-	1998 09 26	704	0.3+ 0.2-	1998 10 28	704	(0.7+ 2.1-)
1998 09 18	704	0.2+ 0.1+	1998 09 27	704	0.2- 0.3+	1998 10 28	704	(2.6- 2.2+)
1998 09 18	704	1.3- 0.2+	1998 09 27	704	0.8- 0.0	1998 10 29	704	0.4+ 1.4-
1998 09 18	704	0.6+ 0.7+	1998 09 27	704	0.6- 0.3+	1998 10 29	704	1.9+ 1.8+
1998 09 21	910	0.7+ 0.2+	1998 09 27	704	0.1+ 0.7-	1998 10 29	704	1.3- 1.2-
1998 09 21	910	0.7+ 0.4+	1998 09 27	704	1.3- 0.6-			

1998 SZ₁₃ = 1973 SG

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.35514386	<i>ω</i>	0.51347	+0.94952578	-0.29460350		
<i>a</i>	1.9748457	<i>Ω</i>	17.80030	+0.28653302	+0.67475834		
<i>e</i>	0.1100110	<i>i</i>	20.63798	+0.12767000	+0.67669045		
<i>P</i>	2.78	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 29	675	1.1+ 0.4+	1998 09 27	704	0.3+ 0.5-	1998 10 15	704	1.2- 0.6-
1973 09 30	675	0.1- 1.2-	1998 09 27	704	0.4- 0.7+	1998 10 15	704	0.9- 0.0
1973 10 04	675	0.6- 0.4+	1998 09 27	704	0.6+ 0.3+	1998 10 28	704	1.0- 0.2+
1998 09 21	809	0.2+ 1.4+	1998 09 27	704	0.1- 0.3+	1998 10 28	704	0.8+ 0.6-
1998 09 21	809	1.6- 1.6+	1998 10 14	704	0.1- 0.2-	1998 10 28	704	0.3- 0.1+
1998 09 21	809	0.3- 1.1+	1998 10 14	704	0.6- 1.4-	1998 10 28	704	0.7+ 0.6-
1998 09 26	704	0.6+ 1.0-	1998 10 14	704	1.6+ 0.4+	1998 10 29	704	0.3+ 0.1+
1998 09 26	704	0.1- 0.4-	1998 10 14	704	(0.7- 2.5-)	1998 10 29	704	0.8+ 1.3+
1998 09 26	704	0.1- 1.1-	1998 10 14	704	0.5- 0.6-	1998 10 29	704	0.0 1.8+
1998 09 26	704	0.9+ 0.8-	1998 10 15	704	0.4- 0.5+	1998 10 29	704	0.7+ 0.6-
1998 09 26	704	1.4+ 0.0	1998 10 15	704	(3.5- 0.2+)	1998 10 29	704	0.1+ 0.3+
1998 09 27	704	0.4- 0.6-	1998 10 15	704	1.4- 0.2-			

1998 SV₁₄ = 1980 BU = 1991 SG₄ = 1997 GT₃₉

Id. A. Doppler, G. V. Williams

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29765496	<i>ω</i>	147.09182	-0.48536952	+0.87014570		
<i>a</i>	2.2215732	<i>Ω</i>	93.74161	-0.81948930	-0.41879787		
<i>e</i>	0.0782382	<i>i</i>	4.89929	-0.30471908	-0.25972062		
<i>P</i>	3.31	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 01 23	095	0.1- 0.4-	1998 09 21	809	(2.4- 2.4+)	1998 09 27	704	0.0 1.0+
1991 09 16	675	(21.5+ 1.5+)	1998 09 21	809	(3.9- 1.7+)	1998 10 01	910	0.4+ 0.2-

M.P.C. 33017

1991 09 16	675	(22.2+ 3.0+)	1998 09 21	809	(3.5- 2.3+)	1998 10 01	910	0.2+ 0.3-
1997 04 07	809	0.4+ 0.7+	1998 09 22	699	0.7+ 0.8-	1998 10 01	910	0.3+ 0.2-
1997 04 07	809	0.5- 0.5+	1998 09 22	699	0.4- 0.4+	1998 10 02	704	1.7- 1.8+
1997 04 07	809	0.3- 0.5+	1998 09 22	699	0.0 0.2-	1998 10 02	704	(3.2- 2.3+)
1997 04 08	809	0.4+ 0.7-	1998 09 24	699	0.2+ 0.0	1998 10 02	704	(3.4- 2.8+)
1997 04 08	809	0.6+ 0.8-	1998 09 24	699	0.2+ 0.1-	1998 10 02	704	(2.8- 3.4+)
1997 04 08	809	0.6- 0.2-	1998 09 24	699	0.3+ 1.0+	1998 10 02	704	0.1+ 0.8+
1997 04 09	809	(3.5+ 5.7+)	1998 09 26	704	0.7+ 0.8-	1998 10 02	704	0.6+ 1.3+
1997 04 09	809	(2.2+ 5.8+)	1998 09 26	704	0.3+ 0.4-	1998 10 02	704	0.5- 0.7-
1997 04 09	809	(2.5+ 5.2+)	1998 09 26	704	0.1- 0.2-	1998 10 02	704	0.5- 0.1-
1997 04 10	809	(2.3+ 6.7+)	1998 09 26	704	0.0 1.0-	1998 10 02	704	0.2- 0.9-
1997 04 10	809	(2.3+ 6.4+)	1998 09 26	704	0.7- 0.5-	1998 10 20	699	0.5- 0.5+
1997 04 10	809	(2.4+ 6.4+)	1998 09 27	704	0.1- 0.9-	1998 10 20	699	0.1+ 0.9+
1998 09 18	699	0.7+ 0.2-	1998 09 27	704	0.8- 0.8-	1998 10 20	699	0.0 0.6+
1998 09 18	699	0.6+ 1.1-	1998 09 27	704	0.4+ 0.0			
1998 09 18	699	0.1- 0.3+	1998 09 27	704	0.1- 0.2+			

1998 SX₁₆ = 1997 GC₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27107976	<i>ω</i>	75.60481	-0.30654642	+0.95184059		
<i>a</i>	2.3644928	<i>Ω</i>	176.53008	-0.90390683	-0.28933320		
<i>e</i>	0.0523327	<i>i</i>	5.08616	-0.29829807	-0.10141893		
<i>P</i>	3.64	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 02	704	0.1+ 0.5+	1998 09 17	699	1.6+ 1.2+	1998 09 25	699	1.4+ 0.0
1997 04 02	704	0.1+ 0.5+	1998 09 17	691	0.8- 0.1+	1998 09 26	704	0.4+ 0.1+
1997 04 06	704	0.3- 0.7-	1998 09 17	699	1.2+ 1.8+	1998 09 26	704	0.1- 0.3-
1997 04 06	704	0.1- 0.2-	1998 09 17	691	0.6- 0.0	1998 09 26	704	0.0 0.5+
1997 04 07	704	0.2- 0.6-	1998 09 17	699	1.2+ 1.1+	1998 09 26	704	0.2+ 0.2-
1997 04 07	704	0.1+ 0.0	1998 09 18	704	0.1- 0.4+	1998 09 26	704	0.4+ 0.9-
1997 04 08	704	0.2+ 0.8+	1998 09 18	704	0.8+ 0.3-	1998 09 27	704	0.2+ 0.0
1997 04 08	704	0.4+ 0.9+	1998 09 18	704	0.6+ 0.5+	1998 09 27	704	0.5- 0.4+
1998 08 02	699	0.0 0.7-	1998 09 18	704	1.0- 0.7-	1998 09 27	704	0.1+ 0.5-
1998 08 02	699	0.0 1.3-	1998 09 18	704	1.6- 0.3-	1998 09 27	704	0.5+ 0.2-
1998 08 02	699	0.0 1.1-	1998 09 24	691	1.8- 0.2-	1998 09 27	704	0.8+ 0.5-
1998 09 14	704	0.4+ 0.0	1998 09 24	691	1.9- 0.2-	1998 10 14	699	0.7- 0.0
1998 09 14	704	0.4- 0.3+	1998 09 24	691	1.8- 0.2-	1998 10 14	699	0.1- 0.9+
1998 09 14	704	0.0 0.8-	1998 09 25	699	1.1+ 1.1+	1998 10 14	699	0.5+ 0.5-
1998 09 17	691	0.9- 0.3+	1998 09 25	699	0.7+ 0.6+			

1998 SQ₁₈ = 2030 T-1 = 1987 SB₇ = 1994 NK₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26863859	<i>ω</i>	176.58096	+0.97059310	+0.23997911		
<i>a</i>	2.3787955	<i>Ω</i>	169.47566	-0.22324994	+0.92678227		
<i>e</i>	0.1370764	<i>i</i>	5.95474	-0.09004722	+0.28893711		
<i>P</i>	3.67	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	(0.9- 2.8-)	1998 09 18	704	0.6+ 0.2-	1998 10 14	704	0.3- 1.5-
1971 03 25	675	(3.4+ 1.9-)	1998 09 18	704	0.6+ 0.3-	1998 10 14	704	0.1- 0.7-
1971 03 25	675	0.1+ 0.5-	1998 09 18	691	2.0- 0.4-	1998 10 14	704	0.9+ 0.1+
1971 03 26	675	0.2- 1.9-	1998 09 18	704	1.6+ 0.7-	1998 10 15	704	0.0 0.2+
1971 03 27	675	1.1- 1.5-	1998 09 18	691	2.0- 0.5-	1998 10 15	704	0.4+ 0.0
1987 09 29	033	1.0+ 0.8-	1998 09 24	691	1.4- 0.5-	1998 10 15	704	0.1+ 0.5-
1987 09 30	033	0.1+ 0.5-	1998 09 24	691	0.6- 0.2-	1998 10 15	704	0.9+ 0.2-
1987 09 30	033	0.0 1.8-	1998 09 24	691	1.3- 0.1-	1998 10 15	704	0.0 0.4+
1987 10 01	033	0.5+ 1.1-	1998 09 25	699	0.6+ 0.1+	1998 10 17	699	0.6+ 0.1+
1987 10 01	033	0.8+ 0.2-	1998 09 25	699	0.4+ 0.6+	1998 10 17	699	0.7+ 0.4+
1987 10 01	033	0.5- 1.5-	1998 09 25	699	0.6+ 1.0+	1998 10 17	699	0.9- 0.9+
1994 07 10	033	0.5+ 0.7-	1998 09 26	704	0.3+ 0.5+	1998 10 19	699	0.4+ 0.5+
1994 07 10	033	0.2- 0.1-	1998 09 26	704	0.3- 0.6+	1998 10 19	699	0.8+ 0.3+
1994 07 11	033	0.3- 0.2+	1998 09 26	704	0.4+ 1.2+	1998 10 19	699	0.1+ 1.1+
1998 09 14	704	0.6+ 0.5+	1998 09 26	704	0.5- 0.1+	1998 10 28	704	0.1+ 0.1-

M.P.C. 33018

1998 NOV. 10

1998 09 14	704	0.0	1.0+	1998 09 26	704	0.7+	0.1+	1998 10 28	704	0.8-	0.4-
1998 09 14	704	(3.1-	0.2+)	1998 09 27	704	0.6-	0.1+	1998 10 28	704	0.9-	0.0
1998 09 17	699	0.5+	0.1+	1998 09 27	704	0.1+	0.2+	1998 10 28	704	1.3-	0.1-
1998 09 17	699	0.6+	0.7+	1998 09 27	704	0.4+	0.1+	1998 10 28	704	0.3-	0.2+
1998 09 17	699	0.8+	0.5+	1998 09 27	704	0.4+	0.3-	1998 10 29	704	0.6-	0.6+
1998 09 18	704	0.5+	0.5-	1998 09 27	704	0.5-	0.8-	1998 10 29	704	0.2-	0.2+
1998 09 18	704	1.3+	0.3-	1998 10 14	704	0.0	0.1+	1998 10 29	704	0.4-	1.1-
1998 09 18	691	1.8-	0.3-	1998 10 14	704	0.3+	0.7+	1998 10 29	704	0.4-	0.5-

1998 SU₂₁ = 1997 LA₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	297.39459		(2000.0)	P		Q	
<i>n</i>	0.28713907	ω	277.19594	-0.23290161		-0.97248245	
<i>a</i>	2.2754878	Ω	186.28130	+0.91215947		-0.21634550	
<i>e</i>	0.1144471	<i>i</i>	3.08749	+0.33722685		-0.08644368	
<i>P</i>	3.43	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 07	809	0.9-	2.2-	1997 06 08	809	1.5+	2.2+	1998 09 18	704	1.2-	0.4+
1997 06 07	809	2.0-	1.5-	1997 06 08	809	2.4+	2.9+	1998 09 18	704	0.5-	0.7+
1997 06 07	809	1.4-	1.9-	1998 09 14	704	0.7-	0.6+	1998 09 18	704	1.7+	0.8+
1997 06 07	809	0.5+	0.5-	1998 09 14	704	0.1+	0.0	1998 09 18	704	1.1+	0.2-
1997 06 07	809	0.8+	0.2-	1998 09 14	704	0.8-	0.2-	1998 09 24	120	0.1-	0.4+
1997 06 07	809	1.0+	0.5-	1998 09 14	704	0.3+	0.2+	1998 09 24	120	0.9-	0.3-
1997 06 08	809	1.5-	0.2-	1998 09 17	120	0.3-	0.3-	1998 09 24	120	1.5+	1.8+
1997 06 08	809	0.9-	0.6-	1998 09 17	120	0.8+	0.5-	1998 09 29	120	0.1+	1.1-
1997 06 08	809	1.4-	0.3-	1998 09 17	120	0.5-	2.4-	1998 09 29	120	0.6-	0.2-
1997 06 08	809	2.0+	2.9+	1998 09 18	704	0.1+	0.2+	1998 09 29	120	0.1-	0.2+

1998 SX₂₁ = 1993 FP₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	56.70154		(2000.0)	P		Q	
<i>n</i>	0.26189651	ω	186.42225	+0.90862855		+0.41693202	
<i>a</i>	2.4194477	Ω	148.90261	-0.38107448		+0.85102415	
<i>e</i>	0.1846700	<i>i</i>	2.63038	-0.17081101		+0.31925787	
<i>P</i>	3.76	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 17	809	0.2+	0.0	1998 09 23	120	(0.6-	2.2-)	1998 09 26	704	0.3+	0.4+
1993 03 18	809	1.7+	0.2+	1998 09 23	120	0.0	0.1-	1998 09 26	704	0.5-	0.3+
1993 03 23	809	0.7+	1.1+	1998 09 23	120	0.0	0.6+	1998 09 27	704	0.0	0.1+
1993 03 23	691	0.9-	0.6-	1998 09 24	120	0.1+	0.3-	1998 09 27	704	0.4+	0.3+
1993 03 23	691	0.6-	0.4-	1998 09 24	120	0.1+	0.3-	1998 09 27	704	0.2-	0.5+
1993 03 23	691	1.3-	0.8-	1998 09 24	120	0.2+	0.5-	1998 09 27	704	0.5+	0.2+
1998 09 18	699	0.2-	0.5-	1998 09 26	704	0.2-	0.0	1998 09 27	704	0.2-	0.4+
1998 09 18	699	0.2-	0.3-	1998 09 26	704	0.5+	0.7-	1998 10 16	120	0.1+	0.4-
1998 09 18	699	0.3+	0.2-	1998 09 26	704	0.2-	0.1-	1998 10 16	120	0.6-	0.2+

1998 SE₂₂ = 1994 UU₄ = 1995 YT₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	67.48575		(2000.0)	P		Q	
<i>n</i>	0.23892794	ω	111.36573	+0.74339162		+0.66848216	
<i>a</i>	2.5721212	Ω	206.69989	-0.63063186		+0.68936988	
<i>e</i>	0.1931545	<i>i</i>	2.85399	-0.22287297		+0.27910711	
<i>P</i>	4.13	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 26	691	0.9+	0.4-	1998 09 23	120	0.5-	0.3+	1998 09 27	704	0.8+	0.0
1994 10 26	691	0.1+	0.1-	1998 09 23	120	0.8-	0.3+	1998 09 27	704	0.8-	1.0-
1994 10 26	691	0.1+	0.1-	1998 09 23	120	0.2-	0.8-	1998 09 27	704	0.6+	0.2-
1994 11 01	691	0.6-	0.3+	1998 09 24	120	0.5+	0.9+	1998 09 27	704	1.7+	1.2-
1994 11 01	691	0.4-	0.3+	1998 09 24	120	0.2-	0.1+	1998 10 16	120	0.0	0.8+
1994 11 01	691	0.2-	0.1+	1998 09 24	120	1.0-	0.2+	1998 10 16	120	0.2+	1.3+
1995 12 20	691	0.3+	0.2+	1998 09 26	704	0.1+	0.1-	1998 10 20	120	0.1+	0.3-
1995 12 20	691	0.1+	0.0	1998 09 26	704	0.3+	0.5-	1998 10 20	120	0.0	0.5+

1995 12 20	691	0.2+	0.1+	1998 09 26	704	0.9-	0.6+	1998 10 23	120	0.1-	0.1+
1995 12 26	691	0.3-	0.0	1998 09 26	704	1.0-	0.1+	1998 10 23	120	1.5+	1.5-
1995 12 26	691	0.3-	0.3-	1998 09 26	704	1.4-	1.0-	1998 10 24	120	0.6+	0.8+
1995 12 26	691	0.1-	0.2-	1998 09 27	704	0.4+	0.2+	1998 10 24	120	0.3-	0.3+

1998 SH₂₂ = 1981 UP₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	359.91772		(2000.0)	P		Q	
<i>n</i>	0.28792155	ω	58.55293	+0.65668526		-0.75393875	
<i>a</i>	2.2713633	Ω	350.33349	+0.64924973		+0.57761660	
<i>e</i>	0.1842692	<i>i</i>	6.31220	+0.38371768		+0.31294635	
<i>P</i>	3.42	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 10 24	675	0.2+	0.0	1998 09 18	704	0.7-	0.5+	1998 10 14	704	0.2+	0.2+
1981 10 25	675	0.3+	0.3-	1998 09 18	704	0.5-	1.5+	1998 10 14	704	(0.2+	2.3-)
1981 10 26	675	0.6-	0.2+	1998 09 18	704	0.2-	1.2-	1998 10 14	699	1.1+	0.4-
1998 09 14	704	0.6+	0.7-	1998 09 23	120	0.2-	0.5-	1998 10 14	699	0.4+	0.6-
1998 09 14	704	0.1-	0.1-	1998 09 23	120	0.2-	0.1-	1998 10 14	699	0.3-	0.8-
1998 09 14	704	0.4-	0.3+	1998 09 23	120	0.1-	0.1-	1998 10 15	704	0.7-	0.5+
1998 09 16	699	0.2+	0.6+	1998 09 24	120	0.2+	0.1+	1998 10 15	704	1.5-	0.8+
1998 09 16	699	0.2+	0.4+	1998 09 24	120	0.2+	0.2+	1998 10 15	704	0.4+	1.2+
1998 09 16	699	0.4+	1.0+	1998 09 24	120	0.5+	0.1+	1998 10 15	704	0.4+	0.2-
1998 09 18	704	0.2+	1.7-	1998 10 14	704	0.6+	0.2-	1998 10 15	704	1.2-	0.7-
1998 09 18	704	0.1-	0.6-	1998 10 14	704	0.7+	0.4+				

1998 SK₂₂ = 1996 GR₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	9.08787		(2000.0)	P		Q	
<i>n</i>	0.17514026	ω	187.66788	+0.96059323		-0.27766532	
<i>a</i>	3.1638221	Ω	188.48567	+0.25938864		+0.91196285	
<i>e</i>	0.1693040	<i>i</i>	4.95758	+0.09989083		+0.30203597	
<i>P</i>	5.63	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 13	691	0.2-	0.4+	1998 09 18	704	0.3-	0.7-	1998 09 28	691	0.7-	0.1-
1996 04 13	691	0.5-	0.4+	1998 09 23	120	0.4+	0.2+	1998 09 28	691	1.0-	0.1+
1996 04 13	691	0.4-	0.4+	1998 09 23	120	0.0	0.1+	1998 09 29	120	0.2-	0.6+
1996 04 24	691	0.2+	0.4-	1998 09 23	120	0.1+	0.0	1998 09 29	120	0.4+	0.1-
1996 04 24	691	0.5+	0.3-	1998 09 24	120	(2.3+	0.5-)	1998 10 14	704	0.2+	1.0-
1996 04 24	691	0.5+	0.2-	1998 09 24	120	1.5+	1.1-	1998 10 14	704	(2.4+	0.9+)
1998 09 14	704	0.9+	0.3-	1998 09 24	120	0.3-	0.5-	1998 10 14	704	0.8+	0.2-
1998 09 14	704	0.2-	0.9+	1998 09 26	704	0.2-	1.4-	1998 10 14	704	0.7-	0.5+
1998 09 14	704	0.0	0.3+	1998 09 26	704	0.6-	0.5-	1998 10 14	699	0.9+	0.1-
1998 09 14	704	1.0-	0.2+	1998 09 26	704	0.8-	1.6-	1998 10 14	699	0.5-	0.6+
1998 09 14	704	0.7+	1.0-	1998 09 26	704	0.2-	0.8+	1998 10 14	699	0.8-	0.0
1998 09 16	699	0.1+	0.8+	1998 09 26	704	0.8+	0.9-	1998 10 15	704	1.6+	0.8-
1998 09 16	699	0.9+	0.6+	1998 09 27	704	0.8+	0.1+	1998 10 15	704	0.5+	0.8+
1998 09 16	699	1.1+	1.4+	1998 09 27	704	0.8-	1.0+	1998 10 15	704	(0.1+	2.3+)
1998 09 18	704	1.0+	0.7+	1998 09 27	704	0.5-	0.4+	1998 10 15	704	1.1-	1.4+
1998 09 18	704	0.3-	0.5+	1998 09 27	704	0.7-	0.7-	1998 10 15	704	(2.3-	0.5+)
1998 09 18	704	0.3+	0.3-	1998 09 27	704	0.9-	0.1+				
1998 09 18	704	0.2-	0.5-	1998 09 28	691	0.7-	0.0				

1998 SL₂₂ = 1993 RN₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	23.82092		(2000.0)	P		Q	
<i>n</i>	0.19772959	ω	109.63696	+0.99980436		+0.01274873	
<i>a</i>	2.9180200	Ω	249.63492	-0.01766364		+0.91955046	
<i>e</i>	0.0850762	<i>i</i>	0.92432	+0.00890194		+0.39276510	
<i>P</i>	4.98	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 09 14	809	1.0+	0.8+	1998 09 18	704	0.8+	0.5+	1998 09 25	699	1.0-	1.5+
1993 09 14	809	0.1-	0.6-	1998 09 18	704	1.1+	0.1+	1998 09 26	704	1.9+	1.6+

1998 NOV. 10

M.P.C. 33019

1993 09 14	809	0.8−	0.1+	1998 09 18	704	1.6+	0.2−	1998 09 26	704	0.1+	2.0−
1993 09 19	809	0.2−	1.3−	1998 09 18	704	1.7+	0.6−	1998 09 26	704	0.5−	1.2−
1993 09 19	809	0.4−	0.4+	1998 09 23	120	0.8+	0.5−	1998 09 26	704	0.6−	0.4−
1993 09 19	809	0.9+	0.8−	1998 09 23	120	1.1−	0.2−	1998 09 26	704	1.0−	0.4+
1998 09 14	704	0.8−	0.2−	1998 09 23	120	0.7+	0.1+	1998 09 27	704	0.1−	0.7−
1998 09 14	704	0.9−	0.1−	1998 09 24	120	0.9+	0.2−	1998 09 27	704	1.5−	0.4−
1998 09 14	704	1.4−	0.7+	1998 09 24	120	0.0	0.1−	1998 09 27	704	1.5+	0.3+
1998 09 14	704	0.2−	0.4−	1998 09 25	691	2.1−	0.5+	1998 09 27	704	0.1−	0.3+
1998 09 16	699	0.3+	0.1+	1998 09 25	691	2.0−	0.6+	1998 09 27	704	0.8−	0.6−
1998 09 16	699	1.3+	0.6+	1998 09 25	699	0.3−	1.6+	1998 09 29	120	3.7+	1.8−
1998 09 16	699	0.0	1.0+	1998 09 25	691	2.0−	0.4+	1998 09 29	120	1.3−	0.4−
1998 09 18	704	0.5+	0.4−	1998 09 25	699	0.1+	1.4+				

1998 SN₂₂ = 1992 HN₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	264.69420		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.22379020	ω	309.34180	-0.77086864	-0.63541389
a	2.6868412	Ω	191.44848	$+0.63151568$	-0.75313026
e	0.0992936	i	13.05671	$+0.08336356$	-0.17042300
P	4.40	H	13.5	G 0.15	U 4

Residuals in seconds of arc

1992 04 30	033	0.1−	0.2+	1998 09 24	120	0.0	0.3−	1998 10 14	704	0.5−	1.8−
1992 05 01	033	0.4−	0.1−	1998 09 24	120	0.5+	0.6−	1998 10 14	704	(2.1+	0.2−)
1992 05 04	033	0.5+	0.2−	1998 09 24	120	0.4−	0.8−	1998 10 14	704	0.2+	0.3−
1998 09 14	704	0.5−	0.2+	1998 09 26	704	0.6+	0.0	1998 10 14	699	0.1+	0.1+
1998 09 14	704	0.8+	0.4+	1998 09 26	704	0.3+	1.4−	1998 10 14	699	0.6+	0.6+
1998 09 14	704	0.3+	0.6+	1998 09 26	704	0.4+	1.1−	1998 10 14	699	0.2+	0.3+
1998 09 15	699	0.0	0.2−	1998 09 26	704	0.7+	1.1−	1998 10 15	704	1.1+	0.1+
1998 09 15	699	0.2−	0.9+	1998 09 26	704	0.9+	1.0−	1998 10 15	704	0.6+	0.5+
1998 09 15	699	0.8+	1.3+	1998 09 27	704	0.7+	0.2+	1998 10 15	704	0.3−	0.2−
1998 09 18	704	0.1−	0.6+	1998 09 27	704	0.5−	0.2+	1998 10 15	704	1.0−	0.1−
1998 09 18	704	1.1−	0.2+	1998 09 27	704	0.1+	1.0+	1998 10 15	704	1.9−	0.9−
1998 09 18	704	0.0	0.5+	1998 09 27	691	1.4−	0.0	1998 10 28	704	1.1+	0.7+
1998 09 18	704	0.2+	0.8−	1998 09 27	704	0.0	0.1−	1998 10 28	704	0.5+	0.2−
1998 09 18	704	1.0+	1.5+	1998 09 27	691	1.2−	0.1−	1998 10 28	704	0.6+	0.6−
1998 09 23	120	0.3−	0.0	1998 09 27	704	0.9+	0.6−	1998 10 28	704	1.5−	0.7+
1998 09 23	120	0.0	0.3−	1998 09 27	691	1.4−	0.1+	1998 10 28	704	0.5−	1.4+
1998 09 23	120	0.4−	0.2+	1998 10 14	704	0.1−	0.2+				

1998 SW₂₂ = 1993 PD₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	36.67768		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.22151560	ω	226.86373	+0.87916920	−0.47163020
a	2.7052029	Ω	160.95841	+0.47482424	+0.85509326
e	0.1242676	i	12.03340	+0.04004314	+0.21536124
P	4.45	H	14.2	G 0.15	U 5

Residuals in seconds of arc

1993 08 15	010	0.1−	0.4+	1998 09 23	426	0.5−	0.6−	1998 10 13	426	0.3−	0.1−
1993 08 15	010	0.1+	0.1−	1998 09 23	426	0.1+	0.2−	1998 10 19	426	0.1+	0.5−
1993 08 15	010	0.6−	0.1+	1998 10 12	699	0.7−	0.4+	1998 10 19	426	0.4+	0.4−
1993 08 17	010	0.5+	0.1−	1998 10 12	699	0.6+	0.6+	1998 10 19	426	0.2+	0.3−
1998 09 20	426	0.1−	0.3−	1998 10 12	699	0.1−	1.8+	1998 10 29	699	0.1−	0.3+
1998 09 20	426	0.1+	0.2−	1998 10 13	426	0.8+	0.4−	1998 10 29	699	0.5−	0.3−
1998 09 23	426	0.3−	0.4−	1998 10 13	426	0.0	0.3−	1998 10 29	699	0.2+	0.8+

1998 SH₂₃ = 1981 QN₂ = 1987 SS₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	53.26380		(2000.0)	P	Q		
n	0.17636716	ω	168.94128	+0.66596946	+0.74356333		
a	3.1491322	Ω	142.77156	−0.69176504	+0.64566498		
e	0.2105781	i	5.69026	−0.27918777	+0.17386866		
P	5.59	H	13.4	G	0.15	U	4

Residuals in seconds of arc

1981 08 23	809	(4.0−	3.6−)	1981 09 01	809	0.4+	0.7−	1981 09 06	809	0.2+	0.4+
1981 08 23	809	(4.0−	4.3−)	1981 09 01	809	0.7+	0.9−	1981 09 06	809	0.0	0.4+
1981 08 23	809	(3.9−	4.7−)	1981 09 01	675	0.0	0.3−	1981 09 06	809	0.3+	0.2−
1981 08 24	809	0.2−	0.2+	1981 09 02	809	1.4+	0.4+	1981 09 07	809	2.4−	1.1−
1981 08 24	809	0.2−	0.1+	1981 09 02	809	1.5+	0.1+	1981 09 07	809	2.0−	1.0−
1981 08 24	809	0.2+	0.0	1981 09 02	809	1.5+	0.5+	1981 09 07	809	1.4−	0.8−
1981 08 25	809	0.9−	0.2+	1981 09 02	809	0.5+	0.6+	1981 09 07	809	0.8−	0.0
1981 08 25	809	0.8−	0.4+	1981 09 02	809	0.5+	0.6+	1981 09 07	809	0.7−	0.0
1981 08 25	809	0.1−	0.4+	1981 09 02	809	1.0+	0.9+	1981 09 07	809	0.5−	0.1+
1981 08 26	809	0.6−	0.4−	1981 09 02	809	0.3−	0.8+	1987 09 18	095	0.8+	2.2−
1981 08 26	809	0.5+	0.0	1981 09 02	809	0.4−	0.8+	1998 09 14	704	0.3+	0.9+
1981 08 26	809	0.2+	0.1+	1981 09 02	809	0.3−	0.6+	1998 09 14	704	1.0+	0.3+
1981 08 27	809	0.8−	0.4−	1981 09 02	809	0.2+	0.2−	1998 09 14	704	0.1−	0.5−
1981 08 27	809	0.7−	0.9−	1981 09 02	809	0.2+	0.4−	1998 09 17	699	0.2−	0.1+
1981 08 27	809	0.7−	0.4−	1981 09 02	809	0.2+	0.4−	1998 09 17	699	0.3−	0.4+
1981 08 27	809	0.6−	1.2+	1981 09 02	675	0.3+	1.1−	1998 09 17	699	0.1−	0.1+
1981 08 27	809	1.0−	0.8+	1981 09 03	809	0.6−	0.0	1998 09 18	704	1.1+	0.2+
1981 08 27	809	0.6−	1.2+	1981 09 03	809	0.3−	0.1−	1998 09 18	704	0.4+	1.0+
1981 08 28	809	0.3−	0.3−	1981 09 03	809	0.6+	0.2−	1998 09 18	704	0.6+	0.4+
1981 08 28	809	0.4+	0.0	1981 09 03	809	0.3−	0.1+	1998 09 18	704	0.7+	0.3+
1981 08 28	809	0.2+	0.4+	1981 09 03	809	0.0	0.4−	1998 09 18	704	0.4+	0.3−
1981 08 28	809	0.4−	0.6−	1981 09 03	809	0.5+	0.4−	1998 09 24	699	0.5+	1.3+
1981 08 28	809	0.1−	0.9−	1981 09 03	809	0.4+	0.4+	1998 09 24	699	1.1−	1.3+
1981 08 28	809	0.4−	1.0−	1981 09 03	809	0.8+	1.0+	1998 09 24	699	0.5−	0.8+
1981 08 31	809	0.7+	0.1+	1981 09 03	809	0.8+	0.4+	1998 09 26	704	1.4+	0.2−
1981 08 31	809	0.6+	0.0	1981 09 05	809	0.2−	0.7−	1998 09 26	704	1.0−	0.2−
1981 08 31	809	0.3+	0.3−	1981 09 05	809	1.0−	0.9−	1998 09 26	704	0.5−	0.9−
1981 09 01	809	0.8+	0.9+	1981 09 05	809	0.3−	0.3−	1998 09 26	704	0.8−	0.2−
1981 09 01	809	1.3+	1.2+	1981 09 05	809	0.7−	0.4−	1998 09 27	704	0.7−	1.2−
1981 09 01	809	1.4+	0.6+	1981 09 05	809	0.7−	0.6−	1998 09 27	704	0.9+	0.3+
1981 09 01	809	0.5−	0.7+	1981 09 05	809	0.5−	0.9−	1998 09 27	704	0.0	0.6+
1981 09 01	809	0.2−	0.8+	1981 09 05	809	0.0	1.0−	1998 09 27	704	0.4−	0.4−
1981 09 01	809	0.3+	1.0+	1981 09 05	809	0.9+	0.3−	1998 09 27	704	0.4−	0.3−
1981 09 01	809	0.3+	0.5+	1981 09 05	809	1.6+	0.2−	1998 10 17	699	1.4−	0.2+
1981 09 01	809	0.7+	0.5+	1981 09 06	809	0.0	0.4−	1998 10 17	699	1.8−	0.1+
1981 09 01	809	0.5+	0.7+	1981 09 06	809	0.4−	0.8−	1998 10 17	699	0.5+	0.6−
1981 09 01	809	0.7+	1.0−	1981 09 06	809	0.2−	0.8−				

1998 SX₂₃ = 1991 NY₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	70.20446		(2000.0)	P	Q
n	0.29361411	ω	196.67017	+0.72566951	+0.68404125
a	2.2419096	Ω	119.93027	−0.62110924	+0.69760137
e	0.1433585	i	4.90520	−0.29601870	+0.21316634
P	3.36	H	15.5	G	0.15
				U	5

Residuals in seconds of arc

1991 07 12	809	1.5−	1.0+	1998 09 17	699	0.6+	0.1+	1998 09 26	704	0.9−	0.5+
1991 07 12	809	1.0−	0.9+	1998 09 17	699	0.6+	0.3−	1998 09 27	704	0.1−	0.5−
1991 07 12	809	0.5−	1.0+	1998 09 17	699	0.5+	0.2−	1998 09 27	704	0.6−	0.8+
1991 07 13	809	0.3+	1.7−	1998 09 18	704	0.3+	0.2+	1998 09 27	704	0.8+	0.3−
1991 07 13	809	0.8+	1.5−	1998 09 18	704	0.4−	0.1+	1998 09 27	704	0.2−	0.3+
1991 07 13	809	1.2+	1.3−	1998 09 18	704	0.0	0.1+	1998 09 27	704	1.4+	1.3+
1991 07 15	809	1.1−	0.4+	1998 09 18	704	0.4−	1.2+	1998 10 14	704	0.8−	0.2+
1991 07 15	809	0.4−	0.5+	1998 09 18	704	0.3−	0.3+	1998 10 14	704	(2.3+	0.3+)
1991 07 15	809	0.1+	0.6+	1998 09 24	699	0.4−	0.9+	1998 10 14	704	0.1−	0.2−
1991 07 16	809	0.2+	0.1−	1998 09 24	699	0.3−	0.6+	1998 10 14	704	0.3−	0.6−
1991 07 16	809	0.7+	0.0	1998 09 24	699	0.2−	0.6+	1998 10 15	704	1.4+	0.7−
1991 07 16	809	1.1+	0.0	1998 09 26	704	0.2−	0.3−	1998 10 15	704	0.2−	0.8−
1998 09 14	704	0.1+	0.8−	1998 09 26	704	0.4−	0.1−	1998 10 15	704	(0.7−	2.5−)
1998 09 14	704	0.2−	1.6−	1998 09 26	704	0.8−	0.3−	1998 10 15	704	1.3+	0.4−
1998 09 14	704	0.7+	0.7−	1998 09 26	704	1.1−	0.4+				

1998 SC₂₄ = 9610 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	359.71755		(2000.0)	P		Q	
<i>n</i>	0.18129720	ω	304.11771	+0.86953773		-0.49073145	
<i>a</i>	3.0917805	Ω	85.32814	+0.46948832		+0.78646013	
<i>e</i>	0.1718122	<i>i</i>	3.19555	+0.15324768		+0.37505082	
<i>P</i>	5.44	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 10 17	675	0.7+	0.3-	1998 09 18	704	0.4-	1.1+	1998 10 14	704	0.8-	1.4+
1960 10 22	675	0.3+	0.1+	1998 09 24	699	0.1-	0.2+	1998 10 14	704	(2.5+	0.4-)
1960 10 25	675	0.2-	0.0	1998 09 24	699	0.0	0.4+	1998 10 14	704	(1.4+	2.1-)
1960 10 26	675	1.1-	0.7+	1998 09 24	699	0.4+	0.7+	1998 10 14	704	1.3+	0.4+
1998 09 14	704	0.3+	0.1-	1998 09 26	704	0.3+	1.2-	1998 10 14	704	0.9-	1.3-
1998 09 14	704	1.0+	0.1+	1998 09 26	704	0.3-	0.8-	1998 10 15	704	0.2+	0.5+
1998 09 14	704	0.1+	0.2-	1998 09 26	704	0.3+	0.5-	1998 10 15	704	0.4+	1.4-
1998 09 17	699	0.4+	0.2-	1998 09 26	704	0.5-	0.4-	1998 10 15	704	0.1-	0.4+
1998 09 17	699	0.9-	0.7+	1998 09 26	704	1.1-	0.6-	1998 10 15	704	0.1+	1.1-
1998 09 17	699	0.3+	1.0+	1998 09 27	704	0.8-	0.2-	1998 10 15	704	1.7+	0.1-
1998 09 18	704	0.0	0.5-	1998 09 27	704	0.7-	0.6+	1998 10 17	699	0.4+	0.2-
1998 09 18	704	1.8+	1.1-	1998 09 27	704	0.2-	0.0	1998 10 17	699	0.7-	0.7+
1998 09 18	704	0.6-	0.0	1998 09 27	704	0.4-	0.3+	1998 10 17	699	0.1-	0.1-
1998 09 18	704	0.3-	1.1+	1998 09 27	704	0.0	0.0				

1998 SD₂₄ = 1990 TK

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	80.35006		(2000.0)	P		Q	
<i>n</i>	0.36897660	ω	306.41684	+0.85465347		+0.49541273	
<i>a</i>	1.9251748	Ω	25.03657	-0.27423462		+0.68480538	
<i>e</i>	0.0617849	<i>i</i>	21.53610	-0.44086599		+0.53442287	
<i>P</i>	2.67	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 10 12	413	0.6+	0.4-	1998 09 27	704	0.0	0.8+	1998 10 26	120	0.5+	0.1+
1990 10 12	413	1.4+	0.1+	1998 09 27	704	0.1-	0.8+	1998 10 26	120	1.0+	0.0
1990 10 13	413	(2.3-	0.1+)	1998 10 01	910	1.0+	0.5-	1998 10 26	120	0.3+	0.7+
1990 10 14	675	0.5-	0.1+	1998 10 01	910	0.8+	0.3-	1998 10 27	120	(2.2+	0.5-)
1990 10 14	675	1.5-	0.8+	1998 10 01	910	0.8+	0.4-	1998 10 27	120	(2.7+	0.5-)
1990 10 16	675	0.1-	0.6+	1998 10 14	704	0.2+	1.0-	1998 10 28	704	1.5-	1.3-
1990 10 16	675	1.3-	0.6+	1998 10 14	704	0.8+	0.8+	1998 10 28	704	0.3+	0.7-
1990 10 16	413	(2.4+	1.7-)	1998 10 14	704	0.2-	0.3-	1998 10 28	704	0.7+	0.6-
1998 09 26	704	0.8-	0.4-	1998 10 14	704	1.6-	1.0-	1998 10 28	704	0.5+	0.7-
1998 09 26	704	0.1-	0.2-	1998 10 14	704	(2.4-	2.3-)	1998 10 28	704	0.4-	0.6-
1998 09 26	704	0.1-	0.2-	1998 10 15	704	0.3+	0.5-	1998 10 29	704	0.2-	0.3+
1998 09 26	704	0.3-	0.1-	1998 10 15	704	0.4-	0.3+	1998 10 29	704	0.4+	1.1+
1998 09 26	704	0.4-	0.1+	1998 10 15	704	0.8-	0.6-	1998 10 29	704	0.2-	1.2+
1998 09 27	704	0.0	0.2+	1998 10 15	704	0.3-	1.0-	1998 10 29	704	0.1-	1.3+
1998 09 27	704	1.4+	0.0	1998 10 15	704	(0.3+	2.4-)				
1998 09 27	704	1.5-	0.6+	1998 10 26	120	1.6+	0.5+				

1998 SG₂₄ = 1972 TD₁₀ = 1991 YD₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	341.80167		(2000.0)	P		Q	
<i>n</i>	0.26365727	ω	352.36687	+0.58350011		-0.80987075	
<i>a</i>	2.4086640	Ω	61.91669	+0.74866426		+0.50765181	
<i>e</i>	0.0794197	<i>i</i>	3.91953	+0.31468945		+0.29393709	
<i>P</i>	3.74	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1972 10 09	033	0.6+	0.4-	1998 09 18	704	0.9-	0.5-	1998 09 26	704	1.1+	0.4-
1972 10 09	033	0.6+	0.6-	1998 09 18	704	0.1+	0.1-	1998 09 26	704	1.4+	0.5-
1972 10 09	033	0.4-	0.8-	1998 09 18	704	1.2-	0.7-	1998 09 27	704	0.3+	0.1+
1972 10 09	033	0.3+	0.5-	1998 09 18	704	0.8-	0.0	1998 09 27	704	0.5+	0.7+
1991 12 28	033	0.3-	1.1+	1998 09 18	704	0.2-	0.7-	1998 09 27	704	0.1-	0.2-
1998 09 14	704	0.5-	0.5+	1998 09 24	699	0.1-	0.1+	1998 09 27	704	0.7+	0.5-

1998 09 14	704	1.2-	0.5+	1998 09 24	699	0.1+	1.0+	1998 09 27	704	0.2+	0.8-
1998 09 14	704	0.2-	0.2+	1998 09 24	699	0.4-	1.2+	1998 10 12	699	0.3+	0.8+
1998 09 17	699	0.0	0.5+	1998 09 26	704	0.8-	0.2-	1998 10 12	699	0.3+	0.9+
1998 09 17	699	0.2-	0.8+	1998 09 26	704	0.6+	0.5-	1998 10 12	699	0.7+	0.1-
1998 09 17	699	0.5-	0.3+	1998 09 26	704	0.0	0.5-				

1998 SP₂₄ = 1993 TK₂₉ = 1995 BE₁₆ = 1996 JL₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	335.95930		(2000.0)	P		Q	
<i>n</i>	0.18702691	ω	278.67843	+0.56617606		-0.82267507	
<i>a</i>	3.0283076	Ω	136.70449	+0.78271501		+0.51699001	
<i>e</i>	0.1169476	<i>i</i>	4.30540	+0.25846058		+0.23648902	
<i>P</i>	5.27	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 10 09	809	0.5+	0.2-	1998 09 14	704	1.0-	0.1+	1998 09 24	699	0.7+	0.2+
1993 10 09	809	0.3-	0.1+	1998 09 14	704	0.3-	1.1-	1998 09 24	699	0.5-	1.3+
1993 10 09	809	0.4-	0.2+	1998 09 14	704	0.2-	0.9+	1998 09 24	699	0.7-	0.1-
1993 10 11	809	(2.5-	3.4-)	1998 09 14	704	0.2+	0.9-	1998 09 26	704	(0.2-	2.3-)
1993 10 11	809	(2.8-	3.9-)	1998 09 14	704	0.4+	0.2+	1998 09 26	704	0.7-	0.9-
1993 10 11	809	(3.7-	3.2-)	1998 09 14	704	0.5-	0.1-	1998 09 26	704	0.5-	1.6-
1993 10 21	809	0.4-	1.7+	1998 09 14	704	1.2+	0.2+	1998 09 26	704	(0.2-	2.7-)
1993 10 21	809	0.5-	1.5+	1998 09 14	704	0.5-	0.3-	1998 09 26	704	0.2+	1.4-
1993 10 21	809	(2.8-	1.2+)	1998 09 14	704	0.4+	0.9+	1998 09 27	704	1.6-	0.5+
1995 01 30	033	0.4+	0.1-	1998 09 17	699	0.3+	0.2+	1998 09 27	704	0.9+	0.4+
1995 01 31	033	0.7-	0.5-	1998 09 17	699	0.1-	1.4+	1998 09 27	704	0.0	0.2+
1995 02 03	033	0.2+	0.3-	1998 09 17	699	0.5-	0.8-	1998 09 27	704	0.0	1.2-
1996 05 12	691	0.9-	0.3+	1998 09 17	699	0.2-	1.3+	1998 09 27	704	1.3-	1.7-
1996 05 12	691	0.6-	0.3+	1998 09 17	699	0.1+	0.2+	1998 10 15	704	0.1+	0.8+
1996 05 12	691	0.6-	0.2+	1998 09 17	699	1.6+	1.0+	1998 10 15	704	0.2+	0.5+
1996 05 18	691	0.9+	0.4+	1998 09 18	704	0.6+	0.2-	1998 10 15	704	0.4+	0.2+
1996 05 18	691	1.2+	0.4+	1998 09 18	704	0.5+	0.9-	1998 10 15	704	1.0+	0.2-
1996 05 18	691	0.7+	0.4+	1998 09 18	704	0.2+	0.6-				
1998 09 14	704	0.7+	0.2-	1998 09 18	704	0.0	0.1-				

1998 SU₂₄ = 1981 UO₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	325.66684		(2000.0)	P		Q	
<i>n</i>	0.28634394	ω	17.82968	-0.00308725		-0.99641778	
<i>a</i>	2.2796984	Ω	72.41306	+0.90634194		-0.03849711	
<i>e</i>	0.1019048	<i>i</i>	5.08621	+0.42253373		+0.07529660	
<i>P</i>	3.44	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 10 24	675	0.3+	0.3-	1998 09 24	699	0.2+	1.1+	1998 09 27	704	0.3-	0.6-
1981 10 25	675	0.1-	0.3-	1998 09 24	699	0.5+	0.1+	1998 10 14	327	0.6-	0.1-
1998 09 17	699	0.1+	0.5+	1998 09 24	699	0.3+	0.2+	1998 10 14	327	0.8-	0.3-
1998 09 17	699	0.6+	0.0	1998 09 26	704	0.2-	0.3-	1998 10 14	327	0.7-	0.3-
1998 09 17	699	0.2+	0.4+	1998 09 26	704	1.1+	0.6-	1998 10 17	699	0.3-	0.2+
1998 09 20	327	0.7+	0.0	1998 09 26	704	0.5+	1.0-	1998 10 17	699	0.2-	1.2+
1998 09 20	327	0.6+	0.3-	1998 09 26	704	0.6+	0.3+	1998 10 17	699	0.5+	0.8+
1998 09 20	327	0.6+	0.0	1998 09 26	704	0.6-	0.5-	1998 10 19	327	0.0	0.5+
1998 09 23	327	1.3-	0.4-	1998 09 27	704	0.4+	0.2+	1998 10 19	327	0.2-	0.4+
1998 09 23	327	1.2-	0.3-	1998 09 27	704	0.5+	0.4-	1998 10 19	327	0.0	0.1+
1998 09 23	327	1.2-	0.1-	1998 09 27	704	(0.0	2.1-)				

1998 SA₂₅ = 1993 FM₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	324.48679		(2000.0)	P	Q
n	0.28340761	ω	316.55449	-0.08867347	-0.99368904
a	2.2954176	Ω	138.39189	+0.93983210	-0.10631282
e	0.0495556	i	5.93801	+0.32992823	+0.03577244
P	3.48	H	13.8	G 0.15	U 5

1998 NOV. 10

M.P.C. 33021

Residuals in seconds of arc

1993 03 23	675	0.5+	1.0-	1998 09 18	699	0.3-	0.6+	1998 09 24	699	0.2-	0.5-
1993 03 23	675	0.4+	0.2+	1998 09 18	699	0.8-	0.0	1998 09 24	699	0.6-	0.5+
1993 03 25	399	1.0-	1.2-	1998 09 20	809	0.8+	0.0	1998 10 20	699	0.4+	0.1-
1993 03 25	399	0.6+	2.5-	1998 09 20	809	0.3+	0.5-	1998 10 20	699	0.0	0.3+
1993 03 26	399	0.2+	0.1+	1998 09 20	809	0.0	0.1-	1998 10 20	699	0.1+	0.2-
1993 03 26	399	0.3+	0.7-	1998 09 21	809	0.8+	0.3-	1998 10 20	699	0.4-	0.7+
1993 03 29	399	0.6-	1.8+	1998 09 21	809	0.0	0.7-	1998 10 20	699	0.3+	0.0
1993 03 29	399	0.5-	3.3+	1998 09 21	809	0.2-	0.2-	1998 10 20	699	0.0	0.1+
1998 09 18	699	0.0	0.3-	1998 09 24	699	0.4-	0.6+				

1998 SH₂₅ = 1997 MZ₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.21702740	ω	209.14776	+0.18853869	+0.97645238				
<i>a</i>	2.7423718	Ω	71.88465	-0.87830430	+0.21541989				
<i>e</i>	0.0206808	<i>i</i>	6.33377	-0.43935716	-0.01161963				
<i>P</i>	4.54	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1997 06 29	704	0.1-	0.3+	1998 09 22	699	0.5+	0.5+	1998 09 27	704	0.5-	0.0
1997 06 29	704	0.3+	0.4+	1998 09 22	699	0.0	0.2+	1998 09 27	704	0.5-	0.5+
1997 06 29	704	0.6+	1.3-	1998 09 24	699	0.5-	0.3+	1998 09 27	704	0.4-	0.5-
1997 06 29	704	0.4-	0.8-	1998 09 24	699	0.8-	0.5+	1998 09 27	704	1.4-	0.6-
1997 06 29	704	1.3+	0.2+	1998 09 24	699	0.2-	0.7+	1998 10 11	699	0.2+	0.4+
1997 07 02	704	0.3-	0.4+	1998 09 26	704	0.5+	0.1-	1998 10 11	699	0.2+	0.5+
1997 07 02	704	0.2+	0.7+	1998 09 26	704	0.5+	0.0	1998 10 11	699	0.3+	0.2+
1997 07 02	704	0.2+	0.2+	1998 09 26	704	0.3+	0.2+	1998 10 20	699	0.1-	0.4-
1997 07 02	704	0.1-	0.1+	1998 09 26	704	0.3+	0.5-	1998 10 20	699	0.0	0.2-
1997 07 02	704	1.8-	0.2-	1998 09 26	704	0.9+	1.1-	1998 10 20	699	0.2+	0.2-
1998 09 22	699	0.4+	0.2+	1998 09 27	704	0.2+	0.7-				

1998 SN₂₅ = 1993 QG₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.21231357	ω	319.22436	-0.16249847	-0.98477366				
<i>a</i>	2.7828142	Ω	140.01476	+0.92842463	-0.17379571				
<i>e</i>	0.0781848	<i>i</i>	5.51585	+0.33409873	+0.00398688				
<i>P</i>	4.64	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1993 08 20	809	0.4-	1.2+	1998 09 24	699	0.6+	0.4+	1998 09 27	704	0.0	1.3+
1993 08 20	809	0.6-	0.1+	1998 09 24	699	0.2-	0.2+	1998 09 27	704	0.2+	0.2-
1993 08 20	809	0.6-	0.2+	1998 09 24	699	0.5-	0.6+	1998 09 27	704	0.3+	1.1-
1993 08 24	809	0.0	0.8-	1998 09 26	704	0.1+	0.4+	1998 09 27	704	0.2-	0.6-
1993 08 24	809	1.0+	0.1-	1998 09 26	704	0.6+	0.0	1998 10 20	699	0.8-	0.4-
1993 08 24	809	0.6+	0.6-	1998 09 26	704	0.4+	0.2-	1998 10 20	699	0.4-	0.1+
1998 09 22	699	0.7-	0.3+	1998 09 26	704	0.4+	0.2-	1998 10 20	699	0.2+	0.1+
1998 09 22	699	0.1+	0.2-	1998 09 26	704	0.7-	0.4-				
1998 09 22	699	0.1+	0.1-	1998 09 27	704	0.3+	0.0				

1998 SW₂₅ = 1997 LN₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.18657751	ω	175.35921	+0.86949641	+0.49225824				
<i>a</i>	3.0331684	Ω	155.02250	-0.45622717	+0.83196838				
<i>e</i>	0.2206388	<i>i</i>	5.53332	-0.18929544	+0.25595008				
<i>P</i>	5.28	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 06 08	809	0.1+	0.2+	1998 09 24	699	0.1+	0.5-	1998 09 27	704	0.4-	1.1+
1997 06 08	809	0.2+	0.5+	1998 09 24	699	0.8-	0.1-	1998 09 27	704	0.1-	1.2+
1997 06 08	809	0.4+	1.0+	1998 09 24	699	0.2+	0.2+	1998 09 27	704	0.5+	0.3-
1997 06 09	809	0.3-	0.2-	1998 09 26	704	0.9-	0.2+	1998 09 27	704	0.4-	0.1+
1997 06 09	809	0.3-	0.7-	1998 09 26	704	0.0	0.1+	1998 10 17	699	0.2+	0.2+

1997 06 09	809	0.1-	0.8-	1998 09 26	704	0.9+	1.0-	1998 10 17	699	0.4-	0.7-
1998 09 22	699	0.4+	0.4-	1998 09 26	704	0.5+	0.6-	1998 10 17	699	0.5+	0.3+
1998 09 22	699	0.5+	0.6+	1998 09 26	704	0.8-	0.8+				
1998 09 22	699	0.5+	0.4-	1998 09 27	704	0.1-	0.9-				

1998 SG₂₇ = 1998 QC₆₅ = 1976 YA₂ = 1984 YO₄

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.12585888	ω	115.91409	+0.87921950	-0.42797176				
<i>a</i>	3.9434846	Ω	270.04012	+0.32663638	+0.86134187				
<i>e</i>	0.2533643	<i>i</i>	12.08228	+0.34681659	+0.27373411				
<i>P</i>	7.83	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1976 12 16	095	0.5+	0.8-	1998 08 27	704	0.4-	0.6-	1998 09 26	426	0.1-	0.2-
1976 12 20	095	0.5-	1.2+	1998 09 21	699	0.0	1.0+	1998 09 26	426	0.6-	0.7-
1984 12 28	095	0.3-	0.9-	1998 09 21	699	0.2-	1.4+	1998 09 27	747	0.4+	0.1-
1998 08 24	704	0.3+	0.1-	1998 09 21	699	0.4+	1.4+	1998 09 27	747	0.1+	0.1-
1998 08 24	704	0.7-	0.2-	1998 09 25	747	0.1-	0.3-	1998 09 27	735	0.2-	0.0
1998 08 24	704	0.6-	0.4+	1998 09 25	747	0.2+	0.3+	1998 09 27	735	0.2-	0.0
1998 08 24	704	0.5+	0.4-	1998 09 25	747	0.2+	0.1+	1998 09 29	429	0.1+	0.1-
1998 08 24	704	0.3+	1.4-	1998 09 25	747	0.2-	0.5-	1998 09 29	429	0.1-	0.4+
1998 08 27	704	0.3+	0.4+	1998 09 25	747	0.0	0.3-	1998 10 09	747	0.1-	0.3+
1998 08 27	704	0.3+	0.6-	1998 09 26	747	0.6+	0.0	1998 10 09	747	0.1+	0.3+
1998 08 27	704	0.2+	0.5-	1998 09 26	747	0.1+	0.2+	1998 10 11	747	0.1+	0.2+
1998 08 27	704	0.1-	0.3-	1998 09 26	747	0.2-	0.6-	1998 10 11	747	0.2-	0.5+

1998 SM₂₇ = 1993 VW₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.37931204	ω	120.58041	+0.94026199	+0.19866683				
<i>a</i>	1.8900428	Ω	229.50430	-0.24738619	+0.95660961				
<i>e</i>	0.09999911	<i>i</i>	21.31939	+0.23389626	+0.21314209				
<i>P</i>	2.60	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1993 11 09	675	2.2-	0.1+	1998 09 24	703	0.5+	0.1+	1998 09 26	703	0.7-	0.8-
1993 11 09	675	1.2+	0.8-	1998 09 24	703	0.1+	0.1-	1998 10 27	703	0.3+	0.2+
1993 11 10	675	0.3-	1.2+	1998 09 25	703	0.2+	0.2+	1998 10 27	703	0.4-	0.3-
1993 11 10	675	1.4+	0.5-	1998 09 25	703	0.1+	0.5+				
1998 09 24	703	0.4+	0.0	1998 09 26	703	0.7-	0.2+				

1998 SA₂₈ = 1996 LC₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P		Q	
<i>n</i>	0.21583942	ω	278.04683	+0.57981514	+0.81399554				
<i>a</i>	2.7524253	Ω	27.48336	-0.71445422	+0.52862565				
<i>e</i>	0.0651695	<i>i</i>	4.35073	-0.39162427	+0.24076166				
<i>P</i>	4.57	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1996 06 06	327	0.4-	0.6-	1998 09 20	809	0.6-	0.2+	1998 09 27	704	1.1+	0.5-
1996 06 06	327	0.3+	0.4-	1998 09 26	704	0.8+	0.7-	1998 09 27	704	0.6-	0.5-
1996 06 06	327	0.1+	0.1-	1998 09 26	704	0.5-	1.3-	1998 09 28	684	1.0-	0.0
1996 06 10	327	0.2-	0.3+	1998 09 26	704	0.2-	0.8-	1998 09 28	684	1.0-	0.1-
1996 06 10	327	0.1+	0.5+	1998 09 26	704	1.1+	1.4-	1998 09 29	684	0.5-	0.3+
1998 09 14	699	0.3+	0.3+	1998 09 26	684	0.4+	0.3-	1998 09 29	684	0.8-	0.3+
1998 09 14	699	0.1+	0.4+	1998 09 26	704	0.5+	1.5-	1998 10 13	684	0.2-	0.3-
1998 09 14	699	0.3-	0.2+	1998 09 26	684	0.4+	0.3-	1998 10 13	684	0.0	0.0
1998 09 18	809	1.9+	0.8+	1998 09 27	684	0.4-	0.1-	1998 10 14	684	0.5-	0.1-
1998 09 18	809	0.7+	0.6+	1998 09 27	684	0.4-	0.2-	1998 10 14	684	0.5-	0.1-
1998 09 18	809	0.4-	0.2+	1998 09 27	704	0.8+	0.3-	1998 10 17	699	0.0	0.9+
1998 09 20	809	0.0	0.9+	1998 09 27	704	0.9+	1.1+	1998 10 17	699	0.5+	0.3+
1998 09 20	809	0.9-	0.2+	1998 09 27	704	0.5-	0.2+	1998 10 17	699	0.0	1.0+

1998 SC₂₈ = 1992 OY₄

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>	0.18079103	ω	163.75632			+0.80266420			+0.59641275		
<i>a</i>	3.0975487	Ω	159.62810			-0.54870354			+0.74149370		
<i>e</i>	0.1665607	<i>i</i>	0.77219			-0.23378325			+0.30737424		
<i>P</i>	5.45	<i>H</i>	14.7			<i>G</i>	0.15		<i>U</i>	5	

Residuals in seconds of arc

1992 07 26	809	0.0	0.4-	1998 09 18	809	0.4+	0.3-	1998 09 27	684	0.2-	0.2+
1992 07 26	809	1.4-	0.3-	1998 09 18	809	0.3-	0.8-	1998 09 27	684	0.4-	0.4+
1992 07 26	809	(2.7-	0.5-)	1998 09 20	809	0.3-	0.2-	1998 10 20	684	0.0	0.0
1992 07 30	809	1.7+	0.7+	1998 09 20	809	0.4+	0.2-	1998 10 20	684	0.2-	0.4+
1992 07 30	809	0.5+	0.3-	1998 09 20	809	0.4-	0.3-	1998 10 22	684	0.1+	0.1+
1992 07 30	809	0.8-	0.4+	1998 09 26	684	1.0-	0.4+	1998 10 22	684	0.7+	0.1-
1998 09 18	809	1.9+	0.1-	1998 09 26	684	0.8-	0.4+				

1998 SY₃₁ = 1977 RC₁₃ = 1993 FK₇₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>	0.28241148	ω	239.68227			+0.39142039			-0.92015427		
<i>a</i>	2.3008121	Ω	187.29732			+0.86968800			+0.37356607		
<i>e</i>	0.1677681	<i>i</i>	4.65363			+0.30072058			+0.11732227		
<i>P</i>	3.49	<i>H</i>	15.6			<i>G</i>	0.15		<i>U</i>	4	

Residuals in seconds of arc

1977 09 09	675	0.1-	1.0+	1998 09 26	704	1.6+	0.6-	1998 10 14	704	(2.4-	0.9-)
1977 09 10	675	0.6-	1.1+	1998 09 26	704	1.0+	1.2-	1998 10 14	699	0.1-	0.4-
1993 03 21	809	0.1+	1.4+	1998 09 26	704	0.4+	1.3-	1998 10 14	699	0.8+	0.6-
1993 03 22	809	0.8+	1.3+	1998 09 26	704	0.8+	0.9-	1998 10 14	699	0.0	0.5-
1998 09 14	704	1.0+	1.0+	1998 09 26	704	0.7+	1.2-	1998 10 28	704	0.8+	1.4-
1998 09 14	704	0.6+	0.7+	1998 09 26	691	0.8-	0.7-	1998 10 28	704	1.4+	0.1+
1998 09 14	704	0.0	0.4+	1998 09 26	691	1.0-	1.2-	1998 10 28	704	0.8+	0.1+
1998 09 18	704	0.6+	0.1+	1998 09 26	691	0.9-	0.7-	1998 10 28	704	0.3-	0.1+
1998 09 18	704	0.5-	1.3+	1998 09 27	704	0.4+	0.2+	1998 10 28	704	1.6-	0.3+
1998 09 18	704	1.4-	0.7-	1998 09 27	704	0.2+	0.0	1998 10 29	704	(1.1-	2.8+)
1998 09 18	704	1.3-	0.1-	1998 09 27	704	0.1+	0.2+	1998 10 29	704	0.3+	1.2+
1998 09 18	704	0.9+	1.3+	1998 09 27	704	0.7+	0.2-	1998 10 29	704	1.3-	2.0+
1998 09 20	691	1.3-	0.0	1998 09 27	704	1.3+	0.2+	1998 10 29	704	0.7-	1.0+
1998 09 20	691	1.8-	0.2-	1998 10 14	704	0.9-	0.9+	1998 10 29	704	0.1-	1.7+
1998 09 20	691	1.5-	0.0	1998 10 14	704	0.9+	0.3-				

1998 SB₃₂ = 1993 TQ₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>	0.19344785	ω	141.27998			+0.85089625			+0.52515096		
<i>a</i>	2.9609207	Ω	187.08264			-0.50561352			+0.81151008		
<i>e</i>	0.0835339	<i>i</i>	6.45315			-0.14258521			+0.25625739		
<i>P</i>	5.09	<i>H</i>	13.5			<i>G</i>	0.15		<i>U</i>	5	

Residuals in seconds of arc

1993 10 09	809	0.3+	0.2+	1998 09 18	704	0.3+	0.7+	1998 10 14	699	0.5+	0.6-
1993 10 09	809	0.1-	0.7+	1998 09 18	704	0.1+	0.7+	1998 10 14	699	1.0+	0.3+
1993 10 09	809	0.3+	0.1+	1998 09 20	691	1.8-	0.5-	1998 10 14	699	1.2+	0.1-
1993 10 10	675	(0.3-	3.7-)	1998 09 20	691	(2.3-	0.4-)	1998 10 15	704	1.0+	0.1-
1993 10 10	675	(0.9-	2.5-)	1998 09 20	691	1.6-	0.4-	1998 10 15	704	(3.4+	2.5+)
1993 10 13	675	(0.4-	2.6-)	1998 09 26	704	0.5+	0.4-	1998 10 15	704	(2.0-	0.8-)
1993 10 13	675	(0.6-	3.0-)	1998 09 26	704	0.5-	0.5+	1998 10 15	704	1.4+	0.0
1993 10 20	809	0.1-	0.0	1998 09 26	704	0.2-	0.2+	1998 10 15	704	0.8+	0.2-
1993 10 20	809	0.0	0.1-	1998 09 26	704	0.5-	0.7+	1998 10 28	704	0.4+	0.6+
1993 10 20	809	0.6-	0.1-	1998 09 26	704	0.1-	0.7+	1998 10 28	704	0.6+	0.5-
1998 09 14	704	0.1-	0.4-	1998 09 26	691	0.7-	0.0	1998 10 28	704	0.4+	0.7-
1998 09 14	704	0.8+	1.0+	1998 09 26	691	0.6-	0.5-	1998 10 28	704	0.7-	0.9+
1998 09 15	699	0.1+	0.1-	1998 09 26	691	0.8-	0.5-	1998 10 28	704	0.9+	0.0

1998 09 15	699	0.9+	0.3+	1998 09 27	704	0.2-	0.2-	1998 10 29	704	1.1-	0.7-
1998 09 15	699	0.9+	0.2+	1998 09 27	704	0.5+	0.7-	1998 10 29	704	1.8-	1.1+
1998 09 18	704	0.1+	0.0	1998 09 27	704	0.5-	0.1-	1998 10 29	704	0.2-	0.8-
1998 09 18	704	0.8+	0.3-	1998 09 27	704	0.4+	1.0-	1998 10 29	704	1.2-	0.1+
1998 09 18	704	0.0	0.4+	1998 09 27	704	0.6-	0.4-				

1998 SN₃₃ = 1997 GW₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>	0.27060067	ω	337.66850			+0.98575113			+0.15681342		
<i>a</i>	2.3672828	Ω	13.73498			-0.08708256			+0.78531087		
<i>e</i>	0.2692603	<i>i</i>	14.85288			-0.14391436			+0.59891267		
<i>P</i>	3.64	<i>H</i>	16.0			<i>G</i>	0.15		<i>U</i>	4	

Residuals in seconds of arc

1997 04 03	704	0.5+	0.3+	1998 09 26	704	0.1+	0.6-	1998 10 14	704	0.5-	0.3+
1997 04 03	704	0.4+	0.1-	1998 09 27	704	0.2+	0.6+	1998 10 14	704	0.9+	0.6-
1997 04 07	704	0.7-	0.1-	1998 09 27	704	0.0	0.4+	1998 10 15	704	0.2+	0.4-
1997 04 07	704	0.3-	0.1-	1998 09 27	704	1.1-	0.1+	1998 10 15	704	0.3+	0.4-
1998 09 26	704	0.4+	0.1-	1998 09 27	704	0.8+	0.6+	1998 10 15	704	0.6+	0.6-
1998 09 26	704	0.4-	0.3-	1998 09 27	704	0.5-	0.0	1998 10 15	704	0.3-	0.6+
1998 09 26	704	0.5+	0.4-	1998 10 14	704	0.1-	0.2-	1998 10 15	704	1.1-	0.5+
1998 09 26	704	0.2-	0.2-	1998 10 14	704	0.2+	0.8+				

1998 SR₃₃ = 1981 RG₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>	0.23352236	ω	64.41683			+0.59846114			-0.79991595		
<i>a</i>	2.6116626	Ω	348.49856			+0.63143938			+0.50513109		
<i>e</i>	0.3259006	<i>i</i>	12.89075			+0.49308070			+0.32400163		
<i>P</i>	4.22	<i>H</i>	15.3			<i>G</i>	0.15		<i>U</i>	3	

Residuals in seconds of arc

1981 09 03	675	0.4-	0.4+	1998 09 18	704	0.4-	0.2+	1998 10 15	699	0.2+	0.6+
1981 09 04	675	0.1+	0.0	1998 09 18	699	0.1-	0.1-	1998 10 18	704	0.1-	0.2+
1998 08 02	699	0.8+	0.9+	1998 09 26	704	0.1-	0.5+	1998 10 18	704	0.2-	0.4+
1998 08 02	699	0.1+	0.4+	1998 09 26	704	0.7+	0.2-	1998 10 18	704	0.4+	0.6+
1998 08 02	699	0.2-	1.9-	1998 09 26	704	0.5+	0.0	1998 10 18	704	0.2-	0.5+
1998 09 14	704	0.4-	0.2-	1998 09 26	704	1.0+	0.1+	1998 10 18	704	0.9-	0.2-
1998 09 14	704	0.5-	0.1+	1998 09 26	704	0.5-	0.2-	1998 10 18	699	0.2-	0.8-
1998 09 14	704	0.0	0.3-	1998 09 27	704	0.2+	0.1+	1998 10 18	699	0.4-	0.5-
1998 09 18	704	0.2+	0.2-	1998 09 27	704	0.4-	0.5+	1998 10 18	699	0.2+	1.0-
1998 09 18	704	0.6-	0.1-	1998 09 27	704	0.8+	0.1+	1998 10 21	699	0.2+	0.2-
1998 09 18	699	0.4-	0.0	1998 09 27	704	0.3-	0.1-	1998 10 21	699	0.1+	0.3-
1998 09 18	704	0.9+	0.5-	1998 09 27	704	0.2+	0.6+	1998 10 21	699	0.2+	0.0
1998 09 18	704	0.1-	0.2+	1998 10 15	699	0.1-	0.9+				
1998 09 18	699	0.1-	0.0	1998 10 15	699	0.0	0.5-				

1998 SH₃₄ = 1161 T-2 = 1997 EP₅₃

Id. G. V. Williams, A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>			(2000.0)			P			Q		
<i>n</i>	0.27625854	ω	275.01351			+0.14838857			+0.98855619		
<i>a</i>	2.3348496	Ω	3.85118			-0.66844026			+0.12049938		
<i>e</i>	0.1198750	<i>i</i>	23.84912			-0.72881305			+0.09075551		
<i>P</i>	3.57	<i>H</i>	15.4			<i>G</i>	0.15		<i>U</i>	2	

Residuals in seconds of arc

1998 NOV. 10

M.P.C. 33023

1973 09 29	675	1.6+	0.9−	1998 09 25	699	0.4+	0.5+	1998 10 14	699	0.1−	0.1+
1973 09 30	675	0.2−	1.7+	1998 09 26	704	1.1+	0.4−	1998 10 14	699	0.5−	0.1−
1973 09 30	675	0.6−	1.4+	1998 09 26	704	0.0	1.6−	1998 10 15	704	1.1+	0.5+
1973 10 04	675	0.1−	0.4−	1998 09 26	704	(1.0−	2.1−)	1998 10 15	704	0.0	1.0+
1973 10 04	675	0.3+	0.5−	1998 09 26	704	0.7+	0.2−	1998 10 15	704	0.8−	0.9+
1973 10 05	675	1.5−	0.7+	1998 09 26	704	0.1+	1.2−	1998 10 15	704	(0.5−	2.1+)
1973 10 05	675	0.2+	1.9+	1998 09 27	704	0.7−	0.1+	1998 10 15	704	0.4+	1.0−
1997 03 08	809	0.6−	0.8−	1998 09 27	704	0.6+	0.8+				

1998 SM₃₄ = 1973 SZ₄ = 1973 UH₄ = 1991 VH₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	351.92694		(2000.0)	P	Q
<i>n</i>	0.27472244	ω	50.83323	+0.41067587	−0.91051848
<i>a</i>	2.3435450	Ω	15.13584	+0.76960876	+0.31794602
<i>e</i>	0.2237609	<i>i</i>	10.58704	+0.48892503	+0.26432259
<i>P</i>	3.59	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1973 09 27	095	0.8−	0.6−	1998 09 18	704	0.9−	0.4+	1998 09 27	704	0.3+	1.4−
1973 10 29	095	0.5−	2.4+	1998 09 18	704	0.2+	0.6+	1998 09 27	704	0.2+	0.9−
1991 11 15	372	1.1−	0.1−	1998 09 26	704	0.3+	0.1+	1998 10 14	699	0.3+	0.2+
1991 11 15	372	1.5+	0.8−	1998 09 26	704	0.9−	0.2+	1998 10 14	699	0.5+	0.6+
1998 09 14	704	0.1−	0.4−	1998 09 26	704	0.0	0.3+	1998 10 14	699	0.3+	0.3+
1998 09 14	704	0.0	0.5−	1998 09 26	704	0.2+	0.3+	1998 10 15	691	0.5−	0.4−
1998 09 14	704	0.7+	0.7+	1998 09 26	704	1.0−	0.3+	1998 10 15	691	0.2−	0.5−
1998 09 18	704	0.7+	0.2+	1998 09 27	704	0.1+	0.1+	1998 10 15	691	0.3−	0.3−
1998 09 18	704	0.2−	0.0	1998 09 27	704	0.2−	0.7+	1998 10 20	120	0.8+	0.7−
1998 09 18	704	0.3−	0.5+	1998 09 27	704	0.3−	0.8−	1998 10 20	120	1.1+	0.7−

1998 SN₃₄ = 9091 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	358.06426		(2000.0)	P	Q
<i>n</i>	0.36368013	ω	226.41086	+0.47393608	−0.87444527
<i>a</i>	1.9438213	Ω	196.23287	+0.87621585	+0.47999355
<i>e</i>	0.0894411	<i>i</i>	21.74992	+0.08735206	−0.07036802
<i>P</i>	2.71	<i>H</i>	15.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1960 10 17	675	0.0	1.3−	1998 10 10	699	0.0	0.4+	1998 10 19	699	0.7+	0.5+
1960 10 22	675	0.5−	0.8+	1998 10 10	699	0.0	0.3+	1998 10 19	699	0.4+	0.5+
1960 10 24	675	0.4+	0.9−	1998 10 14	704	0.4+	0.0	1998 10 19	699	0.4+	0.2+
1960 10 26	675	0.2+	0.0	1998 10 14	704	0.2+	0.0	1998 10 28	704	0.3−	0.9−
1998 09 26	704	0.2−	0.1−	1998 10 14	704	(0.7+	2.2−)	1998 10 28	704	0.5−	0.5−
1998 09 26	704	0.5+	0.4+	1998 10 14	704	0.9+	0.0	1998 10 28	704	0.1+	0.1+
1998 09 26	704	0.6−	0.3+	1998 10 14	704	0.3−	1.5−	1998 10 28	704	0.5−	0.2+
1998 09 26	704	0.5−	0.3+	1998 10 14	699	0.4+	0.0	1998 10 28	704	0.2+	0.1−
1998 09 26	704	0.1+	0.4−	1998 10 14	699	0.2+	0.8+	1998 10 29	704	0.1+	0.2+
1998 09 27	704	0.2+	0.5+	1998 10 14	699	0.7+	0.7+	1998 10 29	704	0.5−	1.3+
1998 09 27	704	0.3+	0.7+	1998 10 15	704	0.1−	0.4−	1998 10 29	704	0.9−	0.1+
1998 09 27	704	0.2−	0.3+	1998 10 15	704	0.2+	1.0−	1998 10 29	704	0.9−	0.4+
1998 09 27	704	0.2+	0.7+	1998 10 15	704	1.4−	1.2−	1998 10 29	704	0.1−	0.1+
1998 09 27	704	0.9+	0.8−	1998 10 15	704	(1.8−	2.7−)				
1998 10 10	699	0.3+	0.0	1998 10 15	704	0.7−	0.9−				

1998 SP₃₆ = 1973 FQ = 1984 DO₁ = 1987 SO₁₅ = 1987 SV₂₅ = 1990 FA₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	168.45118		(2000.0)	P	Q
<i>n</i>	0.17485664	ω	205.34352	−0.77990144	+0.62380791
<i>a</i>	3.1672423	Ω	13.62472	−0.53090475	−0.61602421
<i>e</i>	0.0897824	<i>i</i>	12.54388	−0.33150248	−0.48101754
<i>P</i>	5.64	<i>H</i>	11.8	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1973 03 26	095	1.3+	1.7+	1998 09 18	704	0.1+	0.2+	1998 10 14	704	1.0+	0.0
1984 02 26	095	0.6+	0.4−	1998 09 18	704	0.5−	0.1+	1998 10 14	704	0.3+	0.9−

1987 09 24	095	1.0−	0.3−	1998 09 19	691	0.7−	0.2−	1998 10 14	699	0.3+	0.1−
1987 09 25	095	(3.0−	0.8+)	1998 09 19	691	0.7−	0.3−	1998 10 14	699	0.4+	0.0
1990 03 16	046	1.0−	0.4−	1998 09 19	691	0.8−	0.3−	1998 10 14	699	0.4+	0.1−
1990 03 16	046	1.8−	0.2+	1998 09 26	704	0.2+	0.5+	1998 10 15	704	1.1+	0.6−
1990 03 17	046	0.7−	0.9−	1998 09 26	704	0.7−	0.3+	1998 10 15	704	0.5+	0.1−
1990 03 17	046	(2.1−	1.5−)	1998 09 26	704	0.1−	0.1−	1998 10 15	704	0.9+	1.2−
1990 03 17	046	0.2+	0.4−	1998 09 26	704	0.2−	0.2+	1998 10 15	704	1.2+	0.2−
1990 03 17	046	0.1+	1.1−	1998 09 26	704	0.5−	1.2+	1998 10 15	704	0.1+	0.3−
1990 03 18	046	1.4−	0.4+	1998 09 27	704	0.8+	0.0	1998 10 28	704	0.9+	0.3−
1990 03 18	046	0.6−	0.5+	1998 09 27	704	0.4+	0.7−	1998 10 28	704	0.7+	0.6−
1990 03 18	046	0.3+	0.3+	1998 09 27	704	0.6+	0.3−	1998 10 28	704	1.0+	0.7−
1990 03 18	046	1.6+	0.6−	1998 09 27	691	1.7−	0.3−	1998 10 28	704	1.5+	1.1−
1990 03 19	046	0.1+	0.2+	1998 09 27	704	0.5+	1.1−	1998 10 28	704	0.7+	0.6−
1990 03 19	046	1.6+	0.4+	1998 09 27	691	1.9−	0.2−	1998 10 29	704	1.5−	1.4+
1998 09 14	704	0.5+	0.5+	1998 09 27	704	1.2+	0.1−	1998 10 29	704	2.0−	1.2+
1998 09 14	704	0.1−	0.0	1998 09 27	691	1.7−	0.3−	1998 10 29	704	1.8−	1.9+
1998 09 18	704	0.1+	0.6+	1998 10 14	704	0.8+	0.2−	1998 10 29	704	1.8−	1.6+
1998 09 18	704	0.1−	0.6+	1998 10 14	704	1.6+	0.8+	1998 10 29	704	(1.5−	2.4+)
1998 09 18	704	0.7+	0.7+	1998 10 14	704	0.8−	0.2−				

1998 SP₃₇ = 1989 ED₄

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	334.09916		(2000.0)	P	Q
<i>n</i>	0.27913749	ω	233.14067	−0.02925099	−0.99873809
<i>a</i>	2.3187679	Ω	218.59686	+0.93665787	−0.01312630
<i>e</i>	0.1081449	<i>i</i>	3.75214	+0.34902209	−0.04847610
<i>P</i>	3.53	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1989 03 02	809	0.5−	1.0−	1998 09 14	699	1.0+	0.5+	1998 09 30	691	0.1−	0.0
1989 03 02	809	0.1+	1.0−	1998 09 21	691	0.1+	0.2−	1998 09 30	691	0.4−	0.2+
1989 03 02	809	0.5−	0.6−	1998 09 21	691	0.2+	0.2−	1998 10 13	691	0.8+	0.3+
1989 03 03	809	0.2+	0.9+	1998 09 21	691	0.3+	0.5−	1998 10 13	691	0.7+	0.4+
1989 03 03	809	0.1+	1.1+	1998 09 27	691	0.9−	0.1−	1998 10 13	691	0.8+	0.5+
1989 03 03	809	0.6+	0.6+	1998 09 27	691	0.6−	0.4−	1998 10 15	691	1.1−	0.9−
1998 09 14	699	0.3+	0.1+	1998 09 27	691	1.1−	1.2−	1998 10 15	691	0.4+	0.1+
1998 09 14	699	0.4−	0.7+	1998 09 30	691	0.4−	0.1+	1998 10 15	691	0.3+	0.6+

1998 SQ₃₇ = 1977 RY₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	55.95178		(2000.0)	P	Q
<i>n</i>	0.19219068	ω	356.70684	+0.95334544	+0.30172279
<i>a</i>	2.9738188	Ω	345.72039	−0.27605610	+0.85820608
<i>e</i>	0.1195516	<i>i</i>	2.27465	−0.12216999	+0.41526579
<i>P</i>	5.13	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1977 09 08	675	0.8+	0.4+	1998 09 30	691	0.2+	0.4−	1998 10 15	327	0.0	0.1+
1977 09 09	675	0.8−	0.4−	1998 09 30	691	0.0	0.2+	1998 10 15	327	0.1−	0.3−
1998 09 21	691	0.2+	0.1+	1998 10 14	327	0.2+	0.1−	1998 10 21	910	0.4+	0.3+
1998 09 21	691	0.3+	0.2+	1998 10 14	327	0.3−	0.3−	1998 10 21	910	0.4+	0.4+
1998 09 21	691	0.2+	0.3−	1998 10 14	327	0.2−	0.1+	1998 10 22	910	0.2+	0.4+
1998 09 27	691	0.3−	0.0	1998 10 15	910	0.5+	0.0	1998 10 26	910	0.4−	0.3−
1998 09 27	691	0.2−	0.1+	1998 10 15	910	0.6+	0.1+	1998 10 26	910	0.5−	0.1−
1998 09 27	691	0.6−	0.2+	1998 10 15	910	0.6+	0.1+	1998 10 26	910	0.6−	0.1−
1998 09 30	691	0.3−	0.2−	1998 10 15	327	0.3−	0.1−				

1998 SU₄₀ = 1994 PT₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	325.11081		(2000.0)		P		Q
<i>n</i>	0.25944324	ω	197.35875	+0.25414677			-0.96696825
<i>a</i>	2.4346758	Ω	237.92220	+0.89007154			+0.24174513
<i>e</i>	0.0900412	<i>i</i>	1.32142	+0.37839406			+0.08081891
<i>P</i>	3.80	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1994 08 10	809	0.5-	0.3-	1998 09 14	704	0.1+	0.3+	1998 09 26	704	0.8+	1.5-
1994 08 10	809	0.8-	0.9-	1998 09 14	704	0.2-	0.7+	1998 09 26	704	1.6-	0.4+
1994 08 10	809	1.6-	0.8-	1998 09 14	704	1.1+	1.2+	1998 09 26	704	(0.3+	2.2+)
1994 08 10	809	0.6+	0.7+	1998 09 14	704	1.6-	0.5-	1998 09 26	704	(2.4+	0.6+)
1994 08 10	809	0.7+	0.9+	1998 09 18	704	0.7+	1.1-	1998 09 27	704	(2.7+	0.5+)
1994 08 10	809	0.1-	0.4+	1998 09 18	704	0.7-	0.8-	1998 09 27	704	0.3-	1.4+
1994 08 11	809	(2.4+	0)	1998 09 18	704	0.3-	0.5-	1998 09 27	704	0.0	0.7-
1994 08 11	809	0.9+	0.1-	1998 09 18	704	1.4+	0.2-	1998 09 27	704	1.4+	1.2-
1994 08 11	809	0.6+	1.1-	1998 09 18	704	1.5-	0.0	1998 09 27	704	1.0+	0.0
1994 08 11	809	0.4-	0.2+	1998 09 25	691	0.4+	0.3+	1998 09 28	691	0.7-	0.3+
1994 08 11	809	0.1-	0.1-	1998 09 25	691	0.3+	0.2+	1998 09 28	691	0.6-	0.3+
1994 08 11	809	0.6+	1.0+	1998 09 25	691	0.4+	0.3+	1998 09 28	691	0.7-	0.5+
1998 09 14	704	0.6+	0.5+	1998 09 26	704	(3.1+	1.2+)				

1998 SL₄₂ = 1977 RN₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	359.64655		(2000.0)		P		Q
<i>n</i>	0.23498330	ω	61.86694	+0.82526656			-0.56466572
<i>a</i>	2.6008265	Ω	332.50903	+0.51076420			+0.75335943
<i>e</i>	0.0806348	<i>i</i>	1.16265	+0.24094613			+0.33704925
<i>P</i>	4.19	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 09 09	675	0.2+	0.1+	1998 09 26	704	0.4-	0.5+	1998 10 12	691	0.8-	0.4-
1977 09 10	675	0.1-	0.4-	1998 09 26	704	0.4-	1.3+	1998 10 12	691	1.0-	0.6-
1998 09 14	704	0.3-	0.1-	1998 09 27	704	1.0+	0.3-	1998 10 14	704	0.6+	0.2+
1998 09 14	704	0.5-	0.4-	1998 09 27	704	1.1+	0.2+	1998 10 14	704	0.2+	0.5-
1998 09 14	704	0.3+	0.5-	1998 09 27	704	(0.8+	2.6-)	1998 10 14	704	1.4+	0.3+
1998 09 16	699	0.4-	0.4+	1998 09 27	704	(2.2+	1.5-)	1998 10 14	704	0.2+	0.8+
1998 09 16	699	0.3+	0.2-	1998 09 28	691	0.4-	0.1-	1998 10 14	704	0.7+	1.2+
1998 09 16	699	0.3+	0.0	1998 09 28	691	0.3-	0.2+	1998 10 14	699	0.6-	0.6-
1998 09 18	704	0.3+	0.3-	1998 09 28	691	0.3-	0.0	1998 10 14	699	0.1+	0.7-
1998 09 18	704	1.0+	0.1+	1998 09 29	691	0.3+	0.2-	1998 10 14	699	0.6+	0.4-
1998 09 18	704	0.8-	0.1-	1998 09 29	691	0.8-	0.1-	1998 10 15	704	0.1+	0.3-
1998 09 18	704	0.9+	0.0	1998 09 29	691	0.8-	0.2-	1998 10 15	704	0.1+	0.3-
1998 09 18	704	0.5+	0.5+	1998 10 01	691	1.3-	0.4+	1998 10 15	704	0.3-	0.9+
1998 09 26	704	0.9+	0.2+	1998 10 01	691	1.0-	0.4+	1998 10 15	704	0.4+	0.7-
1998 09 26	704	0.8+	0.2+	1998 10 01	691	0.9-	0.1+	1998 10 15	704	0.1+	0.4+
1998 09 26	704	0.2+	0.0	1998 10 12	691	0.6-	0.9-				

1998 SP₄₂ = 1989 AF₂ = 1993 FW₅₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	343.57839		(2000.0)		P		Q
<i>n</i>	0.27969383	ω	71.56566	+0.45531088			-0.89031555
<i>a</i>	2.3156920	Ω	351.34327	+0.80245957			+0.41304057
<i>e</i>	0.1211289	<i>i</i>	2.09353	+0.38568206			+0.19166564
<i>P</i>	3.52	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 01 09	046	0.3+	0.6+	1998 09 25	699	1.1+	0.3+	1998 10 01	691	1.7-	0.3+
1989 01 09	046	0.3-	0.8-	1998 09 26	704	0.8+	0.1-	1998 10 01	691	1.3-	0.0
1993 03 19	809	0.2-	1.1+	1998 09 26	704	0.4+	0.1-	1998 10 01	691	0.9-	0.1-
1993 03 20	809	1.1+	0.8+	1998 09 26	704	0.3+	0.5-	1998 10 12	691	0.8-	0.9-
1998 09 14	704	0.3+	0.5+	1998 09 26	704	0.1-	0.2+	1998 10 12	691	1.0-	0.7-
1998 09 14	704	0.0	0.6+	1998 09 26	704	0.3+	0.1+	1998 10 12	691	1.2-	0.6-
1998 09 14	704	0.2+	0.3+	1998 09 27	704	1.0+	0.1-	1998 10 14	704	0.1-	0.4+

1998 09 16	699	0.1+	0.0	1998 09 27	704	0.3+	0.2+	1998 10 14	704	0.6+	0.7-
1998 09 16	699	0.2+	0.1-	1998 09 27	704	0.8+	0.5+	1998 10 14	704	0.9+	0.8+
1998 09 16	699	0.0	0.0	1998 09 27	704	1.1+	0.6-	1998 10 14	704	0.1+	0.9+
1998 09 18	704	1.5+	0.5-	1998 09 27	704	1.1+	0.6-	1998 10 14	704	0.0	1.4+
1998 09 18	704	0.0	1.8+	1998 09 28	691	0.9-	0.3-	1998 10 15	704	0.2-	0.1+
1998 09 18	704	1.4-	0.2+	1998 09 28	691	0.7-	0.1-	1998 10 15	704	0.9+	0.5+
1998 09 18	704	0.9+	0.3-	1998 09 28	691	0.8-	0.2-	1998 10 15	704	0.2-	0.2+
1998 09 18	704	0.0	0.4-	1998 09 29	691	2.0-	0.2-	1998 10 15	704	0.1+	0.4+
1998 09 25	699	1.5+	0.3+	1998 09 29	691	1.5-	0.3-	1998 10 15	704	0.1-	0.7-
1998 09 25	699	1.3+	0.3+	1998 09 29	691	1.6-	0.3-				

1998 SQ₄₂ = 1994 RF₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	331.28952		(2000.0)		P		Q
<i>n</i>	0.26104849	ω	95.28402	+0.07996806			-0.99672062
<i>a</i>	2.4246846	Ω	350.10372	+0.88365871			+0.07663013
<i>e</i>	0.1509067	<i>i</i>	4.12865	+0.46125089			+0.02599656
<i>P</i>	3.78	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 09 05	809	0.3+	0.4-	1998 09 24	595	0.6-	0.0	1998 09 27	704	1.0+	1.2+
1994 09 05	809	0.7-	0.8-	1998 09 24	595	1.3-	1.5-	1998 09 27	704	0.3-	0.3+
1994 09 05	809	1.1-	0.2-	1998 09 26	704	1.2+	0.5-	1998 09 29	595	0.3-	0.5+
1994 09 06	809	0.1-	0.5+	1998 09 26	704	1.8+	1.6-	1998 09 29	595	0.4-	0.1+
1994 09 06	809	0.9+	0.1+	1998 09 26	704	0.9-	0.1-	1998 10 13	595	0.5-	0.1-
1994 09 06	809	0.7+	0.9+	1998 09 26	704	1.2-	0.6+	1998 10 13	595	0.5+	0.3+
1998 09 23	595	1.6+	0.3-	1998 09 26	704	0.5-	0.6-	1998 10 15	595	0.5+	0.1-
1998 09 23	595	0.5+	0.7+	1998 09 27	704	0.6-	1.3+	1998 10 15	595	0.4-	0.3-

1998 SY₄₂ = 1996 AE₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	127.36495		(2000.0)		P		Q
<i>n</i>	0.21642504	ω	245.12700	-0.14554520			+0.98869898
<i>a</i>	2.7474579	Ω	16.62315	-0.85634766			-0.10770863
<i>e</i>	0.0868495	<i>i</i>	7.21508	-0.49546471			-0.10427455
<i>P</i>	4.55	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 14	691	0.1-	0.2-	1998 09 25	327	0.2+	0.1+	1998 10 13	691	0.2-	0.1-
1996 01 14	691	0.0	0.2-	1998 09 26	704	0.1+	0.7+	1998 10 15	327	1.2+	0.4+
1996 01 14	691	0.3-	0.0	1998 09 26	704	1.1+	0.1+	1998 10 15	327	0.9+	0.6-
1996 01 21	691	0.0	0.0	1998 09 26	704	(2.2+	2.0-)	1998 10 15	327	0.9+	0.0
1996 01 21	691	0.3+	0.3+	1998 09 26	704	1.9+	0.3+	1998 10 18	691	1.1-	0.0
1996 01 21	691	0.2+	0.2+	1998 09 27	704	0.7+	0.5+	1998 10 18	691	1.1-	0.2+
1998 09 20	327	1.6-	0.8-	1998 09 27	704	0.4-	0.7-	1998 10 18	691	0.6-	0.3-
1998 09 20	327	0.8-	0.3+	1998 09 27	704	(0.4+	2.1+)	1998 10 22	691	0.0	0.5+
1998 09 20	327	0.2-	0.2+	1998 09 27	704	0.5+	0.5+	1998 10 22	691	0.1+	0.1+
1998 09 20	327	1.0-	0.5-	1998 09 27	704	0.9-	1.0-	1998 10 22	691	0.1+	0.2+
1998 09 25	327	0.7+	0.3+	1998 10 13	691	0.2-	0.1-				
1998 09 25	327	0.2-	0.1+	1998 10 13	691	0.2-	0.2-				

1998 SC₄₃ = 1992 DO₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	61.84842		(2000.0)		P		Q
<i>n</i>	0.23086437	ω	293.51488	+0.83617375			+0.54694221
<i>a</i>	2.6316700	Ω	33.36908	-0.47223423			+0.75582447
<i>e</i>	0.1346555	<i>i</i>	4.25786	-0.27894137			+0.35997721
<i>P</i>	4.27	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 29	809	0.5+	0.2-	1998 09 24	327	0.9+	0.5-	1998 10 02	327	0.8-	1.1+
1992 03 03	809	0.5-	0.1+	1998 09 24	327	0.8+	0.3-	1998 10 02	327	0.1-	1.2+
1998 09 15	699	0.3+	1.4-	1998 09 26	704	0.6+	0.2+	1998 10 10	699	0.7+	0.4-
1998 09 15	699	0.1+	0.2-	1998 09 26	704	1.3+	1.1+	1998 10 10	699	0.3+	1.1-
1998 09 15	699	0.0	0.6-	1998 09 26	704	1.0+	0.6+	1998 10 10	699	0.0	0.1+

1998 NOV. 10

M.P.C. 33025

1998 09 23	327	0.7−	0.2+	1998 09 26	704	0.0	0.7+	1998 10 15	327	0.1−	0.4−
1998 09 23	327	0.6−	0.2+	1998 09 26	704	0.5−	0.9+	1998 10 15	327	0.1+	0.3−
1998 09 23	327	0.1−	0.1−	1998 09 27	704	0.0	0.5+	1998 10 15	327	0.1−	0.6−
1998 09 23	327	0.1−	0.3+	1998 09 27	704	0.4+	0.3+	1998 10 19	699	0.2−	0.2−
1998 09 23	327	0.3−	0.1−	1998 09 27	704	0.3+	0.5+	1998 10 19	699	0.3−	0.1+
1998 09 23	327	0.5−	0.2+	1998 09 27	704	0.5−	1.8−	1998 10 19	699	0.5−	0.4+
1998 09 23	327	0.1−	0.0	1998 09 27	704	0.4−	1.5−				
1998 09 24	327	0.4+	0.3+	1998 10 02	327	1.3−	0.3+				

1998 SF₄₃ = 1991 RG₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28702344	<i>ω</i>	287.76734	+0.41801760	+0.90834613		
<i>a</i>	2.2760989	<i>Ω</i>	6.98392	−0.78778668	+0.36958011		
<i>e</i>	0.1953278	<i>i</i>	6.13009	−0.45238638	+0.19574944		
<i>P</i>	3.43	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 15	675	0.5−	0.2+	1998 09 26	704	1.0−	0.8+	1998 10 14	704	(4.2−	1.1+)
1991 09 15	675	0.2+	0.0	1998 09 26	704	0.0	0.3+	1998 10 15	120	0.2+	0.1+
1991 09 17	675	0.6−	0.3−	1998 09 26	704	0.5−	0.1−	1998 10 15	120	0.5+	0.3+
1991 09 17	675	1.0+	0.0	1998 09 27	704	0.3−	0.4−	1998 10 17	327	0.1−	0.2+
1998 09 15	699	0.4−	0.6+	1998 09 27	704	0.9−	0.1+	1998 10 17	327	0.1−	0.0
1998 09 15	699	0.7+	0.0	1998 09 27	704	0.2−	0.0	1998 10 17	327	0.0	0.2+
1998 09 15	699	0.7+	0.5+	1998 09 27	704	0.1−	1.2−	1998 10 19	327	0.1−	0.3−
1998 09 23	327	0.8+	0.4+	1998 09 27	704	1.8−	1.4−	1998 10 19	327	0.0	0.3−
1998 09 23	327	0.6+	0.1+	1998 10 01	327	1.0−	0.4−	1998 10 19	327	0.0	0.1−
1998 09 23	327	0.9+	0.8+	1998 10 01	327	0.6−	0.7−	1998 10 20	120	0.4+	0.3−
1998 09 25	327	1.0+	0.2−	1998 10 01	327	1.2−	0.1−	1998 10 20	120	1.6+	0.9−
1998 09 25	327	0.9+	0.2+	1998 10 14	704	0.5+	0.6−	1998 10 27	120	(2.0+	0.8−)
1998 09 25	327	0.9+	0.1+	1998 10 14	704	0.9+	0.5+	1998 10 27	120	0.3+	0.2−
1998 09 26	704	0.8−	0.4+	1998 10 14	704	(0.4+	2.4+)	1998 10 27	120	0.0	1.1+
1998 09 26	704	0.2−	1.1−	1998 10 14	704	1.7−	1.7+				

1998 SG₄₃ = 1997 JT₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27799583	<i>ω</i>	288.75100	+0.97339941	−0.22039191		
<i>a</i>	2.3251119	<i>Ω</i>	84.01831	+0.22668226	+0.88667916		
<i>e</i>	0.0295521	<i>i</i>	3.60977	+0.03329772	+0.40648183		
<i>P</i>	3.55	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 05 03	809	0.8−	0.7+	1998 09 17	699	0.1+	0.0	1998 09 26	704	0.3+	0.5−
1997 05 03	809	0.4+	0.7+	1998 09 17	699	0.2+	0.2−	1998 09 26	704	0.5+	0.6−
1997 05 03	809	0.9+	0.5−	1998 09 17	699	0.2+	0.2−	1998 09 26	704	0.5+	0.2−
1997 05 04	809	0.3−	0.7+	1998 09 18	704	0.1+	0.7−	1998 09 26	704	0.4+	0.7−
1997 05 04	809	1.5+	0.2+	1998 09 18	704	0.4−	0.5−	1998 09 26	704	0.6+	0.0
1997 05 04	809	(0.8+	3.2+)	1998 09 18	704	0.0	0.1−	1998 09 27	704	0.6−	0.3+
1997 05 07	704	0.3−	0.3−	1998 09 18	704	0.2−	0.1+	1998 09 27	704	0.3+	1.0+
1997 05 07	704	0.3−	0.2−	1998 09 18	704	0.0	0.9+	1998 09 27	704	0.1−	1.2+
1997 05 07	704	0.2−	0.4−	1998 09 23	327	1.9−	0.1+	1998 09 27	704	(1.3+	2.1+)
1997 05 07	704	0.3−	0.4−	1998 09 23	327	1.6−	0.1+	1998 10 17	699	0.2+	0.7−
1997 05 07	704	0.3−	0.2−	1998 09 23	327	1.1−	0.3+	1998 10 17	699	0.2−	0.7+
1998 09 14	704	0.2−	0.4−	1998 09 25	327	1.3+	0.3+	1998 10 17	699	0.7−	0.4+
1998 09 14	704	0.5−	0.8−	1998 09 25	327	1.5+	0.2+				
1998 09 14	704	(3.6−	0.4+)	1998 09 25	327	1.4+	0.2+				

1998 SR₄₃ = 1976 JQ₉ = 1989 YJ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19525070	<i>ω</i>	69.12569	+0.28712734	−0.95788977		
<i>a</i>	2.9426660	<i>Ω</i>	4.19020	+0.86699843	+0.25888178		
<i>e</i>	0.0552079	<i>i</i>	1.76594	+0.40727339	+0.12420709		
<i>P</i>	5.05	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1976 05 02	809	0.1−	0.4−	1998 09 27	704	0.1−	0.9+	1998 10 14	691	1.4−	0.5−
1989 12 30	413	1.4−	0.3−	1998 09 27	704	0.0	0.8+	1998 10 14	691	1.5−	0.1−
1989 12 30	413	0.5+	1.6+	1998 09 27	704	0.2−	0.5−	1998 10 14	691	1.5−	0.2−
1989 12 31	413	0.7+	1.9−	1998 09 29	327	1.1+	0.8−	1998 10 14	422	0.3−	0.1+
1998 09 15	699	0.3−	1.4−	1998 09 29	327	1.7+	1.2−	1998 10 14	422	0.2−	0.1+
1998 09 15	699	1.3+	0.1+	1998 09 29	327	0.5+	0.4+	1998 10 14	422	0.3−	0.2+
1998 09 15	699	0.2−	1.4−	1998 09 29	327	1.3+	0.2+	1998 10 14	470	0.5−	0.5+
1998 09 25	327	0.1+	0.4+	1998 09 29	327	1.5+	0.3+	1998 10 14	470	0.7−	0.3+
1998 09 25	327	0.5+	0.6+	1998 09 29	327	1.4+	0.3+	1998 10 14	470	0.3−	0.0
1998 09 25	327	0.2+	0.5+	1998 09 30	327	0.6+	0.0	1998 10 15	422	0.3−	0.2−
1998 09 26	704	0.2−	0.8−	1998 09 30	327	0.8+	0.3+	1998 10 15	422	0.2−	0.3−
1998 09 26	704	0.5−	0.1−	1998 09 30	327	0.8+	0.3+	1998 10 15	422	0.3−	0.6−
1998 09 26	704	0.2+	0.7+	1998 10 02	327	0.6−	0.1−	1998 10 21	402	0.1−	0.4+
1998 09 26	704	0.5−	0.9−	1998 10 02	327	0.7−	0.3+	1998 10 21	402	0.1+	0.4+
1998 09 26	704	0.2−	0.4−	1998 10 02	327	0.6−	0.3+	1998 10 21	402	0.2+	0.4+
1998 09 27	704	0.3−	0.1−	1998 10 13	557	0.2−	0.3−				
1998 09 27	704	0.4+	0.7+	1998 10 13	557	0.2−	0.0				

1998 SW₄₃ = 1990 TW₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.12509685	<i>ω</i>	137.81864	+0.94524339	−0.31644101		
<i>a</i>	3.9594829	<i>Ω</i>	240.79318	+0.26963819	+0.89508157		
<i>e</i>	0.1773154	<i>i</i>	5.25043	+0.18387546	+0.31415612		
<i>P</i>	7.88	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 09	413	0.9−	1.0−	1998 09 14	704	(0.5+	2.4+)	1998 09 27	704	0.8+	0.3−
1990 10 09	413	0.9+	1.1+	1998 09 18	704	0.1+	0.6−	1998 09 27	704	0.1+	0.2+
1990 10 11	413	0.1−	0.1+	1998 09 18	704	0.1+	1.1−	1998 09 27	704	0.1+	0.1−
1998 08 27	699	0.7−	0.0	1998 09 18	704	1.2−	1.0+	1998 09 27	704	0.4+	0.3+
1998 08 27	699	0.7+	1.0−	1998 09 18	704	0.4−	0.2+	1998 09 29	327	1.5−	0.6−
1998 08 27	699	0.2+	0.1+	1998 09 18	704	1.1−	0.8−	1998 09 29	327	1.6−	0.2−
1998 09 14	704	0.5+	0.1−	1998 09 26	704	0.8+	0.7−	1998 09 29	327	1.7−	0.2−
1998 09 14	704	0.1+	0.5+	1998 09 26	704	0.2−	0.8−	1998 10 01	327	0.0	0.1−
1998 09 14	704	0.5+	0.3+	1998 09 26	704	0.6+	0.3−	1998 10 01	327	0.4+	0.2−
1998 09 14	704	1.1−	0.3+	1998 09 26	704	0.3−	0.4+	1998 10 01	327	0.2+	0.4−
1998 09 14	704	0.2+	0.6−	1998 09 26	704	0.5−	0.1+	1998 10 15	704	0.5+	0.5−
1998 09 14	704	0.3−	1.4+	1998 09 26	327	1.1+	0.0	1998 10 15	704	0.5+	0.4+
1998 09 14	704	0.1−	0.5+	1998 09 26	327	1.0+	0.1−	1998 10 15	704	0.4−	0.7+
1998 09 14	704	0.4+	1.8+	1998 09 26	327	1.0+	0.3+	1998 10 15	704	0.3−	0.7+
1998 09 14	704	0.9+	0.1−	1998 09 27	704	0.5+	0.5−	1998 10 15	704	0.1−	0.1−

1998 SM₄₆ = 1926 RS = 1976 SU₄ = 1990 EV₇ = 1992 PK₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18010293	<i>ω</i>	25.24247	+0.81933472	+0.57330144		
<i>a</i>	3.1054333	<i>Ω</i>	299.77618	−0.52678706	+0.75006228		
<i>e</i>	0.1751892	<i>i</i>	0.26464	−0.22624325	+0.32974540		
<i>P</i>	5.47	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc (or two decimals in units of degrees)

1926 09 05	672(0.35+ 0.11+)	Y	1998 09 20	809	0.5− 1.6+	1998 09 30	691	0.9− 0.5−
1926 09 06	672(0.35+ 0.11+)	Y	1998 09 21	809	(2.7+ 3.8+)	1998 09 30	691	0.7− 0.5−
1976 09 24	095	0.3− 0.8+	1998 09 21	809	(2.3+ 3.7+)	1998 09 30	691	0.7− 0.3−
1990 03 03	809	(0.8+ 3.0−)	1998 09 21	809	(1.8+ 4.2+)	1998 10 09	120	0.3+ 0.2−
1990 03 03	809	0.1+ 1.3−	1998 09 24	120	0.2+ 0.6−	1998 10 09	120	0.8+ 0.2+
1990 03 03	809	0.5− 0.3+	1998 09 25	120	1.0+ 0.6+	1998 10 15	120	0.6− 0.7−
1992 08 02	675	0.1+ 0.3+	1998 09 25	120	0.8+ 0.4+	1998 10 15	120	0.4− 0.7−
1992 08 02	675	0.2+ 0.6+	1998 09 25	691	0.0 0.2−	1998 10 27	120	0.4+ 0.1+
1992 08 06	675	0.1+ 0.6−	1998 09 25	691	0.2− 0.1−	1998 10 27	120	0.4+ 0.1+
1992 08 06	675	0.1+ 1.3−	1998 09 25	691	0.1− 0.2−	1998 10 27	120	0.4+ 0.2+
1998 09 20	809	(0.1+ 2.1+)	1998 09 30	120	0.5+ 0.4−	1998 11 06	120	0.2− 0.6−
1998 09 20	809	1.2− 1.5+	1998 09 30	120	0.4+ 0.1+	1998 11 06	120	0.7+ 0.3−

1998 SE₄₇ = 1993 VL₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	329.59498	(2000.0)		P		Q					
n	0.18952223	ω	53.51149	+0.05263495	−0.99706588						
a	3.0016676	Ω	33.60042	+0.88109069	+0.02017262						
e	0.0674998	i	5.76422	+0.47000932	+0.07384239						
P	5.20 <th>H</th> <td>13.6<th>G</th><td>0.15<th>U</th><td>5</td></td></td>	H	13.6 <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											
1993 11 11	399	1.1−	1.4−	1998 09 29	704	(2.4+	0.6−)	1998 10 12	691	1.1−	0.3−
1993 11 11	399	0.7+	1.3+	1998 09 29	704	(0.7−	2.1+)	1998 10 14	699	0.2−	0.6+
1993 11 16	399	0.3+	0.1+	1998 09 29	704	1.5+	1.0−	1998 10 14	699	0.8+	0.9+
1993 11 16	399	0.0	0.0	1998 09 30	691	0.5−	0.4−	1998 10 14	699	0.1+	0.5+
1998 09 25	691	0.1−	0.1−	1998 09 30	691	0.7−	0.1−	1998 10 20	699	0.5+	0.4+
1998 09 25	691	0.2−	0.1+	1998 09 30	691	0.4−	0.1−	1998 10 20	699	0.4+	0.3−
1998 09 25	691	0.3−	0.1−	1998 10 12	691	1.2−	0.5−	1998 10 20	699	1.3+	0.2−
1998 09 29	704	1.2+	1.0+	1998 10 12	691	1.1−	0.4−				

1998 SP₄₈ = 1992 DU₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	224.19582		(2000.0)		P		Q				
<i>n</i>	0.24333024	ω	323.70354		−0.98641554		+0.15626665				
<i>a</i>	2.5410039	Ω	225.37110		−0.12891613		−0.92749692				
<i>e</i>	0.0366746	<i>i</i>	4.08097		−0.10180871		−0.33960299				
<i>P</i>	4.05	<i>H</i>	15.0	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1992 02 29	809	0.6+	0.3−	1998 09 30	691	0.0	0.4−	1998 10 17	327	0.4+	0.5+
1992 03 03	809	0.1−	0.8+	1998 09 30	691	0.1+	0.4−	1998 10 17	327	0.2+	0.1−
1992 03 05	809	0.1−	0.3−	1998 09 30	691	0.3+	0.3−	1998 10 18	327	0.4+	0.2+
1992 03 08	809	0.4−	0.2−	1998 10 01	691	0.9−	0.4−	1998 10 18	327	0.2+	0.2+
1998 09 27	691	0.5+	0.2+	1998 10 01	691	1.1−	0.2−	1998 10 18	327	0.4+	0.2+
1998 09 27	691	0.4+	0.3+	1998 10 01	691	1.1−	0.5−				
1998 09 27	691	0.8−	0.3+	1998 10 17	327	0.8+	0.3+				

1998 SD₄₉ = 1995 YL₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	26.96724		(2000.0)			P		Q			
<i>n</i>	0.26233710	ω	193.91437			+0.99441650		−0.10529154			
<i>a</i>	2.4167380	Ω	172.11949			+0.10106373		+0.93105402			
<i>e</i>	0.2060000	<i>i</i>	2.94211			+0.03036371		+0.34935956			
<i>P</i>	3.76	<i>H</i>	15.9			<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc											
1995 12 19	691	0.4−	0.0	1998 09 18	704	1.0+	1.1−	1998 10 13	704	0.8+	0.9−
1995 12 19	691	0.6−	0.0	1998 09 18	704	0.5−	0.1+	1998 10 13	704	0.3+	0.5+
1995 12 19	691	0.2−	0.3−	1998 09 24	120	1.0+	0.7+	1998 10 13	704	1.1−	0.1+
1995 12 26	691	0.5+	0.2+	1998 09 24	120	0.0	0.4+	1998 10 13	704	(3.8−	0.2+)
1995 12 26	691	0.2+	0.0	1998 09 24	120	0.4+	0.3+	1998 10 14	704	1.0−	0.6−
1995 12 26	691	0.4+	0.2−	1998 09 26	704	0.0	0.3−	1998 10 14	704	1.5−	0.0
1998 09 14	704	0.4+	0.5−	1998 09 26	704	0.3+	0.3+	1998 10 14	704	0.6−	1.1+
1998 09 14	704	0.4−	0.3+	1998 09 26	704	0.4−	0.0	1998 10 14	704	0.2+	0.8+
1998 09 14	704	0.2+	0.2−	1998 09 26	704	0.4−	0.2−	1998 10 15	704	1.1+	0.1+
1998 09 14	704	0.9+	0.1−	1998 09 26	704	1.2−	0.4+	1998 10 15	704	0.6+	0.1+
1998 09 14	704	1.5−	0.9−	1998 09 27	704	0.1+	0.1+	1998 10 15	704	0.1−	1.6−
1998 09 16	699	0.3+	0.1−	1998 09 27	704	0.5−	1.2+	1998 10 15	704	1.0+	1.6−
1998 09 16	699	0.2−	0.1−	1998 09 27	704	1.3−	1.1+	1998 10 15	704	(3.3−	1.9−)
1998 09 16	699	0.3+	0.4+	1998 09 27	704	0.2+	1.2+	1998 10 15	704	0.4+	0.5−
1998 09 18	704	0.1−	0.9−	1998 09 27	704	0.7−	1.1+	1998 10 15	704	0.6−	0.1+
1998 09 18	704	0.4+	0.5−	1998 09 29	120	1.3+	0.5−	1998 10 15	704	1.8+	0.5+
1998 09 18	704	0.3+	0.9−	1998 09 29	120	0.4−	0.6−	1998 10 15	704	0.5−	1.0+

1998 SG₄₉ = 1989 WR₁ = 1996 HD₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	333.90756		(2000.0)		P		Q		
n	0.21145147	ω	234.25069		+0.04336727		−0.99599131		
a	2.7903729	Ω	213.52296		+0.95626106		+0.06405640		
e	0.1224503	i	8.14386		+0.28928198		−0.06243465		
P	4.66	H	12.5		G	0.15	U	4	
Residuals in seconds of arc									
1989 11 24	095	(1.3+ 4.1+)	1996 04 20	809	(0.7− 2.8+)	1998 10 15	120	0.1− 0.4+	
1989 11 25	403	0.1− 1.4+	1996 04 20	809	0.0 1.5+	1998 10 16	120	0.2+ 0.7+	
1989 11 25	403	0.6− 0.7+	1996 04 20	809	0.3+ 1.8+	1998 10 16	120	0.2− 0.2−	
1989 11 25	402	2.0+ 1.6−	1998 09 24	120	0.9− 0.3−	1998 10 21	120	0.3+ 0.5+	
1989 11 25	402	0.2+ 0.2+	1998 09 25	120	0.2− 0.2+	1998 10 21	120	0.3+ 0.7+	
1989 11 26	402	(3.8+ 6.5+)	1998 09 25	120	0.3+ 0.2+	1998 10 21	120	0.3− 0.4+	
1989 12 01	403	0.5− 0.3−	1998 09 30	120	0.0 0.9−	1998 10 23	120	0.2− 0.8+	
1989 12 01	403	1.0− 0.9+	1998 09 30	120	0.1− 0.9−	1998 10 23	120	0.4− 0.6+	
1996 04 18	809	0.2+ 1.2+	1998 10 09	120	0.5+ 0.2+	1998 10 24	120	0.2− 0.9+	
1996 04 18	809	0.2− 1.2+	1998 10 09	120	0.1− 0.3+	1998 10 24	120	0.2− 0.6+	
1996 04 18	809	0.6+ 0.8+	1998 10 15	120	0.1+ 0.4+				

1998 SH₄₉ = 1990 UX₃

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	80.17040		(2000.0)		P		Q				
n	0.24094896	ω	102.97136		+0.56137794		+0.82349250				
a	2.5577181	Ω	201.79966		−0.81872593		+0.53822694				
e	0.1886339	i	12.74776		−0.12059292		+0.17936517				
P	4.09	H	14.5	G	0.15	U	4				
Residuals in seconds of arc											
1990 10 16	809	0.4+	0.7−	1998 09 26	704	0.5+	0.8+	1998 10 01	012	0.7+	0.4−
1990 10 16	809	0.4−	1.2+	1998 09 26	704	0.3+	0.1+	1998 10 11	699	0.2−	0.2−
1990 10 16	809	0.3+	0.5+	1998 09 26	704	0.6−	0.3+	1998 10 11	699	0.8−	0.1+
1990 10 20	809	0.2−	0.0	1998 09 26	704	0.4−	0.6+	1998 10 11	699	0.2−	0.0
1990 10 20	809	0.7−	0.4+	1998 09 26	704	0.0	0.0	1998 10 12	012	0.2−	0.8−
1990 10 20	809	0.5+	1.4−	1998 09 27	704	0.1+	0.3−	1998 10 12	012	0.2−	0.3−
1998 09 14	699	0.0	0.4−	1998 09 27	704	0.5−	0.4+	1998 10 12	012	0.1−	0.4−
1998 09 14	699	0.5+	0.4−	1998 09 27	704	0.7+	1.2+	1998 10 15	704	0.1+	0.2−
1998 09 14	699	0.4−	0.1+	1998 09 27	704	0.6+	0.9+	1998 10 15	704	0.7+	0.7+
1998 09 23	012	0.1−	0.3−	1998 09 27	704	(2.3+	0.6+)	1998 10 15	704	0.1+	0.7+
1998 09 23	012	0.1−	1.1−	1998 10 01	012	0.2+	0.3−				
1998 09 23	012	0.4−	0.3−	1998 10 01	012	0.4−	0.5−				

1998 SO₄₉ = 1988 RA₇ = 1991 EG₅ = 1993 SK₁₃

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	104.61267		(2000.0)			P		Q			
<i>n</i>	0.20659718	ω	115.49742			+0.43548870		+0.90019419			
<i>a</i>	2.8339127	Ω	180.31911			−0.83569694		+0.40422194			
<i>e</i>	0.0413394	<i>i</i>	1.61430			−0.33460457		+0.16203411			
<i>P</i>	4.77	<i>H</i>	13.5		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1988 09 09	809	0.9+	1.6+	1998 09 18	809	0.5−	1.2−	1998 09 24	621	0.0	0.2+
1988 09 09	809	0.7+	1.0+	1998 09 18	809	(1.2−	2.2−)	1998 09 26	704	0.1−	0.7−
1988 09 09	809	0.6+	0.5+	1998 09 18	809	(2.1−	2.2−)	1998 09 26	704	0.1−	0.8−
1991 03 14	809	1.7−	0.1−	1998 09 20	809	0.6+	1.1−	1998 09 26	704	0.2+	0.8−
1991 03 14	809	0.3−	0.7−	1998 09 20	809	0.8−	1.7−	1998 09 26	704	0.2−	0.1+
1991 03 14	809	1.0+	1.2−	1998 09 20	809	1.2−	1.9−	1998 09 26	704	0.6+	0.1+
1993 09 16	809	1.7−	1.5−	1998 09 22	621	0.4+	0.0	1998 09 27	704	0.7−	0.8+
1993 09 16	809	0.1+	1.9−	1998 09 22	621	0.6+	0.1−	1998 09 27	704	0.7+	1.1+
1993 09 16	809	(0.3+	2.1−)	1998 09 23	621	0.6+	0.1+	1998 09 27	704	0.6−	0.9+
1993 09 23	809	0.0	1.8−	1998 09 23	621	0.3+	0.0	1998 09 27	704	0.3−	1.7+
1993 09 23	809	0.3−	2.0−	1998 09 23	621	0.2−	0.4+	1998 09 27	704	0.6−	0.9+

1998 NOV. 10

M.P.C. 33027

1993 09 23	809	1.2−	1.8−	1998 09 23	621	0.4+	0.3+	1998 10 17	699	0.6+	1.1+
1998 09 16	411	1.0+	0.7+	1998 09 23	621	0.1−	0.5+	1998 10 17	699	0.8+	1.3+
1998 09 16	411	0.2+	1.3+	1998 09 24	621	0.0	0.1−	1998 10 17	699	0.4+	1.3+

1998 SL₅₀ = 4787 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	354.96677		(2000.0)	P		Q	
<i>n</i>	0.26028006	ω	53.02453	+0.35362063	−0.93487880		
<i>a</i>	2.4294546	Ω	16.34970	+0.81955622	+0.29374469		
<i>e</i>	0.1633927	<i>i</i>	6.29961	+0.45086590	+0.19928796		
<i>P</i>	3.79	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.3−	0.7+	1960 09 28	675	0.3+	0.9−	1998 10 21	910	0.8+	0.1−
1960 09 24	675	0.3−	0.5−	1998 09 25	691	0.6−	0.5+	1998 10 21	910	0.8+	0.1−
1960 09 26	675	0.4−	0.1+	1998 09 25	691	0.0	0.6+	1998 10 22	910	0.8+	0.0
1960 09 26	675	0.3+	0.8−	1998 09 25	691	0.2−	0.3+	1998 10 26	910	0.2+	0.3−
1960 09 27	675	0.5+	0.1+	1998 10 01	691	1.1−	0.0	1998 10 26	910	0.0	0.1+
1960 09 27	675	0.3+	0.9+	1998 10 01	691	0.7−	0.0	1998 10 26	910	0.1−	0.2−
1960 09 28	675	0.0	0.4−	1998 10 01	691	0.5−	0.1+				

1998 ST₅₃ = 1986 TM₄ = 1990 SC

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	354.31801		(2000.0)	P		Q	
<i>n</i>	0.24408969	ω	78.95746	+0.58575504	−0.80885241		
<i>a</i>	2.5357305	Ω	334.96791	+0.68800979	+0.52979934		
<i>e</i>	0.2385611	<i>i</i>	6.98643	+0.42840818	+0.25508906		
<i>P</i>	4.04	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1986 10 09	033	0.1−	0.1+	1990 09 20	372	2.3−	1.2+	1998 09 18	704	0.8−	0.2−
1986 10 10	033	0.4−	0.2+	1990 09 21	372	2.4−	0.4+	1998 09 25	699	0.1+	0.3+
1990 09 16	675	1.0+	0.6−	1990 09 21	372	1.7−	0.1+	1998 09 25	699	0.4−	0.9+
1990 09 16	675	0.9+	0.2−	1998 09 14	704	0.2+	0.5+	1998 09 25	699	1.4−	0.0
1990 09 17	675	1.2+	0.5−	1998 09 14	704	0.0	0.1+	1998 09 26	704	0.9−	0.2−
1990 09 17	675	1.4+	1.1−	1998 09 14	704	1.8+	1.4+	1998 09 26	704	0.5−	0.3+
1990 09 18	675	0.3−	0.8−	1998 09 14	704	0.3−	0.5−	1998 09 26	704	0.9−	0.4+
1990 09 18	675	1.0+	0.5+	1998 09 16	699	0.8+	0.6+	1998 09 26	704	0.8−	0.3+
1990 09 18	675	0.1−	2.0−	1998 09 16	699	0.3+	0.1−	1998 09 26	704	0.2−	0.9+
1990 09 18	675	0.9+	0.2−	1998 09 16	699	1.7+	0.5+	1998 09 27	704	1.3+	0.3−
1990 09 19	372	1.3+	0.8+	1998 09 18	704	0.2−	0.2−	1998 09 27	704	0.2−	0.0
1990 09 20	675	1.0+	0.1+	1998 09 18	704	0.4+	1.1−	1998 09 27	704	0.1−	0.2−
1990 09 20	675	0.6+	0.4−	1998 09 18	704	0.9−	0.3−	1998 09 27	704	0.2+	0.7−
1990 09 20	372	0.7−	0.5+	1998 09 18	704	0.1−	0.5−				

1998 SV₅₃ = 1997 KT

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	279.47111		(2000.0)	P		Q	
<i>n</i>	0.17297742	ω	261.50302	−0.28701568	−0.95679714		
<i>a</i>	3.1901402	Ω	205.32629	+0.91608447	−0.25996913		
<i>e</i>	0.0972185	<i>i</i>	6.23905	+0.28002007	−0.13021246		
<i>P</i>	5.70	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 31	327	0.5+	0.2−	1998 09 14	704	0.6+	1.1−	1998 09 18	704	0.4−	0.7+
1997 05 31	327	0.5+	0.1+	1998 09 14	704	1.6−	1.8−	1998 09 18	704	1.7−	1.8+
1997 05 31	327	0.3−	0.2+	1998 09 14	704	0.5+	0.2−	1998 09 25	699	0.6−	0.8+
1997 06 01	327	0.6+	0.4+	1998 09 14	704	0.1−	0.3−	1998 09 25	699	0.6−	1.8+
1997 06 01	327	0.3−	0.0	1998 09 16	699	0.4−	0.1+	1998 09 25	699	0.5+	0.0
1997 06 01	327	0.6−	0.3−	1998 09 16	699	0.3−	0.1+	1998 10 11	699	1.3+	1.3−
1997 06 01	327	0.4−	0.1−	1998 09 16	699	0.7+	0.0	1998 10 11	699	0.2−	0.4−
1998 08 30	699	0.5+	0.8−	1998 09 18	704	0.1−	0.2+	1998 10 11	699	0.4+	0.5−
1998 08 30	699	0.3+	0.1−	1998 09 18	704	0.6+	0.4+				
1998 08 30	699	0.8+	0.3−	1998 09 18	704	0.0	0.6+				

1998 SW₅₃ = 1991 GV₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	101.65304		(2000.0)	P		Q	
<i>n</i>	0.31454419	ω	14.38254	+0.26391499	+0.96347628		
<i>a</i>	2.1413202	Ω	270.93518	−0.88938072	+0.22485703		
<i>e</i>	0.0691861	<i>i</i>	2.60321	−0.37329721	+0.14543994		
<i>P</i>	3.13	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 04 08	809	1.0−	0.9+	1998 09 14	704	0.2+	0.4−	1998 09 18	704	0.1−	0.2+
1991 04 08	809	0.4−	0.9+	1998 09 14	704	0.0	1.0−	1998 09 18	704	0.6−	0.2+
1991 04 08	809	2.0−	0.7−	1998 09 14	704	0.6+	0.8−	1998 09 18	704	1.1−	1.3+
1991 04 10	809	1.4+	0.9−	1998 09 14	704	0.8+	0.6−	1998 09 25	699	0.2−	0.9−
1991 04 10	809	1.0+	0.5−	1998 09 16	699	0.3+	0.5+	1998 09 25	699	0.7+	1.7+
1991 04 10	809	0.9+	1.3−	1998 09 16	699	0.3+	0.1+	1998 09 25	699	0.1−	0.1+
1991 04 19	809	1.1+	0.5+	1998 09 16	699	0.4+	0.0	1998 09 25	699	0.3−	0.1−
1991 04 19	809	0.2+	0.7+	1998 09 18	704	1.2−	0.2+	1998 09 25	699	0.9+	1.2−
1991 04 19	809	1.1−	0.4+	1998 09 18	704	0.2−	0.6−	1998 09 25	699	0.5−	1.3+

1998 SY₅₃ = 1997 GL₇ = 1997 GC₂₄

Id. A. Doppler

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	34.78968		(2000.0)	P		Q	
<i>n</i>	0.25784230	ω	159.46790	+0.99575424	+0.08043542		
<i>a</i>	2.4447434	Ω	196.11406	−0.08912946	+0.96402676		
<i>e</i>	0.0993183	<i>i</i>	9.28092	+0.02300943	+0.25334277		
<i>P</i>	3.82	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 02	704	0.4+	0.1+	1998 09 14	704	0.3+	1.5+	1998 09 25	699	0.2+	0.7+
1997 04 02	704	0.2+	0.5+	1998 09 14	704	0.1+	0.3+	1998 09 26	704	0.0	0.5−
1997 04 06	704	1.0−	0.3+	1998 09 14	704	0.7+	0.9+	1998 09 26	704	(0.9+	2.1−)
1997 04 06	704	0.4−	0.4−	1998 09 16	699	0.5−	0.3−	1998 09 26	704	(2.8−	2.9−)
1997 04 08	704	0.0	0.2+	1998 09 16	699	0.3+	0.2+	1998 09 26	704	0.4+	0.5−
1997 04 08	704	0.7+	0.4−	1998 09 16	699	0.1+	0.4−	1998 09 26	704	(0.9−	3.1+)
1997 04 08	704	0.4−	0.2−	1998 09 18	704	0.1−	0.4−	1998 09 27	704	(2.2−	1.5+)
1997 04 08	704	0.6+	0.1+	1998 09 18	704	0.3−	0.8−	1998 09 27	704	1.0−	0.1+
1998 08 27	699	0.1+	0.2+	1998 09 18	704	0.0	0.2+	1998 09 27	704	0.2+	0.2+
1998 08 27	699	0.0	0.7−	1998 09 18	704	0.6+	0.2−	1998 09 27	704	0.3−	0.6−
1998 08 27	699	0.1−	1.4−	1998 09 18	704	0.6+	0.2+	1998 10 14	699	0.0	0.4−
1998 09 14	704	0.6−	0.4+	1998 09 25	699	0.1−	0.1−	1998 10 14	699	0.3−	0.8+
1998 09 14	704	0.5−	0.7+	1998 09 25	699	0.2−	0.5+	1998 10 14	699	0.6+	0.6−

1998 SB₅₄ = 1997 HT₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	10.21916		(2000.0)	P		Q	
<i>n</i>	0.28426718	ω	165.50954	+0.83801897	−0.54444761		
<i>a</i>	2.2907880	Ω	227.53575	+0.49562353	+0.78718305		
<i>e</i>	0.1396056	<i>i</i>	2.80256	+0.22821376	+0.28968887		
<i>P</i>	3.47	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 30	704	0.3+	0.7−	1998 09 18	704	0.1−	0.8−	1998 10 14	699	0.7+	0.0
1997 04 30	704	0.5+	0.3+	1998 09 18	704	0.9+	0.6−	1998 10 14	699	0.9−	0.1+
1997 04 30	704	1.0−	0.6+	1998 09 18	704	0.1+	0.5−	1998 10 14	699	0.1+	0.3−
1997 04 30	704	0.5−	0.2+	1998 09 18	704	0.4−	0.6+	1998 10 14	327	0.2+	0.7−
1997 04 30	704	0.6−	0.5+	1998 09 25	699	0.1−	0.3+	1998 10 14	327	0.3+	0.4−
1997 05 01	704	1.1+	1.6+	1998 09 25	699	0.2−	0.8+	1998 10 14	327	0.2+	0.6−
1997 05 01	704	1.0+	0.4+	1998 09 25	699	0.7−	0.8+	1998 10 15	704	0.2+	1.3+
1997 05 01	704	0.2+	0.8−	1998 09 26	704	0.1+	0.4+	1998 10 15	704	0.3+	0.0
1997 05 01	704	0.2−	0.5−	1998 09 26	704	0.6−	0.8+	1998 10 15	704	0.7+	1.6+
1997 05 01	704	0.2+	0.5+	1998 09 26	704	0.8+	0.2−	1998 10 15	704	0.6+	1.2+
1997 05 05	704	0.1+	0.9−	1998 09 26	704	0.8−	0.8+	1998 10 15	704	1.2−	0.3−
1997 05 05	704	0.0	0.1+	1998 09 26	704	0.5−	0.1−	1998 10 17	327	0.0	0.7−
1997 05 05	704	0.4−	0.6−	1998 09 27	704	0.4+	0.3+	1998 10 17	327	0.1−	0.6−

M.P.C. 33028

1997 05 05	704	0.7−	0.1−	1998 09 27	704	0.8+	0.7+	1998 10 17	327	0.3−	0.5−
1997 05 05	704	(2.8−	1.0−)	1998 09 27	704	0.0	0.6+	1998 10 18	327	0.0	0.7−
1998 09 14	704	0.2+	0.5−	1998 09 27	704	0.2−	0.9−	1998 10 18	327	0.1−	1.4−
1998 09 14	704	0.3−	0.6−	1998 09 27	704	0.1+	1.2+	1998 10 18	327	0.3+	0.5−
1998 09 14	704	0.2−	1.6−	1998 10 14	704	0.1−	0.8+	1998 10 20	327	0.1+	0.4−
1998 09 16	699	0.5+	0.3−	1998 10 14	704	0.5+	0.7+	1998 10 20	327	0.1−	0.2−
1998 09 16	699	0.8+	0.4−	1998 10 14	704	1.5−	0.1+	1998 10 20	327	0.2−	0.1−
1998 09 16	699	0.5+	0.3−	1998 10 14	704	0.4+	0.8+				
1998 09 18	704	0.8−	1.1−	1998 10 14	704	0.5−	1.2+				

1998 SH₅₄ = 1978 EV₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	280.82338		(2000.0)	P		Q	
<i>n</i>	0.17158122	<i>ω</i>	274.11244	−0.41354657		−0.90996827	
<i>a</i>	3.2074229	<i>Ω</i>	200.39993	+0.86631852		−0.38292069	
<i>e</i>	0.1056283	<i>i</i>	5.03796	+0.28012757		−0.15915241	
<i>P</i>	5.74	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 03 15	675	0.0	0.1+	1998 09 18	704	0.5+	0.3−	1998 09 27	704	0.0	0.9−
1978 03 16	675	0.4+	1.1+	1998 09 18	704	0.9−	0.0	1998 10 14	704	1.1+	0.8−
1997 07 27	910	0.0	0.1−	1998 09 25	699	0.5+	1.0+	1998 10 14	704	0.1−	0.2−
1997 07 27	910	0.3+	0.1+	1998 09 25	699	1.2+	0.5+	1998 10 14	704	0.3+	1.2−
1997 07 27	910	0.3−	0.2+	1998 09 25	699	0.3−	0.9+	1998 10 14	704	(2.3+ 0.8+)	
1998 09 14	704	0.5−	0.8−	1998 09 26	704	0.1+	0.0	1998 10 14	704	0.1+	0.0
1998 09 14	704	1.0−	0.3−	1998 09 26	704	0.5−	0.8−	1998 10 15	704	0.2+	0.7−
1998 09 14	704	0.6−	0.5−	1998 09 26	704	0.6−	1.3−	1998 10 15	704	1.4+	0.2−
1998 09 16	699	1.3−	1.4+	1998 09 26	704	0.1+	0.4−	1998 10 15	704	(3.2+ 0.0)	
1998 09 16	699	0.8+	1.0+	1998 09 26	704	0.8+	0.9+	1998 10 15	704	0.5−	0.2+
1998 09 16	699	0.3−	0.6+	1998 09 27	704	0.4+	0.0	1998 10 24	691	0.8−	0.7+
1998 09 18	704	1.3−	0.7+	1998 09 27	704	1.3+	0.8+	1998 10 24	691	1.0−	0.4+
1998 09 18	704	0.0	1.0−	1998 09 27	704	0.3−	1.1+	1998 10 24	691	0.6−	0.7+
1998 09 18	704	1.2+	0.5−	1998 09 27	704	0.2+	0.1−				

1998 SL₅₄ = 1997 EZ₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	60.40919		(2000.0)	P		Q	
<i>n</i>	0.26091619	<i>ω</i>	90.76818	+0.75207004		+0.65867963	
<i>a</i>	2.4255042	<i>Ω</i>	228.03294	−0.61636330		+0.69050037	
<i>e</i>	0.1784112	<i>i</i>	1.77733	−0.23342437		+0.29891534	
<i>P</i>	3.78	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 08	809	0.3+	1.4−	1998 09 16	699	0.4−	0.7−	1998 09 26	704	0.0	0.9−
1997 03 08	809	1.0−	1.6−	1998 09 16	699	0.6−	0.2−	1998 09 26	704	0.5−	0.3−
1997 03 08	809	0.3−	1.8−	1998 09 16	699	0.6−	0.3−	1998 09 26	704	0.4−	0.2−
1997 03 09	809	0.7−	0.4−	1998 09 18	704	0.2+	0.0	1998 09 26	704	0.1−	0.9−
1997 03 09	809	0.2+	1.5−	1998 09 18	704	0.5+	0.8−	1998 09 27	704	0.6+	0.2−
1997 03 09	809	1.3−	0.3−	1998 09 18	704	0.1+	0.9−	1998 09 27	704	1.2+	1.0+
1998 08 02	699	0.7−	0.0	1998 09 18	704	1.0+	0.8−	1998 09 27	704	0.9+	0.3−
1998 08 02	699	0.7−	0.8+	1998 09 18	704	0.0	1.2−	1998 09 27	704	0.2+	0.4+
1998 08 02	699	0.6−	0.7+	1998 09 25	699	0.1−	0.1−	1998 09 27	704	1.1+	0.4+
1998 09 14	704	0.7−	0.1+	1998 09 25	699	0.1+	0.4−	1998 10 14	699	1.2−	0.1+
1998 09 14	704	0.7+	0.1−	1998 09 25	699	0.2+	0.1+	1998 10 14	699	0.5+	0.4−
1998 09 14	704	0.1−	0.4+	1998 09 26	704	0.6+	0.6−	1998 10 14	699	0.4+	0.1+

1998 SN₅₄ = 1991 TO₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	194.71916		(2000.0)	P		Q	
<i>n</i>	0.27713723	<i>ω</i>	216.31916	−0.95328676		+0.29963968	
<i>a</i>	2.3299117	<i>Ω</i>	341.00788	−0.24202917		−0.83337534	
<i>e</i>	0.0509788	<i>i</i>	6.74365	−0.18073803		−0.46443687	
<i>P</i>	3.56	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

1998 NOV. 10

Residuals in seconds of arc

1991 10 07	033	0.0	0.0	1998 09 18	704	1.1+	1.4−	1998 09 27	704	0.3−	0.7−
1991 10 07	033	1.2−	0.0	1998 09 18	704	0.7+	1.4+	1998 09 27	704	0.2−	0.3+
1991 10 08	033	0.0	0.2−	1998 09 18	704	1.0+	0.2+	1998 09 27	704	0.5−	0.6+
1991 10 09	033	1.3+	0.1−	1998 09 18	704	0.8−	0.1+	1998 09 27	704	0.0	0.0
1998 09 14	704	0.4+	0.4+	1998 09 18	704	0.6+	0.7−	1998 09 27	704	0.0	0.4−
1998 09 14	704	0.1−	0.0	1998 09 18	704	0.6−	0.5+	1998 10 14	704	0.7+	1.2−
1998 09 14	704	0.5+	0.4+	1998 09 18	704	0.2−	0.2−	1998 10 14	704	1.5+	0.4−
1998 09 14	704	(2.1+ 0.5+)		1998 09 25	699	0.1+	0.8+	1998 10 14	704	1.8−	1.2+
1998 09 14	704	0.4+	0.3−	1998 09 25	699	0.1+	0.3+	1998 10 14	704	0.7−	0.5+
1998 09 16	699	0.1−	0.1+	1998 09 25	699	0.5+	0.4+	1998 10 14	704	0.5−	1.7+
1998 09 16	699	0.4−	0.5+	1998 09 26	704	0.5−	0.5−	1998 10 15	704	0.2−	0.5−
1998 09 16	699	0.1+	0.7+	1998 09 26	704	0.0	0.9−	1998 10 15	704	0.6+	0.8−
1998 09 18	704	0.0	0.4+	1998 09 26	704	0.4+	0.9−	1998 10 15	704	0.3+	0.4−
1998 09 18	704	0.3+	1.1−	1998 09 26	704	0.7−	0.4+	1998 10 15	704	0.1+	0.4−
1998 09 18	704	0.8−	0.1−	1998 09 26	704	0.4−	0.2−	1998 10 15	704	0.9−	0.8+

1998 SP₅₄ = 1996 HU₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	324.60156		(2000.0)	P		Q	
<i>n</i>	0.24286219	<i>ω</i>	261.63776	−0.00742706		−0.99990906	
<i>a</i>	2.5442676	<i>Ω</i>	188.81126	+0.94394960		−0.00329546	
<i>e</i>	0.2238248	<i>i</i>	4.21437	+0.33000606		−0.01307745	
<i>P</i>	4.06	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 04 19	608	0.1−	0.3+	1998 09 18	704	0.4−	0.2−	1998 09 26	704	1.1+	0.7−
1996 04 19	608	0.3−	0.1+	1998 09 18	704	0.7+	1.1−	1998 09 26	704	1.4+	1.9−
1996 04 20	608	0.2+	0.1−	1998 09 18	704	0.8−	0.3+	1998 09 26	704	1.2−	0.3+
1996 04 20	608	0.2+	0.3−	1998 09 18	704	1.5−	1.1−	1998 09 27	704	0.2+	1.3−
1998 09 14	704	0.1−	0.2+	1998 09 18	704	0.7−	1.0−	1998 09 27	704	1.3−	1.4+
1998 09 14	704	0.6−	0.3−	1998 09 25	699	1.1−	1.4+	1998 09 27	704	0.7+	1.0−
1998 09 14	704	1.2+	0.0	1998 09 25	699	0.0	1.0+	1998 09 27	704	0.3−	0.0
1998 09 16	699	0.4+	0.9+	1998 09 25	699	0.8+	1.5+	1998 09 27	704	0.3−	0.2−
1998 09 16	699	0.1−	0.3+	1998 09 26	704	0.6+	0.1+				
1998 09 16	699	1.0+	1.2+	1998 09 26	704	0.1−	0.4+				

1998 ST₅₄ = 1980 TP₉ = 1991 VB₁ = 1997 EL₅₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	66.11996		(2000.0)	P		Q	
<i>n</i>	0.27184215	<i>ω</i>	305.61106	+0.72912432		+0.68402382	
<i>a</i>	2.3600698	<i>Ω</i>	11.28736	−0.58568393		+0.64036656	
<i>e</i>	0.1399414	<i>i</i>	6.48800	−0.35405094		+0.34934521	
<i>P</i>	3.63	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 10 13	095	0.4+	0.9−	1997 03 10	809	0.6+	1.4+	1998 09 25	699	0.9+	0.8+
1991 11 04	399	1.1−	1.1+	1997 03 11	809	0.2+	0.0	1998 09 25	699	0.2+	0.2+
1991 11 04	399	(0.0 2.8+)		1997 03 11	809	0.0	0.1−	1998 09 25	699	0.1+	0.0
1991 11 05	399	0.6−	1.0+	1997 03 11	809	0.0	0.0	1998 09 26	704	0.6−	0.5+
1991 11 05	399	(2.7− 2.2+)		1998 09 14	704	0.7+	0.9+	1998 09 26	704	0.1−	0.3−
1991 11 11	399	0.5+	0.1−	1998 09 14	704	0.6−	0.8+	1998 09 26	704	0.9−	0.2−
1991 11 11	399	1.3+	1.4−	1998 09 14	704	0.4−	0.2−	1998 09 26	704	0.3−	0.1+
1997 03 08	809	(3.9+ 0.5−)		1998 09 16	699	0.8+	0.1+	1998 09 26	704	0.1+	0.3−
1997 03 08	809	(4.4+ 0.5+)		1998 09 16	699	0.9+	0.4−	1998 09 27	704	0.3+	0.7−
1997 03 08	809	(3.4+ 0.2−)		1998 09 16	699	1.3+	0.1+	1998 09 27	704	0.7+	0.4+

1998 NOV. 10

M.P.C. 33029

1998 SV₅₄ = 1985 GE = 1990 DE₉ = 1991 KY

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	131.05244		(2000.0)		P		Q				
<i>n</i>	0.17444660	ω	70.01514		−0.52996367		+0.84771142				
<i>a</i>	3.1722035	Ω	167.90223		−0.81314923		−0.50032598				
<i>e</i>	0.1351023	<i>i</i>	6.26971		−0.24067996		−0.17623639				
<i>P</i>	5.65	<i>H</i>	13.0		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1985 04 14	688	0.0	1.0+	1998 09 16	699	0.5+	0.1+	1998 09 27	704	0.4−	0.1−
1985 04 14	688	1.5+	0.4−	1998 09 18	704	1.0+	0.0	1998 09 27	704	0.0	0.5+
1985 04 23	688	0.0	0.0	1998 09 18	704	1.1+	0.2+	1998 09 27	704	0.3−	0.1−
1985 04 23	688	1.7−	0.9−	1998 09 18	704	0.8+	0.5+	1998 09 27	704	0.8+	0.9−
1990 02 28	809	0.7+	0.5−	1998 09 18	704	0.2+	0.9+	1998 10 14	910	0.1−	0.9−
1990 02 28	809	0.0	0.1+	1998 09 18	704	1.5+	1.4+	1998 10 14	910	0.1−	1.0−
1990 02 28	809	0.8−	0.1+	1998 09 25	699	0.6+	0.7−	1998 10 14	910	0.0	0.8−
1991 05 17	809	0.4+	0.2−	1998 09 25	699	0.4+	0.1−	1998 10 18	910	0.6−	0.4−
1991 05 17	809	0.0	0.3+	1998 09 25	699	0.6+	0.4−	1998 10 18	910	0.5−	0.3−
1991 05 17	809	0.4−	0.4−	1998 09 26	704	0.6+	0.2−	1998 10 18	910	0.6−	0.5−
1998 09 14	704	0.7−	0.7+	1998 09 26	704	0.4−	1.3−	1998 10 22	910	0.5−	0.3−
1998 09 14	704	0.9−	1.0+	1998 09 26	704	1.2−	1.4+	1998 10 22	910	0.4−	0.4−
1998 09 14	704	0.4−	0.5+	1998 09 26	704	0.2−	0.1−	1998 10 22	910	0.6−	0.1−
1998 09 16	699	0.6+	0.6+	1998 09 26	704	0.2+	0.3+				
1998 09 16	699	0.5−	0.1−	1998 09 27	704	0.5−	0.4−				

1998 SZ₅₄ = 2794 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	46.51543		(2000.0)		P		Q				
<i>n</i>	0.18165700	ω	292.31816		+0.84779113		+0.53006573				
<i>a</i>	3.0876966	Ω	35.67812		−0.47539047		+0.77358275				
<i>e</i>	0.1635428	<i>i</i>	1.64558		−0.23506190		+0.34727517				
<i>P</i>	5.43	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1960 09 26	675	1.0+	1.0+	1998 09 18	704	0.3−	0.0	1998 09 26	704	0.1−	0.2−
1960 09 28	675	0.9−	0.5−	1998 09 18	704	0.8−	0.5+	1998 09 26	704	0.1+	0.1−
1960 09 29	675	0.1−	0.5−	1998 09 18	704	0.2−	0.4−	1998 09 26	704	0.2−	0.0
1998 09 14	704	0.2+	0.6−	1998 09 18	704	0.4−	0.4−	1998 09 26	704	1.3−	0.0
1998 09 14	704	0.7+	0.5−	1998 09 18	704	0.6−	0.1+	1998 09 27	704	0.6+	0.2+
1998 09 14	704	0.8+	0.4−	1998 09 25	699	0.3−	0.8+	1998 09 27	704	0.4+	0.2+
1998 09 16	699	0.2+	0.3+	1998 09 25	699	0.6+	0.3−	1998 09 27	704	0.3+	0.1+
1998 09 16	699	0.1+	0.7+	1998 09 25	699	0.7+	0.1−	1998 09 27	704	0.7+	0.6−
1998 09 16	699	0.8−	0.5+	1998 09 26	704	0.5−	0.4+	1998 09 27	704	0.2+	0.3−

1998 SA₅₅ = 1996 EN₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	34.62678		(2000.0)		P		Q				
<i>n</i>	0.20685600	ω	181.35100		+0.98785898		+0.15518108				
<i>a</i>	2.8315483	Ω	169.71302		−0.14214706		+0.92187244				
<i>e</i>	0.0824231	<i>i</i>	2.34674		−0.06268053		+0.35506342				
<i>P</i>	4.76	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1996 03 11	691	0.1−	0.0	1998 09 14	704	0.0	1.0−	1998 09 25	699	0.4+	0.4+
1996 03 11	691	0.0	0.1−	1998 09 16	699	0.5+	0.2+	1998 09 26	704	2.3−	0.7−
1996 03 11	691	0.0	0.1−	1998 09 16	699	0.3+	0.9−	1998 09 26	704	0.8−	1.0−
1996 03 18	691	1.0−	0.0	1998 09 16	699	1.8+	1.1+	1998 09 26	704	0.5−	0.3+
1996 03 18	691	1.1−	0.1−	1998 09 18	704	1.6−	0.2−	1998 09 27	704	0.1−	0.2−
1996 03 18	691	1.0−	0.1−	1998 09 18	704	0.9−	0.2−	1998 09 27	704	0.6+	0.9−
1996 03 19	566	0.9+	0.4+	1998 09 18	704	0.4−	0.5+	1998 09 27	704	0.4+	0.1+
1996 03 19	566	1.1+	0.3−	1998 09 18	704	0.5−	1.3+	1998 09 27	704	0.9+	0.3−
1996 03 19	566	1.2+	0.5+	1998 09 18	704	1.4−	1.4+	1998 09 27	704	1.6+	0.0
1998 09 14	704	0.5+	0.3+	1998 09 25	699	0.2+	0.5+				
1998 09 14	704	0.8+	1.0−	1998 09 25	699	0.4+	0.6+				

1998 SC₅₅ = 1987 SB₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	347.37559		(2000.0)		P		Q				
<i>n</i>	0.26866974	ω	252.73728		+0.41228183		−0.91084321				
<i>a</i>	2.3786117	Ω	172.82053		+0.88427818		+0.39486452				
<i>e</i>	0.2161603	<i>i</i>	9.07224		+0.21926193		+0.12019428				
<i>P</i>	3.67	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1987 09 23	809	0.6+	0.6−	1998 09 14	704	0.3−	0.0	1998 09 18	704	0.0	0.1+
1987 09 23	809	0.8+	0.5−	1998 09 16	699	0.2−	0.6+	1998 09 25	699	0.2−	0.5−
1987 09 23	809	0.9+	0.5−	1998 09 16	699	0.4+	0.5+	1998 09 25	699	0.0	0.2+
1987 09 24	809	0.9−	0.7+	1998 09 16	699	0.6+	0.4+	1998 09 25	699	0.4−	0.3+
1987 09 24	809	0.8−	0.7+	1998 09 18	704	0.2+	0.8−	1998 10 17	699	0.3+	0.3−
1987 09 24	809	0.7−	0.6+	1998 09 18	704	0.1−	0.5−	1998 10 17	699	0.2+	0.1+
1998 09 14	704	0.4−	0.2+	1998 09 18	704	0.3+	0.4−	1998 10 17	699	0.3−	0.1+
1998 09 14	704	0.0	0.1−	1998 09 18	704	0.2+	0.5−				

1998 SP₅₅ = 1996 FH₄ = 1997 LF₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	52.25963		(2000.0)		P		Q				
n	0.20194751	ω	169.80794		+0.80288910		+0.59558320				
a	2.8772463	Ω	153.58651		−0.55089122		+0.75762234				
e	0.1442321	i	3.28492		−0.22778928		+0.26700009				
P	4.88	H	14.6	G	0.15	U	4				
Residuals in seconds of arc											
1996 03 17	691	0.6−	0.2+	1998 09 14	704	0.2+	0.3+	1998 09 26	704	0.8−	1.4−
1996 03 17	691	0.7−	0.2+	1998 09 14	704	0.6−	0.4+	1998 09 26	704	0.4−	1.7−
1996 03 17	691	0.8−	0.4+	1998 09 14	704	0.7−	0.0	1998 09 26	704	1.3+	0.0
1996 03 23	608	0.4+	0.4−	1998 09 16	699	0.1+	0.4+	1998 09 27	704	1.5+	0.6+
1996 03 23	608	0.7+	0.9+	1998 09 16	699	0.2+	0.1+	1998 09 27	704	1.3+	0.4+
1996 03 24	608	1.4+	0.9+	1998 09 16	699	0.4+	0.4+	1998 09 27	704	0.1−	0.7+
1996 03 24	608	0.4+	0.5+	1998 09 18	704	0.5−	0.1+	1998 09 27	704	1.2+	1.2+
1996 03 25	608	0.8+	0.1+	1998 09 18	704	0.6−	0.7+	1998 09 27	704	1.3+	0.3+
1996 03 25	608	0.3−	0.9+	1998 09 18	704	0.5−	1.0+	1998 10 15	704	1.6−	0.6+
1997 06 07	809	0.3−	1.8+	1998 09 18	704	1.1−	0.6+	1998 10 15	704	(2.0−	1.6+)
1997 06 07	809	0.4+	0.7+	1998 09 25	699(41.6−	4.0−)		1998 10 15	704	1.2−	0.0
1997 06 07	809	0.0	1.0+	1998 09 25	699(39.9−	7.3−)		1998 10 15	704	0.4−	0.6−
1997 06 08	809	0.6+	1.5−	1998 09 25	699(38.3−	11.2−)		1998 10 15	704	0.1+	1.6−
1997 06 08	809	0.5−	0.8−	1998 09 26	704	1.5−	0.5+				
1997 06 08	809	(0.1−	2.3−)	1998 09 26	704	0.9+	0.4+				

1998 SS₅₅ = 1990 FR₂ = 1997 JJ₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	226.54104		(2000.0)		P		Q				
<i>n</i>	0.29165802	ω	3.95053		−0.98611235		−0.16394057				
<i>a</i>	2.2519225	Ω	166.52570		+0.14907960		−0.94428019				
<i>e</i>	0.0743240	<i>i</i>	6.54746		+0.07319633		−0.28540920				
<i>P</i>	3.38	<i>H</i>	15.2		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1990 03 17	033	0.1−	0.6−	1998 09 16	699	0.6+	0.7+	1998 09 26	704	1.3−	0.3−
1990 03 18	033	0.1−	0.3−	1998 09 16	699	0.5+	0.4+	1998 09 26	704	0.2−	1.3−
1997 05 01	691	0.1+	0.1+	1998 09 18	704	0.3+	0.1+	1998 09 26	704	1.1−	0.5−
1997 05 01	691	0.4+	0.2+	1998 09 18	704	0.9−	1.7−	1998 09 27	704	1.1+	1.8−
1997 05 01	691	0.3−	0.6+	1998 09 18	704	0.6+	0.4−	1998 09 27	704	0.1+	1.6−
1997 05 10	691	0.2−	0.2−	1998 09 18	704	0.2−	0.8−	1998 09 27	704	1.1−	0.9−
1997 05 10	691	0.2+	0.3−	1998 09 18	704	(2.3+	0.7+)	1998 09 27	704	0.2−	0.3+
1997 05 10	691	0.2−	0.3−	1998 09 25	699	0.7+	0.6+	1998 10 17	699	0.0	1.5+
1998 09 14	704	1.2+	0.7+	1998 09 25	699	1.2+	1.2+	1998 10 17	699	0.8−	0.9−
1998 09 14	704	0.9+	0.0	1998 09 25	699	0.2+	1.4+	1998 10 17	699	0.4−	1.0+
1998 09 14	704	1.6+	1.6+	1998 09 26	704	1.4−	1.1−				
1998 09 16	699	0.4−	0.6+	1998 09 26	704	0.7−	0.4+				

1998 SA₅₆ = 1996 GT₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	5.17001			(2000.0)			P			Q					
n	0.18082669			ω	222.97894			+0.91545066			−0.40234779				
a	3.0971413			Ω	160.74149			+0.37559587			+0.84696572				
e	0.1994750			i	1.41504			+0.14449162			+0.34751306				
P	5.45 <th>H</th> <td colspan="3">15.0</td> <th>G</th> <td colspan="3">0.15</td> <th>U</th> <td colspan="3">5</td>			H	15.0			G	0.15			U	5		
Residuals in seconds of arc															
1996 04 13	691	0.4+	0.3+	1998 09 16	699	0.4+	0.1−	1998 09 27	704	0.4−	0.2−				
1996 04 13	691	0.0	0.7+	1998 09 18	704	0.3−	0.9−	1998 09 27	704	0.4+	0.4+				
1996 04 13	691	0.1−	0.2+	1998 09 18	704	1.2+	0.1−	1998 09 27	704	1.2−	0.9+				
1996 04 20	691	0.1−	0.1−	1998 09 18	704	0.6−	0.1+	1998 09 27	704	1.1−	0.7+				
1996 04 20	691	0.4+	0.2+	1998 09 18	704	1.2+	0.4+	1998 09 27	704	0.0	0.1+				
1996 04 20	691	0.3−	0.4−	1998 09 18	704	0.5−	0.9+	1998 10 18	910	0.2+	0.1−				
1998 09 14	704	1.1+	0.7−	1998 09 25	699	1.1−	0.1+	1998 10 18	910	0.0	0.1−				
1998 09 14	704	1.7+	0.5−	1998 09 25	699	(0.2−	2.1+)	1998 10 18	910	0.2+	0.1+				
1998 09 14	704	1.7+	0.1−	1998 09 25	699	0.7−	0.4−	1998 10 22	910	0.4+	0.6+				
1998 09 14	704	0.2−	0.6−	1998 09 26	704	1.8−	0.6+	1998 10 22	910	0.4+	0.7+				
1998 09 14	704	0.7+	0.6+	1998 09 26	704	0.1−	0.7−	1998 10 22	910	0.4+	0.6+				
1998 09 16	699	0.2−	0.1+	1998 09 26	704	0.6−	0.9−								
1998 09 16	699	0.4+	0.4−	1998 09 26	704	1.5−	0.3−								

1998 SO₅₆ = 1997 EV₂₆ = 1997 GG₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	58.79485		(2000.0)		P		Q				
<i>n</i>	0.26813102	ω	311.34123		+0.78813175		+0.61544486				
<i>a</i>	2.3817966	Ω	10.68436		−0.54974790		+0.71022793				
<i>e</i>	0.2111239	<i>i</i>	2.69443		−0.27681326		+0.34176587				
<i>P</i>	3.68	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1997 03 04	691	0.4−	0.4−	1998 09 14	704	0.0	0.5−	1998 09 25	699	0.9+	0.2+
1997 03 04	691	0.9−	0.2−	1998 09 14	704	0.1+	0.8−	1998 09 25	699	0.3+	0.5+
1997 03 04	691	0.7−	0.6−	1998 09 14	704	0.4+	0.6−	1998 09 26	704	0.1+	0.1+
1997 03 10	691	0.0	0.9−	1998 09 16	699	0.3−	0.1−	1998 09 26	704	0.9−	0.7−
1997 03 10	691	0.1+	0.5−	1998 09 16	699	0.5−	0.0	1998 09 26	704	1.0−	0.6−
1997 03 10	691	0.1+	0.6−	1998 09 16	699	0.9−	0.6−	1998 09 26	704	0.2+	1.2−
1997 03 13	691	0.2−	1.1−	1998 09 16	699	0.3−	0.3+	1998 09 26	704	0.4−	0.7−
1997 03 13	691	0.4−	0.5−	1998 09 16	699	0.4+	0.1+	1998 09 27	704	0.5+	0.5−
1997 03 13	691	0.4−	0.7−	1998 09 16	699	0.2+	0.2−	1998 09 27	704	0.8+	0.4−
1997 04 07	691	0.5−	0.8−	1998 09 18	704	0.0	1.2−	1998 09 27	704	1.0+	0.5+
1997 04 07	691	0.4−	0.6−	1998 09 18	704	0.6−	0.3+	1998 09 27	704	0.8+	0.4−
1997 04 07	691	0.7−	0.6−	1998 09 18	704	1.2+	0.1−	1998 09 27	704	1.0+	0.1+
1997 04 16	691	0.0	0.9−	1998 09 18	704	0.7−	0.5−	1998 10 28	691	0.4−	0.4−
1997 04 16	691	0.1−	0.3−	1998 09 18	704	1.0+	0.5+	1998 10 28	691	0.3−	0.6−
1997 04 16	691	0.1−	0.7−	1998 09 25	699	0.7+	0.7+	1998 10 28	691	0.2−	0.4−

1998 SP₅₆ = 1992 GT₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	52.28401		(2000.0)			P		Q			
n	0.20927039	ω	311.01277			+0.83383305		+0.55175084			
a	2.8097275	Ω	15.52476			−0.48531300		+0.74751046			
e	0.0747854	i	3.66963			−0.26304705		+0.36986366			
P	4.71	H	14.0	G	0.15	U	5				
Residuals in seconds of arc											
1992 04 04	809	0.7+	0.5−	1998 09 17	699	0.2−	0.3+	1998 09 26	704	0.4+	0.1+
1992 04 04	809	0.0	0.0	1998 09 17	699	0.1+	0.8+	1998 09 26	704	0.7−	0.3+
1992 04 04	809	0.3−	0.8−	1998 09 17	699	0.3+	0.1+	1998 09 26	704	0.4−	0.7−
1992 04 06	809	0.2+	0.2+	1998 09 18	704	0.1+	0.7−	1998 09 26	704	0.7+	1.2−
1992 04 06	809	0.1−	0.1+	1998 09 18	704	0.2−	1.1−	1998 09 26	704	0.8+	0.1+
1992 04 06	809	0.6−	0.9+	1998 09 18	704	0.6−	0.9−	1998 09 27	704	0.5+	0.2−
1998 09 14	704	0.1−	0.3−	1998 09 18	704	0.2+	0.0	1998 09 27	704	0.5−	0.7+
1998 09 14	704	0.0	0.4+	1998 09 18	704	0.4−	0.9−	1998 09 27	704	0.2+	0.3+

1998 09 14	704	0.4+	0.2+	1998 09 25	699	0.1−	0.7+	1998 09 27	704	0.1+	0.4−
1998 09 14	704	0.1+	0.2+	1998 09 25	699	0.0	0.7+	1998 09 27	704	0.2−	0.3−
1998 09 14	704	0.2−	0.9+	1998 09 25	699	0.2−	0.7+				

1998 SS₅₆ = 1997 EC₅₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	72.87277			(2000.0)		P		Q			
n	0.23437671			ω	130.89114	+0.42490763		+0.90497577			
a	2.6053121			Ω	164.21208	−0.85270892		+0.40819588			
e	0.1947385			i	4.58175	−0.30387661		+0.11997908			
P	4.21			H	15.5	G	0.15	U	5		
Residuals in seconds of arc											
1997 03 10	809	1.0+	0.8+	1998 09 14	704	0.9−	0.9+	1998 09 25	699	0.2−	0.1−
1997 03 10	809	0.3+	1.3+	1998 09 17	699	0.5−	0.9+	1998 09 26	704	0.0	0.3+
1997 03 10	809	1.3+	0.6+	1998 09 17	699	0.3−	0.3+	1998 09 26	704	1.4−	0.0
1997 03 11	809	1.5−	0.7−	1998 09 17	699	1.2−	1.3+	1998 09 26	704	0.2−	0.8+
1997 03 11	809	0.7−	0.4−	1998 09 18	704	2.6+	2.6−	1998 09 26	704	0.8+	0.2−
1997 03 11	809	0.4−	1.5−	1998 09 18	704	0.8−	0.5−	1998 09 26	704	0.1−	1.3−
1998 09 14	704	0.6+	0.5−	1998 09 18	704	1.1+	0.4+	1998 09 27	704	0.4−	0.3−
1998 09 14	704	0.3−	0.7+	1998 09 18	704	1.0+	1.2−	1998 09 27	704	0.7+	0.4−
1998 09 14	704	0.4−	0.0	1998 09 25	699	0.3−	1.2+	1998 09 27	704	0.0	0.9+
1998 09 14	704	0.0	0.6−	1998 09 25	699	0.5−	1.2+	1998 09 27	704	0.5+	1.1−

1998 SU₅₆ = 1997 CM₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	71.14533		(2000.0)	P			Q				
n	0.26955412	ω	294.28100	+0.53057484			+0.84751768				
a	2.3734062	Ω	7.80972	−0.73458202			+0.46815279				
e	0.2031855	i	6.03537	−0.42294160			+0.25009348				
P	3.66	H	15.5	G	0.15		U	4			
Residuals in seconds of arc											
1997 02 02	691	0.2+	0.1−	1998 09 17	699	0.4+	0.1+	1998 09 27	704	1.3−	0.5+
1997 02 02	691	0.3+	0.1+	1998 09 17	699	0.7+	0.5+	1998 09 27	704	0.1+	0.0
1997 02 02	691	0.4+	0.4+	1998 09 18	704	0.4−	0.3+	1998 09 27	704	0.0	0.8−
1997 02 07	691	0.3−	0.3+	1998 09 18	704	0.7−	0.3−	1998 09 27	704	0.5−	0.0
1997 02 07	691	0.2−	0.3−	1998 09 18	704	0.6+	0.0	1998 10 14	704	1.6+	1.2−
1997 02 07	691	0.3−	0.1−	1998 09 18	704	0.2−	0.1+	1998 10 14	704	0.6−	0.4−
1998 09 14	704	1.2+	0.3−	1998 09 18	704	0.5−	0.1−	1998 10 14	704	0.7+	0.6+
1998 09 14	704	(2.8+	1.0−)	1998 09 25	699	0.3−	0.1−	1998 10 14	910	0.3+	0.2−
1998 09 14	704	0.2+	0.0	1998 09 25	699	0.5−	0.5+	1998 10 14	910	0.3+	0.2−
1998 09 14	704	0.5+	0.6−	1998 09 25	699	0.1−	0.1−	1998 10 14	910	0.3+	0.2−
1998 09 14	704	0.6+	0.6−	1998 09 26	704	1.1−	0.8−	1998 10 15	704	(0.1+	2.2−)
1998 09 14	704	0.5+	0.1+	1998 09 26	704	1.1−	0.5+	1998 10 15	704	1.3+	1.3+
1998 09 14	704	0.4+	0.3+	1998 09 26	704	1.5−	0.2+	1998 10 15	704	1.1−	0.6+
1998 09 14	704	0.2−	0.8+	1998 09 26	704	0.1+	0.2−	1998 10 15	704	0.5−	0.0
1998 09 17	699	0.1+	0.2+	1998 09 27	704	0.3−	0.6+	1998 10 15	704	0.1+	0.8−

1998 NOV. 10

1998 09 17	699	0.4+	0.3+	1998 09 26	704	0.3-	0.0	1998 10 15	704	0.1-	0.7+
1998 09 18	704	0.4+	0.4-	1998 09 27	704	0.6-	0.4-	1998 10 15	704	0.7-	0.9+
1998 09 18	704	0.0	0.1-	1998 09 27	704	0.1+	0.1+	1998 10 15	704	0.3-	0.5-
1998 09 18	704	0.4+	0.3+	1998 09 27	704	0.3-	0.2+	1998 10 17	699	0.3-	0.2-
1998 09 18	704	0.9+	0.3-	1998 09 27	704	0.4-	0.0	1998 10 17	699	0.8+	0.1+
1998 09 18	704	1.1-	0.3+	1998 09 27	704	0.8-	1.2-	1998 10 17	699	0.2+	0.4+

1998 SV₅₇ = 1989 CA₂ = 1990 HL₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	299.82692	(2000.0)	P	Q			
<i>n</i>	0.27772104	ω	15.70693	-0.42297189	-0.90514897		
<i>a</i>	2.3266453	Ω	99.33105	+0.82667107	-0.40462782		
<i>e</i>	0.1778889	<i>i</i>	2.46429	+0.37109261	-0.13031372		
<i>P</i>	3.55	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 02 06	675	(0.4-	3.5-)	1998 09 17	699	(1.8-	2.4+)	1998 09 26	704	0.0	1.7-
1989 02 06	675	(1.4-	4.3-)	1998 09 18	704	0.1-	0.5+	1998 09 26	704	1.7-	0.3+
1989 02 11	675	0.7+	1.2-	1998 09 18	704	0.0	0.0	1998 09 27	704	0.6-	0.2+
1989 02 11	675	0.9-	0.0	1998 09 18	704	1.7-	1.4-	1998 09 27	704	0.7+	0.2+
1990 04 29	413	0.1-	1.1-	1998 09 18	704	0.2-	0.2+	1998 09 27	704	0.0	0.6+
1990 05 01	413	0.1+	0.5-	1998 09 18	704	1.9+	0.3+	1998 09 27	704	0.9+	0.5+
1990 05 02	413	0.1+	0.4-	1998 09 25	699	0.1+	0.2-	1998 09 27	704	0.3+	0.0
1998 09 14	704	1.8-	0.1-	1998 09 25	699	0.7+	0.1-	1998 10 15	704	1.7+	1.6-
1998 09 14	704	0.3+	0.7+	1998 09 25	699	1.0+	0.3-	1998 10 15	704	(2.5+	0.6-)
1998 09 14	704	(3.6-	0.9+)	1998 09 26	704	0.6-	1.1+	1998 10 15	704	0.2-	1.1-
1998 09 17	699	0.8+	1.1+	1998 09 26	704	0.3+	1.4-	1998 10 15	704	0.3-	0.7-
1998 09 17	699	0.7-	1.4+	1998 09 26	704	0.2-	0.3+				

1998 SD₅₈ = 1993 TD₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	295.31594	(2000.0)	P	Q			
<i>n</i>	0.18769176	ω	277.49604	-0.10996177	-0.99392957		
<i>a</i>	3.0211520	Ω	178.80000	+0.96534241	-0.10764203		
<i>e</i>	0.0449876	<i>i</i>	9.68724	+0.23669059	-0.02274207		
<i>P</i>	5.25	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 09	809	(0.1+	2.5+)	1998 09 18	704	0.0	0.2-	1998 10 14	704	0.6-	0.1-
1993 10 09	809	(0.4-	2.8+)	1998 09 18	704	0.6-	0.2+	1998 10 14	699	1.8+	0.2+
1993 10 09	809	(0.8-	2.7+)	1998 09 18	704	0.5+	0.7-	1998 10 14	704	1.2-	1.1-
1993 10 11	809	0.6+	1.2+	1998 09 18	704	0.0	0.0	1998 10 14	704	0.1+	0.2-
1993 10 11	809	0.0	1.0+	1998 09 18	704	0.3-	0.4+	1998 10 14	699	1.6+	0.2-
1993 10 11	809	0.4-	1.3+	1998 09 25	699	0.2-	0.6+	1998 10 14	704	0.3-	0.1+
1993 10 11	400	0.1-	1.6-	1998 09 25	699	0.1+	0.5+	1998 10 14	699	1.1+	0.1+
1993 10 11	400	(3.1+	2.2+)	1998 09 25	699	0.1+	0.4+	1998 10 15	761	0.1-	0.4+
1993 10 14	675	(0.1+	3.3-)	1998 09 26	704	0.2-	0.2-	1998 10 15	704	0.5+	0.1-
1993 10 14	675	(0.6-	2.9-)	1998 09 26	704	1.1-	0.6-	1998 10 15	761	0.8+	0.1-
1993 10 15	675	(0.8-	2.6-)	1998 09 26	704	1.3-	0.0	1998 10 15	704	0.1+	0.5+
1993 10 15	400	(0.4+	3.2-)	1998 09 26	704	1.1-	0.2+	1998 10 15	704	(0.4+	2.4+)
1993 10 15	400	0.1-	1.8-	1998 09 26	704	1.2-	0.2+	1998 10 15	704	1.5-	1.4+
1998 09 14	704	0.1-	0.5-	1998 09 27	704	0.2+	0.2-	1998 10 15	704	0.1-	1.1+
1998 09 14	704	0.6+	0.8-	1998 09 27	704	0.3-	1.2+	1998 10 17	699	0.2+	1.0-
1998 09 14	704	0.4+	0.7-	1998 09 27	704	0.5+	0.4+	1998 10 17	699	0.1-	1.2-
1998 09 17	699	0.8+	0.4-	1998 09 27	704	0.6+	0.3+	1998 10 17	699	0.3-	0.7-
1998 09 17	699	0.1+	0.3-	1998 09 27	704	0.2-	1.3+				
1998 09 17	699	0.6+	0.1-	1998 10 14	704	0.3+	0.5-				

1998 SE₅₈ = 1990 TM₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	155.65499	(2000.0)	P	Q			
<i>n</i>	0.22707026	ω	227.23716	-0.70177588	+0.71239677		
<i>a</i>	2.6609040	Ω	358.19181	-0.64188340	-0.63304988		
<i>e</i>	0.1260269	<i>i</i>	2.20117	-0.30902479	-0.30288396		
<i>P</i>	4.34	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

M.P.C. 33031

Residuals in seconds of arc

1990 10 14	033	0.1-	0.3-	1998 09 18	704	0.0	0.6+	1998 09 27	704	0.5+	0.9+
1990 10 15	033	0.1-	0.6+	1998 09 18	704	0.1-	0.5+	1998 09 27	704	(2.5+	1.3+)
1990 10 15	033	0.6+	0.4+	1998 09 18	704	1.1-	0.5+	1998 09 27	704	(1.0-	2.3-)
1990 10 18	033	0.4-	0.9-	1998 09 18	704	0.3+	0.7+	1998 09 27	704	0.2+	0.7-
1990 10 18	033	0.0	0.3+	1998 09 25	699	0.1-	0.8+	1998 10 14	699	0.4-	0.0
1998 09 14	704	0.4-	0.4-	1998 09 25	699	0.1-	0.5+	1998 10 14	699	1.7+	0.5-
1998 09 14	704	1.3+	0.7-	1998 09 25	699	0.9+	0.8+	1998 10 16	691	0.5-	0.1+
1998 09 14	704	0.0	0.3-	1998 09 26	704	0.2+	0.3-	1998 10 16	691	0.4-	0.0
1998 09 17	699	0.5+	0.3+	1998 09 26	704	0.9-	1.5-	1998 10 16	691	0.4-	0.0
1998 09 17	699	0.1+	0.2+	1998 09 26	704	0.4-	1.2-	1998 10 28	691	0.7-	0.4-
1998 09 17	699	0.1+	0.5+	1998 09 26	704	0.3+	0.7-	1998 10 28	691	0.6-	0.4-
1998 09 18	704	0.2-	0.3-	1998 09 27	704	0.0	0.9+	1998 10 28	691	(2.2-	6.3-)

1998 SF₅₈ = 1979 SK₁₄ = 1997 EB₅₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	61.61958	(2000.0)	P	Q			
<i>n</i>	0.25987640	ω	314.23641	+0.75532276	+0.65526906		
<i>a</i>	2.4319696	Ω	4.85802	-0.56044688	+0.65415105		
<i>e</i>	0.1904365	<i>i</i>	7.11344	-0.33968634	+0.37776827		
<i>P</i>	3.79	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 09 20	675	0.1-	1.0+	1998 09 18	704	0.0	0.6+	1998 10 13	691	1.5-	0.1-
1979 09 21	675	0.6-	0.3+	1998 09 18	704	0.7-	0.2-	1998 10 13	691	1.4-	0.1-
1997 03 10	809	1.7+	0.7+	1998 09 18	704	0.2-	0.3+	1998 10 13	691	1.5-	0.1-
1997 03 10	809	0.1+	0.9+	1998 09 25	699	0.4+	1.1+	1998 10 14	704	0.6+	0.3+
1997 03 10	809	0.8+	0.3+	1998 09 25	699	0.3+	0.3+	1998 10 14	704	0.6-	1.7+
1997 03 11	809	0.5+	0.9+	1998 09 25	699	0.0	0.2+	1998 10 14	704	0.1+	1.0-
1997 03 11	809	1.6-	0.5+	1998 09 26	704	0.2-	0.2+	1998 10 14	704	0.3+	0.2-
1997 03 11	809	0.5+	0.4+	1998 09 26	704	1.2+	0.7-	1998 10 14	704	0.1-	0.7+
1998 09 14	704	0.6-	0.0	1998 09 26	704	0.6+	1.7-	1998 10 14	699	0.5+	0.2-
1998 09 14	704	0.3+	0.3-	1998 09 26	704	1.1+	0.6-	1998 10 14	699	0.7+	0.1-
1998 09 14	704	0.2+	0.9-	1998 09 26	704	1.4+	1.1-	1998 10 14	699	0.3+	0.9+
1998 09 17	699	0.2-	0.5+	1998 09 27	704	0.5-	0.1+	1998 10 15	704	0.2-	0.4-
1998 09 17	699	0.3-	0.2+	1998 09 27	704	0.3+	0.4+	1998 10 15	704	0.2+	0.2+
1998 09 17	699	0.1+	0.4+	1998 09 27	704	0.5-	0.1+	1998 10 15	704	0.4+	0.6+
1998 09 18	704	0.2+	0.4+	1998 09 27	704	0.0	0.3-	1998 10 15	704	0.1+	0.2+
1998 09 18	704	1.1-	0.8+	1998 09 27	704	0.1-	0.9-	1998 10 15	704	0.5-	0.4+

1998 SG₅₈ = 1997 EY₅₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams							
<i>M</i>	79.46077	(2000.0)	P	Q			
<i>n</i>	0.27667185	ω	302.44014	+0.58987475	+0.80745867		
<i>a</i>	2.3325237	Ω	3.73487	-0.69593977	+0.51315590		
<i>e</i>	0.1242682	<i>i</i>	6.73034	-0.40953098	+0.29100089		
<i>P</i>	3.56	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1997 03 08	809	0.5+	0.2+	1998 09 17	699	0.9-	0.0	1998 09 26	704	0.0	0.8-
1997 03 08	809	0.1+	1.3-	1998 09 17	699	0.8-	0.6-	1998 09 26	704	0.6-	0.0
1997 03 08	809	0.1+	2.4-	1998 09 25	699	0.3-	0.4-	1998 09 26	704	1.3-	0.3-
1997 03 09	809	0.3-	1.7+	1998 09 25	699	0.1-	0.3+	1998 09 27	704	0.7+	0.4+
1997 03 09	809	0.3+	1.9+	1998 09 25	699	0.4-	0.1-	1998 09 27	704	1.1+	1.4+
1997 03 09	809	0.1+	1.2+	1998 09 26	704	0.5-	1.2+	1998 09 27	704	1.2+	0.1-
1998 09 17	699	0.2+	0.3-	1998 09 26	704	0.1+	0.1+	1998 09 27	704	1.0+	0.1+

Residuals in seconds of arc

1997 04 11	809	0.5−	1.5+	1998 09 25	699	0.0	1.1+	1998 10 11	120	0.4−	0.4+
1997 04 11	809	1.3+	1.7+	1998 09 25	699	0.4+	0.7+	1998 10 11	120	0.4+	0.1−
1997 04 11	809	0.2+	0.9+	1998 09 25	699	0.0	0.6+	1998 10 14	704	0.1−	0.3−
1997 04 12	809	0.7−	1.6−	1998 09 26	704	0.3+	0.1−	1998 10 14	704	0.4+	0.1+
1997 04 12	809	0.0	1.1−	1998 09 26	704	0.5−	1.2−	1998 10 14	704	0.1−	0.1+
1997 04 12	809	0.4−	1.4−	1998 09 26	704	0.0	0.4+	1998 10 14	704	0.3+	0.1−
1998 09 14	704	1.0+	0.3−	1998 09 26	704	0.1−	1.8−	1998 10 14	704	0.8−	0.1−
1998 09 14	704	1.3+	0.3+	1998 09 26	704	0.1+	1.3−	1998 10 15	704	(2.4− 0.4+)	
1998 09 14	704	1.4+	0.3−	1998 09 27	704	0.7−	0.3+	1998 10 15	704	0.2+	0.5−
1998 09 17	699	0.2+	0.3+	1998 09 27	704	1.1−	0.9+	1998 10 15	704	0.1+	0.6−
1998 09 17	699	0.6+	0.2+	1998 09 27	704	0.5−	0.3−	1998 10 15	704	0.6+	0.4−
1998 09 17	699	0.2+	0.5+	1998 09 27	704	1.7−	0.2+	1998 10 15	704	0.6+	1.4−
1998 09 18	704	0.3−	0.8+	1998 09 27	704	0.3−	0.0	1998 10 28	704	0.9+	0.3−
1998 09 18	704	0.8−	0.3−	1998 09 29	120	0.1−	0.9+	1998 10 28	704	1.7+	0.2−
1998 09 18	704	0.3−	0.4−	1998 09 29	120	0.2−	0.7+	1998 10 28	704	0.2+	0.4−
1998 09 18	704	0.1+	0.3−	1998 09 30	120	0.1−	0.8+	1998 10 28	704	0.6−	1.1+
1998 09 18	704	0.3−	1.0−	1998 10 11	120	0.2−	0.2+	1998 10 28	704	1.5−	1.0+

1998 SM₅₈ = 1993 QO₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	350.54506	(2000.0)	P	Q	
<i>n</i>	0.20582436	<i>ω</i> 239.31523	+0.71851994	−0.69542952	
<i>a</i>	2.8410019	<i>Ω</i> 164.73796	+0.65079673	+0.66701320	
<i>e</i>	0.0601347	<i>i</i> 2.25081	+0.24534202	+0.26734095	
<i>P</i>	4.79	<i>H</i> 14.1	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1993 08 16	010	0.2+	0.2+	1998 09 26	704	0.6−	0.5+	1998 10 15	704	0.3+	0.6+
1993 08 16	010	0.2+	0.9−	1998 09 26	704	0.4−	0.3+	1998 10 15	704	1.1+	0.7−
1993 08 16	010	0.8+	0.1−	1998 09 26	704	0.6−	0.3+	1998 10 15	704	0.0	1.0+
1993 08 17	010	1.1−	0.9+	1998 09 26	704	0.2−	0.2−	1998 10 19	699	0.2+	0.8+
1998 09 14	704	0.5−	0.0	1998 09 27	704	0.7+	1.8+	1998 10 19	699	0.2−	1.5+
1998 09 14	704	0.9−	1.0−	1998 09 27	704	0.5−	0.5−	1998 10 19	699	0.2+	1.7+
1998 09 14	704	0.0	0.1−	1998 09 27	704	0.3+	0.1−	1998 10 22	691	0.7−	0.4−
1998 09 17	699	0.4−	0.8−	1998 09 27	704	0.3+	0.2−	1998 10 22	691	0.7−	0.4−
1998 09 17	699	0.4+	0.1+	1998 09 27	704	0.4−	1.3−	1998 10 27	691	0.4−	0.3−
1998 09 17	699	0.9−	0.3−	1998 10 14	704	1.0+	0.1+	1998 10 27	691	0.8−	0.4−
1998 09 18	704	0.3+	0.1−	1998 10 14	704	0.6+	0.1−	1998 10 27	691	0.1−	0.3+
1998 09 18	704	0.3+	0.3−	1998 10 14	699	0.2−	0.6+	1998 10 28	704	0.4+	0.2+
1998 09 18	704	0.1+	0.1−	1998 10 14	704	1.1−	0.9−	1998 10 28	704	0.4+	1.1−
1998 09 18	704	(2.3− 0.1−)		1998 10 14	704	0.1−	0.5−	1998 10 28	704	0.4+	1.7−
1998 09 25	699	0.1+	0.4+	1998 10 14	699	1.5+	0.8+	1998 10 28	704	(2.4+ 0.3+)	
1998 09 25	699	0.4+	0.1+	1998 10 14	699	0.6+	0.0	1998 10 28	704	0.3+	0.6−
1998 09 25	699	0.4−	0.0	1998 10 15	704	0.5+	0.1−				
1998 09 26	704	0.5+	0.6−	1998 10 15	704	0.6−	1.4+				

1998 SN₅₈ = 1991 VB₂ = 1996 BQ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	47.14872	(2000.0)	P	Q	
<i>n</i>	0.27305992	<i>ω</i> 173.31484	+0.94444460	+0.32855918	
<i>a</i>	2.3530478	<i>Ω</i> 167.49362	−0.30335009	+0.88141260	
<i>e</i>	0.2354643	<i>i</i> 2.26514	−0.12650342	+0.33935334	
<i>P</i>	3.61	<i>H</i> 15.3	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1991 11 09	399	(4.8− 0.4−)	1998 09 14	704	1.0−	0.9−	1998 09 27	704	0.6−	0.4−
1991 11 09	399	1.6− 0.4+	1998 09 17	699	0.1−	0.4−	1998 09 27	704	0.3−	0.3−
1991 11 11	399	0.1+ 1.2+	1998 09 17	699	0.8−	0.1−	1998 09 27	704	0.4+	0.3+
1991 11 11	399	0.8− 0.5+	1998 09 17	699	0.3−	0.2−	1998 09 27	704	0.4+	0.6−
1991 11 13	399	0.3+ 0.1−	1998 09 18	704	0.2+	0.4−	1998 09 27	704	1.1+	0.5+
1991 11 13	399	1.7+ 0.7−	1998 09 18	704	0.4−	0.8−	1998 10 14	704	0.3+	0.4+
1996 01 17	595	0.5− 0.5−	1998 09 18	704	0.2+	0.4−	1998 10 14	704	0.2+	0.2+
1996 01 17	595	0.9− 0.4−	1998 09 18	704	0.6−	0.4−	1998 10 14	704	(0.2+ 2.5+)	
1996 01 17	595	0.2− 0.8−	1998 09 18	704	0.6+	0.4−	1998 10 14	704	0.6+	0.9+
1996 01 19	595	1.7+ 0.4+	1998 09 25	699	0.4+	0.1−	1998 10 15	704	0.8+	0.1−

1996 01 19	595	0.6+	0.3−	1998 09 25	699	0.3+	0.0	1998 10 15	704	0.1+	0.0
1996 01 19	595	0.8−	0.4+	1998 09 25	699	0.2+	0.4+	1998 10 15	704	0.1+	0.0
1998 08 02	699	0.3+	0.8+	1998 09 26	704	0.2−	0.5+	1998 10 15	704	0.1+	0.2+
1998 08 02	699	0.7+	0.2+	1998 09 26	704	0.8−	0.3−	1998 10 15	704	0.3+	0.6+
1998 08 02	699	0.1+	0.6+	1998 09 26	704	0.5+	0.0	1998 10 19	699	0.2+	0.4+
1998 09 14	704	0.9−	1.1−	1998 09 26	704	0.2−	0.7+	1998 10 19	699	0.1+	0.1+
1998 09 14	704	1.2−	0.4−	1998 09 26	704	0.4−	0.7−	1998 10 19	699	0.3+	0.6+

1998 SR₅₈ = 1997 LC₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	309.73091	(2000.0)	P	Q	
<i>n</i>	0.28154677	<i>ω</i> 273.87767	−0.10540063	−0.99442061	
<i>a</i>	2.3055206	<i>Ω</i> 182.18646	+0.95113889	−0.09955352	
<i>e</i>	0.0529919	<i>i</i> 6.44966	+0.29021633	−0.03488201	
<i>P</i>	3.50	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1997 06 10	327	0.4−	0.2+	1998 09 17	699	0.2+	0.2+	1998 09 26	704	0.6+	0.8−
1997 06 10	327	0.5−	0.2+	1998 09 17	699	0.7+	0.2+	1998 09 26	704	0.1+	0.9−
1997 06 10	327	0.5−	0.1−	1998 09 18	704	0.2+	0.2−	1998 09 26	704	0.3+	1.0−
1997 06 14	327	0.6+	0.2−	1998 09 18	704	0.7−	0.9+	1998 09 26	704	0.0	0.6−
1997 06 14	327	0.6+	0.2−	1998 09 18	704	0.8−	0.1−	1998 09 26	704	0.6−	1.0−
1997 06 14	327	0.3+	0.2+	1998 09 18	704	0.1+	2.4+	1998 09 27	704	0.4−	0.0
1998 09 14	704	0.7+	1.2−	1998 09 18	704	0.3−	0.4+	1998 09 27	704	0.2−	0.3−
1998 09 14	704	0.1−	0.2−	1998 09 25	699	0.1+	0.2+	1998 09 27	704	0.1−	0.2+
1998 09 14	704	0.6−	1.1−	1998 09 25	699	0.7+	0.5+	1998 09 27	704	0.2−	0.7+
1998 09 17	699	0.3+	0.4+	1998 09 25	699	0.6−	0.9+	1998 09 27	704	0.7+	0.5+

1998 SB₅₉ = 1977 RB₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

			Williams		
<i>M</i>	23.81229	(2000.0)	P	Q	
<i>n</i>	0.18898913	<i>ω</i> 198.60578	+0.99296516	−0.11743515	
<i>a</i>	3.0073098	<i>Ω</i> 168.10788	+0.11580978	+0.93658594	
<i>e</i>	0.1428526	<i>i</i> 4.21285	+0.02466326	+0.33017536	
<i>P</i>	5.22	<i>H</i> 14.8	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1977 09 09	675	0.3+	0.9+	1998 09 18	704	(1.7− 2.7+)	1998 09 26	704	0.5−	0.7−	
1977 09 10	675	0.5−	0.3−	1998 09 18	704	(2.4− 1.2−)	1998 09 27	704	0.3+	1.2+	
1998 09 14	704	0.8+	0.5+	1998 09 18	704	0.2− 0.8−	1998 09 27	704	0.2+	0.5+	
1998 09 14	704	1.1−	0.9−	1998 09 25	699	0.3− 0.3−	1998 09 27	704	0.1+	0.1+	
1998 09 14	704	0.6+	1.6−	1998 09 25	699	0.9− 0.6−	1998 09 27	704	1.3−	0.8+	
1998 09 17	699	0.4−	0.2+	1998 09 25	699	0.4+	0.8−	1998 09 27	704	0.2+	0.2−
1998 09 17	699	0.2+	0.7+	1998 09 26	704	0.2+	0.2−	1998 10 17	699	0.4−	0.3+
1998 09 17	699	0.0	0.2+	1998 09 26	704	0.2− 0.5−	1998 10 17	699	1.3+	1.1+	
1998 09 18	704	0.2−	0.8+	1998 09 26	704	0.8+	0.7−	1998 10 17	699	0.4+	0.3+
1998 09 18	704	0.4−	0.4+	1998 09 26	704	0.5+	0.4−				

1998 SF₅₉ = 1993 TH₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	132.87217		(2000.0)	P	Q
n	0.19177751	ω	78.34742	−0.24669205	+0.96905556
a	2.9780884	Ω	177.32421	−0.94545713	−0.23871228
e	0.0414889	i	10.64438	−0.21272952	−0.06283135
P	5.14	H	13.5	G 0.15	U 5

1998 NOV. 10

1998 09 14	704	0.1−	0.3−	1998 09 25	699	0.4+	0.6−	1998 10 17	699	0.3+	0.2−
1998 09 17	699	0.9−	1.1+	1998 09 26	704	1.0+	0.7+	1998 10 17	699	1.4+	0.2−
1998 09 17	699	1.1−	1.1+	1998 09 26	704	0.3−	0.8−				

1998 SP₅₉ = 4143 T-1

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	287.63627		(2000.0)	P	Q		
<i>n</i>	0.23457596	ω	0.51942	−0.44652161	−0.89352466		
<i>a</i>	2.6038365	Ω	116.00203	+0.82074836	−0.43003866		
<i>e</i>	0.0541308	<i>i</i>	3.01322	+0.35635737	−0.12915279		
<i>P</i>	4.20	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1971 03 24	675	1.8+	2.0−	1998 09 17	699	0.3−	0.1+	1998 09 26	704	0.3+	0.2−
1971 03 26	675	0.3+	0.8+	1998 09 25	699	0.6+	1.0+	1998 09 26	704	0.0	0.3−
1971 03 26	675	0.2−	0.2+	1998 09 25	699	1.0+	0.0	1998 09 27	704	0.7−	0.2+
1971 03 27	675	2.3−	0.4−	1998 09 25	699	0.4−	0.1+	1998 09 27	704	0.2+	0.4−
1971 04 02	675	0.3+	1.4+	1998 09 26	704	0.6+	0.1+	1998 09 27	704	0.5+	0.1−
1998 09 17	699	0.0	1.5−	1998 09 26	704	0.5−	0.5+	1998 09 27	704	0.4+	0.4+
1998 09 17	699	0.0	0.3−	1998 09 26	704	0.2+	1.0+	1998 09 27	704	1.9−	0.7−

1998 SQ₅₉ = 1976 SY₃ = 1991 HS

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	101.35110		(2000.0)	P	Q		
<i>n</i>	0.18047962	ω	178.03765	+0.08638920	+0.99537025		
<i>a</i>	3.1011107	Ω	96.91650	−0.91462912	+0.09600446		
<i>e</i>	0.1540438	<i>i</i>	2.43233	−0.39495631	−0.00460616		
<i>P</i>	5.46	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 09 24	095	2.1−	1.6−	1998 09 18	704	0.4−	0.5+	1998 09 27	704	0.2−	0.1+
1976 09 29	095	3.2+	1.0−	1998 09 18	704	0.3−	0.1+	1998 09 27	704	0.7−	0.0
1991 04 17	071	0.1+	1.0−	1998 09 18	704	0.2+	0.1−	1998 09 27	704	0.4−	0.4−
1991 04 17	071	0.1−	0.9+	1998 09 25	699	0.2+	0.3+	1998 09 27	704	1.3−	1.1−
1998 09 14	704	0.1+	0.0	1998 09 25	699	1.1+	0.2+	1998 10 10	699	0.1−	0.3−
1998 09 14	704	0.4+	0.4+	1998 09 25	699	0.5+	0.6−	1998 10 10	699	0.3+	0.5−
1998 09 14	704	1.2−	1.6+	1998 09 26	704	0.7−	1.5+	1998 10 10	699	0.3+	0.5−
1998 09 17	699	0.1−	0.1−	1998 09 26	704	0.6−	0.9+	1998 10 19	699	0.1−	0.7−
1998 09 17	699	0.2+	0.1+	1998 09 26	704	0.2+	1.3+	1998 10 19	699	0.5+	0.9−
1998 09 17	699	0.1−	0.4+	1998 09 26	704	0.0	0.5+	1998 10 19	699	0.4+	0.9−
1998 09 18	704	1.4+	0.1−	1998 09 26	704	0.5−	0.8+				
1998 09 18	704	0.1−	0.6+	1998 09 27	704	0.1−	0.6−				

1998 ST₅₉ = 1993 FA₅₅ = 1996 AY₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	44.47294		(2000.0)	P	Q		
<i>n</i>	0.26178045	ω	263.85415	+0.97288587	+0.22451123		
<i>a</i>	2.4201628	Ω	83.16192	−0.18383361	+0.89642659		
<i>e</i>	0.2008812	<i>i</i>	3.20829	−0.14035059	+0.38211789		
<i>P</i>	3.77	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 17	809	0.7−	1.2−	1998 09 18	704	0.5+	0.1−	1998 10 14	704	1.5−	0.6−
1993 03 18	809	0.6−	1.6−	1998 09 18	704	0.8+	1.3+	1998 10 14	704	0.7−	1.4−
1996 01 12	691	0.2+	0.2−	1998 09 25	699	0.5+	0.1+	1998 10 14	704	(2.7− 1.2−)	
1996 01 12	691	0.0	0.0	1998 09 25	699	0.5+	0.3−	1998 10 15	704	0.8−	0.5−
1996 01 12	691	0.4+	0.2+	1998 09 25	699	0.3−	0.2+	1998 10 15	704	0.2+	0.1−
1996 01 18	691	0.4−	0.1−	1998 09 26	704	0.1+	0.0	1998 10 15	704	1.1−	0.6−
1996 01 18	691	0.1+	0.3−	1998 09 26	704	0.8+	0.0	1998 10 15	704	0.6+	1.7−
1996 01 18	691	0.2−	0.3−	1998 09 26	704	0.5+	0.2−	1998 10 15	704	0.4+	0.9+
1998 09 14	704	1.1+	0.4−	1998 09 26	704	0.4+	0.9−	1998 10 17	699	0.0	0.4−
1998 09 14	704	0.0	0.5+	1998 09 26	704	0.5−	1.2−	1998 10 17	699	0.9−	0.1−
1998 09 14	704	1.1−	0.4+	1998 09 27	704	0.4+	0.2−	1998 10 17	699	0.0	0.1−
1998 09 17	699	1.4+	0.2−	1998 09 27	704	0.2−	0.1+	1998 10 28	704	0.7−	0.7+
1998 09 17	699	0.9+	0.2+	1998 09 27	704	0.1+	0.2−	1998 10 28	704	1.9−	0.9+

M.P.C. 33033

1998 09 17	699	0.8+	0.7+	1998 09 27	704	0.1+	0.2+	1998 10 28	704	0.5+	0.3+
1998 09 18	704	1.0+	0.7−	1998 09 27	704	0.4−	0.4−	1998 10 28	704	0.9−	0.9+
1998 09 18	704	1.0+	0.7−	1998 10 14	704	0.4−	0.4+	1998 10 28	704	(2.4− 1.4+)	
1998 09 18	704	0.0	0.9+	1998 10 14	704	0.4−	0.2+				

1998 SU₅₉ = 7645 P-L = 1994 RC₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	174.78035		(2000.0)	P	Q		
<i>n</i>	0.25989984	ω	61.24191	−0.76020713	+0.64839018		
<i>a</i>	2.4318234	Ω	159.09320	−0.62888538	−0.71859994		
<i>e</i>	0.0818463	<i>i</i>	6.58629	−0.16305919	−0.25140466		
<i>P</i>	3.79	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 10 17	675	0.3+	1.2−	1998 09 17	699	0.3+	1.6+	1998 09 26	704	0.9−	1.3+
1960 10 22	675	0.7+	0.1+	1998 09 17	699	0.9+	0.7+	1998 09 26	704	0.1−	1.0+
1960 10 25	675	0.8−	0.3−	1998 09 25	699	0.7−	1.0+	1998 09 27	704	0.2+	0.5−
1960 10 26	675	0.3+	0.5−	1998 09 25	699	0.1+	0.5+	1998 09 27	704	0.1−	0.7−
1994 09 01	033	0.5−	0.3+	1998 09 25	699	1.0+	0.4−	1998 09 27	704	0.5+	1.1−
1994 09 02	033	0.5−	0.3+	1998 09 26	704	0.6+	0.4+	1998 09 27	704	1.2−	0.9−
1994 09 03	033	1.0+	0.7−	1998 09 26	704	0.5−	0.2−	1998 09 27	704	0.8−	2.1−
1998 09 17	699	0.7+	0.1+	1998 09 26	704	0.5−	1.1+				

1998 SV₅₉ = 1996 FV₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	2.48968		(2000.0)	P	Q		
<i>n</i>	0.22817297	ω	302.97124	+0.69677841	−0.71500361		
<i>a</i>	2.6523240	Ω	102.74713	+0.67611281	+0.62807122		
<i>e</i>	0.2081516	<i>i</i>	3.36096	+0.23952311	+0.30707718		
<i>P</i>	4.32	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 20	691	0.3−	0.1+	1998 09 17	699	0.3−	0.3−	1998 09 26	704	1.2+	0.2+
1996 03 20	691	0.4−	0.2+	1998 09 18	704	0.9+	0.7+	1998 09 26	704	0.8−	0.4−
1996 03 20	691	0.4−	0.2+	1998 09 18	704	0.5−	0.3−	1998 09 26	704	0.7+	0.4−
1996 03 24	691	0.5+	0.4−	1998 09 18	704	1.7−	1.8+	1998 09 27	704	0.3−	0.3−
1996 03 24	691	0.1+	0.3−	1998 09 18	704	2.0−	1.8+	1998 09 27	704	0.2−	0.3+
1996 03 24	691	0.3+	0.4−	1998 09 18	704	0.2−	1.4+	1998 09 27	704	0.8+	0.8+
1998 09 14	704	1.0+	1.2−	1998 09 25	699	0.3−	0.0	1998 09 27	704	0.7−	0.1−
1998 09 14	704	2.3+	0.3+	1998 09 25	699	0.3+	1.2−	1998 09 27	704	0.1−	0.3−
1998 09 14	704	0.6−	1.4−	1998 09 25	699	0.1+	0.6+	1998 10 17	699	0.5+	0.3−
1998 09 17	699	0.1+	0.1−	1998 09 26	704	0.6+	0.3+	1998 10 17	699	0.5−	0.4−
1998 09 17	699	0.8+	1.1−	1998 09 26	704	0.7−	0.9−	1998 10 17	699	0.4−	0.3+

1998 SY₅₉ = 1989 CU₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

				Williams			
<i>M</i>	344.30501		(2000.0)	P	Q		
<i>n</i>	0.17558343	ω	284.56250	+0.51449336	−0.85411452		
<i>a</i>	3.1584962	Ω	134.21183	+0.82192588	+0.46592728		
<i>e</i>	0.1496056	<i>i</i>	6.09135	+0.24440628	+0.23108473		
<i>P</i>	5.61	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 02 02	033	0.0	0.1+	1998 09 26	704	0.1−	0.0	1998 10 28	704	1.3+	1.2−
1989 02 04	033	0.0	0.0	1998 09 26	704	0.2−	0.4+	1998 10 28	704	0.6+	0.3−
1998 09 17	699	1.1+	1.0+	1998 09 27	704	1.6−	0.1−	1998 10 28	704	0.0	0.1−
1998 09 17	699	0.6+	0.0	1998 09 27	704	0.5−	0.3+	1998 10 28	704	0.8−	0.4−
1998 09 25	699	0.2+	0.4−	1998 09 27	704	0.4−	0.5+	1998 10 29	704	0.3−	1.1+

1998 SZ₅₉ = 1993 FX₆ = 1994 PO₁₅
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26326770	ω	106.34909	−0.17042648	+0.98380267		
<i>a</i>	2.4110395	Ω	153.64348	−0.94508993	−0.14724250		
<i>e</i>	0.0819423	<i>i</i>	7.18952	−0.27885451	−0.10223474		
<i>P</i>	3.74	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 03 17	809	0.4+	1.0+	1998 09 17	699	0.5+	0.1+	1998 09 26	704	0.7−	1.0+
1993 03 18	809	0.6−	0.4−	1998 09 20	327	0.2+	0.2+	1998 09 27	704	0.6+	0.5−
1993 03 23	809	0.2+	0.5−	1998 09 20	327	0.6+	1.2+	1998 09 27	704	0.5+	0.6−
1994 08 10	809	0.5+	1.2+	1998 09 20	327	0.5+	1.0+	1998 09 27	704	0.2+	0.5−
1994 08 10	809	0.3−	0.4−	1998 09 25	699	0.4+	0.0	1998 09 27	704	0.3+	1.8−
1994 08 10	809	1.1−	1.3−	1998 09 25	699	0.5−	0.0	1998 09 27	704	1.0+	1.0−
1994 08 11	809	1.9+	0.5+	1998 09 25	699	1.1−	0.3+	1998 10 17	699	0.8−	0.3−
1994 08 11	809	0.3+	0.2+	1998 09 26	704	0.7−	0.4+	1998 10 17	699	0.3+	0.4−
1994 08 11	809	1.2−	0.4−	1998 09 26	704	1.6−	0.4−	1998 10 17	699	(1.1−	2.3+)
1998 09 17	699	0.5+	0.4+	1998 09 26	704	0.5−	0.9+				
1998 09 17	699	0.2+	0.4−	1998 09 26	704	0.1+	0.6+				

1998 SG₆₀ = 1981 TL
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17203651	ω	333.47906	+0.37531902	−0.92585377		
<i>a</i>	3.2017614	Ω	94.45017	+0.85804600	+0.32912201		
<i>e</i>	0.1680488	<i>i</i>	2.52581	+0.35056055	+0.18567038		
<i>P</i>	5.73	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 09 26	688	0.4+	0.1−	1998 09 18	704	0.6−	0.1+	1998 09 26	704	0.2−	0.8+
1981 09 26	688	(6.7−	4.4−)	1998 09 18	704	0.1+	0.1+	1998 09 27	704	0.5−	0.6−
1981 10 04	688	(1.6−	4.8−)	1998 09 18	704	0.1+	0.9+	1998 09 27	704	0.9−	0.0
1981 10 04	688	0.3+	1.4−	1998 09 18	704	1.4+	0.7+	1998 09 27	704	0.7+	0.2+
1998 09 14	704	0.3−	0.5−	1998 09 25	699	0.0	0.1−	1998 09 27	704	0.1+	0.4+
1998 09 14	704	0.9−	1.1−	1998 09 25	699	0.4+	0.0	1998 09 27	704	0.4+	0.1+
1998 09 14	704	1.3−	0.8−	1998 09 25	699	0.3+	0.3−	1998 10 17	699	0.3−	0.8+
1998 09 17	699	1.1+	0.1−	1998 09 26	704	0.6+	0.3−	1998 10 17	699	0.1−	1.1+
1998 09 17	699	0.0	0.4+	1998 09 26	704	0.8−	0.3−	1998 10 17	699	0.2−	0.4+
1998 09 17	699	0.1−	0.1+	1998 09 26	704	0.5+	0.0				
1998 09 18	704	0.2+	0.5−	1998 09 26	704	0.3−	0.2+				

1998 SR₆₀ = 1990 EG₆ = 1991 JM₃ = 1997 MG₅
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17375711	ω	145.20892	−0.25546744	+0.96580640		
<i>a</i>	3.1805898	Ω	109.95462	−0.89737076	−0.21985194		
<i>e</i>	0.1261274	<i>i</i>	2.69573	−0.35980842	−0.13741586		
<i>P</i>	5.67	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 03 02	809	0.4−	0.4−	1997 06 29	704	0.4+	0.9−	1998 09 18	704	0.2+	0.7−
1990 03 02	809	0.2−	0.5−	1997 07 02	704	0.3+	0.3+	1998 09 25	699	0.2−	0.0
1990 03 02	809	0.0	0.7−	1997 07 02	704	0.2+	0.6+	1998 09 25	699	0.1−	0.1+
1990 03 03	809	(2.4−	15.8−)	1997 07 02	704	0.4+	0.1+	1998 09 25	699	0.5−	0.8+
1990 03 03	809	(2.1−	16.0−)	1997 07 02	704	0.4+	0.1−	1998 09 26	704	0.1−	0.5−
1990 03 03	809	(1.9−	15.9−)	1997 07 02	704	1.5−	0.2+	1998 09 26	704	0.1+	1.7−
1991 05 12	809	0.5+	0.4+	1998 09 14	704	0.3+	0.9−	1998 09 26	704	1.0+	0.5+
1991 05 12	809	0.0	0.5−	1998 09 14	704	0.5+	0.6−	1998 09 26	704	0.2−	0.5−
1991 05 12	809	0.2+	0.7+	1998 09 14	704	0.2−	1.7−	1998 09 26	704	0.3−	1.3−
1991 05 17	809	0.2−	1.3−	1998 09 17	699	0.2−	0.3−	1998 09 27	704	0.5+	0.7+
1991 05 17	809	0.7−	0.8−	1998 09 17	699	0.6+	1.4+	1998 09 27	704	0.2+	0.1+
1991 05 17	809	0.3−	1.3−	1998 09 17	699	0.5+	0.4+	1998 09 27	704	0.4−	0.6+
1997 06 29	704	0.9−	0.3+	1998 09 18	704	0.6+	0.7−	1998 09 27	704	0.7−	0.0
1997 06 29	704	0.0	0.6+	1998 09 18	704	0.2+	0.0	1998 09 27	704	0.8−	0.9+

1997 06 29 704 1.2− 0.2+ 1998 09 18 704 0.2− 0.2+
 1997 06 29 704 1.8+ 0.4+ 1998 09 18 704 0.4+ 0.1−

1998 SV₆₀ = 1997 LX₉
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26595352	ω	254.06055	+0.79221663	−0.60919473		
<i>a</i>	2.3947796	Ω	143.44950	+0.58031015	+0.73397412		
<i>e</i>	0.1331631	<i>i</i>	3.43687	+0.18876689	+0.30027282		
<i>P</i>	3.71	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 07	809	0.6−	0.1+	1998 09 18	704	0.6+	1.0+	1998 09 27	704	1.6−	0.2−
1997 06 07	809	1.0−	0.1−	1998 09 18	704	0.5+	0.8+	1998 10 14	704	0.3+	0.1+
1997 06 07	809	0.5−	0.3+	1998 09 18	704	0.2+	0.9+	1998 10 14	704	0.1+	0.9−
1997 06 08	809	0.4+	0.4−	1998 09 25	699	0.8−	0.9+	1998 10 14	704	1.1+	1.2+
1997 06 08	809	1.0+	0.2−	1998 09 25	699	0.3−	0.4+	1998 10 14	704	0.5−	0.3+
1997 06 08	809	0.7+	0.2+	1998 09 25	699	0.3−	0.6+	1998 10 15	704	0.1−	0.3−
1998 09 14	704	0.7+	0.7−	1998 09 26	704	0.4−	0.1−	1998 10 15	704	0.8+	0.4−
1998 09 14	704	0.3−	0.5−	1998 09 26	704	(3.2−	1.8−)	1998 10 15	704	0.5+	1.2−
1998 09 14	704	0.1−	0.9−	1998 09 26	704	0.4−	0.9−	1998 10 15	704	0.2+	0.2+
1998 09 17	699	0.9+	0.6+	1998 09 26	704	0.7−	1.1−	1998 10 15	704	1.5+	0.4−
1998 09 17	699	0.7+	0.3+	1998 09 27	704	0.6−	1.2−	1998 10 17	699	0.4−	0.7+
1998 09 17	699	0.7+	0.6+	1998 09 27	704	1.5−	0.5−	1998 10 17	699	0.0	0.2+
1998 09 18	704	1.0+	0.7+	1998 09 27	704	1.1−	0.3−	1998 10 17	699	0.5−	0.4+
1998 09 18	704	1.2+	0.0	1998 09 27	704	1.3−	0.3−				

1998 SX₆₀ = 1993 TU₄₄
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19240833	ω	11.39699	+0.89976601	−0.43384251		
<i>a</i>	2.9715757	Ω	14.58984	+0.38429501	+0.73684860		
<i>e</i>	0.1178914	<i>i</i>	10.73574	+0.20673285	+0.51849283		
<i>P</i>	5.12	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 10	809	0.1+	0.3−	1998 09 17	699	0.3−	0.1+	1998 09 26	704	0.3+	0.1+
1993 10 10	809	0.6−	0.8−	1998 09 17	699	0.7+	0.0	1998 09 26	704	0.1−	0.9−
1993 10 10	809	1.6−	0.9−	1998 09 18	704	0.2−	1.0+	1998 09 26	704	0.2−	0.2−
1993 10 22	809	1.6+	1.0+	1998 09 18	704	1.6+	1.7+	1998 09 26	704	0.8+	0.2+
1993 10 22	809	1.2+	0.4+	1998 09 18	704	0.8+	1.0+	1998 09 26	704	1.7−	2.0−
1993 10 22	809	0.6−	0.6+	1998 09 18	704	0.0	0.5+	1998 09 27	704	0.9−	0.1−
1998 09 14	704	0.4+	0.1−	1998 09 18	704	0.6+	0.2+	1998 09 27	704	0.2−	0.5−
1998 09 14	704	0.1−	0.9−	1998 09 25	699	0.9+	0.8+	1998 09 27	704	1.0−	0.7−
1998 09 14	704	1.0−	0.2−	1998 09 25	699	0.2+	0.0	1998 09 27	704	0.4−	0.3−
1998 09 17	699	0.3+	0.3+	1998 09 25	699	0.2−	0.3+	1998 09 27	704	0.3−	0.2−

1998 SY₆₀ = 1997 GG₃₅
 Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	316.58705		(2000.0)			P		Q			
<i>n</i>	0.30400960	ω	305.80732			−0.00826027		−0.99922543			
<i>a</i>	2.1905063	Ω	144.60651			+0.93754779		−0.02111976			
<i>e</i>	0.0654376	<i>i</i>	3.80889			+0.34775840		+0.03320386			
<i>P</i>	3.24	<i>H</i>	15.5			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1997 04 06	704	0.5−	0.1−	1998 09 18	704	2.0+	0.2−	1998 09 26	704	1.2−	0.2+
1997 04 06	704	0.6+	0.4+	1998 09 18	704	0.1+	0.2−	1998 09 27	704	0.1+	0.1−
1997 04 11	704	0.1−	0.7−	1998 09 18	704	0.8−	0.4+	1998 09 27	704	0.4−	0.7−
1997 04 11	704	0.1−	0.4+	1998 09 18	704	0.2−	0.2−	1998 09 27	704	0.9+	0.9+
1998 09 14	704	0.4−	0.1+	1998 09 25	699	0.0	1.6+	1998 09 27	704	0.8+	0.7+
1998 09 14	704	0.1−	0.5+	1998 09 25	699	0.4−	0.2+	1998 09 27	704	1.5+	0.2−
1998 09 14	704	0.5−	1.4−	1998 09 25	699	0.1+	1.6+	1998 10 15	704	0.1+	1.4+
1998 09 17	699	0.7+	0.5−	1998 09 26	704	0.1+	0.2−	1998 10 15	704	0.0	0.4−
1998 09 17	699	0.2−	1.1+	1998 09 26	704	1.0−	0.8−	1998 10 15	704	1.3−	0.5−

1998 NOV. 10

M.P.C. 33035

1998 09 17 699 0.4− 0.6− 1998 09 26 704 1.1− 1.0− 1998 10 15 704 1.1+ 0.8−
 1998 09 18 704 0.5+ 0.2+ 1998 09 26 704 0.1+ 1.1− 1998 10 15 704 (1.3+ 2.6−)

1998 SF₆₁ = 1984 YW = 1987 QB₉ = 1989 CC₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	334.54315		(2000.0)	P	Q
<i>n</i>	0.27637062	ω	116.88891	+0.23014867	−0.97050582
<i>a</i>	2.3342183	Ω	319.59592	+0.84896510	+0.23627866
<i>e</i>	0.0737704	<i>i</i>	6.35664	+0.47569932	+0.04786277
<i>P</i>	3.57	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1984 12 18	801	0.0	0.0	1998 09 14	704	1.3+	1.7−	1998 09 18	704	0.7−	0.6+
1987 08 28	809	0.6−	0.3+	1998 09 17	699	0.1+	0.3+	1998 09 25	699	0.1+	0.0
1987 08 28	809	0.2+	0.1+	1998 09 17	699	0.5−	0.6+	1998 09 25	699	0.4−	0.1−
1987 08 28	809	0.1+	0.2+	1998 09 17	699	0.1+	0.5+	1998 09 25	699	0.1+	0.1−
1989 02 02	033	0.2+	0.2+	1998 09 18	704	0.9−	0.5−	1998 10 18	699	0.0	0.2+
1989 02 03	033	0.1−	0.0	1998 09 18	704	1.0−	0.1+	1998 10 18	699	0.1+	0.1+
1998 09 14	704	1.2+	0.5−	1998 09 18	704	0.7−	0.0	1998 10 18	699	0.1+	0.3+
1998 09 14	704	1.1+	0.8−	1998 09 18	704	0.2+	0.6+				

1998 SK₆₁ = 1980 TS₅ = 1989 UY₇ = 1996 FZ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	15.49069		(2000.0)	P	Q
<i>n</i>	0.21919786	ω	42.65667	+0.88556310	−0.46133902
<i>a</i>	2.7242388	Ω	344.55192	+0.35202919	+0.74273046
<i>e</i>	0.1346799	<i>i</i>	11.75404	+0.30307333	+0.48530174
<i>P</i>	4.50	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1980 10 08	675	0.9+	0.5−	1996 03 25	327	0.4−	1.0+	1998 10 02	704	0.3+	0.3+
1980 10 09	675	1.7+	1.0−	1998 09 14	704	0.1+	0.1−	1998 10 02	704	0.3+	0.5+
1980 10 10	675	0.8+	0.5−	1998 09 14	704	0.4+	0.8+	1998 10 02	704	0.6−	0.3−
1989 10 24	095	(1.3+ 11.4−)		1998 09 14	704	(2.3+ 3.2+)		1998 10 02	704	0.6−	0.2−
1989 10 24	095	0.7−	1.2−	1998 09 17	699	0.5−	1.2+	1998 10 02	704	0.2+	0.0
1989 10 26	095	0.5−	1.0−	1998 09 17	699	0.2−	0.9+	1998 10 12	699	0.1+	0.3+
1989 10 26	095	0.6−	1.6−	1998 09 17	699	0.3−	1.0+	1998 10 12	699	0.2+	0.1+
1996 03 23	566	0.2+	1.2+	1998 09 18	704	0.8−	0.8+	1998 10 12	699	0.2+	0.3+
1996 03 23	566	0.0	1.3+	1998 09 18	704	0.3−	1.2+	1998 10 18	704	0.7−	0.6+
1996 03 23	566	0.3−	1.3+	1998 09 18	704	1.2−	0.2+	1998 10 18	704	0.2+	0.0
1996 03 24	566	1.3+	0.9−	1998 09 18	704	1.0−	0.3+	1998 10 18	704	0.4+	0.1+
1996 03 24	566	1.2+	0.9−	1998 09 18	704	0.9−	1.2+	1998 10 18	704	0.4+	0.6−
1996 03 24	566	0.9+	1.0−	1998 09 25	699	0.2+	0.1+	1998 10 18	704	0.0	0.3−
1996 03 25	327	0.1+	1.3+	1998 09 25	699	0.0	0.6+				
1996 03 25	327	0.2−	1.0+	1998 09 25	699	0.4+	0.6+				

1998 SO₆₁ = 1994 WZ₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	104.32546		(2000.0)	P	Q
<i>n</i>	0.21188796	ω	13.32556	+0.31132139	+0.94861605
<i>a</i>	2.7865394	Ω	274.83570	−0.87701482	+0.26385406
<i>e</i>	0.0365122	<i>i</i>	3.25781	−0.36595627	+0.17466718
<i>P</i>	4.65	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 11 27	010	0.3+	0.3−	1998 09 18	704	0.4+	1.3+	1998 09 27	704	0.2−	0.3−
1994 11 27	010	0.1−	0.9−	1998 09 18	704	0.5+	1.0+	1998 09 27	704	0.3+	0.4+
1994 11 28	010	0.5−	0.1−	1998 09 18	704	1.5−	0.2−	1998 09 27	704	0.0	0.4−
1994 11 28	010	0.2+	0.9+	1998 09 18	704	0.6−	1.6+	1998 09 27	704	0.1−	1.0+
1994 11 28	010	0.0	0.6+	1998 09 25	699	1.1+	0.0	1998 10 28	704	0.1−	0.6+
1994 11 29	010	0.1+	0.2−	1998 09 25	699	0.3−	0.1+	1998 10 28	704	0.8−	1.0+
1998 09 14	704	0.2−	1.2−	1998 09 25	699	1.0+	0.8−	1998 10 28	704	0.1+	0.3−
1998 09 14	704	0.2−	1.7−	1998 09 26	704	0.1+	0.6+	1998 10 28	704	1.8+	0.8−
1998 09 14	704	1.2+	0.7−	1998 09 26	704	0.1+	0.0	1998 10 29	704	1.2+	0.3−
1998 09 17	699	0.1+	0.1−	1998 09 26	704	0.8−	0.1−	1998 10 29	704	1.5−	0.2−

1998 09 17 699 0.0 0.1+ 1998 09 26 704 0.5− 0.6− 1998 10 29 704 0.1− 0.1−
 1998 09 17 699 0.7+ 0.2+ 1998 09 26 704 0.7− 0.1− 1998 10 29 704 1.0+ 0.4−
 1998 09 18 704 0.1− 0.3− 1998 09 27 704 0.2− 0.2− 1998 10 29 704 1.7− 1.0+

1998 SS₆₁ = 1994 UO₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	346.09988		(2000.0)	P	Q
<i>n</i>	0.23409112	ω	210.74442	+0.50838330	−0.85471216
<i>a</i>	2.6074306	Ω	209.08847	+0.82745380	+0.51860869
<i>e</i>	0.1156852	<i>i</i>	12.46635	+0.23846723	+0.02263061
<i>P</i>	4.21	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 10 31	691	0.1+	0.1+	1998 09 18	704	0.4−	0.6−	1998 09 26	704	0.2−	0.9−
1994 10 31	691	0.1+	0.3+	1998 09 18	704	0.8+	0.1+	1998 09 27	704	0.1−	0.4−
1994 10 31	691	0.0	0.3+	1998 09 18	704	0.6+	0.2−	1998 09 27	704	0.1−	0.3+
1994 11 06	691	0.1+	0.1−	1998 09 18	704	0.6+	0.4−	1998 09 27	704	0.6−	0.3−
1994 11 06	691	0.2−	0.0	1998 09 18	704	0.2−	0.6−	1998 09 27	704	0.5+	0.6+
1994 11 06	691	0.2−	0.4−	1998 09 25	699	0.4+	0.4−	1998 09 27	704	0.2−	0.4−
1998 09 14	704	0.2+	0.5+	1998 09 25	699	0.1+	0.7+	1998 10 12	292	(0.6− 2.7−)	
1998 09 14	704	0.3−	1.0+	1998 09 25	699	0.3+	0.1+	1998 10 12	292	(1.1− 2.9−)	
1998 09 14	704	0.2−	0.8+	1998 09 26	704	0.9+	0.3−	1998 10 12	292	(0.6− 3.3−)	
1998 09 17	699	0.2+	0.4+	1998 09 26	704	1.2−	0.1−	1998 10 14	699	0.2−	0.0
1998 09 17	699	0.2+	0.6+	1998 09 26	704	0.7−	0.6−	1998 10 14	699	0.2−	0.1−
1998 09 17	699	0.3+	0.5+	1998 09 26	704	0.3+	0.5−	1998 10 14	699	0.4−	0.1+

1998 ST₆₁ = 5017 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	8.43785		(2000.0)	P	Q
<i>n</i>	0.18140137	ω	173.47505	+0.90132270	−0.41686549
<i>a</i>	3.0905968	Ω	211.99293	+0.38669374	+0.89678099
<i>e</i>	0.1106229	<i>i</i>	12.82953	+0.19515465	+0.14834763
<i>P</i>	5.43	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1960 10 22	675	1.2−	0.1+	1998 09 18	704	1.6−	0.4+	1998 09 26	704	0.7+	0.9−
1960 10 25	675	1.8+	0.9+	1998 09 18	704	0.6+	0.0	1998 09 26	704	0.2+	1.0−
1960 10 26	675	0.6−	0.8−	1998 09 18	704	1.1−	0.4−	1998 09 27	704	0.5+	0.7−
1998 09 14	704	0.2+	0.3+	1998 09 18	704	0.8−	0.2−	1998 09 27	704	0.5+	0.7−
1998 09 14	704	0.9−	0.9+	1998 09 25	699	0.4−	1.0+	1998 09 27	704	0.4−	1.5−
1998 09 14	704	0.4−	0.1+	1998 09 25	699	0.7+	1.4+	1998 09 27	704	1.3+	0.9−
1998 09 17	699	0.4−	0.3+	1998 09 25	699	0.5+	0.3+	1998 09 27	704	1.6+	0.7−
1998 09 17	699	0.3−	1.4+	1998 09 26	704	0.3+	0.1+	1998 10 14	699	0.3−	1.0+
1998 09 17	699	0.2−	0.9+	1998 09 26	704	0.4+	0.1−	1998 10 14	699	1.4−	0.2−
1998 09 18	704	0.1+	0.5−	1998 09 26	704	0.7+	1.5−	1998 10 14	699	0.5−	1.0+

1998 SU₆₂ = 1993 TT₄₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	26.64068		(2000.0)	P	Q
<i>n</i>	0.19117050	ω	12.28534	+0.99770029	+0.06762128
<i>a</i>	2.9843892	Ω	343.83512	−0.06351121	+0.90878868
<i>e</i>	0.0725633	<i>i</i>	0.95406	−0.02367388	+0.41174081
<i>P</i>	5.16	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 10 10	809	0.3−	0.7+	1998 09 25	699	0.3−	0.3+	1998 10 01	327	0.5−	0.2−
1993 10 10	809	0.2−	0.0	1998 09 25	327	(2.3− 1.0−)		1998 10 14	704	0.1−	0.0
1993 10 10	809	1.0−	0.4−	1998 09 25	327	1.8−	0.4−	1998 10 14	704	1.1+	0.6+
1993 10 22	809	(2.3+ 0.5+)		1998 09 25	327	1.0−	0.0	1998 10 14	704	0.6+	0.2−
1993 10 22	809	0.6+	0.7−	1998 09 26	704	0.1+	0.8+	1998 10 14	704	0.3+	0.4−
1993 10 22	809	0.9+	0.4+	1998 09 26	704	0.3+	1.3−	1998 10 14	704	1.5−	0.4−
1998 09 14	704	0.1+	0.2+	1998 09 26	704	1.3+	0.8−	1998 10 14	327	0.0	0.5+
1998 09 14	704	0.2+	0.7+	1998 09 26	704	1.2+	0.4−	1998 10 14	327	0.4−	0.9+
1998 09 14	704	0.3−	0.4−	1998 09 26	704	0.9+	0.8−	1998 10 14	327	0.2−	0.1+
1998 09 18	704	0.3+	0.6+	1998 09 27							

1998 09 18	704	0.1+	0.5+	1998 09 27	704	0.8+	0.1+	1998 10 15	704	1.0+	0.2−
1998 09 18	704	0.5+	0.4+	1998 09 27	704	0.8−	0.9−	1998 10 15	704	(0.4+	2.2+)
1998 09 18	704	0.7−	0.0	1998 09 27	704	0.7−	0.9−	1998 10 15	704	0.1+	0.8+
1998 09 18	704	0.8+	0.8+	1998 09 27	704	0.4+	1.0−	1998 10 15	704	1.8−	0.2+
1998 09 25	699	0.0	1.2+	1998 10 01	327	0.3−	0.0				
1998 09 25	699	0.1−	0.9+	1998 10 01	327	0.2−	0.5−				

1998 SZ₆₂ = 1990 TP₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	29.32736		(2000.0)	P	Q	Williams
<i>n</i>	0.24447695	ω	5.30513	+0.98529534	−0.17080423	
<i>a</i>	2.5330520	Ω	4.53641	+0.15466352	+0.88076035	
<i>e</i>	0.2198350	<i>i</i>	3.16029	+0.07261054	+0.44168669	
<i>P</i>	4.03	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1990 10 11	033	1.2−	0.4−	1998 09 26	704	0.6−	0.4−	1998 10 18	327	0.1+	0.0
1990 10 12	033	0.3+	0.4+	1998 09 27	704	0.5−	0.7−	1998 10 18	327	0.1+	0.2+
1990 10 12	033	0.4−	0.5+	1998 09 27	704	0.4−	1.5−	1998 10 18	327	0.1+	0.3+
1990 10 13	033	1.0+	0.1−	1998 09 27	704	0.5+	0.3−	1998 10 28	704	1.2−	0.7−
1990 10 14	033	0.0	0.0	1998 09 27	704	0.1+	0.8+	1998 10 28	704	0.9−	0.4+
1990 10 18	033	0.6+	1.1−	1998 09 27	704	0.6−	0.3−	1998 10 28	704	1.6−	1.1−
1998 09 25	327	0.2+	0.4+	1998 09 30	327	0.7+	0.4+	1998 10 28	704	0.3−	0.5−
1998 09 25	327	0.4+	0.4+	1998 09 30	327	0.1+	0.1+	1998 10 29	704	0.2−	0.4+
1998 09 25	327	0.1+	0.5+	1998 09 30	327	0.4+	0.2+	1998 10 29	704	0.7+	0.2−
1998 09 26	704	0.3+	0.3−	1998 10 15	327	0.3−	0.0	1998 10 29	704	(2.4+	1.9+)
1998 09 26	704	0.5+	0.6+	1998 10 15	327	0.5−	0.0	1998 10 29	704	1.8+	0.7+
1998 09 26	704	0.1−	0.1−	1998 10 15	327	0.3−	0.1+	1998 10 29	704	1.2+	1.3+

1998 SB₆₃ = 1981 WZ₃ = 1992 GA₆ = 1992 GA₂Id. G. V. Williams; 1981 TF₄ = 1981 WZ₃ (*MPC* 10752) is invalid

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	323.82261		(2000.0)	P	Q	Williams
<i>n</i>	0.22808566	ω	59.10404	+0.16260068	−0.97538640	
<i>a</i>	2.6530009	Ω	23.00475	+0.72402175	+0.01539732	
<i>e</i>	0.0481977	<i>i</i>	22.40196	+0.67033837	+0.21996428	
<i>P</i>	4.32	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1981 11 25	095	1.7+	0.3−	1998 09 26	704	1.4+	1.0+	1998 10 15	704	0.5+	0.0
1981 11 26	511	1.2+	1.2−	1998 09 27	704	0.0	0.2+	1998 10 15	704	0.7+	0.1−
1981 11 26	511	0.2−	0.2−	1998 09 27	704	1.0+	0.3+	1998 10 15	704	0.3+	0.4−
1981 11 26	511	1.8−	0.8+	1998 09 27	704	0.6−	0.9+	1998 10 15	704	1.0+	0.5+
1992 04 03	303	(4.7+	0.8+)	1998 09 27	704	0.2+	1.0−	1998 10 15	704	0.2+	0.1+
1992 04 03	303	0.1−	0.4−	1998 09 27	704	0.0	1.0−	1998 10 19	699	0.4−	0.5−
1992 04 03	303	0.8−	0.1+	1998 10 02	327	0.4−	0.2+	1998 10 19	699	0.2+	0.2−
1992 04 04	809	0.4−	0.3+	1998 10 02	327	0.6−	0.1+	1998 10 19	699	0.3−	0.2−
1992 04 04	809	1.6−	0.3−	1998 10 02	327	0.3−	0.2+	1998 10 28	704	0.5−	0.9−
1992 04 04	809	0.9−	1.0+	1998 10 10	699	0.6−	0.2−	1998 10 28	704	0.3+	0.8−
1992 04 06	809	0.1+	1.7−	1998 10 10	699	0.4−	0.0	1998 10 28	704	0.1+	0.4−
1992 04 06	809	0.2+	1.6−	1998 10 10	699	0.5−	0.1+	1998 10 28	704	0.0	0.3−
1992 04 06	809	0.8−	2.0−	1998 10 13	327	0.4−	0.1+	1998 10 28	704	0.9−	0.1+
1998 09 25	327	0.0	0.3+	1998 10 13	327	0.2−	0.1+	1998 10 29	704	0.4−	0.9−
1998 09 25	327	0.1−	0.4+	1998 10 13	327	0.2−	0.1+	1998 10 29	704	0.3−	0.8−
1998 09 25	327	0.1−	0.4−	1998 10 14	704	0.4+	0.1+	1998 10 29	704	0.5−	0.1+
1998 09 26	704	1.2+	0.3−	1998 10 14	704	0.2+	0.2−	1998 10 29	704	0.2−	0.3−
1998 09 26	704	0.8+	1.2−	1998 10 14	704	0.9+	0.5+	1998 10 29	704	0.3+	0.9+
1998 09 26	704	(2.3+	1.6−)	1998 10 14	704	0.4+	0.7−				
1998 09 26	704	0.8+	0.0	1998 10 14	704	0.4+	0.0				

1998 SM₆₃ = 1991 RK₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	321.00245		(2000.0)	P	Q	Williams
<i>n</i>	0.28175055	ω	116.63219	+0.15033004	−0.98696714	
<i>a</i>	2.3044089	Ω	324.57404	+0.86818901	+0.15957359	
<i>e</i>	0.0614579	<i>i</i>	5.68475	+0.47291513	+0.02078761	
<i>P</i>	3.50	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1991 09 13	675	0.2+	0.9−	1998 09 18	704	0.8−	0.1+	1998 10 01	327	0.1−	0.0
1991 09 13	675	0.7+	0.7−	1998 09 18	704	0.4−	0.1+	1998 10 01	327	0.3−	0.0
1991 09 15	675	0.9+	0.3−	1998 09 18	704	0.3−	0.7+	1998 10 01	327	0.2−	0.1−
1991 09 15	675	0.2−	1.0−	1998 09 26	704	0.7+	0.4−	1998 10 14	704	0.1−	0.3+
1998 09 14	704	0.5−	0.2−	1998 09 26	704	1.9+	0.5+	1998 10 14	704	0.2+	1.2−
1998 09 14	704	0.3−	0.0	1998 09 26	704	(0.2−	2.2−)	1998 10 14	704	0.2+	0.1+
1998 09 14	704	0.6−	0.5+	1998 09 26	704	0.0	0.5−	1998 10 14	704	0.1−	0.6+
1998 09 14	704	0.4+	0.7+	1998 09 26	704	0.1−	0.5−	1998 10 14	704	1.4+	0.5+
1998 09 14	704	0.4+	0.8+	1998 09 27	704	0.5+	0.5−	1998 10 15	699	0.2+	0.3−
1998 09 18	704	0.1+	0.1−	1998 09 27	704	1.5+	0.8+	1998 10 15	704	0.2−	0.7−
1998 09 18	704	0.7−	0.1−	1998 09 27	704	0.3+	0.6+	1998 10 15	699	0.0	0.5−
1998 09 18	704	0.7−	0.4+	1998 09 27	704	0.6+	0.2−	1998 10 15	704	0.2−	0.1+
1998 09 18	704	0.8−	0.1+	1998 09 27	704	0.1+	0.2−	1998 10 15	704	0.2−	0.3+
1998 09 18	704	0.2−	0.5+	1998 09 29	327	0.6−	0.2−	1998 10 15	699	0.3−	0.0
1998 09 18	704	0.1−	0.2−	1998 09 29	327	0.9−	0.1+	1998 10 15	704	0.5−	0.2+
1998 09 18	704	0.3+	0.0	1998 09 29	327	0.8−	0.1+	1998 10 15	704	0.2−	0.6+

1998 SR₆₃ = 1976 KQ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	47.70178		(2000.0)	P	Q	Williams
<i>n</i>	0.18596923	ω	224.57352	+0.86878755	+0.49407280	
<i>a</i>	3.0397788	Ω	105.79100	−0.44415759	+0.80712711	
<i>e</i>	0.2535338	<i>i</i>	1.97543	−0.21893429	+0.32316853	
<i>P</i>	5.30	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1976 05 29	413	0.2+	0.1+	1998 09 27	704	0.1+	0.5−	1998 10 10	699	0.4+	0.7+
1976 05 29	413	0.3−	0.1+	1998 09 27	704	1.5+	0.0	1998 10 13	327	0.4+	0.9+
1976 05 30	413	0.1+	0.2+	1998 09 27	704	0.6−	1.4−	1998 10 13	327	0.1+	0.0
1976 05 30	413	0.0	0.1−	1998 09 27	704	0.2−	0.4−	1998 10 13	327	0.6+	0.3−
1998 09 15	699	0.7+	0.8+	1998 09 29	327	0.9+	0.3+	1998 10 14	327	0.2+	0.2+
1998 09 15	699	0.7−	0.4+	1998 09 29	327	0.4+	0.5+	1998 10 14	327	0.3+	0.4+
1998 09 15	699	0.1+	0.0	1998 09 29	327	0.3−	0.1−	1998 10 14	327	0.1+	0.2+
1998 09 26	704	0.6−	1.5−	1998 10 01	327	0.6−	0.2−	1998 10 19	699	0.4−	0.2+
1998 09 26	704	1.0+	0.1−	1998 10 01	327	0.4−	0.0	1998 10 19	699	0.1+	0.0
1998 09 26	704	0.4−	0.5−	1998 10 01	327	0.4−	0.1+	1998 10 19	699	1.3−	0.5−
1998 09 26	704	0.0	0.1−	1998 10 10	699	0.1−	0.8+				
1998 09 26	704	1.1−	0.4−	1998 10 10	699	0.0	0.5+				

1998 SV₆₄ = 1978 WO₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	275.92976		(2000.0)	P	Q	Williams
<i>n</i>	0.29261215	ω	73.41670	−0.86407457	−0.49604200	
<i>a</i>	2.2470245	Ω	76.77387	+0.42181742	−0.80629211	
<i>e</i>	0.1172222	<i>i</i>	5.04126	+0.27467291	−0.32223495	
<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 30	675	0.2−	0.2−	1998 09 21	809	0.5−	0.4−	1998 10 28	704	0.6−	0.4+
1978 12 01	675	0.1+	0.4+	1998 10 11	699	0.3+	0.7−	1998 10 29	704	0.9+	0.2+
1998 09 20	809	0.9+	1.6+	1998 10 11	699	0.4+	0.8−	1998 10 29	704	0.6+	0.2+
1998 09 20	809	0.4−	0.1−	1998 10 11	699	0.7−	0.5−	1998 10 29	704	1.1−	1.1−
1998 09 20	809	0.8−	1.6+	1998 10 28	704	(0.0	2.5+)	1998 10 29	704	0.2−	0.2+
1998 09 21	809	0.9+	0.0	1998 10 28	704	(2.6−	2.0+)	1998 10 29	704	0.5+	0.8−
1998 09 21	809	0.5−	1.2−	1998 10 28	704	0.2+	1.4+				

1998 NOV. 10

M.P.C. 33037

1998 SD₆₇ = 1978 TV₄ = 1988 VF₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29630964	ω	298.66896	+0.97184075	+0.22249521		
<i>a</i>	2.2282925	Ω	48.58887	−0.16339480	+0.87357937		
<i>e</i>	0.1925846	<i>i</i>	5.93881	−0.16978723	+0.43284520		
<i>P</i>	3.33	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1978 10 07	095	(0.1+ 3.9+)	1998 09 21	809	1.1+ 0.0	1998 10 23	965 0.9− 0.2−
1988 11 04	046	0.6− 0.9−	1998 09 21	809	0.7− 0.2+	1998 10 23	965 0.2− 0.4−
1988 11 04	046	0.7+ 1.6−	1998 09 21	809	1.5− 0.4+	1998 10 27	965 0.7− 0.2+
1988 11 05	046	0.1+ 0.1−	1998 10 14	699	0.1− 0.1−	1998 10 27	965 0.4− 0.5+
1988 11 05	046	0.3− 0.6−	1998 10 14	699	0.3+ 0.9−	1998 10 27	965 0.6− 1.2+
1988 11 10	046	1.5+ 0.2−	1998 10 14	699	0.7− 0.5−	1998 10 27	965 0.6− 0.6+
1988 11 10	046	0.8+ 0.5−	1998 10 22	965	0.6+ 0.1−	1998 11 07	965 0.1+ 0.6+
1998 09 20	809	1.3+ 0.2−	1998 10 22	965	0.6+ 0.3−	1998 11 07	965 0.3− 0.8+
1998 09 20	809	0.1− 0.3+	1998 10 22	965	1.3+ 0.1+	1998 11 07	965 0.1+ 0.7+
1998 09 20	809	0.3− 0.4+	1998 10 23	965	0.7− 0.2−	1998 11 07	965 0.0 0.9+

1998 SS₆₇ = 1991 JK₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30365691	ω	238.28124	+0.70642851	+0.70185973		
<i>a</i>	2.1922022	Ω	76.96041	−0.61349866	+0.67158591		
<i>e</i>	0.2038035	<i>i</i>	5.38262	−0.35295631	+0.23741373		
<i>P</i>	3.25	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1991 05 12	809	0.8− 1.2+	1998 09 21	809	0.8+ 0.0	1998 10 28	704 0.6− 0.3+
1991 05 12	809	1.4− 1.1+	1998 09 21	809	0.3− 0.2+	1998 10 28	704 0.3− 0.5+
1991 05 12	809	0.5− 0.9+	1998 09 21	809	0.4− 0.3+	1998 10 28	704 0.7− 1.2+
1991 05 17	809	1.0+ 1.3−	1998 10 11	699	0.5+ 0.3+	1998 10 28	704 1.0− 1.2+
1991 05 17	809	0.3+ 0.8−	1998 10 11	699	0.6+ 0.2+	1998 10 29	704 (2.2− 0.5−)
1991 05 17	809	1.4+ 0.8−	1998 10 11	699	0.7+ 0.4+	1998 10 29	704 0.2− 1.1−
1998 09 20	809	0.7− 0.3−	1998 10 20	699	1.0+ 0.0	1998 10 29	704 0.0 1.0−
1998 09 20	809	1.2− 0.8−	1998 10 20	699	0.6+ 0.1−	1998 10 29	704 0.0 1.6−
1998 09 20	809	(2.7− 0.4+)	1998 10 20	699	1.0+ 0.3+		

1998 SU₇₁ = 1981 WT₃ = 1994 AO₁₅ = 1997 ND₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17128263	ω	323.27811	−0.40908446	−0.91231497		
<i>a</i>	3.2111493	Ω	150.85645	+0.84583760	−0.38660891		
<i>e</i>	0.1053789	<i>i</i>	2.14196	+0.34235751	−0.13496279		
<i>P</i>	5.75	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1981 11 24	033	(0.5− 3.1−)	1998 09 18	809	(1.0− 3.2+)	1998 09 23	809 0.6+ 0.5+
1981 11 24	033	0.1− 0.4+	1998 09 18	809	(0.9− 2.9+)	1998 09 26	704 0.3+ 0.2+
1994 01 14	033	0.6− 0.1+	1998 09 18	809	(2.2− 2.8+)	1998 09 26	704 0.3− 0.2−
1994 01 14	033	0.3+ 0.1−	1998 09 20	809	(1.3+ 2.9+)	1998 09 26	704 0.2+ 0.4−
1994 01 17	033	0.4+ 0.5+	1998 09 20	809	(0.8+ 3.5+)	1998 09 26	704 0.1− 1.4−
1997 07 06	691	0.2+ 0.3+	1998 09 20	809	(1.1+ 2.6+)	1998 09 26	704 0.6+ 0.7−
1997 07 06	691	0.0 0.0	1998 09 21	809	(1.9− 3.7+)	1998 09 27	704 0.4− 0.0
1997 07 06	691	0.2+ 0.0	1998 09 21	809	(2.1− 3.2+)	1998 09 27	704 0.2− 0.4+
1997 07 10	691	0.1− 0.0	1998 09 21	809	(2.1− 3.3+)	1998 09 27	704 0.4+ 0.4+
1997 07 10	691	0.3− 0.4+	1998 09 23	809	0.9+ 0.4+	1998 09 27	704 0.8− 0.4+
1997 07 10	691	0.3− 0.1+	1998 09 23	809	0.5+ 0.6+	1998 09 27	704 1.3− 1.0−

1998 SD₇₂ = 1993 VG₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19156001	ω	297.72195	+0.99712402	−0.06424620		
<i>a</i>	2.9803423	Ω	65.98526	+0.07513959	+0.90725032		
<i>e</i>	0.2634511	<i>i</i>	2.52242	−0.00988556	+0.41565525		
<i>P</i>	5.15	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1993 11 11	399	0.4− 0.6−	1998 09 23	809	0.3+ 1.0+	1998 09 27	704 0.3+ 0.5−
1993 11 11	399	2.4− 0.8+	1998 09 23	809	0.5− 1.5+	1998 09 27	704 1.5+ 1.5−
1993 11 16	399	1.9+ 0.4−	1998 09 26	704	0.5+ 0.5−	1998 09 27	704 1.1− 0.9−
1993 11 16	399	1.0+ 0.0	1998 09 26	704	1.0+ 1.0−	1998 09 27	704 0.1− 1.5−
1998 09 21	809	0.2+ 2.3+	1998 09 26	704	0.3− 1.3−	1998 10 30	595 0.2+ 0.2+
1998 09 21	809	0.3− 1.9+	1998 09 26	704	0.4− 1.2−	1998 10 30	595 0.2− 0.4+
1998 09 21	809	0.7− 2.1+	1998 09 26	704	0.6+ 1.5−	1998 10 30	595 0.4+ 0.8+
1998 09 23	809	0.6+ 1.0+	1998 09 27	704	1.2− 1.6−	1998 10 30	595 0.8− 0.8+

1998 SA₇₃ = 1991 RK₂₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28683652	ω	353.50500	+0.88799254	−0.45491831		
<i>a</i>	2.2770877	Ω	33.81545	+0.42715991	+0.76185685		
<i>e</i>	0.1781270	<i>i</i>	6.93754	+0.17030462	+0.46111113		
<i>P</i>	3.44	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1991 09 14	675	0.3− 0.2−	1998 09 23	809	0.4− 0.2+	1998 10 28	758 0.1+ 0.4−
1991 09 14	675	2.0+ 0.9−	1998 10 26	758	0.3+ 0.1−	1998 10 29	758 0.0 0.1+
1991 09 16	675	0.2+ 0.3−	1998 10 26	758	0.6+ 0.0	1998 10 29	758 0.3− 0.1+
1991 09 16	675	1.0− 0.0	1998 10 27	758	0.3− 0.3+	1998 10 29	758 0.2+ 0.1+
1998 09 21	809	0.3− 0.7+	1998 10 27	758	0.3− 0.3+	1998 10 29	758 0.0 0.1+
1998 09 21	809	1.2− 0.4+	1998 10 27	758	0.2− 0.1+	1998 10 30	758 0.5+ 0.2−
1998 09 21	809	1.1− 1.0+	1998 10 28	758	0.1+ 0.3−	1998 10 30	758 0.2+ 0.1−
1998 09 23	809	0.1− 0.0	1998 10 28	758	0.2− 0.2−	1998 10 30	758 0.6+ 0.1−
1998 09 23	809	0.0 0.4+	1998 10 28	758	0.0 0.4−	1998 10 30	758 0.9+ 0.4−

1998 SJ₇₃ = 1997 LG₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25507451	ω	248.34352	+0.93166298	−0.36068088		
<i>a</i>	2.4623966	Ω	132.76893	+0.35147677	+0.86423486		
<i>e</i>	0.1870709	<i>i</i>	3.41607	+0.09202261	+0.35072411		
<i>P</i>	3.86	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 06 07	809	0.6+ 0.6−	1998 09 23	809	(1.7+ 2.5+)	1998 09 27	704 1.1− 0.8−
1997 06 07	809	0.1− 0.4−	1998 09 23	809	0.5+ 1.8+	1998 09 27	704 0.8− 0.7−
1997 06 07	809	0.4− 0.2−	1998 09 26	704	0.4+ 0.3−	1998 10 11	699 0.1+ 0.5+
1997 06 08	809	0.2+ 0.6−	1998 09 26	704	0.1+ 1.1−	1998 10 11	699 0.0 0.3−
1997 06 08	809	0.5+ 1.1+	1998 09 26	704	0.6+ 1.4−	1998 10 11	699 0.2− 0.0
1997 06 08	809	0.7− 0.6+	1998 09 26	704	0.0 0.1+	1998 10 20	699 0.1+ 0.2−
1998 09 21	809	0.7+ 1.3+	1998 09 26	704	0.5− 0.5−	1998 10 20	699 0.2+ 0.1+
1998 09 21	809	0.1+ 0.0	1998 09 27	704	0.1+ 0.5−	1998 10 20	699 0.1+ 0.1+
1998 09 21	809	0.1− 0.9+	1998 09 27	704	0.1+ 0.1+		
1998 09 23	809	(2.1+ 2.3+)	1998 09 27	704	0.3− 0.8+		

1998 SM₇₃ = 1989 TH₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	312.21854		(2000.0)	P		Q	
<i>n</i>	0.21929155	ω	301.40545	-0.28540455	-0.95810361		
<i>a</i>	2.7234628	Ω	165.11968	+0.90812628	-0.27838973		
<i>e</i>	0.1209746	<i>i</i>	5.38913	+0.30635094	-0.06735445		
<i>P</i>	4.49	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1989 09 29	675	0.8+	1.7-	1998 09 21	809	(0.6+	2.8+)
1989 09 29	675	0.0	0.8-	1998 09 21	809	(0.6+	3.3+)
1989 10 03	809	2.0-	0.6-	1998 09 23	809	(2.1+	4.0+)
1989 10 03	809	(3.2-	0.4-)	1998 09 23	809	(1.3+	4.6+)
1989 10 03	809	2.5-	1.4-	1998 09 23	809	(1.0+	4.2+)
1989 10 07	809	0.6+	1.3+	1998 09 26	704	0.1-	1.3-
1989 10 07	809	0.2-	0.2+	1998 09 26	704	0.2-	0.3-
1989 10 07	809	0.2-	0.2-	1998 09 26	704	0.2+	1.2-
1989 10 08	809	1.7+	0.3+	1998 09 26	704	0.4+	1.3-
1989 10 08	809	1.8+	1.4+	1998 09 26	704	0.5-	0.4-
1989 10 08	809	0.4+	0.0	1998 09 27	704	1.0+	0.2-
1998 09 18	699	0.6+	0.1-	1998 09 27	704	1.0+	0.5+
1998 09 18	699	1.4+	0.3+	1998 09 27	704	1.6-	0.2-
1998 09 18	699	0.9-	1.3+	1998 09 27	704	1.5-	1.3+
1998 09 21	809	(2.7+	4.3+)	1998 09 29	704	0.3+	0.4+

1998 ST₇₃ = 4381 T-3 = 1993 BO₁₂ = 1997 GU₄₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	168.53763		(2000.0)	P		Q	
<i>n</i>	0.28159947	ω	89.21870	-0.60537641	+0.79477999		
<i>a</i>	2.3052330	Ω	143.41379	-0.75591949	-0.55720778		
<i>e</i>	0.1549092	<i>i</i>	4.13171	-0.24920899	-0.24050832		
<i>P</i>	3.50	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1977 10 16	675	0.1-	0.1+	1993 01 28	809	0.1-	0.2+
1977 10 16	675	1.5-	0.6+	1997 04 11	809	(0.7+	2.5+)
1977 10 17	675	0.8-	0.7-	1997 04 11	809	1.2+	1.6+
1977 10 17	675	0.2+	0.9-	1997 04 11	809	(0.2+	2.3+)
1977 10 21	675	1.5+	0.8-	1997 04 12	809	0.4+	0.9+
1977 10 21	675	0.7+	1.2-	1997 04 12	809	0.4-	0.9+
1977 10 22	675	0.5+	1.5+	1997 04 12	809	0.2-	0.1+
1993 01 22	809	0.1+	0.8-	1998 09 21	809	0.1+	0.6+
1993 01 22	809	0.3+	0.5+	1998 09 21	809	0.5-	0.9-
1993 01 22	809	1.7-	1.0-	1998 09 21	809	0.1-	0.2+
1993 01 28	809	1.2+	1.3+	1998 09 23	809	0.3+	0.5+
1993 01 28	809	0.6+	0.7+	1998 09 23	809	0.8-	1.1+

1998 SV₇₃ = 1991 RD₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	66.53485		(2000.0)	P		Q	
<i>n</i>	0.28258061	ω	287.59179	+0.86643954	+0.49208159		
<i>a</i>	2.2998940	Ω	43.03510	-0.39815989	+0.78309144		
<i>e</i>	0.1593280	<i>i</i>	7.11156	-0.30124943	+0.38029397		
<i>P</i>	3.49	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1991 09 13	675	0.6-	0.1-	1998 09 23	809	1.8+	0.8+
1991 09 13	675	0.3+	0.5-	1998 09 23	809	0.9+	0.8+
1991 09 15	675	0.0	1.0+	1998 09 23	809	0.2+	0.4-
1991 09 15	675	0.3-	0.4+	1998 09 26	704	0.2-	0.5-
1998 09 18	699	0.5+	0.3+	1998 09 26	704	0.3-	0.8-
1998 09 18	699	0.4+	0.0	1998 09 26	704	0.2+	1.3-
1998 09 18	699	0.0	0.1+	1998 09 26	704	0.2-	0.8-
1998 09 21	809	0.4+	0.7+	1998 09 26	704	0.7-	0.5-

1998 09 21	809	0.3-	0.4+	1998 09 27	704	0.4+	0.0	1998 10 20	699	0.5-	0.2-
1998 09 21	809	0.8-	0.1+	1998 09 27	704	0.5+	0.6+				

1998 SW₇₃ = 1977 UG₃ = 1991 RO₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	77.84897		(2000.0)	P		Q	
<i>n</i>	0.28134545	ω	283.98607	+0.75232746	+0.65378461		
<i>a</i>	2.3066203	Ω	35.29086	-0.53723199	+0.68005649		
<i>e</i>	0.1387254	<i>i</i>	8.06468	-0.38129409	+0.33179642		
<i>P</i>	3.50	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1977 10 18	675	0.1-	0.7+	1998 09 23	809	1.3+	1.8+
1977 10 19	675	0.4+	0.7+	1998 09 23	809	0.8+	1.7+
1991 09 12	675	0.1-	0.9-	1998 09 23	809	0.3+	1.1+
1991 09 12	675	0.0	1.5-	1998 09 26	704	0.2-	0.5-
1991 09 14	675	0.1-	0.3-	1998 09 26	704	0.0	1.3-
1991 09 14	675	1.8-	0.0	1998 09 26	704	0.4+	1.2-
1998 09 21	809	0.3+	1.4+	1998 09 26	704	0.3+	1.3-
1998 09 21	809	0.4-	1.3+	1998 09 26	704	0.3-	1.3-
1998 09 21	809	0.8-	1.8+	1998 09 27	704	0.1-	0.2-

1998 SG₇₄ = 1996 BU₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	340.51764		(2000.0)	P		Q	
<i>n</i>	0.26888437	ω	16.74955	+0.18989369	-0.97919257		
<i>a</i>	2.3773457	Ω	62.35257	+0.89127282	+0.14135043		
<i>e</i>	0.1045476	<i>i</i>	4.63429	+0.41179259	+0.14560896		
<i>P</i>	3.67	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1996 01 23	411	1.7-	0.4-	1998 09 23	809	0.4-	0.1-
1996 01 23	411	0.4-	0.1+	1998 09 23	809	1.6-	1.4-
1996 01 24	411	0.1-	0.9+	1998 09 26	704	1.0-	2.8-
1996 01 24	411	0.7+	0.2+	1998 09 26	704	0.6-	0.1-
1996 01 27	411	1.3+	0.1+	1998 09 26	704	0.6-	0.3-
1996 01 27	411	0.1+	0.8-	1998 09 26	704	0.4+	0.3+
1998 09 21	809	1.2+	1.8+	1998 09 27	704	0.8+	1.0+
1998 09 21	809	0.2-	1.1+	1998 09 27	704	0.6+	1.1+
1998 09 21	809	0.2-	0.6+	1998 09 27	704	0.2-	0.2+
1998 09 23	809	0.8+	0.1-	1998 09 27	704	1.6-	2.4+

1998 SK₇₄ = 1993 QX₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	328.39124		(2000.0)	P		Q	
<i>n</i>	0.21214236	ω	331.80209	-0.03166883	-0.99711912		
<i>a</i>	2.7843113	Ω	119.93834	+0.93132297	-0.05447027		
<i>e</i>	0.1501190	<i>i</i>	4.56197	+0.36281485	+0.05278675		
<i>P</i>	4.65	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1993 08 20	809	0.5+	0.5+	1998 09 23	809	0.0	2.2-
1993 08 20	809	0.7+	0.2-	1998 09 23	809	0.7-	1.9-
1993 08 20	809	1.0-	0.1-	1998 09 23	809	1.6-	2.3-
1993 08 24	809	0.5-	0.7+	1998 09 26	704	1.4+	0.4+
1993 08 24	809	0.4-	0.1-	1998 09 26	704	0.8+	0.3+
1993 08 24	809	0.4+	0.1-	1998 09 26	704	0.6+	0.1+
1998 09 21	809	0.1-	1.0-	1998 09 26	704	0.9+	0.6+
1998 09 21	809	0.4-	2.3-	1998 09 26	704	1.6+	1.1+
1998 09 21	809	0.7-	2.0-	1998 09 27	704	0.4-	0.9+

1998 NOV. 10

M.P.C. 33039

1998 SL₇₄ = 1996 GU₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	278.19210		(2000.0)	P	Q
<i>n</i>	0.21749750	ω	95.89760	-0.66784283	-0.73314868
<i>a</i>	2.7384188	Ω	37.07095	+0.57038375	-0.61492357
<i>e</i>	0.0509106	<i>i</i>	12.29562	+0.47817186	-0.29045139
<i>P</i>	4.53	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 04 15	691	0.1-	0.3+	1998 09 21	809	0.9+	0.8-	1998 09 27	704	0.6-	0.3+
1996 04 15	691	0.2+	0.3+	1998 09 21	809	0.2+	1.0-	1998 09 27	704	0.6-	0.6-
1996 04 15	691	0.2+	0.3+	1998 09 23	809	0.6+	1.2-	1998 09 27	704	0.3+	0.5+
1996 04 21	691	0.4-	0.1-	1998 09 23	809	0.2+	1.6-	1998 09 27	704	0.4-	0.0
1996 04 21	691	0.0	0.4-	1998 09 23	809	0.7-	1.8-	1998 09 27	704	1.4-	0.4+
1996 04 21	691	0.1-	0.6-	1998 09 26	704	0.1+	1.1+	1998 10 11	699	0.5+	0.2+
1998 09 18	699	0.1+	1.7+	1998 09 26	704	0.2+	0.3-	1998 10 11	699	0.6+	0.2+
1998 09 18	699	0.5-	1.5+	1998 09 26	704	0.2-	0.3+	1998 10 11	699	0.5+	0.1-
1998 09 18	699	0.4+	0.8+	1998 09 26	704	0.0	0.4+				
1998 09 21	809	1.4+	1.2-	1998 09 26	704	1.5-	0.9+				

1998 SW₇₄ = 4826 T-1

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	335.20641		(2000.0)	P	Q
<i>n</i>	0.27214043	ω	34.86664	+0.07740721	-0.99202941
<i>a</i>	2.3583450	Ω	50.90389	+0.88312536	+0.02194119
<i>e</i>	0.1063362	<i>i</i>	7.36057	+0.46270694	+0.12408158
<i>P</i>	3.62	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1971 05 13	675	0.4+	2.0+	1998 09 26	704	0.1+	0.5+	1998 09 27	704	1.0-	0.5-
1971 05 14	675	0.3-	0.1-	1998 09 26	704	0.3-	0.1+	1998 10 11	699	0.1+	0.3+
1971 05 16	675	0.1-	1.8-	1998 09 26	704	0.0	0.0	1998 10 11	699	0.0	0.5+
1998 09 21	809	1.1+	0.5+	1998 09 26	704	0.2+	0.0	1998 10 11	699	0.2+	0.2+
1998 09 21	809	0.2+	0.5+	1998 09 26	704	1.0-	0.3-	1998 10 20	699	0.9+	0.3-
1998 09 21	809	0.1+	0.8+	1998 09 27	704	0.5-	0.0	1998 10 20	699	0.4+	0.1-
1998 09 23	809	1.0+	0.9-	1998 09 27	704	0.2+	0.3-	1998 10 20	699	0.3+	0.4+
1998 09 23	809	0.2+	0.8-	1998 09 27	704	0.8-	0.0				
1998 09 23	809	0.4-	0.5-	1998 09 27	704	1.0-	0.2+				

1998 SP₇₅ = 1997 GP₂₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	79.44586		(2000.0)	P	Q
<i>n</i>	0.21059428	ω	123.73796	+0.59107378	+0.80655992
<i>a</i>	2.7979396	Ω	182.55751	-0.79291971	+0.57880236
<i>e</i>	0.1936901	<i>i</i>	12.47254	-0.14802065	+0.12020364
<i>P</i>	4.68	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 13	691	0.2+	0.4-	1998 09 21	809	1.0-	0.5-	1998 10 28	704	0.8+	1.6-
1997 04 13	691	0.8+	0.2+	1998 09 21	809	1.7-	1.0-	1998 10 28	704	1.4-	1.4+
1997 04 13	691	0.1-	0.0	1998 09 23	809	1.6+	0.3+	1998 10 29	704	0.0	0.5-
1997 04 15	691	0.3-	0.0	1998 09 23	809	1.9+	0.3-	1998 10 29	704	1.4-	0.1-
1997 04 15	691	0.3-	0.5+	1998 09 23	809	0.6+	1.3+	1998 10 29	704	0.5+	0.4+
1997 04 15	691	0.3-	0.3-	1998 10 28	704	0.9+	1.0+	1998 10 29	704	0.7+	0.6+
1998 09 21	809	1.3-	0.1+	1998 10 28	704	1.1-	0.2-	1998 10 29	704	0.8+	0.9-

1998 SU₈₅ = 1995 WV₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	73.51854		(2000.0)	P	Q
<i>n</i>	0.30253632	ω	307.90701	+0.74493154	+0.66693060
<i>a</i>	2.1976121	Ω	10.29953	-0.57891720	+0.65869532
<i>e</i>	0.0961625	<i>i</i>	5.37577	-0.33155977	+0.34831603
<i>P</i>	3.26	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1995 11 18	691	0.3+	0.0	1998 09 26	704	0.5+	1.2-	1998 10 15	691	0.5-	0.2+
1995 11 18	691	0.3+	0.0	1998 09 26	704	(2.5+	0.5-)	1998 10 22	691	0.7-	0.2+
1995 11 18	691	0.3+	0.3-	1998 09 27	704	1.0+	0.4+	1998 10 22	691	0.6-	0.4+
1995 11 24	691	0.2+	0.3-	1998 09 27	704	1.3+	1.1-	1998 10 22	691	0.9-	0.4+
1995 11 24	691	0.4-	0.1-	1998 09 27	704	0.2-	0.8-	1998 10 28	691	0.5-	0.1+
1995 11 24	691	0.3-	0.2-	1998 09 27	704	0.7-	0.4+	1998 10 28	691	0.4-	0.4+
1998 09 26	704	1.5+	1.1+	1998 10 15	691	0.6-	0.3+	1998 10 28	691	0.5-	0.4+
1998 09 26	704	1.0+	0.5-	1998 10 15	691	0.5-	0.1+				

1998 SM₈₇ = 4224 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	81.33878		(2000.0)	P	Q
<i>n</i>	0.18187224	ω	82.73684	+0.48988739	+0.86710554
<i>a</i>	3.0852600	Ω	217.04022	-0.84724250	+0.44915853
<i>e</i>	0.0894596	<i>i</i>	8.61311	-0.20540324	+0.21537085
<i>P</i>	5.42	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1960 09 24	675	0.8+	0.3-	1998 09 26	704	1.5-	1.0-	1998 10 28	704	0.2+	0.4-
1960 09 25	675	0.6+	0.7+	1998 09 26	704	0.2+	0.1-	1998 10 28	704	0.2-	0.4-
1960 09 25	675	0.1-	0.2+	1998 09 26	704	1.2+	0.3-	1998 10 28	704	1.0+	1.5-
1960 09 26	675	0.8-	0.2+	1998 09 27	704	0.3-	0.4-	1998 10 29	704	0.2+	0.8+
1960 09 26	675	0.7-	1.3+	1998 09 27	704	0.9+	1.9+	1998 10 29	704	1.0-	0.6-
1960 09 28	675	0.1+	1.5-	1998 09 27	704	1.1-	0.1+	1998 10 29	704	0.7+	0.9+
1960 09 28	675	0.2+	0.7-	1998 09 27	704	0.3+	0.7+	1998 10 29	704	1.2-	1.1+
1998 09 26	704	0.1+	1.0+	1998 09 27	704	0.4+	0.7-				
1998 09 26	704	0.5-	1.4-	1998 10 28	704	0.6+	0.3+				

1998 SP₉₇ = 1993 FS₄₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	3.73454		(2000.0)	P	Q
<i>n</i>	0.27519468	ω	25.33148	+0.76077809	-0.64830050
<i>a</i>	2.3408631	Ω	15.20235	+0.57399781	+0.65025941
<i>e</i>	0.1016341	<i>i</i>	6.65364	+0.30289142	+0.39606712
<i>P</i>	3.58	<i>H</i>	15.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 19	809	0.6-	0.6+	1998 09 26	704	0.2-	0.1-	1998 10 14	699	1.8+	0.0
1993 03 20	809	0.6+	0.8-	1998 09 27	704	0.3+	0.5-	1998 10 16	691	0.5-	0.6+
1993 03 24	809	(3.2+	1.2-)	1998 09 27	704	0.3-	0.6+	1998 10 16	691	0.4-	0.2+
1998 09 26	704	0.3+	0.0	1998 09 27	704	0.3-	0.1-	1998 10 16	691	0.3-	0.3-
1998 09 26	704	0.7+	0.2+	1998 09 27	704	1.5-	0.8-	1998 10 24	691	0.4-	0.4-
1998 09 26	704	0.2-	0.4-	1998 10 14	699	1.7+	0.8+	1998 10 24	691	0.4-	0.2-
1998 09 26	704	0.2+	0.4+	1998 10 14	699	(3.5+	0.5+)	1998 10 24	691	0.4-	0.2-

1998 SQ₉₇ = 1987 QV₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	12.54766		(2000.0)	P	Q
<i>n</i>	0.17772576	ω	194.98650	+0.95624551	-0.29235842
<i>a</i>	3.1330630	Ω	182.11012	+0.28963006	+0.95129599
<i>e</i>	0.1159707	<i>i</i>	17.38854	+0.04133947	+0.09778804
<i>P</i>	5.55	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1987 08 23	675	0.2-	2.2-	1998 09 26	704	0.3+	0.7-	1998 09 27	704	0.3+	0.5+
1987 08 23	675	0.3+	1.0+	1998 09 26	704	0.2+	0.5-	1998 09 27	704	0.3+	0.5+
1987 08 24	675	1.1+	0.6+	1998 09 26	704	0.1+	0.4-	1998 10 17	699	0.1-	0.0
1987 08 24	675	1.0+	2.1+	1998 09 26	704	0.4+	1.0-	1998 10 17	699	0.3-	0.6-
1987 08 26	675	0.6-	2.5-	1998 09 27	704	0.6-	0.2+	1998 10 17	699	0.0	0.6+
1987 08 26	675	1.4-	1.5+	1998 09 27	704	0.6-	0.5+				
1998 09 26	704	0.8+	0.4-	1998 09 27	704	0.5-	1.0+				

1998 SZ₁₀₆ = 1996 FT₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22106488	ω	239.46663	+0.19305522	-0.98105815		
<i>a</i>	2.7088786	Ω	199.42149	+0.91586422	+0.18601296		
<i>e</i>	0.0605708	<i>i</i>	2.75047	+0.35202616	+0.05407491		
<i>P</i>	4.46	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 20	566	0.5+	0.5-	1998 09 26	704	0.8+	0.9+	1998 10 13	691	1.0-	0.2-
1996 03 20	566	0.3-	0.7-	1998 09 26	704	0.2+	0.1-	1998 10 13	691	1.4-	0.2-
1996 03 20	566	0.2-	0.1+	1998 09 26	704	0.5+	0.2+	1998 10 13	691	1.2-	0.1-
1996 03 26	566	0.0	0.4+	1998 09 27	704	0.3-	0.6+	1998 10 14	699	1.2+	0.1+
1996 03 26	566	0.0	0.4+	1998 09 27	704	0.2+	0.7+	1998 10 14	699	1.0+	0.2+
1996 03 26	566	0.1-	0.4+	1998 09 27	704	0.8-	0.2-	1998 10 14	699	1.4+	0.2+
1998 09 26	704	0.5+	0.4-	1998 09 27	704	0.6+	1.3-				
1998 09 26	704	1.4-	0.8-	1998 09 27	704	0.4-	0.5+				

1998 SM₁₀₇ = 1994 VR₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23878998	ω	356.88000	+0.87167628	+0.48964933		
<i>a</i>	2.5731118	Ω	333.77097	-0.44862683	+0.78032563		
<i>e</i>	0.0957127	<i>i</i>	2.67043	-0.19726742	+0.38901857		
<i>P</i>	4.13	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 11 01	691	0.5-	0.3+	1998 09 26	704	0.2+	0.3+	1998 10 28	704	0.9+	1.6-
1994 11 01	691	0.5-	0.3+	1998 09 26	704	0.6+	0.2+	1998 10 28	704	0.2+	1.0-
1994 11 01	691	0.4-	0.4+	1998 09 27	704	0.3+	0.2-	1998 10 29	704	0.1+	0.2-
1994 11 11	691	0.5+	0.3-	1998 09 27	704	0.8+	0.2+	1998 10 29	704	0.7-	0.7+
1994 11 11	691	0.4+	0.2-	1998 09 27	704	1.0-	0.2+	1998 10 29	704	0.4-	0.5+
1994 11 11	691	0.4+	0.2-	1998 09 27	704	0.7-	0.3+	1998 10 29	704	0.5+	0.2+
1998 09 26	704	0.1+	0.3-	1998 09 27	704	0.1+	0.5-	1998 10 29	704	0.1-	0.2+
1998 09 26	704	0.2-	0.8-	1998 10 28	704	0.2-	0.2+				
1998 09 26	704	0.1-	0.7+	1998 10 28	704	0.2-	0.4+				

1998 SN₁₀₈ = 1996 KW₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17153431	ω	181.08278	+0.84320287	-0.53292288		
<i>a</i>	3.2080076	Ω	211.44702	+0.49424764	+0.82023061		
<i>e</i>	0.0953672	<i>i</i>	7.79130	+0.21149040	+0.20788207		
<i>P</i>	5.75	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 05 22	809	0.3-	0.2+	1998 09 26	704	0.0	0.6-	1998 10 17	327	0.3+	0.1+
1996 05 22	809	1.4-	1.4-	1998 09 26	704	0.2-	0.0	1998 10 19	327	0.2-	0.0
1996 05 22	809	0.9-	2.0-	1998 09 27	704	0.1+	0.2-	1998 10 19	327	0.0	0.1-
1996 05 23	809	1.1+	1.0+	1998 09 27	704	0.8+	0.1-	1998 10 19	327	0.1+	0.1-
1996 05 23	809	0.5+	0.8+	1998 09 27	704	0.6+	0.6+	1998 10 20	327	0.1+	0.2-
1996 05 23	809	1.1+	1.3+	1998 09 27	704	0.4-	0.4-	1998 10 20	327	0.0	0.2-
1998 09 26	704	0.9-	0.6+	1998 09 27	704	0.6+	0.4+	1998 10 20	327	0.0	0.2+
1998 09 26	704	0.2-	0.2+	1998 10 17	327	0.2-	0.3+				
1998 09 26	704	0.3-	0.4-	1998 10 17	327	0.1-	0.0				

1998 SJ₁₀₉ = 1996 FU₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22393341	ω	226.38104	+0.22111056	-0.96619464		
<i>a</i>	2.6856956	Ω	211.56952	+0.95174717	+0.24344386		
<i>e</i>	0.1855612	<i>i</i>	14.66964	+0.21280845	-0.08487054		
<i>P</i>	4.40	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 22	809	1.3+	1.6+	1998 09 26	704	1.3+	0.4-	1998 10 28	704	0.6-	0.1+
1996 03 22	809	0.5+	0.9+	1998 09 27	704	0.3-	0.6+	1998 10 28	704	0.1+	1.0-
1996 03 22	809	0.2-	1.2+	1998 09 27	704	1.0-	1.4+	1998 10 28	704	0.9-	0.1+
1996 03 26	809	0.5+	0.8-	1998 09 27	704	0.3+	0.7+	1998 10 28	704	0.3+	0.6-
1996 03 26	809	0.8-	0.4-	1998 09 27	704	0.5+	0.3-	1998 10 29	704	0.8-	0.3+
1996 03 26	809	1.2-	1.3-	1998 09 27	704	1.1-	0.7-	1998 10 29	704	0.3+	1.0+
1998 09 26	704	0.1+	0.3-	1998 10 11	699	(6.0-	1.6+)	1998 10 29	704	0.1-	0.4+
1998 09 26	704	0.2+	0.2+	1998 10 11	699	0.1+	0.2+	1998 10 29	704	0.5-	0.3-
1998 09 26	704	0.5+	0.4-	1998 10 11	699	1.3+	0.7+	1998 10 29	704	0.7-	0.7+
1998 09 26	704	0.5+	1.0-	1998 10 28	704	0.3+	0.5-				

1998 SD₁₁₀ = 1997 LU₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28709312	ω	329.99122	-0.96280286	+0.25005421		
<i>a</i>	2.2757306	Ω	224.87257	-0.20992590	-0.93080944		
<i>e</i>	0.0357874	<i>i</i>	8.34442	-0.17012280	-0.26658332		
<i>P</i>	3.43	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 07	809	1.7-	0.1-	1998 09 26	704	0.1+	0.1-	1998 10 28	704	0.5-	0.7-
1997 06 07	809	0.7-	0.2+	1998 09 26	704	0.8+	0.4-	1998 10 28	704	0.0	0.1-
1997 06 07	809	0.2-	0.2-	1998 09 26	704	0.4+	0.7-	1998 10 28	704	0.1+	0.6+
1997 06 07	809	0.7-	0.0	1998 09 26	704	0.8+	0.3-	1998 10 28	704	1.0+	0.5+
1997 06 07	809	0.9-	0.0	1998 09 27	704	0.3-	0.0	1998 10 29	704	0.2-	0.6+
1997 06 07	809	1.0-	0.6-	1998 09 27	704	0.7-	1.0+	1998 10 29	704	0.9-	0.5-
1997 06 08	809	1.6+	0.2+	1998 09 27	704	0.6-	0.4+	1998 10 29	704	0.2+	0.5+
1997 06 08	809	2.0+	0.1-	1998 09 27	704	0.2+	0.3+	1998 10 29	704	0.4-	0.0
1997 06 08	809	1.8+	0.4+	1998 09 27	704	0.8-	0.0	1998 10 29	704	0.5-	0.6+
1998 09 26	704	0.1-	0.2+	1998 10 28	704	1.5+	1.9-				

1998 SH₁₁₁ = 1997 GK₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23675685	ω	145.20981	+0.94783111	+0.31258965		
<i>a</i>	2.5878217	Ω	196.91084	-0.31873962	+0.92651436		
<i>e</i>	0.1893870	<i>i</i>	12.40370	-0.00460957	+0.20942507		
<i>P</i>	4.16	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 06	704	1.5+	0.4-	1998 09 26	704	0.3-	0.4-	1998 10 13	691	0.3+	0.2+
1997 04 06	704	0.2-	0.0	1998 09 26	704	0.2+	0.0	1998 10 13	691	0.4+	0.1+
1997 04 07	704	0.4-	0.1+	1998 09 27	704	0.5+	0.2+	1998 10 13	691	0.3+	0.1+
1997 04 07	704	0.8-	0.4+	1998 09 27	704	0.3-	0.5+	1998 10 17	691	0.5-	0.3+
1998 09 26	704	0.0	0.2-	1998 09 27	704	0.3+	0.6-	1998 10 17	691	0.1+	0.4-
1998 09 26	704	0.4-	0.2-	1998 09 27	704	0.2+	0.4-	1998 10 17	691	0.3-	0.2-
1998 09 26	704	0.2-	0.6+	1998 09 27	704	0.2-	0.4+				

1998 SR₁₁₁ = 1996 FM₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22523716	ω	103.80764	-0.50413783	-0.86095525		
<i>a</i>	2.6753218	Ω	16.98235	+0.67515505	-0.44187918		
<i>e</i>	0.1007938	<i>i</i>	13.42888	+0.53852642	-0.25198976		
<i>P</i>	4.38	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 20	691	0.1-	0.1-	1998 09 26	704	0.5-	0.1+	1998 10 18	327	0.4-	0.3+
1996 03 20	691	0.1+	0.2-	1998 09 26	704	0.2-	0.5-	1998 10 18	327	0.4-	0.5+
1996 03 20	691	0.0	0.0	1998 09 26	704	0.9-	0.1-	1998 10 18	327	0.2-	0.4+
1996 03 22	691	0.5-	0.1+	1998 09 27	704	0.2+	0.3+	1998 10 28	704	0.5+	0.1+
1996 03 22	691	0.4-	0.1+	1998 09 27	704	0.1+	0.0	1998 10 28	704	0.0	0.8-
1996 03 22	691	0.6-	0.2+	1998 09 27	704	0.1+	0.2+	1998 10 28	704	0.6-	0.7-
1996 03 26	691	0.5+	0.1-	1998 09 27	704	0.2+	0.2+	1998 10 28	704	0.1-	0.8-

1998 NOV. 10

M.P.C. 33041

1996 03 26	691	0.5+	0.0	1998 09 27	704	1.4+	0.3-	1998 10 28	704	0.4+	0.5-
1996 03 26	691	0.5+	0.1+	1998 10 14	699	0.4+	0.3+	1998 10 29	704	0.2-	0.5-
1996 03 26	566	(2.6+	2.3-)	1998 10 14	699	0.7+	0.5+	1998 10 29	704	0.3+	0.1+
1996 03 26	566	(2.8+	2.2-)	1998 10 14	699	1.0+	0.3+	1998 10 29	704	0.6-	0.0
1996 03 26	566	(2.5+	2.5-)	1998 10 17	327	0.3+	0.2+	1998 10 29	704	0.9-	0.0
1998 09 26	704	0.5-	0.1-	1998 10 17	327	0.2+	0.2+	1998 10 29	704	0.0	1.0+
1998 09 26	704	0.6-	0.8-	1998 10 17	327	0.3+	0.3+				

1998 SN₁₁₄ = 1978 SK

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i> 18.52371				(2000.0)				P		Q	
<i>n</i>	0.20175859	ω	260.43024	+0.94974907	-0.30782941						
<i>a</i>	2.8790422	Ω	117.48005	+0.30637654	+0.87710439						
<i>e</i>	0.1767463	<i>i</i>	3.66596	+0.06411018	+0.36868543						
<i>P</i>	4.89	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1978 09 27	809	0.2-	0.3-	1998 09 26	704	0.5-	0.6+	1998 10 18	327	0.2+	0.1-
1978 09 28	809	0.3+	0.5+	1998 09 27	704	0.1+	0.0	1998 10 18	327	0.1+	0.0
1978 09 29	809	0.2-	0.2-	1998 09 27	704	0.1+	0.7+	1998 10 19	327	0.0	0.1+
1998 09 26	704	0.0	0.4-	1998 09 27	704	0.1+	0.1-	1998 10 19	327	0.2-	0.2-
1998 09 26	704	0.5-	0.5-	1998 09 27	704	0.3-	0.1+	1998 10 19	327	0.0	0.1+
1998 09 26	704	1.0+	0.3-	1998 09 27	704	0.4-	0.1+				
1998 09 26	704	0.3+	0.3-	1998 10 18	327	0.1-	0.1+				

1998 SL₁₁₅ = 1993 QS₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i> 93.19151				(2000.0)				P		Q	
<i>n</i>	0.21020959	ω	287.04217	+0.51372247	+0.85788299						
<i>a</i>	2.8013521	Ω	13.88670	-0.76830210	+0.46582335						
<i>e</i>	0.0536937	<i>i</i>	2.68077	-0.38183911	+0.21689950						
<i>P</i>	4.69	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1993 08 15	809	0.1+	0.7-	1998 09 26	704	0.4+	1.3+	1998 10 14	327	0.7+	0.1-
1993 08 15	809	0.2-	0.7-	1998 09 26	704	0.4-	1.2-	1998 10 14	327	0.2-	0.4+
1993 08 15	809	(2.4-	1.0-)	1998 09 26	704	0.4+	0.5-	1998 10 15	327	0.6-	0.2-
1993 08 20	809	(0.1-	2.7+)	1998 09 27	704	0.0	0.4-	1998 10 15	327	0.9+	0.4-
1993 08 20	809	(0.2-	2.5+)	1998 09 27	704	0.5+	1.1-	1998 10 15	327	0.5+	0.9+
1993 08 20	809	(0.8-	2.9+)	1998 09 27	704	(0.8-	2.6+)	1998 10 29	691	0.9-	0.3-
1993 08 24	809	0.0	0.7+	1998 09 27	704	(2.4-	1.2+)	1998 10 29	691	1.1-	0.2-
1993 08 24	809	0.7-	0.9+	1998 09 27	704	0.3+	1.4+	1998 10 29	691	0.8-	0.3-
1993 08 24	809	0.7+	0.0	1998 10 14	327	0.2+	0.3+				

1998 SY₁₁₇ = 1991 XF₁ = 1994 PD₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i> 335.44698				(2000.0)				P		Q	
<i>n</i>	0.26939122	ω	139.19792	-0.06080780	-0.99787335						
<i>a</i>	2.3743629	Ω	314.27382	+0.90705039	-0.04542544						
<i>e</i>	0.2002176	<i>i</i>	1.87903	+0.41660773	-0.04674737						
<i>P</i>	3.66	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1991 12 10	033	0.2+	0.2-	1998 09 26	704	0.1-	1.5+	1998 10 14	587	0.2-	0.7-
1991 12 10	033	0.0	0.5+	1998 09 26	704	1.5-	0.1-	1998 10 14	587	0.1-	0.0
1991 12 12	033	0.2-	0.3-	1998 09 26	704	0.1-	0.2+	1998 10 20	587	0.6+	0.1+
1994 08 10	809	0.5+	1.0-	1998 09 26	704	0.2+	0.4-	1998 10 20	587	0.4+	0.1-
1994 08 10	809	0.1+	1.3-	1998 09 27	704	0.1+	0.7+	1998 10 20	587	0.3+	0.3-
1994 08 10	809	0.1+	0.6-	1998 09 27	704	1.0+	0.3+	1998 10 22	587	0.7-	0.2-
1994 08 11	809	0.6+	0.7+	1998 09 27	704	0.3-	0.8+	1998 10 22	587	0.4-	0.3-
1994 08 11	809	0.7-	0.3+	1998 09 27	704	0.6+	1.4-				
1994 08 11	809	0.5-	1.6+	1998 10 14	587	0.1+	0.2+				

1998 SB₁₁₉ = 6708 P-L

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i> 185.17739				(2000.0)				P		Q	
<i>n</i>	0.26075328	ω	188.15525	-0.82100055	+0.57054728						
<i>a</i>	2.4265143	Ω	26.66655	-0.52116187	-0.73404039						
<i>e</i>	0.1305003	<i>i</i>	2.66022	-0.23312743	-0.36832119						
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1960 09 24	675	0.4-	0.0	1998 09 26	704	1.8+	0.2-	1998 09 27	704	1.6-	0.3+
1960 09 24	675	0.3+	0.1+	1998 09 26	704	0.9+	0.4-	1998 10 14	691	0.2-	0.1+
1960 09 26	675	0.4-	0.2-	1998 09 26	704	0.1+	0.5-	1998 10 14	691	0.1-	0.0
1960 09 26	675	1.3+	0.1-	1998 09 26	704	0.1+	0.7-	1998 10 14	691	0.2-	0.1+
1960 09 27	675	0.2-	0.6+	1998 09 27	704	0.9-	0.2-	1998 10 18	691	0.4+	0.1-
1960 09 27	675	1.7-	0.4-	1998 09 27	704	0.2-	0.2-	1998 10 18	691	0.2+	0.1+
1960 09 28	675	0.5-	0.6+	1998 09 27	704	1.0-	0.0	1998 10 18	691	0.1+	0.0
1960 09 28	675	1.5+	0.6-	1998 09 27	704	0.5+	1.6+				

1998 SR₁₁₉ = 1993 OD₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i> 1.73480				(2000.0)				P		Q	
<i>n</i>	0.21152317	ω	235.38873	+0.64343864	-0.76537668						
<i>a</i>	2.7897423	Ω	174.50266	+0.74060187	+0.61791626						
<i>e</i>	0.2285617	<i>i</i>	8.16822	+0.19363781	+0.17993897						
<i>P</i>	4.66	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1993 07 21	691	0.0	0.0	1998 09 27	704	0.4-	0.0	1998 10 19	699	0.4+	0.9+
1993 07 21	691	0.5+	0.1+	1998 09 27	704	0.3-	0.8+	1998 10 28	704	0.9+	1.6-
1993 07 21	691	0.2-	0.4-	1998 09 27	704	1.0-	0.2+	1998 10 28	704	0.5+	0.1-
1993 07 25	691	0.2-	0.3+	1998 09 27	704	1.2-	0.8-	1998 10 28	704	0.0	0.1+
1993 07 25	691	0.0	0.2+	1998 10 10	699	0.2+	0.5+	1998 10 28	704	1.2-	0.5-
1993 07 25	691	0.2-	0.0	1998 10 10	699	0.2-	0.2-	1998 10 28	704	0.3-	1.6+
1998 09 26	704	1.5+	0.2-	1998 10 10	699	0.9+	0.4+	1998 10 29	704	0.1+	0.6-
1998 09 26	704	0.3+	0.7-	1998 10 17	699	0.6+	0.6+	1998 10 29	704	0.7+	1.2-
1998 09 26	704	0.3+	0.4+	1998 10 17	699	0.3-	0.5+	1998 10 29	704	1.5-	1.1+
1998 09 26	704	0.2-	0.5-	1998 10 17	699	0.0	0.3-	1998 10 29	704	0.1-	0.3+
1998 09 26	704	0.0	0.6-	1998 10 19	699	0.6+	0.1-	1998 10 29	704	0.7-	0.5-
1998 09 27	704	0.8-	0.3-	1998 10 19	699	0.9+	0.6+				

1998 SK₁₂₁ = 1996 JL₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5						Williams					
M	219.72814			(2000.0)		P			Q		
n	0.18559055	ω		317.82980		-0.98894859		+0.08908904			
a	3.0439124	Ω		227.68900		-0.05080098		-0.95455801			
e	0.1028090	i		9.22153		-0.13928372		-0.28439787			
P	5.31	H	13.6		G	0.15		U	4		
Residuals in seconds of arc											
1996 05 13	566	0.7-	0.0	1998 09 26	704	0.0	0.5-	1998 10 12	699	0.2-	0.8-
1996 05 13	566	0.1+	0.1+	1998 09 26	704	0.0	0.7-	1998 10 19	910	0.3+	0.4+
1996 05 13	566	0.6+	0.8-	1998 09 26	704	0.5+	0.4+	1998 10 19	910	0.1+	0.1+
1996 05 21	566	0.0	0.2+	1998 09 27	704	0.1-	1.1+	1998 10 20	910	0.4+	0.3+
1996 05 21	566	0.1-	0.2+	1998 09 27	704	1.4-	0.9+	1998 10 20	910	0.2+	0.0
1996 05 21	566	0.1+	0.2+	1998 09 27	704	0.7+	0.7-	1998 10 20	910	0.2+	0.1-
1998 09 26	704	0.1+	0.4+	1998 10 12	699	0.5-	0.3-	1998 10 20	910	0.1+	0.2-
1998 09 26	704	0.2+	0.5+	1998 10 12	699	0.5-	0.9-				

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	71.93344	(2000.0)	P		Q	
<i>n</i>	0.17440541	ω	294.11117	+0.58036063	+0.81434707	
<i>a</i>	3.1727030	Ω	11.36806	-0.73859532	+0.52869430	
<i>e</i>	0.1981736	<i>i</i>	1.31286	-0.34301385	+0.23941843	
<i>P</i>	5.65	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1992 09 02	809	1.0+	0.9+	1998 09 26	704	1.6+	0.2-	1998 10 11	699	0.3+	0.1-
1992 09 02	809	0.3-	0.1+	1998 09 26	704	0.2-	0.6+	1998 10 12	012	0.1+	0.8-
1992 09 02	809	0.5-	0.0	1998 09 27	704	0.5-	0.7-	1998 10 12	012	0.7+	0.1-
1992 09 03	809	0.1-	1.1-	1998 09 27	704	0.1-	0.3-	1998 10 12	012	0.4+	0.1-
1998 09 18	699	0.2-	0.8+	1998 09 27	704	0.1+	0.4+	1998 10 18	012	0.2-	0.4+
1998 09 18	699	0.6-	1.0+	1998 09 27	704	0.7-	0.4+	1998 10 18	012	0.3-	0.4+
1998 09 18	699	0.9-	0.6+	1998 09 27	704	0.7-	0.4-	1998 10 18	012	1.2-	0.1+
1998 09 26	704	0.7+	0.8-	1998 10 11	699	0.1+	0.1+				
1998 09 26	704	1.2+	1.3-	1998 10 11	699	0.2+	0.1+				

1998 SD₁₂₃ = 1981 UF₂₉ = 1991 PS₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	6.56005	(2000.0)	P		Q	
<i>n</i>	0.28935678	ω	36.13219	+0.65122851	-0.75865623	
<i>a</i>	2.2638463	Ω	13.26675	+0.67598763	+0.56884391	
<i>e</i>	0.1210932	<i>i</i>	4.62334	+0.34487991	+0.31758043	
<i>P</i>	3.41	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1981 10 24	675	0.1+	0.6+	1998 09 26	704	0.2+	0.7-	1998 10 28	704	0.7-	0.8-
1981 10 25	675	0.5+	0.1+	1998 09 26	704	0.1-	0.7+	1998 10 28	704	0.5+	0.4-
1981 10 26	675	0.9-	0.1-	1998 09 26	704	0.0	1.4+	1998 10 28	704	0.6+	0.2-
1991 08 07	675	1.6+	0.7+	1998 09 27	704	0.2+	1.0-	1998 10 29	704	0.1-	0.6-
1991 08 07	675	0.8-	0.4-	1998 09 27	704	0.3+	0.1+	1998 10 29	704	1.0+	0.4+
1991 09 11	675	0.0	0.8-	1998 09 27	704	0.4-	1.2+	1998 10 29	704	1.2-	2.7+
1991 09 11	675	0.8-	0.5+	1998 09 27	704	0.1-	0.8-	1998 10 29	704	0.5-	0.2+
1998 09 26	704	1.0+	0.1-	1998 09 27	704	1.1-	0.5+	1998 10 29	704	0.2-	0.4-
1998 09 26	704	0.8+	0.5-	1998 10 28	704	0.2+	2.2-				

1998 SK₁₂₃ = 1981 UC₁₅ = 1992 SS₈ = 1996 HE₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	18.11113	(2000.0)	P		Q	
<i>n</i>	0.17188475	ω	4.97348	+0.93758033	-0.34764825	
<i>a</i>	3.2036457	Ω	15.37968	+0.31786939	+0.84599600	
<i>e</i>	0.2036134	<i>i</i>	1.97821	+0.14107505	+0.40426656	
<i>P</i>	5.73	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1981 10 23	095	0.2-	0.7+	1996 04 18	809	0.2-	0.3+	1998 09 27	704	0.4-	1.3+
1992 09 27	691	0.2-	0.6-	1996 04 18	809	0.0	0.5-	1998 09 27	704	0.0	0.2-
1992 09 27	691	0.1-	0.8-	1996 04 18	809	0.2+	0.1+	1998 09 27	704	1.1-	0.6+
1992 09 27	691	0.1-	0.3-	1998 09 26	704	0.1-	0.5+	1998 10 11	699	0.8-	0.1+
1992 10 04	691	0.6+	0.7-	1998 09 26	704	0.6+	0.1+	1998 10 11	699	0.5-	0.2-
1992 10 04	691	0.6+	0.7-	1998 09 26	704	0.1+	0.2-	1998 10 11	699	0.3-	0.0
1992 10 04	691	1.0+	0.9-	1998 09 26	704	0.5-	0.7+	1998 10 17	699	0.4-	1.2+
1996 04 17	809	1.2+	2.4+	1998 09 26	704	0.2-	1.1+	1998 10 17	699	0.6-	0.7+
1996 04 17	809	1.3+	3.0+	1998 09 27	704	0.5+	0.7+	1998 10 17	699	0.6-	1.0+
1996 04 17	809	0.4+	2.7+	1998 09 27	704	0.5+	1.4+				

1998 SM₁₂₃ = 1993 HF₆ = 1997 EG₅₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	100.81794	(2000.0)	P		Q	
<i>n</i>	0.24068173	ω	254.36942	+0.10588128	+0.99372404	
<i>a</i>	2.5596110	Ω	21.80599	-0.87107378	+0.11019053	
<i>e</i>	0.2383611	<i>i</i>	5.57371	-0.47960360	+0.01925068	
<i>P</i>	4.10	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1993 04 26	033	0.3-	0.1-	1998 09 26	704	0.3+	0.9-	1998 10 28	704	0.5+	0.7+
1993 04 26	033	0.2+	0.2+	1998 09 26	704	0.7+	0.5-	1998 10 28	704	0.5+	0.2-
1993 04 27	033	0.0	0.2-	1998 09 26	704	0.3-	0.0	1998 10 28	704	0.3-	0.6-
1997 03 10	809	0.7+	0.9+	1998 09 27	704	0.1-	0.1+	1998 10 28	704	0.9-	0.4+
1997 03 10	809	0.6+	0.9+	1998 09 27	704	0.4+	0.6+	1998 10 29	704	0.9-	0.4-
1997 03 10	809	0.1+	0.8+	1998 09 27	704	0.6-	0.9+	1998 10 29	704	1.3-	1.3-
1997 03 11	809	0.3-	0.7-	1998 09 27	704	0.3-	1.1+	1998 10 29	704	0.4+	0.6+
1997 03 11	809	0.6-	1.0-	1998 09 27	704	0.6-	0.5+	1998 10 29	704	1.1+	1.2+
1997 03 11	809	0.5-	1.0-	1998 10 11	699	0.6+	1.2-	1998 10 29	704	0.1-	0.3-
1998 09 26	704	0.4+	0.0	1998 10 11	699	(2.0-	3.1+)				
1998 09 26	704	0.6+	0.9-	1998 10 11	699	(3.5-	4.3+)				

1998 SN₁₂₃ = 1986 WB₁₁ = 1997 HZ₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	51.52078	(2000.0)	P		Q	
<i>n</i>	0.24117929	ω	327.41999	+0.95193966	+0.30602356	
<i>a</i>	2.5560894	Ω	14.77621	-0.26929953	+0.85597248	
<i>e</i>	0.1738950	<i>i</i>	2.84695	-0.14590630	+0.41672617	
<i>P</i>	4.09	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1986 11 30	381	0.0	0.8+	1997 05 01	704	0.0	0.4+	1998 09 27	704	0.8+	0.4+
1986 11 30	381	0.2+	0.9+	1997 05 01	704	0.1-	0.5+	1998 09 27	704	0.4+	0.1-
1986 12 01	381	0.3+	0.2+	1997 05 01	704	0.1+	0.3+	1998 09 27	704	1.0+	0.3+
1986 12 01	381	0.8-	0.7-	1997 05 01	704	0.1-	0.6+	1998 09 27	704	0.5+	0.1+
1997 04 30	704	0.9+	0.3+	1998 09 26	704	0.9-	0.3-	1998 10 12	012	0.5-	0.2-
1997 04 30	704	0.5-	0.1+	1998 09 26	704	0.3+	0.1-	1998 10 12	012	0.2-	0.0
1997 04 30	704	0.2+	0.1-	1998 09 26	704	0.5-	0.1-	1998 10 12	012	0.5-	0.3-
1997 04 30	704	0.2-	0.4-	1998 09 26	704	0.2+	0.7+	1998 10 18	012	0.4-	0.1-
1997 04 30	704	0.5+	0.2-	1998 09 26	704	0.1+	1.0+	1998 10 18	012	0.6-	0.3+
1997 05 01	704	0.0	0.7+	1998 09 27	704	0.2+	0.6-	1998 10 18	012	0.5-	0.0

1998 ST₁₂₄ = 3325 T-3

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	343.78775	(2000.0)	P		Q	
<i>n</i>	0.23459305	ω	37.43021	+0.43890983	-0.89644338	
<i>a</i>	2.6037101	Ω	26.69772	+0.78793587	+0.35124662	
<i>e</i>	0.0634994	<i>i</i>	7.83108	+0.43187409	+0.27021302	
<i>P</i>	4.20	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1977 10 11	675	1.8-	1.6+	1997 10 21	675	1.5+	0.7+	1998 09 27	704	1.0+	0.6-
1977 10 11	675	2.2-	1.1+	1998 09 26	704	1.2+	1.0+	1998 10 13	691	0.6-	0.5+
1977 10 12	675	1.0-	2.5-	1998 09 26	704	0.3+	0.9-	1998 10 13	691	0.7-	0.4+
1977 10 12	675	2.3+	0.6-	1998 09 26	704	0.3-	1.8+	1998 10 13	691	0.6-	0.5+
1977 10 16	675	0.9+	2.2-	1998 09 26	704	0.6+	0.4-	1998 10 18	691	0.7-	1.2+
1977 10 16	675	0.4+	0.3-	1998 09 26	704	0.7+	0.8-	1998 10 18	691	1.0-	0.9+
1977 10 17	675	0.5+	1.4-	1998 09 27	704	0.4-	1.9-	1998 10 18	691	0.5-	0.8+
1977 10 17	675	1.6+	1.1-	1998 09 27	704	0.6-	0.0				
1977 10 21	675	0.1+	0.5+	1998 09 27	704	0.8-	1.8+				

1998 SA₁₂₆ = 1993 UP₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	7.20055	(2000.0)	P		Q	
<i>n</i>	0.19007530	ω	287.03679	+0.86136315	-0.50137493	
<i>a</i>	2.9958422	Ω	103.12086	+0.49213294	+0.78373455	
<i>e</i>	0.1018647	<i>i</i>	4.81285	+0.12593129	+0.36658331	
<i>P</i>	5.19	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1993 10 10	809	(5.7+	1.5+)	1998 09 26	704	1.2+	1.0-	1998 10 15	327	0.3-	0.1-
1993 10 10	809	(5.7+	1.0+)	1998 09 26	704	0.3+	1.2+	1998 10 15	327	0.9-	0.5-
1993 10 10	809	(5.6+	1.1+)	1998 09 26	704	0.5+	0.6-	1998 10 15	327	0.7-	0.1-
1993 10 20	809	0.6+	0.7-	1998 09 27	704	0.1-	0.9+	1998 10 17	327	0.4+	0.1-

1998 NOV. 10

M.P.C. 33043

1993 10 20	809	0.7+	0.6−	1998 09 27	704	0.3+	0.7+	1998 10 17	327	0.1+	0.3−
1993 10 20	809	0.2−	0.4−	1998 09 27	704	0.0	0.3+	1998 10 17	327	0.3−	0.2−
1993 10 21	809	0.9−	1.3+	1998 09 27	704	0.3−	0.7−	1998 10 19	327	0.7+	0.1+
1993 10 21	809	0.3−	0.1+	1998 09 27	704	0.1−	0.2+	1998 10 19	327	0.7+	0.2−
1993 10 21	809	0.1−	0.5+	1998 10 14	327	0.7−	0.4−	1998 10 19	327	0.3+	0.1+
1998 09 26	704	0.4−	0.9+	1998 10 14	327	0.3−	0.0				
1998 09 26	704	0.6+	0.4−	1998 10 14	327	1.1−	0.1+				

1998 SD₁₂₈ = 1980 WE₄ = 1989 SM₁₂ = 1991 EL₆ = 1997 NM₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	318.68856		(2000.0)	P	Q
<i>n</i>	0.21454205	ω	341.03217	−0.07767721	−0.99580772
<i>a</i>	2.7635103	Ω	113.39913	+0.92138019	−0.09020954
<i>e</i>	0.1086545	<i>i</i>	3.01699	+0.38082121	+0.01514021
<i>P</i>	4.59	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1980 11 29	675	0.2+	0.5+	1998 09 26	704	0.3+	0.3−	1998 10 19	699	0.2−	0.3+
1980 12 01	675	0.1−	0.1−	1998 09 26	704	0.4+	0.1+	1998 10 28	704	0.3−	0.1−
1989 09 28	675	0.2+	1.8−	1998 09 26	704	0.3−	0.3+	1998 10 28	704	0.1−	0.8+
1989 09 28	675	(0.7+	2.7−)	1998 09 27	704	0.1−	0.2−	1998 10 28	704	0.2+	0.4+
1991 03 05	071	0.3+	0.1−	1998 09 27	704	0.2+	0.6+	1998 10 28	704	0.1−	0.3+
1991 03 05	071	0.5+	1.9+	1998 09 27	704	0.6−	1.0+	1998 10 28	704	0.4−	0.4+
1997 07 01	327	0.6+	0.5+	1998 09 27	704	0.3+	1.0−	1998 10 29	704	1.3+	1.1−
1997 07 01	327	0.1−	0.3+	1998 09 27	704	1.5−	0.9−	1998 10 29	704	(3.0−	0.5+)
1997 07 09	327	0.0	0.6+	1998 10 10	699	0.1+	0.6+	1998 10 29	704	0.8−	0.4+
1997 07 09	327	0.5−	0.0	1998 10 10	699	0.3+	0.0	1998 10 29	704	0.2−	0.1+
1997 07 09	327	0.2−	0.3−	1998 10 10	699	0.2+	0.3+	1998 10 29	704	0.3−	0.1−
1998 09 26	704	0.2+	0.3+	1998 10 19	699	0.0	0.3+				
1998 09 26	704	0.9+	0.4+	1998 10 19	699	0.3−	0.0				

1998 SK₁₃₀ = 1991 RH₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	93.81772		(2000.0)	P	Q
<i>n</i>	0.28807474	ω	283.05570	+0.40889401	+0.91228603
<i>a</i>	2.2705580	Ω	11.16527	−0.78388416	+0.36415205
<i>e</i>	0.1967098	<i>i</i>	6.89167	−0.46725937	+0.18742326
<i>P</i>	3.42	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1991 09 15	675	0.7+	0.5+	1998 09 26	704	0.2−	0.1+	1998 10 14	704	0.7+	0.3−
1991 09 15	675	0.2−	0.5+	1998 09 27	704	0.3+	0.5+	1998 10 14	704	0.3−	0.9+
1991 09 17	675	0.2−	1.3−	1998 09 27	704	0.7−	0.5+	1998 10 14	704	1.2−	0.7+
1991 09 17	675	0.3−	0.3+	1998 09 27	704	0.3+	0.2−	1998 10 15	704	0.3+	0.4−
1998 09 26	704	0.6−	0.1+	1998 09 27	704	0.4+	0.4+	1998 10 15	704	0.1−	0.8−
1998 09 26	704	0.4+	0.4−	1998 09 27	704	0.7+	0.7−	1998 10 15	704	1.3+	1.3−
1998 09 26	704	0.1+	0.8−	1998 10 14	704	0.1+	0.5−	1998 10 15	704	1.9+	0.4+
1998 09 26	704	0.4−	0.4+	1998 10 14	704	0.7+	1.3+	1998 10 15	704	3.6−	0.2+

1998 SD₁₃₁ = 1995 DD₁₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	266.73215		(2000.0)	P	Q
<i>n</i>	0.17652980	ω	147.41082	−0.80851077	−0.58845901
<i>a</i>	3.1471977	Ω	356.52844	+0.52014032	−0.71051203
<i>e</i>	0.0844383	<i>i</i>	4.86087	+0.27525330	−0.38586093
<i>P</i>	5.58	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 02 25	098	0.4−	0.3+	1998 10 23	725	0.5+	0.0	1998 10 25	734	0.1−	0.2−
1995 02 25	098	0.6+	0.8+	1998 10 23	725	0.5+	0.2−	1998 10 25	360	0.8−	0.7+
1995 02 26	098	1.5+	0.3−	1998 10 24	747	0.3+	0.2−	1998 10 25	360	1.0−	0.1+
1995 02 26	098	1.7+	1.3−	1998 10 24	747	0.2+	0.3+	1998 10 25	360	0.1+	0.2+
1995 02 27	098	1.4−	0.4+	1998 10 24	747	0.1+	0.8+	1998 10 25	402	0.5−	0.0
1995 02 27	098	1.9−	0.1+	1998 10 24	402	0.0	0.2−	1998 10 25	402	0.5−	0.0
1998 09 26	704	1.2−	1.5+	1998 10 24	402	0.2−	0.2−	1998 10 25	402	0.3−	0.0

1998 09 26	704	0.4+	0.5−	1998 10 24	402	0.1+	0.3−	1998 10 25	402	0.4−	0.1+
1998 09 26	704	0.5−	0.9−	1998 10 24	402	0.0	0.4−	1998 10 25	557	0.1+	0.2−
1998 09 26	704	0.4+	0.0	1998 10 24	360	0.2−	0.2−	1998 10 25	557	0.2+	0.4−
1998 09 27	704	0.0	0.2−	1998 10 24	360	0.0	0.3−	1998 10 25	587	0.3+	0.2−
1998 09 27	704	1.4−	0.9+	1998 10 24	360	0.0	0.3−	1998 10 25	587	0.1−	0.1−
1998 09 27	704	0.6−	0.9−	1998 10 24	557	0.3+	0.2+	1998 10 25	587	0.2+	0.1+
1998 09 27	704	0.4+	0.6−	1998 10 24	557	0.4+	0.0	1998 10 25	587	0.0	0.3−
1998 09 27	704	1.2+	0.4−	1998 10 24	118	0.1+	0.8−	1998 10 25	118	0.5+	0.2−
1998 10 17	699	1.2+	0.8+	1998 10 24	118	0.7−	0.1−	1998 10 25	118	0.3+	0.2−
1998 10 17	699	0.2+	1.1+	1998 10 24	118	0.5−	0.3−	1998 10 25	118	0.3−	0.1+
1998 10 17	699	0.7+	0.5+	1998 10 24	118	0.0	1.2+	1998 10 26	118	0.0	0.1+
1998 10 22	587	0.1+	0.1−	1998 10 24	118	0.2−	0.5+	1998 10 26	118	0.1+	0.4+
1998 10 22	587	0.1−	0.1−	1998 10 25	734	0.2−	0.1−	1998 10 26	118	0.3+	0.0
1998 10 23	725	0.7+	0.1−	1998 10 25	734	0.2+	0.3−				

1998 ST₁₃₁ = 1985 SS₂ = 1991 PR₂₉ = 1994 NQ₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	229.54426		(2000.0)	P	Q
<i>n</i>	0.30559237	ω	257.02504	−0.98357018	+0.16213319
<i>a</i>	2.1829362	Ω	292.26122	−0.11355215	−0.89750900
<i>e</i>	0.1231519	<i>i</i>	4.92100	−0.14034102	−0.41011027
<i>P</i>	3.23	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1985 09 19	095	0.8+	2.1−	1994 07 09	809	1.2−	0.5−	1998 09 27	704	0.0	0.1+
1991 08 11	809	0.0	1.0−	1998 09 26	704	0.1+	0.3−	1998 10 13	327	0.0	0.6+
1991 08 11	809	0.9+	0.4−	1998 09 26	704	0.0	1.2−	1998 10 13	327	0.2−	0.9+
1991 08 11	809	0.5−	0.6+	1998 09 26	704	0.3+	0.5−	1998 10 13	327	0.0	1.3+
1994 07 08	809	0.2−	3.4+	1998 09 26	704	0.1−	0.5−	1998 10 14	327	0.6−	0.4+
1994 07 08	809	0.6−	0.7+	1998 09 26	704	0.3+	0.0	1998 10 14	327	0.6−	0.8+
1994 07 08	809	0.4+	1.1+	1998 09 27	704	0.4−	0.2+	1998 10 14	327	0.4−	0.5+
1994 07 09	809	0.6+	1.6−	1998 09 27	704	1.7+	0.6+				
1994 07 09	809	0.5+	1.8−	1998 09 27	704	1.0−	0.3−				

1998 SG₁₃₂ = 1990 DX₇ = 1991 RM₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	171.76012		(2000.0)	P	Q
<i>n</i>	0.29252449	ω	255.49989	−0.58047274	+0.81356848
<i>a</i>	2.2474734	Ω	338.90642	−0.70594279	−0.52362906
<i>e</i>	0.1291783	<i>i</i>	5.42503	−0.40582777	−0.25282195
<i>P</i>	3.37	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1990 02 18	399	1.4−	0.4−	1998 09 23	098	0.4−	0.5−	1998 09 27	704	0.9−	0.2−
1990 02 18	399	0.4+	1.4−	1998 09 26	704	0.4−	0.1−	1998 09 27	704	0.1+	0.6−
1991 09 11	675	2.4+	0.3+	1998 09 26	704	0.7+	0.3+	1998 09 27	704	0.7−	0.0
1991 09 11	675	0.0	0.1+	1998 09 26	704	0.0	0.0	1998 10 11	699	0.7+	0.8+
1991 09 16	675	0.3−	1.6−	1998 09 26	704	0.4+	0.2−	1998 10 11	699	0.7+	0.6+
1991 09 16	675	0.7−	1.5−	1998 09 26	704	0.0	0.3−	1998 10 11	699	1.2+	0.0
1998 09 23	098	0.5−	0.0	1998 09 27	704	0.3−	0.2−				
1998 09 23	098	1.2−	1.7+	1998 09 27	704	0.3−	0.0				

1998 SS₁₃₂ = 1994 RF₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	340.18384		(2000.0)	P	Q
<i>n</i>	0.26579521	ω	84.60596	+0.19802568	−0.98010287
<i>a</i>	2.3957305	Ω	353.92168	+0.84090037	+0.17698255
<i>e</i>	0.0842829	<i>i</i>	7.36413	+0.50365901	+0.08986406
<i>P</i>	3.71	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 7

Residuals in seconds of arc

1994 09 05	809	0.1−	0.1+	1998 09 26	704	0.6+	0.3−	1998 09 27	704	0.1+	0.9+
1994 09 05	809	0.2−	0.3−	1998 09 26	704	1.0+	1.6−	1998 09 27	704	1.5−	0.0
1994 09 05	809	0.8−	0.5+	1998 09 26	704	0.8+	0.0	1998 10 11	699	0.5+	0.7−
1994 09 06	809	1.2+	0.8−	1998 09 26	704	0.5−	1.0+	1998 10 11	699	0.0	0.2+

M.P.C. 33044

1998 NOV. 10

1994 09 06	809	0.1−	0.2−	1998 09 27	704	0.2−	0.1+	1998 10 11	699	0.4+	0.3+
1994 09 06	809	0.1+	0.6+	1998 09 27	704	0.7−	0.2+				
1998 09 26	704	0.3−	0.4+	1998 09 27	704	0.3−	0.4−				

1998 SA₁₃₃ = 1981 UY₂₇ = 1991 RU₂₀ = 1997 EX₅₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	110.86624		(2000.0)		P		Q
<i>n</i>	0.28969748	ω	279.09712	+0.26667842			+0.96362958
<i>a</i>	2.2620710	Ω	6.44864	−0.81248721			+0.23445493
<i>e</i>	0.1458803	<i>i</i>	8.88103	−0.51840829			+0.12825332
<i>P</i>	3.40	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 10 24	675	0.1+	0.3+	1997 03 09	809	2.8+	3.0+	1998 09 27	704	0.3−	0.8+
1981 10 25	675	0.3+	0.1−	1997 03 09	809	2.8+	3.0+	1998 09 27	704	0.3+	0.7+
1981 10 26	675	0.5−	0.4+	1997 03 09	809	3.4+	2.9+	1998 09 27	704	0.4−	1.1+
1991 09 14	675	0.5−	1.0+	1998 09 18	809	1.7+	0.1+	1998 09 27	704	0.0	1.1+
1991 09 14	675	1.1−	1.6+	1998 09 18	809	0.2+	0.3−	1998 09 27	704	0.6−	0.3+
1991 09 16	675	0.8−	0.8+	1998 09 18	809	0.5+	0.1+	1998 10 11	699	0.2+	0.2+
1991 09 16	675	1.0−	1.3+	1998 09 26	704	1.4−	0.0	1998 10 11	699	0.8+	0.2+
1997 03 08	809	1.5−	0.4−	1998 09 26	704	0.3−	1.0−	1998 10 11	699	0.3+	0.3+
1997 03 08	809	1.1−	0.2−	1998 09 26	704	0.5−	1.0−				
1997 03 08	809	1.6−	0.5−	1998 09 26	704	1.3−	0.7−				

1998 SO₁₃₅ = 1981 UE₄ = 1987 YS₄ = 1995 FG₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	347.91382		(2000.0)		P		Q
<i>n</i>	0.17060171	ω	22.64067	+0.49377386			−0.86151647
<i>a</i>	3.2196880	Ω	38.06020	+0.76558899			+0.36621049
<i>e</i>	0.1427050	<i>i</i>	11.05602	+0.41238438			+0.35168061
<i>P</i>	5.78	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 10 30	381	0.7+	0.0	1998 09 26	704	0.9−	0.2−	1998 10 20	699	0.5+	0.4+
1981 10 30	381	0.4−	0.2−	1998 09 26	704	0.1−	0.8−	1998 10 28	704	1.6+	0.7−
1987 12 23	010	1.3−	1.2−	1998 09 26	704	0.4+	0.7−	1998 10 28	704	0.1+	0.1−
1987 12 23	010	0.7+	2.3+	1998 09 26	704	0.1+	0.4−	1998 10 28	704	0.8+	0.1−
1995 03 24	691	0.1−	0.5−	1998 09 27	704	0.4+	0.4+	1998 10 29	704	0.2−	0.7−
1995 03 24	691	0.0	0.1+	1998 09 27	704	0.3−	0.4−	1998 10 29	704	0.3+	0.0
1995 03 24	691	0.5−	0.6−	1998 09 27	704	0.4−	0.6−	1998 10 29	704	(2.4+ 0.6+)	
1995 04 06	691	0.5−	0.8−	1998 09 27	704	0.4−	0.5+	1998 10 29	704	0.7−	0.6+
1995 04 06	691	0.4−	0.6−	1998 09 27	704	0.4+	0.6−	1998 10 29	704	0.3+	1.0−
1995 04 06	691	0.2−	0.6−	1998 10 20	699	0.2+	1.2+				
1998 09 26	704	0.0	0.4−	1998 10 20	699	0.3−	0.7+				

1998 SB₁₃₆ = 1993 FZ₅

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	49.98164		(2000.0)		P		Q
<i>n</i>	0.26502279	ω	208.94446	+0.97112260			+0.23474947
<i>a</i>	2.4003831	Ω	137.40949	−0.20498911			+0.91231601
<i>e</i>	0.1828594	<i>i</i>	3.60785	−0.12206706			+0.33551778
<i>P</i>	3.72	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 17	809	1.8−	1.4+	1998 09 26	704	0.0	0.0	1998 09 27	704	0.5−	1.0−
1993 03 18	809	1.4+	0.7−	1998 09 26	704	0.2−	0.2−	1998 09 27	704	0.1+	1.1+
1993 03 23	809	0.6+	0.4−	1998 09 26	704	0.5−	0.4+	1998 10 20	699	0.6−	0.3−
1998 09 19	888	0.3+	0.5−	1998 09 26	704	0.2−	0.0	1998 10 20	699	1.4+	0.1+
1998 09 19	888	0.3+	0.1+	1998 09 27	704	0.1−	0.0	1998 10 20	699	0.4+	0.2−
1998 09 19	888	1.1+	0.2−	1998 09 27	704	0.4−	0.7+				
1998 09 26	704	0.3−	0.4+	1998 09 27	704	0.8−	0.1−				

1998 SQ₁₄₀ = 1991 RX₃₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	82.22353		(2000.0)		P		Q
<i>n</i>	0.28901389	ω	309.91081	+0.61765749			+0.78644445
<i>a</i>	2.2656365	Ω	358.23052	−0.69937483			+0.54805799
<i>e</i>	0.2209255	<i>i</i>	3.87301	−0.35968608			+0.28484656
<i>P</i>	3.41	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 08	691	0.7−	0.7+	1998 09 27	704	0.2−	0.0	1998 10 15	910	1.1+	0.0
1991 09 08	691	0.6−	0.7+	1998 09 27	704	0.4−	0.1−	1998 10 15	910	1.2+	0.1+
1991 09 08	691	0.8−	0.5+	1998 09 27	704	0.0	1.2+	1998 10 17	699	0.8−	1.2−
1991 09 11	675	1.1+	1.1−	1998 09 27	704	0.4+	0.8+	1998 10 17	699	0.8−	0.5+
1991 09 11	675	1.1+	0.9−	1998 10 11	699	0.6−	0.1+	1998 10 17	699	1.0−	0.1−
1998 09 26	704	0.4−	0.3−	1998 10 11	699	0.9−	0.1+	1998 10 20	910	0.5+	0.0
1998 09 26	704	0.7+	0.2−	1998 10 11	699	1.0−	0.7+	1998 10 20	910	0.2+	0.0
1998 09 26	704	0.1−	0.1+	1998 10 12	910	0.6+	0.0	1998 10 20	910	0.5+	0.1+
1998 09 26	704	1.0−	0.6−	1998 10 12	910	0.6+	0.2+	1998 10 21	910	0.5−	0.0
1998 09 26	704	0.3+	0.9−	1998 10 12	910	0.7+	0.2−	1998 10 21	910	0.5−	0.0
1998 09 27	704	0.9+	0.4−	1998 10 14	910	1.1+	0.2+	1998 10 22	910	0.5−	0.0

1998 ST₁₄₀ = 1991 YU₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	15.83664		(2000.0)		P		Q
<i>n</i>	0.26671828	ω	82.91200	+0.74554447			−0.66613555
<i>a</i>	2.3901997	Ω	318.85442	+0.59839773			+0.68273582
<i>e</i>	0.1850616	<i>i</i>	1.79940	+0.29340005			+0.30022528
<i>P</i>	3.70	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 12 28	691	0.1−	0.1−	1998 09 26	704	0.3−	0.4−	1998 09 27	704	1.0−	0.8−
1991 12 28	691	0.5−	0.2+	1998 09 26	704	0.1−	0.1−	1998 09 27	704	1.0−	0.0
1991 12 28	691	0.3+	0.5−	1998 09 26	704	1.8+	0.5+	1998 09 27	704	0.6+	1.0+
1992 01 01	691	0.2−	0.1+	1998 09 26	704	1.0−	1.2+	1998 10 26	910	0.5+	0.5−
1992 01 01	691	0.3+	0.2+	1998 09 27	704	0.6−	1.3+	1998 10 26	910	0.3+	0.6−
1992 01 01	691	0.3+	0.5+	1998 09 27	704	0.5+	0.8−	1998 10 26	910	0.3+	0.7−

1998 SF₁₄₁ = 1992 EU₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	114.50830		(2000.0)		P		Q
<i>n</i>	0.23917926	ω	260.70346	+0.30864918			+0.95108418
<i>a</i>	2.5703191	Ω	27.28570	−0.86098308			+0.28525919
<i>e</i>	0.0629815	<i>i</i>	1.65152	−0.40428186			+0.11860047
<i>P</i>	4.12	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 03 01	809	0.5−	0.1−	1998 09 26	704	0.1+	1.7−	1998 09 27	704	0.1+	0.6−
1992 03 04	809	0.4+	0.1−	1998 09 26	704	0.1−	1.5−	1998 09 27	704	1.0−	0.1−
1998 09 18	809	0.1+	1.0+	1998 09 26	704	1.2−	0.5−	1998 10 23	731	0.3+	0.3−
1998 09 18	809	0.7−	0.8+	1998 09 26	704	0.1+	1.3−	1998 10 23	731	0.6+	0.4+
1998 09 18	809	1.3−	0.5+	1998 09 26	704	1.0−	1.2−	1998 10 23	731	0.5+	0.5+
1998 09 20	809	1.6+	0.7+	1998 09 27	704	1.2−	0.3−	1998 10 24	731	0.3+	0.8+
1998 09 20	809	1.3+	0.1+	1998 09 27	704	1.2−	0.1+	1998 10 24	731	0.5−	0.8+
1998 09 20	809	1.7+	0.4+	1998 09 27	704	0.3+	0.3+	1998 10 24	731	1.1+	0.8+

1998 SO₁₄₂ = 1997 JB₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	57.43933		(2000.0)		P		Q
<i>n</i>	0.26300238	ω	286.23337	+0.94986494			+0.29503280
<i>a</i>	2.4126608	Ω	56.71491	−0.21803215			+0.86229931
<i>e</i>	0.1414642	<i>i</i>	7.11211	−0.22409503			+0.41157691
<i>P</i>	3.75	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

1998 NOV. 10

M.P.C. 33045

Residuals in seconds of arc

1997 05 01	704	0.5+	0.8+	1997 05 05	704	1.9-	1.3+	1998 09 27	704	1.1+	1.6+
1997 05 01	704	0.3+	0.0	1998 09 26	704	0.7-	0.6-	1998 10 11	699	0.1+	1.3+
1997 05 01	704	0.0	0.3-	1998 09 26	704	0.6+	0.9-	1998 10 11	699	0.5+	1.3+
1997 05 01	704	0.2-	0.3-	1998 09 26	704	0.3-	0.4-	1998 10 11	699	2.0-	0.9+
1997 05 01	704	0.5+	0.9-	1998 09 26	704	0.0	1.2-	1998 10 20	699	0.4-	0.0
1997 05 05	704	0.1+	0.4+	1998 09 27	704	1.8+	0.6-	1998 10 20	699	0.1+	0.0
1997 05 05	704	0.6+	1.1+	1998 09 27	704	0.4-	0.2-	1998 10 20	699	0.4+	0.4-
1997 05 05	704	0.8+	0.3-	1998 09 27	704	0.5-	0.2+				
1997 05 05	704	0.2-	0.9-	1998 09 27	704	0.5-	0.6-				

1998 SY₁₄₃ = 1997 ED₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	80.31911		(2000.0)	P	Q
<i>n</i>	0.29752611	ω	330.60304	+0.76215303	+0.64735169
<i>a</i>	2.2222146	Ω	349.04464	-0.58583704	+0.68460292
<i>e</i>	0.1470586	<i>i</i>	2.30745	-0.27553170	+0.33504424
<i>P</i>	3.31	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 03 08	809	0.3+	0.5-	1998 09 18	809	0.1+	0.6-	1998 09 26	704	0.5-	0.5-
1997 03 08	809	0.4+	1.5-	1998 09 20	809	0.8+	1.0-	1998 09 27	704	0.8-	1.0-
1997 03 08	809	0.1-	0.2-	1998 09 20	809	1.2+	0.3-	1998 09 27	704	0.4-	0.9+
1997 03 09	809	0.8-	0.2-	1998 09 20	809	1.8+	0.5-	1998 09 27	704	1.0-	0.2+
1997 03 09	809	1.0-	0.4-	1998 09 26	704	0.2-	0.5-	1998 10 17	699	0.1-	1.0+
1997 03 09	809	(3.1-	0.4+)	1998 09 26	704	0.4-	1.1-	1998 10 17	699	0.1+	1.0+
1998 09 18	809	1.0+	0.2-	1998 09 26	704	0.2-	0.3-	1998 10 17	699	0.4-	1.4+
1998 09 18	809	1.0+	1.0-	1998 09 26	704	0.9-	0.2-				

1998 SD₁₄₄ = 1990 VJ

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	300.89840		(2000.0)	P	Q
<i>n</i>	0.24286015	ω	279.07567	-0.45320524	-0.88287115
<i>a</i>	2.5442818	Ω	199.38555	+0.89131717	-0.45077212
<i>e</i>	0.0786727	<i>i</i>	21.76161	-0.01259822	-0.13169295
<i>P</i>	4.06	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1990 11 08	413	1.9+	2.2+	1998 09 20	809	0.1+	0.3+	1998 10 28	704	0.7-	0.3+
1990 11 09	413	1.1+	0.5-	1998 09 20	809	0.1-	0.3-	1998 10 29	704	0.3+	0.1+
1990 11 09	413	3.1-	1.5-	1998 09 20	809	0.2+	0.6+	1998 10 29	704	0.9+	0.1+
1998 09 18	809	0.1-	0.5-	1998 10 28	704	1.0+	0.6+	1998 10 29	704	1.6-	0.6+
1998 09 18	809	0.1+	0.1+	1998 10 28	704	0.3+	0.2-	1998 10 29	704	1.0-	0.4-
1998 09 18	809	0.3+	0.0	1998 10 28	704	0.6+	0.9-	1998 10 29	704	0.3-	0.7-

1998 SJ₁₄₄ = 1981 UD₁₇ = 1991 RH₁₅ = 1993 FG₄₄Id. G. V. Williams; 1981 UU₂₅ = 1991 RH₁₅ (MPC 20630) is invalid

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	331.21166		(2000.0)	P	Q
<i>n</i>	0.28933202	ω	267.22330	-0.12202720	-0.99235314
<i>a</i>	2.2639754	Ω	189.84410	+0.94831231	-0.11105067
<i>e</i>	0.1319462	<i>i</i>	6.23337	+0.29293878	-0.05387937
<i>P</i>	3.41	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1981 10 24	095	2.2+	1.0-	1993 03 20	809	1.0+	0.6+	1998 09 20	809	0.4+	0.7+
1981 10 28	095	1.9-	0.4+	1993 03 24	809	2.0+	1.1+	1998 10 28	704	0.8-	0.7-
1991 09 11	675	1.7+	0.2-	1993 03 28	691	0.9-	2.3-	1998 10 28	704	0.7-	0.7-
1991 09 11	675	0.1-	1.8-	1993 03 28	691	2.1-	3.1-	1998 10 28	704	0.4+	0.7-
1991 09 15	691	1.2-	0.2-	1993 03 28	691	1.3-	0.4-	1998 10 29	704	0.9-	0.7+
1991 09 15	691	0.8-	0.4+	1998 09 18	809	1.4+	0.5+	1998 10 29	704	0.5-	0.7-
1991 09 15	691	0.6-	0.1-	1998 09 18	809	1.2+	0.7+	1998 10 29	704	0.2-	0.7-
1991 09 15	675	0.0	0.2+	1998 09 18	809	1.0+	0.3+	1998 10 29	704	1.3-	0.6-
1991 09 15	675	1.6+	1.3-	1998 09 20	809	1.4+	1.8+	1998 10 29	704	1.3-	1.1-
1993 03 19	809	0.4+	1.3+	1998 09 20	809	0.9+	1.1+				

1998 SV₁₄₄ = 1992 GJ₁ = 1997 MF₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	150.01853		(2000.0)	P	Q
<i>n</i>	0.22479279	ω	220.75262	-0.32933161	+0.94360705
<i>a</i>	2.6788463	Ω	30.06453	-0.84780357	-0.27972860
<i>e</i>	0.1110189	<i>i</i>	3.87536	-0.41565586	-0.17708093
<i>P</i>	4.38	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 04 03	303	2.7-	0.5+	1997 06 29	704	0.1+	0.0	1998 10 15	327	0.8+	0.1+
1992 04 03	303	0.6-	0.2+	1997 06 29	704	0.1-	0.1-	1998 10 15	327	0.4+	0.1-
1992 04 03	303	1.0-	1.3+	1997 06 29	704	0.0	0.6-	1998 10 17	327	0.5+	0.1+
1992 04 04	303	0.4+	0.0	1998 09 20	809	0.0	1.1+	1998 10 17	327	0.6+	0.4+
1992 04 04	303	0.8+	0.4-	1998 09 20	809	0.7-	0.6+	1998 10 17	327	0.1+	0.0
1992 04 04	303	3.9+	0.1-	1998 09 20	809	0.6-	2.0+	1998 10 18	327	0.3+	0.0
1997 06 28	704	0.2+	0.2+	1998 09 21	809	0.9-	1.4-	1998 10 18	327	0.7+	0.5+
1997 06 28	704	0.1+	0.1+	1998 09 21	809	1.5-	0.9-	1998 10 18	327	0.4+	0.1+
1997 06 28	704	0.0	0.5+	1998 09 21	809	1.8-	0.8-				
1997 06 29	704	0.2-	0.0	1998 10 15	327	0.6+	0.0				

1998 SW₁₄₅ = 1985 DO₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	275.64105		(2000.0)	P	Q
<i>n</i>	0.26699976	ω	40.11923	-0.88744120	-0.46002580
<i>a</i>	2.3885196	Ω	112.46998	+0.41452342	-0.82379695
<i>e</i>	0.1437080	<i>i</i>	1.78053	+0.20154020	-0.33126252
<i>P</i>	3.69	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1985 02 20	675	0.6+	0.9+	1998 10 23	737	1.0-	0.2-	1998 10 28	704	2.0+	1.1+
1985 02 22	675	0.6-	0.8-	1998 10 23	737	0.2-	0.1-	1998 10 28	704	0.7-	0.1-
1998 09 20	809	0.3+	0.2-	1998 10 23	737	0.5+	0.6-	1998 10 28	704	0.0	1.3-
1998 09 20	809	1.1-	0.8-	1998 10 24	737	0.4+	0.1+	1998 10 28	704	1.2-	0.2+
1998 09 20	809	1.7-	0.9-	1998 10 24	737	0.1+	0.3+	1998 10 29	704	1.2+	1.0+
1998 09 21	809	1.3+	1.3+	1998 10 25	749	0.4+	0.5-	1998 10 29	737	0.2+	0.1+
1998 09 21	809	1.0+	0.2+	1998 10 25	737	0.0	0.3-	1998 10 29	704	0.2+	0.9-
1998 09 21	809	0.1+	1.5+	1998 10 25	749	0.2-	0.3-	1998 10 29	737	0.1-	0.1-
1998 10 22	737	0.3-	0.1-	1998 10 25	737	0.1+	0.2-	1998 10 29	704	0.2-	0.2+
1998 10 22	737	0.2+	0.7-	1998 10 25	749	0.8+	0.3+	1998 10 29	704	0.2-	0.2-
1998 10 22	737	0.1-	0.0	1998 10 26	749	0.3+	0.9+	1998 10 29	704	0.3-	0.4-
1998 10 22	737	0.4-	0.1-	1998 10 26	749	1.0-	0.1+				
1998 10 23	737	0.5-	0.2+	1998 10 26	749	0.3+	0.8+				

1998 SY₁₄₅ = 1997 ES₅₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	87.39772		(2000.0)	P	Q
<i>n</i>	0.26183412	ω	271.58450	+0.52128688	+0.85313355
<i>a</i>	2.4198320	Ω	29.86265	-0.76561821	+0.47818804
<i>e</i>	0.2173075	<i>i</i>	2.36768	-0.37694661	+0.20856496
<i>P</i>	3.76	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1997 03 10	809	1.2+	0.6-	1998 09 20	809	0.8-	0.8+	1998 10 15	327	0.5+	1.4+
1997 03 10	809	1.1+	0.6-	1998 09 20	809	0.9-	0.7+	1998 10 17	327	0.6+	1.2-
1997 03 10	809	0.0	0.1+	1998 09 21	809	0.3+	0.2+	1998 10 17	327	0.2-	0.1-
1997 03 11	809	0.2-	1.0+	1998 09 21	809	0.3+	1.3-	1998 10 17	327	0.4+	0.3-
1997 03 11	809	0.2-	0.7+	1998 09 21	809	0.6-	0.0	1998 10 18	327	0.0	0.0
1997 03 11	809	1.5-	0.1+	1998 10 15	327	0.6+	0.1-	1998 10 18	327	0.5-	0.1-
1998 09 20	809	0.3-	0.6+	1998 10 15	327	0.5+	0.1+	1998 10 18	327	0.1-	0.1+

1998 SU₁₅₄ = 1986 WP₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	335.17823		(2000.0)	P		Q		Williams	
<i>n</i>	0.24045649	ω	177.69263	-0.02039462	-0.99636421				
<i>a</i>	2.5612092	Ω	273.46806	+0.91595898	+0.01454323				
<i>e</i>	0.2143618	<i>i</i>	4.75359	+0.40075330	-0.08394558				
<i>P</i>	4.10	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1986 11 29	046	0.3+	1.2-	1998 09 26	704	0.0	0.7-	1998 10 28	704	0.7+	0.8+
1986 11 29	046	0.3+	0.7-	1998 09 27	704	0.0	0.7-	1998 10 28	704	0.6-	1.1-
1986 11 30	046	2.6-	1.5+	1998 09 27	704	0.8+	0.7+	1998 10 28	704	1.0-	1.0-
1986 12 01	046	0.2+	0.1-	1998 09 27	704	0.3+	1.4+	1998 10 29	704	0.1-	0.3+
1986 12 01	046	1.8+	0.0	1998 09 27	704	1.1-	0.4+	1998 10 29	704	1.2-	3.1+
1998 09 26	704	1.1+	0.6+	1998 10 12	699	0.4+	0.6-	1998 10 29	704	0.2-	0.5+
1998 09 26	704	1.2+	0.9-	1998 10 12	699	0.5+	0.0	1998 10 29	704	1.5+	0.1+
1998 09 26	704	0.4+	0.3-	1998 10 12	699	0.2-	0.7-	1998 10 29	704	0.5+	1.2+
1998 09 26	704	0.0	1.9-	1998 10 28	704	0.7-	0.8-				

1998 SA₁₅₅ = 1997 HW₁₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	45.40978		(2000.0)	P		Q		Williams	
<i>n</i>	0.22684920	ω	127.60715	+0.95000974	+0.31073332				
<i>a</i>	2.6626324	Ω	214.31965	-0.30076760	+0.88464372				
<i>e</i>	0.2287776	<i>i</i>	3.09442	-0.08378756	+0.34763530				
<i>P</i>	4.34	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1997 04 30	704	0.0	0.5-	1998 09 26	704	0.4+	1.6-	1998 10 28	704	0.7+	0.1+
1997 04 30	704	1.7+	1.4+	1998 09 26	704	0.8+	0.3-	1998 10 28	704	0.6-	1.0-
1997 04 30	704	0.5-	1.4+	1998 09 27	704	0.7+	0.8-	1998 10 28	704	0.1-	0.3-
1997 04 30	704	1.4-	1.3+	1998 09 27	704	1.3-	1.2+	1998 10 28	704	1.5+	0.2+
1997 05 01	704	1.2+	1.2-	1998 09 27	704	0.8-	0.4-	1998 10 28	704	0.1+	0.7-
1997 05 01	704	0.1+	0.7-	1998 09 27	704	1.0-	0.9+	1998 10 29	704	(3.1+	1.7+)
1997 05 01	704	0.4-	0.6-	1998 10 19	327	0.8+	0.5+	1998 10 29	704	1.0-	0.5-
1997 05 01	704	0.1+	0.2-	1998 10 19	327	0.7+	0.1+	1998 10 29	704	0.3-	1.5+
1997 05 01	704	0.9-	0.9-	1998 10 19	327	0.5+	0.2+	1998 10 29	704	0.2+	0.9-
1998 09 26	704	0.1+	0.1+	1998 10 20	327	0.2+	0.2+	1998 10 29	691	0.9-	0.1+
1998 09 26	704	0.4-	0.4+	1998 10 20	327	0.7+	0.3+	1998 10 29	691	1.0-	0.1-
1998 09 26	704	0.3+	0.2+	1998 10 20	327	0.6+	0.5+	1998 10 29	691	1.0-	0.0

1998 SE₁₅₇ = 1993 FE₆₁ = 1994 PP₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	59.34290		(2000.0)	P		Q		Williams	
<i>n</i>	0.26281647	ω	303.65087	+0.91674271	+0.39918369				
<i>a</i>	2.4137984	Ω	32.82949	-0.35651009	+0.83485454				
<i>e</i>	0.1212873	<i>i</i>	1.62098	-0.18023142	+0.37903864				
<i>P</i>	3.75	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1993 03 19	809	0.8-	0.7-	1998 09 26	704	0.9+	0.5+	1998 09 27	704	1.7+	1.0-
1993 03 20	809	0.5-	2.2-	1998 09 26	704	0.4-	0.1+	1998 10 13	691	0.8-	0.2-
1994 08 12	809	0.9+	0.8+	1998 09 26	704	0.3-	0.3-	1998 10 13	691	0.4-	0.2-
1994 08 12	809	0.0	1.1+	1998 09 26	704	0.6+	0.7-	1998 10 13	691	0.7-	0.3-
1994 08 12	809	0.8+	0.7+	1998 09 26	704	0.1+	0.8+	1998 10 22	691	0.7-	0.5+
1994 08 13	809	0.3-	0.7-	1998 09 27	704	1.1+	1.0-	1998 10 22	691	0.7-	0.1-
1994 08 13	809	0.6-	0.7-	1998 09 27	704	0.7-	0.1+	1998 10 22	691	0.6-	0.2+
1994 08 13	809	0.7-	1.3-	1998 09 27	704	1.8+	0.9-				

1998 SL₁₆₁ = 1988 JX = 1989 SJ₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	183.15174		(2000.0)	P		Q		Williams	
<i>n</i>	0.22984690	ω	358.01087	-0.78996289	+0.61295695				
<i>a</i>	2.6394308	Ω	219.80647	-0.56222209	-0.73424248				
<i>e</i>	0.1611669	<i>i</i>	1.39356	-0.24467316	-0.29184200				
<i>P</i>	4.29	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1988 05 07	046	(11.0-	0.2-)	1989 09 26	809	0.6-	0.8+	1998 10 17	699	0.3-	0.1-
1988 05 07	046	(9.0-	0.4-)	1989 09 26	809	0.4-	0.9+	1998 10 17	699	0.8+	0.1-
1988 05 09	046	1.8-	0.5-	1998 09 26	704	0.2-	0.3-	1998 10 17	699	0.6+	0.2+
1988 05 09	046	(5.9-	0.7+)	1998 09 26	704	0.0	0.3-	1998 10 23	589	0.4-	0.1-
1988 05 12	046	0.8-	2.0-	1998 09 26	704	0.3-	1.1-	1998 10 23	589	0.4-	0.4-
1988 05 12	046	1.7+	0.6-	1998 09 26	704	0.8+	0.1+	1998 10 23	589	0.1+	0.6-
1989 09 25	809	0.4-	0.2+	1998 09 27	704	0.3+	0.6-	1998 10 26	589	0.5+	0.3-
1989 09 25	809	0.2+	0.2+	1998 09 27	704	0.5+	0.6-	1998 10 26	589	0.6-	0.0
1989 09 25	809	0.6+	0.2+	1998 09 27	704	0.6+	1.1-	1998 10 26	589	0.2-	0.0
1989 09 26	809	0.6-	0.9+	1998 09 27	704	0.6+	1.1-				

1998 TB = 1978 NJ₇ = 1979 YC₅ = 1992 EZ = 1992 EL₃

Id. T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	350.19852		(2000.0)	P		Q		Nakano	
<i>n</i>	0.25928212	ω	352.64030	-0.22479067	-0.96954438				
<i>a</i>	2.4356843	Ω	110.31221	+0.89920057	-0.24484431				
<i>e</i>	0.1154122	<i>i</i>	5.95070	+0.37537646	+0.00591301				
<i>P</i>	3.80	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1978 07 10	675	(7.8-	12.4-)	Y	1992 03 11	372	(0.5-	5.8+)	1998 10 11	888	0.8+	0.7+
1978 07 11	675	(6.6-	3.8+)	Y	1998 10 02	888	0.4-	0.1-	1998 10 11	888	0.0	0.2+
1978 07 13	675	0.5-	2.1+	Y	1998 10 02	888	0.3+	0.3-	1998 10 11	888	1.0-	0.3+
1979 12 18	095	0.2+	0.8-		1998 10 02	888	0.1+	0.4-	1998 10 11	888	0.2-	0.6+
1992 03 07	372	1.0+	0.0		1998 10 03	888	0.2-	0.2+	1998 10 18	888	0.4+	0.8+
1992 03 07	372	0.4-	0.4+		1998 10 03	888	0.4-	0.3+	1998 10 18	888	0.1-	0.6+
1992 03 11	372	0.3+	1.8+		1998 10 03	888	0.2+	0.4+				

1998 TG = 1997 GZ₁₁

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	68.19376		(2000.0)	P		Q		Williams	
<i>n</i>	0.27147102	ω	330.85008	+0.83911284	+0.54395110				
<i>a</i>	2.3622203	Ω	356.19383	-0.49113098	+0.75554787				
<i>e</i>	0.2208513	<i>i</i>	2.25680	-0.23383755	+0.36505425				
<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 04 03	704	0.1+	1.1-	1998 10 10	411	0.3-	0.7-	1998 10 11	411	0.3+	0.8+
1997 04 03	704	0.5+	0.2+	1998 10 11	699	0.5-	0.1+	1998 10 24	411	1.0-	0.3-
1997 04 07	704	0.3-	0.1+	1998 10 11	699	0.7+	0.3+	1998 10 24	411	0.4-	0.8+
1997 04 07	704	0.0	1.2+	1998 10 11	699	0.5+	0.8+	1998 10 28	120	1.0+	0.8-
1998 10 10	411	0.2-	0.1-	1998 10 11	411	0.4-	0.1-	1998 10 28	120	0.2+	0.4-

1998 TZ₁ = 3210 T-2 = 1990 WO₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	39.60558		(2000.0)	P		Q		Williams	
<i>n</i>	0.23955448	ω	206.96369	+0.94590375	-0.32287452				
<i>a</i>	2.5676344	Ω	171.68106	+0.32296023	+0.92759815				
<i>e</i>	0.0136147	<i>i</i>	12.74066	+0.03102881	+0.18791942				
<i>P</i>	4.11	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1973 09 19	675	1.2+	3.1+	1973 10 04	675	0.7+	0.8+	1998 10 14	428	0.2+	0.1-
1973 09 19	675	0.1+	3.0+	1973 10 04	675	0.2+	0.8-	1998 10 14	428	0.8+	0.4+
1973 09 20	675	0.0	1.6+	1973 10 05	675	0.6+	0.8-	1998 10 15	428	1.1-	0.5-
1973 09 24	675	0.5-	0.9+	1973 10 05	675	0.0	0.2-	1998 10 15	428	0.2+	0.1-
1973 09 24	675	0.8-	0.4+	1990 11 20	413	0.5-	2.1-	1998 10 18	428	1.0-	0.0
1973 09 25	675	0.5+	1.9-	1990 11 20	413	0.7+	0.8-	1998 10 18	428	0.5-	0.5+
1973 09 25	675	0.5+	1.7-	1998 10 12	699	0.3+	0.7+	1998 10 21	428	0.3-	0.0
1973 09 29	675	0.1+	1.6-	1998 10 12	699	0.7+	0.8+	1998 10 21	428	0.0	0.4+
1973 09 29	675	0.1-	2.8-	1998 10 12	699	0.9+	0.5+	1998 10 29	699	0.2+	0.4+
1973 09 30	675	0.6-	1.3-	1998 10 13	428	0.5-	0.2-	1998 10 29	699	0.3-	0.6+
1973 09 30	675	1.2-	1.6-	1998 10 13	428	0.2-	0.7+	1998 10 29	699	0.3-	0.9+

1998 TC₅ = 1997 LW₁₂

Id. S. Nakano

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	50.51600		(2000.0)	P	Q
<i>n</i>	0.17603161	ω	95.93232	+0.81366770	+0.54569800
<i>a</i>	3.1531328	Ω	231.18035	-0.58069943	+0.77902065
<i>e</i>	0.2857951	<i>i</i>	14.90441	+0.02707499	+0.30877261
<i>P</i>	5.60	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 06 07	809	0.4+	1.0+	1998 10 13	120	0.1+	0.2-	1998 10 18	360	0.2+	0.4+
1997 06 07	809	0.0	0.7+	1998 10 14	360	0.3-	0.1-	1998 10 18	360	0.3-	0.1-
1997 06 07	809	0.1+	0.5+	1998 10 14	360	0.3-	0.1-	1998 10 18	360	0.1+	0.3+
1997 06 08	809	0.4-	0.8-	1998 10 14	360	0.2-	0.0	1998 10 22	120	0.1+	0.2-
1997 06 08	809	0.2-	0.5-	1998 10 15	120	0.3+	0.0	1998 10 22	120	0.3-	0.3-
1997 06 08	809	0.1+	0.9-	1998 10 15	120	0.0	0.2+	1998 10 22	120	0.1-	0.2+
1998 10 13	120	0.2+	0.1+	1998 10 15	120	0.2+	0.1-	1998 10 22	120	0.0	0.1+
1998 10 13	120	0.0	0.2-	1998 10 15	120	0.3+	0.1+				

1998 TD₅ = 1992 EK₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	9.07036		(2000.0)	P	Q
<i>n</i>	0.25508892	ω	333.79360	+0.57687540	-0.81341491
<i>a</i>	2.4623039	Ω	80.88777	+0.76208144	+0.50306621
<i>e</i>	0.1272844	<i>i</i>	4.33528	+0.29401812	+0.29202836
<i>P</i>	3.86	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1992 02 26	691	1.1-	0.6-	1998 10 13	120	0.2-	0.5-	1998 10 23	120	0.3+	0.4+
1992 02 26	691	0.6-	0.7-	1998 10 13	120	0.0	0.5-	1998 10 23	120	0.2+	0.4-
1992 02 26	691	0.7-	0.8-	1998 10 14	699	0.3+	0.7+	1998 10 26	120	0.6-	0.0
1992 03 01	809	1.3+	1.1+	1998 10 14	699	0.3+	0.2+	1998 10 26	120	0.2+	0.2+
1992 03 04	809	1.0+	0.4+	1998 10 14	699	0.2+	0.7+	1998 10 26	120	0.2+	0.1+
1992 03 06	809	0.1+	0.7+	1998 10 15	120	(2.1+	3.6+)				
1998 10 13	120	1.1-	0.8-	1998 10 15	120	(2.7+	3.2+)				

1998 TH₅ = 1995 FS₃ = 1996 KM₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	30.34009		(2000.0)	P	Q
<i>n</i>	0.17885487	ω	241.76602	+0.95621990	-0.29053477
<i>a</i>	3.1198631	Ω	135.09920	+0.28290579	+0.88700151
<i>e</i>	0.1914939	<i>i</i>	2.85142	+0.07488537	+0.35891206
<i>P</i>	5.51	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1995 03 23	691	0.4-	0.3+	1996 05 17	691	0.2+	0.0	1998 10 14	699	1.0-	0.2+
1995 03 23	691	0.4-	0.3+	1996 05 23	691	0.5-	0.7-	1998 10 14	699	0.4-	0.3+
1995 03 23	691	0.1+	0.4+	1996 05 23	691	0.4-	0.2+	1998 10 15	120	0.4+	0.7+
1995 03 29	691	0.1+	0.6-	1996 05 23	691	0.1-	0.4+	1998 10 15	120	0.2-	0.3-
1995 03 29	691	0.4-	0.2-	1998 10 13	120	0.0	0.2-	1998 10 20	120	0.1+	0.1-
1995 03 29	691	1.1+	0.2-	1998 10 13	120	0.1+	0.5-	1998 10 20	120	0.7+	0.2-

1996 05 17	691	0.7+	0.3+	1998 10 13	120	0.8+	0.1-	1998 10 21	120	0.7-	0.0
1996 05 17	691	0.1+	0.3-	1998 10 14	699	0.0	0.1-	1998 10 21	120	0.2+	0.1+

1998 TK₅ = 1977 AJ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	324.82170		(2000.0)	P	Q
<i>n</i>	0.26330599	ω	45.63339	-0.25203804	-0.96164158
<i>a</i>	2.4108058	Ω	59.25475	+0.84818746	-0.27338347
<i>e</i>	0.0834744	<i>i</i>	7.23710	+0.46589148	-0.02251559
<i>P</i>	3.74	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1977 01 13	095	0.3+	0.2+	1998 10 14	699	0.7+	0.1+	1998 10 21	120	0.6+	0.0
1977 01 20	095	0.3-	0.2-	1998 10 15	120	0.4-	0.3-	1998 10 21	120	1.8+	0.1-
1998 10 13	120	0.7-	0.1+	1998 10 15	120	0.3-	0.4-	1998 10 29	120	1.1-	0.1+
1998 10 13	120	0.4-	0.1+	1998 10 20	120	0.3+	0.2-	1998 10 29	120	0.7-	0.1+
1998 10 13	120	0.9-	0.1+	1998 10 20	120	0.1+	0.0	1998 10 30	120	0.2+	0.1+
1998 10 14	699	0.6+	0.5+	1998 10 20	120	0.4-	0.4-				
1998 10 14	699	0.2+	0.5+	1998 10 20	120	0.5+	0.3-				

1998 TP₅ = 1981 WK₈ = 1991 RF₉ = 1993 FO₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	1.52837		(2000.0)	P	Q
<i>n</i>	0.28797562	ω	226.81445	+0.36197183	-0.93212906
<i>a</i>	2.2710790	Ω	201.97091	+0.86325467	+0.33946366
<i>e</i>	0.1259846	<i>i</i>	1.61950	+0.35180643	+0.12609456
<i>P</i>	3.42	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1981 11 25	095	0.1+	0.6-	1998 09 29	910	0.8+	0.2+	1998 10 18	699	0.6-	0.6+
1991 09 11	675	0.2-	0.1-	1998 09 29	910	0.9+	0.2+	1998 10 18	699	0.2-	0.6+
1991 09 11	675	0.1+	0.4-	1998 09 29	910	1.0+	0.3+	1998 10 20	120	0.4-	0.1+
1991 09 14	675	0.4+	0.7-	1998 10 13	120	0.2-	0.0	1998 10 23	120	0.1+	0.2-
1991 09 14	675	0.2+	0.6-	1998 10 13	120	0.0	0.2-	1998 10 23	120	0.1-	0.3-
1993 03 21	809	1.0+	0.2-	1998 10 13	120	0.1-	0.0	1998 10 28	120	0.0	0.0
1993 03 22	809	(3.4+	1.1-)	1998 10 15	120	0.1-	0.2-	1998 10 28	120	0.3+	0.1-
1993 03 26	809	0.4-	1.8-	1998 10 15	120	0.3-	0.2-	1998 11 06	120	0.1+	0.1-
1993 04 21	413	1.1-	0.6+	1998 10 18	699	0.6-	0.6+	1998 11 06	120	0.4-	0.3-

1998 TX₅ = 1993 RY₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	101.22683		(2000.0)	P	Q
<i>n</i>	0.21202157	ω	26.25280	+0.42675457	+0.90376276
<i>a</i>	2.7853686	Ω	269.02430	-0.83545130	+0.37997114
<i>e</i>	0.1265725	<i>i</i>	1.89520	-0.34626819	+0.19706546
<i>P</i>	4.65	<i>H</i>	12.8	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1993 09 14	809	1.6+	0.1+	1998 10 13	120	0.5-	0.3+	1998 10 27	120	0.1-	0.3-
1993 09 14	809	0.3+	0.3+	1998 10 15	120	0.6-	0.2+	1998 10 27	120	0.2-	0.1-
1993 09 14	809	0.1+	0.3-	1998 10 15	120	0.4-	0.0	1998 10 28	120	0.6-	0.4-
1993 09 19	809	1.3-	0.0	1998 10 16	120	0.1-	0.4+	1998 10 28	120	0.1+	0.1-
1993 09 19	809	0.2-	0.3+	1998 10 16	120	0.2+	0.2+	1998 10 28	120	1.4-	1.1-
1993 09 19	809	0.4-	0.6-	1998 10 21	120	1.0+	0.8-	1998 10 28	120	0.1+	0.1+
1998 10 11	699	0.2-	0.5+	1998 10 21	120	0.4+	0.3-	1998 10 28	120	1.7+	0.1+
1998 10 11	699	0.2-	0.6+	1998 10 21	120	0.1-	0.2-	1998 11 06	120	0.2+	0.2+
1998 10 11	699	0.1-	1.2+	1998 10 23	120	0.1-	0.5-	1998 11 06	120	0.2+	0.6+
1998 10 13	120	0.1+	0.3+	1998 10 23	120	0.3+	0.7-				
1998 10 13	120	0.2+	0.1+	1998 10 27	120	0.3+	0.2-				

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1998 TA₆ = 1997 MQ₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	299.83701		(2000.0)	P		Q	
<i>n</i>	0.22697035	ω	308.50151	-0.67338321	-0.73914059		
<i>a</i>	2.6616849	Ω	183.92867	+0.72805952	-0.65947998		
<i>e</i>	0.1153903	<i>i</i>	12.68189	+0.12839154	-0.13695746		
<i>P</i>	4.34	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 27	691	0.2-	0.2-	1998 10 12	699	(2.5-	0.7-)	1998 10 16	120	0.0	0.7+
1997 06 27	691	0.3-	0.1+	1998 10 12	699	0.6+	0.0	1998 10 20	120	0.0	0.3+
1997 06 27	691	0.3-	0.0	1998 10 12	699	0.3-	0.7+	1998 10 20	120	0.3-	0.2+
1997 07 08	691	0.4+	0.0	1998 10 15	120	0.2+	0.2+	1998 10 27	120	0.3-	0.1-
1997 07 08	691	0.1+	0.0	1998 10 16	120	0.3+	0.7-	1998 10 28	120	0.2-	0.2-
1997 07 08	691	0.2+	0.1+	1998 10 16	120	0.2-	0.9-	1998 10 28	120	0.3+	0.1+

1998 TC₆ = 1990 OM₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	25.85916		(2000.0)	P		Q	
<i>n</i>	0.26536796	ω	236.02885	+0.80453413	-0.59364667		
<i>a</i>	2.3983012	Ω	160.36909	+0.56069020	+0.74945451		
<i>e</i>	0.0349387	<i>i</i>	2.99664	+0.19583496	+0.29308968		
<i>P</i>	3.71	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 07 27	675	0.8-	0.1+	1998 10 14	699	0.2+	0.1+	1998 10 20	699	0.5+	0.2+
1990 07 27	675	0.9+	0.7-	1998 10 15	120	0.0	1.0-	1998 10 20	699	0.4-	0.2-
1990 07 30	675	0.3-	0.1-	1998 10 16	120	0.5+	0.5-	1998 10 20	120	0.9-	0.9+
1990 07 30	675	0.2+	0.7+	1998 10 16	120	0.1-	0.3+	1998 10 20	120	0.2+	0.3-
1998 10 14	699	0.5+	0.0	1998 10 16	120	2.0-	0.1+	1998 10 27	120	0.1-	0.6+
1998 10 14	699	0.4+	0.2+	1998 10 20	699	0.3+	0.1-	1998 10 27	120	0.7+	0.3-

1998 TS₆ = 1997 GP

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	28.07378		(2000.0)	P		Q	
<i>n</i>	0.37171793	ω	0.93753	+0.89262732	-0.41904925		
<i>a</i>	1.9156980	Ω	25.92535	+0.41108346	+0.60538652		
<i>e</i>	0.0700895	<i>i</i>	22.33925	+0.18500500	+0.67668669		
<i>P</i>	2.65	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 04	566	0.1-	0.2+	1998 10 15	327	0.4-	0.3-	1998 10 28	704	0.1-	0.9-
1997 04 04	566	0.5+	0.1+	1998 10 17	327	0.0	0.1+	1998 10 28	704	0.1-	0.9-
1997 04 04	566	0.6-	0.1-	1998 10 17	327	0.1-	0.4+	1998 10 28	704	0.3+	1.0-
1997 04 07	566	0.3+	0.2-	1998 10 17	327	0.1+	0.0	1998 10 28	704	0.6+	0.0
1997 04 07	566	0.2-	0.2-	1998 10 18	327	0.3+	0.2+	1998 10 29	704	0.6-	0.0
1997 04 07	566	0.0	0.2+	1998 10 18	327	0.5+	0.2+	1998 10 29	704	0.9+	0.4+
1998 10 14	327	0.4-	0.3-	1998 10 18	327	0.3+	0.3+	1998 10 29	704	0.6-	0.3+
1998 10 14	327	0.3-	0.7-	1998 10 19	327	0.4+	0.4+	1998 10 29	704	0.5+	1.2+
1998 10 14	327	0.4-	0.6-	1998 10 19	327	0.6+	0.4+	1998 10 29	704	1.2-	0.2-
1998 10 15	327	0.4-	0.3+	1998 10 19	327	0.5+	0.4+				
1998 10 15	327	0.3-	0.2-	1998 10 28	704	0.3-	0.5+				

1998 TU₆ = 1997 MW₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	71.71849		(2000.0)	P		Q	
<i>n</i>	0.19629136	ω	247.46379	+0.87885934	+0.47468883		
<i>a</i>	2.9322562	Ω	84.16854	-0.41820003	+0.81466138		
<i>e</i>	0.1290146	<i>i</i>	2.74918	-0.22959748	+0.33316264		
<i>P</i>	5.02	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 28	704	0.1-	0.2+	1997 07 02	704	1.0-	0.0	1998 10 15	120	0.0	0.4+
1997 06 28	704	0.4+	1.0+	1997 07 02	704	0.2+	0.3-	1998 10 15	120	1.4+	0.6+

1997 06 28	704	0.8-	0.1+	1997 07 02	704	0.3-	0.1+	1998 10 17	691	0.6-	0.2-
1997 06 29	704	0.4-	0.5+	1997 07 02	704	0.0	0.1-	1998 10 17	691	0.9-	0.0
1997 06 29	704	0.0	0.0	1998 10 13	120	1.0+	1.8+	1998 10 17	691	0.6-	0.2-
1997 06 29	704	0.3+	0.1-	1998 10 13	120	0.8-	1.7-	1998 10 30	120	0.1+	1.0+
1997 06 29	704	0.5+	1.5-	1998 10 14	699	0.2-	1.0-	1998 10 30	120	0.2+	0.8-
1997 06 29	704	1.1+	0.4+	1998 10 14	699	0.1-	0.3-				
1997 07 02	704	0.3+	0.3-	1998 10 14	699	0.4+	0.3+				

1998 TV₆ = 1981 UG₂₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	197.72450		(2000.0)	P		Q	
<i>n</i>	0.17327538	ω	3.28869	-0.78807760	+0.59612634		
<i>a</i>	3.1864821	Ω	214.81721	-0.57073801	-0.80102420		
<i>e</i>	0.0455527	<i>i</i>	15.59721	-0.23063351	-0.05471387		
<i>P</i>	5.69	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 10 24	675	0.7-	0.3-	1998 10 15	120	0.2+	0.4-	1998 10 23	120	0.1-	0.3+
1981 10 25	675	0.7+	0.5+	1998 10 15	120	0.1-	0.8+	1998 10 23	120	0.3+	0.1-
1998 09 22	910	0.2+	0.2+	1998 10 17	691	1.3-	0.6-	1998 10 24	120	0.1+	0.8-
1998 09 22	910	0.2+	0.2+	1998 10 17	691	1.1-	1.0-	1998 10 26	120	0.3+	0.3-
1998 09 22	910	0.2+	0.2+	1998 10 17	691	1.3-	0.5-	1998 10 26	120	0.3+	0.5+
1998 10 13	120	1.6-	0.7-	1998 10 20	120	1.8+	0.8-	1998 10 28	120	0.1-	0.5+
1998 10 13	120	0.5-	0.9+	1998 10 20	120	1.2+	0.0	1998 10 28	120	0.2+	0.0
1998 10 15	120	0.2+	0.1+	1998 10 21	120	1.0+	0.3+	1998 10 29	691	0.6-	0.2+
1998 10 15	120	1.4+	0.5+	1998 10 21	120	0.4-	0.2+	1998 10 29	691	0.4-	0.2+

1998 TE₈ = 1997 LW

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	90.50290		(2000.0)	P		Q	
<i>n</i>	0.28473349	ω	88.44407	+0.57433620	+0.81454750		
<i>a</i>	2.2882862	Ω	216.99840	-0.79459771	+0.53075413		
<i>e</i>	0.2416576	<i>i</i>	7.78815	-0.19685631	+0.23412051		
<i>P</i>	3.46	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 05	568	0.6+	0.2+	1998 10 14	691	0.3-	0.1-	1998 10 18	691	0.2-	0.2+
1997 06 05	568	0.4-	0.0	1998 10 14	691	0.3-	0.3-	1998 10 18	691	0.2-	0.0
1997 06 05	568	0.0	0.1-	1998 10 14	691	0.0	0.1+	1998 10 29	704	0.1-	0.7+
1997 06 06	568	0.1+	0.0	1998 10 17	691	0.4+	0.0	1998 10 29	704	0.2-	0.1+
1997 06 06	568	0.6-	0.0	1998 10 17	691	0.4+	0.1+	1998 10 29	704	0.0	0.9-
1997 06 06	568	0.3+	0.1-	1998 10 17	691	0.4+	0.0	1998 10 29	704	0.0	0.0

1998 TH₉ = 1995 WE₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	34.99355		(2000.0)	P		Q	
<i>n</i>	0.27092693	ω	168.45227	+0.95334054	-0.30158536		
<i>a</i>	2.3653819	Ω	209.11196	+0.27469203	+0.88538242		
<i>e</i>	0.1539562	<i>i</i>	1.61535	+0.12524420	+0.35375733		
<i>P</i>	3.64	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 20	691	0.3+	0.1-	1998 10 12	691	0.4-	0.4-	1998 10 18	691	0.9-	0.0
1995 11 20	691	0.0	0.2+	1998 10 12	691	0.4-	0.3-	1998 10 18	691	1.0-	0.2-
1995 11 20	691	0.2-	0.1-	1998 10 14	699	0.7+	0.6+	1998 10 20	699	0.4+	0.4-
1995 11 30	691	0.3+	0.0	1998 10 14	699	0.2+	0.3+	1998 10 20	699	0.0	0.0
1995 11 30	691	0.0	0.1-	1998 10 14	699	1.1+	0.4+	1998 10 20	699	1.1+	0.2+
1995 11 30	691	0.3-	0.0	1998 10 18	691	0.9-	0.2-				

1998 NOV. 10

M.P.C. 33049

1998 TG₁₆ = 1971 QE₁ = 1992 HY₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Marsden

<i>M</i>	342.78191		(2000.0)	P		Q	
<i>n</i>	0.08133539	ω	227.01651	+0.32345135	−0.94245452		
<i>a</i>	5.2757356	Ω	204.49770	+0.91666867	+0.33426713		
<i>e</i>	0.0945702	<i>i</i>	11.77367	+0.23472917	−0.00670568		
<i>P</i>	12.12	<i>H</i>	11.0	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1971 08 19	095	0.0	0.1−	1998 10 13	120	0.4+	0.1+
1992 04 27	691	0.8+	0.3−	1998 10 14	699	1.3−	0.6+
1992 04 27	691	0.0	0.6−	1998 10 14	699	1.0−	0.4+
1992 04 27	691	0.3−	0.3+	1998 10 14	699	0.8−	1.1+
1992 05 06	691	0.1+	0.6+	1998 10 20	699	1.0−	1.0+
1992 05 06	691	0.1−	0.9+	1998 10 20	699	0.3+	1.1+
1992 05 06	691	0.3−	0.5+	1998 10 20	699	0.3+	1.5+
1998 10 13	120	0.4+	0.0	1998 10 20	120	0.8+	0.1+

1998 TK₁₆ = 1979 ME₅ = 1979 OD₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	338.36732		(2000.0)	P		Q	
<i>n</i>	0.27017069	ω	302.12373	−0.00985119	−0.99783917		
<i>a</i>	2.3697938	Ω	148.24542	+0.95399269	−0.02884722		
<i>e</i>	0.0814993	<i>i</i>	7.09033	+0.29966797	+0.05903244		
<i>P</i>	3.65	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1979 06 23	413	0.4−	0.3−	1998 10 12	699	0.3−	0.8+
1979 06 24	413	1.8+	1.2+	1998 10 12	699	0.9−	0.9+
1979 06 25	413	0.2−	0.5+	1998 10 15	120	0.2+	0.5−
1979 06 29	413	0.8−	0.3−	1998 10 15	120	0.1+	1.5−
1979 07 24	413	0.4−	1.0−	1998 10 20	120	0.2+	0.6−
1998 10 12	699	(3.4−	0.5+)	1998 10 20	120	0.7−	0.4+

1998 TA₁₈ = 1973 YY₂ = 1984 YQ₅ = 1984 YT₆ = 1987 QU₉ = 1991 XJ₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	39.56557		(2000.0)	P		Q	
<i>n</i>	0.27354946	ω	96.78230	+0.99260955	+0.02662584		
<i>a</i>	2.3502396	Ω	261.74008	−0.06997398	+0.92268524		
<i>e</i>	0.2760597	<i>i</i>	6.87109	+0.09914601	+0.38463362		
<i>P</i>	3.60	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1973 12 25	095	0.6−	0.4−	1991 12 01	675	0.7+	0.2+
1984 12 20	010	0.1+	0.9+	1991 12 03	675	0.5+	0.7−
1984 12 28	095	2.0−	1.1+	1991 12 03	675	0.9+	0.5+
1984 12 28	010	0.7+	0.2−	1998 10 12	399	1.4−	0.1−
1987 08 26	095	0.7+	0.4−	1998 10 12	399	1.0−	0.3−
1991 12 01	675	0.5+	1.9−	1998 10 20	399	0.2+	0.2+

1998 UB = 1996 BD₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	1.40650		(2000.0)	P		Q	
<i>n</i>	0.27709315	ω	170.81180	+0.67144159	−0.65744992		
<i>a</i>	2.3301588	Ω	236.09302	+0.65105314	+0.74374381		
<i>e</i>	0.1870360	<i>i</i>	24.33107	+0.35397174	−0.12085010		
<i>P</i>	3.56	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 01 26	413	2.2−	0.3+	1998 08 25	704	1.2−	0.1−
1996 01 26	413	(6.4+	1.1−)	1998 08 25	704	2.0+	0.1−
1996 01 27	413	0.8+	0.4−	1998 08 25	704	0.6+	0.1+
1996 01 27	413	0.8+	0.1+	1998 09 28	704	0.4+	0.6−
1996 01 28	413	0.4+	0.1+	1998 09 28	704	1.2−	1.4+

1996 01 28	413	0.3+	0.1+	1998 09 28	704	1.0+	0.6−	1998 10 20	703	0.5−	0.4−
1998 08 25	704	0.1+	0.3+	1998 09 28	704	0.7−	0.1+	1998 10 20	703	0.1+	0.3−
1998 08 25	704	0.0	0.1−	1998 09 28	704	1.0−	0.9+				

1998 UC = 1991 XK₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	318.13144		(2000.0)		P		Q				
n	0.27050233	ω	221.39063		−0.21734530		−0.90070719				
a	2.3678565	Ω	244.37487		+0.96876840		−0.15192709				
e	0.2510831	i	24.65674		+0.11936840		−0.40699474				
P	3.64	H	14.8		G	0.15	U	4			
Residuals in seconds of arc											
1991 12 02	675	(0.3−	2.8−)	1998 10 16	703	0.1−	0.4+	1998 10 23	658	0.2+	0.1+
1991 12 02	675	0.3+	0.5+	1998 10 16	703	0.5+	0.1+	1998 10 23	658	0.1+	0.0
1991 12 03	675	0.3−	0.6−	1998 10 16	703	0.3−	0.7+	1998 10 23	658	0.2+	0.0
1998 09 20	703	0.3−	0.2−	1998 10 18	703	0.2+	0.1−	1998 10 25	703	0.4−	0.3−
1998 09 20	703	0.4−	0.0	1998 10 18	703	1.1+	0.3−	1998 10 25	703	0.5−	0.4−
1998 09 20	703	0.0	0.5−	1998 10 20	703	0.1+	0.9+	1998 10 25	703	0.4−	0.4−

1998 UE = 1982 BQ₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	271.84471		(2000.0)	P				Q			
<i>n</i>	0.27759621	ω	182.88061	−0.79251597				−0.54437692			
<i>a</i>	2.3273428	Ω	319.83205	+0.56770193				−0.49386586			
<i>e</i>	0.1558332	<i>i</i>	25.22586	+0.22278453				−0.67804888			
<i>P</i>	3.55	<i>H</i>	13.5	<i>G</i>	0.15			<i>U</i>	5		
Residuals in seconds of arc											
1982 01 26	381	0.7+	0.2+	1998 08 27	704	1.8+	0.3+	1998 10 18	703	0.5−	0.2+
1982 01 26	381	0.1+	0.6+	1998 08 27	704	1.0−	0.0	1998 10 18	703	0.1−	0.8+
1982 01 28	381	0.7−	0.7−	1998 10 16	703	0.3−	0.3+	1998 10 25	703	0.6+	0.3+
1998 08 27	704	0.3−	1.2−	1998 10 16	703	0.4+	0.3+	1998 10 25	703	1.0+	1.8−
1998 08 27	704	0.7−	0.2−	1998 10 16	703	0.0	0.2+				
1998 08 27	704	0.6−	0.5+	1998 10 18	703	0.2−	0.2+				

1998 UF = 1997 CU₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

M	92.28102		(2000.0)	P				Q			
n	0.38791546	ω	353.49002	+0.69346505				+0.67880672			
a	1.8619928	Ω	319.99196	−0.64293910				+0.43173765			
e	0.0696605	i	22.06523	−0.32517002				+0.59398994			
P	2.54	H	16.0	G	0.15			U	4		
Residuals in seconds of arc											
1997 02 06	566	0.5−	0.1+	1998 09 26	699	0.4+	0.3−	1998 10 18	670	0.0	1.0−
1997 02 06	566	0.1+	0.2−	1998 09 26	699	0.1+	0.2+	1998 10 18	670	0.4−	1.4−
1997 02 06	566	0.5−	0.1−	1998 09 26	699	0.1−	0.3+	1998 10 18	670	1.9−	1.2+
1997 02 08	566	0.4+	0.1+	1998 10 17	703	0.5+	0.1+	1998 10 25	703	0.2−	0.2+
1997 02 08	566	0.3+	0.1+	1998 10 17	703	0.6+	0.3+	1998 10 25	703	0.9+	0.3+
1997 02 08	566	0.2+	0.1−	1998 10 17	703	0.2+	0.1+				

1998 UQ = 1991 UY₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

$\dot{M}$	40.90270		(2000.0)	P				Q			
n	0.27733031	ω	303.10124			+0.93608882		+0.33572542			
a	2.3288302	Ω	37.58434			−0.23699757		+0.82251638			
e	0.3333807	i	9.91345			−0.25994206		+0.45908087			
P	3.55	H	16.5	G	0.15			U	5		
Residuals in seconds of arc											
1991 10 29	399	0.1−	0.4−	1998 10 17	422	0.1−	0.2−	1998 10 18	704	0.8+	0.1+
1991 10 29	399	1.7+	0.2−	1998 10 17	422	0.2+	0.0	1998 10 18	658	0.4−	0.2−
1991 10 31	399	2.2−	0.4+	1998 10 17	422	0.2+	0.2−	1998 10 18	658	0.6−	0.4−

1991 10 31	399	0.7+	0.1+	1998 10 17	046	0.2+	0.5+	1998 10 18	658	0.9-	0.0
1998 10 16	704	0.6+	0.9-	1998 10 17	046	0.2+	0.1+	1998 10 18	422	0.0	0.1-
1998 10 16	704	0.3+	0.6-	1998 10 17	046	0.3+	0.0	1998 10 18	422	0.3-	0.0
1998 10 16	704	0.4+	0.1+	1998 10 17	046	0.1-	0.2+	1998 10 18	422	0.3-	0.0
1998 10 16	704	0.8-	0.4-	1998 10 17	046	0.0	0.0	1998 10 18	422	0.1-	0.2-
1998 10 16	704	0.3+	0.3+	1998 10 18	713	0.5+	1.0-	1998 10 18	900	0.4-	0.5+
1998 10 16	046	0.3+	0.0	1998 10 18	704	0.3-	0.2-	1998 10 18	900	0.3-	0.5+
1998 10 16	046	0.9+	0.4-	1998 10 18	734	0.1-	0.2-	1998 10 19	758	0.8+	0.1-
1998 10 16	046	0.5+	0.6-	1998 10 18	713	0.5+	0.9+	1998 10 19	758	1.8+	3.2-
1998 10 16	046	0.5+	0.5-	1998 10 18	704	0.3+	0.5-	1998 10 19	704	0.1+	0.3-
1998 10 16	046	0.3+	0.5-	1998 10 18	670	1.7+	0.9+	1998 10 19	704	0.6-	0.1-
1998 10 17	761	2.5-	1.1-	1998 10 18	734	0.8-	0.1+	1998 10 19	704	0.4+	0.3-
1998 10 17	761	1.6+	0.4+	1998 10 18	704	0.3+	0.1-	1998 10 19	704	1.2-	0.9+
1998 10 17	761	1.5-	0.3+	1998 10 18	670	0.5-	0.6-	1998 10 19	658	0.8-	0.7+
1998 10 17	758	0.4-	0.5+	1998 10 18	673	0.5-	0.4-	1998 10 19	658	1.0-	0.9+
1998 10 17	758	0.2+	0.4+	1998 10 18	734	0.1+	0.3+	1998 10 19	658	0.9-	0.6+
1998 10 17	758	0.4+	0.2+	1998 10 18	670	1.4+	0.1-	1998 10 19	428	0.1+	0.4+
1998 10 17	758	0.0	0.6+	1998 10 18	673	0.5-	0.0	1998 10 19	428	0.6+	0.3+
1998 10 17	670	0.8-	0.6+	1998 10 18	704	0.3+	0.1-	1998 10 19	426	0.0	0.1+
1998 10 17	670	0.7+	1.1+	1998 10 18	670	0.8+	0.4-	1998 10 19	426	0.1+	0.2+
1998 10 17	670	0.8-	1.3+	1998 10 18	673	0.9-	0.3+	1998 10 19	426	0.1-	0.2-
1998 10 17	422	0.2+	0.2-	1998 10 18	673	0.9-	0.1+	1998 10 19	426	0.2+	0.1-

1998 UC₁ = 1991 VB₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	17.11993	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27987886	<i>ω</i>	274.98421	+0.57603375
<i>a</i>	2.3146713	<i>Ω</i>	139.60178	+0.78491123
<i>e</i>	0.1476517	<i>i</i>	5.92300	+0.22825310
<i>P</i>	3.52	<i>H</i>	15.5	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1991 11 09	809	0.1-	1.9+	1998 10 20	557	0.1-	0.0	1998 10 22	557	0.2-	0.2+
1991 11 09	809	2.0+	1.3-	1998 10 20	557	0.2-	0.2-	1998 10 25	557	0.1+	0.2+
1991 11 12	809	0.1+	0.3-	1998 10 20	825	0.7+	0.2+	1998 10 25	557	0.0	0.0
1991 11 12	809	0.5-	0.0	1998 10 20	825	0.2+	0.2+	1998 10 25	557	0.0	0.1+
1991 11 12	809	1.4-	0.4-	1998 10 21	825	0.6-	0.3-	1998 10 30	557	0.0	0.1+
1998 10 17	557	0.3+	0.3-	1998 10 21	825	0.3-	0.2+	1998 10 30	557	0.1+	0.1+
1998 10 17	557	0.1-	0.4-	1998 10 22	825	0.5+	0.5+	1998 10 30	557	0.0	0.0
1998 10 17	557	0.2-	0.4-	1998 10 22	825	0.1+	0.3+	1998 10 30	557	0.2+	0.2-
1998 10 17	557	0.0	0.4-	1998 10 22	825	0.0	0.7+				
1998 10 17	557	0.2-	0.2-	1998 10 22	557	0.2-	0.2-				

1998 UJ₁ = 1997 GP₃₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	111.71593	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.24423356	<i>ω</i>	199.05791	+0.02077082
<i>a</i>	2.5347346	<i>Ω</i>	72.27163	-0.90031069
<i>e</i>	0.1666213	<i>i</i>	7.16990	-0.43475192
<i>P</i>	4.04	<i>H</i>	15.0	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1997 04 07	809	0.8-	1.6-	1998 10 16	046	0.1-	0.1+	1998 10 25	046	(2.9-	0.3+)
1997 04 07	809	1.8-	1.6-	1998 10 16	046	0.1+	0.2-	1998 10 25	046	2.0-	0.3+
1997 04 07	809	1.0-	1.5-	1998 10 16	046	0.3+	0.0	1998 10 25	046	(2.3-	0.4-)
1997 04 08	809	1.5+	1.7+	1998 10 16	046	0.0	0.2-	1998 10 25	046	1.3-	0.3+
1997 04 08	809	0.9+	1.7+	1998 10 20	046	0.5+	0.2-	1998 11 07	046	0.1+	0.1-
1997 04 08	809	1.2+	1.5+	1998 10 21	046	0.2+	0.5-	1998 11 07	046	0.5+	0.3+
1998 10 16	046	0.4+	0.3-	1998 10 21	046	0.4+	0.1-	1998 11 07	046	0.3+	0.5+
1998 10 16	046	0.3-	0.4+	1998 10 21	046	0.6+	0.2-	1998 11 07	046	0.2+	0.3+

1998 UC₄ = 1972 RK₁ = 1981 UY₂₂ = 1984 OM

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	130.22960	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23162391	<i>ω</i>	66.52009	+0.09184813
<i>a</i>	2.6259138	<i>Ω</i>	209.33877	-0.97339317
<i>e</i>	0.1680109	<i>i</i>	12.24868	-0.20992776
<i>P</i>	4.26	<i>H</i>	13.2	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1972 09 10	095	0.0	0.8+	1984 07 18	413	1.9+	0.4-	1998 10 27	120	0.2-	0.7+
1981 10 24	675	0.2+	0.3-	1984 07 18	413	1.3-	0.3-	1998 10 27	120	0.3-	0.2-
1981 10 24	675	0.3+	0.0	1998 10 20	120	0.3-	0.1+	1998 10 28	120	0.2+	0.1-
1981 10 25	675	0.7-	1.2-	1998 10 20	120	0.1+	0.1-	1998 10 28	120	0.4+	0.4+
1981 10 25	675	0.2+	0.9+	1998 10 23	120	0.3+	0.3-	1998 11 06	120	0.3+	0.6-
1981 10 26	675	0.2-	0.4-	1998 10 23	120	0.3+	0.3-	1998 11 06	120	1.0-	0.2-
1984 07 18	413	0.6+	0.1-	1998 10 24	120	0.4+	0.4-				
1984 07 18	413	1.2-	0.7-	1998 10 24	120	0.1+	0.3+				

1998 UP₆ = 1981 SF₅ = 1981 US = 1988 FM₃

Id. T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	78.77440	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23473959	<i>ω</i>	299.89487	+0.78903508
<i>a</i>	2.6026264	<i>Ω</i>	23.74493	-0.40594863
<i>e</i>	0.2555848	<i>i</i>	17.56208	-0.46111751
<i>P</i>	4.20	<i>H</i>	12.7	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1981 09 25	095	0.2+	0.1-	1988 03 17	399	1.2-	1.0-	1998 10 24	886	1.1+	1.0+
1981 10 24	675	1.0-	0.3+	1988 03 17	399	0.9-	0.4+	1998 10 24	886	1.6-	0.4-
1981 10 25	675	0.5-	0.3-	1988 03 17	399	1.8+	0.2+	1998 10 24	888	0.1+	0.3-
1981 10 26	675	1.9-	0.1-	1998 10 18	905	1.0+	0.6+	1998 10 24	888	0.1+	0.4-
1981 10 26	704	0.9-	0.7-	1998 10 18	905	1.2+	0.2+	1998 10 24	888	0.2-	0.6-
1981 10 26	704	0.9+	0.9+	1998 10 22	886	0.1-	0.3+	1998 10 31	886	0.5+	0.4+
1981 10 27	704	0.8+	0.7+	1998 10 22	886	0.7-	0.5-	1998 10 31	886	1.3-	0.3+
1981 10 30	704	2.1+	1.4-	1998 10 22	888	0.3-	0.1+				
1981 10 31	704	1.0+	0.1-	1998 10 22	888	0.0	0.1-				

1998 US₆ = 1996 FC₁₂

Id. T. Urata

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	345.98774	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.22717569	<i>ω</i>	26.07798	+0.41288375
<i>a</i>	2.6600807	<i>Ω</i>	39.60760	+0.81908113
<i>e</i>	0.1109510	<i>i</i>	5.16971	+0.39828772
<i>P</i>	4.34	<i>H</i>	15.0	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1996 03 22	691	0.8-	0.2-	1998 10 18	888	0.2+	0.5-	1998 10 31	888	0.9-	0.1+
1996 03 22	691	0.8-	0.1+	1998 10 22	888	0.7-	0.9-	1998 10 31	888	0.2-	0.4+
1996 03 26	691	0.8+	0.2+	1998 10 22	888	0.6-	0.4-	1998 11 07	888	0.1-	0.4-
1996 03 26	691	0.5+	0.1+	1998 10 24	888	0.1+	1.1+	1998 11 07	888	0.4-	0.2-
1996 03 26	691	0.3+	0.2-	1998 10 24	888	0.5+	0.1+	1998 11 07	888	0.1-	0.0
1998 10 18	888	0.2+	0.0	1998 10 24	888	0.5+	0.4+				
1998 10 18	888	0.2+	0.2+	1998 10 31	888	1.1+	0.2+				

1998 UE₇ = 1981 UV₂₂ = 1997 JF₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	47.12224	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23219996	<i>ω</i>	142.26888	+0.97693787
<i>a</i>	2.6215690	<i>Ω</i>	207.76046	-0.20210458
<i>e</i>	0.3207001	<i>i</i>	13.57140	+0.06889214
<i>P</i>	4.24	<i>H</i>	15.5	<i>G</i> 0.15 <i>U</i> 4

Williams

1998 NOV. 10

M.P.C. 33051

Residuals in seconds of arc

1981 10 24	675	0.4+	0.0	1997 05 03	910	0.5+	0.2+	1998 10 29	704	0.4+	0.5+
1981 10 26	675	0.4-	0.0	1998 10 22	120	0.1+	0.4-	1998 10 29	704	0.3-	0.3+
1997 05 01	910	0.3-	0.6-	1998 10 22	120	0.1-	0.3-	1998 10 29	704	0.4-	0.1+
1997 05 01	910	0.2-	0.6-	1998 10 23	120	0.2+	0.1-	1998 10 29	704	0.0	0.2+
1997 05 01	910	0.3-	0.5-	1998 10 23	120	0.5+	0.4-	1998 10 29	704	0.5-	0.0
1997 05 02	910	0.0	0.0	1998 10 24	120	0.1+	0.2-				
1997 05 02	910	0.2+	0.1-	1998 10 24	120	0.0	0.7-				

1998 UZ₇ = 1996 JH₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	4.71535		(2000.0)	P	Q		
<i>n</i>	0.23059181	ω	224.23952	+0.36162024	-0.92734596		
<i>a</i>	2.6337434	Ω	205.03532	+0.90602317	+0.37388524		
<i>e</i>	0.2657181	<i>i</i>	13.14404	+0.21989275	-0.01546947		
<i>P</i>	4.27	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 05 11	691	0.1-	0.3+	1998 10 23	120	0.1-	0.5+	1998 10 29	120	1.3+	1.8-
1996 05 11	691	0.2-	0.2+	1998 10 23	120	0.2-	0.5+	1998 10 30	120	0.1+	0.2+
1996 05 11	691	0.2-	0.1-	1998 10 24	120	0.8-	0.2+	1998 10 30	120	0.4-	0.8+
1996 05 15	691	0.1+	0.3-	1998 10 24	120	0.2-	0.0	1998 10 30	120	1.0+	0.2+
1996 05 15	691	0.0	0.2-	1998 10 28	120	0.3-	0.2-	1998 10 30	120	1.0-	0.3+
1996 05 15	691	0.4+	0.1+	1998 10 28	120	0.1-	0.1-				
1998 10 23	120	0.9+	0.8-	1998 10 29	120	0.1-	0.5+				

1998 UB₈ = 1996 FA₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	75.43112		(2000.0)	P	Q		
<i>n</i>	0.22882798	ω	280.14116	+0.87455492	+0.48399603		
<i>a</i>	2.6472602	Ω	50.91882	-0.42839195	+0.80012779		
<i>e</i>	0.1694383	<i>i</i>	2.21677	-0.22723123	+0.35432100		
<i>P</i>	4.31	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 03 17	691	0.3+	0.1+	1998 10 18	699	0.5-	0.2+	1998 10 24	120	0.4-	0.8-
1996 03 17	691	0.1-	0.0	1998 10 18	699	0.6+	0.3-	1998 10 24	120	0.4+	0.2+
1996 03 23	691	0.0	0.1-	1998 10 23	120	0.6+	0.5+	1998 10 30	120	1.7+	0.4+
1996 03 23	691	0.1-	0.0	1998 10 23	120	0.2+	0.3+	1998 10 30	120	1.8-	0.3-
1998 10 18	699	0.1+	0.2+	1998 10 23	120	0.8-	0.3-				

1998 UH₈ = 1997 JP₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Urata

<i>M</i>	58.66220		(2000.0)	P	Q		
<i>n</i>	0.27485416	ω	308.17504	+0.98252921	+0.13097629		
<i>a</i>	2.3427962	Ω	44.74622	-0.04521673	+0.85714588		
<i>e</i>	0.2484739	<i>i</i>	10.82548	-0.18053200	+0.49814271		
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1997 05 01	910	0.1+	0.2-	1997 05 03	910	0.0	0.2+	1998 10 24	888	0.1+	0.1-
1997 05 01	910	0.2+	0.5-	1998 10 22	888	0.2+	0.1-	1998 10 24	888	0.7-	0.0
1997 05 01	910	0.0	0.3-	1998 10 22	888	0.3+	0.3+	1998 10 31	888	0.1+	0.0
1997 05 02	910	0.2-	0.4+	1998 10 22	888	0.1-	0.0	1998 10 31	888	0.0	0.0
1997 05 02	910	0.1-	0.4+	1998 10 24	888	0.1-	0.0	1998 10 31	888	0.2+	0.0

1998 UF₉ = 1980 FA₄ = 1995 WS₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	233.40859		(2000.0)	P	Q		
<i>n</i>	0.29428665	ω	162.05237	-0.97769062	-0.20988308		
<i>a</i>	2.2384927	Ω	5.85135	+0.18124189	-0.86308536		
<i>e</i>	0.0802342	<i>i</i>	4.71262	+0.10617174	-0.45938302		
<i>P</i>	3.35	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 03 16	809	0.2-	0.1-	1995 11 18	691	0.2+	0.0	1998 10 16	691	0.3-	0.1-
1980 03 16	809	0.1+	0.1-	1995 11 18	691	0.3+	0.1-	1998 10 22	691	0.3+	0.3+
1980 03 16	809	0.1+	0.4+	1995 11 18	691	0.4+	0.1-	1998 10 22	691	0.5+	0.3+
1980 03 16	809	0.5+	0.0	1995 11 24	691	0.5-	0.1-	1998 10 22	691	0.1+	0.2+
1980 03 17	809	0.4+	0.2+	1995 11 24	691	0.1-	0.0	1998 10 28	691	0.3-	0.1+
1980 03 17	809	0.3-	0.0	1995 11 24	691	0.1-	0.1-	1998 10 28	691	0.5-	0.1+
1980 03 17	809	0.2+	0.3+	1998 10 16	691	0.0	0.1+	1998 10 28	691	0.4-	0.0
1980 03 17	809	0.3-	0.1+	1998 10 16	691	0.1-	0.2+				

1998 UQ₁₅ = 1979 SA₁₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	12.74704		(2000.0)	P	Q		
<i>n</i>	0.21262512	ω	324.15618	+0.62615112	-0.77724404		
<i>a</i>	2.7800952	Ω	86.99452	+0.72901636	+0.55546439		
<i>e</i>	0.0757824	<i>i</i>	3.55139	+0.27653197	+0.29555206		
<i>P</i>	4.64	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1979 09 20	675	0.4-	0.3+	1998 10 18	699	0.2-	0.5-	1998 10 26	120	0.2+	0.4-
1979 09 21	675	0.4+	0.3-	1998 10 23	120	0.7+	0.8+	1998 10 26	120	0.2+	0.2+
1998 10 18	699	0.3+	0.2-	1998 10 23	120	0.5-	0.2+	1998 10 30	120	0.1-	0.0
1998 10 18	699	0.2+	0.3+	1998 10 23	120	0.9-	0.3-	1998 10 30	120	0.1+	0.1-

**1998 UT₁₅ = 1925 VM = 1962 WE₁ = 1977 TN₃ = 1987 SW₂₀
= 1988 VW₇**

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	253.45104		(2000.0)	P	Q		
<i>n</i>	0.19076186	ω	309.59152	-0.97287204	-0.16076914		
<i>a</i>	2.9886497	Ω	221.93436	+0.19495031	-0.95687815		
<i>e</i>	0.0205505	<i>i</i>	14.41405	-0.12455666	-0.24194522		
<i>P</i>	5.17	<i>H</i>	11.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1925 11 15	024(0.06-	0.01-)	X	1987 09 23	095	1.1-	0.3+	1998 10 24	120	0.5-	0.3-
1962 11 26	760	1.6-	1.3+	1988 11 07	092	0.4+	0.4+	1998 10 24	120	0.9+	0.4-
1962 11 26	760	1.0+	0.5+	1988 11 07	092	0.4+	0.4-	1998 10 26	120	0.1+	0.5-
1977 10 10	330	0.3-	0.5-	1998 10 18	699	1.0-	0.7+	1998 10 26	120	0.1+	0.5-
1977 10 16	330	1.4+	0.2+	1998 10 18	699	0.2-	1.3+	1998 10 29	120	0.4+	0.8-
1987 09 18	095	0.3+	0.5+	1998 10 23	120	0.6-	0.4-	1998 10 29	120	0.1-	0.9-

1998 UG₁₇ = 1993 PQ₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	31.92625		(2000.0)	P	Q		
<i>n</i>	0.22003016	ω	66.68350	+0.95526912	-0.28987134		
<i>a</i>	2.7173645	Ω	310.11346	+0.23554164	+0.86558256		
<i>e</i>	0.0815773	<i>i</i>	4.39555	+0.17883243	+0.40833984		
<i>P</i>	4.48	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 08 14	691	0.2+	0.8+	1993 08 15	691	0.0	0.1-	1998 10 17	327	1.4+	0.7-
1993 08 14	691	0.5+	0.3-	1998 10 11	699	0.0	1.0+	1998 10 17	327	0.4+	0.2-
1993 08 14	691	0.0	0.2+	1998 10 11	699	0.1-	0.4+	1998 10 20	327	0.4-	0.1-
1993 08 15	691	0.5-	0.5-	1998 10 11	699	1.1-	0.0	1998 10 20	327	0.1+	0.0
1993 08 15	691	0.2-	0.1-	1998 10 17	327	0.3-	0.4-	1998 10 20	327	0.0	0.1+

1998 UF₁₈ = 1983 QA₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	307.21836		(2000.0)	P	Q		
<i>n</i>	0.27355572	ω	328.83763	-0.68807588	-0.72473980		
<i>a</i>	2.3502037	Ω	164.54005	+0.69052926	-0.66926370		
<i>e</i>	0.1029080	<i>i</i>	7.78512	+0.22298190	-0.16382408		
<i>P</i>	3.60	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1983 08 30	675	0.1−	0.7−	1998 10 22	428	0.3−	0.7−	1998 10 28	428	0.0	0.4−
1983 08 31	675	0.0	0.8+	1998 10 27	428	0.1−	0.8−	1998 10 29	699	1.1+	1.0+
1983 09 01	675	0.6+	0.5−	1998 10 27	428	0.3−	0.3+	1998 10 29	699	0.1−	0.0
1983 09 02	675	0.1+	0.2−	1998 10 27	428	1.1−	0.3−	1998 10 29	699	0.3−	0.5+
1983 09 02	675	0.6−	0.6+	1998 10 28	428	1.2+	0.3+				

1998 UO₁₈ = 1994 PB₂₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	48.15502		(2000.0)	P	Q
<i>n</i>	0.27028675	ω	13.07415	+0.96415993	−0.26531706
<i>a</i>	2.3691154	Ω	2.31343	+0.23977377	+0.86875769
<i>e</i>	0.2201773	<i>i</i>	2.24118	+0.11359654	+0.41817094
<i>P</i>	3.65	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 12	809	0.1−	0.5−	1994 09 04	809	(2.8−	5.9−)	1998 10 25	411	0.1−	0.7−
1994 08 12	809	0.1+	0.7−	1994 09 05	809	0.1+	0.4+	1998 10 29	411	0.5+	0.0
1994 08 12	809	0.2−	0.6−	1994 09 05	809	0.6−	0.6+	1998 10 29	411	0.4+	0.7−
1994 08 13	809	(2.4+	0.5−)	1994 09 05	809	0.2−	1.2+	1998 11 07	411	0.4+	0.9+
1994 08 13	809	1.2+	0.8−	1994 09 06	809	0.3−	0.4+	1998 11 07	411	0.3−	1.0+
1994 08 13	809	1.0+	0.4−	1994 09 06	809	0.5−	0.4+	1998 11 07	411	0.5−	0.2−
1994 09 04	809	(2.1−	5.7−)	1994 09 06	809	0.6−	0.1+				
1994 09 04	809	(3.2−	6.2−)	1998 10 25	411	0.3−	1.1−				

1998 UU₁₈ = 9088 P-L = 1991 RH₁₁ = 1997 HJ₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	47.17480		(2000.0)	P	Q
<i>n</i>	0.28673606	ω	144.55611	+0.98738255	−0.14995220
<i>a</i>	2.2776195	Ω	224.15594	+0.12313764	+0.92913817
<i>e</i>	0.2199122	<i>i</i>	4.18958	+0.09956311	+0.33795947
<i>P</i>	3.44	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1960 10 17	675	0.0	0.5+	1997 04 30	704	0.3+	1.1−	1998 10 20	699	0.4+	0.5−
1960 10 22	675	0.1+	0.6−	1997 04 30	704	0.4+	0.1−	1998 10 20	699	0.2+	0.4−
1960 10 24	675	0.5−	0.4+	1997 04 30	704	0.1−	0.2−	1998 10 20	699	0.5+	1.2−
1960 10 26	675	0.2+	0.3+	1997 04 30	704	2.4−	0.4+	1998 10 23	120	0.5−	0.4−
1991 09 13	675	0.5−	0.7−	1997 05 01	704	1.1+	1.3−	1998 10 23	120	0.1+	0.4−
1991 09 13	675	0.8+	0.6−	1997 05 01	704	0.1+	0.7+	1998 10 28	120	0.3+	0.1−
1991 09 15	675	0.6−	0.2+	1997 05 01	704	0.4+	0.3+	1998 10 28	120	0.4−	0.0
1991 09 15	675	0.3+	0.4+	1997 05 01	704	0.6−	2.1−				

1998 UJ₂₀ = 1979 RK₁ = 1992 CP₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Nakano

<i>M</i>	33.06901		(2000.0)	P	Q
<i>n</i>	0.26187245	ω	110.15026	+0.95760574	−0.27375054
<i>a</i>	2.4195959	Ω	265.82033	+0.21909611	+0.89430522
<i>e</i>	0.2123750	<i>i</i>	5.16197	+0.18705117	+0.35394748
<i>P</i>	3.76	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1979 09 14	095	0.8−	0.2+	1992 02 02	809	1.0−	0.4−	1998 10 20	399	0.3−	0.1−
1979 09 28	095	1.2+	0.7−	1992 02 12	809	1.5+	0.3−	1998 10 25	399	0.1+	0.9+
1992 01 30	809	(3.1+	4.6+)	1992 02 12	809	0.2−	0.3+	1998 10 25	399	0.3+	0.2+
1992 02 02	809	0.7+	0.6+	1992 02 12	809	0.9−	0.1−	1998 10 28	399	0.8+	0.2−
1992 02 02	809	0.4−	0.4−	1998 10 20	399	1.6−	0.5−	1998 10 28	399	0.5+	0.1+

1998 UM₂₀ = 1977 DA₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	349.48317		(2000.0)	P	Q
<i>n</i>	0.17028965	ω	337.19270	+0.36349878	−0.93047516
<i>a</i>	3.2236203	Ω	91.46720	+0.86160937	+0.31715015
<i>e</i>	0.1739491	<i>i</i>	2.61776	+0.35425687	+0.18338965
<i>P</i>	5.79	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1977 02 18	381	0.5+	0.5−	1998 10 20	699	0.5+	0.6+	1998 10 30	611	0.5−	0.1−
1977 02 18	381	0.9+	0.3+	1998 10 20	699	0.9−	0.3−	1998 10 30	611	0.2−	0.2+
1977 02 19	381	0.2−	0.4+	1998 10 29	611	0.1−	0.2+	1998 10 30	611	0.7+	0.6−
1977 02 19	381	1.2−	0.1−	1998 10 29	611	0.3+	0.3−				
1998 10 20	699	0.0	0.3−	1998 10 29	611	0.1+	0.6+				

2038 P-L = 1998 TC₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	292.63855		(2000.0)	P	Q
<i>n</i>	0.28661906	ω	267.85264	−0.69182038	−0.71816796
<i>a</i>	2.2782393	Ω	226.23189	+0.69687634	−0.63689092
<i>e</i>	0.0574937	<i>i</i>	5.95832	+0.18907121	−0.28036538
<i>P</i>	3.44	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.3−	0.9+	1960 10 25	675	0.4−	1.0−	1998 10 20	910	0.1+	0.0
1960 09 26	675	0.4+	0.7+	1960 10 26	675	0.8+	0.8+	1998 10 20	910	0.0	0.1−
1960 09 28	675	0.1+	0.0	1998 10 15	910	0.3+	0.2−	1998 10 21	910	0.5−	0.2+
1960 09 29	675	0.6+	1.0−	1998 10 15	910	0.5+	0.0	1998 10 21	910	0.5−	0.1+
1960 10 17	675	0.5−	0.1+	1998 10 15	910	0.4+	0.0	1998 10 21	910	0.5−	0.1+
1960 10 22	675	0.7−	0.6−	1998 10 20	910	0.1+	0.0				

2048 P-L = 1998 SG₁₃₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	137.32898		(2000.0)	P	Q
<i>n</i>	0.23447797	ω	290.64556	−0.31128695	+0.94936824
<i>a</i>	2.6045619	Ω	321.13658	−0.84479147	−0.29689400
<i>e</i>	0.2289926	<i>i</i>	3.87744	−0.43523305	−0.10273215
<i>P</i>	4.20	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.1−	0.5−	1998 09 26	704	0.8−	0.4+	1998 10 21	159	0.0	0.2−
1960 09 26	675	0.5−	0.1−	1998 09 26	704	0.7+	1.3−	1998 10 21	159	0.1−	0.2−
1960 09 28	675	0.7+	1.7+	1998 09 27	704	1.0−	1.1+	1998 10 21	159	1.5−	0.1+
1960 09 29	675	0.4−	0.7−	1998 09 27	704	1.2+	0.5−	1998 10 22	159	0.2−	0.3+
1960 10 17	675	0.1−	0.1+	1998 09 27	704	0.5+	0.7+	1998 10 22	159	0.5−	0.3−
1960 10 22	675	0.2+	0.7−	1998 09 27	704	1.0−	0.4+	1998 10 22	159	0.1−	0.7−
1960 10 25	675	0.6+	0.6+	1998 09 27	704	1.7−	0.3−	1998 10 26	159	0.2+	0.0
1960 10 26	675	0.4−	0.5−	1998 10 20	159	0.3+	0.1+	1998 10 26	159	0.7+	1.5+
1998 09 26	704	0.4+	0.1+	1998 10 20	159	0.4+	0.3−	1998 10 26	159	0.5+	0.2−
1998 09 26	704	2.0+	1.1−	1998 10 20	159	0.2−	0.2+				

2564 P-L = 1998 SA₁₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	1.25467		(2000.0)	P	Q
<i>n</i>	0.23376457	ω	10.21946	+0.70718035	−0.70653604
<i>a</i>	2.6098583	Ω	34.78343	+0.64536666	+0.62973250
<i>e</i>	0.1007764	<i>i</i>	2.66348	+0.28878682	+0.32286809
<i>P</i>	4.22	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.0	0.5+	1960 10 26	675	0.6−	0.0	1998 09 27	704	(2.4+	0.4+)
1960 09 26	675	0.3−	0.4−	1998 09 26	704	(4.0+	0.8−)	1998 09 27	704	1.0+	0.6−
1960 09 28	675	0.4−	0.1−	1998 09 26	704	(2.6+	0.4+)	1998 09 27	704	0.0	1.2−
1960 09 29	675	0.9+	0.7+	1998 09 26	704	(4.0+	0.3−)	1998 10 12	691	0.7−	0.1+

1998 NOV. 10

M.P.C. 33053

1960 10 17	675	1.2−	0.6+	1998 09 26	704	(3.3+	1.5−)	1998 10 12	691	0.7−	0.0
1960 10 22	675	0.3+	0.1+	1998 09 27	704	1.2+	0.7+	1998 10 12	691	0.7−	0.0
1960 10 25	675	0.6+	0.1+	1998 09 27	704	0.6+	0.6−				

2565 P-L = 1998 RN₇₅

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	74.33189		(2000.0)	P	Q	Williams					
<i>n</i>	0.25941338	ω	298.81905	+0.79245346	+0.60899116						
<i>a</i>	2.4348626	Ω	23.71410	−0.52613960	+0.71062265						
<i>e</i>	0.0227534	<i>i</i>	4.83125	−0.30853628	+0.35234248						
<i>P</i>	3.80	<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+	0.2+	1998 09 18	704	1.3−	1.1−	1998 10 14	699	1.3−	0.2+
1960 09 26	675	0.3+	0.4−	1998 09 25	699	0.9−	0.2+	1998 10 14	699	0.8+	0.6−
1960 09 28	675	0.2−	0.6−	1998 09 25	699	0.6+	0.9+	1998 10 15	704	0.5−	0.0
1960 09 29	675	0.5+	1.0−	1998 09 25	699	0.8+	0.9+	1998 10 15	704	0.3−	1.4−
1960 10 17	675	0.6−	0.8+	1998 09 26	704	0.1+	0.8−	1998 10 15	704	(2.3−	1.8+)
1960 10 22	675	1.3−	0.4−	1998 09 26	704	0.1−	1.0−	1998 10 15	704	0.3−	0.3−
1960 10 25	675	1.4+	1.1+	1998 09 26	704	0.6+	0.0	1998 10 19	699	0.1+	0.5+
1960 10 26	675	0.3−	0.1−	1998 09 26	704	0.5+	0.7−	1998 10 19	699	0.7+	0.2+
1998 09 14	704	0.3−	0.5+	1998 09 26	704	0.5−	0.1+	1998 10 19	699	0.7+	0.7−
1998 09 14	704	1.9+	0.1+	1998 09 27	704	0.3−	0.1−	1998 10 28	704	0.8−	1.0+
1998 09 14	704	0.3−	0.1+	1998 09 27	704	0.6+	0.4+	1998 10 28	704	0.7+	1.1−
1998 09 18	704	0.1+	1.2+	1998 09 27	704	0.1+	0.6−	1998 10 28	704	0.4+	0.6+
1998 09 18	704	0.9−	0.4−	1998 09 27	704	0.5−	0.9+	1998 10 28	704	0.7−	0.3−
1998 09 18	704	(0.2−	2.3+)	1998 09 27	704	1.0+	0.5+				
1998 09 18	704	1.3−	0.6+	1998 10 14	699	0.1+	0.4+				

2589 P-L = 1998 SJ₇₂

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	256.80478		(2000.0)	P	Q	Williams					
<i>n</i>	0.23497972	ω	18.75952	−0.96168523	−0.27227865						
<i>a</i>	2.6008529	Ω	145.38961	+0.24376873	−0.90269690						
<i>e</i>	0.1520871	<i>i</i>	3.23261	+0.12545249	−0.33317058						
<i>P</i>	4.19	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1960 09 24	675	0.4+	0.9+	1998 09 26	704	0.3+	0.3−	1998 10 15	704	0.3−	0.6+
1960 09 26	675	0.4+	0.4+	1998 09 26	704	0.2+	0.9−	1998 10 15	704	0.0	0.9+
1960 09 28	675	0.4+	0.3+	1998 09 26	704	0.4−	0.9−	1998 10 15	704	0.2+	1.3+
1960 09 29	675	0.7+	1.1−	1998 09 26	704	0.4+	0.6−	1998 10 15	704	0.4−	0.3+
1960 10 17	675	0.7−	0.5+	1998 09 26	704	0.3−	0.2−	1998 10 28	704	0.7+	0.3+
1960 10 22	675	1.1−	0.9+	1998 09 27	704	(0.8−	2.5−)	1998 10 28	704	0.7+	0.4+
1960 10 25	675	0.5−	0.6−	1998 09 27	704	0.2+	0.2+	1998 10 28	704	0.5+	0.2−
1960 10 26	675	0.2−	0.1−	1998 09 27	704	1.2+	0.4−	1998 10 28	704	1.5−	0.5−
1998 09 21	809	1.5−	0.4+	1998 09 27	704	(2.1+	1.1−)	1998 10 29	704	1.0+	0.4+
1998 09 21	809	(2.2−	1.1+)	1998 09 27	704	0.8−	0.1−	1998 10 29	704	0.0	0.4+
1998 09 21	809	1.7−	0.9+	1998 10 14	704	0.2+	0.4−	1998 10 29	704	1.0+	0.7+
1998 09 23	809	0.7+	1.1−	1998 10 14	704	0.2+	1.0+	1998 10 29	704	0.2−	0.0
1998 09 23	809	0.5−	0.7−	1998 10 14	704	0.4+	0.1−	1998 10 29	704	0.3+	0.5−
1998 09 23	809	0.1−	1.9−	1998 10 14	704	0.2−	0.2−				

2602 P-L = 1998 SG₁₀₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	338.91517		(2000.0)	P	Q	Williams					
<i>n</i>	0.18080502	ω	8.76631	+0.32445103	−0.94487352						
<i>a</i>	3.0973888	Ω	62.31152	+0.86480083	+0.27741840						
<i>e</i>	0.1937783	<i>i</i>	2.85523	+0.38321151	+0.17393405						
<i>P</i>	5.45	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1960 09 24	675	0.2−	0.2−	1960 10 25	675	1.2+	0.6+	1998 09 26	704	1.4+	1.1−
1960 09 26	675	0.5+	0.1+	1960 10 26	675	0.1−	0.5−	1998 09 27	704	0.6−	1.1+
1960 09 28	675	0.5+	1.3+	1998 09 26	704	0.3+	0.2−	1998 09 27	704	1.0+	1.2+
1960 09 29	675	0.8−	1.3−	1998 09 26	704	0.3−	0.3−	1998 09 27	704	0.2−	0.5+
1960 10 17	675	0.1−	0.8+	1998 09 26	704	1.9+	1.4+	1998 09 27	704	0.4−	0.1+
1960 10 22	675	1.1−	0.7−	1998 09 26	704	0.6−	0.9−	1998 09 27	704	2.4−	1.9−

2621 P-L = 1998 SM₁₆₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	75.54844		(2000.0)	P	Q	Williams					
<i>n</i>	0.28587364	ω	303.27051	+0.78719812	+0.61520537						
<i>a</i>	2.2821979	Ω	18.87653	−0.51247550	+0.69128101						
<i>e</i>	0.1391300	<i>i</i>	7.62207	−0.34305683	+0.37901571						
<i>P</i>	3.45	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6				

Residuals in seconds of arc

1960 09 24	675	0.0	0.3−	1960 10 22	675	0.8−	1.1+	1998 09 26	704	0.9+	0.4+
1960 09 26	675	0.4+	0.2−	1960 10 26	675	0.6−	0.4−	1998 09 27	704	0.5−	0.1−
1960 09 28	675	0.3−	0.9+	1998 09 26	704	0.3+	0.6+	1998 09 27	704	0.4−	0.5−
1960 10 17	675	0.8+	0.6−	1998 09 26	704	0.8+	0.5−	1998 09 27	704	0.9−	0.6−

2695 P-L = 1987 SN₃₀ = 1998 SF₈₆

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	310.95909		(2000.0)	P	Q	Williams					
<i>n</i>	0.18053682	ω	116.27279	+0.06535169	−0.99781814						
<i>a</i>	3.1004556	Ω	329.97563	+0.90869943	+0.06339638						
<i>e</i>	0.0986777	<i>i</i>	1.07490	+0.41230389	+0.01843507						
<i>P</i>	5.46	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1960 09 24	675	0.6−	0.4+	1987 09 16	095	1.0−	2.2+	1998 09 26	704	0.2+	0.1−
1960 09 26	675	0.3+	1.9−	1998 09 26	704	0.2+	1.0−	1998 09 27	704	0.2+	1.3−
1960 09 29	675	0.0	0.7+	1998 09 26	704	0.6+	0.9−	1998 09 27	704	1.7+	0.2−
1960 10 22	675	0.1−	1.3+	1998 09 26	704	0.1+	0.7−	1998 09 27	704	0.4+	0.2−
1960 10 26	675	0.4−	1.5+	1998 09 26	704	1.0−	0.5−	1998 09 27	704	0.5−	0.8+

4080 P-L = 1998 RH₅₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	147.53291		(2000.0)	P	Q	Williams					
<i>n</i>	0.18084980	ω	20.13573	−0.65735042	+0.75286078						
<i>a</i>	3.0968775	Ω	208.79583	−0.70045151	−0.62658214						
<i>e</i>	0.1036838	<i>i</i>	3.93209	−0.27795344	−0.20148318						
<i>P</i>	5.45	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6				

Residuals in seconds of arc

1960 09 24	675	1.2−	0.8−	1998 09 14	704	0.4+	0.4+	1998 10 14	704	0.1+	0.4−
1960 09 25	675	0.3+	0.3+	1998 09 14	704	1.3+	1.7−	1998 10 14	704	0.8−	0.1−
1960 09 26	675	0.9+	0.3+	1998 09 18	704	0.5+	1.0+	1998 10 14	704	2.0+	1.5−
1960 09 28	675	0.1+	1.5+	1998 09 18	704	0.1−	0.8+	1998 10 14	704	0.4−	0.4+
1960 10 17	675	0.8−	0.2−	1998 09 18	704	0.5−	0.6+	1998 10 15	704	0.2+	0.9+
1960 10 22	675	0.3+	0.6−	1998 09 18	704	0.9−	0.5+	1998 10 15	704	0.5−	0.7−
1960 10 26	675	0.1−	0.4+	1998 09 18	704	1.9−	0.3+	1998 10 15	704	(3.5+	0.9+)
1998 09 14	704	0.3+	1.9−	1998 10 14	704	(0.1+	2.2−)	1998 10 15	704	0.7+	0.3+

4091 P-L = 1998 RK₅₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	25.74870		(2000.0)	P	Q	Williams					
<i>n</i>	0.23359250	ω	141.01244	+0.99459847	−0.09793039						
<i>a</i>	2.6111398	Ω	224.64527	+0.07869085	+0.92754078						
<i>e</i>	0.2599363	<i>i</i>	2.80610	+0.06768772	+0.36066292						
<i>P</i>	4.22	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1960 09 24	675	0.1+	0.3-	1998 09 18	704	0.0	1.2+	1998 09 27	704	0.3-	0.0
1960 09 25	675	0.1-	0.9-	1998 09 26	704	0.3+	0.3-	1998 09 27	704	1.2-	1.0+
1960 09 26	675	0.2+	0.6-	1998 09 26	704	0.3-	0.7+	1998 09 27	704	0.1-	0.3+
1960 09 28	675	0.0	0.6-	1998 09 26	704	0.4+	0.5-	1998 09 27	704	0.3+	0.9-
1960 10 17	675	1.2-	0.3-	1998 09 26	704	0.1+	0.4-	1998 09 27	704	0.0	1.0+
1960 10 22	675	1.3+	0.3+	1998 09 26	704	1.0+	0.6-	1998 09 27	704	0.1-	0.9+
1960 10 26	675	0.5+	0.5+	1998 09 26	704	1.4-	0.5+	1998 09 27	704	0.2-	0.5-
1998 09 14	704	1.0+	1.0-	1998 09 26	704	0.4-	0.3+	1998 10 15	704	0.5+	1.7-
1998 09 14	704	0.3-	1.1-	1998 09 26	704	1.0-	1.3+	1998 10 15	704	1.0-	0.3+
1998 09 14	704	0.2+	0.0	1998 09 26	704	0.4-	0.5-	1998 10 15	704	0.2-	0.3+
1998 09 18	704	0.1+	0.3+	1998 09 26	704	1.1-	0.2+	1998 10 15	704	0.6+	0.0
1998 09 18	704	0.2+	0.6+	1998 09 27	704	0.0	0.7-	1998 10 15	704	(1.2-	2.4-)
1998 09 18	704	1.3+	0.8+	1998 09 27	704	1.1+	0.3+				
1998 09 18	704	0.8+	0.7-	1998 09 27	704	0.7-	0.9+				

4525 P-L = 1998 RP₆₈

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	6.68766		(2000.0)	P	Q
n	0.18184507	ω	183.23158	+0.86518594	-0.50136667
a	3.0855674	Ω	206.86508	+0.46052806	+0.80170870
e	0.1891031	i	1.16730	+0.19841167	+0.32541453
P	5.42	H	13.6	G 0.15	U 5

Residuals in seconds of arc

1960 09 24	675	0.5+	0.4-	1998 09 15	699	0.3-	0.8+	1998 10 15	704	1.3-	1.0-
1960 09 24	675	0.3-	0.6-	1998 09 15	699	0.1+	0.4+	1998 10 15	704	0.4+	0.3+
1960 09 25	675	0.9+	0.3+	1998 09 15	699	0.1-	0.3+	1998 10 15	704	1.2-	0.7+
1960 09 26	675	0.2+	0.1+	1998 09 18	704	0.3-	0.4+	1998 10 28	704	1.0-	0.8+
1960 09 26	675	0.2+	0.6-	1998 09 18	704	1.0+	0.0	1998 10 28	704	1.0+	0.2-
1960 09 27	675	0.5+	0.3+	1998 09 18	704	1.4+	0.1+	1998 10 28	704	0.7-	1.0-
1960 09 28	675	0.5-	0.2-	1998 09 18	704	0.3+	0.2-	1998 10 28	704	1.2-	1.2-
1960 09 28	675	0.9-	0.3-	1998 09 18	704	0.9-	0.5+	1998 10 28	704	1.0-	0.2+
1960 10 17	675	0.4+	0.3+	1998 10 14	704	0.6+	0.1-	1998 10 29	704	0.1+	0.1-
1960 10 22	675	0.2-	0.6+	1998 10 14	704	(0.1-	2.3-)	1998 10 29	704	1.0+	0.9+
1960 10 24	675	0.7-	0.3+	1998 10 14	704	0.6+	0.2+	1998 10 29	704	1.5+	0.0
1998 09 14	704	0.8+	0.4+	1998 10 14	704	0.9-	0.5+	1998 10 29	704	1.4+	0.4-
1998 09 14	704	1.6-	0.5-	1998 10 15	704	0.3-	0.5+				
1998 09 14	704	0.3+	1.1-	1998 10 15	704	0.3+	0.9-				

4758 P-L = 1998 SK₁₆

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	338.70165		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.18110313	ω	52.09231	+0.47166931	-0.88165058		
a	3.0939889	Ω	9.79823	+0.77917162	+0.40884574		
e	0.1513582	i	5.00375	+0.41281916	+0.23566378		
P	5.44	H	14.9	G	0.15	U	5

Residuals in seconds of arc

1960 09 24	675	0.2+	0.5+	1998 09 16	691	0.2-	0.6-	1998 09 27	704	0.0	1.6+
1960 09 26	675	0.6+	0.3+	1998 09 24	691	0.8-	0.2-	1998 09 27	704	(2.1+	0.6+)
1960 09 27	675	0.4-	1.1+	1998 09 24	691	1.6-	0.0	1998 09 27	704	(2.8-	0.3-)
1960 09 28	675	0.2+	0.2-	1998 09 24	691	1.6-	0.1-	1998 09 27	704	0.7-	1.1+
1960 10 17	675	1.0+	0.3-	1998 09 26	704	1.8+	0.2-	1998 10 29	691	0.2+	0.4+
1960 10 22	675	1.2-	0.5-	1998 09 26	704	0.7+	0.2-	1998 10 29	691	0.0	0.4+
1960 10 26	675	0.3-	1.3-	1998 09 26	704	0.2-	0.2-	1998 10 29	691	0.3+	0.4+
1998 09 16	691	0.4-	0.8-	1998 09 26	704	1.8+	0.2-				
1998 09 16	691	0.5-	0.5-	1998 09 27	704	1.0+	0.5-				

4858 P-L = 1998 SJ₁₆₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	324.87898		(2000.0)	P	Q
n	0.18180202	ω	263.18275	+0.08196316	-0.99660937
a	3.0860544	Ω	182.15551	+0.97320118	+0.08159058
e	0.1100835	i	11.03140	+0.21485229	+0.01061756
P	5.42	H	14.2	G 0.15	U 5

Residuals in seconds of arc

1960 09 24	675	0.5+	1.6-	1998 09 26	704	1.9+	0.1-	1998 09 27	704	0.7-	0.3-
1960 09 26	675	0.4+	0.2+	1998 09 26	704	1.4+	1.4-	1998 09 27	704	0.3+	1.0+
1960 09 27	675	0.3-	0.7+	1998 09 26	704	0.8+	0.5+	1998 09 27	704	1.2-	0.7+
1960 09 28	675	1.2-	1.0-	1998 09 26	704	0.3+	0.2+	1998 10 20	699	0.5-	0.0
1960 10 17	675	0.6+	0.7+	1998 09 27	704	1.6-	1.2+	1998 10 20	699	0.4-	1.7-
1960 10 22	675	0.1+	0.9+	1998 09 27	704	0.4-	0.2+	1998 10 20	699	0.0	0.2-

6062 P-L = 1979 VM₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	42.50688		(2000.0)	P	Q
n	0.26414816	ω	105.06922	+0.27795233	-0.96041358
a	2.4056789	Ω	328.77340	+0.86692485	+0.25916886
e	0.1449737	i	2.06294	+0.41374364	+0.10216293
P	3.73	H	15.5	G 0.15	U 3

Residuals in seconds of arc

1949 11 21	675	0.6+	0.6-	1960 09 28	675	0.7+	1.2+	1979 11 14	095	0.4+	3.4-
1949 11 21	675	0.4-	0.8+	1960 10 17	675	0.3-	0.2+	1997 07 16	910	0.7+	1.4-
1960 09 24	675	0.7-	0.4+	1960 10 22	675	0.7-	0.1+	1997 07 16	910	0.4+	1.4-
1960 09 25	675	0.5+	0.3-	1960 10 24	675	0.6-	0.5+	1997 07 16	910	0.6+	1.0-
1960 09 26	675	0.3-	1.1+	1960 10 26	675	0.7-	0.8+				

6100 P-L = 1998 SR₉₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	31.17562		(2000.0)	P	Q
n	0.28563124	ω	178.62078	+0.98294490	-0.18212908
a	2.2834889	Ω	191.96447	+0.16752746	+0.94391760
e	0.1282938	i	7.05512	+0.07585426	+0.27540619
P	3.45	H	16.1	G 0.15	U 4

Residuals in seconds of arc

1960 09 24	675	0.1+	0.5+	1960 10 26	675	0.3-	0.9+	1998 09 27	704	0.5-	0.1+
1960 09 25	675	0.7+	0.2-	1998 09 26	704	0.2-	0.4+	1998 09 27	704	0.0	1.0+
1960 09 26	675	1.1-	0.4+	1998 09 26	704	0.1+	1.1-	1998 09 27	704	0.1-	0.6+
1960 09 28	675	0.1+	0.4+	1998 09 26	704	0.5+	0.2-	1998 10 14	699	0.4+	0.3+
1960 10 17	675	0.8-	0.8+	1998 09 26	704	0.2+	1.6-	1998 10 14	699	0.0	0.4+
1960 10 17	675	1.0+	1.9-	1998 09 26	704	0.3-	1.0-	1998 10 14	699	0.3-	0.3+
1960 10 22	675	0.8+	0.6-	1998 09 27	704	0.7-	0.3-				
1960 10 24	675	0.5-	0.3-	1998 09 27	704	1.0+	1.0+				

6184 P-L = 1998 SQ₁₄₃

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

M	32.70216		(2000.0)	P	Q
n	0.28631250	ω	173.93430	+0.94553563	-0.32261907
a	2.2798652	Ω	205.02123	+0.29418397	+0.90391607
e	0.1088579	i	5.88289	+0.13934903	+0.28080719
P	3.44	H	16.2	G 0.15	U 5

Residuals in seconds of arc

1960 09 24	675	0.5+	0.2-	1998 09 18	809	(0.9-	3.8+)	1998 10 14	684	0.4-	0.2-
1960 09 25	675	0.6-	0.5-	1998 09 18	809	(1.6-	3.5+)	1998 10 17	684	0.4-	0.1-
1960 09 26	675	0.1+	0.6+	1998 09 20	809	(2.0-	3.4+)	1998 10 17	684	0.3-	0.1-
1960 10 17	675	0.1-	0.4+	1998 09 20	809	(2.6-	3.4+)	1998 10 17	699	0.8+	0.3+

1998 NOV. 10

M.P.C. 33055

1960 10 26	675	0.1+	0.2−	1998 09 20	809	(1.9−	2.9+)	1998 10 17	699	0.4+	0.1−
1998 09 18	809	(0.1−	4.3+)	1998 10 14	684	0.2−	0.4−	1998 10 17	699	0.1−	0.6+

6202 P-L = 1998 RY₂₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i>	3.37505			(2000.0)		P			Q		
<i>n</i>	0.18127660	ω		140.85260			+0.95884268		−0.27669165		
<i>a</i>	3.0920147	Ω		235.32467			+0.23714811		+0.90384463		
<i>e</i>	0.1970031	<i>i</i>		4.44504			+0.15614576		+0.32635352		
<i>P</i>	5.44	<i>H</i>		15.5		<i>G</i>	0.15		<i>U</i>	5	
Residuals in seconds of arc											
1960 09 24	675	0.0	0.5+	1960 10 26	675	0.1−	0.4+	1998 09 14	704	0.2−	1.7+
1960 09 25	675	0.5+	0.3−	1998 09 14	704	0.1+	0.8−	1998 09 18	704	0.4+	3.3−
1960 09 26	675	0.7−	0.0	1998 09 14	704	0.6−	0.6+	1998 09 18	704	0.7−	1.4−
1960 09 28	675	0.1+	0.3−	1998 09 14	704	0.2+	1.4+	1998 09 18	704	1.3−	0.9+
1960 10 22	675	0.0	0.2−	1998 09 14	704	0.5+	0.1+	1998 09 18	704	1.4+	0.7+

6276 P-L = 1998 SD₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i>	346.33609			(2000.0)		P			Q		
<i>n</i>	0.18090420	ω		202.96277			+0.66347883		−0.74815678		
<i>a</i>	3.0962567	Ω		205.47348			+0.68915737		+0.61503283		
<i>e</i>	0.2137894	<i>i</i>		1.00826			+0.29130389		+0.24899006		
<i>P</i>	5.45	<i>H</i>		15.5		<i>G</i>	0.15		<i>U</i>	6	
Residuals in seconds of arc											
1960 09 24	675	0.1−	0.8−	1960 10 26	675	0.4+	0.2−	1998 09 21	691	0.2+	0.2+
1960 09 25	675	1.1+	0.3−	1998 09 20	691	0.5+	0.1+	1998 09 23	691	0.6−	0.1+
1960 09 26	675	0.4−	0.1−	1998 09 20	691	0.6+	0.1+	1998 09 23	691	0.7−	0.0
1960 09 28	675	0.1−	0.1−	1998 09 21	691	0.3+	0.1−	1998 09 23	691	0.7−	0.1+
1960 10 22	675	0.5−	1.0+	1998 09 21	691	0.1+	0.2+				

6520 P-L = 1953 RM₂ = 1998 RO₆₉

Id. G. V. Williams, E. Bowell, A. Gnädig											
Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i>	359.42170			(2000.0)		P			Q		
<i>n</i>	0.28542972	ω		239.34188			+0.65811006		−0.75276126		
<i>a</i>	2.2845636	Ω		169.45890			+0.71660435		+0.61989774		
<i>e</i>	0.1343094	<i>i</i>		4.87434			+0.23101808		+0.22153393		
<i>P</i>	3.45	<i>H</i>		15.6		<i>G</i>	0.15		<i>U</i>	2	
Residuals in seconds of arc											
1953 09 06	675	0.7+	0.9−	1997 05 28	910	0.2−	0.0	1998 10 11	120	0.2−	0.3−
1953 09 06	675	0.3−	0.2+	1997 05 28	910	0.0	0.1−	1998 10 11	120	0.9−	0.7+
1960 09 24	675	0.4−	0.3+	1998 09 14	704	0.5−	0.7−	1998 10 11	120	0.4−	0.5−
1960 09 26	675	0.7−	0.8+	1998 09 14	704	1.2−	0.5−	1998 10 15	704	0.1−	0.4−
1960 09 27	675	0.3−	0.1−	1998 09 14	704	0.3−	1.1−	1998 10 15	704	0.6+	0.6−
1960 09 28	675	0.6+	0.4−	1998 09 18	704	0.4+	0.2−	1998 10 15	704	0.3+	0.4−
1960 10 17	675	0.5+	0.4+	1998 09 18	704	0.0	0.7+	1998 10 15	704	0.5−	0.4−
1960 10 22	675	0.1+	0.4−	1998 09 18	704	0.0	0.3+	1998 10 15	704	(4.2−	0.7−)
1960 10 25	675	0.3−	0.2−	1998 09 18	704	0.5+	0.4−	1998 10 17	699	0.0	0.2+
1960 10 26	675	0.5+	0.7−	1998 09 18	704	0.8+	1.1+	1998 10 17	699	0.7+	0.1−
1983 05 07	413	0.5−	0.7+	1998 09 25	699	0.6+	0.8+	1998 10 17	699	0.7−	0.4+
1983 05 07	413	0.7+	0.4−	1998 09 25	699	0.6+	0.8+				
1997 05 27	910	0.1+	0.0	1998 09 25	699	0.1+	1.2+				

6631 P-L = 1998 UO₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i>	11.22254			(2000.0)		P			Q		
<i>n</i>	0.28589366	ω		250.50837			+0.74318696		−0.66769588		
<i>a</i>	2.2820914	Ω		151.33137			+0.64260853		+0.69436850		
<i>e</i>	0.1571770	<i>i</i>		5.15124			+0.18635292		+0.26839262		
<i>P</i>	3.45	<i>H</i>		15.6		<i>G</i>	0.15		<i>U</i>	6	
Residuals in seconds of arc											
1960 09 24	675	0.6−	0.7−	1998 10 17	699	0.3−	0.9−	1998 10 28	704	0.4−	0.4−
1960 09 26	675	0.1−	0.7−	1998 10 17	699	0.6+	0.0	1998 10 28	704	0.6−	0.5+
1960 09 27	675	0.6+	0.3+	1998 10 17	699	1.1−	0.6−	1998 10 29	704	1.9−	0.6−
1960 09 28	675	0.6+	0.9+	1998 10 28	704	1.6+	0.4−	1998 10 29	704	0.6+	0.3−
1960 10 22	675	1.1−	0.8+	1998 10 28	704	0.6+	0.4−	1998 10 29	704	1.2−	1.0+
1960 10 24	675	0.3+	0.3+	1998 10 28	704	1.1+	0.5−	1998 10 29	704	1.3+	1.9+

6773 P-L = 1998 UC₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i>	351.75383			(2000.0)		P			Q		
<i>n</i>	0.26058482	ω		345.55728			+0.23298273		−0.97083417		
<i>a</i>	2.4275600	Ω		90.94644			+0.89775282		+0.19235373		
<i>e</i>	0.1748959	<i>i</i>		3.24334			+0.37384343		+0.14311203		
<i>P</i>	3.78	<i>H</i>		16.1		<i>G</i>	0.15		<i>U</i>	5	
Residuals in seconds of arc											
1960 09 24	675	0.4−	0.0	1960 10 26	675	0.5−	0.4+	1998 10 23	910	0.0	0.0
1960 09 26	675	0.1−	0.9−	1998 10 14	699	0.1+	0.3−	1998 10 26	910	0.1+	0.5−
1960 09 27	675	1.3+	0.2−	1998 10 14	699	0.2−	1.1+	1998 10 26	910	0.2−	0.5−
1960 09 28	675	0.3+	1.0−	1998 10 14	699	0.2+	0.4+	1998 10 27	910	0.0	0.6−
1960 10 22	675	0.4−	0.9+	1998 10 23	910	0.1+	0.1−				
1960 10 24	675	0.3−	1.4+	1998 10 23	910	0.1+	0.0				

9093 P-L = 1998 RZ₆₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i>	50.35382			(2000.0)		P			Q		
<i>n</i>	0.25963537	ω		353.08099			+0.91422955		+0.40505054		
<i>a</i>	2.4334746	Ω		343.01211			−0.36995332		+0.82345672		
<i>e</i>	0.2010913	<i>i</i>		2.13426			−0.16528421		+0.39730729		
<i>P</i>	3.80	<i>H</i>		15.5		<i>G</i>	0.15		<i>U</i>	4	
Residuals in seconds of arc											
1960 09 24	675	0.2−	0.2−	1998 09 18	704	0.7−	1.1+	1998 10 14	704	1.3+	0.2−
1960 09 25	675	0.1+	0.5+	1998 09 26	704	0.0	0.1+	1998 10 14	704	0.5−	0.2−
1960 10 17	675	0.1−	0.2−	1998 09 26	704	0.1+	1.9−	1998 10 14	704	0.2+	0.5+
1960 10 22	675	0.1+	0.6+	1998 09 26	704	0.7−	1.8−	1998 10 15	704	0.1−	0.6+
1960 10 24	675	0.4−	0.0	1998 09 26	704	0.5+	1.7−	1998 10 15	704	0.1−	0.3+
1960 10 26	675	0.1+	0.2+	1998 09 26	704	0.3+	1.7−	1998 10 15	704	1.6−	0.1+
1998 09 14	704	0.6−	0.3+	1998 09 27	704	0.5+	0.2−	1998 10 15	704	1.5−	1.0+
1998 09 14	704	0.4+	0.7+	1998 09 27	704	0.1+	0.6+	1998 10 15	704	(2.4−	0.5−)
1998 09 14	704	1.0+	0.5+	1998 09 27	704	0.7+	0.5+	1998 10 28	704	0.4−	1.2+
1998 09 18	704	0.8+	0.8−	1998 09 27	704	0.3+	0.0	1998 10 28	704	0.5+	1.6−
1998 09 18	704	1.4−	1.2+	1998 09 27	704	0.3+	0.0	1998 10 28	704	(1.4+	2.3−)
1998 09 18	704	0.7−	0.0	1998 10 14	704	0.4+	0.2−	1998 10 28	704	0.1−	0.6−
1998 09 18	704	0.3−	0.3+	1998 10 14	704	1.3+	1.1+				

9104 P-L = 1998 RO₄₈

Id. A. Gnädig											
Epoch 1999 Jan. 22.0 TT = JDT 2451200.5											
<i>M</i>	42.88035			(2000.0)		P			Q		
<i>n</i>	0.18184304	ω		146.59635			+0.86206075		+0.50666340		
<i>a</i>	3.0855903	Ω		183.03786			−0.50024678		+0.84687816		
<i>e</i>	0.1436446	<i>i</i>		13.06218			−0.08126755		+0.16152270		
<i>P</i>	5.42	<i>H</i>		14.5		<i>G</i>	0.15		<i>U</i>	4	

Residuals in seconds of arc

1960 09 24	675	1.1+	1.2+	1998 09 18	704	1.2+	0.8+	1998 09 27	704	0.3-	1.0-
1960 09 25	675	0.4+	0.9-	1998 09 18	704	0.5-	0.7+	1998 10 14	910	0.6+	0.3+
1960 10 17	675	0.5-	0.5-	1998 09 18	704	0.1+	0.5-	1998 10 14	910	0.4+	0.7+
1960 10 22	675	0.6-	2.3-	1998 09 26	704	0.5-	0.2-	1998 10 14	910	0.5+	0.5+
1960 10 26	675	0.3-	0.7+	1998 09 26	704	1.8-	0.9-	1998 10 18	910	0.4+	0.5+
1998 09 14	704	0.5+	0.1+	1998 09 26	704	1.4-	0.3-	1998 10 18	910	0.2+	0.6+
1998 09 14	704	0.8+	0.7+	1998 09 26	704	0.3-	0.4-	1998 10 18	910	0.2+	0.5+
1998 09 14	704	1.0+	0.1+	1998 09 26	704	(2.4- 0.2-)		1998 10 19	910	0.4+	0.4+
1998 09 14	704	0.1-	0.2-	1998 09 27	704	0.5-	0.3-	1998 10 19	910	0.3+	0.6+
1998 09 14	704	0.2-	1.3+	1998 09 27	704	0.6+	0.2-	1998 10 19	910	0.1+	0.5+
1998 09 18	704	0.2+	0.6-	1998 09 27	704	0.7-	1.3-				
1998 09 18	704	0.6-	0.5+	1998 09 27	704	0.9-	1.0-				

1236 T-1 = 1998 RT₆₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	317.43136	(2000.0)	P	Q
<i>n</i>	0.30751122	ω	104.60051	-0.15152594
<i>a</i>	2.1738458	Ω	354.09046	-0.12845707
<i>e</i>	0.1279509	<i>i</i>	5.26850	+0.47311779
<i>P</i>	3.21	<i>H</i>	15.4	<i>U</i>
				5

Residuals in seconds of arc

1971 03 24	675	0.6+	1.4-	1998 09 18	704	0.9+	1.7-	1998 10 14	704	0.3-	0.6+
1971 03 25	675	1.0-	0.8+	1998 09 18	704	0.7-	0.5+	1998 10 14	704	0.5-	0.2+
1971 03 25	675	1.5-	0.2+	1998 09 18	704	0.4-	1.3-	1998 10 14	704	0.5+	0.1-
1971 03 26	675	1.7+	0.9-	1998 09 26	704	1.3+	0.8+	1998 10 14	704	1.1-	0.0
1971 03 27	675	1.4-	1.0-	1998 09 26	704	0.1-	0.0	1998 10 14	699	1.3+	0.1-
1971 04 02	675	0.2-	0.3+	1998 09 26	704	0.5-	1.0+	1998 10 14	699	0.6+	1.2-
1971 05 13	675	0.8+	0.0	1998 09 26	704	0.4-	0.1-	1998 10 14	699	0.5+	0.4-
1971 05 14	675	0.2+	0.1+	1998 09 26	704	0.2-	0.3+	1998 10 15	704	0.6+	1.0+
1998 09 14	704	0.3-	0.7+	1998 09 27	704	0.1+	0.3-	1998 10 15	704	0.4+	0.2+
1998 09 14	704	0.9-	0.4-	1998 09 27	704	0.6+	0.3-	1998 10 15	704	0.3-	0.3+
1998 09 14	704	0.8-	1.9-	1998 09 27	704	0.1-	0.6+	1998 10 15	704	0.1-	0.2+
1998 09 18	704	0.1-	1.8-	1998 09 27	704	0.5+	0.8+				
1998 09 18	704	0.3-	0.4+	1998 09 27	704	0.6+	0.1-				

2153 T-1 = 1998 SH₅₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	38.68796	(2000.0)	P	Q
<i>n</i>	0.19621036	ω	210.72519	+0.94800895
<i>a</i>	2.9330633	Ω	130.81627	-0.28014519
<i>e</i>	0.0833795	<i>i</i>	3.03985	-0.15098910
<i>P</i>	5.02	<i>H</i>	14.0	<i>U</i>
				4

Residuals in seconds of arc

1971 03 24	675	(5.6- 1.2+)	1998 09 18	704	0.5+	1.0-	1998 10 02	704	(0.1- 2.1-)
1971 03 25	675	0.3- 0.6+	1998 09 18	704	0.1- 0.2-	1998 10 02	704	1.0+ 0.7-	
1971 03 25	675	1.0- 0.2+	1998 09 18	704	0.5+ 0.3+	1998 10 02	704	1.0- 1.8-	
1971 03 26	675	0.1+ 0.6-	1998 09 25	699	0.5+ 0.7+	1998 10 02	704	1.5- 1.6-	
1971 03 27	675	0.4- 0.8+	1998 09 25	699	0.1- 1.0-	1998 10 02	704	0.4- 1.4-	
1971 04 02	675	1.7+ 0.8-	1998 09 25	699	0.4- 0.0	1998 10 14	704	0.4+ 0.1+	
1971 04 16	675	(3.3+ 3.3-)	1998 09 26	704	0.7- 0.6-	1998 10 14	704	1.0- 0.7+	
1971 04 16	675	(2.9+ 2.0-)	1998 09 26	704	0.8- 0.0	1998 10 14	704	0.8+ 0.3+	
1998 09 14	704	0.8+ 0.9-	1998 09 26	704	0.9+ 0.5+	1998 10 14	704	(2.2+ 0.1+)	
1998 09 14	704	0.5- 0.8+	1998 09 26	704	0.1+ 0.5+	1998 10 15	704	0.9- 0.4+	
1998 09 14	704	0.1+ 0.9+	1998 09 26	704	1.7- 1.7+	1998 10 15	704	0.8- 0.2+	
1998 09 17	699	0.8+ 1.1+	1998 09 27	704	0.4+ 0.5-	1998 10 15	704	0.0 0.2+	
1998 09 17	699	1.6+ 0.8+	1998 09 27	704	0.3- 0.1-	1998 10 15	704	0.6+ 1.1-	
1998 09 17	699	0.4- 0.4+	1998 09 27	704	0.1- 0.5+	1998 10 15	704	1.3+ 1.3+	
1998 09 18	704	0.0 0.0	1998 09 27	704	0.4- 0.2-				
1998 09 18	704	0.3+ 0.6-	1998 09 27	704	0.4+ 0.6+				

2214 T-1 = 1998 SG₁₁₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	68.62176	(2000.0)	P	Q
<i>n</i>	0.26837032	ω	150.14526	+0.85572545
<i>a</i>	2.3803806	Ω	178.69144	-0.48786034
<i>e</i>	0.0946021	<i>i</i>	4.13257	-0.17241298
<i>P</i>	3.67	<i>H</i>	14.5	<i>U</i>
				5

Residuals in seconds of arc

1971 03 24	675	0.6-	0.1-	1998 09 26	704	0.0	0.0	1998 10 28	704	0.1-	1.5-
1971 03 25	675	0.9-	0.4+	1998 09 26	704	1.1+	0.4-	1998 10 28	704	0.1+	0.5-
1971 03 25	675	1.4-	2.0+	1998 09 26	704	0.6+	0.5-	1998 10 28	704	1.0-	0.4+
1971 03 26	675	0.2-	0.6-	1998 09 26	704	0.8+	0.5-	1998 10 28	704	1.7-	0.7-
1971 03 27	675	0.2+	1.2-	1998 09 26	704	0.4+	0.3+	1998 10 28	704	1.0-	0.2+
1971 04 02	675	1.2+	0.6-	1998 09 27	704	0.0	0.5-	1998 10 29	704	0.1+	0.3+
1971 04 16	675	1.4+	1.8-	1998 09 27	704	0.8-	0.1-	1998 10 29	704	1.2+	1.1+
1971 04 16	675	(2.6+	3.9-)	1998 09 27	704	1.1-	0.1-	1998 10 29	704	1.9+	1.8+
1971 05 13	675	0.4-	0.6+	1998 09 27	704	0.6-	0.1-	1998 10 29	704	1.5+	1.3+
1971 05 14	675	0.5+	0.8+	1998 09 27	704	0.7-	0.1-	1998 10 29	704	0.6-	0.8-

3290 T-1 = 1998 SZ₁₆₀

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	134.10270	(2000.0)	P	Q
<i>n</i>	0.26789131	ω	272.47358	-0.06309379
<i>a</i>	2.3832172	Ω	353.87267	-0.86697673
<i>e</i>	0.0902335	<i>i</i>	6.24525	-0.49433847
<i>P</i>	3.68	<i>H</i>	14.9	<i>U</i>
				4

Residuals in seconds of arc

1971 03 24	675	0.1+	0.7+	1971 05 14	675	0.3+	1.0-	1998 09 27	704	0.1-	0.4-
1971 03 25	675	1.2+	0.1+	1971 05 14	675	0.4-	0.3-	1998 09 27	704	0.7-	1.0+
1971 03 26	675	1.1-	0.1-	1971 05 14	675	0.2+	0.2+	1998 09 27	704	0.1-	1.8+
1971 03 26	675	0.9-	0.4+	1971 05 16	675	1.0+	0.5+	1998 09 27	704	1.5+	0.4-
1971 03 27	675	1.7-	1.0+	1998 09 26	704	0.1-	0.1+	1998 10 17	699	0.4+	0.3+
1971 04 02	675	0.9+	1.0-	1998 09 26	704	(0.8- 2.6-)		1998 10 17	699	0.6-	0.7-
1971 04 16	675	2.0+	0.1-	1998 09 26	704	1.1-	1.3-	1998 10 17	699	0.2+	0.2-
1971 04 16	675	0.2+	1.0-	1998 09 26	704	0.4-	0.5-				
1971 05 13	675	1.6-	1.0+	1998 09 26	704	0.9+	0.7+				

4164 T-1 = 1978 VX₁₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	150.86974	(2000.0)	P	Q
<i>n</i>	0.20461165	ω	286.42189	+0.76523963
<i>a</i>	2.8522165	Ω	33.54341	-0.57449368
<i>e</i>	0.0686252	<i>i</i>	2.26856	-0.29045707
<i>P</i>	4.82	<i>H</i>	13.5	<i>U</i>
				2

Residuals in seconds of arc

1971 03 24	675	0.1+	0.1+	1971 04 16	675	0.4+	0.3-	1982 07 16	413	0.0	0.7+
1971 03 26	675	1.3-	1.9-	1971 04 16	675	0.2-	0.2-	1982 07 16	413	0.0	0.6-
1971 03 26	675	1.5-	0.7-	1971 05 13	675	1.0+	1.7+	1997 12 06	910	0.1+	0.3-
1971 03 27	675	0.2+	0.2-	1971 05 14	675	1.7+	0.5+	1997 12 06	910	0.2+	0.5-
1971 04 02	675	0.3+	1.5+	1978 11 01	095	0.4-	1.4+	1997 12 06	910	0.1+	0.3-

4290 T-1 = 1998 RP₇₆

Id. G. V. Williams, E. Bowell

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	124.37682	(2000.0)	P	Q
<i>n</i>	0.15912997	ω	222.53947	-0.40459872
<i>a</i>	3.3726251	Ω	24.00188	-0.77005741
<i>e</i>	0.1250297	<i>i</i>	12.49281	-0.49326611
<i>P</i>	6.19	<i>H</i>	12.2	<i>U</i>
				4

Residuals in seconds of arc

1971 03 24	675	0.5+	1.4-	1998 09 17	699	0.1-	0.5+	1998 09 27	704	0.9+	0.2+
1971 03 26	675	0.6-	1.2+	1998 09 17	699	0.3+	0.4+	1998 09 27	704	0.2-	0.8+
1971 03 26	675	0.1+	0.2+	1998 09 18	704	0.3+	1.2-	1998 10 14	704	0.9+	1.2+
1971 03 27	675	0.8-	1.6-	1998 09 18	704	0.8+	0.3-	1998 10 14	704	1.0+	0.7-
1971 04 02	675	0.6-	1.7+	1998 09 18	704	0.0	0.4-	1998 10 14	704	1.5+	0.1+
1971 04 16	675	0.6+	0.2-	1998 09 18	704	0.2-	0.2+	1998 10 14	704	0.9-	0.9-
1971 04 16	675	1.4+	0.1-	1998 09 18	704	0.2+	0.2+	1998 10 15	704	0.2+	0.8-
1971 05 13	675	0.7-	0.4+	1998 09 26	704	0.0	0.0	1998 10 15	704	0.1+	0.4+
1971 05 14	675	0.0	0.3-	1998 09 26	704	0.8-	0.5-	1998 10 15	704	1.8-	0.4-
1971 05 16	675	0.4-	0.3-	1998 09 26	704	0.8-	0.3-	1998 10 15	704	0.2+	0.2+
1971 05 16	675	(6.3+	2.0-)	1998 09 26	704	0.6-	0.5-	1998 10 15	704	0.4+	0.6+
1998 09 14	704	0.1+	0.2-	1998 09 26	704	0.7-	0.3-	1998 10 17	699	0.2+	0.3+
1998 09 14	704	0.6-	0.8-	1998 09 27	704	0.0	0.2+	1998 10 17	699	0.7+	0.4+
1998 09 14	704	1.1-	0.1-	1998 09 27	704	0.8-	0.6+	1998 10 17	699	1.4+	0.5+
1998 09 17	699	0.2-	0.4-	1998 09 27	704	0.1-	0.5+				

1027 T-2 = 1998 RK₈

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	80.60230		(2000.0)	P	Q
<i>n</i>	0.19817194	ω	122.64911	+0.52553310	+0.85076967
<i>a</i>	2.9136762	Ω	179.04487	-0.82132123	+0.50808538
<i>e</i>	0.1152167	<i>i</i>	8.40681	-0.22191531	+0.13431389
<i>P</i>	4.97	<i>H</i>	15.2	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	(2.7+	1.0-)	1973 09 30	675	0.5+	2.5+	1998 09 19	691	0.5-	0.2-
1973 09 19	675	2.0+	0.9-	1973 09 30	675	0.7-	2.2+	1998 09 26	704	(2.1-	0.9-)
1973 09 24	675	1.1+	0.3-	1973 10 04	675	0.3-	1.4-	1998 09 26	704	(0.7-	2.1-)
1973 09 24	675	0.3-	0.5-	1973 10 04	675	0.6-	0.1-	1998 09 26	704	0.9-	0.0
1973 09 25	675	1.6-	1.2-	1973 10 04	675	0.5+	1.5-	1998 09 26	704	0.3-	1.2-
1973 09 25	675	1.5-	1.6+	1973 10 04	675	1.1+	0.5-	1998 09 27	704	0.4-	0.1-
1973 09 25	675	0.7-	0.6-	1998 09 12	691	0.1-	0.1+	1998 09 27	704	(2.4+	2.1+)
1973 09 25	675	(2.5-	1.8+)	1998 09 12	691	0.0	0.1+	1998 09 27	704	0.7+	0.7+
1973 09 29	675	0.3-	0.1+	1998 09 12	691	0.2-	0.3+	1998 09 27	704	0.3+	0.6+
1973 09 29	675	1.0+	0.5+	1998 09 19	691	0.9+	0.2-	1998 09 27	704	0.5+	0.0

1093 T-2 = 1998 ST₁₆₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	351.02945		(2000.0)	P	Q
<i>n</i>	0.27776740	ω	70.94173	+0.31045358	-0.95058668
<i>a</i>	2.3263865	Ω	0.97763	+0.82545968	+0.26860610
<i>e</i>	0.1116637	<i>i</i>	6.32739	+0.47141796	+0.15567827
<i>P</i>	3.55	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	0.2+	0.6+	1973 10 04	675	1.7+	0.1+	1998 10 11	699	0.0	0.4-
1973 09 19	675	0.0	1.3+	1973 10 05	675	1.7-	0.1+	1998 10 28	704	0.1+	0.1+
1973 09 20	675	0.9-	0.3-	1973 10 05	675	0.1-	1.4+	1998 10 28	704	1.5+	0.5-
1973 09 24	675	0.4-	0.1-	1998 09 26	704	0.5-	0.4-	1998 10 28	704	0.5+	0.4+
1973 09 24	675	1.1+	0.0	1998 09 26	704	0.0	1.1+	1998 10 28	704	0.1+	0.3-
1973 09 25	675	1.9-	0.7-	1998 09 26	704	0.4-	0.8+	1998 10 29	704	(2.5+	1.2+)
1973 09 25	675	1.7+	0.4+	1998 09 26	704	0.9+	0.9-	1998 10 29	704	1.1-	0.0
1973 09 29	675	0.8+	0.4-	1998 09 27	704	(0.5+	2.7-)	1998 10 29	704	0.0	0.1-
1973 09 29	675	1.3+	1.1-	1998 09 27	704	0.7+	0.3+	1998 10 29	704	0.8+	0.0
1973 09 30	675	2.0-	0.6-	1998 09 27	704	1.4-	0.9-	1998 10 29	704	0.4+	0.0
1973 09 30	675	0.4-	0.7-	1998 10 11	699	0.3-	0.4+				
1973 10 04	675	1.0+	0.6-	1998 10 11	699	1.7-	1.0+				

1187 T-2 = 1998 SB₁₃₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	26.64946		(2000.0)	P	Q
<i>n</i>	0.23756542	ω	31.66669	+0.94748872	-0.31951355
<i>a</i>	2.5819465	Ω	346.94672	+0.27975872	+0.84827901
<i>e</i>	0.2467783	<i>i</i>	3.36940	+0.15491990	+0.42229587
<i>P</i>	4.15	<i>H</i>	16.6	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1973 09 19	675	1.2+	0.9-	1973 10 05	675	0.9+	1.4-	1998 10 17	699	0.6-	0.6+
1973 09 19	675	0.4-	0.2-	1998 09 26	704	1.4-	0.8+	1998 10 17	699	0.0	1.0+
1973 09 20	675	0.3-	0.3-	1998 09 26	704	0.5-	1.0-	1998 10 19	910	0.5+	0.1-
1973 09 24	675	1.6-	0.0	1998 09 26	704	0.1-	0.5+	1998 10 19	910	0.4+	0.2-
1973 09 24	675	0.5-	0.7+	1998 09 26	704	0.6-	1.4+	1998 10 20	910	0.3+	0.2-
1973 09 25	675	1.7-	0.7-	1998 09 26	704	0.0	0.9+	1998 10 20	557	0.3-	0.6-
1973 09 25	675	0.9-	0.0	1998 09 27	704	1.4-	0.6+	1998 10 20	557	0.2-	0.7-
1973 09 29	675	0.3-	0.1-	1998 09 27	704	0.2+	0.6+	1998 10 20	557	0.3-	0.5-
1973 09 29	675	1.6+	0.0	1998 09 27	704	0.4-	1.9+	1998 10 20	910	0.7+	0.0
1973 09 30	675	0.6+	1.5+	1998 09 27	704	(1.0-	3.0+)	1998 10 20	910	0.6+	0.0
1973 09 30	675	0.9+	1.5+	1998 10 11	699	0.2+	0.4+	1998 10 20	910	0.7+	0.1-
1973 10 04	675	1.4+	2.4-	1998 10 11	699	0.6+	0.4-	1998 10 21	557	1.5-	0.5-
1973 10 04	675	(0.7+	2.8-)	1998 10 11	699	1.2+	0.9-	1998 10 21	557	0.3-	0.3-
1973 10 05	675	0.5+	0.9-	1998 10 17	699	0.7+	0.3+	1998 10 21	557	0.2+	0.3-

1242 T-2 = 1976 GJ₇ = 1998 RJ₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	139.66217		(2000.0)	P	Q
<i>n</i>	0.23402154	ω	33.58477	-0.79203075	+0.61023433
<i>a</i>	2.6079474	Ω	184.14912	-0.59950210	-0.78284071
<i>e</i>	0.1941170	<i>i</i>	13.88226	-0.11525848	-0.12155031
<i>P</i>	4.21	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1973 09 19	675	0.2+	0.7-	1973 09 29	675	0.0	0.4-	1998 09 14	704	0.2-	0.3+
1973 09 19	675	1.1-	0.8-	1973 09 30	675	1.1-	1.1-	1998 09 14	704	0.6+	0.4-
1973 09 20	675	1.8-	1.9+	1973 09 30	675	1.0-	0.5+	1998 09 14	704	0.5+	0.3-
1973 09 24	675	0.5-	1.0+	1973 10 04	675	0.2-	0.4-	1998 09 14	704	0.1+	0.0
1973 09 24	675	0.4+	0.8+	1973 10 04	675	1.2+	0.2+	1998 09 18	704	0.1+	0.4+
1973 09 25	675	0.5-	0.2-	1973 10 05	675	1.5+	1.1-	1998 09 18	704	0.5+	1.1-
1973 09 25	675	1.5-	0.7+	1973 10 05	675	2.3+	0.2-	1998 09 18	704	0.9-	0.2+
1973 09 29	675	1.1+	0.9+	1976 04 04	095	0.0	0.5+	1998 09 18	704	0.5-	0.1+

1343 T-2 = 1998 SU₈₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	214.69758		(2000.0)	P	Q
<i>n</i>	0.27551283	ω	184.28748	-0.99973559	+0.02283324
<i>a</i>	2.3390607	Ω	357.01682	-0.01923687	-0.89527315
<i>e</i>	0.0997196	<i>i</i>	2.99474	-0.01259732	-0.44493216
<i>P</i>	3.58	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1973 09 19	675	1.6+	0.5-	1973 09 30	675	1.8-	1.8+	1998 09 27	704	0.3-	0.7+
1973 09 19	675	0.6-	1.4-	1973 10 04	675	0.2+	1.4-	1998 09 27	704	1.1+	1.2+
1973 09 20	675	1.4+	0.4-	1973 10 04	675	0.6+	1.4-	1998 09 27	704	0.7+	0.4+
1973 09 24	675	1.4-	1.7+	1973 10 05	675	2.4+	0.4-	1998 09 27	704	0.5-	0.4-
1973 09 24	675	1.0-	1.3+	1973 10 05	675	0.0	1.7-	1998 09 27	704	0.2-	0.0
1973 09 25	675	0.1-	0.6-	1998 09 26	704	0.1+	1.6-	1998 10 16	691	0.4-	0.1+
1973 09 25	675	0.7+	0.1+	1998 09 26	704	1.5+	0.9-	1998 10 16	691	0.3-	0.2+
1973 09 29	675	0.9-	1.7+	1998 09 26	704	1.2-	0.2-	1998 10 16	691	0.1-	0.4+
1973 09 29	675	1.0-	0.8+	1998 09 26	704	0.5-	0.5+				

2197 T-2 = 1998 TS₁₈

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	101.84094	(2000.0)	P		Q	
<i>n</i>	0.23736119	ω	253.01544	+0.00571113	+0.99975928	
<i>a</i>	2.5834273	Ω	17.35306	-0.88832783	+0.01479977	
<i>e</i>	0.2657780	<i>i</i>	4.07289	-0.45917431	-0.01619710	
<i>P</i>	4.15	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1973 09 19	675	0.9+	1.4+	1973 09 29	675	0.9-	2.8-	1998 10 14	327	0.1+	0.6+
1973 09 19	675	0.2+	2.2-	1973 09 30	675	1.0-	0.7+	1998 10 14	327	0.1+	0.2+
1973 09 20	675	0.6-	0.3-	1973 09 30	675	1.1+	0.1+	1998 10 14	327	0.1+	0.0
1973 09 24	675	1.4-	1.8+	1973 10 04	675	1.3-	0.9+	1998 10 15	327	0.2-	0.1+
1973 09 24	675	1.9-	1.1+	1973 10 04	675	0.9+	2.2+	1998 10 15	327	0.0	0.4-
1973 09 25	675	2.3+	0.2-	1973 10 05	675	0.2+	2.0-	1998 10 15	327	0.1-	0.5-
1973 09 25	675	1.0+	0.3-	1973 10 05	675	0.7+	0.4-				

2266 T-2 = 1998 SO₇₂

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	104.59382	(2000.0)	P		Q	
<i>n</i>	0.27730898	ω	129.49904	+0.55094006	+0.83448242	
<i>a</i>	2.3289496	Ω	173.90644	-0.79215727	+0.52676570	
<i>e</i>	0.0387655	<i>i</i>	5.51681	-0.26258696	+0.16173123	
<i>P</i>	3.55	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1973 09 20	675	(2.5+	3.8-)	1973 10 04	675	1.8+	2.2+	1998 10 14	704	1.3+	1.1-
1973 09 24	675	0.7-	0.9-	1973 10 04	675	1.9-	2.4+	1998 10 15	704	0.5+	0.3+
1973 09 24	675	0.6-	1.2-	1973 10 05	675	1.6+	0.4-	1998 10 15	704	0.2-	0.4+
1973 09 25	675	(4.5+	4.4-)	1973 10 05	675	(3.4-	2.0+)	1998 10 15	704	0.9-	0.8-
1973 09 25	675	(1.8+	4.8-)	1973 10 05	675	1.1+	0.5+	1998 10 15	704	0.6+	1.6-
1973 09 29	675	1.5-	0.3+	1973 10 05	675	(4.0-	1.3+)	1998 10 28	704	0.7+	0.4+
1973 09 29	675	1.2+	1.6-	1998 09 21	809	0.7-	1.1+	1998 10 28	704	0.3-	1.4-
1973 09 29	675	2.3-	0.1-	1998 09 21	809	0.8-	0.6+	1998 10 28	704	0.7+	0.1+
1973 09 29	675	0.8+	2.2-	1998 09 21	809	0.8-	0.7+	1998 10 28	704	0.7-	0.4+
1973 09 30	675	0.2-	1.4-	1998 09 23	809	1.0+	0.4-	1998 10 29	704	0.0	0.3-
1973 09 30	675	0.2+	1.6+	1998 09 23	809	0.9+	0.8-	1998 10 29	704	0.2+	0.6+
1973 09 30	675	0.0	1.0-	1998 09 23	809	0.6+	0.3-	1998 10 29	704	0.7-	0.0
1973 09 30	675	0.1+	2.0+	1998 10 14	704	1.2+	0.5+	1998 10 29	704	1.1-	0.5+
1973 10 04	675	0.4+	0.0	1998 10 14	704	0.1-	1.2+				
1973 10 04	675	(2.7-	3.5+)	1998 10 14	704	1.4-	0.5-				

3167 T-2 = 1998 SF₆₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	83.24479	(2000.0)	P		Q	
<i>n</i>	0.27659890	ω	179.07627	+0.25775908	+0.96543345	
<i>a</i>	2.3329338	Ω	105.86012	-0.88673749	+0.25228024	
<i>e</i>	0.2926943	<i>i</i>	2.30636	-0.38374064	+0.06552053	
<i>P</i>	3.56	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1973 09 19	675	0.1+	2.2+	1973 10 05	675	1.2+	2.3-	1998 09 25	699	0.1-	0.2+
1973 09 19	675	0.2+	1.3+	1973 10 05	675	0.9+	0.4-	1998 09 25	699	(0.6+	2.2+)
1973 09 20	675	0.1+	1.7+	1998 09 14	704	0.1-	0.9+	1998 09 25	699	0.3-	1.3+
1973 09 24	675	0.6-	0.1+	1998 09 14	704	0.4+	0.1-	1998 09 26	704	0.4-	1.7+
1973 09 24	675	1.1-	1.3-	1998 09 14	704	1.3-	1.8+	1998 09 26	704	0.3+	0.0
1973 09 25	675	0.7-	1.2-	1998 09 17	699	0.2+	0.7+	1998 09 26	704	0.4+	0.8+
1973 09 25	675	0.5-	1.4-	1998 09 17	699	0.4+	0.4+	1998 09 26	704	0.2-	0.1-
1973 09 29	675	0.9+	0.3-	1998 09 17	699	0.1-	1.4+	1998 09 26	704	0.4+	0.2-
1973 09 29	675	0.0	2.0-	1998 09 18	704	0.6+	0.4+	1998 09 27	704	0.7-	0.7+
1973 09 30	675	0.8+	1.9-	1998 09 18	704	1.6-	1.3+	1998 09 27	704	1.1-	0.1+
1973 09 30	675	0.0	1.8-	1998 09 18	704	(0.1+	2.3+)	1998 09 27	704	0.2-	0.9+
1973 10 04	675	1.5+	1.6-	1998 09 18	704	0.6-	0.5-	1998 09 27	704	0.3-	0.8-
1973 10 04	675	1.8+	1.8-	1998 09 18	704	(2.7-	2.4+)	1998 09 27	704	0.5-	0.1+

3182 T-2 = 1998 ST₁₂₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	152.95140	(2000.0)	P		Q	
<i>n</i>	0.27734307	ω	86.72239	-0.54168986	+0.83843575	
<i>a</i>	2.3287588	Ω	150.23107	-0.81121066	-0.50273538	
<i>e</i>	0.1751721	<i>i</i>	6.93855	-0.22024840	-0.21043439	
<i>P</i>	3.55	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1973 09 19	675	0.0	0.1+	1973 09 30	675	0.3-	1.0-	1998 09 26	704	0.1-	0.2-
1973 09 19	675	1.1+	0.5+	1973 09 30	675	0.4-	1.8-	1998 09 26	704	0.3-	0.7+
1973 09 20	675	0.3+	0.3-	1973 10 04	675	0.7+	0.5+	1998 09 27	704	0.1-	0.8-
1973 09 24	675	1.5-	0.1+	1973 10 04	675	0.4-	0.6+	1998 09 27	704	0.5+	0.4+
1973 09 24	675	0.5-	0.8+	1973 10 05	675	1.6+	1.6+	1998 09 27	704	0.4+	0.4+
1973 09 25	675	0.5-	0.3-	1973 10 05	675	0.1+	0.7-	1998 09 27	704	0.7-	0.5-
1973 09 25	675	0.1-	1.4-	1998 09 26	704	0.2+	0.4+	1998 09 27	704	1.7-	0.3-
1973 09 29	675	0.9+	1.1+	1998 09 26	704	1.4+	0.0				
1973 09 29	675	1.0-	0.2+	1998 09 26	704	0.4+	0.2-				

4081 T-2 = 1998 SN₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	80.92852	(2000.0)	P		Q	
<i>n</i>	0.23890449	ω	284.82837	+0.72326143	+0.68808058	
<i>a</i>	2.5722895	Ω	31.75943	-0.58300285	+0.65390201	
<i>e</i>	0.1995543	<i>i</i>	6.39590	-0.37013590	+0.31457475	
<i>P</i>	4.13	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1973 09 19	675	0.8-	1.0-	1973 09 29	675	2.0+	1.4-	1973 10 05	675	1.4-	0.6+
1973 09 19	675	0.2+	0.1+	1973 09 29	675	0.7+	1.8-	1998 09 22	910	0.2+	0.2+
1973 09 20	675	1.7-	0.3+	1973 09 30	675	0.1-	1.5+	1998 09 22	910	0.1+	0.0
1973 09 24	675	1.1+	1.4+	1973 09 30	675	1.3-	0.1-	1998 09 22	910	0.6+	0.1-
1973 09 24	675	0.7-	0.6+	1973 10 04	675	0.2+	0.6-	1998 09 29	910	0.3-	0.1-
1973 09 25	675	0.2+	0.2+	1973 10 04	675	2.4+	0.4-	1998 09 29	910	0.4-	0.1+
1973 09 25	675	0.4+	0.2-	1973 10 05	675	0.9-	1.0+	1998 09 29	910	0.1-	0.1-

4087 T-2 = 1997 CW₂₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	332.87521	(2000.0)	P		Q	
<i>n</i>	0.18599110	ω	178.84439	+0.40598361	+0.91339412	
<i>a</i>	3.0395405	Ω	115.10777	-0.83873269	+0.38535403	
<i>e</i>	0.2066819	<i>i</i>	1.88640	-0.36291153	+0.13120007	
<i>P</i>	5.30	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1973 09 19	675	0.8-	0.5-	1973 09 29	675	0.3+	2.1-	1973 10 05	675	0.3+	1.1+
1973 09 19	675	0.3+	1.3+	1973 09 29	675	(2.1+	1.1-)	1997 02 03	691	0.2-	0.0
1973 09 20	675	0.6-	0.7-	1973 09 30	675	0.5+	0.6-	1997 02 03	691	0.5+	0.0
1973 09 24	675	1.0+	0.2+	1973 09 30	675	0.1-	1.3-	1997 02 03	691	0.2-	0.1+
1973 09 24	675	0.9-	1.6+	1973 10 04	675	1.0-	0.6+	1997 02 14	691	0.2-	0.4-
1973 09 25	675	(0.2+	3.3+)	1973 10 04	675	(1.4-	2.1+)	1997 02 14	691	0.0	0.2+
1973 09 25	675	1.3+	0.5+	1973 10 05	675	0.3-	0.2-	1997 02 14	691	0.1+	0.2+

4174 T-2 = 1993 UK₉ = 1998 SW₇₀

Id. B. G. Marsden

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>	84.89607	(2000.0)	P		Q	
<i>n</i>	0.19865445	ω	177.79106	+0.69875091	+0.71445873	
<i>a</i>	2.9089562	Ω	136.53290	-0.65713428	+0.66094585	
<i>e</i>	0.0389001	<i>i</i>	2.99954	-0.28270427	+0.22956328	
<i>P</i>	4.96	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5	

1998 NOV. 10

M.P.C. 33059

Residuals in seconds of arc

1973 09 20	675	0.3−	0.3−	1973 09 30	675	1.9+	1.5−	1998 09 21	809	0.3+	1.0+
1973 09 24	675	1.7−	1.5+	1973 10 05	675	(3.0+	0.6+)	1998 09 23	809	(5.5−	1.7+)
1973 09 24	675	0.1+	0.9+	1973 10 05	675	0.9−	1.0−	1998 09 23	809	(6.1−	1.3+)
1973 09 25	675	(2.0−	2.5−)	1993 10 20	809	0.2+	0.0	1998 09 23	809	(6.3−	1.8+)
1973 09 25	675	0.0	0.6−	1993 10 20	809	0.1−	0.4+	1998 10 29	704	(0.0	3.2−)
1973 09 29	675	0.3−	0.7+	1993 10 20	809	0.6−	1.3+	1998 10 29	704	(0.2+	2.5−)
1973 09 29	675	0.3+	0.1−	1998 09 21	809	(1.6+	2.5+)	1998 10 29	704	0.3+	1.4−
1973 09 30	675	1.1+	0.5−	1998 09 21	809	0.4−	0.6−	1998 10 29	704	(0.6+	2.8−)

4278 T-2 = 1998 SA₁₀₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	316.98751		(2000.0)	P	Q
<i>n</i>	0.23622245	ω	284.08643	−0.11064677	−0.99339636
<i>a</i>	2.5917231	Ω	172.07708	+0.97549433	−0.11439450
<i>e</i>	0.1692467	<i>i</i>	12.71865	+0.19017914	+0.00880793
<i>P</i>	4.17	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1973 09 19	675	2.6+	0.2−	1973 09 30	675	0.3+	0.3+	1998 09 26	704	0.9−	1.1−
1973 09 19	675	0.5+	2.1−	1973 09 30	675	1.2+	0.2+	1998 09 26	704	0.2+	0.2+
1973 09 20	675	3.0−	1.3+	1973 10 04	675	0.8+	0.5−	1998 09 27	704	0.0	1.2−
1973 09 24	675	0.9+	1.4+	1973 10 04	675	1.5+	2.4−	1998 09 27	704	0.4+	1.4+
1973 09 24	675	1.2+	0.2+	1973 10 05	675	0.9−	1.7+	1998 09 27	704	0.4−	0.4−
1973 09 25	675	0.8−	0.1+	1973 10 05	675	0.1−	0.2+	1998 09 27	704	1.2+	1.0+
1973 09 25	675	0.3−	1.0+	1998 09 26	704	0.3−	1.3+	1998 09 27	704	0.1+	0.3+
1973 09 29	675	1.6−	0.9−	1998 09 26	704	0.4−	1.2−				
1973 09 29	675	2.2−	0.1−	1998 09 26	704	0.2+	0.7−				

4536 T-2 = 1996 RP₂₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	337.45614		(2000.0)	P	Q
<i>n</i>	0.08342305	ω	282.55404	−0.12518450	−0.99181506
<i>a</i>	5.1873474	Ω	174.45009	+0.98091265	−0.12752827
<i>e</i>	0.1041582	<i>i</i>	15.06316	+0.14879250	+0.00627865
<i>P</i>	11.81	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1973 09 19	675	0.3+	0.5−	1973 09 25	675	1.3+	0.0	1973 10 04	675	1.6+	0.9−
1973 09 19	675	1.1−	0.5−	1973 09 29	675	0.4−	0.3+	1973 10 05	675	1.0−	0.6−
1973 09 20	675	0.3+	1.0−	1973 09 29	675	0.9+	0.7+	1973 10 05	675	0.3+	0.4+
1973 09 24	675	0.6−	1.2+	1973 09 30	675	0.6+	0.2−	1996 09 10	809	0.1+	0.5−
1973 09 24	675	0.3−	1.7+	1973 09 30	675	0.0	0.2−	1996 09 13	809	0.0	0.4+
1973 09 25	675	1.1−	0.2+	1973 10 04	675	1.1−	0.6−				

4564 T-2 = 1995 WU₃₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	2.42680		(2000.0)	P	Q
<i>n</i>	0.27157550	ω	306.29974	+0.98341247	+0.17957900
<i>a</i>	2.3616144	Ω	43.37138	−0.15221800	+0.89359003
<i>e</i>	0.1995835	<i>i</i>	2.12974	−0.09863866	+0.41139792
<i>P</i>	3.63	<i>H</i>	18.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1973 09 20	675	0.5−	0.9+	1973 09 30	675	0.8+	0.4−	1995 11 21	691	0.6+	0.1+
1973 09 24	675	1.1+	0.7+	1973 09 30	675	(4.3+	1.8+)	1995 11 21	691	0.4−	0.1−
1973 09 24	675	1.6−	0.6+	1973 10 04	675	0.4+	1.8+	1995 11 28	691	0.0	0.1+
1973 09 25	675	1.3−	0.4+	1973 10 04	675	(3.6−	1.8+)	1995 11 28	691	0.4−	0.1−
1973 09 25	675	0.5+	0.9−	1973 10 05	675	0.5−	0.3+	1995 11 28	691	0.1−	0.1−
1973 09 29	675	1.8+	2.1−	1973 10 05	675	0.8−	0.6−				
1973 09 29	675	0.0	0.8−	1995 11 21	691	0.2+	0.3+				

5080 T-2 = 1996 ER₁₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	175.04530		(2000.0)	P	Q
<i>n</i>	0.28558712	ω	29.21654	+0.44947700	+0.88767423
<i>a</i>	2.2837241	Ω	267.65084	−0.83778924	+0.38004483
<i>e</i>	0.1404830	<i>i</i>	5.74542	−0.30996711	+0.26000075
<i>P</i>	3.45	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1973 09 19	675	(6.1+	1.8+)	1973 09 29	675	0.1−	1.1+	1973 10 05	675	1.0+	0.4−
1973 09 20	675	0.6−	1.3−	1973 09 29	675	0.3+	0.5−	1996 03 13	691	0.6−	0.5+
1973 09 20	675	2.0+	0.2−	1973 09 30	675	0.4−	0.7+	1996 03 13	691	0.5−	0.5+
1973 09 24	675	(1.1−	2.8+)	1973 09 30	675	1.1−	1.0+	1996 03 13	691	0.2−	1.0+
1973 09 24	675	1.6−	1.6+	1973 10 04	675	0.0	1.0−	1996 03 19	691	0.6+	1.1−
1973 09 25	675	0.7+	0.5+	1973 10 04	675	0.4−	1.0−	1996 03 19	691	0.2+	0.6−
1973 09 25	675	0.2+	0.1−	1973 10 05	675	0.1+	0.4−	1996 03 19	691	0.4+	0.5−

5112 T-2 = 1998 DP₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	64.97306		(2000.0)	P	Q
<i>n</i>	0.17437032	ω	230.56904	−0.64265603	−0.74784268
<i>a</i>	3.1731286	Ω	260.24445	+0.74457008	−0.55839993
<i>e</i>	0.1789889	<i>i</i>	9.72677	+0.18057858	−0.35905548
<i>P</i>	5.65	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1973 09 20	675	0.7+	0.9+	1973 09 29	675	0.5+	1.4+	1998 02 22	566	0.4+	0.4+
1973 09 20	675	2.4+	0.0	1973 09 30	675	0.2+	0.7−	1998 02 22	566	0.4−	0.5−
1973 09 24	675	0.2+	0.5−	1973 09 30	675	1.0−	0.3−	1998 02 22	566	0.4−	0.1+
1973 09 24	675	0.4−	0.5−	1973 10 04	675	0.6−	0.7+	1998 02 23	566	0.3+	0.0
1973 09 25	675	1.2−	0.6−	1973 10 04	675	0.8−	1.2+	1998 02 23	566	0.0	0.2−
1973 09 25	675	2.4−	0.9−	1973 10 05	675	2.0+	1.8−	1998 02 23	566	0.0	0.2+
1973 09 29	675	0.4+	1.3+	1973 10 05	675	0.6+	0.0				

5124 T-2 = 1976 JT₇ = 1998 KR₂₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	81.46762		(2000.0)	P	Q
<i>n</i>	0.22474885	ω	323.14077	−0.92940626	+0.32620008
<i>a</i>	2.6791955	Ω	236.77301	−0.26975196	−0.91964129
<i>e</i>	0.1190875	<i>i</i>	11.90899	−0.25186879	−0.21875420
<i>P</i>	4.39	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1973 09 20	675	0.9+	1.0+	1973 09 30	675	0.4+	0.5+	1998 05 22	704	0.2−	0.1+
1973 09 20	675	0.0	0.7+	1973 10 04	675	0.7+	0.1+	1998 05 22	704	0.1−	0.7−
1973 09 24	675	0.1−	1.5−	1973 10 04	675	0.2−	1.8+	1998 05 24	704	0.1+	0.3+
1973 09 24	675	0.5−	1.5−	1973 10 05	675	2.1+	0.7−	1998 05 24	704	0.5−	0.6+
1973 09 25	675	1.4−	0.5−	1973 10 05	675	2.3+	1.0−	1998 05 24	704	0.0	0.5−
1973 09 25	675	0.5−	0.1−	1976 05 02	809	0.0	0.2+	1998 05 24	704	1.1+	0.5+
1973 09 29	675	1.9−	0.6+	1998 05 22	704	0.5+	0.3−	1998 05 24	704	0.0	0.2+
1973 09 29	675	2.4−	0.5+	1998 05 22	704	0.4−	0.2+				
1973 09 30	675	0.3+	0.1+	1998 05 22	704	0.4−	0.6−				

5149 T-2 = 1998 KS₁₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	232.47936		(2000.0)	P	Q
<i>n</i>	0.18450031	ω	163.10797	+0.73639169	−0.66147859
<i>a</i>	3.0558918	Ω	239.17523	+0.60004252	+0.73553613
<i>e</i>	0.0810548	<i>i</i>	9.52031	+0.31253200	+0.14639904
<i>P</i>	5.34	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1973 09 19	675	(5.5+	1.9+)	1973 09 29	675	0.7−	0.1+	1998 05 22	704	(2.2+	0.2+)
1973 09 20	675	1.0+	1.2−	1973 09 30	675	0.6−	0.3+	1998 05 22	704	0.5+	0.3+

M.P.C. 33060

1973 09 20	675	1.7+	0.5−	1973 09 30	675	0.7+	0.5−	1998 05 22	704	(1.1−	1.7+)
1973 09 24	675	0.7−	0.2−	1973 10 04	675	0.6+	0.9+	1998 05 24	704	0.1−	0.1+
1973 09 24	675	0.1−	0.7+	1973 10 04	675	0.0	0.5+	1998 05 24	704	(2.2−	1.6−)
1973 09 25	675	1.0−	0.2+	1973 10 05	675	0.7+	1.4−	1998 05 24	704	0.1+	0.3−
1973 09 25	675	1.5−	0.7+	1973 10 05	675	1.2+	0.5−	1998 05 24	704	(2.4+	1.0−)
1973 09 29	675	1.0−	0.8+	1998 05 22	704	0.5−	0.1−				

5415 T-2 = 1998 FC₁₁₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	200.35336		(2000.0)	P	Q		
<i>n</i>	0.29949987	ω	133.28345	+0.37134408	−0.92392861		
<i>a</i>	2.2124406	Ω	294.70817	+0.81987229	+0.37278171		
<i>e</i>	0.1280871	<i>i</i>	5.81084	+0.43579008	+0.08596347		
<i>P</i>	3.29	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 20	675	(3.6+	2.7−)	1973 10 04	675	0.5−	0.6−	1998 04 01	704	0.6+	0.1+
1973 09 20	675	(4.0+	2.8−)	1973 10 04	675	0.8+	0.5−	1998 04 18	704	0.7+	1.3+
1973 09 24	675	1.4+	0.2−	1973 10 05	675	0.6−	0.2−	1998 04 18	704	0.6+	1.7−
1973 09 24	675	1.8+	0.3−	1973 10 05	675	0.6+	0.5−	1998 04 18	704	1.2−	0.9−
1973 09 25	675	1.8−	0.8−	1998 03 31	704	(3.7−	1.2+)	1998 04 18	704	0.1+	0.1−
1973 09 25	675	0.5−	0.6−	1998 03 31	704	(2.6−	0.3−)	1998 04 19	704	0.3+	0.4+
1973 09 29	675	0.5−	0.6+	1998 03 31	704	1.9−	0.1+	1998 04 19	704	0.1−	0.2−
1973 09 29	675	0.6−	0.2+	1998 04 01	704	0.5+	0.2−	1998 04 19	704	0.7+	0.3+
1973 09 30	675	0.0	1.6+	1998 04 01	704	0.6−	0.5+	1998 04 19	704	0.9+	0.0
1973 09 30	675	0.5−	1.2+	1998 04 01	704	0.5−	0.4+	1998 04 19	704	(5.5−	1.4+)

1088 T-3 = 1998 RJ₇₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	347.11777		(2000.0)	P	Q		
<i>n</i>	0.23416320	ω	68.91474	+0.54930486	−0.83490573		
<i>a</i>	2.6068955	Ω	347.58651	+0.69446667	+0.47914660		
<i>e</i>	0.0645958	<i>i</i>	9.26023	+0.46473672	+0.27083384		
<i>P</i>	4.21	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	0.2−	0.3−	1998 09 18	704	0.6+	0.5−	1998 10 15	704	1.4+	0.1+
1977 10 07	675	1.3+	0.7−	1998 09 18	704	1.2+	0.9−	1998 10 15	704	0.0	0.2−
1977 10 11	675	0.9−	1.5+	1998 09 25	699	0.3−	0.4+	1998 10 15	704	0.5−	1.7+
1977 10 11	675	0.9+	0.6−	1998 09 25	699	0.4+	0.0	1998 10 15	704	1.0+	0.3+
1977 10 11	675	0.1−	1.2+	1998 09 25	699	0.6+	0.3+	1998 10 15	704	1.2−	0.5−
1977 10 11	675	0.3+	0.3−	1998 09 26	704	0.9−	0.2−	1998 10 18	699	0.7−	0.8+
1977 10 12	675	0.2+	0.3+	1998 09 26	704	0.3−	0.0	1998 10 18	699	0.0	1.1+
1977 10 12	675	0.5+	0.1+	1998 09 26	704	0.2−	1.7−	1998 10 18	699	1.2+	0.0
1977 10 12	675	0.8+	0.9+	1998 09 26	704	0.7−	1.0−	1998 10 28	704	1.2−	1.0−
1977 10 12	675	0.6+	0.2+	1998 09 26	704	0.7−	0.1+	1998 10 28	704	0.2−	0.7+
1977 10 16	675	1.1−	2.0−	1998 09 27	704	0.6−	0.1−	1998 10 28	704	0.9+	0.1+
1977 10 16	675	0.6−	0.1+	1998 09 27	704	1.2−	0.9+	1998 10 28	704	(2.3−	1.2+)
1977 10 17	675	0.3+	0.2−	1998 09 27	704	1.0−	0.8+	1998 10 28	704	1.5−	0.9+
1977 10 17	675	1.3−	1.5−	1998 09 27	704	0.2−	0.4+	1998 10 29	704	0.1+	1.0+
1998 09 14	704	0.7−	0.8+	1998 09 27	704	0.4+	0.2+	1998 10 29	704	0.7+	0.4−
1998 09 14	704	0.3−	0.9+	1998 10 14	704	0.1−	0.2+	1998 10 29	704	0.5−	0.5+
1998 09 14	704	0.1+	0.7+	1998 10 14	704	0.5+	0.4−	1998 10 29	704	0.6−	1.5−
1998 09 18	704	1.5+	0.1−	1998 10 14	704	0.4+	1.6−	1998 10 29	704	0.6+	0.1−
1998 09 18	704	1.2+	1.2−	1998 10 14	704	0.0	0.4−				

1102 T-3 = 1998 QF₈₃

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	210.66854		(2000.0)	P	Q		
<i>n</i>	0.18037317	ω	265.93880	−0.88446508	−0.42785664		
<i>a</i>	3.1023307	Ω	248.64516	+0.46636082	−0.82352996		
<i>e</i>	0.1489912	<i>i</i>	11.53093	−0.01513620	−0.37247429		
<i>P</i>	5.46	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

1998 NOV. 10

Residuals in seconds of arc

1977 10 07	675	1.2+	1.9−	1977 10 17	675	0.7+	2.8+	1998 08 24	704	(2.9−	1.7+)
1977 10 11	675	0.4+	0.4+	1977 10 17	675	0.1+	1.9+	1998 08 27	704	0.6−	0.2+
1977 10 11	675	0.8−	0.5−	1977 10 22	675	1.0+	0.8−	1998 08 27	704	0.4−	0.1−
1977 10 12	675	0.7−	1.2+	1977 10 22	675	0.9−	1.7−	1998 08 27	704	0.0	0.5−
1977 10 12	675	0.5−	0.4−	1998 08 24	704	0.9−	1.0+	1998 08 27	704	0.4+	1.0−
1977 10 16	675	0.3−	0.9−	1998 08 24	704	1.0+	0.0				
1977 10 16	675	0.0	0.1−	1998 08 24	704	0.4+	0.3+				

1158 T-3 = 1998 QJ₈₆

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	137.45705		(2000.0)	P	Q		
<i>n</i>	0.18298539	ω	326.05254	−0.68768370	+0.70563854		
<i>a</i>	3.0727350	Ω	259.83889	−0.62160355	−0.69380046		
<i>e</i>	0.1042873	<i>i</i>	9.99138	−0.37510021	−0.14392765		
<i>P</i>	5.39	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 07	675	1.4+	1.5−	1977 10 17	675	0.4+	1.4+	1998 08 24	704	0.0	0.2−
1977 10 11	675	0.9+	0.5+	1977 10 17	675	0.4+	0.0	1998 08 24	704	0.1−	0.7+
1977 10 11	675	0.7+	1.5−	1977 10 22	675	1.4−	0.6−	1998 08 27	704	1.2+	0.1−
1977 10 12	675	0.4+	0.0	1977 10 22	675	1.3+	0.2−	1998 08 27	704	0.1−	0.0
1977 10 12	675	0.9−	1.4+	1998 08 24	704	0.1−	0.9−	1998 08 27	704	1.0+	0.2+
1977 10 16	675	1.5−	0.1−	1998 08 24	704	1.1+	0.3−	1998 08 27	704	0.9−	0.0
1977 10 16	675	1.9−	0.4+	1998 08 24	704	2.3−	2.0+	1998 08 27	704	0.4+	1.4−

2135 T-3 = 1998 RB₄₇

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	354.49507		(2000.0)	P	Q		
<i>n</i>	0.18569930	ω	171.24507	+0.85927984	−0.50562080		
<i>a</i>	3.0427239	Ω	219.43839	+0.46161521	+0.83170218		
<i>e</i>	0.0677975	<i>i</i>	6.99550	+0.22033963	+0.22938853		
<i>P</i>	5.31	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	0.5+	0.1−	1977 10 21	675	0.8+	0.0	1998 09 18	704	1.1−	0.6+
1977 10 11	675	0.0	0.1+	1977 10 22	675	0.2−	0.0	1998 09 26	704	1.0−	0.3+
1977 10 11	675	0.4−	0.4+	1977 10 22	675	0.5−	1.7+	1998 09 26	704	0.7+	1.9−
1977 10 12	675	0.5−	0.9+	1998 09 14	704	1.2+	1.2−	1998 09 26	704	1.6−	0.6+
1977 10 12	675	0.8−	1.7+	1998 09 14	704	0.9+	0.7+	1998 09 26	704	0.4−	0.7+
1977 10 16	675	1.2+	1.4−	1998 09 14	704	0.4−	1.1+	1998 09 27	704	1.1+	1.1+
1977 10 16	675	0.4−	0.9−	1998 09 14	704	(3.4+	0.1+)	1998 09 27	704	0.2+	0.9+
1977 10 17	675	0.4−	1.0−	1998 09 18	704	0.3+	1.3−	1998 09 27	704	0.5+	0.8−
1977 10 17	675	0.3−	1.3−	1998 09 18	704	0.3−	0.8−	1998 09 27	704	0.1+	0.2−
1977 10 21	675	0.8+	0.2−	1998 09 18	704	0.6−	0.0	1998 09 27	704	0.4+	0.2+

2140 T-3 = 1997 LV₁₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	328.21207		(2000.0)	P	Q		
<i>n</i>	0.08365999	ω	111.61908	+0.84258285	+0.50844396		
<i>a</i>	5.1775487	Ω	218.45350	−0.53552227	+0.82597164		
<i>e</i>	0.0960315	<i>i</i>	16.59310	+0.05718421	+0.24342473		
<i>P</i>	11.78	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	0.6+	0.6−	1977 10 17	675	1.0−	0.2−	1997 06 07	809	0.7+	0.3+
1977 10 11	675	0.2−	0.2+	1977 10 17	675	0.7−	0.5+	1997 06 07	809	0.6+	0.3−
1977 10 11	675	0.1−	0.1+	1977 10 21	675	1.4+	0.9−	1997 06 08	809	1.0−	0.6−
1977 10 12	675	0.2−	1.0+	1977 10 21	675	(2.5−	0.2−)	1997 06 08	809	0.8−	0.3−
1977 10 12	675	0.1−	0.3−	1977 10 22	675	1.4+	1.0+	1997 06 08	809	0.7−	0.2+
1977 10 16	675	(0.8−	3.0−)	1977 10 22	675	1.0−	0.7−				
1977 10 16	675	(0.4−	2.9−)	1997 06 07	809	1.2+	0.6+				

1998 NOV. 10

M.P.C. 33061

2382 T-3 = 1998 HC₄₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21761314	ω	273.41696	−0.70963573	+0.70388322		
<i>a</i>	2.7374486	Ω	311.32553	−0.62888774	−0.65267898		
<i>e</i>	0.0597805	<i>i</i>	2.37143	−0.31767491	−0.28028299		
<i>P</i>	4.53	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	2.5+	1.7−	1977 10 21	675	2.2+	0.3−	1998 04 21	704	0.8+	0.3+
1977 10 11	675	0.0	1.5+	1977 10 21	675	3.1+	0.7+	1998 04 21	704	0.8−	0.8−
1977 10 11	675	1.8−	0.1+	1977 10 22	675	0.5−	1.2−	1998 04 21	704	0.6+	0.7−
1977 10 12	675	0.5−	0.8+	1977 10 22	675	1.0+	0.9+	1998 04 21	704	0.4+	0.1−
1977 10 12	675	0.4−	0.8−	1998 04 20	704	0.0	0.5−	1998 04 22	704	1.8+	0.7−
1977 10 16	675	1.5−	1.2−	1998 04 20	704	1.7+	0.4+	1998 04 22	704	1.4−	0.5−
1977 10 16	675	0.4−	1.4−	1998 04 20	704	0.3−	0.7−	1998 04 22	704	1.5−	1.2+
1977 10 17	675	2.2−	0.8+	1998 04 20	704	0.6−	0.0	1998 04 22	704	0.7−	0.9+
1977 10 17	675	1.6−	1.6+	1998 04 21	704	0.4+	0.4+	1998 04 22	704	0.3−	0.8+

3042 T-3 = 1998 SU₉

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28062315	ω	125.35741	−0.98818829	−0.12154911		
<i>a</i>	2.3105767	Ω	47.85800	+0.06356443	−0.87925255		
<i>e</i>	0.1355721	<i>i</i>	7.23063	+0.13943980	−0.46058741		
<i>P</i>	3.51	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 07	675	1.5+	1.0−	1977 10 21	675	0.1+	1.1+	1998 09 24	699	0.3−	1.1−
1977 10 11	675	1.7+	0.8−	1977 10 21	675	(2.8+	0.5−)	1998 09 24	699	1.1−	1.0+
1977 10 11	675	1.4+	0.7−	1977 10 21	675	0.4−	0.8+	1998 09 25	327	0.6+	0.2−
1977 10 12	675	1.6−	0.3−	1977 10 22	675	(1.3−	3.6−)	1998 09 25	327	0.3−	0.6−
1977 10 12	675	1.7−	0.2−	1977 10 22	675	1.9−	1.7−	1998 09 25	327	0.1−	0.1−
1977 10 16	675	0.0	0.5+	1977 10 22	675	2.1+	1.5−	1998 09 26	704	1.5−	0.5−
1977 10 16	675	1.0−	1.4+	1977 10 22	675	0.0	0.2−	1998 09 26	704	(0.7−	2.3+)
1977 10 16	675	0.1+	0.3+	1998 09 17	327	0.8+	0.0	1998 09 26	704	0.0	0.9−
1977 10 16	675	0.9−	1.3+	1998 09 17	327	0.0	0.0	1998 09 26	704	0.2+	0.2+
1977 10 17	675	0.0	1.8+	1998 09 17	327	0.2+	0.1+	1998 09 26	704	1.3−	0.4+
1977 10 17	675	0.1−	0.5−	1998 09 20	327	(3.1−	1.6+)	1998 09 27	704	0.7+	0.3−
1977 10 17	675	(1.3−	2.6+)	1998 09 20	327	(3.7−	1.9+)	1998 09 27	704	0.1+	0.5+
1977 10 17	675	0.6−	0.7+	1998 09 20	327	(4.9−	2.2+)	1998 09 27	704	0.1−	0.2+
1977 10 21	675	1.2+	1.4−	1998 09 24	699	0.3+	1.3+	1998 09 27	704	1.6+	0.1+

3195 T-3 = 1998 QQ₈₀

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22926788	ω	79.93451	−0.02844476	+0.99917482		
<i>a</i>	2.6438729	Ω	188.59573	−0.97618739	−0.03400706		
<i>e</i>	0.1661417	<i>i</i>	11.18518	−0.21505597	+0.02220807		
<i>P</i>	4.30	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	0.4+	1.7−	1977 10 17	675	0.1−	1.5−	1998 08 24	704	0.6+	1.0+
1977 10 11	675	2.0−	0.2+	1977 10 17	675	0.2−	0.2+	1998 08 24	704	0.2+	1.5+
1977 10 11	675	0.3+	1.3+	1977 10 17	675	0.9−	0.3+	1998 08 24	704	(2.6−	2.6+)
1977 10 12	675	0.2−	0.1−	1977 10 17	675	1.2+	0.5+	1998 08 24	704	1.0−	1.4−
1977 10 12	675	(3.7−	0.1+)	1977 10 21	675	1.5+	2.5−	1998 08 27	704	0.1+	0.9−
1977 10 16	675	1.1+	1.3+	1977 10 21	675	0.9+	0.8+	1998 08 27	704	0.2+	0.2−
1977 10 16	675	1.4−	0.2+	1977 10 21	675	(3.7+	2.5−)	1998 08 27	704	1.2+	0.6−
1977 10 16	675	1.2+	0.3−	1977 10 21	675	1.4−	0.5+	1998 08 27	704	1.2−	0.5+
1977 10 16	675	0.1−	0.8+	1977 10 22	675	(1.7+	5.0−)				

3382 T-3 = 1984 TC = 1998 SF₅₄

Id. A. Gnädig

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27993329	ω	75.14544	−0.03932986	+0.99894373		
<i>a</i>	2.3143712	Ω	192.67207	−0.95337146	−0.04463535		
<i>e</i>	0.1199485	<i>i</i>	6.21820	−0.29922570	+0.01091402		
<i>P</i>	3.52	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	1.7−	0.9−	1984 10 03	801	1.4+	1.2+	1998 09 25	699	0.8+	0.4+
1977 10 11	675	0.9−	1.3+	1998 09 14	704	0.5−	0.1−	1998 09 25	699	0.6+	0.4−
1977 10 11	675	1.2−	1.9+	1998 09 14	704	1.0−	0.1−	1998 09 26	704	0.9+	0.5−
1977 10 12	675	1.8+	0.9−	1998 09 14	704	0.7−	1.5−	1998 09 26	704	0.0	0.5−
1977 10 12	675	1.0+	1.2−	1998 09 16	699	0.2−	0.3+	1998 09 26	704	0.8−	0.1−
1977 10 16	675	0.1−	0.2+	1998 09 16	699	0.1+	0.8+	1998 09 26	704	0.5−	0.1−
1977 10 16	675	0.8+	0.5+	1998 09 16	699	0.1+	0.4+	1998 09 26	704	0.3+	0.9+
1977 10 17	675	0.5−	0.3+	1998 09 18	704	0.0	0.3+	1998 09 27	704	0.4+	0.4−
1977 10 17	675	0.7+	0.4−	1998 09 18	704	0.9+	0.2−	1998 09 27	704	0.5+	0.2+
1977 10 21	675	0.8−	0.8−	1998 09 18	704	(2.7+	0.4+)	1998 09 27	704	0.6−	0.2−
1977 10 21	675	0.9−	0.7+	1998 09 18	704	0.2+	0.1+	1998 09 27	704	0.4+	0.1+
1977 10 22	675	0.5+	1.2−	1998 09 18	704	1.0−	0.1+	1998 09 27	704	0.0	0.2−
1977 10 22	675	(3.1+	1.1−)	1998 09 25	699	0.2−	0.0				

3460 T-3 = 1998 HT₉₂

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17376600	ω	74.66464	+0.99985482	−0.01536160		
<i>a</i>	3.1804813	Ω	286.21512	+0.01113452	+0.91656421		
<i>e</i>	0.1737663	<i>i</i>	0.43991	+0.01289780	+0.39959238		
<i>P</i>	5.67	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1977 10 07	675	1.0−	0.2−	1977 10 17	675	1.0−	0.4−	1998 04 21	704	0.2−	1.3+
1977 10 11	675	0.3+	0.4−	1977 10 17	675	0.1−	0.9−	1998 04 21	704	(0.0	2.6−)
1977 10 11	675	0.3−	1.8+	1977 10 21	675	1.4−	1.2+	1998 04 21	704	(0.0	1.9+)
1977 10 12	675	0.8+	0.5−	1977 10 21	675	1.3−	0.5+	1998 04 22	704	0.4+	1.3−
1977 10 12	675	1.2+	0.1−	1977 10 22	675	1.5+	0.8−	1998 04 22	704	0.7−	0.5−
1977 10 16	675	0.0	1.0−	1977 10 22	675	0.2+	0.2−	1998 04 22	704	0.7+	0.0
1977 10 16	675	0.5+	0.8+	1998 04 21	704	0.1−	0.6+	1998 04 22	704	(0.9−	2.6−)

3477 T-3 = 1998 SY₁₅₅

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18747302	ω	212.01807	−0.22517159	+0.97301753		
<i>a</i>	3.0235016	Ω	45.02488	−0.87824065	−0.18032147		
<i>e</i>	0.0482356	<i>i</i>	4.08108	−0.42188992	−0.14394813		
<i>P</i>	5.26	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1977 10 07	675	0.7+	0.8+	1977 10 17	675	0.8+	1.4−	1998 09 26	704	0.5−	0.9−
1977 10 11	675	0.0	1.6+	1977 10 17	675	0.0	0.6−	1998 09 26	704	0.3+	0.3+
1977 10 11	675	1.3−	0.2+	1977 10 21	675	1.3−	1.0+	1998 09 26	704	1.1−	0.4−
1977 10 12	675	1.1+	0.8−	1977 10 21	675	2.2−	1.0+	1998 09 27	704	0.4+	0.7−
1977 10 12	675	0.8−	0.6−	1977 10 22	675	2.1+	0.4−	1998 09 27	704	0.8+	1.5+
1977 10 16	675	0.5−	0.1−	1977 10 22	675	1.3+	0.7−	1998 09 27	704	1.1−	1.2+
1977 10 16	675	0.1+	0.4+	1998 09 26	704	0.1−	2.1−	1998 09 27	704	1.4+	0.7+

4054 T-3 = 1964 EL = 1997 JG₁

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18179749	ω	271.83415	+0.68330421	+0.71961268		
<i>a</i>	3.0861057	Ω	42.17359	−0.57516242	+0.63471234		
<i>e</i>	0.1020500	<i>i</i>	10.60015	−0.44975944	+0.28159873		
<i>P</i>	5.42	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1964 03 11	033	2.0−	0.1+	1977 10 16	675	0.9−	0.5+	1977 10 22	675	1.7+	1.3−
1964 03 12	033	2.0+	0.0	1977 10 16	675	2.0−	0.9+	1977 05 01	910	0.0	0.0
1977 10 07	675	1.6+	0.5+	1977 10 17	675	1.0+	0.9−	1977 05 01	910	0.1+	0.1+
1977 10 11	675	0.4+	1.3−	1977 10 17	675	0.3−	0.0	1977 05 01	910	0.2+	0.1+
1977 10 11	675	1.0−	1.0−	1977 10 21	675	0.1−	1.8+	1977 05 02	910	0.0	0.1−
1977 10 12	675	0.6−	0.1−	1977 10 21	675	0.4−	2.0+	1977 05 02	910	0.1−	0.1+
1977 10 12	675	0.4−	0.3−	1977 10 22	675	0.7+	0.6−	1977 05 03	910	0.0	0.0

4137 T-3 = 1998 AB₄

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Gnädig

<i>M</i>	189.55536		(2000.0)	P		Q
<i>n</i>	0.20624517	ω	241.28487	+0.95084207	+0.30156641	
<i>a</i>	2.8371363	Ω	101.09039	−0.25316618	+0.88790866	
<i>e</i>	0.1889811	<i>i</i>	4.11429	−0.17834303	+0.34738439	
<i>P</i>	4.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1977 10 07	675	0.8+	0.6−	1977 10 17	675	0.1−	1.5−	1998 01 02	691	0.1+	0.7−
1977 10 11	675	0.3+	0.5−	1977 10 17	675	0.7−	0.3−	1998 01 02	691	0.2−	0.1−
1977 10 11	675	0.0	0.4+	1977 10 21	675	0.7+	0.4+	1998 01 08	691	0.3+	0.1+
1977 10 12	675	1.2−	1.1+	1977 10 21	675	0.6+	0.6+	1998 01 08	691	0.3+	0.1+
1977 10 12	675	0.4−	0.3−	1977 10 22	675	0.1+	2.1−	1998 01 08	691	0.3+	0.2+
1977 10 16	675	0.2−	1.7+	1977 10 22	675	0.0	1.2+				
1977 10 16	675	0.1−	0.2−	1998 01 02	691	0.9−	0.4+				

4234 T-3 = 1998 SN₆₆

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
(188)	9.22	0.15	19990122	53.13842	69.37519	241.25933	11.72222	0.1780325	2.7630934	87	23 1915–1998	0.87	M-v 0	Bowell	32738	(188)
(316)	9.8	0.15	19990122	280.02885	315.14403	124.15534	2.33945	0.1494129	3.1707895	147	33 1891–1998	0.81	M-v 0	Bowell	30778	(316)
(432)	8.84	0.15	19990122	73.81474	174.38777	89.00017	12.12146	0.1452560	2.3704127	203	42 1897–1998	0.56	M-v 0	Goffin	30753	(432)
(453)	10.6	0.15	19990122	163.39143	220.26302	11.87884	5.55766	0.1089473	2.1834277	113	19 1900–1998	0.83	M-v 1	Bowell	21966	(453)
(460)	10.6	0.15	19990122	350.20917	161.96969	205.45679	4.63506	0.1066312	2.7189111	100	25 1918–1998	0.83	M-v 0	Bowell	31780	(460)
(683)	8.1	0.15	19990122	214.65703	281.55188	259.92172	18.51270	0.0476673	3.1191543	68	24 1915–1998	0.79	M-v 1	Bowell	27725	(683)
(857)	11.32	0.15	19990122	87.46245	238.51706	83.05923	5.30202	0.0889007	2.1900511	82	23 1920–1998	0.87	M-v 1	Bowell	26918	(857)
(933)	11.8	0.15	19990122	258.80418	12.82886	141.57764	5.53012	0.1633781	2.3696858	70	18 1927–1998	0.97	M-v 0	Bowell	21967	(933)
(949)	9.7	0.15	19990122	318.38517	249.18553	321.63366	10.69945	0.2003336	2.9966736	65	19 1931–1998	0.90	M-v 1	Bowell	26919	(949)
(1157)	10.0	0.15	19990122	92.93303	316.25821	336.35527	9.53817	0.1416837	3.1862487	82	23 1930–1998	1.01	M-v 1	Bowell	28611	(1157)
(1188)	11.7	0.15	19990122	28.13090	6.57366	5.61975	4.82173	0.1805012	2.1903646	90	18 1930–1998	0.91	M-v 0	Bowell	26922	(1188)
(1351)	9.6	0.15	19990122	53.91625	52.42426	9.85213	9.70405	0.0614142	3.1969677	78	28 1917–1998	0.91	M-v 1	Bowell	31272	(1351)
(1398)	10.1	0.15	19990122	26.14345	73.19338	297.29216	11.83114	0.1133558	3.1543978	61	13 1936–1998	0.91	M-v 1	Bowell	31135	(1398)
(1472)	12.7	0.15	19990122	40.63368	318.47511	45.36407	4.56987	0.1986962	2.2337825	58	16 1938–1998	0.94	M-v 1	Bowell	32299	(1472)
(1680)	11.2	0.15	19990122	169.69447	156.97191	83.52501	4.25607	0.1823683	2.7235394	130	29 1902–1998	0.88	M-v 0	Bowell	31782	(1680)
(1717)	12.9	0.15	19990122	324.34240	115.64783	340.68492	6.19149	0.1285271	2.1957434	95	13 1930–1998	0.85	M-v 1	Bowell	32740	(1717)
(1884)	11.7	0.15	19990122	333.17402	110.28726	353.88261	21.78595	0.2619304	2.4261746	40	9 1943–1998	0.73	M-v 1	Bowell	32741	(1884)
(1902)	9.51	0.15	19990122	58.05158	268.51212	59.44666	12.48936	0.2223395	3.9737289	73	20 1940–1998	0.83	M-v 1	Bowell	25226	(1902)
(1937)	11.9	0.15	19990122	68.25829	225.89307	79.21411	12.47402	0.1576238	2.3774527	42	12 1936–1998	0.73	M-v 1	Bowell	32658	(1937)
(1956)	11.9	0.15	19990122	290.97848	341.06497	153.75344	1.48098	0.0936384	3.2090911	59	16 1954–1998	0.85	M-v 1	Bowell	28884	(1956)
(2003)	11.7	0.15	19990122	288.68230	70.10163	64.58819	1.87427	0.1180595	3.0643310	85	17 1934–1998	0.83	M-v 1	Bowell	32301	(2003)
(2029)	13.5	0.15	19990122	61.16798	66.51474	278.23157	5.59464	0.1279154	2.3495700	56	14 1969–1998	0.88	M-v 1	Bowell	28613	(2029)

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	330.68114		(2000.0)	P		Q
<i>n</i>	0.28218196	ω	280.87066	−0.39471635	−0.91450113	
<i>a</i>	2.3020595	Ω	193.46032	+0.91874811	−0.39390149	
<i>e</i>	0.2622271	<i>i</i>	22.42783	−0.01004506	−0.09235420	
<i>P</i>	3.49	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1977 10 11	675	1.7+	0.7+	1977 10 22	675	0.5−	1.3+	1998 10 11	699	0.3−	0.0
1977 10 11	675	1.4+	0.6−	1998 09 20	809	1.8+	0.1−	1998 10 11	699	0.8−	0.2−
1977 10 12	675	1.4−	1.3−	1998 09 20	809	1.2+	0.8−	1998 10 16	704	0.4−	0.5−
1977 10 12	675	0.7−	1.5−	1998 09 20	809	1.2+	0.8−	1998 10 16	704	0.6−	0.8−
1977 10 16	675	0.3−	0.6−	1998 09 20	809	0.7+	0.2+	1998 10 16	704	0.1+	0.4−
1977 10 16	675	0.5+	1.4−	1998 09 20	809	0.0	0.4+	1998 10 16	704	0.4+	0.3−
1977 10 17	675	0.4−	1.5−	1998 09 20	809	0.2−	1.0+	1998 10 16	704	0.2+	0.2−
1977 10 17	675	0.1+	1.1−	1998 09 21	809	0.2+	1.6+	1998 10 20	699	0.5−	0.6+
1977 10 21	675	0.0	1.1+	1998 09 21	809	0.2−	1.5+	1998 10 20	699	0.5−	1.0+
1977 10 21	675	0.0	1.7+	1998 09 21	809	0.0	1.8+	1998 10 20	699	0.6−	0.7+
1977 10 22	675	0.5−	0.8−	1998 10 11	699	0.8−	0.2−				

4672 T-3 = 1998 SB₁₄₉

Epoch 1999 Jan. 22.0 TT = JDT 2451200.5

Williams

<i>M</i>	294.42419		(2000.0)	P		Q
<i>n</i>	0.23191464	ω	30.87141	−0.31158655	−0.94634301	
<i>a</i>	2.6237187	Ω	77.40021	+0.85289788	−0.31830543	
<i>e</i>	0.1394780	<i>i</i>	5.03937	+0.41890218	−0.05582622	
<i>P</i>	4.25	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1977 10 17	675	0.2+	0.4+	1977 10 22	675	0.2+	0.5+	1998 09 27	704	0.0	1.8+
1977 10 17	675	0.2+	0.6−	1998 09 26	704	0.2−	0.2−	1998 09 27	704	1.0+	0.4+
1977 10 21	675	0.5+	0.4+	1998 09 26	704	2.1−	0.4+	1998 09 27	704	0.5+	0.2−
1977 10 21	675	0.5−	0.0	1998 09 26	704	0.8+	0.5−	1998 09 27	704	0.6−	0.3−
1977 10 22	675	0.6−	0.6−	1998 09 26	704	0.5+	1.5−				

(2119)	12.8	0.15	19990122	125.51182	19.36351	268.43817	3.83642	0.1571771	2.2506030	45	12	1930–1998	0.68	M-v	1	Bowell	30894	(2119)
(2184)	11.5	0.15	19990122	30.98708	120.69100	256.84785	5.20712	0.1091608	3.1710466	51	12	1964–1998	0.82	M-v	1	Bowell	32741	(2184)
(2309)	11.3	0.15	19990122	350.38915	266.77563	157.66711	10.98440	0.0885829	3.0125805	82	15	1956–1998	0.90	M-v	1	Bowell	31582	(2309)
(2422)	13.7	0.15	19990122	238.19770	52.17430	160.17882	6.40468	0.1990957	2.3277272	63	10	1943–1998	0.94	M-v	1	Bowell	32512	(2422)
(2462)	14.1	0.15	19990122	304.49555	53.74849	99.83469	2.98691	0.1398883	2.4088245	42	7	1960–1998	1.03	M-v	2	Williams	31274	(2462)
(2496)	13.5	0.15	19990122	342.01169	292.30635	163.33736	0.91504	0.0330054	2.1700762	81	11	1953–1998	0.88	M-v	1	Bowell	31529	(2496)
(2524)	10.9	0.15	19990122	88.60190	21.79991	279.30427	0.28950	0.1602337	3.1139167	79	14	1954–1998	1.05	M-v	1	Williams	31137	(2524)
(2567)	11.8	0.15	19990122	64.74934	191.18342	142.93819	8.91215	0.1418136	2.7362391	51	11	1979–1998	0.75	M-v	1	Bowell	32046	(2567)
(2582)	10.5	0.15	19990122	108.51750	243.44367	56.51172	18.17312	0.0656705	3.1991155	43	8	1938–1998	0.93	M-v	1	Bowell	32742	(2582)
(2603)	12.2	0.15	19990122	64.06711	279.75230	38.01819	3.05959	0.0444403	2.7818419	82	11	1936–1998	0.85	M-v	1	Bowell	32513	(2603)
(2767)	11.6	0.15	19990122	87.91216	253.32667	66.13877	10.88343	0.0889554	3.0186408	26	7	1967–1998	0.72	M-v	1	Bowell	31785	(2767)
(2785)	12.2	0.15	19990122	351.93983	92.70844	334.91272	1.44280	0.0400373	2.8725329	53	15	1932–1998	0.85	M-v	1	Bowell	32223	(2785)
(2797)	8.4	0.15	19990122	297.84974	46.02420	69.96292	22.37117	0.0919718	5.1281644	29	7	1940–1998	0.78	M-v	1	Bowell	30091	(2797)
(2854)	13.2	0.15	19990122	219.63508	280.13784	292.58632	5.76375	0.1223261	2.2046827	33	8	1931–1998	0.74	M-v	1	Bowell	32513	(2854)
(2863)	12.0	0.15	19990122	34.63767	222.27215	120.86657	1.96695	0.1974723	3.1624642	54	11	1954–1998	0.75	M-v	1	Bowell	32047	(2863)
(3016)	12.4	0.15	19990122	335.00062	319.68962	129.08096	2.89211	0.0407221	2.8334421	139	13	1933–1998	0.78	M-v	1	Bowell	28585	(3016)
(3145)	14.4	0.15	19990122	147.94288	41.59426	283.85863	5.03430	0.2357261	2.1921881	54	6	1955–1998	0.58	M-v	1	Williams	32304	(3145)
(3420)	11.9	0.15	19990122	246.14379	21.53659	146.30216	14.28159	0.0716891	3.1073522	34	7	1951–1998	0.87	M-v	1	Bowell	31275	(3420)
(3519)	13.1	0.15	19990122	102.89854	246.14414	49.59178	0.56930	0.1774735	2.1697393	135	14	1950–1998	0.69	M-v	1	Bowell	31103	(3519)
(3542)	11.7	0.15	19990122	79.47509	65.71805	266.22691	8.08598	0.0946437	3.1670662	26	7	1964–1998	0.87	M-v	1	Bowell	21269	(3542)
(3647)	11.4	0.15	19990122	47.15114	217.99378	126.42916	8.08319	0.1028969	2.8000888	27	11	1951–1998	0.82	M-v	1	Bowell	31418	(3647)
(3709)	9.0	0.15	19990122	349.40256	246.21603	187.18567	19.60289	0.0632472	5.2664963	63	11	1979–1998	0.70	M-v	1	Bowell	31233	(3709)
(3776)	10.4	0.15	19990122	229.64146	165.09347	39.80670	27.43902	0.0604067	3.1822569	31	7	1938–1998	0.95	M-v	2	Williams	30291	(3776)
(3815)	12.4	0.15	19990122	231.87475	10.03084	197.41331	8.61840	0.1034847	2.5704390	31	9	1955–1998	0.83	M-v	1	Bowell	32515	(3815)
(3832)	12.5	0.15	19990122	31.05694	357.48360	28.86547	1.05363	0.1848930	3.1302045	58	12	1937–1998	1.01	M-v	1	Sicoli	31234	(3832)
(3899)	11.2	0.15	19990122	284.80220	328.58360	82.17933	2.82044	0.1826273	3.1810168	64	15	1948–1998	0.95	M-v	1	Sicoli	27915	(3899)
(3927)	14.0	0.15	19990122	116.29663	25.81063	255.74922	1.95089	0.1359599	2.1936864	54	8	1978–1998	0.78	M-v	1	Bowell	32306	(3927)
(3949)	13.3	0.15	19990122	208.70540	304.86447	250.03159	3.77742	0.0323504	2.2080657	47	6	1984–1998	0.69	M-v	1	Bowell	30659	(3949)
(4047)	13.1	0.15	19990122	57.47252	309.65893	31.98758	3.02468	0.2095017	2.6165642	37	9	1964–1998	0.90	M-v	1	Bowell	29944	(4047)
(4058)	11.4	0.15	19990122	77.82256	252.74812	61.94912	10.79688	0.1000289	3.0102006	39	7	1972–1998	0.79	M-v	1	Williams	30688	(4058)
(4081)	12.8	0.15	19990122	112.52982	49.21570	254.07016	1.80077	0.0935194	2.3781040	47	11	1953–1998	0.82	M-v	1	Bowell	30688	(4081)
(4160)	13.0	0.15	19990122	215.84999	25.96126	187.72761	5.03988	0.0895247	2.4534646	48	11	1975–1998	0.95	M-v	1	Williams	31007	(4160)
(4161)	13.2	0.15	19990122	20.84403	221.77893	172.94973	3.26582	0.0964567	3.0663615	40	9	1960–1998	0.78	M-v	1	Williams	32516	(4161)
(4173)	13.1	0.15	19990122	312.85170	17.99161	107.35797	4.14359	0.1196387	2.3588721	36	10	1954–1998	0.94	M-v	1	Williams	32746	(4173)
(4202)	11.0	0.15	19990122	109.55816	140.35252	144.64389	10.25410	0.0888862	3.0190665	73	7	1977–1998	0.67	M-v	1	Williams	31139	(4202)
(4221)	12.7	0.15	19990122	170.93636	37.75389	188.11207	17.21215	0.1246192	2.6203052	44	8	1954–1998	0.85	M-v	1	Bowell	27106	(4221)
(4352)	11.7	0.15	19990122	356.90349	347.92426	68.83167	11.07223	0.1952609	2.7616533	27	8	1950–1998	0.87	M-v	1	Bowell	29662	(4352)
(4801)	12.5	0.15	19990122	353.45112	44.88454	66.75775	2.25533	0.1637374	2.6411607	53	9	1939–1998	0.83	M-v	1	Williams	32052	(4801)
(4834)	9.2	0.15	19990122	352.93511	350.75638	76.05911	28.44345	0.1375246	5.2393397	22	6	1986–1998	0.71	M-v	1	Bowell	32052	(4834)
(4891)	12.0	0.15	19990122	181.69426	262.56028	339.02023	2.30446	0.0575617	3.1633661	54	9	1933–1998	0.74	M-v	1	Bowell	32461	(4891)
(4932)	12.0	0.15	19990122	30.50661	253.95255	141.97577	12.90961	0.0167247	3.1103938	37	7	1955–1998	0.80	M-v	1	Bowell	30689	(4932)
(4942)	13.0	0.15	19990122	117.76876	10.85533	278.34622	3.83348	0.1364018	2.2011050	69	9	1955–1998	0.75	M-v	1	Williams	31277	(4942)
(4952)	11.5	0.15	19990122	169.12077	104.21936	122.10307	16.95526	0.1039167	3.1636808	25	6	1975–1998	0.70	M-v	1	Bowell	32238	(4952)
(4962)	12.3	0.15	19990122	17.64301	141.96659	207.12316	15.10168	0.1472622	2.6074620	43	10	1952–1998	0.83	M-v	1	Sicoli	32748	(4962)
(4971)	13.1	0.15	19990122	284.88986	342.48669	104.85793	3.20496	0.1786310	2.3850778	98	11	1967–1998	0.83	M-v	1	Sicoli	31105	(4971)
(4994)	13.3	0.15	19990122	359.38961	3.17433	31.73762	1.73171	0.1983866	2.9075653	74	9	1965–1998	0.93	M-v	1	Sicoli	31141	(4994)
(5009)	13.6	0.15	19990122	160.63606	140.07601	44.21567	1.48436	0.1551924	2.3104703	73	10	1957–1998	0.90	M-v	1	Sicoli	31008	(5009)
(5034)	12.9	0.15	19990122	90.47946	328.54850	309.74871	4.30502	0.1823105	2.3042650	63	8	1977–1998	0.89	M-v	2	Sicoli	24909	(5034)
(5040)	13.2	0.15	19990122	23.98172	149.31745	175.79908	24.34716	0.2292094	2.4170153	85	5	1971–1998	0.58	M-v	1	Sicoli	27568	(5040)
(5137)	13.5	0.15	19990122	136.66789	25.60505	230.04026	14.19277	0.0715412	2.5640232	61	6	1982–1998	0.91	M-v	1	Williams	31789	(5137)
(5218)	13.8	0.15	19990122	61.03789	88.62365	256.15092	2.97890	0.1537077	2.3506320	43	6	1969–1998	0.62	M-v	1	Bowell	30093	(5218)
(5254)	8.8	0.15	19990122	6.16531	342.22443	76.04022	24.19009	0.1226949	5.2410765	41	7	1986–1998	0.80	M-v	1	Bowell	29922	(5254)
(5273)	14.0	0.15	19990122	340.83620	68.63298	18.45664	6.30265	0.0862349	2.3099113	32	8	1982–1998	0.86	M-v	1	Bowell	26178	(5273)

(5346)	12.0	0.15	19990122	52.16243	263.16151	71.69258	2.45276	0.1847682	3.1368822	99	8	1970–1998	0.75	M-v	1	Williams	32749	(5346)
(5367)	11.9	0.15	19990122	32.30415	137.07019	251.85413	10.72907	0.1229212	3.0405191	33	5	1982–1998	0.65	M-v	1	Bowell	32053	(5367)
(5375)	13.4	0.15	19990122	64.55853	242.80575	89.87711	2.44172	0.1762334	3.1668459	34	4	1989–1998	0.60	M-v	1	Bowell	32309	(5375)
(5700)	13.5	0.15	19990122	105.37974	124.60980	163.84089	12.94386	0.1648739	2.5960702	43	7	1977–1998	0.77	M-v	1	Bowell	30473	(5700)
(5854)	11.3	0.15	19990122	181.72415	166.93627	69.43432	2.50115	0.1400093	3.1679909	37	10	1976–1998	0.99	M-v	1	Williams	30984	(5854)
(6097)	12.9	0.15	19990122	16.22887	204.41682	205.11647	6.13456	0.0929028	2.3071501	72	8	1942–1998	0.76	M-v	1	Williams	31588	(6097)
(6355)	11.3	0.15	19990122	143.88729	238.69072	24.27318	22.39914	0.0751355	3.2021377	32	7	1955–1998	0.54	M-v	1	Williams	31249	(6355)
(6858)	12.6	0.15	19990122	320.92975	73.29027	344.09884	13.65275	0.1870762	2.5869484	41	6	1986–1998	0.60	M-v	1	Bowell	30690	(6858)
(6864)	13.9	0.15	19990122	349.36664	212.24610	229.28445	2.79604	0.1010403	2.2684290	56	5	1990–1998	0.70	M-v	1	Bowell	32314	(6864)
(6897)	14.5	0.15	19990122	342.10460	261.69908	191.37360	1.61346	0.1733472	2.3823588	74	7	1987–1998	0.84	M-v	1	Williams	30767	(6897)
(7017)	14.1	0.15	19990122	295.10728	28.35442	124.35070	7.34505	0.1151245	2.4282484	37	6	1987–1998	0.99	M-v	1	Bowell	30788	(7017)
(7022)	13.2	0.15	19990122	337.11955	239.21660	215.38403	14.04681	0.0697664	2.6140853	48	7	1985–1998	0.77	M-v	1	Williams	30284	(7022)
(7036)	11.8	0.15	19990122	197.27538	295.11393	273.68451	8.92373	0.1960653	3.1039725	38	6	1991–1998	0.68	M-v	1	Williams	31553	(7036)
(7053)	13.8	0.15	19990122	350.99961	351.59181	147.94266	3.70571	0.0871085	2.2662618	27	5	1989–1998	0.63	M-v	1	Bowell	30692	(7053)
(7099)	12.7	0.15	19990122	164.90366	150.10441	90.62021	2.23087	0.1248521	3.1543399	31	8	1978–1998	0.79	M-v	1	Bowell	30694	(7099)
(7358)	14.4	0.15	19990122	30.06159	90.98144	266.45579	4.66123	0.5017966	2.1983354	180	4	1959–1998	0.57	M-v	1	Williams	31147	(7358)
(7830)	14.3	0.15	19990122	147.71952	128.03614	128.19612	2.99235	0.1634550	2.3854850	25	6	1986–1998	0.76	M-v	1	Bowell	31797	(7830)
(7903)	13.9	0.15	19990122	341.22099	212.65138	218.13689	7.71469	0.0242778	3.0285569	44	6	1990–1998	0.95	M-v	1	Bowell	31265	(7903)
(7935)	13.2	0.15	19990122	169.66123	340.73781	261.57682	0.14627	0.1292065	3.0857407	53	9	1976–1998	0.66	M-v	1	Bowell	31593	(7935)
(7942)	12.3	0.15	19990122	176.40157	294.87816	305.82920	9.51867	0.0388418	3.1718097	32	5	1986–1998	0.64	M-v	1	Williams	32314	(7942)
(8084)	13.2	0.15	19990122	302.71837	79.42159	72.43983	2.15017	0.2165565	3.0665086	35	6	1976–1998	0.69	M-v	1	Bowell	31801	(8084)
A913 CF	14.5	0.15	19990122	38.67038	156.18767	192.92698	9.17478	0.0773111	2.9797905	29	3	1913–1998	0.73	M-v	4	Williams	23120	A913 CF
1958 TL ₁	12.5	0.15	19990122	77.97440	161.97823	203.75949	17.69157	0.1892226	3.1570061	52	4	1958–1998	0.75	M-v	1	Williams	31134	1958 TL ₁
1964 VN ₁	14.5	0.15	19990122	38.32742	341.36260	67.52056	7.05974	0.2249679	2.4189527	22	4	1964–1998	0.65	M-v	2	Williams	27117	1964 VN ₁
1971 UQ	15.6	0.15	19990122	33.65983	311.42865	55.18001	3.57224	0.1717272	2.2555915	41	3	1971–1998	0.83	M-v	4	Williams	32737	1971 UQ
1972 PA	11.8	0.15	19990122	30.83890	91.82414	264.32642	8.72824	0.1231318	2.9735756	67	4	1972–1998	0.59	M-v	2	Williams	32737	1972 PA
1972 TE	13.5	0.15	19990122	46.80012	158.07833	218.74339	4.38512	0.2682104	2.6378855	13	5	1959–1998	0.80	M-v	2	Williams	27323	1972 TE
1973 SS	11.5	0.15	19990122	314.42870	18.25698	97.08088	3.21617	0.0864055	5.1606590	21	4	1973–1998	0.77	M-v	2	Williams	30866	1973 SS
1973 SN ₁	12.0	0.15	19990122	268.59325	54.21007	102.00055	4.20462	0.0015990	5.1541492	23	4	1973–1998	0.82	M-v	1	Williams	29607	1973 SN ₁
1973 SO ₁	10.5	0.15	19990122	339.74410	272.42511	176.67810	8.46818	0.1289216	5.2264173	62	6	1973–1998	0.76	M-v	0	Williams	30892	1973 SO ₁
1973 SP ₁	11.1	0.15	19990122	310.11904	311.31740	156.06953	4.14908	0.0580317	5.2178406	49	6	1973–1998	0.65	M-v	0	Williams	30892	1973 SP ₁
1973 SA ₂	11.0	0.15	19990122	3.22719	331.53364	78.43028	5.84819	0.0319938	5.1933238	23	4	1951–1998	0.79	M-v	1	Williams	27725	1973 SA ₂
1975 LF ₁	12.5	0.15	19990122	56.60678	284.70872	25.02269	19.55183	0.0545541	3.1154429	23	5	1954–1998	0.51	M-v	1	Williams	32738	1975 LF ₁
1975 SB ₁	13.0	0.15	19990122	328.25215	68.28477	32.46525	9.59820	0.0437597	3.1662941	28	4	1975–1998	0.81	M-v	1	Williams	30684	1975 SB ₁
1975 SU ₁	13.0	0.15	19990122	199.12605	8.02777	173.21297	1.45931	0.1143299	3.2499714	34	3	1975–1998	0.97	M-v	5	Williams	32738	1975 SU ₁
1975 VW ₅	13.9	0.15	19990122	58.75617	270.06246	68.16832	8.46525	0.1452745	2.4475798	23	3	1975–1998	0.73	M-v	4	Williams	32738	1975 VW ₅
1976 SL ₅	14.0	0.15	19990122	311.16980	29.49158	14.92971	5.56193	0.0936882	2.7419033	27	3	1976–1998	0.63	M-v	4	Williams	32738	1976 SL ₅
1976 YF ₃	11.7	0.15	19990122	302.73145	243.36541	250.95222	13.39045	0.1030892	3.1486139	26	4	1976–1998	0.77	M-v	2	Williams	32508	1976 YF ₃
1977 DF ₂	13.5	0.15	19990122	294.60946	122.75022	4.95258	5.08994	0.0411186	2.7650359	32	6	1977–1998	0.83	M-v	1	Williams	30892	1977 DF ₂
1977 QD ₂	14.5	0.15	19990122	44.68790	0.17764	350.30374	5.61098	0.1918433	2.3001075	84	6	1977–1998	0.72	M-v	3	Williams	32738	1977 QD ₂
1977 TU ₃	13.1	0.15	19990122	3.43162	174.82154	215.23085	14.75501	0.1977112	3.0460433	33	2	1977–1998	0.68	M-v	4	Williams	32656	1977 TU ₃
1977 TO ₆	14.5	0.15	19990122	53.07865	256.35641	84.35952	6.98099	0.1883047	2.3065009	32	4	1977–1998	0.95	M-v	4	Williams	26187	1977 TO ₆
1978 PA ₃	15.1	0.15	19990122	68.85725	170.46813	169.10972	2.16225	0.1950767	2.2129919	35	3	1978–1998	0.81	M-v	3	Williams	32738	1978 PA ₃
1978 PX ₃	15.5	0.15	19990122	41.84315	30.87109	309.60755	5.30399	0.2190512	2.2289423	51	5	1955–1998	0.74	M-v	3	Williams	32738	1978 PX ₃
1978 PG ₄	14.5	0.15	19990122	39.96777	36.97196	303.06250	6.11997	0.2220412	2.2327425	65	2	1978–1998	0.56	M-v	3	Williams	32738	1978 PG ₄
1978 RL ₇	13.5	0.15	19990122	0.35365	161.22017	219.31024	1.07273	0.0737772	2.9133781	51	5	1978–1998	0.74	M-v	3	Marsden	32738	1978 RL ₇
1978 RH ₉	15.0	0.15	19990122	109.72054	151.78907	149.29650	4.12337	0.1424623	2.2050695	19	3	1978–1998	0.71	M-v	4	Williams	22270	1978 RH ₉
1978 SH ₃	14.8	0.15	19990122	35.44602	159.57522	213.81119	3.94168	0.1735200	2.2245299	50	3	1978–1998	0.78	M-v	3	Williams	32738	1978 SH ₃
1978 SA ₅	15.2	0.15	19990122	51.94470	215.39572	196.49904	0.81351	0.2003683	2.2031476	23	4	1978–1998	0.77	M-v	2	Williams	27118	1978 SA ₅
1978 SD ₇	14.7	0.15	19990122	77.83898	97.32744	216.94291	3.73685	0.2006080	2.2278985	66	3	1988–1998	0.78	M-v	3	Williams	32738	1978 SD ₇
1978 SJ ₇	13.6	0.15	19990122	50.85770	329.50929	1.40673	14.56605	0.1405458	2.9286466	50	4	1978–1998	0.74	M-v	4	Williams	32738	1978 SJ ₇
1978 UN ₅	15.1	0.15	19990122	47.58904	301.52942	11.01575	5.16886	0.2569109	2.5382021	47	6	1954–1998	0.67	M-v	2	Williams	32738	1978 UN ₅
1978 UD ₇	14.7	0.15	19990122	85.02843	280.81864	8.95782	8.49393	0.2119546	2.2397378	31	2	1978–1998	0.55	M-v	4	Williams	32657	1978 UD ₇

1978 VP ₃	13.6	0.15	19990122	304.63865	18.58892	84.32793	4.04271	0.0670414	2.9752537	35	3	1978–1998	0.78	M-v	3	Williams	32738	1978 VP ₃
1978 VY ₃	15.0	0.15	19990122	23.83000	102.73162	269.26132	3.25454	0.1436261	2.5508172	64	6	1978–1998	0.74	M-v	3	Williams	32738	1978 VY ₃
1978 VM ₇	15.0	0.15	19990122	59.75341	88.83438	241.25980	6.44973	0.2895887	2.5371562	22	4	1978–1998	0.43	M-v	4	Williams	28610	1978 VM ₇
1978 WU	14.6	0.15	19990122	43.21674	106.45799	240.37036	8.58986	0.2063471	2.5434738	24	3	1978–1998	0.70	M-v	4	Williams	32738	1978 WU
1978 YM	14.0	0.15	19990122	49.98933	19.63751	0.85160	7.82784	0.1366981	2.2336697	24	4	1974–1998	0.79	M-v	2	Williams	32509	1978 YM
1979 ML ₅	14.9	0.15	19990122	25.68051	210.27488	171.66969	5.17496	0.1326188	2.7574614	14	3	1975–1998	1.04	M-v	5	Williams	22429	1979 ML ₅
1979 QA ₂	14.5	0.15	19990122	175.62655	204.07578	21.18589	1.29647	0.1420261	2.3917342	21	3	1979–1998	0.69	M-v	5	Williams	23778	1979 QA ₂
1979 SO	13.5	0.15	19990122	65.09499	350.28696	8.68279	8.17714	0.2297186	2.7747432	23	3	1979–1998	0.72	M-v	4	Williams	31579	1979 SO
1980 BA	14.0	0.15	19990122	348.85023	332.89315	109.13436	6.85704	0.1675631	2.4724937	31	3	1980–1998	0.78	M-v	3	Williams	32509	1980 BA
1980 FH ₁	13.0	0.15	19990122	281.99111	172.84544	346.19421	11.99705	0.1094088	2.9317158	49	5	1980–1998	0.73	M-v	2	Williams	25225	1980 FH ₁
1980 FY ₂	13.5	0.15	19990122	299.73160	89.58113	2.60116	0.76351	0.0510767	3.0082806	30	3	1980–1998	0.91	M-v	6	Williams	25061	1980 FY ₂
1980 FH ₃	13.5	0.15	19990122	345.10552	220.76033	180.27586	8.59791	0.0834226	3.0158624	59	5	1980–1998	0.77	M-v	1	Williams	32738	1980 FH ₃
1981 DQ ₁	14.0	0.15	19990122	10.75720	164.45780	291.87774	8.39308	0.1618437	2.7857089	36	4	1978–1998	0.64	M-v	2	Williams	30754	1981 DQ ₁
1981 DV ₂	15.0	0.15	19990122	333.52587	245.51121	192.68133	22.36889	0.3019936	2.4209149	44	2	1981–1998	0.86	M-v	4	Williams	32739	1981 DV ₂
1981 EZ	15.0	0.15	19990122	324.80497	93.08959	20.71250	1.24846	0.1744193	2.4086292	73	4	1951–1998	0.95	M-v	2	Williams	32509	1981 EZ
1981 EF ₂	13.5	0.15	19990122	164.60510	325.51676	300.46516	6.49529	0.0316064	2.4274619	46	6	1981–1998	0.76	M-v	2	Williams	29653	1981 EF ₂
1981 EH ₃	14.5	0.15	19990122	73.07924	97.29953	263.86897	7.01345	0.1214524	2.4288206	21	5	1979–1998	1.03	M-v	2	Williams	28882	1981 EH ₃
1981 EU ₄	12.7	0.15	19990122	60.81721	31.63014	261.50318	8.99083	0.0729591	2.9892380	31	2	1981–1998	0.77	M-v	4	Williams	32657	1981 EU ₄
1981 EZ ₁₀	13.5	0.15	19990122	193.69994	27.28725	265.18527	3.25047	0.0415710	2.7840010	38	9	1951–1998	0.85	M-v	1	Williams	30892	1981 EZ ₁₀
1981 EP ₁₃	14.0	0.15	19990122	101.13568	18.82167	309.48596	4.98710	0.1182961	2.1480315	40	5	1981–1998	0.85	M-v	2	Williams	32509	1981 EP ₁₃
1981 EW ₁₃	14.5	0.15	19990122	278.72140	244.10550	271.29992	1.76873	0.0774750	2.4279706	34	5	1978–1998	0.93	M-v	2	Williams	24239	1981 EW ₁₃
1981 ED ₁₅	14.5	0.15	19990122	15.95658	125.31875	288.77136	3.08885	0.0813935	2.4302092	24	4	1949–1998	0.84	M-v	2	Williams	25423	1981 ED ₁₅
1981 EW ₁₇	15.0	0.15	19990122	4.37880	222.34668	218.08887	1.86905	0.1517166	2.4007469	27	5	1978–1998	0.85	M-v	2	Williams	27726	1981 EW ₁₇
1981 EE ₁₉	14.5	0.15	19990122	162.45309	51.87900	206.10229	1.87327	0.1664553	2.4576291	28	4	1981–1998	0.65	M-v	2	Williams	26918	1981 EE ₁₉
1981 EY ₁₉	13.5	0.15	19990122	117.53265	42.88316	260.08990	1.06902	0.0354604	2.8684909	26	6	1977–1998	0.85	M-v	1	Williams	28314	1981 EY ₁₉
1981 EN ₂₁	14.0	0.15	19990122	152.72753	54.63655	187.59837	1.79656	0.0137852	2.9067764	66	5	1981–1998	0.80	M-v	2	Williams	32739	1981 EN ₂₁
1981 EW ₂₄	13.1	0.15	19990122	54.22610	192.55020	162.16168	2.35455	0.0765071	2.8857338	66	11	1949–1998	0.83	M-v	1	Marsden	27726	1981 EW ₂₄
1981 EB ₂₅	13.5	0.15	19990122	46.99417	136.64864	178.88093	11.57724	0.2385142	2.9872646	79	4	1981–1998	0.85	M-v	2	Williams	32739	1981 EB ₂₅
1981 EP ₂₇	14.0	0.15	19990122	62.03151	157.34738	186.00299	12.49488	0.0417514	2.8975157	32	4	1978–1998	0.83	M-v	3	Williams	32739	1981 EP ₂₇
1981 EW ₃₀	15.0	0.15	19990122	65.52697	174.74603	171.17838	0.92483	0.1735621	2.1574600	45	4	1981–1998	0.85	M-v	2	Williams	32509	1981 EW ₃₀
1981 EB ₃₄	16.5	0.15	19990122	155.71954	50.15458	197.44047	4.12635	0.0307921	2.1610326	20	3	1981–1998	0.91	M-v	4	Williams	30075	1981 EB ₃₄
1981 ED ₃₄	15.4	0.15	19990122	4.25968	94.25469	305.74257	2.16918	0.1979407	2.4420672	47	4	1979–1998	0.69	M-v	2	Williams	32739	1981 ED ₃₄
1981 EX ₃₈	14.5	0.15	19990122	99.05622	31.33984	272.73751	7.23574	0.1874969	2.4769950	21	6	1954–1998	0.98	M-v	2	Williams	32299	1981 EX ₃₈
1981 EP ₄₁	16.0	0.15	19990122	5.87514	62.38788	355.73053	2.46754	0.1713742	2.4242882	20	3	1981–1998	0.67	M-v	4	Williams	27102	1981 EP ₄₁
1981 EQ ₄₇	15.1	0.15	19990122	17.07235	279.64689	127.20028	1.65084	0.1527004	2.4291204	37	4	1981–1998	0.86	M-v	2	Williams	32215	1981 EQ ₄₇
1981 JM ₂	14.5	0.15	19990122	203.90098	66.32521	215.20846	1.65010	0.1788107	2.4299426	36	7	1978–1998	0.60	M-v	1	Williams	30893	1981 JM ₂
1981 QJ ₂	14.7	0.15	19990122	13.61568	210.74690	152.46745	5.76504	0.1891321	2.2737950	21	2	1981–1998	0.81	M-v	4	Williams	32657	1981 QJ ₂
1981 QJ ₃	13.6	0.15	19990122	61.11047	200.28613	140.03427	2.62786	0.1885290	3.1133143	59	3	1981–1998	0.54	M-v	4	Williams	21101	1981 QJ ₃
1981 RB ₂	12.5	0.15	19990122	92.44165	47.27093	255.74392	12.92609	0.2012590	2.5874288	22	4	1981–1998	0.70	M-v	2	Williams	24759	1981 RB ₂
1981 RF ₂	12.0	0.15	19990122	46.75381	32.53324	255.18310	14.26116	0.1419203	3.2238552	64	4	1981–1998	0.78	M-v	2	Williams	32510	1981 RF ₂
1981 UU ₂₉	15.8	0.15	19990122	60.38165	109.45605	244.58799	1.29305	0.1929392	2.2524753	30	3	1981–1998	0.75	M-v	3	Williams	32510	1981 UU ₂₉
1981 VN	13.0	0.15	19990122	8.66662	16.30238	39.90823	15.90518	0.1052493	2.6208113	52	3	1981–1998	0.83	M-v	3	Williams	21564	1981 VN
1982 JD ₁	14.1	0.15	19990122	180.82863	36.28899	215.37234	8.39143	0.1735920	2.3804211	36	5	1982–1998	0.70	M-v	1	Williams	30685	1982 JD ₁
1982 SW ₃	14.5	0.15	19990122	60.56935	176.38971	202.45184	5.82076	0.2203025	2.1585703	17	3	1982–1998	0.79	M-v	3	Williams	30271	1982 SW ₃
1982 TK ₁	12.0	0.15	19990122	19.52836	176.03761	244.15357	9.78999	0.0857084	3.0089657	13	4	1930–1998	0.91	M-v	3	Williams	30650	1982 TK ₁
1982 US ₆	14.0	0.15	19990122	32.25427	323.16201	46.71708	8.06629	0.1576998	2.5351933	57	6	1982–1998	0.83	M-v	3	Williams	32739	1982 US ₆
1982 UC ₁₁	14.5	0.15	19990122	38.32472	133.11068	243.94047	3.41978	0.2086809	2.5194210	29	6	1982–1998	0.76	M-v	3	Williams	32510	1982 UC ₁₁
1982 UE ₁₂	13.5	0.15	19990122	355.67945	84.40098	328.67047	9.79351	0.0212987	2.5172737	74	7	1982–1998	0.64	M-v	3	Williams	32739	1982 UE ₁₂
1982 VP ₃	12.5	0.15	19990122	220.61063	200.53581	61.79052	13.57482	0.0585113	2.9428216	20	3	1982–1998	0.85	M-v	3	Williams	31135	1982 VP ₃
1982 VB ₄	14.3	0.15	19990122	297.29090	77.37679	57.57228	3.88206	0.1413200	2.5348213	26	4	1978–1998	0.70	M-v	5	Williams	24759	1982 VB ₄
1984 QU	15.0	0.15	19990122	43.16241	26.53969	352.56636	5.21637	0.2496759	2.2765929	19	3	1984–1998	0.90	M-v	3	Williams	32510	1984 QU
1984 SA	13.9	0.15	19990122	75.20989	77.66452	254.35936	5.87244	0.2223302	2.2842847	34	3	1984–1998	0.56	M-v	4	Williams	32510	1984 SA
1984 SZ ₅	14.8	0.15	19990122	84.14463	273.82343	13.34667	8.22499	0.2397499	2.3036482	92	4	1984–1998	0.74	M-v	3	Williams	32740	1984 SZ ₅

1984 SJ ₇	14.0	0.15	19990122	94.77886	68.08854	300.11548	7.62249	0.1238716	2.2419438	35	5	1984–1998	0.87	M-v	2	Williams	29654	1984 SJ ₇
1984 UR	13.5	0.15	19990122	20.36370	306.89466	48.62760	7.23903	0.1837613	2.3339297	18	4	1984–1998	0.90	M-v	4	Williams	32740	1984 UR
1984 WJ ₁	14.0	0.15	19990122	34.74462	351.32960	34.58860	10.75760	0.2047515	2.3195788	29	2	1984–1998	0.62	M-v	3	Williams	32740	1984 WJ ₁
1985 CD	13.3	0.15	19990122	88.79286	53.52796	152.05287	14.73774	0.1308161	2.5781200	68	3	1978–1998	0.66	M-v	3	Williams	32657	1985 CD
1985 CP ₂	14.9	0.15	19990122	334.60870	143.99024	295.80258	1.79303	0.1344829	2.3898733	66	3	1985–1998	0.82	M-v	4	Williams	32740	1985 CP ₂
1985 PE ₁	14.4	0.15	19990122	92.22233	8.99509	308.64872	3.14374	0.2382156	2.1629788	21	4	1979–1998	0.68	M-v	3	Williams	32510	1985 PE ₁
1985 QP	15.3	0.15	19990122	45.79738	0.58645	357.85699	3.14655	0.1772478	2.1857846	69	4	1971–1998	0.80	M-v	2	Williams	32740	1985 QP
1985 RJ	14.5	0.15	19990122	64.78784	120.07637	182.80723	12.12169	0.2818275	2.6478371	64	2	1985–1998	0.83	M-v	4	Williams	32740	1985 RJ
1985 RD ₃	15.2	0.15	19990122	7.56203	272.16975	117.19928	2.42723	0.1212752	2.1909049	72	4	1969–1998	0.69	M-v	3	Williams	32740	1985 RD ₃
1985 SX ₂	13.3	0.15	19990122	27.17809	77.91605	323.71037	3.67492	0.1401678	2.6207330	22	3	1981–1998	0.78	M-v	2	Williams	32740	1985 SX ₂
1985 SC ₃	15.5	0.15	19990122	54.14438	130.27404	221.11538	6.40613	0.1982918	2.1877320	42	4	1985–1998	0.73	M-v	2	Williams	32740	1985 SC ₃
1985 SM ₃	14.0	0.15	19990122	63.99538	83.27193	308.18741	3.85684	0.1414274	2.1523721	32	5	1985–1998	0.94	M-v	2	Williams	26578	1985 SM ₃
1985 UO ₃	13.0	0.15	19990122	71.19993	331.11645	31.81784	22.65517	0.0446906	2.6123473	26	4	1985–1998	0.84	M-v	3	Williams	32510	1985 UO ₃
1986 AA ₂	13.0	0.15	19990122	269.29735	61.39459	116.45934	5.77810	0.0237281	2.7084494	37	9	1978–1998	0.77	M-v	1	Williams	27324	1986 AA ₂
1986 CB ₂	14.0	0.15	19990122	197.26222	285.95101	299.36366	4.66546	0.1192763	2.2861573	50	5	1986–1998	0.62	M-v	1	Williams	26188	1986 CB ₂
1986 JD	14.0	0.15	19990122	165.62074	158.71714	102.89090	8.95599	0.1718702	2.3524073	37	8	1980–1998	0.69	M-v	1	Williams	30288	1986 JD
1986 PL ₁	12.8	0.15	19990122	65.79948	183.82058	128.36606	6.30126	0.1515504	3.2141017	60	2	1986–1998	0.79	M-v	4	Williams	32657	1986 PL ₁
1986 QR ₁	14.0	0.15	19990122	142.38278	289.45575	351.76598	4.34846	0.0953052	2.4272556	27	3	1986–1998	0.74	M-v	4	Williams	17819	1986 QR ₁
1986 QJ ₂	13.0	0.15	19990122	131.79019	271.57984	5.53162	4.58355	0.1405474	3.1144459	38	5	1951–1998	0.54	M-v	1	Williams	30685	1986 QJ ₂
1986 QP ₂	13.5	0.15	19990122	86.37517	191.13316	128.56236	2.32467	0.1883779	3.1507707	38	6	1981–1998	0.53	M-v	1	Williams	27119	1986 QP ₂
1986 RB ₁₂	11.5	0.15	19990122	55.29577	85.80618	265.19757	14.68016	0.1178038	3.1936278	13	3	1986–1998	0.87	M-v	4	Williams	32740	1986 RB ₁₂
1986 SC ₂	13.5	0.15	19990122	116.60136	57.14964	231.03964	11.33128	0.1793451	2.4569336	30	6	1982–1998	0.57	M-v	2	Williams	30288	1986 SC ₂
1986 TG ₁	13.5	0.15	19990122	19.22401	357.58929	359.10132	14.94092	0.1268595	2.5658148	42	4	1986–1998	0.76	M-v	3	Williams	32740	1986 TG ₁
1986 TV ₆	13.7	0.15	19990122	58.27149	356.06933	325.86632	7.44313	0.1905012	2.5578639	63	3	1986–1998	0.66	M-v	3	Marsden	32740	1986 TV ₆
1986 TT ₁₁	13.5	0.15	19990122	30.31219	329.23172	4.85010	13.93563	0.1905610	2.5674617	33	5	1986–1998	0.69	M-v	3	Williams	32740	1986 TT ₁₁
1986 TZ ₁₁	13.0	0.15	19990122	102.14028	81.58677	287.34901	4.97457	0.1513448	3.1063042	18	5	1954–1998	0.84	M-v	1	Williams	27566	1986 TZ ₁₁
1986 XT	14.8	0.15	19990122	17.64719	17.92452	355.16326	3.30612	0.2959927	2.5605355	97	7	1986–1998	0.76	M-v	2	Williams	32740	1986 XT
1987 BS ₁	13.5	0.15	19990122	349.08240	150.77436	295.08192	12.26404	0.1269047	2.5842124	43	6	1987–1998	0.74	M-v	2	Williams	32511	1987 BS ₁
1987 CH	14.5	0.15	19990122	249.16288	351.31121	147.32955	5.43084	0.0748003	2.2040471	43	3	1987–1998	0.83	M-v	4	Williams	32740	1987 CH
1987 DF ₆	13.0	0.15	19990122	213.86807	248.75298	330.28405	12.55653	0.1207855	2.6659764	42	4	1980–1998	0.41	M-v	1	Williams	31273	1987 DF ₆
1987 DN ₆	14.6	0.15	19990122	323.28008	179.80439	287.80989	2.41066	0.1679046	2.6278158	82	4	1987–1998	0.78	M-v	3	Williams	32740	1987 DN ₆
1987 QT	15.3	0.15	19990122	14.26822	45.80596	334.40611	8.34161	0.2202389	2.3810963	41	2	1987–1998	0.89	M-v	4	Williams	32740	1987 QT
1987 QC ₃	14.0	0.15	19990122	60.46627	77.29063	307.68013	5.72757	0.1239720	2.2922039	29	3	1987–1998	0.83	M-v	3	Williams	24911	1987 QC ₃
1987 QS ₅	13.5	0.15	19990122	21.96456	29.27645	333.56427	10.53073	0.1372588	3.0822776	76	3	1987–1998	0.68	M-v	3	Williams	32740	1987 QS ₅
1987 RR	13.1	0.15	19990122	12.81054	208.94000	156.62488	12.88238	0.1887831	3.1079304	77	2	1987–1998	0.63	M-v	3	Williams	32740	1987 RR
1987 SV ₃	14.0	0.15	19990122	88.13665	331.81609	3.87442	9.22398	0.1607101	2.3212422	40	4	1980–1998	0.79	M-v	3	Williams	32511	1987 SV ₃
1987 SH ₇	13.5	0.15	19990122	82.03437	53.93136	289.77454	18.67394	0.0789858	1.9394596	37	5	1987–1998	0.67	M-v	2	Williams	32511	1987 SH ₇
1987 ST ₁₁	14.0	0.15	19990122	18.78987	355.47711	45.47576	5.79419	0.1310512	2.3607208	41	4	1971–1998	0.77	M-v	2	Williams	29941	1987 ST ₁₁
1987 SP ₁₂	13.5	0.15	19990122	14.73611	187.32005	186.43264	2.72349	0.2665174	3.1080573	66	3	1976–1998	0.72	M-v	3	Williams	32740	1987 SP ₁₂
1987 UR	13.0	0.15	19990122	42.93270	19.57150	23.89644	6.00409	0.2670701	3.0149459	14	3	1961–1998	1.03	M-v	3	Williams	32658	1987 UR
1987 UT	14.5	0.15	19990122	72.94914	49.00574	296.23799	4.12828	0.2408934	2.3317583	23	3	1987–1998	0.76	M-v	2	Williams	32511	1987 UT
1987 UX	15.2	0.15	19990122	37.35157	159.88048	205.34998	24.44627	0.2443971	2.3846854	42	2	1987–1998	0.72	M-v	3	Williams	32658	1987 UX
1987 UA ₁	13.0	0.15	19990122	61.15144	122.62100	235.91098	11.37520	0.1409617	2.3613325	42	2	1987–1998	0.74	M-v	4	Williams	32443	1987 UA ₁
1987 UU ₄	14.0	0.15	19990122	27.19342	51.54079	47.79112	6.58600	0.1619063	2.3065241	29	7	1973–1998	0.79	M-v	2	Williams	30686	1987 UU ₄
1987 WD	14.0	0.15	19990122	70.37693	307.83625	13.77948	8.94399	0.1565078	2.3991368	74	3	1987–1998	0.79	M-v	3	Williams	32740	1987 WD
1987 WJ ₁	13.0	0.15	19990122	12.79495	357.30791	33.11962	7.11130	0.1394763	3.1475894	51	4	1987–1998	0.63	M-v	2	Williams	32740	1987 WJ ₁
1987 WT ₁	13.0	0.15	19990122	293.04597	45.31152	94.57275	4.58548	0.0971596	3.1985331	42	7	1987–1998	0.70	M-v	1	Williams	29655	1987 WT ₁
1987 YU ₁	10.7	0.15	19990122	18.29699	176.69702	227.57693	21.10648	0.1249791	5.1687668	24	4	1986–1998	0.77	M-v	1	Williams	30894	1987 YU ₁
1988 BY ₃	14.3	0.15	19990122	293.28173	297.63580	164.22735	6.99009	0.1099599	2.5171071	55	6	1978–1998	0.72	M-v	3	Williams	32740	1988 BY ₃
1988 CN ₄	13.5	0.15	19990122	271.35406	253.23989	219.31367	5.45493	0.1652952	2.5574437	69	6	1988–1998	0.77	M-v	2	Williams	32741	1988 CN ₄
1988 DE	13.5	0.15	19990122	217.02397	173.58359	352.94381	13.28382	0.0965586	2.5835690	47	2	1988–1998	0.69	M-v	4	Williams	32658	1988 DE
1988 FM	13.5	0.15	19990122	211.02039	183.15649	15.19543	13.72558	0.1142949	2.5629060	61	7	1951–1998	0.83	M-v	2	Williams	32741	1988 FM
1988 GD	13.5	0.15	19990122	277.49582	127.47625	100.51145	5.21285	0.1066936	2.4298963	28	6	1988–1998	0.74	M-v	1	Williams	30894	1988 GD

1988 GF	12.5	0.15	19990122	149.67054	49.87762	227.23829	13.34174	0.1768288	2.5940710	23	5	1981–1998	0.81	M-v	2	Williams	30469	1988 GF
1988 GQ	13.5	0.15	19990122	179.76119	102.81149	121.83290	11.71257	0.2392389	2.6070565	22	3	1988–1998	0.67	M-v	3	Marsden	32741	1988 GQ
1988 JW	14.0	0.15	19990122	160.51092	134.20536	109.09554	13.54190	0.2959334	2.6147774	37	6	1984–1998	0.75	M-v	2	Williams	30469	1988 JW
1988 PL	14.8	0.15	19990122	72.27712	135.54010	206.32365	1.96608	0.1389676	2.1848294	28	5	1971–1998	0.92	M-v	2	Williams	26579	1988 PL
1988 PL ₂	15.9	0.15	19990122	30.19805	7.37401	339.03590	7.23836	0.2215401	2.2472430	38	2	1988–1998	0.57	M-v	3	Williams	32741	1988 PL ₂
1988 RQ ₂	12.3	0.15	19990122	237.32621	252.33501	311.52565	10.90604	0.0706806	2.7790669	32	8	1954–1998	0.69	M-v	1	Williams	30780	1988 RQ ₂
1988 RY ₅	13.0	0.15	19990122	55.22885	163.49219	185.20451	1.99129	0.0916712	2.8266430	52	4	1979–1998	0.91	M-v	2	Williams	30894	1988 RY ₅
1988 SS ₂	15.5	0.15	19990122	39.77356	207.25808	151.87724	2.06961	0.1395368	2.2269307	52	2	1988–1998	0.70	M-v	4	Williams	32658	1988 SS ₂
1988 TT	12.9	0.15	19990122	21.30803	337.82536	4.29596	10.83105	0.1005439	3.0069963	57	5	1988–1998	0.79	M-v	2	Williams	32741	1988 TT
1988 UV	15.0	0.15	19990122	341.57632	206.57163	212.66923	7.46319	0.0972631	2.2510895	61	4	1978–1998	0.78	M-v	4	Williams	32741	1988 UV
1988 VY	13.7	0.15	19990122	16.43343	200.43062	200.30922	1.74840	0.1060437	2.9228264	40	4	1988–1998	0.73	M-v	1	Williams	31004	1988 VY
1988 VS ₁	14.0	0.15	19990122	80.88176	245.97244	102.13197	3.23512	0.2045755	2.2079093	31	5	1988–1998	0.74	M-v	2	Williams	30090	1988 VS ₁
1988 VR ₂	13.5	0.15	19990122	354.66244	0.55826	88.20122	13.23107	0.2722560	2.9345169	24	3	1988–1998	0.77	M-v	3	Williams	32741	1988 VR ₂
1988 VP ₃	14.8	0.15	19990122	19.43487	17.41010	34.18152	6.05741	0.1250506	2.2309304	36	4	1981–1998	0.81	M-v	4	Williams	21972	1988 VP ₃
1988 XX ₂	15.0	0.15	19990122	330.60828	7.43822	73.74682	2.22102	0.1751546	2.2901854	51	4	1988–1998	0.82	M-v	2	Williams	32741	1988 XX ₂
1989 AT	12.5	0.15	19990122	333.96389	354.24501	100.23200	13.23243	0.1156596	3.0292908	34	6	1989–1998	0.73	M-v	2	Williams	30469	1989 AT
1989 AS ₁	13.5	0.15	19990122	320.85317	102.25092	52.27995	2.90833	0.0907433	2.2456951	24	4	1989–1998	1.03	M-v	2	Williams	28315	1989 AS ₁
1989 AF ₃	14.3	0.15	19990122	284.29566	29.04103	110.75522	6.73196	0.1851566	2.3261783	32	4	1988–1998	0.77	M-v	2	Williams	32741	1989 AF ₃
1989 AJ ₆	14.0	0.15	19990122	143.20765	285.53071	318.11623	5.71259	0.1004241	2.3976236	73	3	1989–1998	0.77	M-v	4	Williams	32741	1989 AJ ₆
1989 AK ₆	14.0	0.15	19990122	124.59451	160.04379	122.60810	8.37588	0.0197972	3.1641499	37	3	1989–1998	0.57	M-v	3	Williams	32741	1989 AK ₆
1989 AL ₆	15.0	0.15	19990122	112.77729	247.05707	112.88934	1.78799	0.0890665	2.2391268	23	5	1986–1998	0.64	M-v	2	Williams	30686	1989 AL ₆
1989 CX	13.9	0.15	19990122	294.10819	145.90987	328.27476	24.36474	0.2296339	2.3467896	67	3	1989–1998	0.70	M-v	3	Williams	32741	1989 CX
1989 CS ₂	14.0	0.15	19990122	176.73542	50.36044	198.45394	6.55109	0.0660158	2.3385876	34	5	1987–1998	0.83	M-v	1	Williams	25648	1989 CS ₂
1989 CT ₂	14.4	0.15	19990122	103.36371	72.95911	225.22424	5.79297	0.1080762	2.3725711	47	5	1983–1998	0.69	M-v	1	Williams	32741	1989 CT ₂
1989 CY ₂	15.5	0.15	19990122	340.24695	216.78458	220.44271	5.16176	0.1358409	2.3219963	49	3	1989–1998	0.86	M-v	3	Williams	32741	1989 CY ₂
1989 CB ₃	14.0	0.15	19990122	319.83267	217.77684	264.45875	5.43583	0.1207111	2.2993780	26	4	1989–1998	1.05	M-v	2	Williams	32512	1989 CB ₃
1989 ET ₁	14.0	0.15	19990122	339.04986	88.20368	37.10323	6.24031	0.1058899	2.2942701	13	3	1989–1998	0.79	M-v	4	Williams	27103	1989 ET ₁
1989 EZ ₂	14.5	0.15	19990122	264.50628	264.45187	270.67541	6.79470	0.1151576	2.3175559	21	5	1980–1998	0.88	M-v	2	Williams	30469	1989 EZ ₂
1989 EJ ₆	14.0	0.15	19990122	262.73024	348.02740	135.73608	0.47427	0.0926001	3.2609808	35	3	1989–1998	0.96	M-v	5	Williams	32741	1989 EJ ₆
1989 GC ₁	14.5	0.15	19990122	95.12737	29.37025	294.41051	2.83509	0.1282122	2.4437922	33	6	1989–1998	0.73	M-v	2	Williams	29134	1989 GC ₁
1989 GQ ₁	14.8	0.15	19990122	148.02180	72.74910	248.96777	2.09149	0.1924997	2.3705364	17	3	1979–1998	0.88	M-v	3	Williams	16235	1989 GQ ₁
1989 GR ₃	14.5	0.15	19990122	83.21198	14.38756	257.01197	3.88622	0.2476983	2.5725462	48	4	1952–1998	0.63	M-v	1	Williams	32741	1989 GR ₃
1989 GU ₃	14.0	0.15	19990122	109.06244	20.31971	260.40522	4.11778	0.0979917	2.4751877	55	4	1989–1998	0.66	M-v	1	Williams	32741	1989 GU ₃
1989 GH ₈	15.0	0.15	19990122	293.63761	17.85883	91.14866	3.81594	0.1259083	2.4055799	40	3	1989–1998	0.80	M-v	4	Williams	32741	1989 GH ₈
1989 NE ₁	14.0	0.15	19990122	111.14405	258.90078	38.27563	12.74713	0.2531195	2.5667661	26	5	1976–1998	0.65	M-v	2	Williams	22699	1989 NE ₁
1989 PF	13.8	0.15	19990122	26.64310	190.83129	147.53327	18.70775	0.2412509	2.7448554	34	3	1984–1998	0.76	M-v	3	Williams	32741	1989 PF
1989 RX	13.2	0.15	19990122	23.88026	131.60134	237.14445	7.16917	0.2005880	2.6898115	27	2	1989–1998	0.77	M-v	4	Williams	32658	1989 RX
1989 RD ₁	13.5	0.15	19990122	45.10799	261.13604	87.02972	13.28277	0.1936232	2.6662342	30	3	1989–1998	0.60	M-v	3	Williams	30894	1989 RD ₁
1989 RY ₁	14.0	0.15	19990122	45.81991	147.98893	156.76394	15.25418	0.2790489	2.7628829	48	2	1989–1998	0.69	M-v	3	Williams	32741	1989 RY ₁
1989 SK ₃	13.5	0.15	19990122	283.71991	293.36700	179.28245	7.60431	0.1809352	2.8018710	34	3	1975–1998	0.74	M-v	5	Williams	32658	1989 SK ₃
1989 SN ₄	13.5	0.15	19990122	246.44626	52.57856	157.29118	4.25457	0.1292942	2.5996896	42	6	1979–1998	1.04	M-v	2	Williams	30894	1989 SN ₄
1989 SW ₈	13.5	0.15	19990122	40.22497	189.35318	183.14617	13.40884	0.1907537	2.6737429	36	3	1989–1998	0.71	M-v	3	Williams	32741	1989 SW ₈
1989 TH ₁	13.0	0.15	19990122	24.00046	45.62504	344.09877	8.20850	0.2918481	2.7163657	43	4	1962–1998	0.76	M-v	2	Williams	32741	1989 TH ₁
1989 TN ₁	14.7	0.15	19990122	354.73387	56.35559	342.27958	11.15496	0.2348142	2.7477831	48	2	1989–1998	0.65	M-v	4	Williams	32741	1989 TN ₁
1989 TU ₁	13.5	0.15	19990122	30.24189	160.14639	260.62387	6.66185	0.2841215	2.6699472	39	3	1989–1998	0.62	M-v	3	Williams	30469	1989 TU ₁
1989 TU ₄	15.2	0.15	19990122	80.37460	197.38574	106.06287	4.55247	0.1682747	2.7266284	33	3	1989–1998	0.92	M-v	4	Williams	30272	1989 TU ₄
1989 TR ₁₁	13.0	0.15	19990122	78.95636	324.53560	14.47324	12.79897	0.1977903	2.6463637	21	3	1979–1998	0.78	M-v	3	Williams	32512	1989 TR ₁₁
1989 TD ₁₆	13.5	0.15	19990122	44.09432	4.98099	348.66197	2.96091	0.0986045	2.7097346	58	3	1989–1998	0.64	M-v	4	Williams	32741	1989 TD ₁₆
1989 UL	13.4	0.15	19990122	349.08860	189.28267	217.97598	5.43878	0.1386333	2.7783029	63	4	1980–1998	0.79	M-v	2	Williams	32741	1989 UL
1989 UR	18.4	0.15	19990122	348.74502	289.25963	234.58935	10.30843	0.3559463	1.0802414	63	3	1989–1998	0.71	M-v	4	Williams	32741	1989 UR
1989 US ₁	13.2	0.15	19990122	73.79014	339.31627	31.88226	13.86838	0.2350500	2.6362281	34	3	1989–1998	0.97	M-v	3	Williams	27307	1989 US ₁
1989 UX ₇	13.5	0.15	19990122	32.50787	155.72429	228.88954	13.88434	0.2912076	2.6900515	24	2	1989–1998	0.74	M-v	3	Williams	32444	1989 UX ₇
1989 VS ₁	13.5	0.15	19990122	52.60448	296.58079	117.79443	3.63779	0.2011016	2.6294871	14	3	1989–1998	0.87	M-v	4	Williams	30273	1989 VS ₁

1989 WF ₁	13.5	0.15	19990122	31.79509	352.93038	60.92968	12.91346	0.2166943	2.6997382	25	6	1949–1998	1.06	M-v	2	Williams	29913	1989 WF ₁
1989 WZ ₂	12.5	0.15	19990122	251.11593	354.61612	24.38207	13.69038	0.1197033	3.1465500	23	2	1989–1998	0.57	M-v	5	Williams	32659	1989 WZ ₂
1989 YG ₅	12.0	0.15	19990122	153.81765	87.81753	88.64651	14.97900	0.1537447	3.1650385	42	5	1968–1998	0.60	M-v	1	Williams	29941	1989 YG ₅
1990 BA ₂	12.7	0.15	19990122	254.73840	189.32974	302.39104	10.52857	0.1469113	3.0478682	40	2	1990–1998	0.74	M-v	4	Williams	32741	1990 BA ₂
1990 EL ₂	15.5	0.15	19990122	195.30311	358.78153	213.54640	5.69567	0.1042720	2.2443975	34	4	1990–1998	0.79	M-v	3	Williams	32741	1990 EL ₂
1990 EQ ₂	15.5	0.15	19990122	317.54162	215.93453	254.61042	3.53019	0.0884472	2.1890938	41	4	1990–1998	0.76	M-v	3	Williams	32742	1990 EQ ₂
1990 EN ₄	13.5	0.15	19990122	303.91334	147.37983	337.36809	7.98130	0.0337614	2.9820487	22	4	1990–1998	0.75	M-v	2	Williams	25440	1990 EN ₄
1990 FK ₁	12.1	0.15	19990122	162.05198	68.42238	175.25136	11.45672	0.1695390	3.1790191	31	4	1984–1998	0.70	M-v	2	Marsden	30870	1990 FK ₁
1990 FD ₃	12.3	0.15	19990122	118.81443	100.32088	158.54451	15.68319	0.0345391	3.1508989	23	2	1990–1998	0.64	M-v	4	Williams	32659	1990 FD ₃
1990 HG	14.0	0.15	19990122	190.49914	166.65689	49.17724	23.75360	0.0753664	2.2810886	18	4	1981–1998	0.69	M-v	2	Williams	26189	1990 HG
1990 MR	14.5	0.15	19990122	162.72866	7.12769	248.47579	6.89114	0.2184854	2.3413907	28	5	1980–1998	0.78	M-v	2	Williams	30470	1990 MR
1990 OX ₁	14.0	0.15	19990122	66.76706	280.06310	86.99612	5.73306	0.1187443	2.3967173	39	4	1989–1998	0.61	M-v	3	Williams	31417	1990 OX ₁
1990 QM	13.6	0.15	19990122	115.40756	125.35468	160.57334	2.83531	0.1807362	2.4267037	50	5	1990–1998	0.71	M-v	1	Williams	30470	1990 QM
1990 QZ ₁	14.0	0.15	19990122	341.55860	119.14821	346.00631	7.17132	0.0812691	2.4004511	31	5	1990–1998	0.63	M-v	1	Williams	32512	1990 QZ ₁
1990 QL ₃	14.0	0.15	19990122	101.66176	325.37080	349.11981	5.66486	0.1456366	2.4280197	31	6	1978–1998	0.64	M-v	1	Williams	30289	1990 QL ₃
1990 QJ ₄	14.3	0.15	19990122	128.71324	123.80523	156.19115	2.44705	0.1945988	2.4122489	36	5	1990–1998	0.88	M-v	2	Williams	30289	1990 QJ ₄
1990 QE ₇	14.0	0.15	19990122	284.82691	319.18916	142.96293	2.13641	0.1215123	2.5360524	63	4	1990–1998	0.76	M-v	3	Williams	32742	1990 QE ₇
1990 QO ₈	14.3	0.15	19990122	303.17013	96.84233	341.73448	12.17682	0.1440141	2.5403230	51	2	1990–1998	0.81	M-v	4	Williams	32742	1990 QO ₈
1990 QC ₁₉	15.0	0.15	19990122	358.91980	117.81955	306.17644	22.00128	0.0699158	1.8976126	36	3	1989–1998	0.74	M-v	2	Williams	32742	1990 QC ₁₉
1990 RE ₂	14.0	0.15	19990122	38.15774	192.97378	195.24595	3.54055	0.1974724	2.4576349	49	6	1986–1998	0.75	M-v	2	Williams	26925	1990 RE ₂
1990 RR ₂	12.8	0.15	19990122	54.08108	173.16201	193.60773	6.65488	0.1378100	2.4571952	40	4	1977–1998	0.72	M-v	2	Williams	32512	1990 RR ₂
1990 RY ₂	13.0	0.15	19990122	34.52150	69.80624	278.32231	2.35482	0.2703063	3.9279306	39	3	1990–1998	0.42	M-v	3	Williams	30448	1990 RY ₂
1990 RS ₆	14.5	0.15	19990122	235.32548	213.44968	349.08267	6.20823	0.0699085	2.3821495	31	3	1990–1998	0.69	M-v	4	Williams	26740	1990 RS ₆
1990 RR ₇	14.5	0.15	19990122	80.80095	115.30596	164.21956	6.41500	0.1297494	2.5460942	56	4	1990–1998	0.70	M-v	2	Williams	32742	1990 RR ₇
1990 RF ₁₇	13.5	0.15	19990122	325.19834	225.88828	193.21219	13.44640	0.1612248	2.5760198	17	3	1986–1998	0.61	M-v	3	Williams	32445	1990 RF ₁₇
1990 SV	15.4	0.15	19990122	31.08405	23.03982	320.67257	4.47731	0.3034448	2.5399967	49	2	1990–1998	0.63	M-v	3	Williams	32742	1990 SV
1990 SY	13.5	0.15	19990122	39.46769	337.78133	331.02698	8.41713	0.1859276	2.5947133	34	4	1990–1998	0.83	M-v	3	Williams	32513	1990 SY
1990 SZ	14.0	0.15	19990122	342.82051	72.81532	346.98771	10.57804	0.1753634	2.5411139	52	6	1986–1998	0.77	M-v	2	Williams	32742	1990 SZ
1990 SX ₃	13.7	0.15	19990122	1.86860	60.22950	308.33445	12.31908	0.2183339	2.5861219	30	2	1990–1998	0.49	M-v	4	Williams	32742	1990 SX ₃
1990 SF ₄	14.0	0.15	19990122	67.75304	56.19962	230.44731	10.59238	0.2220511	2.5462832	42	3	1990–1998	0.72	M-v	4	Williams	32742	1990 SF ₄
1990 SD ₅	15.0	0.15	19990122	179.54085	213.70706	36.08534	3.26494	0.1633368	2.4050184	20	5	1989–1998	0.79	M-v	1	Williams	30470	1990 SD ₅
1990 SK ₂₈	13.5	0.15	19990122	34.46889	19.15775	346.90928	2.50709	0.1564570	2.5233360	55	3	1990–1998	0.52	M-v	4	Williams	32742	1990 SK ₂₈
1990 TJ	13.5	0.15	19990122	359.22508	349.77761	56.33104	4.89418	0.0654781	2.5302424	72	6	1978–1998	0.66	M-v	3	Williams	32742	1990 TJ
1990 TB ₄	14.0	0.15	19990122	285.50791	191.06744	281.09973	1.29431	0.1271792	2.5942623	37	5	1986–1998	0.68	M-v	3	Williams	32742	1990 TB ₄
1990 TO ₄	14.5	0.15	19990122	331.15638	5.54761	83.06907	10.40525	0.1649672	2.5456576	15	3	1982–1998	0.79	M-v	4	Williams	21974	1990 TO ₄
1990 UO ₁	14.5	0.15	19990122	11.92755	258.33632	126.62806	5.18197	0.1558311	2.5726124	59	4	1990–1998	0.61	M-v	3	Williams	32742	1990 UO ₁
1990 UU ₁	14.5	0.15	19990122	33.07332	174.27390	192.40780	13.59418	0.1771560	2.5528065	68	4	1990–1998	0.59	M-v	2	Williams	32742	1990 UU ₁
1990 UE ₅	16.0	0.15	19990122	81.19792	130.66304	201.38369	21.24102	0.0883696	1.9324024	41	2	1990–1998	0.59	M-v	4	Williams	32659	1990 UE ₅
1990 VL ₁	14.1	0.15	19990122	42.36459	111.61283	239.13577	8.45015	0.2169354	2.5567665	49	4	1990–1998	0.69	M-v	3	Williams	29942	1990 VL ₁
1990 VH ₃	14.5	0.15	19990122	342.34582	164.78342	267.07005	3.56067	0.2716930	2.5852356	52	2	1990–1998	0.65	M-v	4	Williams	32659	1990 VH ₃
1990 VK ₄	15.0	0.15	19990122	21.59308	268.24031	137.52214	5.36248	0.1835955	2.5266365	21	3	1990–1998	0.81	M-v	5	Williams	24739	1990 VK ₄
1990 VN ₄	13.5	0.15	19990122	199.43432	350.38933	205.82667	12.62938	0.1168765	2.6405522	78	3	1990–1998	0.67	M-v	3	Williams	32742	1990 VN ₄
1990 VS ₄	14.7	0.15	19990122	48.52115	138.63573	206.89587	11.91772	0.1934711	2.5679114	64	5	1986–1998	0.62	M-v	3	Williams	32742	1990 VS ₄
1990 VQ ₅	13.8	0.15	19990122	202.32035	74.61520	133.37207	8.73957	0.0626561	2.5913976	35	4	1990–1998	0.81	M-v	2	Williams	26925	1990 VQ ₅
1990 VG ₆	13.5	0.15	19990122	294.06465	348.89323	165.23383	8.07428	0.1162279	2.5269734	25	4	1990–1998	0.77	M-v	3	Williams	32513	1990 VG ₆
1990 VP ₆	13.0	0.15	19990122	77.74968	122.69839	203.19788	12.74076	0.0610277	2.5899126	74	3	1990–1998	0.53	M-v	3	Williams	32742	1990 VP ₆
1990 VW ₈	13.4	0.15	19990122	306.49621	238.50567	222.89686	12.95819	0.1638118	2.5895963	36	2	1990–1998	0.64	M-v	4	Williams	32742	1990 VW ₈
1990 WQ ₂	13.7	0.15	19990122	305.22249	216.92241	215.46534	6.60223	0.1680241	2.6848987	42	3	1990–1998	0.68	M-v	2	Williams	32742	1990 WQ ₂
1990 XF	12.0	0.15	19990122	313.99852	219.57314	293.19869	11.03894	0.2022236	2.5515958	32	6	1983–1998	0.80	M-v	3	Williams	25080	1990 XF
1990 YX	14.5	0.15	19990122	2.72802	77.85242	8.29141	5.24739	0.1365533	2.5528332	16	5	1977–1998	0.54	M-v	2	Williams	29134	1990 YX
1991 AK	13.0	0.15	19990122	294.66574	159.42532	333.06435	1.93922	0.0445633	2.6543432	32	6	1976–1998	0.71	M-v	1	Williams	30470	1991 AK
1991 AS ₁	13.0	0.15	19990122	357.89195	122.25853	317.85061	30.67215	0.2245104	2.6026813	25	3	1991–1998	0.61	M-v	2	Williams	25226	1991 AS ₁
1991 BK	13.7	0.15	19990122	316.32112	48.19775	67.24983	5.73142	0.2799960	2.6289642	62	4	1991–1998	0.70	M-v	2	Williams	32743	1991 BK

1991 CL	12.5	0.15	19990122	234.50178	50.20833	128.68166	13.92766	0.1570478	2.7662253	24	4	1989–1998	0.61	M-v	2	Williams	30895	1991 CL
1991 CO ₁	12.3	0.15	19990122	173.53522	337.03774	180.20339	9.83904	0.0297355	3.0192921	27	4	1981–1998	0.90	M-v	2	Williams	32743	1991 CO ₁
1991 CC ₃	13.5	0.15	19990122	221.16068	35.49592	180.29542	4.45581	0.1115133	2.7327012	36	5	1988–1998	0.78	M-v	1	Williams	28885	1991 CC ₃
1991 DG	19.0	0.15	19990122	179.18128	63.07056	180.31847	11.15235	0.3630250	1.4271574	40	4	1991–1998	0.83	M-v	2	Williams	28085	1991 DG
1991 DY	13.0	0.15	19990122	278.42583	342.01190	188.80738	7.10059	0.1446223	2.6670556	28	4	1991–1998	0.81	M-v	1	Williams	30895	1991 DY
1991 EE	17.5	0.15	19990122	80.58298	115.11605	169.11039	9.76244	0.6242981	2.2452034	87	4	1991–1998	0.63	M-v	1	Williams	32743	1991 EE
1991 EY ₃	13.8	0.15	19990122	188.69163	239.64722	317.27990	1.33569	0.1319314	2.8645423	51	4	1991–1998	0.74	M-v	2	Williams	32743	1991 EY ₃
1991 FG	13.5	0.15	19990122	261.46770	325.89805	204.41475	13.57763	0.3425642	2.7521901	34	4	1987–1998	0.85	M-v	3	Williams	32743	1991 FG
1991 FL ₂	13.0	0.15	19990122	6.52423	46.88137	347.70980	11.07490	0.0924329	2.8136090	61	3	1984–1998	0.56	M-v	3	Williams	32660	1991 FL ₂
1991 GP ₃	13.1	0.15	19990122	110.21035	60.32887	214.26239	2.35792	0.2114771	3.0580021	36	3	1989–1998	0.93	M-v	5	Williams	32743	1991 GP ₃
1991 GA ₆	13.3	0.15	19990122	99.02402	33.56706	285.51408	0.93445	0.0626014	2.8942249	49	5	1991–1998	0.69	M-v	1	Williams	28316	1991 GA ₆
1991 GZ ₉	14.0	0.15	19990122	278.29115	230.31475	283.68749	7.52609	0.2219436	2.7431670	24	8	1977–1998	0.59	M-v	1	Williams	30687	1991 GZ ₉
1991 LB	15.0	0.15	19990122	31.04395	121.62515	218.85492	4.82859	0.1950547	2.2261712	42	3	1991–1998	0.47	M-v	2	Williams	32743	1991 LB
1991 LU ₁	14.0	0.15	19990122	128.62563	61.57692	221.35986	5.47919	0.0571622	3.0392219	19	3	1991–1998	0.87	M-v	5	Williams	27556	1991 LU ₁
1991 NO ₆	15.0	0.15	19990122	10.88280	100.30969	276.08160	4.63205	0.1667445	2.2684512	36	3	1991–1998	0.66	M-v	3	Williams	32743	1991 NO ₆
1991 OO	15.0	0.15	19990122	38.28776	108.90479	231.65469	3.38428	0.2017430	2.2941176	71	3	1991–1998	0.60	M-v	3	Williams	32743	1991 OO
1991 OV	15.2	0.15	19990122	72.23404	146.04776	166.10389	5.16242	0.1899548	2.2660972	57	2	1991–1998	0.68	M-v	4	Williams	32660	1991 OV
1991 PV	15.5	0.15	19990122	78.18497	94.74412	221.48016	1.84900	0.2037256	2.2461152	42	2	1991–1998	0.67	M-v	4	Williams	32660	1991 PV
1991 PQ ₅	15.3	0.15	19990122	71.75605	163.50769	142.50125	6.62550	0.1322383	2.2724943	42	3	1991–1998	0.74	M-v	3	Williams	32743	1991 PQ ₅
1991 PT ₉	14.0	0.15	19990122	70.02835	357.61643	286.99332	24.75874	0.2183406	2.2866201	43	2	1991–1998	0.51	M-v	3	Williams	32743	1991 PT ₉
1991 PG ₁₁	14.9	0.15	19990122	59.61149	137.52252	179.36111	6.61389	0.2373773	2.3049297	75	4	1977–1998	0.69	M-v	2	Williams	32743	1991 PG ₁₁
1991 PO ₁₂	14.3	0.15	19990122	347.53841	273.40844	145.84505	5.11776	0.1713329	2.2689224	50	2	1991–1998	0.63	M-v	4	Williams	32660	1991 PO ₁₂
1991 PJ ₁₃	15.0	0.15	19990122	87.47796	344.55996	333.51478	2.65663	0.1539427	2.2393205	28	4	1991–1998	0.67	M-v	1	Williams	30782	1991 PJ ₁₃
1991 PM ₁₃	14.7	0.15	19990122	81.63836	278.87060	357.66745	4.06755	0.2059906	2.3042566	59	4	1977–1998	0.75	M-v	3	Williams	32743	1991 PM ₁₃
1991 PJ ₁₅	15.0	0.15	19990122	85.42947	167.57958	118.84078	3.04464	0.1435757	2.2954666	43	3	1981–1998	0.64	M-v	4	Williams	32743	1991 PJ ₁₅
1991 PQ ₁₆	14.0	0.15	19990122	326.64919	229.45462	169.89578	7.48210	0.0868971	2.3678706	23	3	1991–1998	0.76	M-v	3	Williams	32513	1991 PQ ₁₆
1991 PR ₁₆	15.0	0.15	19990122	70.48382	187.47306	138.46179	1.42348	0.1957713	2.2718817	26	3	1991–1998	0.58	M-v	3	Williams	32743	1991 PR ₁₆
1991 QJ	14.0	0.15	19990122	77.84511	162.48355	161.14166	5.98918	0.2063015	2.2516968	34	3	1981–1998	0.86	M-v	3	Williams	32448	1991 QJ
1991 RL ₁	14.3	0.15	19990122	86.70853	101.66101	193.17289	11.66004	0.1697410	2.2769332	65	2	1991–1998	0.59	M-v	4	Williams	32743	1991 RL ₁
1991 RC ₂	14.5	0.15	19990122	334.49570	82.90009	333.27543	7.38351	0.1270220	2.3206656	37	2	1991–1998	0.61	M-v	4	Williams	32743	1991 RC ₂
1991 RE ₂	14.9	0.15	19990122	4.30072	149.64036	265.58412	4.61970	0.1449710	2.2748996	24	3	1991–1998	0.60	M-v	3	Williams	31381	1991 RE ₂
1991 RS ₂	14.0	0.15	19990122	311.86552	242.49684	210.29462	6.48340	0.0638418	2.3062897	87	3	1991–1998	0.57	M-v	3	Marsden	32743	1991 RS ₂
1991 RU ₂	14.5	0.15	19990122	248.67284	271.90467	254.92413	4.47369	0.0919331	2.2778766	43	2	1991–1998	0.73	M-v	5	Williams	32660	1991 RU ₂
1991 RO ₃	15.0	0.15	19990122	112.86509	290.98257	329.08871	6.29530	0.0753377	2.3393052	23	2	1991–1998	0.90	M-v	5	Williams	32661	1991 RO ₃
1991 RT ₃	14.5	0.15	19990122	17.18046	177.06141	224.28399	5.01309	0.1476029	2.2875092	79	5	1977–1998	0.78	M-v	3	Williams	32743	1991 RT ₃
1991 RR ₄	14.5	0.15	19990122	40.14824	55.97458	336.52777	3.60222	0.1594645	2.2581992	41	5	1962–1998	0.75	M-v	2	Williams	32514	1991 RR ₄
1991 RA ₅	15.0	0.15	19990122	342.97908	112.84362	344.63988	3.73070	0.0640628	2.2476015	36	4	1991–1998	0.56	M-v	1	Williams	26758	1991 RA ₅
1991 RF ₆	14.5	0.15	19990122	66.62696	250.47752	112.42945	2.95627	0.2091848	2.2420869	24	4	1981–1998	0.75	M-v	2	Williams	30656	1991 RF ₆
1991 RL ₈	15.4	0.15	19990122	44.48409	337.07261	21.64381	7.37658	0.1908235	2.2961258	52	2	1991–1998	0.79	M-v	4	Williams	32661	1991 RL ₈
1991 RS ₈	14.4	0.15	19990122	343.77576	55.06315	352.52414	8.28422	0.1066936	2.3378562	60	4	1982–1998	0.60	M-v	3	Williams	32743	1991 RS ₈
1991 RY ₈	14.5	0.15	19990122	30.43562	9.87490	8.59443	3.75456	0.1383665	2.2917266	63	3	1991–1998	0.62	M-v	3	Williams	32743	1991 RY ₈
1991 RB ₁₀	14.5	0.15	19990122	59.34643	36.82466	300.52537	4.55015	0.1381238	2.2955948	59	3	1991–1998	0.65	M-v	4	Williams	32743	1991 RB ₁₀
1991 RR ₁₀	15.2	0.15	19990122	18.79851	20.95137	5.06773	6.80185	0.1226244	2.3118287	53	2	1991–1998	0.69	M-v	4	Williams	32661	1991 RR ₁₀
1991 RE ₁₅	14.0	0.15	19990122	85.33116	330.34768	343.22146	7.93906	0.2214457	2.2610081	34	4	1981–1998	0.74	M-v	2	Williams	32514	1991 RE ₁₅
1991 RK ₁₅	14.0	0.15	19990122	44.99490	334.62318	3.86556	5.18485	0.1561929	2.3115196	62	6	1963–1998	0.80	M-v	3	Marsden	32744	1991 RK ₁₅
1991 RV ₁₆	15.0	0.15	19990122	37.04453	19.16225	21.69672	7.15039	0.1159232	2.2371675	26	5	1954–1998	0.77	M-v	2	Williams	32514	1991 RV ₁₆
1991 RA ₁₇	14.9	0.15	19990122	51.59850	303.58256	35.61357	7.23809	0.1605096	2.3009768	70	3	1991–1998	0.64	M-v	3	Williams	32744	1991 RA ₁₇
1991 RT ₁₇	12.8	0.15	19990122	158.52475	54.57108	259.49320	1.53147	0.1435029	3.0741370	47	5	1953–1998	0.65	M-v	2	Williams	31138	1991 RT ₁₇
1991 RU ₁₇	13.6	0.15	19990122	48.80250	177.98351	191.23983	3.30976	0.0293478	2.2454037	47	5	1985–1998	0.67	M-v	2	Williams	32744	1991 RU ₁₇
1991 RX ₁₇	14.4	0.15	19990122	48.84508	148.37730	177.73687	4.36098	0.1438628	2.3178040	58	2	1991–1998	0.67	M-v	3	Williams	32744	1991 RX ₁₇
1991 RJ ₂₂	14.0	0.15	19990122	131.97166	214.50494	120.63313	4.48066	0.2110135	2.1451783	33	4	1991–1998	0.61	M-v	3	Williams	31417	1991 RJ ₂₂
1991 RO ₂₄	17.0	0.15	19990122	40.26371	179.07574	150.59236	9.56795	0.3083056	2.3176927	38	2	1991–1998	0.73	M-v	3	Williams	32744	1991 RO ₂₄
1991 RX ₄₀	16.0	0.15	19990122	10.58674	239.78762	153.21246	2.71220	0.1829849	2.3093961	39	2	1991–1998	0.90	M-v	5	Williams	32661	1991 RX ₄₀

1991 RJ ₄₁	15.1	0.15	19990122	30.20021	8.69326	12.90175	7.68058	0.1274958	2.2830519	51	2	1991–1998	0.58	M-v	4	Williams	32661	1991 RJ ₄₁
1991 SA	15.0	0.15	19990122	48.17870	56.39459	267.69095	5.65421	0.2585449	2.3282068	47	2	1991–1998	0.78	M-v	3	Williams	32744	1991 SA
1991 ST	14.0	0.15	19990122	115.57006	228.85584	79.72706	6.85610	0.2207142	2.2001149	20	6	1952–1998	0.89	M-v	2	Williams	31418	1991 ST
1991 SM ₂	14.0	0.15	19990122	356.60192	57.90437	15.88637	6.94985	0.0645715	2.2722149	27	3	1991–1998	0.72	M-v	3	Williams	32514	1991 SM ₂
1991 TK	14.5	0.15	19990122	215.31781	45.67629	107.88462	5.12319	0.0629980	2.3937344	39	3	1991–1998	0.69	M-v	4	Williams	32744	1991 TK
1991 TN	14.2	0.15	19990122	169.22639	113.10388	96.89421	5.59713	0.1092124	2.3517410	31	4	1991–1998	0.68	M-v	2	Williams	32744	1991 TN
1991 TH ₁	15.0	0.15	19990122	31.03558	2.66724	18.37785	22.97272	0.2234485	2.2971861	46	2	1991–1998	0.72	M-v	3	Williams	32744	1991 TH ₁
1991 TK ₁	14.5	0.15	19990122	324.13368	114.82678	336.77889	21.98480	0.2940419	2.3490709	44	2	1991–1998	0.82	M-v	4	Williams	32744	1991 TK ₁
1991 TV ₄	14.0	0.15	19990122	139.62595	206.89506	126.23664	3.03599	0.1748193	2.1718624	35	5	1977–1998	0.77	M-v	2	Williams	30290	1991 TV ₄
1991 TX ₄	14.5	0.15	19990122	5.53289	116.05970	358.14316	5.83906	0.1434653	2.2138089	23	4	1991–1998	0.99	M-v	2	Williams	29943	1991 TX ₄
1991 UR	14.5	0.15	19990122	57.40851	331.27350	10.69277	6.92591	0.1283355	2.3186131	56	2	1991–1998	0.66	M-v	4	Williams	32661	1991 UR
1991 UK ₁	14.0	0.15	19990122	67.02023	11.18147	333.25937	4.88042	0.2137769	2.2781087	25	2	1991–1998	0.86	M-v	4	Williams	32451	1991 UK ₁
1991 UR ₁	14.5	0.15	19990122	349.97194	9.49812	41.92089	1.93386	0.1533058	2.3626638	45	4	1980–1998	0.77	M-v	1	Williams	32744	1991 UR ₁
1991 UO ₂	14.1	0.15	19990122	14.32621	290.00180	113.13780	4.74104	0.1972328	2.3239597	69	5	1984–1998	0.87	M-v	2	Williams	32744	1991 UO ₂
1991 UN ₃	13.5	0.15	19990122	45.26564	304.65776	84.33857	4.56429	0.0970229	2.2940248	37	3	1991–1998	0.88	M-v	3	Williams	32514	1991 UN ₃
1991 UZ ₃	15.5	0.15	19990122	330.52758	291.01147	130.71713	1.77265	0.1717430	2.3852970	26	2	1991–1998	0.75	M-v	3	Williams	32744	1991 UZ ₃
1991 UE ₅	14.4	0.15	19990122	344.19125	159.40895	300.81460	7.20294	0.1878472	2.3193941	32	5	1980–1998	0.58	M-v	1	Williams	27120	1991 UE ₅
1991 VM	14.0	0.15	19990122	52.52452	303.16699	93.97084	5.55750	0.1908426	2.2640936	29	7	1955–1998	0.77	M-v	1	Williams	28615	1991 VM
1991 VL ₁	14.5	0.15	19990122	121.11894	256.28672	102.71845	5.96640	0.1262787	2.1752495	37	5	1991–1998	0.44	M-v	2	Williams	30687	1991 VL ₁
1991 VQ ₁	13.5	0.15	19990122	54.23996	297.44595	71.86220	7.34580	0.2070737	2.2806679	37	3	1991–1998	0.77	M-v	3	Williams	32514	1991 VQ ₁
1991 VY ₁	13.8	0.15	19990122	14.05690	91.52475	274.18057	22.07678	0.2805680	2.3678821	25	2	1991–1998	0.69	M-v	3	Williams	32225	1991 VY ₁
1991 VF ₂	14.5	0.15	19990122	13.81358	247.07652	216.33535	5.64829	0.1393025	2.2438214	22	4	1989–1998	0.61	M-v	1	Williams	27325	1991 VF ₂
1991 VZ ₂	16.0	0.15	19990122	38.38547	336.79547	23.40903	3.98515	0.3531553	2.3226260	47	4	1959–1998	0.78	M-v	2	Williams	32744	1991 VZ ₂
1991 VG ₃	14.5	0.15	19990122	31.54973	178.69512	219.03021	25.83852	0.1688113	2.2655310	33	3	1991–1998	0.74	M-v	3	Williams	27325	1991 VG ₃
1991 VC ₅	13.5	0.15	19990122	327.81889	24.25180	52.18444	7.66565	0.0958098	2.3604144	37	4	1973–1998	0.79	M-v	2	Williams	32744	1991 VC ₅
1991 VM ₅	14.2	0.15	19990122	57.16242	267.31979	70.06972	6.34612	0.2115431	2.3240227	38	3	1977–1998	0.66	M-v	3	Williams	32744	1991 VM ₅
1991 XC	13.9	0.15	19990122	313.26003	92.23334	0.98195	21.37546	0.3028906	2.4406640	48	3	1991–1998	0.54	M-v	2	Williams	32744	1991 XC
1991 XZ	14.0	0.15	19990122	1.20997	152.48742	330.32298	4.32988	0.1766128	2.2792896	27	8	1975–1998	0.93	M-v	2	Williams	30687	1991 XZ
1991 XH ₁	14.5	0.15	19990122	343.46066	11.23239	47.65426	1.92934	0.1771032	2.4134146	31	4	1983–1998	0.58	M-v	2	Williams	32662	1991 XH ₁
1991 YL ₁	14.5	0.15	19990122	287.66607	200.17752	313.02947	0.79142	0.1396598	2.3831854	21	4	1991–1998	0.67	M-v	2	Williams	30687	1991 YL ₁
1992 AT ₂	14.0	0.15	19990122	130.20109	330.95604	293.23437	3.72258	0.1845173	2.5403494	21	4	1984–1998	0.85	M-v	4	Williams	25065	1992 AT ₂
1992 BQ ₂	14.0	0.15	19990122	247.44095	283.17325	236.53450	4.34612	0.0639995	2.4897212	17	3	1992–1998	0.87	M-v	6	Williams	26563	1992 BQ ₂
1992 CD ₁	13.5	0.15	19990122	337.61531	311.21459	187.96780	2.91758	0.1293081	2.3624501	35	5	1952–1998	0.77	M-v	1	Williams	30896	1992 CD ₁
1992 CS ₂	14.0	0.15	19990122	164.11673	331.93689	261.32427	4.55558	0.0661652	2.5204038	44	3	1992–1998	0.75	M-v	4	Williams	32744	1992 CS ₂
1992 CD ₃	14.2	0.15	19990122	30.93075	184.01441	154.17634	10.25328	0.1035849	2.5631243	53	3	1992–1998	0.73	M-v	3	Williams	32744	1992 CD ₃
1992 CG ₃	13.7	0.15	19990122	352.80919	257.11835	176.30046	6.24283	0.0984800	2.4142214	35	2	1992–1998	0.83	M-v	4	Williams	32452	1992 CG ₃
1992 DZ ₂	14.0	0.15	19990122	327.71482	58.69437	53.24455	1.27863	0.0819914	2.4502906	41	6	1954–1998	0.65	M-v	1	Williams	27935	1992 DZ ₂
1992 DU ₅	14.3	0.15	19990122	1.12310	233.74016	148.33866	10.18089	0.2168669	2.5823445	48	4	1990–1998	0.61	M-v	2	Williams	32744	1992 DU ₅
1992 DJ ₈	15.0	0.15	19990122	228.17620	343.06076	210.18973	4.08791	0.1582969	2.5369929	19	4	1992–1998	0.47	M-v	2	Williams	30687	1992 DJ ₈
1992 EA ₆	14.2	0.15	19990122	349.38733	315.72728	127.86059	7.13213	0.1533756	2.4430456	21	4	1986–1998	0.76	M-v	2	Williams	32452	1992 EA ₆
1992 EX ₈	12.5	0.15	19990122	295.22994	318.20680	144.01829	15.69060	0.0514570	2.5703145	41	4	1977–1998	0.59	M-v	2	Williams	32744	1992 EX ₈
1992 EW ₉	12.5	0.15	19990122	21.19924	209.52837	154.85628	15.18550	0.1248637	2.5885574	47	4	1971–1998	0.67	M-v	2	Williams	32744	1992 EW ₉
1992 EP ₁₀	14.5	0.15	19990122	216.84675	39.73381	163.10739	14.77840	0.0486687	2.5331953	27	3	1992–1998	0.38	M-v	3	Williams	27455	1992 EP ₁₀
1992 EG ₁₁	14.0	0.15	19990122	108.17519	105.24812	159.05649	13.10225	0.1550623	2.7174887	35	2	1992–1998	0.62	M-v	5	Williams	32662	1992 EG ₁₁
1992 EZ ₁₁	13.6	0.15	19990122	36.94124	191.81543	133.47313	5.49854	0.1412280	2.7091616	41	2	1992–1998	0.64	M-v	3	Williams	32745	1992 EZ ₁₁
1992 EK ₁₂	15.4	0.15	19990122	4.10283	243.37788	157.80042	11.95561	0.1389980	2.5280058	27	3	1992–1998	0.57	M-v	4	Williams	32745	1992 EK ₁₂
1992 EK ₁₄	13.5	0.15	19990122	48.58983	19.00415	336.30760	3.59954	0.2562888	2.5500021	37	4	1980–1998	0.63	M-v	2	Williams	32514	1992 EK ₁₄
1992 EB ₂₆	15.0	0.15	19990122	318.02327	120.60301	348.76046	9.05809	0.1825143	2.4667978	18	3	1992–1998	0.73	M-v	2	Williams	27713	1992 EB ₂₆
1992 FV ₁	12.5	0.15	19990122	218.56823	167.60676	46.66290	8.59022	0.1706759	2.5839719	24	6	1942–1998	0.67	M-v	2	Williams	29660	1992 FV ₁
1992 GA	14.0	0.15	19990122	214.77268	247.95856	309.96908	11.66644	0.1192920	2.6355507	40	4	1992–1998	0.77	M-v	2	Williams	32745	1992 GA
1992 GH	14.0	0.15	19990122	90.28629	7.15272	351.99682	19.23324	0.0762266	1.8616101	31	6	1982–1998	0.66	M-v	2	Williams	29660	1992 GH
1992 GB ₁	13.5	0.15	19990122	291.11579	136.70265	39.01076	24.24235	0.2119385	2.4264112	30	5	1988–1998	0.81	M-v	2	Williams	29135	1992 GB ₁
1992 HA ₄	14.0	0.15	19990122	125.49161	346.12527	275.49672	0.19067	0.0822106	2.7537837	47	3	1992–1998	0.71	M-v	4	Williams	32745	1992 HA ₄

1992 HS ₄	13.2	0.15	19990122	119.27500	179.51156	100.24353	9.44733	0.1911336	2.8003731	22	3	1992–1998	0.47	M-v	3	Williams	30657	1992 HS ₄
1992 JB ₂	12.0	0.15	19990122	57.74070	149.19429	218.44858	11.07818	0.0635853	2.6430882	22	3	1992–1998	0.74	M-v	4	Williams	32514	1992 JB ₂
1992 KD	15.5	0.15	19990122	309.96242	355.36537	242.16116	28.94845	0.4335380	2.3415857	73	4	1992–1998	0.74	M-v	2	Williams	28615	1992 KD
1992 OF ₁	12.3	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	32745	1992 OF ₁
1992 OP ₁	12.5	0.15	19990122	63.73443	101.58820	240.46984	15.04312	0.1107671	3.0372022	25	4	1982–1998	0.65	M-v	2	Williams	27309	1992 OP ₁
1992 PB ₁	13.5	0.15	19990122	14.94146	220.89798	149.51247	8.02105	0.1170291	3.1491626	43	2	1992–1998	0.78	M-v	4	Williams	32662	1992 PB ₁
1992 PB ₂	13.3	0.15	19990122	45.26753	84.05864	248.13908	5.48636	0.1544900	3.1580132	74	2	1992–1998	0.58	M-v	5	Williams	32745	1992 PB ₂
1992 PH ₂	13.0	0.15	19990122	64.12667	69.39142	271.45187	9.44135	0.1400422	3.0396383	26	4	1987–1998	0.66	M-v	2	Williams	30657	1992 PH ₂
1992 RO ₃	14.5	0.15	19990122	124.96087	81.23712	199.28531	0.43633	0.1378764	3.0286790	15	3	1992–1998	0.95	M-v	5	Williams	30757	1992 RO ₃
1992 RX ₆	12.5	0.15	19990122	40.03822	22.13340	8.39091	9.52815	0.0927466	3.0405143	24	3	1992–1998	0.72	M-v	3	Williams	32515	1992 RX ₆
1992 SB ₁	12.0	0.15	19990122	60.86385	346.03867	1.94978	17.05596	0.1671015	3.1671618	35	3	1992–1998	0.70	M-v	3	Williams	32515	1992 SB ₁
1992 SF ₁₁	13.5	0.15	19990122	295.45711	304.54779	176.07961	1.53149	0.1175720	3.1909259	47	3	1992–1998	0.73	M-v	4	Williams	32745	1992 SF ₁₁
1992 UM ₉	13.1	0.15	19990122	66.53844	161.54393	186.52385	6.46040	0.1309869	3.1864326	26	4	1992–1998	0.70	M-v	1	Williams	32515	1992 UM ₉
1992 WF ₁	12.0	0.15	19990122	101.73348	262.48436	101.77803	11.06696	0.1010914	3.0287176	24	3	1992–1998	0.59	M-v	4	Williams	32745	1992 WF ₁
1992 YW ₁	14.4	0.15	19990122	186.38191	260.70902	302.45273	3.78474	0.1115073	2.2624227	53	3	1990–1998	0.72	M-v	4	Williams	32662	1992 YW ₁
1993 BJ ₂	13.0	0.15	19990122	75.38628	159.41991	122.68390	6.98154	0.1362545	2.4077215	33	2	1993–1998	0.69	M-v	4	Williams	32663	1993 BJ ₂
1993 BM ₃	15.0	0.15	19990122	174.16213	185.61026	29.61650	6.56510	0.0582602	2.3351443	43	2	1993–1998	0.71	M-v	5	Williams	32663	1993 BM ₃
1993 DD ₁	13.5	0.15	19990122	313.74686	131.15774	18.21623	4.74371	0.0561582	2.1873549	20	4	1991–1998	0.85	M-v	2	Williams	29102	1993 DD ₁
1993 DG ₂	14.0	0.15	19990122	263.89397	47.44483	129.64901	6.49346	0.1133703	2.2374830	36	5	1993–1998	0.83	M-v	2	Williams	31585	1993 DG ₂
1993 EE	14.8	0.15	19990122	229.29967	67.82848	136.42670	3.94936	0.1468224	2.2823863	43	4	1993–1998	0.75	M-v	2	Williams	30471	1993 EE
1993 EQ	13.5	0.15	19990122	257.09219	158.15920	14.59650	7.18278	0.0467211	2.2845819	23	4	1991–1998	0.65	M-v	2	Williams	29102	1993 EQ
1993 FY ₅	15.5	0.15	19990122	280.89265	103.22827	25.48919	4.56512	0.0773520	2.3243484	25	2	1993–1998	0.77	M-v	6	Williams	32663	1993 FY ₅
1993 FZ ₆	14.5	0.15	19990122	131.30209	208.95541	69.48042	3.30408	0.1999333	2.3992280	16	3	1993–1998	0.73	M-v	4	Williams	30291	1993 FZ ₆
1993 FH ₇	14.5	0.15	19990122	125.15794	200.33015	88.66759	3.52036	0.2036419	2.3882738	16	3	1993–1998	0.77	M-v	4	Williams	30274	1993 FH ₇
1993 FT ₇	15.1	0.15	19990122	21.78877	215.45357	155.85408	6.41829	0.1183012	2.3811022	42	3	1991–1998	0.76	M-v	4	Williams	32745	1993 FT ₇
1993 FG ₈	14.5	0.15	19990122	37.19991	209.92174	169.74604	12.44653	0.1911018	2.3065244	23	2	1993–1998	0.56	M-v	4	Williams	32454	1993 FG ₈
1993 FL ₈	14.0	0.15	19990122	143.21924	229.63468	36.32284	7.33554	0.1007543	2.3711019	27	3	1976–1998	0.61	M-v	4	Williams	23522	1993 FL ₈
1993 FK ₉	15.0	0.15	19990122	324.78848	37.42159	37.51467	5.75443	0.0883375	2.3439800	25	2	1993–1998	0.78	M-v	5	Williams	32663	1993 FK ₉
1993 FN ₉	14.8	0.15	19990122	309.29127	49.41686	47.12541	4.04981	0.0515920	2.3381705	45	2	1993–1998	0.75	M-v	5	Williams	32663	1993 FN ₉
1993 FS ₁₀	14.4	0.15	19990122	55.20625	147.74810	173.25903	6.88232	0.0951508	2.4610604	40	3	1993–1998	0.60	M-v	3	Williams	32745	1993 FS ₁₀
1993 FR ₁₁	13.9	0.15	19990122	54.20616	129.20644	171.99769	13.77316	0.1646640	2.5663172	28	4	1989–1998	0.54	M-v	2	Williams	32745	1993 FR ₁₁
1993 FU ₁₇	14.0	0.15	19990122	19.29780	12.28540	46.94919	7.34930	0.1342532	2.2467732	31	5	1991–1998	0.78	M-v	2	Williams	32515	1993 FU ₁₇
1993 FH ₂₀	15.0	0.15	19990122	344.20908	116.54210	285.08347	1.73083	0.1716020	2.3729823	21	3	1993–1998	0.85	M-v	4	Williams	32515	1993 FH ₂₀
1993 FV ₂₄	15.5	0.15	19990122	135.15919	350.09617	269.30124	1.42891	0.1737496	2.4477372	36	4	1993–1998	0.64	M-v	2	Williams	32745	1993 FV ₂₄
1993 FH ₂₅	13.5	0.15	19990122	103.89351	78.60782	201.63735	4.93475	0.0534773	2.4475649	65	4	1987–1998	0.72	M-v	2	Williams	32745	1993 FH ₂₅
1993 FS ₂₆	13.7	0.15	19990122	184.14874	287.86382	285.83215	2.60418	0.0848095	2.3983698	50	3	1993–1998	0.73	M-v	4	Williams	32745	1993 FS ₂₆
1993 FV ₂₇	14.5	0.15	19990122	287.20739	215.68145	293.37816	1.77144	0.0564996	2.2680805	17	4	1993–1998	0.84	M-v	3	Williams	26580	1993 FV ₂₇
1993 FT ₃₁	14.5	0.15	19990122	89.41217	212.45769	148.75532	5.60058	0.2302550	2.2682670	39	7	1953–1998	0.67	M-v	2	Williams	30471	1993 FT ₃₁
1993 FY ₃₄	15.0	0.15	19990122	137.01402	85.89327	172.25021	6.25141	0.0997893	2.4262888	24	4	1993–1998	0.53	M-v	2	Williams	30092	1993 FY ₃₄
1993 FY ₃₇	14.5	0.15	19990122	52.32289	211.25412	170.62257	4.27174	0.1860515	2.2906555	23	4	1991–1998	0.66	M-v	2	Williams	30451	1993 FY ₃₇
1993 FV ₄₅	14.4	0.15	19990122	63.19648	139.21421	170.15432	5.62465	0.2731856	2.5415136	57	2	1993–1998	0.57	M-v	4	Williams	32664	1993 FV ₄₅
1993 FC ₄₆	15.7	0.15	19990122	126.33100	32.14584	241.90498	0.37502	0.1750302	2.4292765	38	3	1993–1998	0.59	M-v	4	Williams	30451	1993 FC ₄₆
1993 FS ₅₀	15.5	0.15	19990122	111.07687	315.13128	338.26960	2.09809	0.1218146	2.3962430	21	4	1979–1998	0.60	M-v	1	Williams	24241	1993 FS ₅₀
1993 FY ₅₅	15.5	0.15	19990122	85.54931	228.14594	53.61658	5.40094	0.2273751	2.5558357	22	3	1981–1998	0.63	M-v	3	Williams	32746	1993 FY ₅₅
1993 FE ₇₆	15.0	0.15	19990122	60.16313	114.57222	206.54370	3.73484	0.3144782	2.5462252	44	2	1993–1998	0.60	M-v	4	Williams	32664	1993 FE ₇₆
1993 FX ₇₉	14.0	0.15	19990122	70.91601	122.14409	195.51680	1.81956	0.1301820	2.4502226	87	3	1993–1998	0.64	M-v	3	Williams	32746	1993 FX ₇₉
1993 GO	13.5	0.15	19990122	163.73062	144.12655	57.82457	13.55639	0.1845737	2.5411847	62	6	1985–1998	0.71	M-v	1	Williams	32746	1993 GO
1993 GA ₁	14.0	0.15	19990122	39.32841	14.09175	7.60160	7.12088	0.1186111	2.3118551	32	3	1993–1998	0.85	M-v	3	Williams	27446	1993 GA ₁
1993 HR ₁	14.5	0.15	19990122	183.86467	116.62933	110.31586	3.04451	0.1690258	2.4037362	19	5	1990–1998	0.90	M-v	2	Williams	23980	1993 HR ₁
1993 HA ₆	13.5	0.15	19990122	132.46950	181.42204	43.11413	6.29843	0.1569826	2.5516816	46	4	1989–1998	0.75	M-v	3	Williams	32746	1993 HA ₆
1993 JB ₁	14.0	0.15	19990122	260.30131	274.37188	233.14790	6.13188	0.1780140	2.4159414	44	5	1970–1998	0.80	M-v	1	Williams	32746	1993 JB ₁
1993 LS ₁	14.0	0.15	19990122	63.15643	24.42442	301.40400	12.82207	0.1778319	2.5473795	15	3	1982–1998	0.60	M-v	3	Williams	24109	1993 LS ₁
1993 LZ ₁	13.6	0.15	19990122	105.67055	86.71621	275.50931	5.75352	0.1270895	2.3815882	22	6	1979–1998	0.84	M-v	1	Williams	30688	1993 LZ ₁

1993 MB	13.5	0.15	19990122	109.47505	63.45541	203.71693	13.28429	0.1859724	2.6771866	71	4	1949–1998	0.70	M-v	1	Williams	32746	1993 MB
1993 MR	15.5	0.15	19990122	89.32866	76.31846	202.13101	6.09088	0.2546282	2.6736127	58	3	1993–1998	0.71	M-v	3	Williams	32746	1993 MR
1993 MG ₁	13.5	0.15	19990122	93.62692	15.53803	277.74892	14.65155	0.3844016	2.6851547	36	5	1989–1998	0.70	M-v	2	Williams	29944	1993 MG ₁
1993 NO	14.0	0.15	19990122	21.85383	80.09024	335.18900	0.54166	0.1232744	2.5332376	29	5	1990–1998	0.68	M-v	1	Williams	32515	1993 NO
1993 NJ ₁	15.6	0.15	19990122	170.74194	170.09410	132.97136	3.28459	0.1719914	2.3905060	29	3	1993–1998	0.71	M-v	4	Williams	30758	1993 NJ ₁
1993 NA ₂	13.5	0.15	19990122	351.49811	300.90598	123.70282	9.61393	0.1775646	2.6317918	25	4	1991–1998	0.78	M-v	3	Williams	32746	1993 NA ₂
1993 OS ₁₀	13.5	0.15	19990122	51.36338	53.65679	274.15543	4.02347	0.0246106	2.7269081	62	3	1989–1998	0.65	M-v	3	Williams	32746	1993 OS ₁₀
1993 OH ₁₂	14.5	0.15	19990122	81.80514	79.36789	251.57595	2.55864	0.1544524	2.6106679	26	4	1951–1998	0.63	M-v	1	Williams	25539	1993 OH ₁₂
1993 PC ₇	13.5	0.15	19990122	332.94759	240.92474	157.68349	6.97519	0.1136910	2.9632927	44	3	1988–1998	0.78	M-v	4	Williams	32664	1993 PC ₇
1993 QU ₃	13.5	0.15	19990122	352.18392	216.08516	189.75005	1.70582	0.0691660	2.8424211	53	3	1979–1998	0.72	M-v	5	Williams	32664	1993 QU ₃
1993 QV ₄	13.9	0.15	19990122	314.77337	62.60505	14.35190	1.85781	0.0215282	2.8587194	48	3	1988–1998	0.72	M-v	4	Williams	32746	1993 QV ₄
1993 QL ₇	14.5	0.15	19990122	60.46472	179.22335	140.77214	3.27717	0.0179504	2.8878520	34	3	1982–1998	0.95	M-v	4	Williams	32746	1993 QL ₇
1993 RZ ₁	14.5	0.15	19990122	175.47965	60.78087	247.51017	1.04791	0.1430188	2.4621667	28	4	1978–1998	0.71	M-v	2	Williams	28616	1993 RZ ₁
1993 RP ₃	13.0	0.15	19990122	20.00689	165.22673	262.68963	12.10005	0.2486173	2.6558382	19	4	1985–1998	0.75	M-v	1	Williams	32746	1993 RP ₃
1993 SB	8.0	0.15	19990122	326.31511	77.88395	354.81872	1.93315	0.3240545	39.7458682	40	6	1993–1998	0.74	M-v	3	Williams	30899	1993 SB
1993 SC	7.0	0.15	19990122	38.74939	319.03052	354.61857	5.14318	0.1906779	39.9088659	82	6	1993–1998	0.57	M-v	3	Williams	30899	1993 SC
1993 ST ₁	13.0	0.15	19990122	331.25973	214.84996	173.32342	11.23344	0.0981901	3.1348821	37	3	1993–1998	0.52	M-v	3	Williams	32746	1993 ST ₁
1993 SD ₂	12.0	0.15	19990122	262.82727	243.77451	227.30114	7.63960	0.1794574	3.0944472	34	2	1993–1998	0.72	M-v	4	Williams	32746	1993 SD ₂
1993 SO ₂	14.0	0.15	19990122	222.23092	338.07764	207.97847	7.59758	0.1115501	2.7922943	69	3	1993–1998	0.67	M-v	4	Williams	32746	1993 SO ₂
1993 SX ₄	13.5	0.15	19990122	307.72024	22.01005	165.69806	2.61651	0.1321990	2.4200980	17	5	1973–1998	0.76	M-v	2	Williams	31235	1993 SX ₄
1993 SQ ₁₃	15.5	0.15	19930910	23.69676	255.05367	69.46855	0.76774	0.1777473	2.8101167	14	1	8 days	1.15		E	Williams	30899	1993 SQ ₁₃
1993 TJ	13.0	0.15	19990122	206.95318	313.65887	205.84801	9.64303	0.0484304	3.0258962	40	2	1993–1998	0.68	M-v	4	Williams	32746	1993 TJ
1993 TM ₁₅	14.5	0.15	19990122	43.25741	269.91814	73.09795	3.08684	0.0787584	2.9589722	27	2	1993–1998	0.85	M-v	6	Williams	32664	1993 TM ₁₅
1993 TW ₁₆	15.0	0.15	19990122	78.97386	142.38844	146.94267	2.88772	0.1570748	2.9900948	39	3	1993–1998	0.67	M-v	3	Williams	32746	1993 TW ₁₆
1993 TH ₁₉	14.3	0.15	19990122	95.42234	159.66353	123.78964	0.51658	0.0793321	2.9907338	25	3	1993–1998	0.77	M-v	4	Williams	32746	1993 TH ₁₉
1993 TG ₂₆	13.1	0.15	19990122	274.77473	84.12100	36.31258	10.49297	0.0500321	2.9924275	64	3	1993–1998	0.76	M-v	3	Williams	32746	1993 TG ₂₆
1993 TJ ₂₇	14.5	0.15	19990122	273.81859	299.75592	184.49119	10.50541	0.0394839	2.9733538	18	2	1993–1998	0.67	M-v	6	Williams	32665	1993 TJ ₂₇
1993 TJ ₃₁	14.0	0.15	19990122	10.24481	250.53238	115.58235	5.19524	0.0534124	3.0709278	20	2	1993–1998	0.63	M-v	6	Williams	32665	1993 TJ ₃₁
1993 TK ₃₇	14.0	0.15	19990122	359.29090	211.70354	181.04811	11.49125	0.1468803	3.0144037	35	3	1972–1998	0.79	M-v	3	Williams	32665	1993 TK ₃₇
1993 TP ₃₈	13.5	0.15	19990122	164.44911	20.74445	191.10096	18.48887	0.0491637	3.1115072	44	4	1991–1998	0.80	M-v	1	Williams	32746	1993 TP ₃₈
1993 TX ₃₈	13.5	0.15	19990122	57.84453	213.29595	106.04917	6.98927	0.0573538	3.0641171	16	2	1993–1998	0.78	M-v	5	Williams	32665	1993 TX ₃₈
1993 UQ ₂	13.5	0.15	19990122	29.09910	168.33567	180.39642	9.75423	0.1048244	3.0567663	42	3	1982–1998	0.62	M-v	4	Williams	32665	1993 UQ ₂
1993 VG ₁	12.0	0.15	19990122	65.09021	315.25562	72.04983	11.72927	0.2524085	2.7471662	21	5	1961–1998	0.66	M-v	2	Williams	27558	1993 VG ₁
1993 VL ₃	13.5	0.15	19990122	305.45406	35.28205	92.09775	3.38060	0.0177315	2.9068585	27	4	1990–1998	0.66	M-v	1	Williams	27447	1993 VL ₃
1993 VV ₄	12.6	0.15	19990122	354.55413	339.40867	83.68012	9.72197	0.0461370	3.0376479	39	3	1993–1998	0.77	M-v	3	Williams	27447	1993 VV ₄
1993 WH	16.0	0.15	19990122	38.12180	119.02491	247.06653	20.67283	0.0400855	1.8923390	21	2	1993–1998	0.79	M-v	5	Williams	32665	1993 WH
1993 YF	14.0	0.15	19990122	357.48991	306.66602	113.34737	2.56706	0.1712123	3.1177663	22	4	1976–1998	0.63	M-v	3	Williams	23791	1993 YF
1994 EW	17.5	0.15	19990122	79.82515	60.31246	246.75388	0.26263	0.1981615	2.1315681	33	2	1994–1998	0.60	M-v	7	Williams	32666	1994 EW
1994 GN	14.5	0.15	19990122	73.55189	203.65234	72.01020	5.54664	0.1399206	2.2698098	30	3	1994–1998	0.60	M-v	3	Williams	32747	1994 GN
1994 GA ₁	14.5	0.15	19990122	80.16235	206.98793	85.79720	4.81946	0.1637304	2.2415066	31	6	1974–1998	0.81	M-v	2	Williams	32747	1994 GA ₁
1994 GB ₁	14.0	0.15	19990122	88.76112	238.39236	40.38668	5.51939	0.1973216	2.2712954	32	2	1994–1998	0.80	M-v	4	Williams	32666	1994 GB ₁
1994 JU	15.0	0.15	19990122	95.90000	63.07492	204.18607	6.30452	0.1909877	2.3290621	47	3	1991–1998	0.73	M-v	3	Williams	32747	1994 JU
1994 NF ₁	13.5	0.15	19990122	126.63999	199.05914	99.24188	8.19710	0.1399464	2.2168166	22	4	1994–1998	0.65	M-v	2	Williams	32516	1994 NF ₁
1994 NO ₁	14.2	0.15	19990122	161.01920	337.91742	260.96382	4.99978	0.1780271	2.2606647	22	3	1991–1998	0.76	M-v	5	Williams	23984	1994 NO ₁
1994 OB	14.0	0.15	19990122	86.02463	178.64108	115.69107	3.27341	0.2351259	2.3956849	56	4	1990–1998	0.61	M-v	2	Williams	32747	1994 OB
1994 PK ₈	15.0	0.15	19990122	152.43992	350.11581	258.04294	1.02980	0.1534586	2.3382847	27	2	1994–1998	0.76	M-v	5	Williams	32667	1994 PK ₈
1994 PL ₁₁	14.5	0.15	19990122	80.06935	13.35989	302.69609	5.34732	0.1092882	2.4109420	28	3	1993–1998	1.00	M-v	3	Williams	32747	1994 PL ₁₁
1994 PL ₁₂	14.5	0.15	19990122	222.91381	268.72974	260.74694	1.48169	0.1311877	2.4288042	23	2	1994–1998	0.69	M-v	6	Williams	32667	1994 PL ₁₂
1994 PC ₁₅	14.5	0.15	19990122	110.24818	81.06186	160.06158	13.44806	0.1393484	2.5515574	24	4	1990–1998	0.86	M-v	3	Williams	32747	1994 PC ₁₅
1994 PW ₁₅	16.5	0.15	19990122	12.44844	230.79668	166.72341	3.77660	0.2163762	2.4547185	41	3	1994–1998	0.90	M-v	4	Williams	32747	1994 PW ₁₅
1994 PD ₁₈	14.4	0.15	19990122	118.80823	120.73928	158.89054	6.68859	0.1176917	2.3829325	58	3	1971–1998	0.78	M-v	4	Williams	32747	1994 PD ₁₈
1994 PG ₁₈	14.0	0.15	19990122	232.03467	2.19752	157.20958	6.43015	0.0657696	2.4555745	43	2	1994–1998	0.77	M-v	5	Williams	32667	1994 PG ₁₈
1994 PA ₁₉	15.0	0.15	19990122	30.84940	190.68850	189.80616	1.80229	0.1864391	2.4271180	40	4	1992–1998	0.93	M-v	2	Williams	32747	1994 PA ₁₉

1994 PY ₁₉	14.2	0.15	19990122	180.02337	258.15989	309.56848	2.10206	0.1225310	2.4318605	49	4	1974–1998	0.73	M-v	2	Williams	32747	1994 PY ₁₉
1994 PY ₂₁	15.0	0.15	19990122	138.30192	118.69143	142.60340	3.22736	0.1335421	2.3715184	24	3	1994–1998	0.97	M-v	4	Marsden	30453	1994 PY ₂₁
1994 PL ₂₃	14.5	0.15	19990122	295.58107	59.28279	36.24332	1.22742	0.1494060	2.5380346	34	4	1988–1998	0.86	M-v	3	Williams	32747	1994 PL ₂₃
1994 PN ₂₅	15.0	0.15	19990122	164.06131	118.99534	101.48119	2.22702	0.1330108	2.3981146	31	3	1991–1998	0.85	M-v	5	Williams	29138	1994 PN ₂₅
1994 PW ₂₇	14.0	0.15	19990122	106.08390	322.06299	357.53186	3.37407	0.0946408	2.2995594	31	5	1966–1998	0.91	M-v	2	Williams	32517	1994 PW ₂₇
1994 PW ₃₁	13.8	0.15	19990122	119.61600	78.29397	175.58786	7.82465	0.1670261	2.4478586	71	4	1990–1998	0.78	M-v	3	Williams	32747	1994 PW ₃₁
1994 PX ₃₁	14.5	0.15	19990122	227.13944	259.09125	300.24215	6.17856	0.0449074	2.3115733	19	3	1994–1998	0.86	M-v	5	Williams	26403	1994 PX ₃₁
1994 PO ₃₂	13.5	0.15	19990122	242.86612	223.69471	304.42571	5.93422	0.0750184	2.3759570	18	3	1979–1998	0.51	M-v	4	Williams	24902	1994 PO ₃₂
1994 PP ₃₇	15.0	0.15	19990122	113.59709	331.39168	287.29397	1.19215	0.1416897	2.4408640	27	2	1994–1998	0.88	M-v	6	Williams	32667	1994 PP ₃₇
1994 PV ₃₇	14.5	0.15	19990122	93.03067	119.05897	172.15090	2.35843	0.1831784	2.4062193	57	3	1979–1998	0.72	M-v	4	Williams	32667	1994 PV ₃₇
1994 PA ₃₉	15.5	0.15	19990122	141.09155	41.07753	217.56361	2.39194	0.1910290	2.3241002	36	5	1973–1998	0.77	M-v	2	Williams	30472	1994 PA ₃₉
1994 QA	13.5	0.15	19990122	256.93814	121.66231	69.42782	25.12462	0.2242914	2.3309325	25	4	1950–1998	0.64	M-v	3	Williams	25083	1994 QA
1994 QR	15.1	0.15	19990122	9.38360	206.54625	158.12221	5.17774	0.1683550	2.5613678	52	4	1953–1998	0.79	M-v	2	Williams	32748	1994 QR
1994 RV	13.8	0.15	19990122	94.51430	348.97923	331.47666	5.31864	0.1344411	2.3784512	31	4	1993–1998	0.58	M-v	2	Williams	32517	1994 RV
1994 RZ	15.5	0.15	19990122	2.76912	44.22929	342.45266	2.45356	0.2635478	2.5533992	69	5	1986–1998	0.68	M-v	3	Williams	32748	1994 RZ
1994 RL ₁	14.5	0.15	19990122	39.66875	153.84192	188.39349	12.94282	0.2088715	2.5447162	68	4	1986–1998	0.71	M-v	3	Williams	32748	1994 RL ₁
1994 RT ₁	15.5	0.15	19990122	12.66322	201.93868	167.88395	20.43756	0.2912096	2.5603385	36	2	1994–1998	0.68	M-v	3	Williams	32748	1994 RT ₁
1994 RT ₂	16.0	0.15	19990122	58.81540	158.94251	168.00791	4.77100	0.1899828	2.4394817	30	2	1994–1998	0.73	M-v	5	Williams	32667	1994 RT ₂
1994 RN ₅	15.0	0.15	19990122	140.91743	62.18566	199.41504	2.83712	0.1044720	2.4305572	30	3	1994–1998	0.62	M-v	4	Williams	32748	1994 RN ₅
1994 RA ₁₁	14.5	0.15	19990122	114.99274	304.21062	334.71250	2.49346	0.2268467	2.3603590	30	6	1954–1998	0.73	M-v	1	Williams	30689	1994 RA ₁₁
1994 RE ₁₁	16.5	0.15	19990122	18.41245	208.02375	172.50357	14.33822	0.3682339	2.5298208	51	2	1994–1998	0.72	M-v	2	Williams	32748	1994 RE ₁₁
1994 RJ ₁₁	13.5	0.15	19990122	76.72837	357.78953	345.74426	6.50303	0.1417472	2.3617031	22	4	1987–1998	0.65	M-v	2	Williams	32517	1994 RJ ₁₁
1994 RW ₁₇	15.5	0.15	19990122	104.87501	346.01284	284.93068	0.82234	0.1379335	2.4579765	34	3	1994–1998	0.74	M-v	3	Williams	32748	1994 RW ₁₇
1994 SB	13.0	0.15	19990122	348.25977	201.47382	297.80867	6.26273	0.1019278	2.1997940	83	4	1994–1998	0.76	M-v	2	Williams	30689	1994 SB
1994 TA	11.5	0.15	19990122	74.42297	154.95149	137.61658	5.39597	0.3025283	16.8585618	27	5	1994–1998	0.65	M-v	2	Williams	30689	1994 TA
1994 TJ ₁	15.0	0.15	19990122	18.82909	194.24452	182.12996	6.34399	0.2464019	2.5641983	49	3	1986–1998	0.63	M-v	3	Williams	32668	1994 TJ ₁
1994 TR ₁	14.0	0.15	19990122	47.64627	119.88429	205.96796	12.09922	0.3049209	2.5573269	43	4	1993–1998	0.82	M-v	2	Williams	32748	1994 TR ₁
1994 TQ ₃	13.6	0.15	19990122	61.54458	322.68497	19.46299	12.90957	0.1210929	2.5323812	38	3	1990–1998	0.64	M-v	4	Williams	32668	1994 TQ ₃
1994 TO ₄	15.0	0.15	19990122	64.33137	124.11354	188.51829	13.89587	0.1322726	2.5568689	44	2	1994–1998	0.61	M-v	5	Williams	32668	1994 TO ₄
1994 TK ₁₁	14.5	0.15	19990122	72.63835	95.25697	235.80569	2.15248	0.0712999	2.4712808	67	3	1977–1998	0.58	M-v	4	Williams	32748	1994 TK ₁₁
1994 TZ ₁₄	14.5	0.15	19990122	19.77282	200.88080	182.78263	5.05235	0.2055656	2.5521279	75	3	1994–1998	0.59	M-v	3	Williams	32748	1994 TZ ₁₄
1994 TO ₁₅	14.0	0.15	19990122	182.65544	204.15974	22.61827	8.31783	0.2451173	2.4418195	27	5	1989–1998	0.74	M-v	2	Williams	32517	1994 TO ₁₅
1994 TW ₁₅	15.5	0.15	19990122	19.82735	150.53046	221.10129	3.57857	0.2267316	2.5556770	65	2	1994–1998	0.64	M-v	4	Williams	32748	1994 TW ₁₅
1994 UB	15.0	0.15	19990122	128.54607	131.88586	154.99891	9.26723	0.1983692	2.3099424	32	4	1990–1998	0.57	M-v	1	Williams	29922	1994 UB
1994 UY	14.5	0.15	19990122	39.86600	48.95072	318.58883	2.88799	0.1738584	2.5224365	56	4	1950–1998	0.56	M-v	4	Williams	32748	1994 UY
1994 UB ₁	13.8	0.15	19990122	110.13003	267.43455	37.52645	8.54799	0.1757977	2.4595965	39	4	1993–1998	0.70	M-v	2	Williams	30472	1994 UB ₁
1994 UC ₁	13.0	0.15	19990122	140.61834	248.42400	35.08151	1.61115	0.1141716	2.4557472	39	4	1977–1998	0.72	M-v	2	Williams	30454	1994 UC ₁
1994 UJ ₁	14.5	0.15	19990122	31.03148	19.64007	348.00727	3.11084	0.1821431	2.5733447	66	4	1992–1998	0.62	M-v	3	Williams	32748	1994 UJ ₁
1994 UM ₁	14.0	0.15	19990122	69.10948	69.55817	250.46984	3.38700	0.1989108	2.5660455	67	5	1986–1998	0.65	M-v	3	Williams	32748	1994 UM ₁
1994 UQ ₁	13.8	0.15	19990122	53.14934	134.26956	201.89044	3.54122	0.1971935	2.5704519	93	5	1980–1998	0.65	M-v	2	Williams	32748	1994 UQ ₁
1994 UT ₁₁	12.7	0.15	19990122	274.81217	232.16333	231.52428	16.99376	0.0627602	2.7396452	49	3	1994–1998	0.64	M-v	3	Williams	32748	1994 UT ₁₁
1994 VB	14.2	0.15	19990122	61.50282	300.95757	36.42163	13.60345	0.1977186	2.5397152	49	3	1994–1998	0.69	M-v	3	Williams	29922	1994 VB
1994 VH	14.5	0.15	19990122	38.76898	332.09216	32.30327	7.56715	0.2691646	2.5340751	74	5	1986–1998	0.63	M-v	2	Williams	32748	1994 VH
1994 VL	15.2	0.15	19990122	355.04121	50.12006	23.15944	5.56841	0.2194865	2.5441546	48	2	1994–1998	0.67	M-v	4	Williams	32669	1994 VL
1994 VA ₁	19.0	0.15	19990122	275.28958	310.90002	231.85052	7.63615	0.1749438	1.5731786	29	3	1994–1998	0.53	M-v	4	Williams	28888	1994 VA ₁
1994 VA ₂	14.5	0.15	19990122	22.25949	324.26927	71.38773	14.03102	0.1656742	2.5314109	14	3	1978–1998	0.63	M-v	4	Williams	26581	1994 VA ₂
1994 VF ₂	13.1	0.15	19990122	300.19412	68.32142	55.58782	13.09884	0.2243998	2.6297363	39	5	1970–1998	0.69	M-v	1	Williams	32748	1994 VF ₂
1994 VU ₆	13.5	0.15	19990122	27.75159	144.34162	209.77481	13.05018	0.2126976	2.6367543	46	2	1994–1998	0.80	M-v	3	Williams	32748	1994 VU ₆
1994 VZ ₆	15.5	0.15	19990122	8.21803	156.46425	235.86031	3.92781	0.2777047	2.5945686	52	2	1994–1998	0.76	M-v	3	Williams	32748	1994 VZ ₆
1994 VM ₇	14.5	0.15	19990122	29.45626	15.70550	50.62236	3.28568	0.1761901	2.4124319	31	5	1979–1998	0.77	M-v	2	Williams	27122	1994 VM ₇
1994 WJ	14.3	0.15	19990122	39.96704	316.90035	53.56231	5.62832	0.2857326	2.5484430	25	2	1994–1998	0.38	M-v	4	Williams	32669	1994 WJ
1994 WM	13.5	0.15	19990122	262.44160	127.05300	60.74091	8.94381	0.1559437	2.5565763	62	4	1993–1998	0.63	M-v	2	Williams	29138	1994 WM
1994 WE ₂	13.0	0.15	19990122	12.27288	266.11454	97.01667	9.10629	0.2181446	2.7471303	25	4	1982–1998	0.63	M-v	2	Williams	32748	1994 WE ₂

1994 WW ₂	13.5	0.15	19990122	87.55630	305.64955	14.56098	3.16147	0.0611768	2.6964101	28	2	1994–1998	0.59	M-v	5	Williams	32461	1994 WW ₂
1994 WN ₃	13.5	0.15	19990122	34.90344	258.72698	133.21534	6.79473	0.2315952	2.5245925	16	2	1994–1998	0.76	M-v	4	Williams	32462	1994 WN ₃
1994 WA ₄	13.5	0.15	19990122	307.29222	252.02242	209.09989	11.71259	0.0835770	2.7041304	50	2	1994–1998	0.60	M-v	4	Williams	32669	1994 WA ₄
1994 XK	14.0	0.15	19990122	102.14931	295.56318	56.98685	5.39714	0.2078152	2.4455887	31	5	1982–1998	0.66	M-v	2	Williams	31420	1994 XK
1994 XP	13.0	0.15	19990122	37.79762	156.39405	225.62298	7.28620	0.2089120	2.5575437	39	2	1994–1998	0.61	M-v	4	Williams	32462	1994 XP
1994 YN	14.0	0.15	19990122	47.01633	292.04106	101.32015	13.59842	0.2709357	2.5285673	15	3	1991–1998	0.52	M-v	5	Williams	24751	1994 YN
1994 YX	14.0	0.15	19990122	22.66101	141.33809	288.29226	4.38368	0.1312935	2.5659444	23	4	1987–1998	0.70	M-v	3	Williams	24752	1994 YX
1994 YA ₁	13.9	0.15	19990122	332.72577	314.99911	118.55499	4.71940	0.1835675	2.8104260	68	3	1994–1998	0.64	M-v	3	Williams	32748	1994 YA ₁
1994 YD ₁	14.0	0.15	19990122	24.46701	127.92664	279.37030	1.95838	0.1028978	2.6692382	30	5	1982–1998	0.76	M-v	1	Williams	30472	1994 YD ₁
1994 YJ ₁	13.5	0.15	19990122	11.53112	1.63043	35.65653	5.46222	0.0565361	2.7445917	46	5	1977–1998	0.68	M-v	1	Williams	32748	1994 YJ ₁
1994 YX ₁	13.5	0.15	19990122	235.23573	185.94399	12.58934	3.12632	0.0544742	2.7489635	39	8	1987–1998	0.74	M-v	1	Williams	30472	1994 YX ₁
1994 YA ₂	13.5	0.15	19990122	339.38016	97.43496	358.28849	22.07911	0.0445441	2.6513824	27	5	1989–1998	0.71	M-v	1	Williams	29663	1994 YA ₂
1994 YC ₂	14.1	0.15	19990122	7.67859	119.33956	271.76100	11.23592	0.1828746	2.6575802	38	2	1994–1998	0.58	M-v	3	Williams	32748	1994 YC ₂
1995 AF	12.2	0.15	19990122	95.44171	27.95969	294.33478	11.53422	0.1682390	2.6652673	23	5	1967–1998	0.85	M-v	3	Williams	28889	1995 AF
1995 AZ ₃	13.5	0.15	19990122	195.99976	321.72505	322.02566	4.98837	0.0639378	2.4561640	17	4	1976–1998	0.76	M-v	3	Williams	30783	1995 AZ ₃
1995 AV ₄	12.9	0.15	19990122	327.75694	119.98307	302.93331	8.94674	0.0906467	2.9822153	32	2	1995–1998	0.54	M-v	4	Williams	32748	1995 AV ₄
1995 BB	13.5	0.15	19990122	53.84430	43.65011	306.09579	1.05600	0.0807285	2.8392844	64	5	1987–1998	0.80	M-v	2	Williams	32748	1995 BB
1995 BY	13.5	0.15	19990122	11.94291	0.60611	35.96745	2.61200	0.0820866	2.9265794	69	3	1995–1998	0.62	M-v	4	Williams	32749	1995 BY
1995 BA ₃	13.8	0.15	19990122	322.70096	35.74520	74.26533	1.48634	0.1211424	2.7941994	41	7	1986–1998	0.77	M-v	1	Williams	28889	1995 BA ₃
1995 BQ ₈	14.5	0.15	19990122	340.27081	330.44230	95.11862	3.16459	0.0469049	2.9872796	18	3	1995–1998	0.29	M-v	4	Williams	27917	1995 BQ ₈
1995 CD ₂	12.5	0.15	19990122	145.70856	22.62251	232.70333	21.12178	0.0425311	3.2357631	32	4	1995–1998	0.64	M-v	2	Williams	30277	1995 CD ₂
1995 DZ ₁	13.0	0.15	19990122	136.01879	202.23787	79.12088	7.31974	0.1250940	3.0957110	30	4	1995–1998	0.75	M-v	2	Williams	30689	1995 DZ ₁
1995 DZ ₁₁	13.5	0.15	19990122	333.41496	311.87361	140.87697	2.83742	0.0362696	2.9421733	20	3	1990–1998	0.81	M-v	4	Williams	32670	1995 DZ ₁₁
1995 EF	13.5	0.15	19990122	260.77182	56.36849	127.79656	8.50040	0.1613735	2.7969556	27	3	1994–1998	0.49	M-v	3	Williams	30664	1995 EF
1995 EQ ₁	13.0	0.15	19990122	234.11279	126.03499	80.17665	1.90059	0.1355495	3.0892098	25	4	1989–1998	0.90	M-v	1	Williams	29664	1995 EQ ₁
1995 EF ₈	14.0	0.15	19990122	302.00521	350.47353	111.09033	3.08985	0.1388055	3.1332406	32	3	1982–1998	0.75	M-v	3	Williams	32670	1995 EF ₈
1995 FM ₃	14.0	0.15	19990122	210.06534	154.62644	47.47704	4.04195	0.0303889	3.2153890	26	2	1995–1998	0.56	M-v	4	Williams	32670	1995 FM ₃
1995 FV ₁₄	12.5	0.15	19990122	258.30456	135.95550	35.75203	8.67070	0.1015898	3.1720682	24	5	1978–1998	0.82	M-v	2	Williams	25539	1995 FV ₁₄
1995 GO ₇	12.0	0.15	19990122	265.53576	130.82938	44.94041	1.90428	0.1284011	3.1418862	24	7	1976–1998	0.74	M-v	1	Williams	32308	1995 GO ₇
1995 QY ₉	7.5	0.15	19990122	349.84437	24.76518	342.06421	4.82527	0.2715096	40.1203031	63	4	1995–1998	0.60	M-v	4	Williams	31008	1995 QY ₉
1995 RC	14.5	0.15	19990122	350.05090	58.52855	331.83368	5.52656	0.1674987	2.2098479	92	3	1995–1998	0.57	M-v	2	Williams	32749	1995 RC
1995 TZ	15.0	0.15	19990122	66.32020	251.87644	36.40208	2.15978	0.1948681	2.2323572	36	2	1995–1998	0.54	M-v	4	Williams	32463	1995 TZ
1995 UR	14.0	0.15	19990122	296.15074	155.06254	297.87635	25.31774	0.2061590	2.3016701	23	2	1995–1998	0.81	M-v	4	Williams	32463	1995 UR
1995 UO ₃	14.7	0.15	19990122	299.04934	200.36568	258.08522	3.64038	0.0954986	2.2503091	45	3	1992–1998	0.67	M-v	4	Williams	32749	1995 UO ₃
1995 UQ ₃	14.4	0.15	19990122	138.03622	12.21734	242.95315	2.14603	0.0726742	2.1827998	66	2	1995–1998	0.61	M-v	4	Williams	32749	1995 UQ ₃
1995 UD ₄	15.0	0.15	19990122	26.32732	342.38232	28.56116	5.49169	0.1647458	2.1601204	64	3	1995–1998	0.68	M-v	3	Williams	32749	1995 UD ₄
1995 UW ₄	14.9	0.15	19990122	70.71185	279.56820	48.73048	8.11432	0.1355753	2.1887486	51	2	1995–1998	0.63	M-v	4	Williams	32749	1995 UW ₄
1995 UB ₈	13.9	0.15	19990122	281.54035	27.27442	65.55430	4.14629	0.1231680	2.3346036	24	2	1995–1998	0.58	M-v	4	Williams	32670	1995 UB ₈
1995 UZ ₄₅	14.0	0.15	19990122	129.88093	315.98665	204.34041	9.33886	0.1606192	2.7516253	20	2	1995–1998	0.65	M-v	4	Williams	32670	1995 UZ ₄₅
1995 VF	15.0	0.15	19990122	11.46125	114.28155	253.29867	6.13991	0.1339360	2.3002435	25	3	1991–1998	0.51	M-v	2	Williams	32518	1995 VF
1995 VT	12.3	0.15	19990122	116.64197	283.61972	231.82529	8.76776	0.0446409	3.0536108	20	2	1995–1998	0.57	M-v	4	Williams	32670	1995 VT
1995 VW ₁	14.3	0.15	19990122	314.15381	188.81087	273.42497	7.99914	0.1476646	2.3530662	39	3	1989–1998	0.55	M-v	2	Williams	32670	1995 VW ₁
1995 WE	13.7	0.15	19990122	284.06875	52.28760	68.96191	6.81720	0.1543737	2.2852586	37	4	1988–1998	0.55	M-v	3	Williams	32749	1995 WE
1995 WS ₁	14.1	0.15	19990122	22.76471	316.90874	44.00881	3.87372	0.1895601	2.2340248	52	3	1985–1998	0.71	M-v	2	Williams	32749	1995 WS ₁
1995 WK ₅	14.9	0.15	19990122	3.52957	341.51244	42.41759	3.45807	0.1241004	2.3118161	60	2	1995–1998	0.60	M-v	4	Williams	32749	1995 WK ₅
1995 WO ₇	15.5	0.15	19990122	352.86542	160.49752	256.58542	3.80120	0.0996343	2.2316405	60	3	1993–1998	0.72	M-v	4	Williams	32749	1995 WO ₇
1995 WS ₇	14.5	0.15	19990122	244.33900	86.47759	90.27265	1.13169	0.0671800	2.2319430	41	4	1990–1998	0.82	M-v	2	Williams	32749	1995 WS ₇
1995 WA ₈	15.5	0.15	19990122	11.98122	39.13740	0.68963	5.29958	0.1446070	2.2050928	52	3	1988–1998	0.62	M-v	2	Williams	32749	1995 WA ₈
1995 WP ₈	14.0	0.15	19990122	71.63758	273.77638	59.15652	5.50712	0.1799698	2.1635403	44	3	1994–1998	0.80	M-v	2	Williams	32518	1995 WP ₈
1995 WW ₁₇	15.5	0.15	19990122	169.23273	212.47150	21.94780	4.12402	0.0804888	2.1584952	63	3	1995–1998	0.82	M-v	4	Williams	32749	1995 WW ₁₇
1995 WB ₂₂	16.0	0.15	19990122	274.79492	39.80738	95.47051	5.14703	0.0897234	2.2327500	27	3	1995–1998	0.73	M-v	3	Williams	32749	1995 WB ₂₂
1995 XH ₁	15.0	0.15	19990122	28.84161	92.13997	275.55845	4.12939	0.1607830	2.2555840	45	3	1988–1998	0.55	M-v	3	Williams	32671	1995 XH ₁
1995 YF	14.5	0.15	19990122	31.51551	205.66325	127.82584	3.15370	0.2010346	2.3888412	32	3	1987–1998	0.63	M-v	2	Williams	32518	1995 YF

1995 YR	13.5	0.15	19990122	188.46941	137.87740	66.70311	9.45724	0.0766810	2.2978037	27	3	1995–1998	0.55	M-v	3	Williams	32750	1995 YR
1995 YV	15.0	0.15	19990122	337.60381	332.30652	102.36278	6.18997	0.1305854	2.2942116	25	3	1995–1998	0.58	M-v	4	Williams	30082	1995 YV
1995 YD ₁	14.0	0.15	19990122	106.83427	201.14045	109.82182	8.79271	0.0712899	2.3016143	25	5	1990–1998	0.55	M-v	1	Williams	31588	1995 YD ₁
1995 YF ₁	13.5	0.15	19990122	86.41591	356.57075	268.05339	8.15269	0.1124187	2.7849697	22	2	1995–1998	0.67	M-v	4	Williams	32467	1995 YF ₁
1995 YH ₁	14.4	0.15	19990122	32.91059	100.70173	277.12553	3.49408	0.1313418	2.2834678	59	3	1991–1998	0.63	M-v	3	Williams	26582	1995 YH ₁
1995 YH ₃	15.0	0.15	19990122	24.13943	263.93490	113.18129	8.75233	0.2307017	2.2850559	23	4	1991–1998	0.70	M-v	2	Williams	32750	1995 YH ₃
1995 YL ₃	15.0	0.15	19990122	344.64179	296.38261	126.00635	5.02976	0.1389992	2.3339175	50	3	1995–1998	0.65	M-v	4	Williams	32750	1995 YL ₃
1995 YY ₅	15.7	0.15	19990122	58.12096	227.33740	95.07172	3.96571	0.1756444	2.2346372	50	2	1995–1998	0.53	M-v	3	Williams	32750	1995 YY ₅
1995 YA ₇	16.6	0.15	19990122	150.73206	54.74519	178.64613	2.15915	0.1611562	2.3251965	21	3	1995–1998	0.41	M-v	4	Williams	30457	1995 YA ₇
1995 YL ₂₃	13.8	0.15	19990122	89.28470	207.17651	61.90516	6.05754	0.1534035	2.4108386	21	3	1971–1998	0.44	M-v	4	Williams	32672	1995 YL ₂₃
1996 AR	16.0	0.15	19990122	297.22070	21.45452	86.96476	3.93617	0.1839627	2.4202491	58	2	1996–1998	0.48	M-v	3	Williams	32672	1996 AR
1996 AS	14.5	0.15	19990122	272.24136	358.41112	136.74003	5.03439	0.0488762	2.4055983	63	4	1989–1998	0.72	M-v	3	Williams	32750	1996 AS
1996 AJ ₂	14.5	0.15	19990122	269.51768	36.02860	114.25118	3.41983	0.1274139	2.4028352	41	3	1996–1998	0.64	M-v	4	Williams	30277	1996 AJ ₂
1996 AP ₂	14.0	0.15	19990122	302.50393	129.95827	310.17332	11.05325	0.1242962	2.5686025	64	2	1995–1998	0.64	M-v	4	Williams	32750	1996 AP ₂
1996 AP ₃	13.5	0.15	19990122	53.98145	65.76206	273.60048	6.82828	0.1934662	2.2872858	39	3	1988–1998	0.50	M-v	3	Williams	32750	1996 AP ₃
1996 AX ₃	13.6	0.15	19990122	150.18078	265.48314	332.24510	5.33562	0.0747888	2.6573577	45	2	1995–1998	0.76	M-v	4	Williams	32672	1996 AX ₃
1996 AW ₄	14.5	0.15	19990122	244.79061	116.60484	75.54804	3.27841	0.1661774	2.3574967	18	3	1942–1998	0.42	M-v	4	Williams	31241	1996 AW ₄
1996 AK ₁₀	15.5	0.15	19990122	7.34947	165.38650	249.39691	1.87338	0.1226036	2.2965539	34	3	1993–1998	0.63	M-v	5	Williams	32750	1996 AK ₁₀
1996 BB	13.0	0.15	19990122	23.19157	214.06852	119.68919	10.19743	0.1604291	2.7840383	37	4	1980–1998	0.63	M-v	2	Williams	32519	1996 BB
1996 BK	15.0	0.15	19990122	315.84140	152.66575	323.23166	10.43977	0.1942281	2.3380076	34	3	1994–1998	0.91	M-v	3	Williams	27123	1996 BK
1996 BX	13.5	0.15	19990122	152.12213	101.17173	91.28878	3.26343	0.1041840	2.8984121	38	3	1996–1998	0.43	M-v	3	Williams	32750	1996 BX
1996 BZ	14.5	0.15	19990122	259.98855	26.69469	120.96876	6.42721	0.1377952	2.4450250	36	2	1996–1998	0.63	M-v	4	Williams	32673	1996 BZ
1996 BX ₁	14.0	0.15	19990122	314.04504	358.71017	113.42121	11.19426	0.1522494	2.3606081	29	6	1989–1998	0.54	M-v	1	Williams	30292	1996 BX ₁
1996 BB ₂	15.0	0.15	19990122	294.55540	160.28369	319.06404	10.25005	0.1714029	2.4155375	29	4	1983–1998	0.71	M-v	2	Williams	32750	1996 BB ₂
1996 BE ₂	13.5	0.15	19990122	273.90085	86.97881	84.93591	6.37698	0.0982681	2.2579082	16	5	1981–1998	1.05	M-v	2	Williams	32519	1996 BE ₂
1996 BH ₂	13.0	0.15	19990122	327.78939	105.63242	320.86163	8.36214	0.0374483	2.5985550	40	2	1996–1998	0.45	M-v	4	Williams	32673	1996 BH ₂
1996 BL ₂	14.6	0.15	19990122	37.07370	155.89586	230.23593	3.93902	0.1702746	2.2840422	30	3	1984–1998	0.70	M-v	3	Williams	32469	1996 BL ₂
1996 BR ₃	13.5	0.15	19990122	93.67513	336.95115	16.77591	4.53323	0.1682418	2.2599769	24	5	1977–1998	0.69	M-v	2	Williams	26928	1996 BR ₃
1996 BW ₄	15.0	0.15	19990122	23.30984	343.89609	72.50054	3.65388	0.1597843	2.2545323	31	8	1981–1998	0.63	M-v	1	Williams	31791	1996 BW ₄
1996 CQ ₁	14.5	0.15	19990122	55.95131	40.41192	319.36235	6.21043	0.1319377	2.3649260	26	3	1994–1998	0.81	M-v	4	Williams	29139	1996 CQ ₁
1996 CO ₂	12.8	0.15	19990122	59.08237	165.33263	128.23096	10.84919	0.0652268	2.9989096	29	2	1996–1998	0.67	M-v	4	Williams	32673	1996 CO ₂
1996 CA ₃	12.5	0.15	19990122	149.42862	135.51927	81.19429	2.18827	0.1163845	3.1644807	25	3	1985–1998	0.92	M-v	4	Williams	32750	1996 CA ₃
1996 CE ₃	13.2	0.15	19990122	323.50322	79.55100	358.36417	21.91985	0.0540517	2.6695551	88	2	1996–1998	0.65	M-v	3	Williams	32750	1996 CE ₃
1996 CT ₇	14.5	0.15	19990122	357.80377	192.29754	210.89107	6.13497	0.1317934	2.4257812	63	3	1996–1998	0.80	M-v	4	Williams	32750	1996 CT ₇
1996 CX ₈	14.3	0.15	19990122	17.39527	11.60528	10.33410	6.88939	0.0454245	2.5960801	66	2	1996–1998	0.71	M-v	4	Williams	32673	1996 CX ₈
1996 CG ₉	14.1	0.15	19990122	60.56295	167.67751	194.51194	6.87078	0.1372052	2.3046849	23	2	1996–1998	0.73	M-v	4	Williams	32519	1996 CG ₉
1996 DF	13.5	0.15	19990122	34.89211	280.46708	128.09520	5.91297	0.0674369	2.3683287	21	6	1989–1998	0.73	M-v	2	Williams	31420	1996 DF
1996 DL	15.2	0.15	19990122	314.66052	329.26309	151.59510	4.62567	0.1058107	2.3620026	22	3	1980–1998	0.54	M-v	3	Williams	26910	1996 DL
1996 DT	13.0	0.15	19990122	135.95003	83.88990	151.81452	10.62918	0.0503453	2.9992472	32	2	1996–1998	0.96	M-v	4	Williams	32673	1996 DT
1996 DV	13.5	0.15	19990122	133.58007	67.11299	154.21557	11.82472	0.0409506	3.1740525	59	3	1996–1998	0.74	M-v	3	Williams	32750	1996 DV
1996 DO ₁	12.3	0.15	19990122	113.03667	320.02067	292.50949	10.29346	0.1353343	3.0364986	94	3	1996–1998	0.60	M-v	3	Williams	32750	1996 DO ₁
1996 DL ₂	13.3	0.15	19990122	79.86961	202.15021	97.53024	3.44247	0.0084054	2.9027739	59	3	1993–1998	0.71	M-v	3	Williams	32750	1996 DL ₂
1996 DQ ₂	14.0	0.15	19990122	189.46024	145.27131	97.82187	5.14145	0.0509074	2.5245068	26	4	1980–1998	0.59	M-v	3	Williams	28890	1996 DQ ₂
1996 EL ₁	13.8	0.15	19990122	305.79182	119.85395	340.90972	13.23213	0.1496403	2.5834607	46	2	1996–1998	0.69	M-v	4	Williams	32674	1996 EL ₁
1996 ES ₁	13.5	0.15	19990122	118.68100	82.59619	175.53076	3.13124	0.1863671	3.1976665	48	2	1996–1998	0.65	M-v	4	Williams	32674	1996 ES ₁
1996 ER ₂	15.0	0.15	19990122	316.33209	214.72067	258.05503	2.70796	0.0500231	2.4349683	52	3	1996–1998	0.59	M-v	3	Marsden	30293	1996 ER ₂
1996 EY ₅	15.5	0.15	19990122	343.18143	40.07722	20.53341	2.22912	0.1574060	2.5795433	35	3	1986–1998	0.87	M-v	4	Williams	32674	1996 EY ₅
1996 FR ₁	13.5	0.15	19990122	67.35788	100.69451	216.84886	9.42540	0.1145142	3.0151641	75	3	1996–1998	0.59	M-v	3	Williams	32751	1996 FR ₁
1996 FJ ₅	12.5	0.15	19990122	38.51085	15.85482	12.90266	15.51346	0.1241591	2.5736513	28	4	1977–1998	0.79	M-v	3	Williams	32519	1996 FJ ₅
1996 FO ₅	14.0	0.15	19990122	300.75694	118.82206	20.64396	8.90620	0.1402789	2.3663149	75	5	1978–1998	0.52	M-v	1	Williams	30293	1996 FO ₅
1996 GL ₁	14.3	0.15	19990122	341.98941	58.32925	40.20270	6.69800	0.1324953	2.3224321	33	4	1987–1998	0.70	M-v	1	Williams	32519	1996 GL ₁
1996 GP ₁	14.0	0.15	19990122	317.30579	73.39574	3.20193	22.14327	0.0437221	2.6561145	53	2	1996–1998	0.45	M-v	3	Williams	32674	1996 GP ₁
1996 GU ₈	14.2	0.15	19990122	117.04313	228.23988	77.62697	3.85262	0.0595592	2.7379686	25	4	1982–1998	0.66	M-v	1	Williams	30473	1996 GU ₈

1996 GJ ₁₉	14.5	0.15	19990122	89.89713	151.13925	181.23235	1.83508	0.0724086	2.9040454	26	4	1995–1998	0.87	M-v	1	Williams	30293	1996 GJ ₁₉
1996 GM ₂₀	13.5	0.15	19990122	167.94721	177.49804	59.30789	0.82848	0.1568314	3.0759113	33	3	1990–1998	0.86	M-v	4	Williams	32751	1996 GM ₂₀
1996 GV ₂₀	15.4	0.15	19990122	321.28630	81.01576	91.42603	0.37696	0.1390976	2.2639433	22	4	1989–1998	0.61	M-v	2	Williams	30784	1996 GV ₂₀
1996 HW	13.0	0.15	19990122	169.50499	242.83705	26.16877	15.03211	0.0394544	2.5671646	33	4	1977–1998	0.94	M-v	1	Williams	32519	1996 HW
1996 HC ₁	13.3	0.15	19990122	297.69776	86.61331	56.62014	13.81479	0.1128271	2.5932563	50	3	1996–1998	0.60	M-v	3	Williams	32519	1996 HC ₁
1996 HE ₁	12.0	0.15	19990122	196.09656	127.40334	57.51378	18.64210	0.1280563	3.2118682	37	2	1996–1998	0.76	M-v	4	Williams	32675	1996 HE ₁
1996 HP ₁	15.5	0.15	19990122	242.78917	355.46731	198.19008	11.08758	0.1200256	2.6161149	50	3	1996–1998	0.58	M-v	3	Williams	30690	1996 HP ₁
1996 HE ₂	13.0	0.15	19990122	131.59409	201.61763	72.45581	10.10438	0.0299884	3.1107998	26	3	1996–1998	0.63	M-v	3	Williams	30763	1996 HE ₂
1996 HR ₁₀	13.5	0.15	19990122	22.13569	343.34423	38.86175	0.44899	0.2174140	3.1475627	41	3	1976–1998	0.89	M-v	4	Williams	32675	1996 HR ₁₀
1996 HF ₁₁	14.5	0.15	19990122	160.61959	181.51628	79.60341	2.58456	0.1727958	2.9838114	20	3	1992–1998	0.88	M-v	4	Williams	27569	1996 HF ₁₁
1996 HB ₁₂	12.0	0.15	19990122	135.13937	248.22653	41.31547	13.64413	0.1408363	2.9863852	21	2	1996–1998	0.88	M-v	3	Williams	32471	1996 HB ₁₂
1996 HT ₁₆	14.1	0.15	19990122	25.94843	211.39128	181.84890	1.72182	0.0548155	2.9272893	17	2	1996–1998	0.71	M-v	4	Williams	32675	1996 HT ₁₆
1996 HU ₁₈	14.0	0.15	19990122	179.27838	53.89827	168.38951	1.22898	0.1195476	3.1107808	37	4	1976–1998	0.84	M-v	2	Williams	32751	1996 HU ₁₈
1996 HR ₂₁	13.5	0.15	19990122	130.62767	107.58080	175.47415	1.21090	0.1642345	3.1725542	34	6	1990–1998	0.81	M-v	1	Williams	31791	1996 HR ₂₁
1996 JK	11.5	0.15	19990122	69.72931	257.73556	96.71639	10.81633	0.0995587	2.9988137	22	4	1984–1998	0.80	M-v	1	Williams	27457	1996 JK
1996 JS ₅	14.0	0.15	19990122	117.27811	118.79163	168.62742	3.74481	0.1039709	3.1458115	21	4	1995–1998	0.42	M-v	1	Williams	30473	1996 JS ₅
1996 JN ₆	13.5	0.15	19990122	48.41009	251.97609	117.40183	2.96242	0.0494737	2.9265785	21	4	1978–1998	0.73	M-v	4	Williams	29925	1996 JN ₆
1996 KA ₃	12.9	0.15	19990122	67.01592	136.81794	133.76724	10.89798	0.1499844	3.1839769	62	3	1995–1998	0.51	M-v	3	Williams	32751	1996 KA ₃
1996 OO	12.2	0.15	19990122	164.14820	18.23089	232.21924	10.27071	0.0800742	3.9849184	52	3	1996–1998	0.44	M-v	3	Williams	32751	1996 OO
1996 RJ	10.0	0.15	19990122	45.13201	115.45700	259.55212	30.49807	0.0484636	5.2008082	39	4	1986–1998	0.63	M-v	1	Williams	30902	1996 RJ
1996 RQ ₂₀	7.0	0.15	19990122	3.50956	358.80177	11.53577	31.57301	0.1080127	44.2361405	39	3	1996–1998	0.72	M-v	5	Williams	30785	1996 RQ ₂₀
1996 SZ ₄	8.0	0.15	19990122	343.45067	28.98914	15.96504	4.72583	0.2645192	40.0079001	29	3	1996–1998	0.60	M-v	5	Williams	30785	1996 SZ ₄
1996 TR ₆	18.5	0.15	19990122	110.83720	117.52789	196.40663	22.09762	0.1804531	1.5848588	59	2	1996–1998	0.73	M-v	4	Williams	32675	1996 TR ₆
1996 TK ₆₆	7.0	0.15	19990122	298.29941	25.04187	44.70500	3.30640	0.0054583	42.9560710	14	3	1996–1998	0.72	M-v	E	Williams	30764	1996 TK ₆₆
1996 TL ₆₆	5.0	0.15	19990122	358.95889	184.35627	217.76382	23.92725	0.5887296	85.1957524	127	3	1996–1998	0.52	M-v	3	Williams	32311	1996 TL ₆₆
1996 TO ₆₆	4.5	0.15	19990122	111.57216	243.30963	355.19804	27.32363	0.1140350	43.5999775	93	3	1996–1998	0.61	M-v	5	Marsden	32519	1996 TO ₆₆
1996 TQ ₆₆	6.5	0.15	19990122	1.12251	18.30711	10.67377	14.62254	0.1295816	39.7659169	26	3	1996–1998	0.32	M-v	4	Williams	31009	1996 TQ ₆₆
1996 TS ₆₆	6.0	0.15	19990122	341.09568	137.99680	285.86029	7.34635	0.1327789	44.2790032	27	3	1996–1998	0.29	M-v	5	Williams	31009	1996 TS ₆₆
1997 AJ ₄	14.7	0.15	19990122	130.61900	307.03873	279.76014	5.94371	0.1200517	2.2193889	41	2	1996–1998	0.68	M-v	4	Williams	32751	1997 AJ ₄
1997 AH ₅	15.1	0.15	19990122	172.77619	224.28719	335.10192	1.90856	0.0856317	2.1952766	37	3	1995–1998	0.62	M-v	3	Williams	32751	1997 AH ₅
1997 AE ₁₈	14.8	0.15	19990122	94.95247	311.56099	306.65397	6.21422	0.1336050	2.2190956	62	3	1988–1998	0.50	M-v	2	Williams	32751	1997 AE ₁₈
1997 BR ₃	14.5	0.15	19990122	90.80790	291.42355	341.71490	21.67616	0.2479659	2.4520023	33	3	1994–1998	0.81	M-v	2	Williams	32751	1997 BR ₃
1997 BC ₉	15.0	0.15	19990122	36.99646	186.95886	140.73517	4.23863	0.2342711	2.2314273	59	5	1978–1998	0.80	M-v	2	Williams	32751	1997 BC ₉
1997 CT ₁₆	15.5	0.15	19990122	122.69069	135.38288	128.86295	4.59732	0.1675660	2.1866324	34	3	1991–1998	0.79	M-v	2	Williams	32676	1997 CT ₁₆
1997 CC ₁₇	15.0	0.15	19990122	120.08081	235.10975	31.36960	2.12062	0.1874531	2.2141164	57	3	1994–1998	0.87	M-v	3	Williams	32751	1997 CC ₁₇
1997 CA ₂₂	14.5	0.15	19990122	193.16173	27.64967	156.38039	1.51972	0.0680807	2.1880448	58	3	1995–1998	0.62	M-v	3	Williams	32751	1997 CA ₂₂
1997 CS ₂₉	5.0	0.15	19990122	46.84916	124.71668	304.31222	2.25262	0.0077706	43.8480235	39	3	1997–1998	0.33	M-v	5	Williams	31279	1997 CS ₂₉
1997 DC	14.0	0.15	19990122	126.02443	86.11986	158.58743	2.53770	0.1670004	2.3921439	84	3	1993–1998	0.66	M-v	3	Williams	32752	1997 DC
1997 ES ₂	14.5	0.15	19990122	96.24015	170.50612	119.35510	3.07481	0.2025841	2.3718100	65	4	1979–1998	0.62	M-v	1	Williams	32752	1997 ES ₂
1997 ER ₁₁	15.5	0.15	19990122	142.99707	225.43030	4.46084	1.29446	0.1888115	2.3459293	75	2	1997–1998	0.75	M-v	4	Williams	32752	1997 ER ₁₁
1997 EW ₂₅	15.0	0.15	19990122	163.05741	205.58868	15.95381	6.95587	0.0702570	2.2423680	32	3	1977–1998	0.75	M-v	3	Williams	32752	1997 EW ₂₅
1997 EG ₂₇	15.2	0.15	19990122	188.33273	6.62951	178.42210	5.93430	0.0432042	2.2855196	46	3	1995–1998	0.60	M-v	3	Williams	32752	1997 EG ₂₇
1997 EB ₅₄	14.0	0.15	19990122	85.15144	298.67127	1.30685	2.31040	0.1989667	2.4198941	44	4	1979–1998	0.81	M-v	1	Williams	32752	1997 EB ₅₄
1997 FB	15.5	0.15	19990122	148.10659	68.86519	181.16019	3.91516	0.1592441	2.1779132	49	3	1995–1998	0.61	M-v	2	Williams	32752	1997 FB
1997 FM	13.5	0.15	19990122	90.13715	161.29539	120.19315	13.67305	0.1324569	2.6884935	30	2	1997–1998	0.73	M-v	4	Williams	32752	1997 FM
1997 FM ₁	15.5	0.15	19990122	266.56245	325.49074	187.53627	22.34983	0.0904684	1.9547173	58	2	1997–1998	0.63	M-v	3	Williams	32677	1997 FM ₁
1997 FY ₂	15.1	0.15	19990122	154.70010	235.85464	355.09964	5.48740	0.0977121	2.3082241	36	2	1997–1998	0.77	M-v	4	Williams	32677	1997 FY ₂
1997 FQ ₃	15.3	0.15	19990122	65.40750	332.07790	1.88144	2.45483	0.1612340	2.2524101	60	3	1991–1998	0.69	M-v	4	Williams	32752	1997 FQ ₃
1997 FX ₃	15.0	0.15	19990122	51.30563	104.56313	223.68176	2.25574	0.3387381	2.6456577	41	4	1971–1998	0.87	M-v	2	Williams	32677	1997 FX ₃
1997 GL ₆	15.5	0.15	19990122	351.19157	216.35618	190.39592	3.27301	0.1350051	2.2760865	38	2	1997–1998	0.61	M-v	4	Williams	32678	1997 GL ₆
1997 GP ₆	14.4	0.15	19990122	194.62852	151.58499	34.47313	4.82723	0.0765264	2.4163387	58	3	1993–1998	0.68	M-v	4	Williams	32752	1997 GP ₆
1997 GQ ₆	15.0	0.15	19990122	66.51790	303.88343	24.60101	4.41482	0.1800744	2.5272432	51	4	1990–1998	0.64	M-v	2	Williams	32752	1997 GQ ₆
1997 GB ₇	14.8	0.15	19990122	156.09177	186.58596	47.22961	3.30931	0.0118365	2.3767513	51	2	1997–1998	0.70	M-v	4	Williams	32678	1997 GB ₇

1997 GD ₈	15.0	0.15	19990122	188.04447	173.89286	29.01012	0.29593	0.1602871	2.3260816	45	3	1995–1998	0.63	M-v	4	Williams	32752	1997 GD ₈
1997 GL ₈	14.2	0.15	19990122	101.83709	275.42948	24.38735	4.73835	0.1624774	2.4432178	51	5	1990–1998	0.67	M-v	1	Williams	30094	1997 GL ₈
1997 GL ₁₁	15.4	0.15	19990122	114.51924	276.19276	1.81584	6.11598	0.0827803	2.2813355	71	3	1991–1998	0.74	M-v	2	Williams	32752	1997 GL ₁₁
1997 GA ₁₄	15.0	0.15	19990122	28.02032	63.85320	287.09338	1.60444	0.2005689	2.4287329	44	3	1994–1998	0.58	M-v	3	Williams	32752	1997 GA ₁₄
1997 GX ₁₄	14.7	0.15	19990122	67.39975	298.71855	6.40965	11.45195	0.2005015	2.6192572	59	2	1997–1998	0.70	M-v	3	Williams	32752	1997 GX ₁₄
1997 GZ ₁₄	16.5	0.15	19990122	185.53670	205.68218	344.05943	2.47919	0.0987468	2.3466996	25	2	1997–1998	0.49	M-v	4	Williams	32678	1997 GZ ₁₄
1997 GT ₁₈	15.1	0.15	19990122	16.23343	199.57675	177.20893	1.84127	0.1413205	2.2169006	67	5	1975–1998	0.66	M-v	2	Williams	32752	1997 GT ₁₈
1997 GC ₁₉	15.1	0.15	19990122	67.95208	317.88054	356.30817	6.98557	0.1205827	2.4227060	45	2	1997–1998	0.69	M-v	4	Williams	32679	1997 GC ₁₉
1997 GK ₂₁	15.5	0.15	19990122	157.40232	65.63871	192.92683	2.54134	0.1712111	2.2460701	34	4	1981–1998	0.53	M-v	2	Williams	30085	1997 GK ₂₁
1997 GR ₂₁	15.0	0.15	19990122	92.93880	76.55375	210.00757	11.90216	0.1706221	2.6744991	50	2	1997–1998	0.65	M-v	3	Williams	32679	1997 GR ₂₁
1997 GX ₂₂	15.0	0.15	19990122	135.14566	115.94660	147.62551	1.70536	0.1531958	2.4033772	47	4	1991–1998	0.81	M-v	3	Williams	32752	1997 GX ₂₂
1997 GQ ₂₃	14.0	0.15	19990122	62.64228	331.28112	329.79816	2.02310	0.0627477	2.7621686	46	2	1997–1998	0.59	M-v	4	Williams	32679	1997 GQ ₂₃
1997 GR ₂₄	14.0	0.15	19990122	67.02379	126.37882	195.27053	12.18629	0.1923405	2.6912760	71	2	1997–1998	0.49	M-v	3	Williams	32752	1997 GR ₂₄
1997 GZ ₂₅	15.0	0.15	19990122	193.62566	57.61742	150.16392	4.91180	0.0788667	2.2894133	44	2	1997–1998	0.72	M-v	3	Williams	32752	1997 GZ ₂₅
1997 GM ₃₃	14.5	0.15	19990122	52.78706	113.83193	197.54627	13.30125	0.1136922	2.6014289	31	2	1997–1998	0.74	M-v	4	Williams	32680	1997 GM ₃₃
1997 GA ₃₈	14.5	0.15	19990122	75.04320	138.12958	175.89334	4.50095	0.2045414	2.4578860	35	3	1993–1998	0.85	M-v	4	Williams	29936	1997 GA ₃₈
1997 GC ₃₈	15.3	0.15	19990122	13.97496	204.32288	186.90497	5.58154	0.0441150	2.2658840	59	2	1997–1998	0.81	M-v	4	Williams	32680	1997 GC ₃₈
1997 HQ ₁	15.0	0.15	19990122	134.58365	243.40548	15.27811	3.95033	0.1304064	2.2901114	61	4	1983–1998	0.90	M-v	2	Williams	32752	1997 HQ ₁
1997 HP ₂	15.0	0.15	19990122	129.68159	83.07010	174.90906	1.19078	0.1095949	2.5328315	43	2	1997–1998	0.75	M-v	4	Williams	32753	1997 HP ₂
1997 HW ₇	14.5	0.15	19990122	11.51134	121.82751	240.43004	2.44406	0.1900309	2.7288203	47	3	1996–1998	0.63	M-v	4	Williams	32680	1997 HW ₇
1997 HV ₁₁	15.3	0.15	19990122	343.62489	17.58376	35.87366	6.80682	0.1059166	2.3054217	26	2	1997–1998	0.58	M-v	4	Williams	32680	1997 HV ₁₁
1997 HS ₁₃	13.9	0.15	19990122	45.32191	112.20970	211.30408	12.43811	0.2639643	3.0685214	36	2	1997–1998	0.48	M-v	3	Williams	32681	1997 HS ₁₃
1997 JO	14.2	0.15	19990122	154.80631	235.51945	355.77882	9.38877	0.1718024	2.3060050	60	3	1995–1998	0.72	M-v	3	Williams	32753	1997 JO
1997 JH ₆	13.9	0.15	19990122	63.20054	208.17480	103.52081	5.39851	0.1567537	2.8779098	54	2	1997–1998	0.78	M-v	4	Williams	32681	1997 JH ₆
1997 JU ₇	14.5	0.15	19990122	352.43604	208.92004	202.27568	14.44675	0.1786219	2.3854541	41	2	1997–1998	0.56	M-v	4	Williams	32753	1997 JU ₇
1997 JV ₇	14.5	0.15	19990122	259.77015	330.54896	169.61406	6.69303	0.0885882	2.2996993	52	2	1997–1998	0.69	M-v	4	Williams	32681	1997 JV ₇
1997 JD ₁₂	15.5	0.15	19990122	43.45653	148.96644	220.55860	6.38168	0.1172787	2.2817819	23	3	1991–1998	0.85	M-v	4	Williams	30086	1997 JD ₁₂
1997 JL ₁₃	14.2	0.15	19990122	138.30502	58.71119	195.19523	3.28341	0.1550727	2.4749573	48	4	1989–1998	0.75	M-v	4	Williams	32753	1997 JL ₁₃
1997 JC ₁₄	14.0	0.15	19990122	59.69117	152.94176	195.87980	10.10077	0.2060211	2.5502389	38	3	1996–1998	0.63	M-v	2	Williams	32753	1997 JC ₁₄
1997 JD ₁₄	13.8	0.15	19990122	14.01783	164.60705	208.71312	14.04377	0.0164437	2.5468142	34	2	1997–1998	0.67	M-v	4	Williams	32753	1997 JD ₁₄
1997 JS ₁₄	15.0	0.15	19990122	45.19264	174.22770	171.35663	2.38185	0.0846330	2.5366821	68	4	1994–1998	0.74	M-v	2	Williams	32753	1997 JS ₁₄
1997 JE ₁₅	13.5	0.15	19990122	39.33436	176.42916	145.02613	2.80189	0.0511876	2.9024623	50	3	1996–1998	0.83	M-v	3	Williams	32753	1997 JE ₁₅
1997 JF ₁₆	15.0	0.15	19990122	74.05557	151.32385	185.06848	4.28850	0.0470893	2.3222262	28	2	1997–1998	0.72	M-v	4	Williams	32681	1997 JF ₁₆
1997 JH ₁₆	14.7	0.15	19990122	115.04952	93.80904	202.77797	5.45405	0.1287727	2.3811472	27	3	1993–1998	0.85	M-v	4	Williams	32753	1997 JH ₁₆
1997 JJ ₁₆	14.2	0.15	19990122	165.45690	52.79161	168.48626	2.30183	0.1210473	2.4779252	61	4	1977–1998	0.69	M-v	2	Williams	32753	1997 JJ ₁₆
1997 JH ₁₈	15.0	0.15	19990122	106.88035	174.06052	121.61288	5.03813	0.1997447	2.5715394	18	3	1981–1998	0.71	M-v	3	Williams	30463	1997 JH ₁₈
1997 KH	14.5	0.15	19990122	78.68233	120.63997	194.90670	2.03234	0.0900437	2.6245190	72	3	1992–1998	0.65	M-v	3	Williams	32753	1997 KH
1997 LZ ₄	14.5	0.15	19990122	28.77383	140.50150	227.77658	4.57739	0.1691361	2.6899693	52	2	1997–1998	0.53	M-v	4	Williams	32681	1997 LZ ₄
1997 MG ₁	13.0	0.15	19990122	329.48136	207.08584	189.87247	10.56282	0.1122635	3.0029932	29	2	1997–1998	0.32	M-v	4	Williams	32480	1997 MG ₁
1997 MR ₁	15.0	0.15	19990122	173.22494	349.50779	252.61572	23.65030	0.0942045	2.2992341	28	2	1997–1998	0.34	M-v	3	Marsden	32682	1997 MR ₁
1997 MJ ₆	16.0	0.15	19990122	64.75884	229.90770	102.45424	7.34843	0.1154156	2.6059780	21	3	1996–1998	0.45	M-v	3	Williams	30284	1997 MJ ₆
1997 MD ₈	14.5	0.15	19990122	280.37602	336.27747	188.63926	1.36041	0.1598772	2.4052640	22	3	1990–1998	0.44	M-v	4	Williams	32254	1997 MD ₈
1997 MB ₉	12.7	0.15	19990122	28.73678	87.68638	302.01882	21.58213	0.1089996	3.1981638	24	4	1986–1998	0.68	M-v	1	Marsden	32520	1997 MB ₉
1997 NU	13.0	0.15	19990122	159.01688	82.38716	122.03479	13.50270	0.1161893	2.6737054	46	2	1997–1998	0.60	M-v	3	Williams	32753	1997 NU
1997 NZ	12.5	0.15	19990122	128.26097	7.95305	284.74205	12.06474	0.1631206	2.6054901	64	5	1972–1998	0.47	M-v	2	Williams	31145	1997 NZ
1997 NQ ₂	13.5	0.15	19990122	230.34684	255.33368	281.61304	29.78624	0.1328458	2.7906138	43	3	1991–1998	0.81	M-v	3	Williams	32753	1997 NQ ₂
1997 NE ₃	14.0	0.15	19990122	244.27910	247.81084	293.59211	6.55635	0.1547781	2.3966635	39	2	1997–1998	0.44	M-v	4	Williams	32753	1997 NE ₃
1997 NG ₃	12.5	0.15	19990122	90.19943	162.14301	158.54338	10.86669	0.0989872	2.9988634	34	4	1987–1998	0.79	M-v	2	Williams	32520	1997 NG ₃
1997 NR ₆	13.0	0.15	19990122	52.15553	228.17608	125.98532	11.42314	0.1149788	2.9816995	38	5	1992–1998	0.50	M-v	1	Williams	31010	1997 NR ₆
1997 NU ₆	13.5	0.15	19990122	168.12305	355.57054	237.74722	8.37350	0.0926512	2.8065966	50	2	1997–1998	0.59	M-v	3	Williams	32753	1997 NU ₆
1997 OJ	13.8	0.15	19990122	104.38101	229.55526	58.65531	1.26706	0.1668862	3.1723600	48	2	1997–1998	0.64	M-v	3	Williams	32753	1997 OJ
1997 OV ₂	14.0	0.15	19990122	233.15789	263.39946	294.92567	9.51480	0.0610143	2.7297406	20	3	1995–1998	0.68	M-v	3	Williams	30675	1997 OV ₂
1997 PJ	14.5	0.15	19990122	112.25494	116.09044	188.48177	7.25651	0.1219223	2.7392892	37	4	1992–1998	0.84	M-v	1	Williams	31010	1997 PJ

1997 PM ₁	13.5	0.15	19990122	285.63644	7.58160	126.10287	6.67727	0.0906237	3.1633053	50	3	1991–1998	0.47	M-v	4	Williams	32682	1997 PM ₁
1997 PU ₂	14.5	0.15	19990122	301.65207	5.62372	150.49295	23.01236	0.1413963	2.2785182	57	2	1997–1998	0.55	M-v	4	Williams	32682	1997 PU ₂
1997 PG ₃	14.0	0.15	19990122	69.22591	199.08996	148.29313	2.84089	0.1087463	3.1816524	22	3	1995–1998	0.58	M-v	4	Williams	30677	1997 PG ₃
1997 QP	13.0	0.15	19990122	234.26487	261.75533	328.08094	13.62023	0.0669818	2.5820374	37	2	1997–1998	0.24	M-v	3	Williams	32481	1997 QP
1997 QD ₂	12.0	0.15	19990122	196.07581	95.75847	143.10710	10.92264	0.0704687	3.0030025	19	4	1949–1998	0.55	M-v	1	Williams	30878	1997 QD ₂
1997 QG ₄	12.5	0.15	19990122	160.48647	118.40747	147.93568	12.21369	0.1440803	2.9878422	13	3	1991–1998	0.80	M-v	4	Williams	30680	1997 QG ₄
1997 SH	14.0	0.15	19990122	158.26237	357.18053	274.66842	9.07523	0.0733547	2.9670080	39	3	1977–1998	0.57	M-v	3	Williams	32753	1997 SH
1997 SM ₁	13.0	0.15	19990122	252.09930	5.50588	199.20200	13.38871	0.1063498	2.6811088	30	2	1997–1998	0.20	M-v	3	Williams	32753	1997 SM ₁
1997 SJ ₄	10.5	0.15	19990122	359.23479	195.45664	232.61687	4.97334	0.1556098	5.2027564	33	4	1988–1998	0.65	M-v	1	Williams	31011	1997 SJ ₄
1997 SR ₈	13.5	0.15	19990122	255.56571	182.02898	357.13742	5.24788	0.0966128	3.1605583	30	4	1989–1998	0.76	M-v	2	Williams	30880	1997 SR ₈
1997 UM ₉	14.5	0.15	19990122	15.76091	88.19694	45.90941	7.52635	0.0380543	2.4316979	37	4	1982–1998	0.36	M-v	3	Williams	31147	1997 UM ₉
1997 US ₉	17.5	0.15	19990122	237.83077	357.19631	212.30521	20.01731	0.2818837	1.0523828	198	2	1997–1998	0.57	M-v	3	Williams	32753	1997 US ₉
1997 VV ₁	11.5	0.15	19990122	22.01263	12.71325	20.30505	4.67389	0.1422886	5.2244428	40	2	1997–1998	0.51	M-v	3	Williams	32753	1997 VV ₁
1997 WP ₂₈	14.0	0.15	19990122	86.29762	101.53614	275.32438	8.85731	0.1041725	2.9763666	18	3	1989–1998	0.52	M-v	3	Williams	31121	1997 WP ₂₈
1997 WR ₄₉	13.2	0.15	19990122	162.29954	166.58433	143.98326	1.81270	0.2417995	3.1691575	51	4	1985–1998	0.88	M-v	2	Williams	31395	1997 WR ₄₉
1997 XX ₅	13.5	0.15	19990122	152.17985	91.40452	236.65164	1.08129	0.1049215	2.9423179	32	3	1991–1998	0.63	M-v	4	Williams	31124	1997 XX ₅
1998 BR ₇	14.0	0.15	19990122	165.27158	70.67324	333.93250	23.11554	0.2794465	2.3222330	34	1	97 days	0.49	M-v	4	Williams	31797	1998 BR ₇
1998 EC ₃	16.5	0.15	19990122	62.78228	128.38392	128.37139	8.36351	0.5131926	2.1317222	271	1	231 days	0.61	M-v	3	Williams	32521	1998 EC ₃
1998 EZ ₁₉	15.0	0.15	19980127	10.36234	160.20504	332.99280	6.02378	0.1137308	2.3446620	12	1	55 days	0.34			Williams		1998 EZ ₁₉
1998 FR ₁₁	16.5	0.15	19990122	31.83870	157.77890	130.41790	6.58890	0.7100094	2.8001662	67	2	1998–1998	0.59	M-v	4	Williams	32317	1998 FR ₁₁
1998 FK ₃₅	15.5	0.15	19990122	146.10679	107.44450	350.12060	2.22239	0.1773611	2.3466979	31	2	1980–1998	0.66	M-v	6	Williams	32685	1998 FK ₃₅
1998 HJ ₄₁	18.0	0.15	19990122	74.76913	120.08951	211.92725	38.87604	0.1249240	1.3633414	98	1	174 days	0.63	M-v	3	Williams	32754	1998 HJ ₄₁
1998 HH ₄₉	21.5	0.15	19990122	94.74941	287.52598	23.75484	8.41445	0.5025754	1.5513189	14	1	171 days	0.42	M-v	4	Williams	32079	1998 HH ₄₉
1998 KU ₂	16.7	0.15	19990122	41.44276	119.14324	206.67054	4.88903	0.5539346	2.2507687	334	1	200 days	0.53	M-v	3	Marsden	32755	1998 KU ₂
1998 KH ₁₇	16.0	0.15	19990122	52.93630	71.23852	220.38207	22.39543	0.4278050	2.3420217	239	1	148 days	0.48	M-v	3	Williams	32755	1998 KH ₁₇
1998 KG ₆₂	6.5	0.15	19980726	104.43701	215.27363	336.47488	0.79716	0.0699037	44.2242668	43	1	149 days	0.17		E	Williams		1998 KG ₆₂
1998 MQ	16.5	0.15	19990122	38.59108	138.54188	221.26833	24.21106	0.4082150	1.7830971	201	1	166 days	0.53	M-v	3	Williams	32755	1998 MQ
1998 MM ₅	16.1	0.15	19990122	24.33328	22.60634	343.05015	4.64611	0.2530209	2.5750960	38	1	114 days	0.73	M-v	4	Williams	32755	1998 MM ₅
1998 MX ₅	18.0	0.15	19990122	31.89790	55.70906	266.61810	9.70888	0.6119116	2.9182771	274	1	117 days	0.57	M-v	3	Williams	32756	1998 MX ₅
1998 MU ₇	14.9	0.15	19990122	29.03343	84.24866	262.16517	4.87430	0.2048064	2.2414645	36	1	140 days	0.59	M-v	4	Williams	32756	1998 MU ₇
1998 MY ₇	14.5	0.15	19990122	41.99403	60.98253	255.87339	10.54344	0.2547631	2.6088014	32	1	125 days	0.66	M-v	4	Williams	32756	1998 MY ₇
1998 MC ₁₄	18.0	0.15	19980616	317.06803	149.79063	169.37147	9.78427	0.1621929	2.6954791	9	1	7 days	0.15			Williams		1998 MC ₁₄
1998 MJ ₁₄	11.1	0.15	19990122	75.05548	34.09123	285.06892	19.52865	0.0119658	3.1641796	31	4	1983–1998	0.71	M-v	1	Williams	32688	1998 MJ ₁₄
1998 ML ₁₄	17.5	0.15	19990122	35.09944	19.32012	339.38607	2.47064	0.6166535	2.4149980	195	1	117 days	0.58	M-v	4	Williams	32756	1998 ML ₁₄
1998 MG ₁₆	16.5	0.15	19990122	11.70915	224.55692	150.15352	2.74025	0.2234237	2.4035727	27	1	112 days	0.67	M-v	4	Williams	32756	1998 MG ₁₆
1998 MS ₁₈	15.5	0.15	19980527	354.53092	97.44483	163.13227	9.70453	0.0639421	2.6672614	21	1	35 days	0.71			Williams		1998 MS ₁₈
1998 MZ ₂₃	13.6	0.15	19990122	353.87277	79.79794	293.56520	5.55525	0.1496590	2.4691949	35	2	1994–1998	0.68	M-v	5	Williams	32523	1998 MZ ₂₃
1998 MR ₂₄	19.0	0.15	19990122	69.08684	54.30625	245.37879	6.08456	0.4454537	1.9578314	113	1	106 days	0.45	M-v	4	Williams	32756	1998 MR ₂₄
1998 MT ₂₄	14.5	0.15	19990122	86.78096	253.68985	310.09527	34.02019	0.6505622	2.4185538	198	1	117 days	0.50	M-v	4	Williams	32756	1998 MT ₂₄
1998 MK ₃₀	15.8	0.15	19990122	30.30997	154.49166	203.74191	5.41268	0.4346666	2.4670598	310	1	141 days	0.56	M-v	3	Williams	32756	1998 MK ₃₀
1998 MB ₃₈	13.8	0.15	19990122	91.39346	318.56604	301.44138	10.73981	0.0580166	2.7295139	45	3	1972–1998	0.75	M-v	3	Williams	32756	1998 MB ₃₈
1998 MA ₄₂	16.0	0.15	19990122	18.74074	60.08648	282.60357	4.41646	0.3158819	2.2854418	19	1	103 days	0.52	M-v	5	Williams	32524	1998 MA ₄₂
1998 NA	13.5	0.15	19990122	21.58414	37.81466	334.09739	9.18655	0.1776772	2.5783764	58	2	1992–1998	0.70	M-v	3	Williams	32756	1998 NA
1998 ND	15.0	0.15	19990122	37.97572	79.32980	276.78374	22.46582	0.3362893	2.5814160	34	1	125 days	0.54	M-v	5	Williams		1998 ND
1998 NF	15.0	0.15	19990122	78.44833	162.61207	76.20552	3.53942	0.1330626	2.4159562	11	1	74 days	0.55	M-v	6	Williams		1998 NF
1998 OK	14.6	0.15	19990122	84.59413	87.46998	186.34462	6.60431	0.0949190	2.3943801	56	1	115 days	0.51	M-v	4	Williams	32756	1998 OK
1998 OC ₁	16.5	0.15	19990122	55.79810	144.24149	167.65109	6.76474	0.1410175	2.2304944	27	1	87 days	0.54	M-v	4	Williams	32756	1998 OC ₁
1998 OD ₁	15.0	0.15	19990122	22.87802	84.85907	265.49570	5.41149	0.1436728	2.3866142	65	1	107 days	0.55	M-v	4	Williams	32756	1998 OD ₁
1998 OJ ₁	14.5	0.15	19990122	25.93828	92.49932	243.65267	12.02613	0.1951112	2.5911413	34	1	93 days	0.57	M-v	4	Williams		1998 OJ ₁
1998 OH ₂	15.0	0.15	19990122	103.46226	107.85167	151.42876	1.70176	0.1389860	2.4311346	32	1	67 days	0.57	M-v	5	Williams	32756	1998 OH ₂
1998 OZ ₄	14.5	0.15	19990122	317.29838	209.77182	206.67931	10.17414	0.1383230	3.1383768	23	1	89 days	0.64	M-v	5	Williams	32757	1998 OZ ₄
1998 OT ₆	15.0	0.15	19990122	81.39204	276.47541	354.91883	1.91551	0.2036931	2.3812639	38	3	1990–1998	0.59	M-v	3	Williams	32757	1998 OT ₆
1998 OX ₆	13.0	0.15	19990122	61.08861	351.12112	307.20843	11.81340	0.0670450	2.8632994	45	1	60 days	0.49	M-v	4	Williams	32757	1998 OX ₆

1998 OY ₆	14.0	0.15	19980726	131.84318	241.96010	305.78364	11.64845	0.0912800	2.6230362	35	1	41 days	0.62		Williams		1998 OY ₆
1998 OZ ₆	14.5	0.15	19990122	12.93374	104.86383	264.90708	4.33754	0.2387075	2.6306608	53	2	1997–1998	0.50	M-v	3	Williams	32757 1998 OZ ₆
1998 OC ₇	15.0	0.15	19990122	65.90890	135.31686	162.78634	8.12134	0.1182906	2.4386489	29	1	93 days	0.55	M-v	4	Williams	1998 OC ₇
1998 OE ₇	14.5	0.15	19990122	351.97791	87.22465	310.77779	12.05790	0.2070611	2.5371591	47	3	1986–1998	0.53	M-v	4	Williams	32757 1998 OE ₇
1998 OF ₇	15.5	0.15	19990122	66.16738	11.61796	288.82278	5.96534	0.1998921	2.2396674	32	1	80 days	0.54	M-v	4	Williams	32757 1998 OF ₇
1998 OG ₇	12.5	0.15	19980815	159.35169	312.77551	217.41312	5.34815	0.1020689	3.1852576	30	1	52 days	0.75			Williams	1998 OG ₇
1998 OH ₇	13.5	0.15	19990122	37.32514	44.80967	283.30426	7.90101	0.1796953	2.7351325	45	1	81 days	0.48	M-v	4	Williams	32757 1998 OH ₇
1998 OJ ₇	15.0	0.15	19990122	38.32109	109.86014	226.15545	5.25681	0.1557425	2.4123035	61	1	103 days	0.54	M-v	3	Williams	32757 1998 OJ ₇
1998 OU ₇	15.1	0.15	19990122	42.64950	26.44123	297.93644	5.34206	0.1259109	2.3454870	32	3	1991–1998	0.70	M-v	3	Williams	32757 1998 OU ₇
1998 OZ ₈	15.1	0.15	19990122	72.34801	338.34256	309.85049	3.56706	0.1397474	2.2698945	21	2	1997–1998	0.38	M-v	4	Williams	32689 1998 OZ ₈
1998 OQ ₁₁	16.2	0.15	19990122	30.27099	206.44955	140.04261	2.72382	0.2286772	2.3460962	21	1	83 days	0.72	M-v	5	Williams	1998 OQ ₁₁
1998 OT ₁₁	16.5	0.15	19990122	8.57322	181.24785	197.80948	1.71213	0.2376935	2.3868623	32	2	1995–1998	0.73	M-v	4	Williams	32757 1998 OT ₁₁
1998 OX ₁₁	16.5	0.15	19990122	8.12363	45.36390	315.86977	11.31536	0.3041851	2.6026117	15	1	81 days	0.60	M-v	5	Williams	1998 OX ₁₁
1998 OY ₁₁	16.6	0.15	19990122	36.41089	269.79710	61.95462	2.81658	0.2292305	2.3752715	22	1	77 days	0.31	M-v	4	Williams	1998 OY ₁₁
1998 OZ ₁₁	15.5	0.15	19990122	1.88968	36.77302	338.23552	7.37291	0.1230337	2.2840864	27	1	80 days	0.79	M-v	5	Williams	32757 1998 OZ ₁₁
1998 OB ₁₂	16.2	0.15	19990122	17.53731	262.34792	92.29450	4.82112	0.2408985	2.5758084	29	1	80 days	0.55	M-v	5	Williams	1998 OB ₁₂
1998 OD ₁₂	15.0	0.15	19990122	143.24778	218.48725	352.40322	5.94683	0.0752263	2.3953807	31	1	75 days	0.74	M-v	5	Williams	1998 OD ₁₂
1998 OE ₁₂	16.7	0.15	19990122	30.58981	225.56158	105.64309	5.50706	0.1865653	2.5851593	12	1	74 days	0.41	M-v	4	Williams	1998 OE ₁₂
1998 OG ₁₂	14.5	0.15	19990122	96.11721	261.21500	343.42060	9.17197	0.0892092	2.6308344	41	3	1986–1998	0.62	M-v	3	Williams	32757 1998 OG ₁₂
1998 OH ₁₂	14.0	0.15	19990122	9.71937	239.24639	100.86446	11.69688	0.1144189	3.0067045	23	1	109 days	0.39	M-v	4	Williams	32757 1998 OH ₁₂
1998 OK ₁₂	16.0	0.15	19990122	10.66974	323.86602	44.01499	7.51660	0.1262534	2.3332355	21	1	74 days	0.44	M-v	4	Williams	1998 OK ₁₂
1998 OM ₁₂	12.0	0.15	19990122	331.48647	322.94559	27.36717	7.48814	0.0360203	5.3251658	26	1	75 days	0.51	M-v	5	Williams	1998 OM ₁₂
1998 ON ₁₂	15.0	0.15	19990122	41.06094	175.30179	153.42763	2.71983	0.2116332	2.3908478	37	1	115 days	0.73	M-v	4	Williams	32757 1998 ON ₁₂
1998 OU ₁₂	15.5	0.15	19990122	38.60773	208.26674	129.91495	8.24227	0.2248661	2.2642176	34	1	107 days	0.42	M-v	4	Williams	32757 1998 OU ₁₂
1998 OV ₁₂	13.7	0.15	19990122	36.96253	178.79117	145.08595	4.99569	0.0665566	2.7901666	27	2	1995–1998	0.66	M-v	4	Williams	32689 1998 OV ₁₂
1998 OA ₁₃	15.4	0.15	19990122	33.64636	24.65383	319.59135	6.26380	0.1738464	2.2692927	21	1	100 days	0.43	M-v	4	Williams	1998 OA ₁₃
1998 OD ₁₃	15.5	0.15	19990122	19.61449	323.70182	36.79350	1.25245	0.2112573	2.4244817	43	2	1993–1998	0.67	M-v	4	Williams	32757 1998 OD ₁₃
1998 ON ₁₃	14.5	0.15	19990122	23.04455	36.02828	318.20511	9.52904	0.0684471	2.2644618	42	2	1981–1998	0.74	M-v	4	Williams	32757 1998 ON ₁₃
1998 OR ₁₃	14.3	0.15	19990122	12.11042	221.71468	150.14762	1.55509	0.1951070	2.4082792	58	3	1987–1998	0.61	M-v	3	Williams	32757 1998 OR ₁₃
1998 OK ₁₄	16.5	0.15	19990122	24.41687	231.41056	124.67799	5.52049	0.3419768	2.5901283	35	1	87 days	0.44	M-v	4	Williams	1998 OK ₁₄
1998 OT ₁₄	16.0	0.15	19990122	24.76062	35.28058	326.15274	5.08006	0.1947444	2.2278157	33	1	100 days	0.72	M-v	4	Williams	32758 1998 OT ₁₄
1998 OV ₁₄	13.2	0.15	19990122	236.41881	157.49275	333.53132	14.42113	0.0562301	2.6451421	35	1	78 days	0.62	M-v	4	Williams	1998 OV ₁₄
1998 OX ₁₄	14.0	0.15	19990122	75.29175	313.59652	326.95213	12.50795	0.1365664	2.5864684	38	1	77 days	0.61	M-v	4	Williams	1998 OX ₁₄
1998 PF	15.0	0.15	19990122	140.94921	53.48623	152.51121	41.96704	0.2871613	2.0087318	92	1	74 days	0.58	M-v	4	Williams	32758 1998 PF
1998 PG	17.1	0.15	19990122	33.30137	155.71161	222.92046	6.48690	0.3919663	2.0150474	407	1	98 days	0.52	M-v	3	Marsden	32758 1998 PG
1998 PJ	15.5	0.15	19990122	35.49306	16.43137	315.66882	1.76763	0.2312032	2.3782795	57	1	72 days	0.37	M-v	4	Williams	1998 PJ
1998 PL	15.0	0.15	19990122	17.97266	214.03814	125.24679	6.95857	0.1698836	2.2753506	26	1	66 days	0.34	M-v	5	Williams	1998 PL
1998 PR	14.5	0.15	19980904	315.12746	56.78664	334.42269	4.24810	0.0666136	2.7601603	23	1	56 days	0.50			Marsden	1998 PR
1998 PU	15.1	0.15	19990122	22.25737	31.31256	332.28778	6.11794	0.2050262	2.3953230	47	1	80 days	0.51	M-v	4	Williams	1998 PU
1998 PW	16.5	0.15	19990122	17.61215	17.34410	344.30397	4.13372	0.2246367	2.4205497	27	2	1995–1998	0.56	M-v	4	Williams	32758 1998 PW
1998 PA ₁	13.9	0.15	19990122	293.60381	196.26112	238.77398	5.62673	0.1303664	3.0485902	27	1	73 days	0.43	M-v	5	Williams	1998 PA ₁
1998 PB ₁	17.5	0.15	19990122	63.86249	350.09601	299.89611	5.97043	0.4315661	2.0286763	167	1	73 days	0.56	M-v	4	Williams	32758 1998 PB ₁
1998 PD ₁	13.3	0.15	19990122	73.19044	104.81853	172.70026	11.22752	0.1160314	3.0183525	39	2	1993–1998	0.61	M-v	4	Williams	32689 1998 PD ₁
1998 PG ₁	14.5	0.15	19980904	16.62031	273.62622	22.71479	7.46252	0.2291727	2.2688123	24	1	59 days	0.33			Williams	1998 PG ₁
1998 PL ₁	14.0	0.15	19980904	297.93793	170.08781	244.11725	4.71958	0.1249613	2.4507126	34	1	57 days	0.57			Williams	1998 PL ₁
1998 PM ₁	16.0	0.15	19980904	351.26472	336.51437	1.07123	5.29573	0.2550301	2.3599531	17	1	58 days	0.57			Williams	1998 PM ₁
1998 PN ₁	14.5	0.15	19990122	14.79229	295.93945	34.45589	5.05631	0.1416484	3.1799066	38	3	1993–1998	0.77	M-v	4	Williams	32758 1998 PN ₁
1998 PO ₁	13.4	0.15	19990122	260.61149	145.94917	275.49447	13.61238	0.0633470	2.5816347	13	1	60 days	0.46	M-v	6	Williams	1998 PO ₁
1998 PP ₁	12.3	0.15	19990122	323.84801	113.96716	290.52440	9.52108	0.0719431	3.2418256	31	1	63 days	0.54	M-v	5	Williams	1998 PP ₁
1998 QC	14.5	0.15	19980904	247.65375	161.15752	306.83716	4.51271	0.0682593	2.1782247	40	1	55 days	0.53			Williams	1998 QC
1998 QD	16.5	0.15	19980815	350.82303	196.00799	151.90675	3.06885	0.2090696	2.4324611	33	1	32 days	0.67			Williams	1998 QD
1998 QE	14.0	0.15	19980904	272.17653	93.54561	341.84510	2.32162	0.0519089	2.6639534	44	1	55 days	0.51			Marsden	1998 QE
1998 QF	13.5	0.15	19980904	103.30903	251.33997	338.07641	8.21683	0.0805209	3.1939412	39	1	55 days	0.74			Marsden	1998 QF

1998 QH	15.0	0.15	19980904	54.31797	300.94613	335.69282	7.43991	0.1015835	2.4039037	41	1	57 days	0.69		Marsden		1998 QH
1998 QL	14.5	0.15	19980904	321.39140	0.04127	15.18923	3.58245	0.1076161	2.7990607	26	1	57 days	0.68		Williams		1998 QL
1998 QO	16.5	0.15	19980904	4.27301	14.45875	319.26579	13.01092	0.2951510	2.4102658	32	1	37 days	0.71		Williams		1998 QO
1998 QW	14.5	0.15	19990122	39.98353	109.85818	212.38874	14.40994	0.1526427	2.6048393	26	2	1990–1998	0.61	M-v 3	Williams	32689	1998 QW
1998 QX	15.5	0.15	19990122	35.49288	156.19020	165.57308	36.50786	0.2014582	2.7310550	22	2	1989–1998	0.64	M-v 3	Williams	32690	1998 QX
1998 QY	14.5	0.15	19980904	11.61556	161.85965	148.15678	14.08179	0.1657077	2.5668567	37	1	54 days	0.66		Marsden		1998 QY
1998 QZ	13.6	0.15	19990122	119.95905	92.10065	176.20735	1.75581	0.0668653	2.8468657	68	2	1993–1998	0.71	M-v 5	Williams	32690	1998 QZ
1998 QA ₁	18.5	0.15	19990122	67.41065	332.88095	299.22600	8.16303	0.5323998	2.1031771	144	1	69 days	0.50	M-v 4	Williams	32758	1998 QA ₁
1998 QH ₁	20.5	0.15	19990122	26.14126	214.94213	162.35657	12.42281	0.5480108	2.5430348	41	1	69 days	0.53	M-v 5	Williams	32758	1998 QH ₁
1998 QJ ₁	16.5	0.15	19990122	4.07527	4.09748	312.11728	23.37789	0.8162066	11.5172493	51	1	62 days	0.54	M-v 3	Williams		1998 QJ ₁
1998 QP ₁	15.6	0.15	19990122	62.36436	326.77372	338.63770	7.22664	0.1840861	2.2571806	42	2	1997–1998	0.62	M-v 4	Williams	32690	1998 QP ₁
1998 QR ₁	14.5	0.15	19990122	189.50524	290.38261	261.12666	5.50049	0.0867573	2.4583466	40	2	1995–1998	0.63	M-v 5	Williams	32690	1998 QR ₁
1998 QZ ₁	16.5	0.15	19980815	337.33173	174.65954	187.41166	3.21729	0.2306357	2.2266471	17	1	27 days	0.27		Williams		1998 QZ ₁
1998 QD ₂	17.0	0.15	19990122	20.24063	43.40158	314.06057	14.77707	0.4250076	3.0466633	55	1	63 days	0.54	M-v 4	Williams	32759	1998 QD ₂
1998 QH ₂	16.1	0.15	19990122	230.65709	13.89992	168.97284	61.05068	0.3621091	1.4268857	85	1	54 days	0.70	M-v 6	Williams	32759	1998 QH ₂
1998 QU ₂	14.0	0.15	19990122	9.77337	202.80362	162.73651	15.62786	0.2110766	2.5661315	31	2	1994–1998	0.62	M-v 3	Williams	32759	1998 QU ₂
1998 QB ₃	14.5	0.15	19980815	39.95561	133.11501	147.39107	31.28570	0.0893277	2.7264234	21	1	28 days	0.60		Williams		1998 QB ₃
1998 QF ₃	14.6	0.15	19990122	329.63878	87.62451	331.67686	20.44142	0.2217243	2.2726815	23	3	1981–1998	0.58	M-v 4	Williams	32691	1998 QF ₃
1998 QL ₃	15.5	0.15	19980904	312.01963	54.14201	343.99658	18.46198	0.0832366	1.9648426	39	1	55 days	0.60		Williams		1998 QL ₃
1998 QV ₃	20.5	0.15	19990122	32.81648	33.34469	333.01924	14.26197	0.5093971	2.3165106	63	1	58 days	0.59	M-v 5	Williams	32759	1998 QV ₃
1998 QW ₃	16.3	0.15	19990122	35.56367	128.40164	187.25458	6.10012	0.3795246	2.7686802	57	1	134 days	0.41	M-v 4	Williams	32759	1998 QW ₃
1998 QA ₄	17.0	0.15	19990122	23.56527	356.36438	348.47879	12.21010	0.2742376	2.6764654	25	1	65 days	0.60	M-v 4	Williams		1998 QA ₄
1998 QD ₄	17.0	0.15	19980904	359.81547	294.21605	48.11932	6.05947	0.1290271	2.2732929	16	1	55 days	0.61		Williams		1998 QD ₄
1998 QE ₄	14.5	0.15	19990122	37.08893	218.13921	113.43574	10.73561	0.0908289	2.9950009	14	1	65 days	0.72	M-v 5	Williams		1998 QE ₄
1998 QJ ₄	15.0	0.15	19990122	340.83311	359.76940	60.68229	3.74847	0.2062540	2.3667254	53	2	1991–1998	0.65	M-v 5	Williams	32759	1998 QJ ₄
1998 QM ₄	14.5	0.15	19990122	49.47532	262.41532	48.69937	15.63306	0.1589549	2.6379455	18	1	64 days	0.22	M-v 4	Williams		1998 QM ₄
1998 QN ₄	14.5	0.15	19990122	164.74101	196.06360	13.31015	6.45798	0.0833006	2.3360915	47	2	1997–1998	0.63	M-v 4	Williams	32759	1998 QN ₄
1998 QO ₄	13.4	0.15	19990122	357.12085	68.72171	301.69275	13.20370	0.0346090	3.1836540	39	1	64 days	0.64	M-v 5	Williams		1998 QO ₄
1998 QV ₄	15.5	0.15	19980726	13.90431	353.43191	308.46007	12.47346	0.2082046	2.5478452	34	1	33 days	0.60		Williams		1998 QV ₄
1998 QZ ₄	14.5	0.15	19980904	32.36762	83.97204	197.84707	9.08935	0.2726645	3.0791084	36	1	26 days	0.56		Williams		1998 QZ ₄
1998 QA ₅	14.5	0.15	19980815	265.36764	199.64410	236.79163	6.13141	0.0881704	2.4064091	38	1	52 days	0.68		Williams		1998 QA ₅
1998 QO ₅	15.5	0.15	19990122	1.10712	206.98524	171.06900	29.44506	0.1274708	2.5886953	31	1	63 days	0.90	M-v 5	Williams		1998 QO ₅
1998 QS ₅	14.5	0.15	19990122	356.44660	56.04013	338.41370	6.71471	0.2290411	2.7369049	40	1	66 days	0.47	M-v 5	Marsden		1998 QS ₅
1998 QT ₅	14.0	0.15	19990122	288.20268	110.38657	340.74037	9.94672	0.0937268	2.9587250	29	1	66 days	0.43	M-v 5	Marsden		1998 QT ₅
1998 QW ₅	15.0	0.15	19990122	66.69517	44.70589	243.54975	7.32513	0.1538800	2.9394299	22	1	65 days	0.42	M-v 5	Williams		1998 QW ₅
1998 QG ₆	14.0	0.15	19980904	344.85754	202.63301	202.03350	20.77586	0.1346597	3.1887964	12	1	51 days	0.28		Williams		1998 QG ₆
1998 QV ₇	15.0	0.15	19990122	57.00558	146.36697	145.19007	3.11056	0.1665297	2.4712924	25	1	139 days	0.65	M-v 4	Williams	32529	1998 QV ₇
1998 QX ₉	14.0	0.15	19990122	347.48757	262.48207	116.45436	5.49724	0.2226838	3.1049606	24	4	1971–1998	0.69	M-v 2	Williams	32691	1998 QX ₉
1998 QO ₁₀	14.9	0.15	19990122	42.86790	126.65321	198.84016	4.35872	0.1778218	2.2769259	36	2	1995–1998	0.52	M-v 3	Williams	32760	1998 QO ₁₀
1998 QQ ₁₂	16.5	0.15	19990122	66.12134	124.95447	171.13268	6.82184	0.2108362	2.1857821	35	1	81 days	0.54	M-v 4	Williams		1998 QQ ₁₂
1998 QU ₁₃	15.1	0.15	19990122	343.93474	78.58477	320.82472	5.83357	0.1409453	2.2679957	20	2	1981–1998	0.62	M-v 5	Williams	32692	1998 QU ₁₃
1998 QA ₁₅	15.0	0.15	19990122	58.23988	144.29691	156.81983	7.27016	0.1209430	2.3482018	33	4	1980–1998	0.63	M-v 2	Williams	32760	1998 QA ₁₅
1998 QN ₁₅	15.5	0.15	19980904	339.09888	173.86646	207.60756	7.13632	0.2648279	2.6643363	34	1	55 days	0.96		Williams		1998 QN ₁₅
1998 QO ₁₅	14.0	0.15	19980904	304.05132	129.07335	287.78851	7.962390	0.1379021	3.0691881	31	1	37 days	1.04		Williams		1998 QO ₁₅
1998 QR ₁₅	18.0	0.15	19990122	21.33847	54.07365	322.56142	9.69584	0.5651654	2.7543836	210	1	84 days	0.47	M-v 3	Marsden	32760	1998 QR ₁₅
1998 QN ₁₆	16.0	0.15	19980904	333.05090	211.30435	166.48395	7.04642	0.2439568	2.3064335	25	1	57 days	0.63		Williams		1998 QN ₁₆
1998 QT ₁₆	15.0	0.15	19990122	3.79218	33.36916	341.89687	3.28787	0.2034701	2.5495114	27	3	1986–1998	0.53	M-v 3	Williams	32693	1998 QT ₁₆
1998 QC ₁₇	14.0	0.15	19990122	177.43821	58.16196	127.85119	6.91479	0.0527986	2.3943167	18	2	1982–1998	0.87	M-v 5	Williams	32693	1998 QC ₁₇
1998 QM ₁₇	14.5	0.15	19980904	32.49760	155.43201	130.23000	4.26272	0.1678431	2.7398916	17	1	35 days	0.59		Williams		1998 QM ₁₇
1998 QV ₁₇	15.5	0.15	19980815	23.75998	108.91579	188.87430	3.77038	0.1013406	2.3170317	12	1	14 days	0.56		Williams		1998 QV ₁₇
1998 QX ₁₇	16.5	0.15	19980904	27.50101	131.14070	163.66776	7.21568	0.1891043	2.2103440	21	1	59 days	0.57		Williams		1998 QX ₁₇
1998 QD ₁₈	15.5	0.15	19980815	1.61410	154.50589	171.15622	3.97827	0.0427085	2.4711626	13	1	14 days	0.86		Williams		1998 QD ₁₈
1998 QL ₁₈	14.5	0.15	19990122	324.20525	68.37705	340.80776	4.38622	0.1668559	3.1592211	24	1	76 days	0.59	M-v 5	Williams		1998 QL ₁₈

1998 QS ₁₈	15.5	0.15	19990122	50.62318	33.33305	290.89232	3.77562	0.2096058	2.1865759	28	1	82 days	0.55	M-v	4	Williams	32761	1998 QS ₁₈
1998 QW ₁₈	14.0	0.15	19980815	263.10410	260.55573	173.02951	12.43238	0.0646818	2.7407460	21	1	32 days	0.83			Williams		1998 QW ₁₈
1998 QK ₁₉	14.0	0.15	19990122	58.94913	181.86761	122.30896	7.71514	0.1133638	2.4193307	25	3	1983–1998	0.47	M-v	3	Williams	32694	1998 QK ₁₉
1998 QL ₁₉	14.2	0.15	19990122	38.55489	277.34984	52.13222	3.38983	0.1832540	2.4309042	35	3	1987–1998	0.75	M-v	3	Williams	32761	1998 QL ₁₉
1998 QO ₁₉	15.5	0.15	19980904	323.38641	249.63723	134.55178	5.02179	0.1784198	2.3319993	18	1	38 days	0.64			Williams		1998 QO ₁₉
1998 QB ₂₀	15.0	0.15	19980904	337.49143	98.23604	273.88805	6.27465	0.2368285	3.1430404	21	1	36 days	0.93			Williams		1998 QB ₂₀
1998 QC ₂₀	14.5	0.15	19990122	41.19032	136.85318	168.09653	16.88759	0.3001865	3.0972816	50	1	71 days	0.52	M-v	4	Williams		1998 QC ₂₀
1998 QJ ₂₀	16.0	0.15	19980815	4.77227	125.59338	196.02266	4.54643	0.1478771	2.2786925	16	1	29 days	0.98			Williams		1998 QJ ₂₀
1998 QK ₂₀	15.0	0.15	19980815	334.30779	120.99715	237.35083	3.14196	0.0618764	2.4837817	16	1	15 days	0.67			Williams		1998 QK ₂₀
1998 QL ₂₀	16.0	0.15	19980815	350.78175	102.99030	240.44360	2.53542	0.2361690	2.3786036	28	1	32 days	0.61			Williams		1998 QL ₂₀
1998 QM ₂₀	12.5	0.15	19980815	199.06044	323.46880	169.72445	11.66175	0.0375832	3.0294464	36	1	56 days	0.54			Williams		1998 QM ₂₀
1998 QW ₂₀	14.8	0.15	19990122	292.94804	285.92547	159.90300	8.81904	0.1309241	2.7455702	15	1	66 days	0.72	M-v	6	Williams		1998 QW ₂₀
1998 QY ₂₀	16.0	0.15	19990122	38.64911	64.11920	268.75624	1.04941	0.2208243	2.4340831	32	2	1979–1998	0.76	M-v	5	Williams	32695	1998 QY ₂₀
1998 QA ₂₂	13.0	0.15	19990122	45.59864	149.98416	161.18105	15.57261	0.0628840	3.1887035	22	1	74 days	0.51	M-v	5	Williams		1998 QA ₂₂
1998 QL ₂₂	13.5	0.15	19990122	357.62562	90.55951	281.38994	7.49723	0.1334438	3.1774921	35	3	1987–1998	0.73	M-v	3	Williams	32695	1998 QL ₂₂
1998 QS ₂₂	13.5	0.15	19990122	45.41177	249.90623	65.35261	4.45312	0.1056658	2.6459460	31	1	78 days	0.55	M-v	4	Williams		1998 QS ₂₂
1998 QA ₂₃	15.0	0.15	19990122	338.28685	356.11345	60.94160	3.47075	0.2130049	2.3377742	26	4	1977–1998	0.87	M-v	4	Williams	32695	1998 QA ₂₃
1998 QC ₂₃	15.3	0.15	19990122	34.86354	218.45556	114.43158	5.48054	0.2628637	2.5627358	27	1	105 days	0.49	M-v	4	Williams	32761	1998 QC ₂₃
1998 QF ₂₃	14.5	0.15	19990122	356.55440	28.66853	348.55787	10.47339	0.1166925	2.6551071	33	1	66 days	0.57	M-v	5	Williams		1998 QF ₂₃
1998 QL ₂₃	14.0	0.15	19990122	348.92428	33.13548	352.45578	5.17786	0.2007133	3.1450883	48	2	1993–1998	0.63	M-v	4	Williams	32761	1998 QL ₂₃
1998 QA ₂₄	15.0	0.15	19990122	338.78471	200.65819	211.03726	5.31390	0.1251184	2.3048297	32	3	1988–1998	0.67	M-v	5	Williams	32696	1998 QA ₂₄
1998 QB ₂₄	15.0	0.15	19980904	309.27122	127.36187	272.84633	5.70454	0.1166814	2.3933556	33	1	55 days	0.67			Williams		1998 QB ₂₄
1998 QD ₂₄	16.5	0.15	19980815	348.95179	97.06390	250.18138	3.66468	0.1950024	2.3080834	19	1	32 days	0.88			Williams		1998 QD ₂₄
1998 QE ₂₄	14.5	0.15	19980904	65.01582	328.06601	292.68376	5.53145	0.1139471	2.4773163	32	1	55 days	0.70			Williams		1998 QE ₂₄
1998 QV ₂₄	15.5	0.15	19990122	358.12420	223.51917	169.77140	4.00012	0.1645294	2.3154264	27	1	70 days	0.54	M-v	5	Williams		1998 QV ₂₄
1998 QC ₂₅	15.0	0.15	19990122	331.53271	277.01308	143.70694	3.89266	0.1187764	2.1640662	28	1	83 days	0.64	M-v	5	Williams		1998 QC ₂₅
1998 QZ ₂₅	14.4	0.15	19990122	344.96722	38.22528	15.23436	2.81926	0.1603118	2.4611797	37	1	64 days	0.67	M-v	5	Williams		1998 QZ ₂₅
1998 QA ₂₆	13.5	0.15	19990122	4.42669	218.71712	154.68390	5.67733	0.0873985	3.0317458	30	1	60 days	0.65	M-v	5	Williams		1998 QA ₂₆
1998 QB ₂₆	14.5	0.15	19990122	49.39065	348.42156	337.65739	1.92617	0.2333949	2.3981492	45	1	81 days	0.61	M-v	5	Williams	32762	1998 QB ₂₆
1998 QC ₂₆	14.0	0.15	19980904	15.01009	346.12909	341.17247	3.53387	0.1484554	2.7064869	38	1	58 days	0.77			Williams		1998 QC ₂₆
1998 QF ₂₆	14.5	0.15	19990122	110.38047	101.08295	156.94343	2.53880	0.2065735	2.3620411	43	2	1997–1998	0.74	M-v	4	Williams	32697	1998 QF ₂₆
1998 QK ₂₆	14.5	0.15	19990122	339.43271	186.85027	205.96436	0.40736	0.2159080	3.1382079	24	2	1982–1998	0.45	M-v	4	Williams	32697	1998 QK ₂₆
1998 QL ₂₆	15.0	0.15	19980904	308.78360	265.55313	126.77769	4.33740	0.1233946	2.6502158	20	1	57 days	0.41			Williams		1998 QL ₂₆
1998 QM ₂₆	16.5	0.15	19980904	320.35446	241.50492	144.06365	2.79399	0.1819380	2.4116258	20	1	57 days	0.68			Williams		1998 QM ₂₆
1998 QN ₂₆	15.5	0.15	19980904	319.43213	49.80724	329.18223	9.65881	0.2484482	2.6285798	15	1	54 days	0.39			Williams		1998 QN ₂₆
1998 QR ₂₆	15.5	0.15	19990122	77.04768	39.73298	243.88369	1.39868	0.2048276	2.3927663	61	2	1997–1998	0.78	M-v	4	Williams	32762	1998 QR ₂₆
1998 QH ₂₇	15.5	0.15	19980904	337.36978	72.78609	320.42787	22.57811	0.2470284	2.3407964	16	1	55 days	0.51			Williams		1998 QH ₂₇
1998 QX ₂₇	14.5	0.15	19980904	337.75955	51.78410	316.28592	7.97729	0.1530383	3.0473857	25	1	55 days	0.94			Williams		1998 QX ₂₇
1998 QJ ₂₈	13.5	0.15	19990122	167.08429	312.79594	265.13046	33.54938	0.1791561	2.7623001	19	1	61 days	0.49	M-v	5	Williams		1998 QJ ₂₈
1998 QM ₂₈	14.9	0.15	19980904	31.32246	264.87196	63.68181	0.29878	0.0817935	2.6487543	34	1	54 days	0.75			Williams		1998 QM ₂₈
1998 QO ₂₈	14.5	0.15	19980904	25.76214	72.05813	271.82827	4.05597	0.0483012	2.7686961	23	1	55 days	0.71			Marsden		1998 QO ₂₈
1998 QS ₂₈	16.0	0.15	19980726	0.75979	20.38401	301.66612	8.82376	0.2036021	2.7541775	26	1	42 days	0.59			Williams		1998 QS ₂₈
1998 QE ₂₉	14.0	0.15	19980904	14.09284	94.89705	292.77443	11.72302	0.1907798	2.7043605	16	1	49 days	0.21			Williams		1998 QE ₂₉
1998 QK ₂₉	15.5	0.15	19980815	288.82313	135.85898	281.96393	5.80095	0.1283748	2.4678242	9	1	8 days	0.67			Williams		1998 QK ₂₉
1998 QQ ₂₉	16.0	0.15	19980726	64.84943	58.99673	191.47669	6.02899	0.0954435	2.4712877	15	1	33 days	0.22			Williams		1998 QQ ₂₉
1998 QU ₂₉	15.5	0.15	19980815	252.92579	198.39015	241.82730	6.38119	0.0155803	2.2468706	12	1	7 days	0.81			Williams		1998 QU ₂₉
1998 QW ₂₉	16.0	0.15	19980815	11.37441	11.50070	303.97197	10.92155	0.1798888	2.6863756	20	1	14 days	0.80			Williams		1998 QW ₂₉
1998 QM ₃₀	14.9	0.15	19990122	33.27434	356.74361	347.84931	5.24179	0.1580082	2.4433553	66	2	1997–1998	0.54	M-v	3	Williams	32763	1998 QM ₃₀
1998 QN ₃₀	15.2	0.15	19990122	55.07219	157.46500	164.58979	1.95578	0.2068992	2.1849990	66	3	1981–1998	0.54	M-v	3	Williams	32697	1998 QN ₃₀
1998 QR ₃₀	13.0	0.15	19990122	167.38630	15.13174	181.50176	13.26253	0.0814153	2.6053552	33	3	1949–1998	0.63	M-v	3	Williams	32698	1998 QR ₃₀
1998 QS ₃₀	15.5	0.15	19990122	16.40870	188.22072	169.77466	13.46798	0.1591000	2.7214714	18	1	70 days	0.71	M-v	5	Williams		1998 QS ₃₀
1998 QZ ₃₀	15.0	0.15	19990122	36.71296	82.37547	239.02114	0.20438	0.1502778	3.0890764	18	1	66 days	0.71	M-v	6	Williams		1998 QZ ₃₀
1998 QC ₃₁	14.2	0.15	19990122	12.56200	202.72521	152.05926	11.54788	0.1921099	3.1485109	31	1	61 days	0.60	M-v	5	Williams		1998 QC ₃₁

1998 QF ₃₁	14.6	0.15	19990122	33.98434	199.54915	134.89623	3.60307	0.1587326	2.6057746	49	5	1981–1998	0.66	M-v	1	Williams	32698	1998 QF ₃₁
1998 QS ₃₁	12.5	0.15	19990122	63.07514	298.59382	347.79138	13.91842	0.1088369	3.2163079	47	3	1981–1998	0.58	M-v	3	Williams	32763	1998 QS ₃₁
1998 QT ₃₁	14.9	0.15	19990122	16.54371	278.21534	87.18472	3.30964	0.1967645	2.4584746	27	1	61 days	0.65	M-v	5	Williams		1998 QT ₃₁
1998 QW ₃₁	15.5	0.15	19990122	18.34112	21.07307	349.38225	6.61616	0.2202532	2.2878636	39	2	1991–1998	0.70	M-v	4	Williams	32698	1998 QW ₃₁
1998 QB ₃₂	13.0	0.15	19990122	349.78327	38.06248	346.23605	10.91883	0.2881055	3.9842928	33	1	100 days	0.47	M-v	4	Williams		1998 QB ₃₂
1998 QS ₃₂	15.5	0.15	19980904	34.03792	322.47486	327.26739	6.46229	0.1845748	2.3084430	20	1	55 days	0.55			Williams		1998 QS ₃₂
1998 QC ₃₃	14.5	0.15	19980904	320.04286	67.70004	320.95419	14.35609	0.1265831	2.6371981	21	1	39 days	0.67			Williams		1998 QC ₃₃
1998 QH ₃₃	15.5	0.15	19980904	340.88114	85.93581	278.36599	3.59720	0.1400908	2.2976350	22	1	55 days	0.61			Williams		1998 QH ₃₃
1998 QL ₃₃	14.0	0.15	19990122	112.85064	292.42014	316.84378	11.35761	0.1003102	2.5315355	37	3	1986–1998	0.70	M-v	4	Williams	32699	1998 QL ₃₃
1998 QM ₃₃	17.0	0.15	19980904	352.31924	141.55739	210.76728	2.98981	0.2209910	2.2429016	13	1	57 days	0.49			Marsden		1998 QM ₃₃
1998 QR ₃₃	15.5	0.15	19980904	344.90476	136.59031	231.55166	4.43169	0.2915523	2.5553918	35	1	55 days	0.63			Williams		1998 QR ₃₃
1998 QS ₃₃	14.0	0.15	19980904	318.39684	139.48466	247.40594	5.24697	0.0708411	3.0602122	26	1	55 days	0.81			Williams		1998 QS ₃₃
1998 QV ₃₃	15.2	0.15	19990122	38.44064	135.45260	200.09665	1.89056	0.2098315	2.4441541	23	1	72 days	0.53	M-v	4	Williams		1998 QV ₃₃
1998 QK ₃₄	14.0	0.15	19990122	24.20935	13.74508	334.84481	14.53126	0.1278846	2.5968945	34	1	71 days	0.59	M-v	4	Williams		1998 QK ₃₄
1998 QN ₃₄	15.9	0.15	19990122	31.29321	4.91045	347.28472	4.73613	0.1921225	2.2489614	29	1	73 days	0.55	M-v	4	Williams		1998 QN ₃₄
1998 QW ₃₄	13.4	0.15	19990122	52.07044	130.59857	175.60507	14.83136	0.2001883	2.7741438	28	2	1992–1998	0.62	M-v	4	Williams	32700	1998 QW ₃₄
1998 QZ ₃₄	15.0	0.15	19980904	10.24730	150.20884	174.91433	12.45121	0.1817073	2.9082738	25	1	56 days	0.80			Williams		1998 QZ ₃₄
1998 QD ₃₅	15.0	0.15	19990122	18.43932	292.18862	63.80142	0.44268	0.1066147	2.6342511	33	2	1997–1998	0.72	M-v	4	Williams	32700	1998 QD ₃₅
1998 QG ₃₅	14.2	0.15	19990122	4.35704	29.24846	344.92231	8.71162	0.1792585	2.7645209	15	1	64 days	0.38	M-v	5	Williams		1998 QG ₃₅
1998 QK ₃₅	15.5	0.15	19990122	17.03976	353.18005	12.53048	4.10458	0.2639654	2.6047683	29	1	70 days	0.62	M-v	5	Williams		1998 QK ₃₅
1998 QS ₃₅	15.5	0.15	19990122	326.12313	64.48054	356.37992	6.08285	0.0937069	2.3414242	23	1	81 days	0.79	M-v	5	Williams		1998 QS ₃₅
1998 QN ₃₆	13.2	0.15	19980904	307.24452	241.89592	165.48521	22.94930	0.1370052	3.1672780	23	1	58 days	0.55			Williams		1998 QN ₃₆
1998 QO ₃₆	15.0	0.15	19990122	7.42949	128.61536	253.93015	3.59687	0.1897920	2.4473624	40	3	1995–1998	0.68	M-v	4	Williams	32701	1998 QO ₃₆
1998 QR ₃₆	14.5	0.15	19990122	58.64833	131.91657	173.93184	12.75960	0.1557484	2.5815752	30	1	64 days	0.51	M-v	4	Williams		1998 QR ₃₆
1998 QS ₃₆	15.2	0.15	19980904	319.13287	77.27739	318.30438	14.07145	0.1497771	2.6275920	20	1	37 days	0.76			Williams		1998 QS ₃₆
1998 QT ₃₆	14.5	0.15	19980904	76.09332	1.14809	254.58894	4.16218	0.0816039	2.4781037	28	1	55 days	0.75			Williams		1998 QT ₃₆
1998 QV ₃₆	16.5	0.15	19990122	32.06965	26.16169	317.24792	12.26870	0.3057277	2.6174580	32	2	1996–1998	0.68	M-v	3	Williams	32701	1998 QV ₃₆
1998 QW ₃₆	15.5	0.15	19980815	338.94905	77.67697	284.62290	5.42937	0.1359269	2.3366795	40	1	55 days	0.84			Williams		1998 QW ₃₆
1998 QY ₃₆	15.5	0.15	19980904	357.36267	132.16395	213.44222	4.73531	0.1691514	2.2206599	29	1	58 days	0.57			Williams		1998 QY ₃₆
1998 QB ₃₇	15.0	0.15	19980904	13.85477	75.81293	248.84935	4.96789	0.1398048	2.5557155	31	1	55 days	0.53			Williams		1998 QB ₃₇
1998 QF ₃₇	16.0	0.15	19990122	11.03328	181.19727	204.22651	4.58815	0.3068347	2.5664272	35	2	1990–1998	0.69	M-v	4	Williams	32701	1998 QF ₃₇
1998 QM ₃₇	14.5	0.15	19980904	206.12572	199.42012	299.43166	5.67970	0.0654539	2.3855271	29	1	55 days	0.58			Williams		1998 QM ₃₇
1998 QO ₃₇	14.9	0.15	19990122	94.23328	75.16766	182.05630	6.44796	0.2135682	2.5423084	32	1	86 days	0.73	M-v	5	Williams		1998 QO ₃₇
1998 QT ₃₇	15.5	0.15	19990122	15.26761	210.61085	164.37954	8.94961	0.3319237	2.6612205	35	2	1996–1998	0.53	M-v	4	Williams	32702	1998 QT ₃₇
1998 QV ₃₇	13.8	0.15	19980904	324.92533	185.26756	192.97332	1.40781	0.0405112	2.9157527	38	1	58 days	0.88			Williams		1998 QV ₃₇
1998 QY ₃₇	14.9	0.15	19990122	32.92720	14.91413	335.82319	5.72337	0.1789890	2.2941150	43	2	1991–1998	0.43	M-v	3	Williams	32702	1998 QY ₃₇
1998 QP ₃₈	14.7	0.15	19980904	305.34652	252.14983	175.28068	7.80235	0.2773346	2.6615616	25	1	58 days	0.73			Williams		1998 QP ₃₈
1998 QR ₃₈	13.6	0.15	19990122	1.82924	52.29574	318.66178	9.08056	0.1004768	3.1342755	28	1	72 days	0.63	M-v	5	Williams		1998 QR ₃₈
1998 QV ₃₈	14.7	0.15	19990122	306.72576	203.04838	249.03803	4.41994	0.1375834	2.2660285	28	2	1978–1998	0.63	M-v	5	Williams	32703	1998 QV ₃₈
1998 QX ₃₈	14.1	0.15	19980904	83.51913	42.20580	214.73590	7.12383	0.0218481	2.5365793	22	1	58 days	0.88			Williams		1998 QX ₃₈
1998 QY ₃₈	15.8	0.15	19990122	12.21761	209.89424	172.94962	6.38297	0.2180389	2.3099331	40	2	1977–1998	0.62	M-v	4	Williams	32704	1998 QY ₃₈
1998 QC ₃₉	15.0	0.15	19990122	69.45218	143.46453	149.46988	2.76760	0.1929830	2.4212592	26	1	65 days	0.70	M-v	5	Williams		1998 QC ₃₉
1998 QE ₃₉	14.5	0.15	19990122	5.87289	352.49856	19.62882	0.46516	0.2141987	3.0817788	40	2	1982–1998	0.67	M-v	4	Williams	32704	1998 QE ₃₉
1998 QG ₃₉	15.3	0.15	19990122	23.36342	10.97520	344.67251	8.94790	0.3114511	2.6952288	57	2	1996–1998	0.57	M-v	4	Williams	32764	1998 QG ₃₉
1998 QO ₃₉	16.0	0.15	19990122	6.41829	283.03502	109.40919	4.07587	0.2482853	2.3247123	27	2	1991–1998	0.57	M-v	5	Williams	32704	1998 QO ₃₉
1998 QR ₃₉	15.5	0.15	19990122	101.18192	263.15590	1.31733	6.15428	0.1088119	2.3683663	21	1	66 days	0.80	M-v	5	Williams		1998 QR ₃₉
1998 QT ₃₉	14.0	0.15	19990122	353.25923	255.43878	142.95208	7.69278	0.1936706	2.5534329	32	2	1992–1998	0.42	M-v	4	Williams	32705	1998 QT ₃₉
1998 QZ ₃₉	14.1	0.15	19990122	79.64321	307.36473	334.37453	6.13103	0.1070756	2.7970488	30	2	1996–1998	0.59	M-v	4	Williams	32705	1998 QZ ₃₉
1998 QB ₄₀	14.4	0.15	19990122	31.42253	178.79493	161.61474	10.04330	0.1877144	2.7415416	33	3	1971–1998	0.69	M-v	3	Williams	32705	1998 QB ₄₀
1998 QG ₄₀	14.9	0.15	19990122	61.45306	120.46676	177.19420	8.18292	0.2346655	2.5800009	29	2	1993–1998	0.47	M-v	4	Williams	32705	1998 QG ₄₀
1998 QJ ₄₀	14.7	0.15	19990122	26.00482	170.56139	188.58895	6.81822	0.1352008	2.3491044	43	3	1991–1998	0.65	M-v	3	Williams	32706	1998 QJ ₄₀
1998 QL ₄₀	14.8	0.15	19980904	32.63858	109.05411	184.24183	11.81406	0.2249370	2.7084483	26	1	58 days	0.63			Williams		1998 QL ₄₀
1998 QM ₄₀	14.0	0.15	19980904	9.91017	16.77240	313.30648	11.22634	0.1887198	2.6583479	25	1	55 days	0.58			Williams		1998 QM ₄₀

1998 QN ₄₀	15.0	0.15	19980904	271.31420	185.90732	251.02187	4.24018	0.0349861	2.3775865	22	1	58 days	0.71	Williams		1998 QN ₄₀
1998 QP ₄₀	13.0	0.15	19990122	282.47923	147.30416	319.91851	12.43331	0.1140534	2.6090581	32	4	1975–1998	0.66	M-v 4	Williams	32706 1998 QP ₄₀
1998 QX ₄₀	16.1	0.15	19990122	51.33578	139.44611	183.06622	5.12374	0.2606458	2.3131938	39	3	1977–1998	0.86	M-v 4	Williams	32706 1998 QX ₄₀
1998 QS ₄₁	14.2	0.15	19990122	86.49862	196.66064	84.80844	1.68127	0.0455291	2.7188142	38	2	1997–1998	0.83	M-v 4	Williams	32707 1998 QS ₄₁
1998 QV ₄₁	15.5	0.15	19980815	355.08204	359.13058	343.91746	11.91197	0.2695556	2.7782471	27	1	32 days	0.93		Williams	1998 QV ₄₁
1998 QW ₄₁	13.9	0.15	19990122	10.40823	15.14222	345.49045	18.07610	0.1653049	3.1261783	43	1	75 days	0.72	M-v 4	Williams	1998 QW ₄₁
1998 QC ₄₂	15.5	0.15	19990122	76.47834	270.47737	11.70583	6.75465	0.2009661	2.4202064	23	1	70 days	0.72	M-v 5	Williams	1998 QC ₄₂
1998 QT ₄₂	15.0	0.15	19980904	6.53817	88.41988	248.14855	4.23462	0.1521786	2.5899758	26	1	55 days	0.80		Williams	1998 QT ₄₂
1998 QU ₄₂	13.6	0.15	19980904	266.38780	110.58718	336.65878	9.73907	0.0790725	3.0070802	29	1	58 days	0.76		Williams	1998 QU ₄₂
1998 QE ₄₃	14.1	0.15	19990122	339.28898	281.05720	131.26767	3.15542	0.2038545	2.8622964	25	1	74 days	0.58	M-v 5	Williams	1998 QE ₄₃
1998 QF ₄₃	16.3	0.15	19980904	355.48133	0.43177	348.08136	4.79057	0.1676337	2.1883121	31	1	58 days	0.60		Williams	1998 QF ₄₃
1998 QP ₄₃	12.9	0.15	19990122	266.76828	110.58741	356.89468	16.94545	0.0997240	3.1620661	24	2	1993–1998	0.78	M-v 4	Williams	32708 1998 QP ₄₃
1998 QQ ₄₃	15.1	0.15	19990122	13.36704	5.02197	10.00146	7.38271	0.1363453	2.3008619	34	1	71 days	0.46	M-v 4	Williams	1998 QQ ₄₃
1998 QU ₄₃	15.5	0.15	19990122	102.94106	144.45709	117.61140	6.97086	0.1475814	2.2731591	37	3	1991–1998	0.79	M-v 3	Williams	32709 1998 QU ₄₃
1998 QA ₄₄	15.5	0.15	19990122	340.46848	52.32929	7.48907	5.65396	0.1597710	2.2231658	20	1	65 days	0.75	M-v 5	Williams	1998 QA ₄₄
1998 QB ₄₄	13.3	0.15	19990122	51.80042	310.31384	358.95523	10.10673	0.1150431	3.0628902	33	2	1993–1998	0.42	M-v 4	Williams	32709 1998 QB ₄₄
1998 QD ₄₄	15.6	0.15	19990122	38.81701	341.53100	2.83735	4.03877	0.1656404	2.2642567	53	2	1997–1998	0.56	M-v 4	Williams	32709 1998 QD ₄₄
1998 QE ₄₄	16.3	0.15	19990122	32.32645	343.22706	16.90505	2.55919	0.2067924	2.1514212	45	3	1995–1998	0.72	M-v 3	Williams	32709 1998 QE ₄₄
1998 QF ₄₄	14.9	0.15	19980904	314.78911	40.94776	1.03505	3.58771	0.1536698	2.5895638	29	1	58 days	0.65		Williams	1998 QF ₄₄
1998 QH ₄₄	15.6	0.15	19990122	57.25656	178.09231	143.00478	7.41750	0.1771840	2.1941024	31	2	1985–1998	0.75	M-v 5	Williams	32709 1998 QH ₄₄
1998 QK ₄₄	15.2	0.15	19990122	24.78685	306.38361	54.06330	1.93258	0.1878343	2.4197195	28	2	1993–1998	0.56	M-v 4	Williams	32710 1998 QK ₄₄
1998 QN ₄₄	15.3	0.15	19980904	43.85735	299.77668	348.87046	6.65147	0.1172655	2.3559938	29	1	58 days	0.70		Williams	1998 QN ₄₄
1998 QS ₄₄	13.4	0.15	19990122	158.30983	240.40890	329.78184	6.15911	0.0756375	2.7687745	28	2	1996–1998	0.59	M-v 4	Williams	32710 1998 QS ₄₄
1998 QU ₄₄	15.3	0.15	19980904	335.03972	81.55825	294.26726	2.49796	0.1138346	2.4341733	25	1	58 days	0.61		Williams	1998 QU ₄₄
1998 QA ₄₅	15.5	0.15	19980904	337.42102	59.35066	322.34023	12.18462	0.2179257	2.7835125	27	1	55 days	1.05		Williams	1998 QA ₄₅
1998 QC ₄₅	14.5	0.15	19980904	335.41902	144.03361	235.46864	5.37242	0.1566667	2.5930418	34	1	55 days	0.57		Williams	1998 QC ₄₅
1998 QD ₄₅	15.0	0.15	19990122	358.26125	112.90065	283.59770	5.61836	0.1266172	2.3382000	34	2	1991–1998	0.56	M-v 5	Williams	32710 1998 QD ₄₅
1998 QF ₄₅	14.5	0.15	19990122	346.46429	223.77551	183.56558	12.86631	0.1644206	2.6304430	22	1	64 days	0.56	M-v 5	Williams	1998 QF ₄₅
1998 QJ ₄₅	14.6	0.15	19990122	0.08106	214.83417	178.51406	13.58536	0.1961990	2.6187070	39	2	1977–1998	0.80	M-v 4	Williams	32710 1998 QJ ₄₅
1998 QK ₄₅	15.0	0.15	19980904	17.24416	104.92368	216.11106	5.50415	0.1862757	2.4607589	19	1	55 days	0.57		Williams	1998 QK ₄₅
1998 QO ₄₅	13.8	0.15	19980904	25.13115	134.81160	183.04160	12.45309	0.0735951	2.4355508	26	1	59 days	0.60		Williams	1998 QO ₄₅
1998 QQ ₄₅	12.2	0.15	19990122	223.47837	189.91860	324.33359	13.55444	0.0769296	3.1285945	43	2	1979–1998	0.60	M-v 4	Williams	32711 1998 QQ ₄₅
1998 QR ₄₅	15.1	0.15	19990122	354.87433	226.09185	178.80209	13.16397	0.1893461	2.4179080	27	1	64 days	0.55	M-v 5	Williams	1998 QR ₄₅
1998 QU ₄₅	15.3	0.15	19990122	83.05620	97.59441	199.18292	5.12618	0.1149639	2.1543038	36	3	1991–1998	0.53	M-v 3	Williams	32711 1998 QU ₄₅
1998 QA ₄₆	15.5	0.15	19990122	86.38518	327.08717	325.00279	6.40862	0.0955160	2.2200256	26	1	71 days	0.60	M-v 5	Williams	1998 QA ₄₆
1998 QJ ₄₆	15.1	0.15	19980904	0.26260	359.16096	344.26658	7.51498	0.2014782	2.5821594	28	1	58 days	0.68		Williams	1998 QJ ₄₆
1998 QL ₄₆	14.7	0.15	19980904	41.16747	309.76252	342.70887	15.04046	0.1235056	2.5942679	29	1	58 days	0.66		Williams	1998 QL ₄₆
1998 QN ₄₆	15.0	0.15	19990122	28.64993	190.59368	166.74704	2.80820	0.1804714	2.3824674	44	4	1976–1998	0.83	M-v 3	Williams	32711 1998 QN ₄₆
1998 QV ₄₆	15.0	0.15	19980904	355.50718	32.19699	324.10726	14.48939	0.2762916	2.6339820	50	1	37 days	0.84		Williams	1998 QV ₄₆
1998 QA ₄₇	13.0	0.15	19990122	62.18072	172.88817	120.82460	6.44474	0.1391673	3.1623949	35	4	1987–1998	0.85	M-v 2	Williams	32711 1998 QA ₄₇
1998 QB ₄₇	15.2	0.15	19980904	308.47116	39.53271	13.05503	5.69184	0.1863481	2.4302285	25	1	58 days	0.64		Williams	1998 QB ₄₇
1998 QE ₄₇	16.0	0.15	19990122	28.56661	304.03438	56.51738	3.21109	0.2158431	2.2701210	28	1	78 days	0.59	M-v 4	Williams	1998 QE ₄₇
1998 QF ₄₇	15.5	0.15	19990122	207.99471	173.01381	356.04050	13.84128	0.1177105	2.3776079	13	1	66 days	0.72	M-v 6	Williams	1998 QF ₄₇
1998 QG ₄₇	15.6	0.15	19980904	5.27613	322.77186	10.45503	6.46369	0.2214594	2.6067426	25	1	58 days	0.69		Williams	1998 QG ₄₇
1998 QS ₄₇	15.9	0.15	19980904	347.80164	207.47403	156.22872	3.88580	0.2114065	2.4029413	25	1	56 days	0.87		Williams	1998 QS ₄₇
1998 QT ₄₇	14.2	0.15	19980904	295.67625	267.34726	161.41438	12.92622	0.1695022	2.6423580	31	1	56 days	0.63		Williams	1998 QT ₄₇
1998 QX ₄₇	16.0	0.15	19980904	345.61011	55.57165	314.58876	3.98808	0.2443543	2.3872685	28	1	55 days	0.57		Williams	1998 QX ₄₇
1998 QY ₄₇	15.3	0.15	19990122	326.47406	248.61113	178.41921	6.28806	0.0707843	2.3195149	24	2	1997–1998	0.78	M-v 5	Williams	32712 1998 QY ₄₇
1998 QD ₄₈	15.5	0.15	19990122	359.74904	178.42492	225.79805	3.88089	0.1791869	2.2584967	39	2	1988–1998	0.82	M-v 5	Williams	32767 1998 QD ₄₈
1998 QF ₄₈	14.0	0.15	19980904	41.97216	356.57671	298.64677	6.37852	0.1312189	2.3263581	20	1	55 days	0.69		Williams	1998 QF ₄₈
1998 QL ₄₈	13.5	0.15	19980904	27.98490	73.84908	238.41439	3.42626	0.1464752	3.1199362	32	1	55 days	0.67		Williams	1998 QL ₄₈
1998 QM ₄₈	16.0	0.15	19980904	349.91269	39.67582	322.25587	5.98640	0.1913046	2.2981123	28	1	55 days	0.70		Williams	1998 QM ₄₈
1998 QN ₄₈	16.0	0.15	19980904	339.61822	63.18906	321.89186	5.24270	0.2983300	2.6269110	27	1	55 days	0.81		Williams	1998 QN ₄₈

1998 QR ₄₈	15.5	0.15	19990122	38.03752	51.09706	283.72987	1.07325	0.2973914	2.6398044	31	2	1997–1998	0.68	M-v	4	Williams	32712	1998 QR ₄₈
1998 QT ₄₈	16.5	0.15	19980904	346.51333	93.14747	275.21626	1.10131	0.2256522	2.4100785	22	1	52 days	0.83			Williams		1998 QT ₄₈
1998 QW ₄₈	14.0	0.15	19990122	117.94914	80.28888	164.53574	12.42407	0.1399822	2.6975694	30	1	82 days	0.79	M-v	5	Williams		1998 QW ₄₈
1998 QE ₄₉	14.1	0.15	19990122	352.18532	347.23354	41.22886	1.57763	0.0721777	2.7832371	33	2	1992–1998	0.56	M-v	5	Williams	32713	1998 QE ₄₉
1998 QG ₄₉	15.7	0.15	19990122	52.87370	297.61108	32.36410	2.05289	0.1283280	2.2022015	31	2	1971–1998	0.58	M-v	4	Williams	32713	1998 QG ₄₉
1998 QL ₄₉	15.1	0.15	19980904	29.67218	279.50139	15.81094	3.86674	0.2443501	2.6925853	22	1	56 days	0.62			Williams		1998 QL ₄₉
1998 QM ₄₉	15.6	0.15	19990122	39.96892	340.28471	358.95026	6.39327	0.1388835	2.4083143	34	2	1997–1998	0.74	M-v	4	Williams	32713	1998 QM ₄₉
1998 QQ ₄₉	14.3	0.15	19990122	273.29324	332.03146	139.93677	8.51707	0.1155947	2.7589818	23	2	1982–1998	0.82	M-v	5	Williams	32713	1998 QQ ₄₉
1998 QF ₅₀	14.6	0.15	19990122	35.66048	327.10386	8.74226	8.31489	0.1481565	2.7643247	30	2	1989–1998	0.63	M-v	4	Williams	32713	1998 QF ₅₀
1998 QG ₅₀	15.1	0.15	19990122	39.16213	339.15852	353.66097	13.64759	0.2037268	2.6256990	46	3	1992–1998	0.59	M-v	3	Williams	32767	1998 QG ₅₀
1998 QJ ₅₀	15.9	0.15	19980904	322.56706	27.64806	3.36094	5.55406	0.1309054	2.2186035	31	1	58 days	0.79			Williams		1998 QJ ₅₀
1998 QN ₅₀	14.8	0.15	19990122	108.00968	141.39010	118.60898	5.28631	0.1397301	2.2913582	23	2	1991–1998	0.77	M-v	5	Williams	32714	1998 QN ₅₀
1998 QS ₅₀	14.9	0.15	19980904	25.91224	166.42497	135.87357	5.36694	0.2440390	2.6982486	25	1	56 days	0.54			Williams		1998 QS ₅₀
1998 QX ₅₀	14.4	0.15	19990122	63.16476	316.05698	353.25624	7.41835	0.1329820	2.4816732	33	3	1977–1998	0.62	M-v	3	Williams	32714	1998 QX ₅₀
1998 QY ₅₀	15.5	0.15	19990122	12.84475	29.53287	350.17665	6.55914	0.1217681	2.3084105	23	2	1977–1998	0.82	M-v	5	Williams	32714	1998 QY ₅₀
1998 QZ ₅₀	14.8	0.15	19990122	18.52722	216.95613	146.51387	5.72950	0.1747429	2.7717781	32	1	84 days	0.70	M-v	4	Williams		1998 QZ ₅₀
1998 QC ₅₁	15.2	0.15	19990122	359.95520	238.68408	159.32380	4.30600	0.1280219	2.2451332	35	2	1993–1998	0.63	M-v	5	Williams	32714	1998 QC ₅₁
1998 QK ₅₁	14.5	0.15	19980904	186.75380	345.66091	176.33553	5.62626	0.0390092	2.2714072	29	1	43 days	1.04			Williams		1998 QK ₅₁
1998 QM ₅₁	13.0	0.15	19980904	103.34159	293.53977	302.81493	3.71314	0.0975567	3.1270553	30	1	55 days	1.01			Williams		1998 QM ₅₁
1998 QR ₅₁	13.7	0.15	19990122	317.77760	122.48262	338.19792	22.72571	0.2809355	2.4442043	41	3	1992–1998	0.62	M-v	3	Williams	32715	1998 QR ₅₁
1998 QS ₅₁	16.0	0.15	19990122	38.20880	108.91457	241.14141	2.67027	0.1266879	2.3067168	38	2	1997–1998	0.69	M-v	4	Williams	32768	1998 QS ₅₁
1998 QT ₅₁	15.0	0.15	19990122	66.41443	355.69935	316.80370	6.45692	0.1493137	2.3052644	31	3	1987–1998	0.72	M-v	3	Williams	32715	1998 QT ₅₁
1998 QU ₅₁	14.8	0.15	19980904	355.34944	103.05167	255.05659	4.08756	0.1779421	3.0654352	21	1	39 days	0.92			Williams		1998 QU ₅₁
1998 QV ₅₁	14.8	0.15	19990122	54.27725	11.16722	316.31512	7.61616	0.1371674	2.3938357	45	3	1987–1998	0.61	M-v	4	Williams	32768	1998 QV ₅₁
1998 QX ₅₁	15.1	0.15	19990122	282.88407	258.03394	215.30745	4.97692	0.0619524	2.2941379	27	2	1997–1998	0.89	M-v	5	Williams	32715	1998 QX ₅₁
1998 QY ₅₁	15.5	0.15	19980904	315.91100	168.64778	238.45644	4.73569	0.1495750	2.3697375	31	1	55 days	0.85			Williams		1998 QY ₅₁
1998 QA ₅₂	16.0	0.15	19980904	328.06513	95.77965	294.39241	5.28014	0.1286623	2.1603855	15	1	55 days	0.67			Williams		1998 QA ₅₂
1998 QB ₅₂	13.8	0.15	19990122	39.37148	155.53601	183.01454	13.00268	0.1809427	2.6695529	47	3	1985–1998	0.61	M-v	3	Williams	32715	1998 QB ₅₂
1998 QC ₅₂	13.9	0.15	19990122	221.17866	340.27753	181.30896	22.08917	0.0105661	2.5967305	47	3	1973–1998	0.80	M-v	3	Williams	32715	1998 QC ₅₂
1998 QE ₅₂	13.5	0.15	19990122	303.89036	209.33262	244.61691	5.78073	0.1424313	2.7829640	33	3	1992–1998	0.78	M-v	4	Williams	32716	1998 QE ₅₂
1998 QH ₅₂	13.5	0.15	19990122	241.49168	189.39154	319.22499	7.55333	0.0545393	2.4564240	41	2	1994–1998	0.62	M-v	5	Williams	32716	1998 QH ₅₂
1998 QK ₅₂	14.8	0.15	19990122	26.56339	174.15669	187.68456	6.84164	0.1203359	2.4535172	38	3	1991–1998	0.69	M-v	3	Williams	32716	1998 QK ₅₂
1998 QM ₅₂	15.0	0.15	19990122	339.24536	270.75050	143.61008	6.79381	0.0988325	2.3467193	25	2	1991–1998	0.73	M-v	5	Williams	32716	1998 QM ₅₂
1998 QO ₅₂	18.0	0.15	19990122	19.87371	224.11458	164.08691	6.18960	0.4113633	2.4453230	71	1	51 days	0.67	M-v	5	Williams	32768	1998 QO ₅₂
1998 QR ₅₂	18.5	0.15	19990122	320.27052	204.20527	316.32692	17.63457	0.2879017	1.0437913	82	1	54 days	0.52	M-v	5	Williams	32768	1998 QR ₅₂
1998 QS ₅₂	14.1	0.15	19990122	351.11964	242.11284	261.33105	17.70092	0.8588272	2.1998151	216	1	81 days	0.59	M-v	5	Marsden	32768	1998 QS ₅₂
1998 QT ₅₂	14.0	0.15	19980904	14.10893	84.71321	247.58696	7.39484	0.2258686	3.1446918	43	1	37 days	0.76			Williams		1998 QT ₅₂
1998 QU ₅₂	13.9	0.15	19980904	342.38145	106.94504	271.76738	7.49310	0.1194403	3.0349585	22	1	56 days	0.63			Williams		1998 QU ₅₂
1998 QV ₅₂	15.0	0.15	19980904	18.83862	21.17747	303.44314	8.35932	0.2225204	2.7159348	20	1	34 days	0.57			Williams		1998 QV ₅₂
1998 QX ₅₂	16.6	0.15	19980904	353.37186	174.19511	191.69956	12.54442	0.3180839	2.5419964	19	1	55 days	0.36			Williams		1998 QX ₅₂
1998 QY ₅₂	15.0	0.15	19980904	72.48155	346.48031	280.14381	7.38246	0.1417615	2.3050728	23	1	56 days	0.53			Williams		1998 QY ₅₂
1998 QE ₅₃	15.0	0.15	19990122	14.89128	190.26967	193.02538	14.70749	0.1646195	2.6224568	30	1	69 days	0.59	M-v	4	Williams		1998 QE ₅₃
1998 QF ₅₃	13.0	0.15	19980904	42.16417	37.27726	272.49732	5.71833	0.1238440	3.1743326	14	1	38 days	0.56			Williams		1998 QF ₅₃
1998 QH ₅₃	15.8	0.15	19980904	351.33499	78.15340	297.12470	3.56628	0.3105087	2.6069325	30	1	59 days	1.25			Williams		1998 QH ₅₃
1998 QJ ₅₃	15.0	0.15	19980904	9.48736	20.76397	324.19562	6.78962	0.2205946	2.5908921	20	1	29 days	0.41			Williams		1998 QJ ₅₃
1998 QK ₅₃	13.5	0.15	19990122	163.83370	264.58634	326.20510	6.26822	0.0722006	2.3612940	48	3	1986–1998	0.60	M-v	3	Williams	32716	1998 QK ₅₃
1998 QL ₅₃	14.0	0.15	19980904	122.40161	33.20948	199.79971	13.74966	0.0982187	2.6247881	33	1	55 days	0.68			Williams		1998 QL ₅₃
1998 QM ₅₃	14.0	0.15	19980904	322.60696	66.68985	342.97189	9.29792	0.0872231	3.0225259	30	1	38 days	0.66			Williams		1998 QM ₅₃
1998 QN ₅₃	12.7	0.15	19980904	98.94331	29.89253	216.48459	11.24925	0.2002981	3.1220497	35	1	52 days	0.63			Williams		1998 QN ₅₃
1998 QO ₅₃	14.4	0.15	19990122	57.45140	111.67669	204.30409	24.11872	0.2700362	2.7347977	37	1	61 days	0.52	M-v	4	Williams		1998 QO ₅₃
1998 QR ₅₃	14.0	0.15	19980924	312.61380	75.07286	335.34625	8.35863	0.1435336	2.7494018	25	1	59 days	0.88			Williams		1998 QR ₅₃
1998 QS ₅₃	14.0	0.15	19990122	21.83835	145.52143	204.86630	9.51040	0.1118026	3.0231454	33	1	63 days	0.70	M-v	5	Williams		1998 QS ₅₃
1998 QW ₅₃	13.9	0.15	19990122	91.80723	116.81928	176.38245	6.40807	0.1177174	2.3283912	71	2	1993–1998	0.51	M-v	4	Williams	32716	1998 QW ₅₃

1998 QF ₅₄	15.7	0.15	19980904	347.81628	165.73197	209.01146	6.17725	0.1202358	2.2500056	29	1	48 days	0.61	Williams	1998 QF ₅₄
1998 QH ₅₄	14.0	0.15	19980904	106.84298	40.55170	199.03152	14.00177	0.1463755	2.5573901	16	1	31 days	0.65	Williams	1998 QH ₅₄
1998 QJ ₅₄	13.9	0.15	19980904	295.13701	211.48825	223.24554	5.98613	0.0889965	2.3844870	36	1	48 days	0.51	Williams	1998 QJ ₅₄
1998 QK ₅₄	13.8	0.15	19980904	340.73223	108.53619	272.69530	3.35849	0.0820634	2.7857342	31	1	49 days	0.62	Williams	1998 QK ₅₄
1998 QL ₅₄	16.2	0.15	19980904	11.96882	128.12832	208.45690	4.19418	0.1971723	2.3085153	30	1	48 days	0.70	Williams	1998 QL ₅₄
1998 QM ₅₄	15.0	0.15	19990122	38.20134	57.83639	301.77940	3.99203	0.1732538	2.2298860	19	1	74 days	0.51	M-v 4 Williams	1998 QM ₅₄
1998 QN ₅₄	14.8	0.15	19990122	33.29845	159.02853	196.39290	10.27090	0.1542789	2.6558747	30	1	62 days	0.48	M-v 4 Williams	1998 QN ₅₄
1998 QR ₅₄	16.0	0.15	19980904	21.97155	126.08220	182.32786	13.38681	0.3618100	2.7017322	35	1	34 days	0.78	Williams	1998 QR ₅₄
1998 QS ₅₄	15.5	0.15	19980904	350.61596	55.63822	316.13599	4.71516	0.2524059	2.3276825	16	1	31 days	0.40	Williams	1998 QS ₅₄
1998 QT ₅₄	15.0	0.15	19980904	295.99051	226.22920	203.86942	5.59089	0.0662771	2.4014894	24	1	31 days	0.45	Williams	1998 QT ₅₄
1998 QU ₅₄	15.5	0.15	19980904	2.22967	34.00112	316.97517	4.22401	0.3301123	2.6106041	16	1	31 days	0.45	Williams	1998 QU ₅₄
1998 QV ₅₄	15.3	0.15	19980904	59.86955	311.63445	323.00737	5.40289	0.2133579	2.2203873	25	1	49 days	0.84	Williams	1998 QV ₅₄
1998 QA ₅₅	15.3	0.15	19990122	38.13591	170.22218	190.55529	5.64020	0.2239958	2.2459534	55	2	1997–1998	0.57	M-v 4 Williams	32717 1998 QA ₅₅
1998 QB ₅₅	14.0	0.15	19980904	335.60156	48.63839	343.92590	8.97006	0.0780630	2.9969100	15	1	31 days	0.47	Williams	1998 QB ₅₅
1998 QE ₅₅	15.2	0.15	19980904	13.76299	346.99973	352.18517	17.00131	0.2081662	2.6419718	35	1	52 days	1.00	Williams	1998 QE ₅₅
1998 QF ₅₅	14.0	0.15	19980904	101.02410	337.72761	263.28187	1.32694	0.1910804	2.3402142	37	1	31 days	1.01	Williams	1998 QF ₅₅
1998 QG ₅₅	15.0	0.15	19980904	336.72825	58.76980	348.21679	9.97447	0.3367974	2.7592021	37	1	52 days	0.56	Williams	1998 QG ₅₅
1998 QL ₅₅	14.9	0.15	19990122	33.08371	350.59975	17.65861	0.89337	0.1959205	3.1671129	21	1	62 days	0.57	M-v 6 Williams	1998 QL ₅₅
1998 QO ₅₅	15.5	0.15	19990122	115.02346	93.79111	190.81302	2.48157	0.1632938	2.4003276	22	2	1997–1998	0.50	M-v 4 Williams	32717 1998 QO ₅₅
1998 QP ₅₅	15.2	0.15	19980904	29.18975	308.94022	27.33506	2.81514	0.2059602	2.6755116	18	1	56 days	0.50	Williams	1998 QP ₅₅
1998 QS ₅₅	14.8	0.15	19980904	14.60597	182.21854	185.77409	2.32366	0.0690125	2.8284123	12	1	55 days	0.36	Williams	1998 QS ₅₅
1998 QV ₅₅	14.5	0.15	19980904	316.65192	68.17383	349.22691	3.24923	0.2687245	2.5753388	27	1	35 days	1.11	Williams	1998 QV ₅₅
1998 QY ₅₅	13.3	0.15	19980904	300.72090	270.55392	148.05589	2.58162	0.0602788	2.9055796	35	1	42 days	0.64	Williams	1998 QY ₅₅
1998 QZ ₅₅	14.0	0.15	19980904	345.66303	72.83029	299.16575	2.70523	0.1326969	2.7714926	33	1	28 days	0.64	Williams	1998 QZ ₅₅
1998 QA ₅₆	15.5	0.15	19990122	51.66245	146.19094	187.04201	5.28135	0.1921363	2.2840075	39	2	1991–1998	0.53	M-v 4 Williams	32717 1998 QA ₅₆
1998 QB ₅₆	16.0	0.15	19980924	24.26814	137.82208	183.30768	2.60255	0.2157683	2.3262569	45	1	54 days	0.61	Williams	1998 QB ₅₆
1998 QC ₅₆	14.5	0.15	19980924	340.81955	46.92128	2.03582	31.81312	0.3053264	2.6309110	38	1	53 days	0.84	Williams	1998 QC ₅₆
1998 QE ₅₆	15.0	0.15	19980904	52.06616	124.88767	180.17570	23.72743	0.0809589	1.9289445	21	1	49 days	0.49	Williams	1998 QE ₅₆
1998 QH ₅₆	18.0	0.15	19990122	350.64458	266.22724	176.51347	32.22149	0.0306536	1.5505856	55	1	47 days	0.64	M-v 5 Williams	32768 1998 QH ₅₆
1998 QJ ₅₆	18.0	0.15	19990122	19.98661	230.12934	156.96526	17.15204	0.4820883	2.6654460	64	1	56 days	0.70	M-v 5 Williams	32768 1998 QJ ₅₆
1998 QK ₅₆	17.5	0.15	19990122	16.68505	285.75060	173.38500	13.54867	0.5125829	1.8840981	68	1	56 days	0.58	M-v 5 Williams	32768 1998 QK ₅₆
1998 QE ₅₇	15.1	0.15	19990122	78.72485	120.67565	177.69176	4.85935	0.1477651	2.2943291	22	2	1991–1998	0.61	M-v 5 Williams	32717 1998 QE ₅₇
1998 QW ₅₇	14.0	0.15	19990122	82.11220	110.39697	174.60653	10.80811	0.1170333	3.0565622	44	2	1993–1998	0.90	M-v 5 Williams	32717 1998 QW ₅₇
1998 QX ₅₇	15.0	0.15	19990122	320.19890	267.49892	177.06091	3.35823	0.1300296	2.3687379	43	2	1971–1998	0.66	M-v 5 Williams	32717 1998 QX ₅₇
1998 QB ₅₈	15.5	0.15	19980904	39.19458	129.11731	178.38045	1.81119	0.0811762	2.6824838	24	1	28 days	0.81	Williams	1998 QB ₅₈
1998 QC ₅₈	16.0	0.15	19990122	8.59869	211.40155	181.35279	1.02344	0.1860434	2.3922222	56	2	1995–1998	0.58	M-v 5 Williams	32718 1998 QC ₅₈
1998 QR ₅₈	15.5	0.15	19990122	338.83413	77.45062	353.27238	5.59017	0.1611876	2.3151294	44	2	1977–1998	0.59	M-v 5 Williams	32718 1998 QR ₅₈
1998 QT ₅₈	15.5	0.15	19980904	354.94464	4.36012	355.03283	6.04153	0.1274391	2.4842320	15	1	28 days	0.53	Williams	1998 QT ₅₈
1998 QZ ₅₈	16.9	0.15	19980904	358.44921	6.86861	343.61854	4.99862	0.2514682	2.3486392	18	1	30 days	0.42	Williams	1998 QZ ₅₈
1998 QF ₆₀	14.5	0.15	19980904	57.77073	140.35114	149.82822	2.49585	0.0627137	2.9279958	15	1	32 days	0.89	Williams	1998 QF ₆₀
1998 QN ₆₀	14.0	0.15	19990122	36.54925	6.61318	19.32357	12.45291	0.1642839	2.5494465	28	1	63 days	0.53	M-v 5 Williams	1998 QN ₆₀
1998 QO ₆₀	13.5	0.15	19990122	118.64634	283.71169	7.88864	11.21898	0.1870386	2.6708522	16	1	63 days	0.28	M-v 5 Williams	1998 QO ₆₀
1998 QP ₆₀	15.0	0.15	19990122	8.27954	127.23522	248.38027	5.66583	0.1221631	2.4373141	37	1	65 days	0.48	M-v 5 Williams	1998 QP ₆₀
1998 QQ ₆₀	15.2	0.15	19990122	352.65843	74.42698	315.69111	16.23035	0.1899177	2.9782381	17	1	60 days	0.60	M-v 6 Williams	1998 QQ ₆₀
1998 QT ₆₀	13.1	0.15	19990122	21.60622	127.06738	298.92065	21.89779	0.3495638	2.4467422	81	2	1990–1998	0.57	M-v 2 Williams	32718 1998 QT ₆₀
1998 QT ₆₂	13.5	0.15	19980904	23.83299	140.93095	181.29415	9.56663	0.2670002	2.7473483	55	1	53 days	0.59	Williams	1998 QT ₆₂
1998 QU ₆₂	15.1	0.15	19980904	70.17832	263.66839	11.23360	3.13844	0.1759698	2.3162887	36	1	48 days	0.75	Williams	1998 QU ₆₂
1998 QW ₆₂	14.0	0.15	19980904	237.34398	296.51107	169.51938	22.29420	0.1166688	2.5508256	33	1	59 days	0.89	Williams	1998 QW ₆₂
1998 QG ₆₃	16.5	0.15	19980904	20.80573	309.89798	12.72611	6.45048	0.0824605	2.1562185	23	1	49 days	0.89	Williams	1998 QG ₆₃
1998 QJ ₆₃	16.0	0.15	19980904	23.22831	108.54694	215.21510	5.43477	0.1568014	2.5385808	23	1	27 days	0.80	Williams	1998 QJ ₆₃
1998 QK ₆₃	16.1	0.15	19980904	327.93926	184.18100	211.02801	5.14782	0.1313778	2.1315489	34	1	48 days	0.58	Williams	1998 QK ₆₃
1998 QL ₆₃	15.5	0.15	19980904	92.32322	343.82603	274.00448	3.81834	0.0681977	2.5779477	15	1	18 days	0.63	Williams	1998 QL ₆₃
1998 QP ₆₃	18.0	0.15	19990122	24.15570	221.44391	159.01300	9.39628	0.4964307	2.6784848	91	1	61 days	0.73	M-v 5 Williams	32769 1998 QP ₆₃

1998 QQ ₆₃	18.8	0.15	19990122	35.15342	265.41427	104.52667	1.66733	0.5477076	2.3640026	30	1	49 days	0.57	M-v	6	Williams	1998 QQ ₆₃
1998 QV ₆₃	13.5	0.15	19990122	17.38595	200.70117	180.91487	4.26828	0.1099663	2.8142336	69	4	1979–1998	0.68	M-v	3	Williams	32718 1998 QV ₆₃
1998 QW ₆₃	15.0	0.15	19980924	355.13097	14.18989	7.96845	20.57954	0.2930111	3.0586062	40	1	47 days	0.95			Williams	1998 QW ₆₃
1998 QL ₆₆	13.8	0.15	19980904	39.34630	34.25023	247.30305	12.10024	0.1516101	2.6446670	18	1	59 days	0.42			Williams	1998 QL ₆₆
1998 QV ₆₇	14.0	0.15	19990122	313.74017	250.83950	189.50480	11.95791	0.2484787	2.6562553	29	2	1985–1998	0.75	M-v	4	Williams	32719 1998 QV ₆₇
1998 QA ₆₉	15.6	0.15	19990122	4.84521	202.58584	179.69430	12.71904	0.2220922	2.5222490	15	1	77 days	0.44	M-v	5	Williams	1998 QA ₆₉
1998 QD ₆₉	16.5	0.15	19980904	341.75639	172.29398	192.67558	8.49139	0.1944597	2.2086164	25	1	25 days	0.70			Williams	1998 QD ₆₉
1998 QJ ₆₉	13.3	0.15	19980904	106.01165	17.26417	210.59308	15.41755	0.0338027	3.1526937	22	1	30 days	0.58			Williams	1998 QJ ₆₉
1998 QQ ₆₉	15.0	0.15	19980904	71.67733	24.00018	236.90498	14.18327	0.0727481	2.5856939	17	1	30 days	0.85			Williams	1998 QQ ₆₉
1998 QR ₆₉	13.0	0.15	19990122	94.57048	18.21413	229.24549	15.42616	0.1970599	3.1588895	33	2	1997–1998	0.54	M-v	4	Williams	32719 1998 QR ₆₉
1998 QT ₆₉	14.5	0.15	19980904	72.26032	25.61917	225.64680	11.28934	0.1420529	2.6520770	18	1	30 days	0.71			Williams	1998 QT ₆₉
1998 QV ₆₉	14.5	0.15	19980904	344.19881	90.87876	270.12437	7.77106	0.1617971	3.0436808	22	1	30 days	0.51			Williams	1998 QV ₆₉
1998 QX ₆₉	16.0	0.15	19980815	9.68263	57.60702	258.08160	5.05072	0.1930219	2.3485876	23	1	51 days	0.90			Williams	1998 QX ₆₉
1998 QD ₇₀	14.5	0.15	19980904	294.41545	177.10738	257.02969	9.20157	0.2401165	2.4414421	19	1	30 days	0.44			Williams	1998 QD ₇₀
1998 QG ₇₀	13.5	0.15	19980904	13.26721	50.37231	275.65108	14.62024	0.0929111	3.1688868	19	1	30 days	0.69			Williams	1998 QG ₇₀
1998 QJ ₇₀	13.5	0.15	19980904	338.49771	86.82484	289.43839	16.99054	0.2074974	3.1981621	19	1	30 days	0.71			Williams	1998 QJ ₇₀
1998 QK ₇₀	15.0	0.15	19980904	317.95591	161.08483	244.26121	12.80043	0.2214258	2.4419191	16	1	30 days	0.65			Williams	1998 QK ₇₀
1998 QL ₇₀	14.0	0.15	19980904	297.21235	208.73054	204.98202	21.59850	0.0919508	3.1495240	16	1	30 days	0.98			Williams	1998 QL ₇₀
1998 QM ₇₀	15.2	0.15	19980904	17.20015	58.05800	260.44346	12.20538	0.1804779	2.6046390	22	1	55 days	0.85			Williams	1998 QM ₇₀
1998 QO ₇₀	16.8	0.15	19980904	14.27564	95.14408	223.11519	10.22894	0.2401221	2.3410247	22	1	30 days	0.87			Williams	1998 QO ₇₀
1998 QR ₇₀	15.4	0.15	19980904	347.69295	152.97163	205.54171	13.24323	0.1737192	2.5758642	22	1	30 days	0.73			Williams	1998 QR ₇₀
1998 QT ₇₀	14.0	0.15	19980904	14.70315	91.91141	228.09637	11.64318	0.1841544	3.0903096	25	1	30 days	0.69			Williams	1998 QT ₇₀
1998 QW ₇₀	13.5	0.15	19980904	13.20201	90.15613	233.73948	10.36934	0.1519431	3.1883723	29	1	36 days	0.69			Williams	1998 QW ₇₀
1998 QX ₇₀	14.0	0.15	19980904	320.33185	129.16436	263.69712	9.52026	0.1284002	2.9895232	19	1	30 days	0.83			Williams	1998 QX ₇₀
1998 QY ₇₀	15.2	0.15	19980904	352.15814	131.59939	222.83366	8.31081	0.2582535	2.7990897	22	1	30 days	0.39			Williams	1998 QY ₇₀
1998 QB ₇₁	16.1	0.15	19980904	338.70597	171.95134	209.29551	8.89045	0.3089798	2.7439659	21	1	30 days	0.71			Williams	1998 QB ₇₁
1998 QD ₇₁	15.3	0.15	19980904	344.73384	147.65894	218.04520	7.37965	0.2423185	2.7962560	21	1	30 days	0.70			Williams	1998 QD ₇₁
1998 QE ₇₁	14.3	0.15	19990122	101.05441	24.63693	225.28354	7.37335	0.2322724	2.3984218	27	1	60 days	0.50	M-v	5	Williams	1998 QE ₇₁
1998 QL ₇₁	15.7	0.15	19980904	327.12439	196.58382	202.01726	7.00991	0.2913196	2.2954174	25	1	57 days	0.41			Williams	1998 QL ₇₁
1998 QO ₇₁	15.4	0.15	19980904	343.84948	101.80632	261.74982	5.46941	0.1564538	2.2865339	22	1	30 days	0.42			Williams	1998 QO ₇₁
1998 QP ₇₁	14.6	0.15	19980904	84.19141	297.86937	305.80534	12.34247	0.1281910	2.5363386	21	1	30 days	0.75			Williams	1998 QP ₇₁
1998 QR ₇₁	13.9	0.15	19980904	315.01439	129.19671	266.55015	9.38683	0.1035651	3.1713989	21	1	30 days	0.87			Williams	1998 QR ₇₁
1998 QU ₇₁	14.5	0.15	19980904	300.55890	145.50457	274.79782	9.56567	0.1736565	2.6093847	18	1	30 days	0.58			Williams	1998 QU ₇₁
1998 QV ₇₁	15.0	0.15	19980904	341.51250	170.45764	195.08211	14.96754	0.1202719	2.6618979	20	1	30 days	0.65			Williams	1998 QV ₇₁
1998 QW ₇₁	15.5	0.15	19980904	27.43326	54.15127	245.15728	9.39522	0.2325800	2.6735081	18	1	30 days	0.82			Williams	1998 QW ₇₁
1998 QZ ₇₁	14.5	0.15	19980904	272.21199	242.93493	191.85509	21.70085	0.0478569	2.6596948	22	1	30 days	0.72			Williams	1998 QZ ₇₁
1998 QB ₇₂	13.8	0.15	19980904	356.22590	135.91708	212.05937	16.01847	0.1718454	3.2114045	29	1	55 days	0.65			Williams	1998 QB ₇₂
1998 QD ₇₂	14.8	0.15	19990122	50.48631	72.14594	238.12526	10.48528	0.2628883	2.6822505	22	1	92 days	0.47	M-v	4	Williams	1998 QD ₇₂
1998 QE ₇₂	14.7	0.15	19980904	14.29798	52.44830	271.45439	15.03305	0.2091288	3.1521647	23	1	32 days	0.92			Williams	1998 QE ₇₂
1998 QF ₇₂	15.1	0.15	19980904	317.27967	156.76598	248.82021	13.86724	0.1869672	2.5643426	23	1	32 days	1.06			Williams	1998 QF ₇₂
1998 QG ₇₂	15.0	0.15	19980904	44.12822	37.34768	247.14184	15.49498	0.1575479	2.6478276	18	1	30 days	1.08			Williams	1998 QG ₇₂
1998 QL ₇₂	15.0	0.15	19980904	36.70127	12.94134	281.55836	10.69828	0.1553158	2.5446768	24	1	30 days	0.81			Williams	1998 QL ₇₂
1998 QR ₇₂	14.8	0.15	19980904	45.19971	45.16493	241.75472	6.07201	0.1136980	2.3518201	22	1	30 days	0.49			Williams	1998 QR ₇₂
1998 QY ₇₂	14.8	0.15	19980904	77.84646	303.51604	312.80996	12.80803	0.0756024	2.6305241	21	1	30 days	0.97			Williams	1998 QY ₇₂
1998 QA ₇₃	14.3	0.15	19980904	335.55042	203.19825	184.68951	17.58744	0.2985110	3.1738141	26	1	57 days	0.63			Williams	1998 QA ₇₃
1998 QJ ₇₃	14.0	0.15	19980904	228.93842	279.32258	204.59362	11.76280	0.1057592	2.6234965	18	1	30 days	1.15			Williams	1998 QJ ₇₃
1998 QL ₇₃	13.6	0.15	19980904	254.30277	220.90168	237.25885	9.40224	0.0654900	3.0515324	24	1	30 days	0.75			Williams	1998 QL ₇₃
1998 QP ₇₃	15.0	0.15	19980904	344.79393	92.26081	275.61171	11.65002	0.1865880	2.6077832	26	1	30 days	0.73			Williams	1998 QP ₇₃
1998 QQ ₇₃	16.0	0.15	19980904	354.39188	72.89359	283.47196	11.50719	0.2918953	2.6442893	23	1	32 days	0.61			Williams	1998 QQ ₇₃
1998 QS ₇₃	15.5	0.15	19980904	334.19936	190.55095	192.02136	15.31014	0.2113651	2.7659307	19	1	30 days	0.66			Williams	1998 QS ₇₃
1998 QT ₇₃	16.2	0.15	19980904	348.59578	172.06533	193.50556	15.72187	0.2951438	3.0649298	20	1	30 days	1.05			Williams	1998 QT ₇₃
1998 QZ ₇₃	14.1	0.15	19980904	25.84659	40.88724	259.54354	9.31503	0.2730026	3.0671782	22	1	55 days	0.54			Williams	1998 QZ ₇₃
1998 QA ₇₄	14.5	0.15	19980904	342.68783	91.66510	280.00198	9.84815	0.1860823	3.1069657	18	1	30 days	1.05			Williams	1998 QA ₇₄

1998 QC ₇₄	15.5	0.15	19980904	25.36150	102.12845	200.66931	11.89198	0.2490324	3.0618206	24	1	30 days	0.94	Williams	1998 QC ₇₄
1998 QD ₇₄	14.5	0.15	19980904	294.29520	160.80797	257.38326	8.12950	0.0589544	2.9834138	23	1	30 days	0.86	Williams	1998 QD ₇₄
1998 QF ₇₄	14.1	0.15	19980904	73.72458	46.09450	218.97793	9.60187	0.0652904	2.9970100	24	1	30 days	0.89	Williams	1998 QF ₇₄
1998 QL ₇₄	16.0	0.15	19980904	332.35438	113.18256	267.90009	6.03229	0.1227774	2.2787539	27	1	30 days	0.63	Williams	1998 QL ₇₄
1998 QM ₇₄	14.0	0.15	19990122	22.28602	91.39403	259.39673	7.55330	0.1254814	3.0955079	37	2	1960–1998	0.68	M-v 5 Williams	32719 1998 QM ₇₄
1998 QO ₇₄	14.6	0.15	19980904	305.57020	130.29562	285.56467	11.45500	0.1398519	2.6109395	24	1	55 days	0.94	Williams	1998 QO ₇₄
1998 QP ₇₄	14.5	0.15	19980904	206.25394	286.12260	218.75865	12.31710	0.0997546	2.5468233	17	1	30 days	0.81	Williams	1998 QP ₇₄
1998 QQ ₇₄	15.5	0.15	19980904	99.20055	14.85437	223.52077	12.11279	0.0742182	2.3736882	18	1	30 days	1.08	Williams	1998 QQ ₇₄
1998 QS ₇₄	14.2	0.15	19980904	20.08461	21.59977	303.04801	16.25799	0.0887289	2.8715224	22	1	30 days	0.74	Williams	1998 QS ₇₄
1998 QU ₇₄	15.1	0.15	19980904	286.88720	160.31769	280.76447	12.07291	0.1762315	2.4139230	28	1	53 days	1.02	Williams	1998 QU ₇₄
1998 QY ₇₄	14.5	0.15	19980904	247.76739	188.89482	278.85025	12.85512	0.0556969	2.6299611	16	1	30 days	0.89	Williams	1998 QY ₇₄
1998 QZ ₇₄	15.0	0.15	19980904	325.54301	166.28821	226.08184	11.66878	0.1426018	2.7392290	22	1	55 days	0.71	Williams	1998 QZ ₇₄
1998 QA ₇₅	15.0	0.15	19980904	346.34511	165.78883	205.87733	14.87905	0.2727991	3.1474313	17	1	30 days	1.10	Williams	1998 QA ₇₅
1998 QB ₇₅	14.4	0.15	19980904	324.02335	103.61319	295.00637	11.61078	0.1791616	2.5466859	29	1	55 days	0.59	Williams	1998 QB ₇₅
1998 QC ₇₅	13.2	0.15	19980904	36.61699	66.52363	238.39898	8.96585	0.0946830	3.4321867	19	1	30 days	0.74	Williams	1998 QC ₇₅
1998 QF ₇₅	14.0	0.15	19980904	24.19452	116.19378	193.38808	13.88401	0.2243327	3.1766969	31	1	48 days	0.65	Williams	1998 QF ₇₅
1998 QK ₇₅	13.0	0.15	19990122	349.20120	150.65288	244.62354	9.09932	0.1109971	2.9985413	24	3	1978–1998	0.72	M-v 5 Williams	32719 1998 QK ₇₅
1998 QL ₇₅	14.5	0.15	19980904	356.79330	78.65323	274.87327	8.87675	0.1304118	2.9842149	21	1	30 days	0.88	Williams	1998 QL ₇₅
1998 QO ₇₅	13.5	0.15	19980904	17.61597	78.38428	252.14908	13.88050	0.1013100	3.0583902	18	1	30 days	0.81	Williams	1998 QO ₇₅
1998 QQ ₇₅	14.0	0.15	19980904	37.46142	53.79531	249.73601	15.54382	0.1471384	3.1017652	22	1	30 days	1.18	Williams	1998 QQ ₇₅
1998 QK ₇₆	14.0	0.15	19980904	38.09515	74.56767	223.07117	13.12333	0.1961053	2.6956022	16	1	30 days	0.45	Williams	1998 QK ₇₆
1998 QM ₇₆	12.9	0.15	19990122	207.86275	290.85170	245.08940	9.90621	0.1331367	2.6436088	30	3	1986–1998	0.70	M-v 4 Williams	32719 1998 QM ₇₆
1998 QT ₇₆	14.5	0.15	19980904	159.27992	272.67478	275.09577	5.92011	0.0850682	2.1964390	16	1	48 days	0.56	Williams	1998 QT ₇₆
1998 QZ ₇₆	15.0	0.15	19980904	338.39601	189.74858	196.80119	13.50127	0.2522177	2.6291733	20	1	34 days	0.61	Williams	1998 QZ ₇₆
1998 QB ₇₇	14.0	0.15	19980904	106.19901	279.40650	314.01937	12.60407	0.1338518	2.6443401	15	1	54 days	0.51	Williams	1998 QB ₇₇
1998 QE ₇₇	14.9	0.15	19980904	7.63332	119.47600	218.48949	9.69631	0.2505702	2.6910373	20	1	52 days	0.53	Williams	1998 QE ₇₇
1998 QM ₇₇	15.7	0.15	19980904	328.22802	114.59484	290.03177	9.29266	0.2442135	2.4074845	18	1	30 days	0.87	Williams	1998 QM ₇₇
1998 QN ₇₇	15.5	0.15	19980904	322.35068	175.43101	225.58274	9.87448	0.1279820	2.4173314	14	1	30 days	0.79	Williams	1998 QN ₇₇
1998 QS ₇₇	14.0	0.15	19980904	327.88898	107.30428	285.82067	9.03288	0.0910015	2.9646085	15	1	30 days	0.90	Williams	1998 QS ₇₇
1998 QU ₇₇	16.5	0.15	19980904	6.93763	119.83940	218.69796	5.86439	0.2495883	2.3502223	29	1	59 days	0.97	Williams	1998 QU ₇₇
1998 QV ₇₇	14.9	0.15	19980904	340.98297	55.55742	325.88438	12.97813	0.1656706	2.6908090	22	1	30 days	0.59	Williams	1998 QV ₇₇
1998 QY ₇₇	14.6	0.15	19980904	240.93696	218.40783	260.66153	6.30644	0.0568928	2.2933347	27	1	52 days	0.74	Williams	1998 QY ₇₇
1998 QZ ₇₇	13.6	0.15	19980904	72.12063	317.77451	324.18516	16.71108	0.0311416	3.1527144	21	1	34 days	0.90	Williams	1998 QZ ₇₇
1998 QB ₇₈	14.6	0.15	19980904	315.76078	121.72455	304.05266	10.37139	0.2584652	2.6826395	19	1	34 days	0.74	Williams	1998 QB ₇₈
1998 QM ₇₈	15.0	0.15	19980904	357.90177	132.69263	223.06454	14.19224	0.1404037	2.6437386	13	1	30 days	0.74	Williams	1998 QM ₇₈
1998 QT ₈₂	16.0	0.15	19980815	43.71405	49.27116	219.45349	5.92555	0.1817401	2.3840762	11	1	7 days	0.83	Williams	1998 QT ₈₂
1998 QH ₈₃	17.0	0.15	19980904	352.81150	116.47878	235.64182	5.85115	0.2652562	2.2463241	27	1	54 days	0.83	Williams	1998 QH ₈₃
1998 QK ₈₃	14.0	0.15	19980904	156.39391	324.13227	213.80747	11.46924	0.0937073	2.7308023	17	1	30 days	0.81	Williams	1998 QK ₈₃
1998 QV ₈₃	16.5	0.15	19980904	11.77781	54.66403	266.86491	8.48754	0.2369308	2.3984295	17	1	30 days	1.06	Williams	1998 QV ₈₃
1998 QW ₈₃	14.5	0.15	19980904	4.36678	63.41920	271.21103	13.12146	0.2193647	3.0423569	21	1	55 days	0.56	Williams	1998 QW ₈₃
1998 QY ₈₃	16.0	0.15	19980904	11.46307	71.72579	250.15187	11.67107	0.2789940	2.6046676	19	1	30 days	0.60	Williams	1998 QY ₈₃
1998 QZ ₈₃	14.6	0.15	19980904	337.70598	146.32481	231.87364	16.26876	0.2075259	3.0539422	22	1	32 days	0.84	Williams	1998 QZ ₈₃
1998 QC ₈₄	14.7	0.15	19990122	23.46944	64.24009	282.85312	12.63947	0.2870603	3.0540644	27	1	117 days	0.49	M-v 3 Williams	1998 QC ₈₄
1998 QE ₈₄	13.7	0.15	19980904	299.84251	114.03582	292.62570	14.55777	0.0314468	3.1756557	20	1	30 days	0.92	Williams	1998 QE ₈₄
1998 QF ₈₄	14.0	0.15	19980904	27.91071	5.82856	299.88723	14.13038	0.1382061	3.1421695	21	1	30 days	0.60	Williams	1998 QF ₈₄
1998 QJ ₈₄	15.0	0.15	19980904	34.14819	73.65241	204.90489	7.97595	0.3034992	3.0115116	28	1	30 days	0.89	Williams	1998 QJ ₈₄
1998 QL ₈₄	14.2	0.15	19980904	315.65221	108.98049	295.31320	11.93047	0.1772563	2.6724379	30	1	55 days	0.45	Williams	1998 QL ₈₄
1998 QM ₈₄	16.2	0.15	19980904	356.37086	62.54372	287.41786	9.02100	0.2822737	2.7610402	20	1	30 days	0.79	Williams	1998 QM ₈₄
1998 QN ₈₄	15.5	0.15	19980904	2.01176	96.63727	241.97527	7.72495	0.3202614	2.7501744	31	1	48 days	0.51	Williams	1998 QN ₈₄
1998 QO ₈₄	14.5	0.15	19980904	18.45160	20.27236	288.14804	10.01269	0.2996972	2.6583331	52	1	53 days	0.40	Williams	1998 QO ₈₄
1998 QS ₈₄	15.5	0.15	19980904	18.15983	80.95618	229.28012	10.70365	0.2810986	2.6380616	19	1	30 days	0.46	Williams	1998 QS ₈₄
1998 QT ₈₄	14.2	0.15	19980904	326.59717	139.86786	254.01880	13.66204	0.2077578	3.0544937	22	1	55 days	0.59	Williams	1998 QT ₈₄
1998 QW ₈₄	14.6	0.15	19980904	69.01879	339.03347	290.73665	10.70037	0.0430117	2.6722735	23	1	30 days	0.88	Williams	1998 QW ₈₄

1998 QZ ₈₄	15.5	0.15	19980904	46.88322	14.31301	271.93776	5.49014	0.0938843	2.2602752	30	1	34 days	0.93	Williams	1998 QZ ₈₄
1998 QC ₈₅	13.5	0.15	19980904	75.08965	298.85335	317.91579	16.34555	0.1125627	3.1785663	19	1	30 days	0.82	Williams	1998 QC ₈₅
1998 QF ₈₅	14.3	0.15	19980904	142.39532	260.82566	299.22573	13.91613	0.0497503	2.5657535	20	1	55 days	0.68	Williams	1998 QF ₈₅
1998 QG ₈₅	17.5	0.15	19980904	5.19641	77.25493	257.96283	7.08717	0.2374279	2.2106251	18	1	30 days	0.97	Williams	1998 QG ₈₅
1998 QH ₈₅	16.0	0.15	19980904	8.90144	85.64997	246.89715	11.28006	0.1843301	2.6283235	18	1	30 days	0.95	Williams	1998 QH ₈₅
1998 QJ ₈₅	14.0	0.15	19980904	278.17485	151.24492	282.78547	15.43302	0.0395089	2.9268087	18	1	30 days	0.87	Williams	1998 QJ ₈₅
1998 QL ₈₅	14.0	0.15	19980904	341.63674	123.36396	255.38747	15.83192	0.2389974	3.1093126	19	1	30 days	0.94	Williams	1998 QL ₈₅
1998 QM ₈₅	14.5	0.15	19980904	356.87584	66.86774	283.80243	13.40377	0.0876976	3.1653295	18	1	30 days	0.72	Williams	1998 QM ₈₅
1998 QN ₈₅	13.5	0.15	19980904	213.22796	231.32667	268.33811	11.64150	0.1148108	2.6959082	22	1	34 days	0.65	Williams	1998 QN ₈₅
1998 QO ₈₅	14.0	0.15	19980904	56.28531	331.05201	303.00185	12.53614	0.1524132	2.6949032	23	1	55 days	0.55	Williams	1998 QO ₈₅
1998 QP ₈₅	14.4	0.15	19980904	339.20844	158.41766	212.73446	10.38487	0.1129942	2.9803550	25	1	30 days	0.98	Williams	1998 QP ₈₅
1998 QS ₈₅	15.5	0.15	19980904	21.97868	14.07496	306.90705	10.39837	0.0669508	2.3411486	41	1	35 days	0.87	Williams	1998 QS ₈₅
1998 QT ₈₅	14.5	0.15	19980904	298.83268	100.02235	316.18281	14.67842	0.0706602	3.0863662	16	1	30 days	1.21	Williams	1998 QT ₈₅
1998 QU ₈₅	13.3	0.15	19980904	358.52314	32.10884	317.47313	15.64218	0.0914845	3.0427024	32	1	55 days	0.48	Williams	1998 QU ₈₅
1998 QW ₈₅	14.7	0.15	19980904	10.93039	100.39165	230.28396	6.60430	0.1406093	2.3929329	23	1	30 days	0.40	Williams	1998 QW ₈₅
1998 QX ₈₅	14.0	0.15	19980904	313.74073	214.49873	196.39484	15.00872	0.1899953	3.1918341	28	1	48 days	1.00	Williams	1998 QX ₈₅
1998 QY ₈₅	15.3	0.15	19980904	316.57033	126.05666	287.18123	11.05992	0.2366885	2.6662128	25	1	55 days	1.15	Williams	1998 QY ₈₅
1998 QZ ₈₅	13.5	0.15	19990122	153.61054	241.40131	324.67287	31.53672	0.3030791	2.7886887	29	2	1993–1998	0.90	M-v 5 Williams	32719 1998 QZ ₈₅
1998 QA ₈₆	14.0	0.15	19980904	35.92184	27.96200	279.75184	15.42234	0.0904621	3.1797712	16	1	30 days	0.80	Williams	1998 QA ₈₆
1998 QB ₈₆	14.3	0.15	19980904	354.79743	73.39262	284.91702	15.41234	0.1961008	3.0563059	20	1	30 days	0.77	Williams	1998 QB ₈₆
1998 QC ₈₆	15.3	0.15	19980904	8.45396	110.52834	225.33116	14.23302	0.1713238	2.5836989	23	1	55 days	0.64	Williams	1998 QC ₈₆
1998 QD ₈₆	15.4	0.15	19980904	319.42563	166.45943	244.44242	11.92278	0.2364967	2.4360842	22	1	30 days	0.66	Williams	1998 QD ₈₆
1998 QE ₈₆	14.9	0.15	19980904	348.48593	159.73781	206.27095	17.18639	0.2328239	2.5354644	26	1	53 days	0.87	Williams	1998 QE ₈₆
1998 QF ₈₆	15.5	0.15	19980904	356.63065	105.00534	248.43896	13.62346	0.1558358	2.5724964	18	1	30 days	0.75	Williams	1998 QF ₈₆
1998 QP ₈₆	15.3	0.15	19980904	79.24120	353.86187	259.49433	5.99469	0.1237677	2.3556712	26	1	30 days	1.01	Williams	1998 QP ₈₆
1998 QQ ₈₆	15.7	0.15	19980904	339.19540	73.07200	311.70743	9.81617	0.2855858	2.5920886	23	1	30 days	0.67	Williams	1998 QQ ₈₆
1998 QR ₈₆	14.3	0.15	19980904	352.23786	61.42581	299.82923	7.84944	0.2668530	2.7164388	24	1	30 days	0.62	Williams	1998 QR ₈₆
1998 QT ₈₆	15.0	0.15	19980904	335.01543	190.09012	202.21131	14.30462	0.2873722	3.0714092	16	1	30 days	0.74	Williams	1998 QT ₈₆
1998 QU ₈₆	14.5	0.15	19980904	80.32141	29.30116	222.17067	12.09529	0.1488797	2.5710874	20	1	30 days	0.70	Williams	1998 QU ₈₆
1998 QV ₈₆	14.5	0.15	19980904	241.89463	251.97292	227.41896	14.30652	0.1234323	2.6167019	17	1	30 days	1.00	Williams	1998 QV ₈₆
1998 QW ₈₆	14.6	0.15	19980904	10.67763	50.07089	285.08226	13.26158	0.1901593	2.5702217	23	1	30 days	0.57	Williams	1998 QW ₈₆
1998 QX ₈₆	13.0	0.15	19980904	319.46181	162.73777	244.34949	15.04518	0.1653057	3.0871128	19	1	30 days	0.77	Williams	1998 QX ₈₆
1998 QZ ₈₆	15.4	0.15	19980904	335.06018	159.00084	227.24210	11.51541	0.1873062	2.4603802	18	1	56 days	0.75	Williams	1998 QZ ₈₆
1998 QA ₈₇	13.9	0.15	19980904	280.41025	182.59429	264.17488	11.55414	0.1335586	2.7683937	19	1	30 days	0.85	Williams	1998 QA ₈₇
1998 QC ₈₇	14.4	0.15	19980904	4.88538	84.93498	259.06731	9.20949	0.1192362	2.9678338	20	1	30 days	1.04	Williams	1998 QC ₈₇
1998 QQ ₈₇	14.0	0.15	19980904	334.07110	136.02595	249.25033	13.17535	0.1134107	2.6361475	17	1	30 days	0.63	Williams	1998 QQ ₈₇
1998 QU ₈₇	14.5	0.15	19980904	354.58954	83.51405	281.18230	14.57300	0.2645592	3.1297482	19	1	58 days	0.84	Williams	1998 QU ₈₇
1998 QM ₈₈	14.5	0.15	19980904	306.28845	202.22002	224.69708	10.45642	0.2611114	2.8968197	23	1	30 days	0.94	Williams	1998 QM ₈₈
1998 QO ₈₈	16.0	0.15	19980904	335.01060	97.43026	286.04491	10.23895	0.2156695	2.5405953	18	1	30 days	0.75	Williams	1998 QO ₈₈
1998 QP ₈₈	14.0	0.15	19990122	28.71246	130.05221	211.72101	9.84447	0.2013757	3.1262093	20	2	1997–1998	0.73	M-v 4 Williams	32720 1998 QP ₈₈
1998 QQ ₈₈	15.5	0.15	19980904	275.24833	208.70158	234.12899	9.95410	0.0876775	2.3640879	16	1	30 days	0.93	Williams	1998 QQ ₈₈
1998 QV ₈₈	15.5	0.15	19980904	8.08629	73.35067	262.21567	7.41705	0.2770795	2.3820001	17	1	30 days	0.96	Williams	1998 QV ₈₈
1998 QA ₈₉	15.7	0.15	19980904	9.28567	85.70892	249.01918	5.94518	0.2220130	2.2646876	18	1	30 days	0.61	Williams	1998 QA ₈₉
1998 QE ₈₉	14.5	0.15	19980904	16.50396	66.60949	262.31133	10.07840	0.2022755	2.6891571	19	1	30 days	0.51	Williams	1998 QE ₈₉
1998 QF ₈₉	14.0	0.15	19980904	12.10495	89.25954	246.00132	12.07056	0.1937477	2.5982600	22	1	30 days	0.62	Williams	1998 QF ₈₉
1998 QV ₈₉	13.0	0.15	19980904	35.85938	14.74053	299.62619	9.63894	0.0788683	3.0720204	24	1	56 days	0.71	Williams	1998 QV ₈₉
1998 QE ₉₀	14.4	0.15	19980904	27.88489	10.80143	305.59936	13.51733	0.1962707	2.6920456	22	1	59 days	0.78	Williams	1998 QE ₉₀
1998 QG ₉₀	13.3	0.15	19980904	58.00896	341.27023	301.79869	16.17900	0.1801152	3.1341317	27	1	58 days	0.76	Williams	1998 QG ₉₀
1998 QM ₉₀	14.2	0.15	19980904	284.32461	168.45185	266.35868	13.06025	0.0333168	2.3936496	19	1	30 days	1.12	Williams	1998 QM ₉₀
1998 QP ₉₀	15.3	0.15	19990122	33.22184	353.37442	12.92881	9.50844	0.1684814	2.1646459	61	2	1997–1998	0.76	M-v 4 Williams	32720 1998 QP ₉₀
1998 QQ ₉₀	13.4	0.15	19980904	54.69086	116.80962	169.06998	21.06837	0.1787134	3.1109985	31	1	30 days	0.62	Williams	1998 QQ ₉₀
1998 QT ₉₀	14.0	0.15	19990122	93.65290	230.91144	53.37089	5.45593	0.1205319	2.5236228	63	3	1990–1998	0.71	M-v 2 Williams	32720 1998 QT ₉₀
1998 QU ₉₀	14.0	0.15	19990122	298.09954	53.73653	52.78981	5.96659	0.0773043	2.2667296	54	3	1993–1998	0.74	M-v 4 Williams	32720 1998 QU ₉₀

1998 QV ₉₀	15.0	0.15	19980904	63.46714	213.67516	59.20221	4.97051	0.1641691	2.1684518	33	1	30 days	0.81	Williams	1998 QV ₉₀
1998 QW ₉₀	15.0	0.15	19980904	60.62920	206.53341	67.93971	3.03561	0.1980320	2.3701009	34	1	50 days	0.76	Williams	1998 QW ₉₀
1998 QY ₉₀	14.4	0.15	19980904	10.50101	174.28681	171.63346	11.89601	0.1272243	2.5236904	37	1	50 days	0.58	Williams	1998 QY ₉₀
1998 QZ ₉₀	14.0	0.15	19980904	290.41429	274.26827	173.61094	14.08539	0.1562384	2.5754518	34	1	50 days	0.73	Williams	1998 QZ ₉₀
1998 QA ₉₁	13.7	0.15	19980815	19.97662	154.71185	166.88354	13.80659	0.2019426	2.6022960	36	1	56 days	0.87	Williams	1998 QA ₉₁
1998 QC ₉₁	13.2	0.15	19980904	85.13960	230.79449	37.33477	10.93943	0.0621590	2.9808255	27	1	50 days	0.76	Williams	1998 QC ₉₁
1998 QD ₉₁	15.0	0.15	19980904	351.70835	206.69153	168.01750	13.25480	0.3049260	2.6261793	24	1	24 days	0.77	Williams	1998 QD ₉₁
1998 QE ₉₁	14.0	0.15	19980924	26.08126	303.51984	8.25926	21.31106	0.3516260	3.1702908	54	1	57 days	0.64	Williams	1998 QE ₉₁
1998 QF ₉₁	14.4	0.15	19980904	28.69456	291.86876	23.87294	12.88695	0.2041229	2.6993291	30	1	50 days	0.91	Williams	1998 QF ₉₁
1998 QN ₉₁	14.3	0.15	19990122	57.25478	332.58069	1.38250	14.48380	0.2280008	2.5205320	36	1	62 days	0.61	M-v 4 Williams	1998 QN ₉₁
1998 QW ₉₁	14.6	0.15	19980904	15.60039	144.70659	205.67756	7.35302	0.1740010	2.1711681	16	1	47 days	0.78	Williams	1998 QW ₉₁
1998 QC ₉₂	14.6	0.15	19980924	342.82977	223.51206	183.02512	2.26496	0.1612823	2.3039298	21	1	53 days	0.51	Williams	1998 QC ₉₂
1998 QF ₉₂	15.5	0.15	19990122	106.01015	283.19373	23.16114	21.87590	0.0777764	1.9381394	33	1	62 days	0.72	M-v 5 Williams	1998 QF ₉₂
1998 QG ₉₂	15.4	0.15	19980904	15.62992	226.39551	113.94848	4.50509	0.3160448	2.3801191	18	1	45 days	0.73	Williams	1998 QG ₉₂
1998 QP ₉₂	14.9	0.15	19980924	22.43321	254.49340	90.92338	3.41311	0.2533097	2.3221048	29	1	59 days	0.87	Williams	1998 QP ₉₂
1998 QX ₉₂	13.5	0.15	19980924	344.91420	217.71361	193.39070	8.99009	0.1481884	2.7743970	13	1	55 days	0.86	Williams	1998 QX ₉₂
1998 QB ₉₃	14.2	0.15	19990122	30.39589	279.64907	107.22033	3.54910	0.2093416	2.5730172	17	1	63 days	0.61	M-v 6 Williams	1998 QB ₉₃
1998 QK ₉₃	13.0	0.15	19990122	340.77522	77.83324	21.05085	13.31591	0.1540251	2.6652180	11	1	64 days	0.49	M-v 6 Williams	1998 QK ₉₃
1998 QO ₉₃	12.5	0.15	19980904	312.49988	227.90325	237.98400	12.85586	0.1261195	2.5709998	24	1	32 days	0.81	Williams	1998 QO ₉₃
1998 QQ ₉₃	12.5	0.15	19990122	25.19648	340.82463	57.42990	12.97900	0.1522458	2.6026910	12	1	64 days	0.61	M-v 6 Williams	1998 QQ ₉₃
1998 QR ₉₃	12.8	0.15	19980924	3.80364	333.66049	58.03536	13.95068	0.1640812	2.6782166	15	1	53 days	0.55	Williams	1998 QR ₉₃
1998 QB ₉₄	15.8	0.15	19990122	26.48213	174.91294	188.43357	7.17204	0.2258130	2.2127554	34	1	68 days	0.48	M-v 4 Williams	1998 QB ₉₄
1998 QU ₉₄	16.0	0.15	19980904	356.38165	140.21819	205.62434	12.77403	0.1679765	2.5662717	18	1	35 days	1.09	Williams	1998 QU ₉₄
1998 QX ₉₄	14.5	0.15	19980904	10.43619	26.66294	300.05462	13.52248	0.1329297	2.6341091	19	1	35 days	0.56	Williams	1998 QX ₉₄
1998 QC ₉₅	13.5	0.15	19980904	120.68039	255.16484	304.71982	12.80767	0.2253643	2.6435977	19	1	35 days	0.55	Williams	1998 QC ₉₅
1998 QH ₉₅	15.0	0.15	19980904	295.18562	150.98755	273.22318	12.93511	0.1499039	2.5789360	18	1	35 days	0.68	Williams	1998 QH ₉₅
1998 QK ₉₅	13.5	0.15	19980904	321.67121	136.16813	254.74521	9.37787	0.1203310	2.9835449	23	1	35 days	0.46	Williams	1998 QK ₉₅
1998 QM ₉₅	14.5	0.15	19980904	314.78329	114.36882	286.53053	9.31420	0.1481194	2.9821993	19	1	35 days	0.96	Williams	1998 QM ₉₅
1998 QO ₉₅	14.9	0.15	19990122	359.99188	184.96765	206.27072	6.94977	0.1519308	2.3642268	35	3	1980–1998	0.63	M-v 2 Williams	32720 1998 QO ₉₅
1998 QR ₉₅	14.5	0.15	19980904	8.53569	128.54288	203.88974	26.33034	0.1829247	3.1086699	23	1	37 days	1.25	Williams	1998 QR ₉₅
1998 QS ₉₅	14.5	0.15	19980904	329.67223	192.25885	191.71594	27.26915	0.1310811	3.1321014	19	1	35 days	1.17	Williams	1998 QS ₉₅
1998 QU ₉₅	14.5	0.15	19980904	6.08950	126.38688	209.91011	12.03755	0.1123163	3.0156598	20	1	35 days	1.00	Williams	1998 QU ₉₅
1998 QX ₉₅	14.5	0.15	19980904	128.44104	301.52654	264.08591	7.76387	0.1261526	2.3956761	18	1	35 days	0.84	Williams	1998 QX ₉₅
1998 QY ₉₅	15.0	0.15	19980904	336.19061	100.25334	275.49362	7.67356	0.1210191	3.0044311	16	1	35 days	0.92	Williams	1998 QY ₉₅
1998 QA ₉₆	15.6	0.15	19990122	13.71720	71.77929	310.18671	25.04395	0.4266859	3.1586238	24	1	78 days	0.71	M-v 4 Nakano	32771 1998 QA ₉₆
1998 QM ₉₆	14.4	0.15	19980904	78.35548	306.69606	309.71643	11.54649	0.1257051	2.7150707	21	1	35 days	0.72	Williams	1998 QM ₉₆
1998 QU ₉₆	14.0	0.15	19980904	33.83204	75.29924	227.53107	10.58110	0.1698214	2.6863161	18	1	35 days	1.03	Williams	1998 QU ₉₆
1998 QA ₉₇	14.5	0.15	19980904	27.81549	23.02403	278.03320	8.67749	0.1919440	3.1542367	17	1	35 days	0.96	Williams	1998 QA ₉₇
1998 QO ₉₇	16.5	0.15	19980904	341.46830	122.88417	257.43229	9.46434	0.3336864	2.6642612	15	1	30 days	0.78	Williams	1998 QO ₉₇
1998 QQ ₉₇	14.5	0.15	19980904	298.11288	136.36836	285.92358	10.84291	0.1118971	3.0079640	16	1	30 days	0.95	Williams	1998 QQ ₉₇
1998 QU ₉₇	15.0	0.15	19990122	103.75562	299.21415	324.94714	22.67825	0.2230677	2.3884894	26	2	1997–1998	0.61	M-v 4 Williams	32721 1998 QU ₉₇
1998 QZ ₉₇	15.0	0.15	19980904	271.92209	65.39744	35.36598	6.95451	0.1572119	2.2249585	35	1	32 days	1.04	Williams	1998 QZ ₉₇
1998 QB ₉₈	14.3	0.15	19980904	19.61564	345.75214	345.20484	16.69908	0.2152883	3.1056252	16	1	51 days	0.77	Williams	1998 QB ₉₈
1998 QD ₉₈	15.5	0.15	19980904	8.67999	205.04400	135.28517	3.50052	0.1929258	2.2406348	33	1	30 days	0.82	Williams	1998 QD ₉₈
1998 QE ₉₈	15.5	0.15	19990122	63.26898	233.50603	77.93671	3.88865	0.2588344	2.3534030	52	2	1991–1998	0.67	M-v 5 Williams	32721 1998 QE ₉₈
1998 QG ₉₈	15.8	0.15	19980904	32.12323	117.60859	184.90982	8.34788	0.2710825	2.2280526	34	1	50 days	0.76	Williams	1998 QG ₉₈
1998 QH ₉₈	13.9	0.15	19980904	29.78548	296.85978	20.16097	13.39933	0.1705154	2.6378130	19	1	21 days	0.69	Williams	1998 QH ₉₈
1998 QJ ₉₈	14.8	0.15	19980904	44.15915	126.01331	171.90954	13.54728	0.1985004	2.5603065	36	1	50 days	0.84	Williams	1998 QJ ₉₈
1998 QK ₉₈	14.0	0.15	19980904	320.47107	341.25456	69.19983	5.58560	0.1712290	2.7898901	25	1	29 days	1.02	Williams	1998 QK ₉₈
1998 QL ₉₈	15.1	0.15	19980904	25.38137	307.67393	10.28461	31.54405	0.2786929	2.6273930	50	1	48 days	0.96	Williams	1998 QL ₉₈
1998 QM ₉₈	15.5	0.15	19980904	11.04927	170.26432	185.28104	22.00912	0.0830369	1.9241499	20	1	49 days	0.79	Williams	1998 QM ₉₈
1998 QO ₉₈	14.3	0.15	19980904	299.75870	275.63127	197.55866	19.85496	0.3123886	2.2612547	20	1	48 days	0.92	Williams	1998 QO ₉₈
1998 QS ₉₈	13.7	0.15	19990122	72.05864	287.94600	58.60720	3.45885	0.1559178	2.1649014	17	1	65 days	0.60	M-v 6 Williams	1998 QS ₉₈

1998 QV ₉₈	14.5	0.15	19980924	271.75323	165.12299	305.80642	25.05685	0.2266464	2.4254518	32	1	46 days	0.27		Williams	1998 QV ₉₈
1998 QX ₉₈	16.5	0.15	19980904	26.46455	214.49206	93.34368	3.25385	0.2122665	2.3635439	16	1	32 days	1.11		Williams	1998 QX ₉₈
1998 QA ₉₉	15.3	0.15	19980904	30.95648	159.23275	149.74581	4.98426	0.1407518	2.3384665	28	1	32 days	0.64		Williams	1998 QA ₉₉
1998 QD ₉₉	13.6	0.15	19990122	4.52206	284.47967	93.30398	3.29798	0.0714847	2.9121913	48	2	1989–1998	0.68	M-v 5	Williams	32721 1998 QD ₉₉
1998 QE ₉₉	13.5	0.15	19990122	320.35965	77.41699	356.33749	16.55999	0.1746396	3.3757343	30	2	1992–1998	0.85	M-v 4	Williams	32721 1998 QE ₉₉
1998 QF ₉₉	16.0	0.15	19980904	243.63384	71.80993	38.15899	3.95416	0.0403962	2.2329306	21	1	32 days	0.78		Williams	1998 QF ₉₉
1998 QH ₉₉	15.7	0.15	19990122	2.25824	353.54441	46.08841	3.20479	0.1904533	2.3875810	31	2	1976–1998	0.75	M-v 5	Williams	32721 1998 QH ₉₉
1998 QJ ₉₉	15.1	0.15	19990122	24.22577	269.23416	99.31337	3.58749	0.2116649	2.4006538	50	2	1993–1998	0.85	M-v 4	Williams	32721 1998 QJ ₉₉
1998 QM ₉₉	15.2	0.15	19980904	11.81867	327.38365	357.70783	7.84442	0.3017199	2.4172581	39	1	50 days	0.93		Williams	1998 QM ₉₉
1998 QN ₉₉	15.9	0.15	19980904	32.36928	157.65378	144.69602	4.42852	0.1892893	2.2397097	22	1	47 days	0.65		Williams	1998 QN ₉₉
1998 QO ₉₉	14.7	0.15	19990122	226.06502	37.35081	128.78355	6.11325	0.1039676	2.2392249	40	3	1991–1998	0.90	M-v 4	Williams	32721 1998 QO ₉₉
1998 QQ ₉₉	15.0	0.15	19980904	107.72405	117.71147	122.24330	3.61962	0.0361367	2.7365149	13	1	32 days	0.72		Williams	1998 QQ ₉₉
1998 QR ₉₉	17.0	0.15	19980904	351.15067	240.31093	122.95429	3.32401	0.2280320	2.4095491	27	1	32 days	0.72		Williams	1998 QR ₉₉
1998 QT ₉₉	16.4	0.15	19980904	26.97099	177.16949	129.03019	4.49873	0.2282401	2.3644156	17	1	29 days	0.69		Williams	1998 QT ₉₉
1998 QU ₉₉	16.7	0.15	19980904	342.52571	279.19639	97.16601	3.04264	0.2233677	2.3270344	31	1	47 days	0.83		Williams	1998 QU ₉₉
1998 QV ₉₉	15.8	0.15	19980904	11.27256	200.89546	130.37230	3.07806	0.2160874	2.3652887	25	1	47 days	0.75		Williams	1998 QV ₉₉
1998 QW ₉₉	14.6	0.15	19980904	18.48369	173.40810	151.96923	12.57511	0.1664113	3.0717525	17	1	29 days	0.76		Williams	1998 QW ₉₉
1998 QX ₉₉	16.0	0.15	19980904	335.98961	351.16251	37.55607	3.31253	0.2380799	2.5998690	19	1	32 days	0.64		Williams	1998 QX ₉₉
1998 QZ ₉₉	15.1	0.15	19980904	340.19919	322.33832	54.91256	3.42339	0.1674376	2.4515843	28	1	47 days	0.66		Williams	1998 QZ ₉₉
1998 QC ₁₀₀	14.9	0.15	19980904	46.00149	159.39829	126.97705	6.22538	0.1801483	2.4532004	28	1	47 days	0.82		Williams	1998 QC ₁₀₀
1998 QE ₁₀₀	14.5	0.15	19980904	301.57944	358.01048	71.17758	3.22225	0.1890757	2.4013185	31	1	47 days	0.71		Williams	1998 QE ₁₀₀
1998 QF ₁₀₀	14.5	0.15	19980904	280.90040	294.33773	154.84936	12.26442	0.1589529	2.6391137	23	1	32 days	0.83		Williams	1998 QF ₁₀₀
1998 QH ₁₀₀	15.5	0.15	19980904	18.87806	321.57433	356.41482	10.05311	0.2572871	2.7259174	30	1	33 days	1.10		Williams	1998 QH ₁₀₀
1998 QJ ₁₀₀	15.1	0.15	19980904	69.49061	254.22603	14.56728	7.11416	0.1040325	2.2725311	28	1	32 days	0.83		Williams	1998 QJ ₁₀₀
1998 QK ₁₀₀	15.2	0.15	19980904	322.83673	37.78253	5.03275	5.09356	0.1853842	2.2497769	43	1	35 days	0.81		Williams	1998 QK ₁₀₀
1998 QO ₁₀₀	14.7	0.15	19990122	329.75510	294.38953	124.72605	5.64928	0.0602890	2.7198137	27	1	74 days	0.73	M-v 5	Williams	1998 QO ₁₀₀
1998 QP ₁₀₀	14.5	0.15	19990122	0.10270	333.00351	52.49653	5.12933	0.0800100	2.8034285	31	2	1994–1998	0.80	M-v 5	Williams	32722 1998 QP ₁₀₀
1998 QQ ₁₀₀	15.5	0.15	19980904	341.55982	339.71829	32.42357	3.49380	0.0422874	2.6280431	15	1	32 days	0.77		Williams	1998 QQ ₁₀₀
1998 QR ₁₀₀	15.2	0.15	19980904	23.51289	187.90919	128.52558	4.37869	0.1908483	2.6690778	28	1	32 days	0.67		Williams	1998 QR ₁₀₀
1998 QS ₁₀₀	16.2	0.15	19980904	343.54593	304.90493	70.69114	3.33863	0.2217994	2.3964833	25	1	47 days	0.62		Williams	1998 QS ₁₀₀
1998 QT ₁₀₀	16.5	0.15	19980904	341.54790	267.82603	108.20265	4.06723	0.1726421	2.3464855	15	1	32 days	0.66		Williams	1998 QT ₁₀₀
1998 QU ₁₀₀	16.0	0.15	19980904	3.51979	290.27427	54.30223	2.92421	0.1953109	2.4136334	26	1	32 days	0.70		Williams	1998 QU ₁₀₀
1998 QW ₁₀₀	13.5	0.15	19980904	185.08927	85.63215	82.37485	2.96482	0.0166701	2.7087080	26	1	32 days	0.56		Williams	1998 QW ₁₀₀
1998 QZ ₁₀₀	15.0	0.15	19990122	34.43272	241.70814	90.84572	2.63225	0.2734904	3.0693253	33	2	1997–1998	0.69	M-v 4	Williams	32722 1998 QZ ₁₀₀
1998 QE ₁₀₁	15.2	0.15	19980904	323.21909	65.90744	348.34224	29.63760	0.3103329	2.6423541	33	1	53 days	1.05		Williams	1998 QE ₁₀₁
1998 QF ₁₀₁	15.6	0.15	19980904	355.72912	297.74242	56.94111	3.09316	0.2212134	2.6629931	18	1	47 days	0.62		Williams	1998 QF ₁₀₁
1998 QH ₁₀₁	15.4	0.15	19990122	290.54430	0.84499	103.07623	2.08465	0.0235027	2.1575593	21	2	1997–1998	0.53	M-v 4	Williams	32722 1998 QH ₁₀₁
1998 QP ₁₀₁	14.5	0.15	19980904	257.12847	55.01747	43.02914	3.75263	0.0507847	2.6675564	16	1	32 days	0.71		Williams	1998 QP ₁₀₁
1998 QS ₁₀₁	17.0	0.15	19980904	3.52064	199.85263	141.82920	4.51321	0.2339912	2.3091741	14	1	32 days	1.20		Williams	1998 QS ₁₀₁
1998 QZ ₁₀₁	15.0	0.15	19990122	120.12099	103.54292	157.06498	9.92343	0.0269830	2.5597214	26	2	1992–1998	0.85	M-v 5	Williams	32722 1998 QZ ₁₀₁
1998 QB ₁₀₂	15.0	0.15	19980904	255.28262	319.56764	147.46514	5.79727	0.1194628	2.3288805	15	1	32 days	0.91		Williams	1998 QB ₁₀₂
1998 QD ₁₀₂	13.6	0.15	19980904	214.74249	348.54300	155.67919	12.79718	0.1354153	2.8680030	27	1	32 days	0.99		Williams	1998 QD ₁₀₂
1998 QG ₁₀₂	14.2	0.15	19980904	283.56114	292.81115	142.32860	5.87985	0.0710331	2.8406808	37	1	47 days	0.84		Williams	1998 QG ₁₀₂
1998 QK ₁₀₂	14.9	0.15	19980904	353.64951	231.36032	125.92440	5.69866	0.1224404	2.6638627	31	1	47 days	0.66		Williams	1998 QK ₁₀₂
1998 QP ₁₀₂	13.0	0.15	19980904	104.30769	88.90492	154.23140	10.20597	0.0400640	3.0499265	23	1	32 days	0.62		Williams	1998 QP ₁₀₂
1998 QR ₁₀₂	15.1	0.15	19980904	297.37325	358.90528	59.51160	4.17038	0.0632647	2.3976181	30	1	47 days	0.88		Williams	1998 QR ₁₀₂
1998 QW ₁₀₂	14.5	0.15	19980904	19.05377	177.50931	149.33373	8.07467	0.1789587	2.9728650	21	1	32 days	0.57		Williams	1998 QW ₁₀₂
1998 QY ₁₀₂	15.6	0.15	19980904	295.16723	29.84216	37.02287	6.63974	0.0882265	2.4054852	31	1	34 days	0.97		Williams	1998 QY ₁₀₂
1998 QA ₁₀₃	15.4	0.15	19980904	359.22394	344.62537	8.65848	14.03865	0.2824025	3.0527212	30	1	48 days	0.65		Williams	1998 QA ₁₀₃
1998 QB ₁₀₃	14.5	0.15	19980904	341.39888	253.13601	127.97866	6.06897	0.1730916	3.1439034	29	1	32 days	0.68		Williams	1998 QB ₁₀₃
1998 QC ₁₀₃	15.0	0.15	19980904	339.50415	327.00551	57.16571	3.33409	0.2075538	2.6127308	29	1	32 days	0.54		Williams	1998 QC ₁₀₃
1998 QD ₁₀₃	15.8	0.15	19980904	328.70585	349.62232	45.89402	5.46742	0.1805144	2.3002171	22	1	47 days	1.22		Williams	1998 QD ₁₀₃
1998 QF ₁₀₃	14.0	0.15	19980904	10.84967	325.70314	16.29117	10.08799	0.0915486	3.1607747	39	1	32 days	0.95		Williams	1998 QF ₁₀₃

1998 QJ ₁₀₃	16.5	0.15	19980924	345.39088	8.36601	13.60231	9.84330	0.2149843	2.2605759	21	1	58 days	0.85	Williams	1998 QJ ₁₀₃
1998 QK ₁₀₃	16.5	0.15	19980904	343.87429	256.26465	119.20749	4.12984	0.1952633	2.2201412	29	1	32 days	0.62	Williams	1998 QK ₁₀₃
1998 QL ₁₀₃	15.5	0.15	19990122	241.77310	72.84844	83.31555	4.37126	0.0586137	2.1878827	32	2	1995–1998	0.84	M-v 5 Williams	32722 1998 QL ₁₀₃
1998 QU ₁₀₃	14.0	0.15	19980904	314.69975	302.03705	107.22466	4.97328	0.0976825	2.7863445	30	1	32 days	0.52	Williams	1998 QU ₁₀₃
1998 QV ₁₀₃	14.5	0.15	19980904	11.32254	336.10186	6.12853	22.42689	0.0735080	3.1616334	29	1	50 days	0.89	Williams	1998 QV ₁₀₃
1998 QW ₁₀₃	16.0	0.15	19980904	11.10599	282.62528	54.26453	5.04941	0.1413386	2.2401296	14	1	23 days	0.48	Williams	1998 QW ₁₀₃
1998 QX ₁₀₃	14.0	0.15	19980904	300.98597	45.62252	24.03523	11.92495	0.1466008	2.9902690	22	1	32 days	0.66	Williams	1998 QX ₁₀₃
1998 QA ₁₀₄	15.5	0.15	19980904	340.42920	341.66591	39.72938	7.24227	0.1787489	2.6061023	16	1	32 days	0.51	Williams	1998 QA ₁₀₄
1998 QF ₁₀₄	13.5	0.15	19990122	92.07565	272.60614	13.22267	14.94264	0.1003026	2.5375503	42	2	1986–1998	0.70	M-v 4 Williams	32722 1998 QF ₁₀₄
1998 QG ₁₀₄	17.0	0.15	19980904	339.84839	4.98002	22.10179	6.69193	0.2374348	2.6575674	12	1	54 days	0.64	Williams	1998 QG ₁₀₄
1998 QH ₁₀₄	15.3	0.15	19980904	305.71546	77.44870	359.77577	21.13030	0.2675596	2.2835616	49	1	50 days	0.71	Williams	1998 QH ₁₀₄
1998 QJ ₁₀₄	14.4	0.15	19980904	29.55449	294.20522	10.04828	11.83882	0.2771017	3.0630091	30	1	52 days	0.96	Williams	1998 QJ ₁₀₄
1998 QK ₁₀₄	16.0	0.15	19980904	27.52214	184.10733	131.69370	5.82366	0.1615117	2.3226376	30	1	32 days	0.62	Williams	1998 QK ₁₀₄
1998 QL ₁₀₄	15.5	0.15	19980904	5.09443	305.02546	41.32716	4.81464	0.1902694	2.5580867	21	1	32 days	1.12	Williams	1998 QL ₁₀₄
1998 QM ₁₀₄	15.0	0.15	19980924	345.07365	6.54985	11.60176	16.81063	0.0879547	2.9478917	19	1	58 days	0.82	Williams	1998 QM ₁₀₄
1998 QN ₁₀₄	15.5	0.15	19980904	44.77222	264.76888	26.79070	5.91074	0.1841617	2.3222384	14	1	23 days	0.68	Williams	1998 QN ₁₀₄
1998 QO ₁₀₄	14.5	0.15	19980904	224.68808	63.12571	69.83929	5.77654	0.0287981	2.4645053	16	1	32 days	0.46	Williams	1998 QO ₁₀₄
1998 QP ₁₀₄	12.6	0.15	19990122	273.49045	85.26486	24.89540	13.68291	0.0224999	3.1848998	56	5	1976–1998	0.82	M-v 2 Williams	32722 1998 QP ₁₀₄
1998 QQ ₁₀₄	14.0	0.15	19980904	151.20397	135.56648	69.87175	5.71754	0.0277865	3.0943078	22	1	32 days	0.99	Williams	1998 QQ ₁₀₄
1998 QR ₁₀₄	16.0	0.15	19980904	24.37287	309.61089	4.04400	15.77000	0.2443429	2.5660111	32	1	53 days	0.85	Williams	1998 QR ₁₀₄
1998 QS ₁₀₄	15.1	0.15	19980904	54.65529	145.73262	142.43875	7.15904	0.1261217	2.3987215	27	1	32 days	0.68	Williams	1998 QS ₁₀₄
1998 QU ₁₀₄	15.5	0.15	19980904	19.20433	260.92780	65.00023	5.49690	0.1929384	2.6291933	15	1	32 days	0.60	Williams	1998 QU ₁₀₄
1998 QV ₁₀₄	14.8	0.15	19980904	340.78101	310.99779	70.47017	5.31302	0.1537529	2.6295925	17	1	29 days	0.51	Williams	1998 QV ₁₀₄
1998 QW ₁₀₄	14.0	0.15	19980904	69.35893	129.02854	146.60435	9.79173	0.1241128	3.1370773	16	1	32 days	0.65	Williams	1998 QW ₁₀₄
1998 QY ₁₀₄	15.0	0.15	19980904	30.83544	285.78847	22.02436	12.44748	0.2077638	2.7906825	24	1	52 days	0.80	Williams	1998 QY ₁₀₄
1998 QA ₁₀₅	21.5	0.15	19990122	22.55753	37.41602	338.65000	8.56398	0.5359180	2.6947359	24	1	58 days	0.55	M-v 5 Williams	1998 QA ₁₀₅
1998 QB ₁₀₅	16.5	0.15	19980924	16.07496	232.10484	85.21153	23.36277	0.3682622	2.3396283	16	1	57 days	0.40	Williams	1998 QB ₁₀₅
1998 QL ₁₀₅	15.0	0.15	19980904	173.19529	105.06214	69.90657	5.00082	0.1024866	2.2307015	22	1	33 days	0.89	Williams	1998 QL ₁₀₅
1998 QM ₁₀₅	16.4	0.15	19980904	324.83126	12.38506	28.81067	5.94876	0.2142328	2.3335843	28	1	33 days	0.85	Williams	1998 QM ₁₀₅
1998 QN ₁₀₅	14.9	0.15	19990122	15.69632	337.68346	42.58084	5.00436	0.1530542	2.3156656	46	2	1991–1998	0.70	M-v 4 Williams	32723 1998 QN ₁₀₅
1998 QO ₁₀₅	14.1	0.15	19990122	186.87885	148.57621	48.91098	5.73855	0.0977378	2.2586016	45	2	1997–1998	0.58	M-v 4 Williams	32723 1998 QO ₁₀₅
1998 QP ₁₀₅	14.9	0.15	19990122	305.34813	23.79335	73.19161	4.44611	0.1163955	2.2967037	30	1	75 days	0.56	M-v 5 Williams	1998 QP ₁₀₅
1998 QS ₁₀₅	15.0	0.15	19980904	334.99421	262.44433	120.33978	5.74173	0.1383783	2.5201103	23	1	33 days	0.79	Williams	1998 QS ₁₀₅
1998 QE ₁₀₆	15.4	0.15	19980904	353.43135	294.21758	63.91298	3.80543	0.2377361	2.6077249	18	1	48 days	0.49	Williams	1998 QE ₁₀₆
1998 QM ₁₀₆	14.2	0.15	19990122	34.70749	326.39093	14.31787	11.33171	0.1659396	2.7488047	30	2	1989–1998	0.69	M-v 4 Williams	32723 1998 QM ₁₀₆
1998 QU ₁₀₆	13.9	0.15	19980904	328.00754	325.04740	68.84939	4.52216	0.1719931	2.8776664	22	1	48 days	0.45	Williams	1998 QU ₁₀₆
1998 QX ₁₀₆	15.5	0.15	19990122	351.97319	25.56419	28.61756	7.22080	0.1956904	2.3058018	18	2	1993–1998	0.71	M-v 5 Williams	32723 1998 QX ₁₀₆
1998 QY ₁₀₆	16.5	0.15	19980904	4.68611	271.89780	68.51142	4.09783	0.1859126	2.3153184	14	1	33 days	0.76	Williams	1998 QY ₁₀₆
1998 RA	15.0	0.15	19980924	33.69885	63.67629	240.32719	5.85141	0.1676574	3.0509203	20	1	47 days	0.57	Williams	1998 RA
1998 RB	14.0	0.15	19980904	103.93510	45.97854	197.43700	15.25654	0.0114303	2.5662979	53	1	48 days	0.77	Williams	1998 RB
1998 RE	12.4	0.15	19990122	266.28584	127.62993	58.31930	13.67420	0.0921981	3.1433193	23	3	1939–1998	0.51	M-v 3 Williams	32723 1998 RE
1998 RF	15.0	0.15	19980924	102.17872	198.14537	49.43328	8.34242	0.0520911	2.7415861	17	1	48 days	0.41	Williams	1998 RF
1998 RG	14.5	0.15	19980924	277.80795	326.64384	126.27600	10.09057	0.1245853	2.7675900	15	1	48 days	0.43	Williams	1998 RG
1998 RH	14.5	0.15	19980924	162.90085	89.44842	107.35112	7.41375	0.0565659	2.3503556	17	1	54 days	0.30	Williams	1998 RH
1998 RJ	17.5	0.15	19980924	8.09443	309.94277	38.87761	6.96001	0.2090963	2.2233431	23	1	54 days	0.64	Williams	1998 RJ
1998 RL	16.0	0.15	19980904	20.84716	142.24324	177.31724	5.11848	0.2010924	2.3331459	42	1	28 days	0.70	Williams	1998 RL
1998 RM	13.5	0.15	19980924	215.65533	271.48127	207.28961	16.58532	0.0907537	2.8026194	17	1	39 days	0.35	Williams	1998 RM
1998 RS	13.5	0.15	19980924	345.75308	194.20438	185.99929	15.88061	0.1078794	3.0736041	52	1	49 days	0.45	Williams	1998 RS
1998 RT	15.0	0.15	19980924	33.45472	62.29776	224.10057	12.95795	0.1400646	2.5488975	13	1	36 days	0.56	Williams	1998 RT
1998 RV	13.8	0.15	19990122	350.70331	4.62166	4.99374	9.85040	0.0972676	2.9891759	43	2	1991–1998	0.51	M-v 4 Williams	32723 1998 RV
1998 RW	15.5	0.15	19980924	10.32446	40.44858	305.50284	5.85521	0.1418283	2.4462391	26	1	28 days	0.55	Nakano	1998 RW
1998 RX	12.5	0.15	19990122	1.14099	35.80907	358.41066	10.42277	0.0682401	3.2144238	56	4	1975–1998	0.64	M-v 2 Williams	32723 1998 RX
1998 RY	15.5	0.15	19980904	345.22733	154.79297	233.41894	3.39245	0.2994927	2.5765368	41	1	52 days	0.70	Williams	1998 RY

1998 RB ₁	15.0	0.15	19980904	3.29038	5.44696	353.60876	9.50923	0.1847068	2.7721872	29	1	20 days	0.59		Williams	1998 RB ₁
1998 RC ₁	13.6	0.15	19980924	58.59299	99.38591	203.35410	9.52893	0.0954037	2.9760626	32	1	32 days	0.62		Williams	1998 RC ₁
1998 RD ₁	13.0	0.15	19980924	11.48472	10.38154	348.10266	8.65980	0.0898365	3.1742969	21	1	29 days	0.57		Williams	1998 RD ₁
1998 RE ₁	14.7	0.15	19980924	22.26834	314.64725	356.37268	17.11013	0.1682043	3.0384480	23	1	38 days	0.49		Williams	1998 RE ₁
1998 RF ₁	15.5	0.15	19990122	34.55237	23.27365	330.05046	5.97001	0.2255430	2.3478987	37	1	77 days	0.45	M-v 4	Williams	32773 1998 RF ₁
1998 RG ₁	13.0	0.15	19980924	281.11065	283.30434	170.55109	9.98828	0.2033897	3.1830679	33	1	28 days	0.73		Williams	1998 RG ₁
1998 RJ ₁	13.0	0.15	19980924	308.12313	259.11558	168.65415	1.13716	0.2240704	3.2051830	43	1	30 days	0.68		Williams	1998 RJ ₁
1998 RO ₁	18.5	0.15	19990122	34.03974	151.03062	351.95767	22.65144	0.7198167	0.9905590	54	1	31 days	0.61	M-v 8	Williams	1998 RO ₁
1998 RP ₁	15.0	0.15	19980924	35.23394	301.79655	14.97932	1.76708	0.2142450	2.7633661	39	1	31 days	0.58		Williams	1998 RP ₁
1998 RT ₁	15.5	0.15	19990122	164.86276	263.15171	326.07452	13.21653	0.0201138	2.5238802	25	2	1994-1998	0.66	M-v 5	Williams	32724 1998 RT ₁
1998 RB ₂	15.5	0.15	19980924	109.62226	85.84649	131.58393	7.00391	0.2070917	2.5436149	12	1	49 days	0.31		Williams	1998 RB ₂
1998 RC ₂	14.0	0.15	19980924	325.71021	28.37881	2.12958	12.76765	0.1485235	3.1692946	25	1	51 days	0.67		Williams	1998 RC ₂
1998 RF ₂	15.0	0.15	19980904	50.90228	264.47886	20.88968	13.43274	0.2008056	2.7333608	39	1	13 days	0.60		Williams	1998 RF ₂
1998 RG ₂	17.5	0.15	19980904	342.51041	235.11704	153.59362	9.04332	0.3021393	2.7914909	17	1	11 days	0.35		Williams	1998 RG ₂
1998 RH ₂	15.1	0.15	19980815	8.47483	236.82421	99.15492	4.45915	0.2042808	2.6422150	33	1	54 days	0.58		Williams	1998 RH ₂
1998 RK ₂	15.5	0.15	19980904	332.17481	285.21708	105.37833	5.42047	0.0730501	2.7609126	18	1	11 days	0.72		Williams	1998 RK ₂
1998 RL ₂	16.0	0.15	19980904	70.91420	147.14619	125.34674	5.54525	0.1190475	2.1813207	31	1	13 days	0.94		Williams	1998 RL ₂
1998 RM ₂	16.5	0.15	19980904	342.59727	317.34879	61.80913	4.20369	0.1798172	2.1709914	39	1	13 days	0.65		Williams	1998 RM ₂
1998 RO ₂	15.0	0.15	19980904	10.07336	194.87767	151.55654	10.52498	0.1352706	2.9749974	17	1	4 days	0.62		Williams	1998 RO ₂
1998 RR ₂	17.4	0.15	19990122	19.43956	29.21306	358.16858	2.97953	0.4125071	2.6583479	68	1	46 days	0.48	M-v 5	Marsden	1998 RR ₂
1998 RD ₃	15.3	0.15	19980924	3.23355	349.35703	11.43777	13.64114	0.3130543	2.5732616	32	1	30 days	0.63		Williams	1998 RD ₃
1998 RF ₃	17.0	0.15	19980924	358.35591	108.48525	244.95270	11.40901	0.2130623	2.3524906	16	1	29 days	0.44		Williams	1998 RF ₃
1998 RG ₃	15.7	0.15	19980924	3.21177	131.51166	229.92148	8.06476	0.3524154	2.6779650	40	1	43 days	0.79		Williams	1998 RG ₃
1998 RM ₃	14.5	0.15	19980924	329.92908	45.24031	350.12182	24.89399	0.1837132	2.2807212	23	1	28 days	0.57		Williams	1998 RM ₃
1998 RO ₃	16.3	0.15	19980924	11.88966	347.46474	350.65782	18.75896	0.0610701	1.9175035	28	1	31 days	0.67		Williams	1998 RO ₃
1998 RZ ₃	15.5	0.15	19980904	27.95731	331.86683	341.38411	14.08714	0.1843362	2.5547511	21	1	13 days	0.91		Williams	1998 RZ ₃
1998 RA ₄	16.5	0.15	19980904	23.15453	334.60995	343.30160	10.33295	0.1927469	2.2650860	19	1	13 days	0.79		Williams	1998 RA ₄
1998 RM ₄	17.5	0.15	19980904	319.62692	217.87995	184.45920	23.95605	0.0962637	1.8238778	26	1	16 days	0.81		Williams	1998 RM ₄
1998 RO ₄	17.9	0.15	19990122	62.09294	111.24736	192.30185	5.33721	0.4272182	2.1379368	71	1	57 days	0.52	M-v 5	Williams	32774 1998 RO ₄
1998 RQ ₄	15.5	0.15	19980924	328.65308	255.69122	172.28702	23.99357	0.3813994	2.8393176	33	1	32 days	1.08		Williams	1998 RQ ₄
1998 RU ₄	15.1	0.15	19980924	306.87099	94.14710	0.23251	21.73346	0.3034332	2.3990288	47	1	34 days	0.83		Williams	1998 RU ₄
1998 RV ₄	16.0	0.15	19990122	30.72907	206.89239	169.34853	23.45142	0.0871878	1.9729544	20	2	1997-1998	0.61	M-v 4	Williams	32724 1998 RV ₄
1998 RW ₄	16.0	0.15	19980924	9.95185	175.09883	177.99866	22.56237	0.0886640	1.9617212	25	1	32 days	0.69		Williams	1998 RW ₄
1998 RX ₄	17.1	0.15	19980924	326.12099	221.12940	184.92292	21.49090	0.0887508	1.9349406	24	1	33 days	0.72		Williams	1998 RX ₄
1998 RZ ₄	15.5	0.15	19980924	192.36340	358.84685	177.96801	22.74071	0.0648242	1.9488570	26	1	32 days	0.68		Williams	1998 RZ ₄
1998 RA ₅	13.5	0.15	19980924	13.07185	26.61006	313.70045	5.83767	0.0246770	3.0545550	31	1	30 days	0.84		Williams	1998 RA ₅
1998 RB ₅	14.5	0.15	19980924	340.83231	49.57827	331.64180	2.58645	0.1725084	2.7874667	26	1	40 days	0.64		Williams	1998 RB ₅
1998 RE ₅	16.5	0.15	19980924	20.80427	271.28736	63.09142	4.66553	0.2197235	2.1649256	33	1	37 days	0.48		Williams	1998 RE ₅
1998 RF ₅	16.5	0.15	19980904	45.45527	220.41055	78.54161	4.49588	0.1291527	2.3405428	15	1	11 days	0.78		Williams	1998 RF ₅
1998 RG ₅	15.0	0.15	19980904	58.09895	254.70283	40.18710	9.64616	0.0732530	3.1844163	20	1	11 days	0.61		Williams	1998 RG ₅
1998 RH ₅	16.0	0.15	19980904	40.32808	284.90535	24.94966	14.12751	0.1023176	2.6440954	21	1	11 days	0.68		Williams	1998 RH ₅
1998 RO ₅	16.5	0.15	19980904	12.82870	118.73505	217.23173	0.21107	0.2015636	2.1906357	24	1	13 days	0.66		Williams	1998 RO ₅
1998 RQ ₅	15.5	0.15	19980904	36.77778	302.78452	13.71786	0.74106	0.0825237	2.2428647	24	1	13 days	0.87		Williams	1998 RQ ₅
1998 RR ₅	16.9	0.15	19980924	357.22455	192.55127	177.86349	2.39055	0.2343924	2.4010366	33	1	33 days	0.76		Williams	1998 RR ₅
1998 RS ₅	16.5	0.15	19980904	0.58259	340.00406	17.40323	1.14999	0.1589385	2.2926065	23	1	13 days	1.27	E	Williams	1998 RS ₅
1998 RT ₅	14.2	0.15	19980924	5.81375	205.47584	156.08505	3.30690	0.2639876	3.9646618	22	1	34 days	0.80		Williams	1998 RT ₅
1998 RU ₅	14.8	0.15	19980924	332.32810	227.95545	176.57943	9.82838	0.0878549	2.5744926	25	1	32 days	0.57		Williams	1998 RU ₅
1998 RV ₅	14.5	0.15	19980904	307.08009	30.84258	35.34956	11.06046	0.1312688	3.0079471	19	1	11 days	0.42		Williams	1998 RV ₅
1998 RA ₆	15.5	0.15	19980924	359.62414	313.60882	40.19342	4.02012	0.2526376	2.6858068	21	1	37 days	0.33		Williams	1998 RA ₆
1998 RK ₆	13.8	0.15	19980924	36.92724	144.83913	151.51458	6.51530	0.1557425	3.1933472	19	1	30 days	0.53		Williams	1998 RK ₆
1998 RL ₆	14.6	0.15	19980924	88.42462	264.74408	11.22592	2.65360	0.1018259	2.2959398	22	1	33 days	0.48		Williams	1998 RL ₆
1998 RM ₆	14.5	0.15	19980904	91.55143	89.31147	191.95852	11.83506	0.0422771	2.5192841	12	1	7 days	0.53		Marsden	1998 RM ₆
1998 RN ₆	15.9	0.15	19980904	344.57986	166.66544	196.51172	6.95435	0.1554209	2.2448749	22	1	45 days	0.48		Williams	1998 RN ₆

1998 RR ₆	15.0	0.15	19980904	355.57309	18.02411	346.93166	13.21091	0.1644796	2.5758824	23	1	13 days	0.96	Williams	1998 RR ₆
1998 RC ₈	14.6	0.15	19980924	339.60972	34.15812	3.93644	5.16354	0.2121136	2.6206175	23	1	37 days	0.61	Williams	1998 RC ₈
1998 RG ₈	15.5	0.15	19980904	350.28372	357.11700	19.46850	3.51088	0.1864241	2.7445469	16	1	15 days	0.63	Williams	1998 RG ₈
1998 RL ₈	16.0	0.15	19980924	347.93179	232.49654	156.00896	2.55119	0.2217494	2.6819284	30	1	37 days	0.63	Williams	1998 RL ₈
1998 RE ₁₁	16.0	0.15	19980904	86.36427	87.02990	179.92935	0.43028	0.0734190	2.2654134	18	1	14 days	0.96	Williams	1998 RE ₁₁
1998 RL ₁₁	15.0	0.15	19980904	276.02842	90.31517	7.84105	14.19307	0.0857765	2.6560902	24	1	14 days	1.00	Williams	1998 RL ₁₁
1998 RU ₁₁	14.5	0.15	19980904	314.64411	238.02662	182.96286	9.48531	0.1014570	3.0577955	15	1	14 days	0.50	Williams	1998 RU ₁₁
1998 RV ₁₁	16.0	0.15	19980904	46.34473	113.38182	180.44347	8.58060	0.2207170	2.3785916	19	1	14 days	0.62	Williams	1998 RV ₁₁
1998 RR ₁₂	16.5	0.15	19980904	345.88289	194.73260	187.62079	3.40865	0.2116308	2.6208416	15	1	13 days	0.74	Williams	1998 RR ₁₂
1998 RV ₁₂	14.4	0.15	19980924	334.07328	209.63069	186.81268	5.90112	0.0271070	2.7940692	27	1	30 days	0.86	Williams	1998 RV ₁₂
1998 RX ₁₂	13.5	0.15	19980904	225.63500	336.99274	180.67927	0.76796	0.2263508	3.1391113	15	1	13 days	0.70	Williams	1998 RX ₁₂
1998 RY ₁₂	13.8	0.15	19980904	76.81665	93.17183	188.11306	15.74996	0.0728420	3.1638653	26	1	13 days	0.80	Williams	1998 RY ₁₂
1998 RA ₁₃	17.0	0.15	19980904	359.87925	350.92367	6.74250	1.34165	0.2279700	2.2733681	16	1	13 days	0.50	Williams	1998 RA ₁₃
1998 RB ₁₃	14.8	0.15	19980924	28.23274	310.91110	18.76713	1.16051	0.1750804	3.1096541	27	1	30 days	0.78	Williams	1998 RB ₁₃
1998 RD ₁₃	14.5	0.15	19980924	18.80504	167.99391	180.18360	1.84408	0.0719369	2.9313610	19	1	30 days	0.50	Williams	1998 RD ₁₃
1998 RS ₁₄	15.2	0.15	19990122	343.68436	54.36796	4.84296	9.01091	0.1414437	3.0123142	29	2	1977–1998	0.86	M-v 5 Williams	32724 1998 RS ₁₄
1998 RT ₁₅	14.9	0.15	19980904	38.00478	341.31755	323.59132	8.53888	0.1193553	2.5771264	27	1	43 days	0.61	Williams	1998 RT ₁₅
1998 RU ₁₅	14.0	0.15	19990122	140.93635	78.39807	175.75200	5.05314	0.1145208	2.2987284	51	2	1983–1998	0.68	M-v 4 Williams	32724 1998 RU ₁₅
1998 RV ₁₅	14.3	0.15	19980904	334.54687	224.19707	179.22925	12.45908	0.1863261	2.6667113	37	1	50 days	0.82	Williams	1998 RV ₁₅
1998 RW ₁₅	15.0	0.15	19980904	24.81140	127.61872	198.18659	2.48287	0.0768276	2.6079075	21	1	17 days	0.73	Williams	1998 RW ₁₅
1998 RX ₁₅	15.0	0.15	19980904	352.54969	65.53277	298.66740	0.95526	0.0829930	2.8675687	39	1	17 days	0.82	Williams	1998 RX ₁₅
1998 RY ₁₅	16.4	0.15	19980924	337.55502	213.36550	182.39305	5.32989	0.2234294	2.3481923	45	1	35 days	0.70	Williams	1998 RY ₁₅
1998 RZ ₁₅	16.0	0.15	19980904	25.09878	247.67486	74.26676	3.39969	0.1920160	2.1694325	22	1	13 days	0.50	Williams	1998 RZ ₁₅
1998 RA ₁₆	15.3	0.15	19980924	22.06835	230.46325	106.72724	3.35609	0.1885604	2.3974740	37	1	32 days	0.68	Williams	1998 RA ₁₆
1998 RC ₁₆	14.8	0.15	19980924	37.36707	263.18348	57.49268	4.58572	0.1457984	2.3545788	31	1	44 days	0.64	Williams	1998 RC ₁₆
1998 RD ₁₆	15.5	0.15	19980904	347.39784	219.63920	159.35026	8.23513	0.0775525	2.3844748	20	1	13 days	0.87	Williams	1998 RD ₁₆
1998 RE ₁₆	13.5	0.15	19980924	55.72725	164.65991	134.13333	5.61261	0.1683188	3.0384395	30	1	32 days	0.90	Williams	1998 RE ₁₆
1998 RF ₁₆	14.0	0.15	19990122	100.02544	145.57701	134.43354	5.17556	0.1740956	2.5950634	46	3	1981–1998	0.72	M-v 3 Williams	32724 1998 RF ₁₆
1998 RG ₁₆	12.5	0.15	19980924	10.47065	95.87552	270.05207	13.71714	0.1748406	2.6700997	18	1	31 days	0.56	Williams	1998 RG ₁₆
1998 RD ₁₇	13.5	0.15	19980904	324.86476	215.16536	161.28480	13.22856	0.1060284	2.8582267	19	1	56 days	0.48	Williams	1998 RD ₁₇
1998 RK ₁₇	14.7	0.15	19990122	248.98097	305.94091	175.70394	7.05240	0.0602942	2.6539651	23	1	60 days	0.77	M-v 6 Williams	1998 RK ₁₇
1998 RC ₁₈	13.8	0.15	19980924	14.23197	311.89248	1.48064	12.27993	0.3089158	3.0694306	16	1	33 days	0.51	Williams	1998 RC ₁₈
1998 RD ₁₉	15.5	0.15	19980924	340.02582	18.44047	355.19627	14.08345	0.1802112	2.5559635	16	1	38 days	0.66	Williams	1998 RD ₁₉
1998 RM ₁₉	15.5	0.15	19980924	296.42697	71.11925	352.15211	6.14752	0.1472264	2.7440197	15	1	38 days	0.88	Williams	1998 RM ₁₉
1998 RD ₂₀	17.5	0.15	19980924	11.20272	318.54383	9.35743	6.85074	0.2743902	2.3096916	16	1	38 days	0.59	Williams	1998 RD ₂₀
1998 RL ₂₀	15.5	0.15	19980924	279.41897	315.81412	102.23949	7.42146	0.0696224	2.7819502	9	1	25 days	0.44	Williams	1998 RL ₂₀
1998 RO ₂₀	15.5	0.15	19990122	78.63899	129.76088	164.86869	3.54219	0.1938706	2.1888929	26	2	1995–1998	0.50	M-v 5 Williams	32725 1998 RO ₂₀
1998 RP ₂₀	15.5	0.15	19980924	49.86669	81.04531	250.16557	11.09028	0.1893231	2.6459537	10	1	30 days	0.48	Williams	1998 RP ₂₀
1998 RR ₂₁	16.5	0.15	19980904	5.68147	156.17241	185.88494	5.16464	0.2591309	2.9671617	16	1	12 days	0.85	Williams	1998 RR ₂₁
1998 RS ₂₁	15.0	0.15	19980904	318.87761	179.06141	224.87046	1.14454	0.1057065	3.0132913	23	1	13 days	0.91	Williams	1998 RS ₂₁
1998 RZ ₂₁	15.0	0.15	19980904	216.85059	149.36917	357.28420	5.56800	0.1347512	2.3379480	17	1	13 days	0.80	Williams	1998 RZ ₂₁
1998 RE ₂₄	15.5	0.15	19980924	319.05393	33.02923	1.72340	3.96982	0.1156476	2.8003731	13	1	38 days	0.70	Williams	1998 RE ₂₄
1998 RE ₂₅	15.2	0.15	19980924	17.89375	127.23449	189.01981	6.49832	0.2955236	3.0862584	21	1	30 days	0.80	Williams	1998 RE ₂₅
1998 RX ₃₂	14.9	0.15	19980924	309.30753	287.94798	142.21218	2.02034	0.2557625	2.6462265	12	1	28 days	0.53	Williams	1998 RX ₃₂
1998 RZ ₃₅	14.0	0.15	19980904	185.97149	347.23224	176.38861	12.71414	0.0935905	2.6557180	12	1	16 days	0.65	Williams	1998 RZ ₃₅
1998 RE ₃₇	14.5	0.15	19980924	328.68584	115.04936	289.57834	5.11943	0.2192964	3.0348116	18	1	27 days	0.71	Williams	1998 RE ₃₇
1998 RK ₃₈	14.4	0.15	19980924	12.18799	343.48492	353.55794	8.85246	0.1411009	3.0362104	14	1	32 days	0.65	Williams	1998 RK ₃₈
1998 RZ ₃₉	15.6	0.15	19980904	34.18065	167.74389	133.64348	6.22811	0.1434031	2.3354931	18	1	43 days	0.61	Williams	1998 RZ ₃₉
1998 RJ ₄₀	15.2	0.15	19980904	239.35331	346.70958	125.92227	7.13760	0.0564758	2.3347532	20	1	22 days	0.88	Williams	1998 RJ ₄₀
1998 RY ₄₀	16.0	0.15	19980904	2.66142	186.33181	157.30139	10.93154	0.2332854	2.5975890	17	1	13 days	0.79	Williams	1998 RY ₄₀
1998 RU ₄₂	14.0	0.15	19980924	355.80807	47.39184	316.08055	8.51416	0.1117831	3.0648635	12	1	31 days	0.41	Williams	1998 RU ₄₂
1998 RV ₄₂	14.0	0.15	19980904	0.97990	119.77611	231.91534	6.20061	0.0794038	2.7746240	22	1	13 days	0.46	Williams	1998 RV ₄₂
1998 RY ₄₂	14.5	0.15	19980904	240.82445	288.97884	186.77795	22.18450	0.0396260	2.6622106	19	1	13 days	0.57	Williams	1998 RY ₄₂

1998 RZ ₄₂	15.5	0.15	19980904	25.94361	78.29581	232.93795	3.75717	0.2218156	2.6066219	18	1	13 days	0.63	Williams	1998 RZ ₄₂
1998 RA ₄₃	15.5	0.15	19980904	311.58281	213.47102	199.71441	9.26127	0.1268518	2.5354338	18	1	13 days	0.72	Williams	1998 RA ₄₃
1998 RE ₄₃	17.0	0.15	19980904	8.89900	7.38490	324.85968	4.12982	0.2904722	2.5256043	15	1	13 days	0.81	Williams	1998 RE ₄₃
1998 RL ₄₃	15.0	0.15	19980904	261.83263	254.91196	200.63122	4.12288	0.0595739	2.1801401	19	1	13 days	0.79	Williams	1998 RL ₄₃
1998 RM ₄₃	15.5	0.15	19980904	320.46627	168.84076	239.73855	2.50057	0.2024325	2.6885486	18	1	13 days	0.79	Williams	1998 RM ₄₃
1998 RQ ₄₃	17.5	0.15	19980904	5.38793	14.80202	323.69824	2.68289	0.2587063	2.2996559	17	1	13 days	1.04	Williams	1998 RQ ₄₃
1998 RX ₄₃	16.5	0.15	19980904	357.61254	3.37013	349.24817	8.28870	0.2497758	2.4517920	19	1	13 days	0.67	Williams	1998 RX ₄₃
1998 RZ ₄₃	16.0	0.15	19980904	22.28197	167.67661	144.87816	4.89578	0.2460036	2.6636045	16	1	13 days	0.92	Williams	1998 RZ ₄₃
1998 RM ₄₄	18.5	0.15	19980904	353.20465	345.82543	14.14020	6.48559	0.3459302	2.3035059	17	1	13 days	0.95	Williams	1998 RM ₄₄
1998 RO ₄₄	13.3	0.15	19980924	205.99675	91.07624	61.57272	5.90856	0.0994892	3.2221041	21	1	55 days	0.75	Williams	1998 RO ₄₄
1998 RP ₄₄	14.8	0.15	19980924	246.25791	334.50192	140.95629	8.29721	0.0611840	2.3853951	19	1	28 days	0.82	Williams	1998 RP ₄₄
1998 RQ ₄₄	15.0	0.15	19980904	146.67725	65.19092	134.56995	7.25468	0.0686125	2.3134248	17	1	13 days	0.96	Williams	1998 RQ ₄₄
1998 RS ₄₄	16.0	0.15	19980904	318.08323	259.56925	145.60290	7.12325	0.1575528	2.3124598	17	1	13 days	0.91	Williams	1998 RS ₄₄
1998 RT ₄₄	14.0	0.15	19980924	160.44108	35.12725	157.36331	13.62100	0.0982622	2.6930925	25	1	28 days	0.67	Williams	1998 RT ₄₄
1998 RA ₄₅	14.4	0.15	19980924	287.04764	292.95278	164.25318	12.36142	0.2412805	2.6886762	31	1	56 days	0.54	Williams	1998 RA ₄₅
1998 RG ₄₅	15.0	0.15	19980904	43.35959	116.94424	180.03988	7.90387	0.1320722	2.7514768	16	1	13 days	1.07	Williams	1998 RG ₄₅
1998 RH ₄₅	17.5	0.15	19980904	346.22582	187.15510	185.01725	4.79382	0.2598994	2.2895275	16	1	13 days	0.81	Williams	1998 RH ₄₅
1998 RJ ₄₅	14.0	0.15	19980904	316.47815	110.48107	292.57915	1.73738	0.0845133	3.1182934	19	1	13 days	0.72	Williams	1998 RJ ₄₅
1998 RO ₄₅	15.5	0.15	19980904	38.89883	120.47606	183.99398	5.69873	0.0987308	2.3453369	18	1	13 days	0.60	Williams	1998 RO ₄₅
1998 RQ ₄₅	14.5	0.15	19980904	323.97703	223.02130	179.35547	25.64657	0.1783875	3.0549354	19	1	13 days	0.66	Williams	1998 RQ ₄₅
1998 RR ₄₅	16.0	0.15	19980904	45.06249	92.92895	197.61984	3.92036	0.1591131	2.2435153	18	1	13 days	0.88	Williams	1998 RR ₄₅
1998 RS ₄₅	16.0	0.15	19980904	63.66983	60.34123	205.89092	3.28388	0.1920805	2.3832805	18	1	13 days	1.11	Williams	1998 RS ₄₅
1998 RU ₄₅	14.5	0.15	19980904	299.39630	95.28439	322.72284	3.27716	0.0450857	2.7720657	17	1	13 days	0.83	Williams	1998 RU ₄₅
1998 RV ₄₅	14.5	0.15	19980904	86.24441	278.84732	328.18857	4.25557	0.1727858	2.6136752	17	1	13 days	0.91	Williams	1998 RV ₄₅
1998 RW ₄₅	15.5	0.15	19980904	342.09841	159.01219	215.83964	2.13482	0.1293671	2.5904175	18	1	13 days	0.92	Williams	1998 RW ₄₅
1998 RA ₄₆	15.0	0.15	19980904	227.67777	148.81676	346.23171	9.63192	0.1213017	2.5835508	16	1	13 days	0.86	Williams	1998 RA ₄₆
1998 RB ₄₆	16.5	0.15	19980904	354.85455	155.40603	201.98860	5.06446	0.1506749	2.3257499	17	1	13 days	0.98	Williams	1998 RB ₄₆
1998 RD ₄₆	16.0	0.15	19980904	2.00296	7.79354	339.06083	7.26929	0.2268265	2.4775339	19	1	13 days	0.51	Williams	1998 RD ₄₆
1998 RE ₄₆	15.5	0.15	19980904	306.24565	134.37116	293.65291	2.73007	0.2142835	2.3615998	19	1	13 days	0.54	Williams	1998 RE ₄₆
1998 RF ₄₆	14.1	0.15	19980924	85.51625	327.60394	298.89210	2.98222	0.0535835	2.6465217	22	1	30 days	0.49	Williams	1998 RF ₄₆
1998 RG ₄₆	17.0	0.15	19980904	12.43269	49.94397	278.16944	2.46655	0.2715106	2.6215074	15	1	13 days	0.84	Williams	1998 RG ₄₆
1998 RJ ₄₆	15.0	0.15	19980904	267.56714	262.02150	203.42597	6.87397	0.1732132	2.7698292	15	1	13 days	1.01	Williams	1998 RJ ₄₆
1998 RK ₄₆	14.5	0.15	19980904	6.53934	47.63306	296.33916	3.72786	0.1804126	3.1024797	19	1	13 days	0.43	Williams	1998 RK ₄₆
1998 RM ₄₆	17.0	0.15	19980904	321.63453	146.71952	255.95174	3.05541	0.1518830	2.2448451	17	1	13 days	1.00	Williams	1998 RM ₄₆
1998 RN ₄₆	16.0	0.15	19980904	16.84961	9.61671	313.37551	4.51570	0.2428634	2.3916666	20	1	13 days	0.56	Williams	1998 RN ₄₆
1998 RP ₄₆	16.4	0.15	19980924	340.21614	164.69898	228.05883	3.33019	0.2461714	2.3303802	21	1	30 days	0.54	Williams	1998 RP ₄₆
1998 RQ ₄₆	16.6	0.15	19980924	15.00106	21.51493	312.44799	3.59119	0.2585836	2.2892447	21	1	30 days	0.49	Williams	1998 RQ ₄₆
1998 RR ₄₆	16.0	0.15	19980904	40.94806	356.90773	299.41645	3.50975	0.1723577	2.3064448	19	1	13 days	0.68	Williams	1998 RR ₄₆
1998 RS ₄₆	16.5	0.15	19980904	31.90050	70.67888	233.19104	4.54320	0.2014443	2.2490490	18	1	13 days	0.90	Williams	1998 RS ₄₆
1998 RT ₄₆	15.0	0.15	19980904	14.34301	21.29296	311.37140	5.58070	0.1482656	2.4248154	18	1	13 days	0.55	Williams	1998 RT ₄₆
1998 RU ₄₆	15.5	0.15	19980904	90.26332	308.80310	307.09755	5.83910	0.0649271	2.3738302	17	1	13 days	1.08	Williams	1998 RU ₄₆
1998 RV ₄₆	16.0	0.15	19980904	6.97568	32.46182	306.51243	4.29447	0.2311650	2.3346824	19	1	13 days	0.56	Williams	1998 RV ₄₆
1998 RC ₄₇	14.5	0.15	19980904	323.56444	203.23583	193.44113	16.32985	0.0827031	2.8867345	19	1	13 days	0.90	Williams	1998 RC ₄₇
1998 RF ₄₇	15.5	0.15	19980904	61.37218	338.69974	301.69361	5.64845	0.1105843	2.4402432	18	1	13 days	0.66	Williams	1998 RF ₄₇
1998 RH ₄₇	16.0	0.15	19980904	36.46639	45.19209	255.25782	4.51256	0.1976189	2.5269576	18	1	13 days	0.85	Williams	1998 RH ₄₇
1998 RL ₄₇	15.5	0.15	19980904	17.88473	59.33998	271.91996	3.65929	0.0992509	2.4475712	21	1	13 days	0.87	Williams	1998 RL ₄₇
1998 RM ₄₇	15.3	0.15	19980924	33.77651	34.76218	278.22484	3.69260	0.1685312	2.5326385	22	1	30 days	0.48	Williams	1998 RM ₄₇
1998 RN ₄₇	15.0	0.15	19980904	335.34665	59.32639	338.47284	12.09693	0.2762619	3.1768472	19	1	13 days	0.93	Williams	1998 RN ₄₇
1998 RO ₄₇	17.0	0.15	19980904	2.74214	70.72156	274.40498	2.94124	0.3161694	2.6079794	18	1	13 days	0.88	Williams	1998 RO ₄₇
1998 RQ ₄₇	14.7	0.15	19980924	74.62744	322.47907	308.62364	4.85030	0.1224180	2.3845415	22	1	30 days	0.37	Williams	1998 RQ ₄₇
1998 RT ₄₇	15.6	0.15	19980924	30.77565	348.76589	329.65831	8.09856	0.1575521	2.4076121	21	1	31 days	0.60	Williams	1998 RT ₄₇
1998 RU ₄₇	13.5	0.15	19980924	229.57227	295.97248	198.35669	12.44250	0.0529065	2.9871412	21	1	30 days	0.84	Williams	1998 RU ₄₇
1998 RV ₄₇	15.0	0.15	19980904	12.04006	134.52884	206.39555	8.97516	0.0898856	2.9763718	17	1	13 days	1.16	Williams	1998 RV ₄₇

1998 RW ₄₇	15.0	0.15	19980904	110.97825	21.47072	214.71304	5.93667	0.0702329	2.4289468	18	1	13 days	0.81	Williams	1998 RW ₄₇
1998 RX ₄₇	17.0	0.15	19980904	19.08501	70.36973	252.26454	2.37825	0.1883836	2.1376869	19	1	13 days	0.82	Williams	1998 RX ₄₇
1998 RY ₄₇	15.0	0.15	19980924	88.85111	23.12399	233.34704	4.15374	0.1257509	2.4314259	22	1	30 days	0.70	Williams	1998 RY ₄₇
1998 RZ ₄₇	14.6	0.15	19980924	45.57211	320.85163	333.57978	7.34330	0.2040840	2.7812575	26	1	30 days	0.61	Williams	1998 RZ ₄₇
1998 RA ₄₈	16.0	0.15	19980904	347.51265	54.05566	315.19627	4.26164	0.1166745	2.4384920	18	1	13 days	0.92	Williams	1998 RA ₄₈
1998 RB ₄₈	16.5	0.15	19980904	25.10836	50.00603	267.87845	2.35827	0.1603923	2.2896002	18	1	13 days	1.00	Williams	1998 RB ₄₈
1998 RD ₄₈	15.5	0.15	19980904	305.09215	116.76599	313.14748	3.35961	0.2036550	2.5354275	18	1	13 days	0.91	Williams	1998 RD ₄₈
1998 RE ₄₈	17.0	0.15	19980904	21.46362	21.50770	302.16878	2.95202	0.1335247	2.2035085	18	1	13 days	1.10	Williams	1998 RE ₄₈
1998 RG ₄₈	15.5	0.15	19980904	324.18850	52.03797	346.40107	13.57855	0.1121274	2.5848885	17	1	13 days	0.81	Williams	1998 RG ₄₈
1998 RH ₄₈	17.0	0.15	19980904	352.40885	119.46575	245.12280	2.25274	0.2468917	2.5334589	18	1	13 days	1.28	Williams	1998 RH ₄₈
1998 RJ ₄₈	14.0	0.15	19980904	197.03864	175.69752	345.29553	11.44121	0.0684802	2.7768037	19	1	13 days	1.01	Williams	1998 RJ ₄₈
1998 RK ₄₈	14.5	0.15	19980904	174.49345	326.63677	211.94683	3.98366	0.1365788	2.6089506	16	1	13 days	0.80	Williams	1998 RK ₄₈
1998 RL ₄₈	15.0	0.15	19980904	51.81410	67.99541	225.53066	3.27915	0.0875645	2.7420738	19	1	13 days	1.24	Williams	1998 RL ₄₈
1998 RM ₄₈	14.5	0.15	19980904	310.71702	132.94737	278.81649	2.56413	0.0855243	3.0183404	17	1	13 days	1.00	Williams	1998 RM ₄₈
1998 RN ₄₈	15.5	0.15	19980904	333.99687	112.41624	269.03000	1.79263	0.0379338	2.5564168	19	1	13 days	1.12	Williams	1998 RN ₄₈
1998 RQ ₄₈	16.0	0.15	19980904	327.67410	86.22596	319.09149	1.93709	0.2664651	2.5469270	20	1	13 days	0.68	Williams	1998 RQ ₄₈
1998 RR ₄₈	14.0	0.15	19980904	57.48420	36.70484	242.65559	1.82847	0.1602732	3.0617618	20	1	13 days	0.88	Williams	1998 RR ₄₈
1998 RZ ₄₈	16.0	0.15	19980904	350.84128	169.21029	197.10603	2.61248	0.2513452	2.6453922	19	1	13 days	0.71	Williams	1998 RZ ₄₈
1998 RC ₄₉	16.0	0.15	19980904	358.43119	13.93767	339.07631	2.71386	0.1657590	2.3365287	17	1	13 days	1.04	Williams	1998 RC ₄₉
1998 RE ₄₉	15.5	0.15	19980904	328.94309	46.09795	350.95794	9.03546	0.1882584	2.9851499	15	1	13 days	1.06	Williams	1998 RE ₄₉
1998 RG ₄₉	15.5	0.15	19980904	41.81619	111.52416	184.49940	2.92225	0.1449907	2.1760398	20	1	13 days	0.44	Williams	1998 RG ₄₉
1998 RJ ₄₉	15.0	0.15	19980904	262.63061	117.83471	341.83812	1.59476	0.0855763	2.5223695	20	1	13 days	0.95	Williams	1998 RJ ₄₉
1998 RK ₄₉	15.5	0.15	19980904	307.50970	251.11834	169.40890	5.10087	0.1704364	2.2323539	20	1	13 days	0.55	Williams	1998 RK ₄₉
1998 RO ₄₉	14.5	0.15	19980904	316.85515	308.93093	112.30375	1.53021	0.2536111	3.3006689	20	1	13 days	0.81	Williams	1998 RO ₄₉
1998 RP ₄₉	14.5	0.15	19980904	316.46652	298.16293	114.28735	2.28061	0.1784972	3.1094258	19	1	13 days	1.00	Williams	1998 RP ₄₉
1998 RQ ₄₉	15.2	0.15	19980924	69.64107	116.97946	152.01995	5.26081	0.1631876	2.2845715	25	1	28 days	0.55	Williams	1998 RQ ₄₉
1998 RT ₄₉	15.5	0.15	19980904	29.17766	307.17946	3.37648	11.86546	0.1720569	2.6391849	17	1	13 days	0.86	Williams	1998 RT ₄₉
1998 RU ₄₉	15.6	0.15	19980924	33.37740	167.92526	141.20574	3.24542	0.1988116	2.4182643	23	1	33 days	0.73	Williams	1998 RU ₄₉
1998 RV ₄₉	15.5	0.15	19980904	66.59291	139.32686	135.24682	3.56158	0.0989572	2.3951091	19	1	13 days	0.90	Williams	1998 RV ₄₉
1998 RW ₄₉	13.5	0.15	19980904	38.62366	135.98891	166.56387	18.85270	0.1447676	3.2090671	19	1	13 days	0.60	Williams	1998 RW ₄₉
1998 RZ ₄₉	14.0	0.15	19980904	320.12849	40.39269	6.69451	13.01414	0.1714865	3.0816031	20	1	13 days	0.42	Williams	1998 RZ ₄₉
1998 RA ₅₀	15.5	0.15	19980904	63.10037	261.08961	10.24938	11.24930	0.1590506	2.6503572	18	1	13 days	1.10	Williams	1998 RA ₅₀
1998 RB ₅₀	14.5	0.15	19980904	340.18242	332.47400	44.29091	4.06584	0.1099536	2.7968558	19	1	13 days	0.85	Williams	1998 RB ₅₀
1998 RC ₅₀	15.6	0.15	19980924	334.75930	353.27608	41.72045	3.18139	0.1857956	2.4284441	27	1	33 days	0.61	Williams	1998 RC ₅₀
1998 RD ₅₀	14.0	0.15	19980904	101.91295	235.61134	6.23181	12.93497	0.0932809	2.7934723	25	1	13 days	0.62	Williams	1998 RD ₅₀
1998 RE ₅₀	14.5	0.15	19980904	89.99133	113.18939	136.76147	4.35534	0.1199005	2.5559231	24	1	13 days	0.97	Williams	1998 RE ₅₀
1998 RJ ₅₀	14.0	0.15	19980904	323.30745	281.24474	126.14128	1.81441	0.2091439	3.0518045	19	1	13 days	0.65	Williams	1998 RJ ₅₀
1998 RM ₅₀	16.0	0.15	19980924	8.09069	337.83331	8.08677	3.27728	0.2029221	2.4474302	26	1	31 days	0.58	Williams	1998 RM ₅₀
1998 RN ₅₀	14.5	0.15	19980904	33.32823	207.41776	101.72741	1.14902	0.1458767	3.0729718	20	1	13 days	0.98	Williams	1998 RN ₅₀
1998 RO ₅₀	16.5	0.15	19980904	336.89751	358.55970	26.24531	1.49544	0.1948690	2.3455314	19	1	13 days	0.68	Williams	1998 RO ₅₀
1998 RP ₅₀	16.5	0.15	19980904	340.77790	358.12125	17.36692	2.19793	0.1339609	2.1459122	19	1	13 days	0.72	Williams	1998 RP ₅₀
1998 RQ ₅₀	15.5	0.15	19980904	5.17694	146.59663	199.92569	0.66999	0.1085097	2.7437138	18	1	13 days	0.94	Williams	1998 RQ ₅₀
1998 RR ₅₀	15.0	0.15	19980904	15.28924	331.11468	356.58793	15.03400	0.2272621	2.9997801	20	1	13 days	0.75	Williams	1998 RR ₅₀
1998 RS ₅₀	15.5	0.15	19980904	38.24649	126.85092	170.71608	2.60373	0.1804530	2.2517542	20	1	13 days	0.42	Williams	1998 RS ₅₀
1998 RT ₅₀	14.4	0.15	19980924	99.07917	251.38204	350.00658	8.10496	0.1662470	2.3794716	22	1	30 days	0.53	Williams	1998 RT ₅₀
1998 RV ₅₀	15.5	0.15	19980904	329.93441	167.66806	222.90658	2.45360	0.1056297	2.6196240	11	1	16 days	0.65	Williams	1998 RV ₅₀
1998 RX ₅₀	16.5	0.15	19980904	345.87199	26.71012	343.83733	6.84154	0.1231545	2.3044016	19	1	13 days	1.18	Williams	1998 RX ₅₀
1998 RY ₅₀	14.5	0.15	19980924	313.22766	72.35469	342.57063	9.71706	0.0860689	3.0863574	29	1	38 days	1.04	Williams	1998 RY ₅₀
1998 RZ ₅₀	13.5	0.15	19980904	88.46871	57.73799	191.03029	16.79235	0.1730149	3.1211704	19	1	13 days	0.93	Williams	1998 RZ ₅₀
1998 RA ₅₁	14.5	0.15	19980904	14.25248	123.09943	216.49807	5.38819	0.0855122	3.2170987	19	1	13 days	1.16	Williams	1998 RA ₅₁
1998 RB ₅₁	15.0	0.15	19980904	327.90507	59.18099	338.91117	9.88098	0.1335901	3.0544609	18	1	13 days	0.95	Williams	1998 RB ₅₁
1998 RE ₅₁	16.5	0.15	19980904	11.26907	105.29301	230.06023	3.62620	0.1950599	2.3380406	20	1	13 days	0.82	Williams	1998 RE ₅₁
1998 RF ₅₁	15.5	0.15	19980904	347.89204	88.70272	280.56100	4.06616	0.1239523	2.4458093	20	1	13 days	0.69	Williams	1998 RF ₅₁

1998 RJ ₅₁	15.0	0.15	19980904	352.72735	93.16659	270.23970	4.17172	0.0418900	2.6059130	18	1	13 days	0.86	Williams	1998 RJ ₅₁
1998 RL ₅₁	16.0	0.15	19980904	31.30441	9.20771	297.43585	5.27709	0.2200814	2.7302803	19	1	13 days	1.02	Williams	1998 RL ₅₁
1998 RT ₅₁	14.0	0.15	19980904	341.41805	106.25139	270.91177	5.12258	0.0870535	3.1794056	17	1	13 days	0.90	Williams	1998 RT ₅₁
1998 RW ₅₁	16.0	0.15	19980904	49.24335	53.07952	240.42385	3.15221	0.1218723	2.5764256	14	1	13 days	0.95	Williams	1998 RW ₅₁
1998 RX ₅₁	15.0	0.15	19980904	45.38060	114.87150	187.89738	13.99568	0.0697432	2.6713182	15	1	13 days	0.92	Williams	1998 RX ₅₁
1998 RY ₅₁	14.5	0.15	19980904	251.69041	247.78183	224.14756	3.08045	0.0939171	2.6301784	18	1	13 days	0.80	Williams	1998 RY ₅₁
1998 RC ₅₂	16.2	0.15	19980924	14.64690	307.34537	23.58127	5.81416	0.3005026	2.3474861	21	1	33 days	0.68	Williams	1998 RC ₅₂
1998 RG ₅₂	15.5	0.15	19980904	304.03435	28.54087	49.27478	5.39085	0.2820451	2.6227019	16	1	13 days	1.02	Williams	1998 RG ₅₂
1998 RH ₅₂	16.0	0.15	19980904	58.56548	231.72726	45.51302	4.95234	0.1306542	2.2142915	16	1	13 days	0.92	Williams	1998 RH ₅₂
1998 RL ₅₂	16.7	0.15	19980924	5.02604	299.53710	49.91375	4.43823	0.2510361	2.3393893	24	1	28 days	0.54	Williams	1998 RL ₅₂
1998 RM ₅₂	15.6	0.15	19980924	9.68311	307.39655	36.56734	5.63885	0.1585500	2.2925569	24	1	28 days	0.48	Williams	1998 RM ₅₂
1998 RN ₅₂	16.1	0.15	19980924	302.60570	45.21549	26.77317	6.89551	0.1596835	2.1857056	24	1	28 days	0.81	Williams	1998 RN ₅₂
1998 RO ₅₂	16.5	0.15	19980904	4.61744	311.94898	30.93167	5.52490	0.1761418	2.2247959	18	1	13 days	0.74	Williams	1998 RO ₅₂
1998 RQ ₅₂	14.0	0.15	19980904	135.75423	57.04283	149.82385	9.72364	0.1878945	2.6778005	16	1	13 days	0.81	Williams	1998 RQ ₅₂
1998 RX ₅₂	15.0	0.15	19980904	68.86033	225.73251	44.31431	3.77616	0.1331514	2.6453473	18	1	13 days	0.96	Williams	1998 RX ₅₂
1998 RA ₅₃	16.0	0.15	19980904	340.37083	214.77027	167.54211	5.20824	0.2160996	2.6127785	18	1	13 days	0.81	Williams	1998 RA ₅₃
1998 RB ₅₃	15.0	0.15	19980904	84.49161	246.20610	1.60057	11.32590	0.1893458	2.6990917	16	1	13 days	1.27	Williams	1998 RB ₅₃
1998 RD ₅₃	13.5	0.15	19980904	214.22510	147.15476	357.61963	10.27484	0.0657412	2.9899915	20	1	13 days	0.68	Williams	1998 RD ₅₃
1998 RE ₅₃	14.5	0.15	19980904	175.95612	176.73224	0.48295	7.36891	0.1193166	2.3556758	19	1	13 days	0.97	Williams	1998 RE ₅₃
1998 RG ₅₃	14.5	0.15	19980924	17.05647	163.96366	176.64945	5.69067	0.0358053	2.7271365	26	1	33 days	0.62	Williams	1998 RG ₅₃
1998 RL ₅₃	14.0	0.15	19980904	288.27276	90.94696	347.15107	9.92580	0.0887704	3.0755554	22	1	13 days	0.89	Williams	1998 RL ₅₃
1998 RM ₅₃	15.0	0.15	19980904	352.95865	176.58716	187.28253	9.31378	0.0990603	3.1644744	18	1	13 days	1.26	Williams	1998 RM ₅₃
1998 RN ₅₃	15.0	0.15	19980904	50.47433	68.53442	228.29582	3.05515	0.0837198	2.6025232	22	1	13 days	0.83	Williams	1998 RN ₅₃
1998 RO ₅₃	15.5	0.15	19980924	28.19268	7.33360	315.57919	3.88423	0.1522145	2.3083143	29	1	36 days	0.92	Williams	1998 RO ₅₃
1998 RS ₅₃	17.0	0.15	19980904	347.68544	74.48447	298.38346	4.02139	0.2537815	2.3662617	19	1	13 days	0.83	Williams	1998 RS ₅₃
1998 RT ₅₃	15.0	0.15	19980904	175.15681	292.58162	246.99965	4.76392	0.0412332	2.2531505	20	1	13 days	0.75	Williams	1998 RT ₅₃
1998 RV ₅₃	15.7	0.15	19980924	326.20631	146.46097	260.46154	4.48475	0.1611176	2.2439197	23	1	31 days	0.59	Williams	1998 RV ₅₃
1998 RW ₅₃	13.5	0.15	19980904	121.95509	252.10607	340.08792	16.35663	0.0470850	3.1566225	20	1	13 days	0.71	Williams	1998 RW ₅₃
1998 RY ₅₃	14.0	0.15	19980904	342.10727	65.99582	318.60429	7.82021	0.2075125	3.1538696	30	1	13 days	0.81	Williams	1998 RY ₅₃
1998 RA ₅₄	14.0	0.15	19980904	11.77180	136.93064	204.67063	9.93903	0.1166380	3.0738156	25	1	13 days	0.73	Williams	1998 RA ₅₄
1998 RC ₅₄	14.0	0.15	19980904	326.21066	74.73135	326.10633	8.02383	0.1257740	3.0927450	18	1	13 days	0.82	Williams	1998 RC ₅₄
1998 RE ₅₄	14.0	0.15	19980904	96.36132	260.27233	343.90651	11.11711	0.1590219	2.6886344	19	1	13 days	0.90	Williams	1998 RE ₅₄
1998 RF ₅₄	15.0	0.15	19980904	32.37091	337.93274	325.76199	5.46781	0.2428227	2.6670952	19	1	13 days	0.51	Williams	1998 RF ₅₄
1998 RG ₅₄	15.0	0.15	19980904	113.71291	287.07878	301.42724	3.81746	0.1617323	2.3467305	20	1	13 days	0.95	Williams	1998 RG ₅₄
1998 RH ₅₄	16.5	0.15	19980904	345.40497	183.11144	197.62902	6.94509	0.2911818	2.5988808	18	1	13 days	0.67	Williams	1998 RH ₅₄
1998 RJ ₅₄	17.5	0.15	19980924	348.17696	188.85049	195.45334	7.36093	0.3009460	2.2638750	30	1	32 days	0.60	Williams	1998 RJ ₅₄
1998 RL ₅₄	13.7	0.15	19980924	321.48087	116.39039	299.10818	4.91572	0.1703022	3.0908507	23	1	31 days	0.47	Williams	1998 RL ₅₄
1998 RM ₅₄	15.0	0.15	19980904	219.23207	216.23904	284.61904	3.87243	0.0420182	2.3243031	24	1	13 days	0.87	Williams	1998 RM ₅₄
1998 RO ₅₄	15.7	0.15	19980924	345.65174	130.71128	250.63810	3.77212	0.1498612	2.2636783	23	1	31 days	0.41	Williams	1998 RO ₅₄
1998 RP ₅₄	15.6	0.15	19980924	342.07999	141.58979	245.64243	3.59411	0.1676084	2.2420026	29	1	38 days	0.62	Williams	1998 RP ₅₄
1998 RR ₅₄	16.0	0.15	19980924	348.70200	154.98018	222.57872	5.91473	0.1422828	2.3681913	25	1	33 days	0.61	Williams	1998 RR ₅₄
1998 RU ₅₄	14.5	0.15	19980904	105.17632	13.05571	230.48007	6.42420	0.0884726	2.3358379	28	1	13 days	0.68	Williams	1998 RU ₅₄
1998 RV ₅₄	15.0	0.15	19980904	290.94341	119.54899	317.41409	6.30640	0.0877329	2.4298096	26	1	13 days	0.70	Williams	1998 RV ₅₄
1998 RB ₅₅	14.0	0.15	19980904	199.74645	277.93573	245.49125	5.24941	0.0933964	2.2511898	19	1	13 days	0.69	Williams	1998 RB ₅₅
1998 RC ₅₅	14.0	0.15	19980904	340.44560	137.21311	244.56095	5.47915	0.0353540	2.7864508	19	1	13 days	0.91	Williams	1998 RC ₅₅
1998 RD ₅₅	16.5	0.15	19980904	30.32777	313.53284	359.29020	7.21612	0.1330381	2.3962732	17	1	13 days	1.05	Williams	1998 RD ₅₅
1998 RF ₅₅	15.8	0.15	19980924	339.79199	56.13061	331.60928	6.00259	0.1268454	2.2942113	22	1	31 days	0.61	Williams	1998 RF ₅₅
1998 RJ ₅₅	13.5	0.15	19980904	155.34174	332.50620	229.20493	6.24989	0.1077268	3.1225978	16	1	13 days	0.80	Williams	1998 RJ ₅₅
1998 RK ₅₅	15.5	0.15	19980904	70.78935	306.52726	322.94412	5.01381	0.1540798	2.2239769	18	1	13 days	0.68	Williams	1998 RK ₅₅
1998 RL ₅₅	15.5	0.15	19980904	83.92818	300.80310	318.96199	4.48804	0.1263668	2.1941001	17	1	13 days	0.91	Williams	1998 RL ₅₅
1998 RM ₅₅	15.5	0.15	19980924	35.45269	74.03296	230.37490	4.33465	0.2735723	2.5874337	20	1	30 days	0.70	Williams	1998 RM ₅₅
1998 RN ₅₅	16.0	0.15	19980924	10.29462	97.61845	250.06053	3.36633	0.1716676	2.2130994	24	1	33 days	0.52	Williams	1998 RN ₅₅
1998 RO ₅₅	14.5	0.15	19980904	181.78475	275.70170	261.02389	4.39993	0.0996993	2.2679666	17	1	13 days	0.66	Williams	1998 RO ₅₅

1998 RP ₅₅	14.5	0.15	19980904	55.93094	4.17537	297.12211	4.70980	0.0114153	2.5605630	18	1	13 days	0.76	Williams	1998 RP ₅₅
1998 RR ₅₅	14.5	0.15	19980904	82.62857	15.75531	235.60114	4.25435	0.2109411	2.5542527	27	1	13 days	1.07	Williams	1998 RR ₅₅
1998 RS ₅₅	15.0	0.15	19980904	17.75249	6.02518	327.64629	5.99336	0.1388618	2.7617169	28	1	13 days	0.65	Williams	1998 RS ₅₅
1998 RT ₅₅	15.0	0.15	19980904	349.81629	114.55906	255.46321	3.34734	0.0871576	2.7851321	17	1	13 days	0.95	Williams	1998 RT ₅₅
1998 RU ₅₅	16.0	0.15	19980904	297.86029	135.68494	295.13204	3.13829	0.1142415	2.2712262	17	1	13 days	0.78	Williams	1998 RU ₅₅
1998 RV ₅₅	14.4	0.15	19980924	340.59601	182.70431	207.37198	7.33858	0.1643220	2.6374823	21	1	30 days	0.56	Williams	1998 RV ₅₅
1998 RW ₅₅	15.0	0.15	19980924	318.01675	95.38518	323.37489	4.26592	0.1558075	2.2333185	21	1	33 days	0.44	Williams	1998 RW ₅₅
1998 RX ₅₅	14.0	0.15	19980904	146.74671	220.11100	343.78740	10.54862	0.1649578	2.6705597	16	1	13 days	0.81	Williams	1998 RX ₅₅
1998 RZ ₅₅	14.2	0.15	19980924	125.38881	267.65421	321.26072	4.01597	0.0899304	2.1669302	21	1	30 days	0.36	Williams	1998 RZ ₅₅
1998 RE ₅₆	14.0	0.15	19980904	181.67547	330.51834	207.48650	6.85746	0.1348950	2.5486291	16	1	13 days	0.72	Williams	1998 RE ₅₆
1998 RF ₅₆	15.3	0.15	19980924	348.67331	115.98952	259.63192	2.23050	0.0701110	2.2632543	21	1	30 days	0.67	Williams	1998 RF ₅₆
1998 RG ₅₆	16.0	0.15	19980904	337.38407	85.87372	304.91456	2.54739	0.2333571	2.3772510	18	1	13 days	0.65	Williams	1998 RG ₅₆
1998 RH ₅₆	15.5	0.15	19980904	51.22937	74.80533	213.13257	3.98157	0.1644130	2.2349872	18	1	13 days	0.63	Williams	1998 RH ₅₆
1998 RJ ₅₆	14.8	0.15	19980924	330.85621	63.51968	333.01397	5.69029	0.0965406	2.3881983	29	1	36 days	0.49	Williams	1998 RJ ₅₆
1998 RM ₅₆	15.0	0.15	19980904	19.68170	337.70020	351.34654	17.33410	0.1758653	3.0556125	17	1	13 days	0.88	Williams	1998 RM ₅₆
1998 RN ₅₆	14.0	0.15	19980904	235.19797	145.41399	350.17930	14.28701	0.1566824	2.4048604	18	1	13 days	0.58	Williams	1998 RN ₅₆
1998 RO ₅₆	16.0	0.15	19980924	37.03733	104.52855	197.00940	6.37358	0.2559820	2.4014070	31	1	32 days	0.81	Williams	1998 RO ₅₆
1998 RP ₅₆	13.0	0.15	19980904	222.71502	315.33166	190.43516	17.55459	0.1369312	3.1318564	17	1	13 days	0.86	Williams	1998 RP ₅₆
1998 RQ ₅₆	15.0	0.15	19980904	260.71465	265.77776	194.61235	6.32076	0.0466160	2.3683277	23	1	13 days	0.70	Williams	1998 RQ ₅₆
1998 RR ₅₆	15.5	0.15	19980904	56.61515	25.19623	255.25430	1.69081	0.1724929	2.4278204	18	1	13 days	0.96	Williams	1998 RR ₅₆
1998 RS ₅₆	16.5	0.15	19980924	1.15259	164.63803	195.03527	4.36440	0.1591263	2.3179846	22	1	36 days	0.92	Williams	1998 RS ₅₆
1998 RT ₅₆	14.5	0.15	19980924	271.88719	250.42679	214.54312	3.09665	0.1332698	2.6066761	29	1	35 days	0.72	Williams	1998 RT ₅₆
1998 RV ₅₆	14.0	0.15	19980904	336.87279	57.84892	330.25860	4.13057	0.1356339	3.1815462	22	1	13 days	0.85	Williams	1998 RV ₅₆
1998 RY ₅₆	14.2	0.15	19980924	32.84893	83.17322	223.45008	2.09587	0.2554247	3.0560839	33	1	35 days	0.56	Williams	1998 RY ₅₆
1998 RZ ₅₆	15.5	0.15	19980904	317.61874	232.81522	188.59685	3.05507	0.2622625	2.6300823	18	1	13 days	0.90	Williams	1998 RZ ₅₆
1998 RC ₅₇	16.4	0.15	19980924	32.97449	130.85999	182.13259	5.21440	0.1837911	2.3027407	36	1	36 days	0.71	Williams	1998 RC ₅₇
1998 RE ₅₇	16.5	0.15	19980904	21.49874	144.01545	174.19227	5.06279	0.2178133	2.4576187	17	1	13 days	0.89	Williams	1998 RE ₅₇
1998 RG ₅₇	15.5	0.15	19980904	33.37106	296.38885	8.32039	2.25306	0.1856254	2.3635717	18	1	13 days	0.53	Williams	1998 RG ₅₇
1998 RH ₅₇	15.5	0.15	19980904	40.73032	298.08794	1.82750	3.36340	0.1547640	2.6485567	16	1	13 days	0.73	Williams	1998 RH ₅₇
1998 RJ ₅₇	15.0	0.15	19980924	358.68901	202.65253	158.70409	2.09626	0.1120724	3.0753295	14	1	39 days	0.90	Williams	1998 RJ ₅₇
1998 RL ₅₇	14.5	0.15	19980904	223.33747	116.37940	22.07844	3.30061	0.1042761	2.4313011	17	1	13 days	0.84	Williams	1998 RL ₅₇
1998 RM ₅₇	14.5	0.15	19980904	5.90432	228.44962	117.02114	1.47094	0.1855307	3.1975034	18	1	13 days	0.79	Williams	1998 RM ₅₇
1998 RP ₅₇	15.5	0.15	19980904	337.65092	261.15659	130.53148	2.40419	0.2601626	2.9923682	16	1	13 days	1.11	Williams	1998 RP ₅₇
1998 RQ ₅₇	15.0	0.15	19980904	32.59824	143.10462	168.96947	16.86778	0.1344710	2.7128052	16	1	13 days	0.80	Williams	1998 RQ ₅₇
1998 RS ₅₇	14.0	0.15	19980904	85.46110	243.56535	15.25480	8.51803	0.0975496	2.7932190	19	1	13 days	0.80	Williams	1998 RS ₅₇
1998 RT ₅₇	15.0	0.15	19980904	259.70166	342.30088	128.89106	3.14385	0.1469226	2.4350478	25	1	13 days	0.97	Williams	1998 RT ₅₇
1998 RV ₅₇	15.5	0.15	19980904	69.19660	248.40659	17.15912	4.30460	0.1665344	2.2876480	17	1	13 days	0.83	Williams	1998 RV ₅₇
1998 RW ₅₇	15.5	0.15	19980904	359.80826	241.00257	113.07746	1.75822	0.1176698	2.5300715	25	1	13 days	0.83	Williams	1998 RW ₅₇
1998 RX ₅₇	16.0	0.15	19980904	45.81963	135.06273	155.95503	4.44860	0.1766086	2.4164748	17	1	13 days	0.86	Williams	1998 RX ₅₇
1998 RA ₅₈	16.0	0.15	19980904	305.04638	272.99903	153.63224	2.43704	0.1734795	2.3433887	17	1	13 days	0.89	Williams	1998 RA ₅₈
1998 RD ₅₈	13.0	0.15	19980904	27.51090	313.64778	4.45316	11.35930	0.1712964	3.6491034	18	1	13 days	0.42	Williams	1998 RD ₅₈
1998 RE ₅₈	16.1	0.15	19980924	2.71219	189.68797	166.40870	4.36960	0.2396674	2.3828771	21	1	33 days	0.49	Williams	1998 RE ₅₈
1998 RG ₅₈	16.5	0.15	19980924	30.45789	151.84064	168.81673	2.27562	0.1327155	2.2079934	20	1	35 days	0.78	Williams	1998 RG ₅₈
1998 RH ₅₈	14.9	0.15	19980904	345.36576	14.45296	358.21285	8.56249	0.1074515	2.6232638	23	1	13 days	0.54	Williams	1998 RH ₅₈
1998 RJ ₅₈	16.3	0.15	19980924	328.58145	244.44086	166.39536	1.84008	0.2426995	2.3256592	30	1	39 days	0.62	Williams	1998 RJ ₅₈
1998 RK ₅₈	16.4	0.15	19980904	4.12344	348.43125	358.53809	3.63625	0.1913258	2.5303850	22	1	13 days	0.94	Williams	1998 RK ₅₈
1998 RN ₅₈	13.8	0.15	19980924	337.15667	114.51194	275.75418	1.15115	0.1301209	2.6687464	30	1	36 days	0.50	Williams	1998 RN ₅₈
1998 RQ ₅₈	13.0	0.15	19980924	89.80202	82.93772	185.72566	9.98972	0.0244781	3.2171191	24	1	31 days	0.48	Williams	1998 RQ ₅₈
1998 RR ₅₈	17.0	0.15	19980904	2.33241	16.04979	332.98092	2.25565	0.2297364	2.4379257	17	1	13 days	0.98	Williams	1998 RR ₅₈
1998 RS ₅₈	15.0	0.15	19980924	296.17777	100.83532	346.15353	3.14458	0.1924003	2.6580624	25	1	35 days	0.65	Williams	1998 RS ₅₈
1998 RT ₅₈	13.0	0.15	19980904	121.48551	251.92360	339.74211	1.47428	0.0535616	2.9022273	18	1	13 days	0.44	Williams	1998 RT ₅₈
1998 RU ₅₈	16.5	0.15	19980924	55.57863	71.24438	213.12306	1.30910	0.2022059	2.3590173	18	1	31 days	0.72	Williams	1998 RU ₅₈
1998 RV ₅₈	15.5	0.15	19980924	2.45864	101.92823	257.43436	0.89539	0.0962370	2.7564386	22	1	44 days	0.84	Williams	1998 RV ₅₈

1998 RW ₅₈	13.5	0.15	19980904	171.77569	193.18809	352.42360	13.54315	0.1113344	2.6940899	28	1	13 days	0.75	Williams	1998 RW ₅₈
1998 RX ₅₈	16.5	0.15	19980904	1.70811	26.57238	323.47131	1.71802	0.2481186	2.4324153	18	1	13 days	0.53	Williams	1998 RX ₅₈
1998 RY ₅₈	15.5	0.15	19980904	327.02307	117.95169	286.38038	1.52567	0.1931637	2.7967231	18	1	13 days	0.96	Williams	1998 RY ₅₈
1998 RZ ₅₈	14.6	0.15	19980904	343.70939	89.99351	288.17495	1.34822	0.0922920	3.0833860	19	1	13 days	0.82	Williams	1998 RZ ₅₈
1998 RB ₅₉	15.5	0.15	19980904	340.19112	164.96400	216.83209	2.78331	0.1285607	2.5048750	18	1	13 days	0.50	Williams	1998 RB ₅₉
1998 RC ₅₉	16.0	0.15	19980924	22.53560	348.38842	344.89157	7.09670	0.1359667	2.3307075	22	1	33 days	0.67	Williams	1998 RC ₅₉
1998 RD ₅₉	13.5	0.15	19980904	266.89053	280.84341	186.36223	20.05811	0.1355322	2.7725035	18	1	13 days	0.66	Williams	1998 RD ₅₉
1998 RE ₅₉	13.9	0.15	19980924	58.70736	72.29372	227.23018	2.59394	0.0519878	3.0285097	21	1	30 days	0.76	Williams	1998 RE ₅₉
1998 RJ ₅₉	15.1	0.15	19980924	18.29382	356.46534	341.50988	5.15904	0.1591559	2.5666949	21	1	30 days	0.61	Williams	1998 RJ ₅₉
1998 RK ₅₉	15.5	0.15	19980924	348.69952	182.92419	195.50963	4.80372	0.1507304	2.2736968	21	1	32 days	0.47	Williams	1998 RK ₅₉
1998 RN ₅₉	16.5	0.15	19980904	7.64647	100.83418	241.54954	2.17758	0.2149352	2.3784367	17	1	13 days	0.72	Williams	1998 RN ₅₉
1998 RR ₅₉	15.0	0.15	19980904	71.32941	327.10184	312.09881	3.64201	0.0623446	2.3086328	17	1	13 days	0.75	Williams	1998 RR ₅₉
1998 RS ₅₉	15.5	0.15	19980904	110.68858	291.45996	305.25278	3.83186	0.1082059	2.2735231	17	1	13 days	0.83	Williams	1998 RS ₅₉
1998 RT ₅₉	15.0	0.15	19980904	63.08987	62.61782	220.87557	4.46164	0.1021878	2.3630619	17	1	13 days	0.74	Williams	1998 RT ₅₉
1998 RV ₅₉	15.5	0.15	19980904	28.77868	338.74233	339.37682	6.70482	0.1385976	2.2303027	18	1	13 days	0.54	Williams	1998 RV ₅₉
1998 RW ₅₉	15.3	0.15	19980924	8.58361	158.75437	192.05976	12.75302	0.1799090	2.6317124	27	1	43 days	0.68	Williams	1998 RW ₅₉
1998 RX ₅₉	15.0	0.15	19980904	101.70242	36.36633	210.40597	5.88753	0.0907193	2.3265850	17	1	13 days	1.14	Williams	1998 RX ₅₉
1998 RY ₅₉	16.0	0.15	19980904	318.89317	92.78921	319.31465	4.08555	0.1626912	2.3466470	17	1	13 days	0.78	Williams	1998 RY ₅₉
1998 RZ ₅₉	16.0	0.15	19980904	335.09091	188.56205	213.35703	4.82952	0.3003770	2.6229019	17	1	13 days	0.73	Williams	1998 RZ ₅₉
1998 RB ₆₀	16.0	0.15	19980904	359.60626	162.55120	194.23276	9.29742	0.2523984	2.6812311	18	1	13 days	0.56	Williams	1998 RB ₆₀
1998 RC ₆₀	16.5	0.15	19980904	358.70389	25.97201	330.45614	4.05000	0.2092659	2.2317802	17	1	13 days	0.64	Williams	1998 RC ₆₀
1998 RJ ₆₀	15.0	0.15	19980815	357.77414	8.45158	345.02608	10.25849	0.2297314	2.6257726	29	1	58 days	0.58	Williams	1998 RJ ₆₀
1998 RK ₆₀	14.5	0.15	19980904	306.00089	71.90960	346.17054	12.26305	0.0280450	2.6977819	16	1	13 days	0.72	Williams	1998 RK ₆₀
1998 RL ₆₀	14.2	0.15	19980924	65.33696	88.77260	204.42884	9.47077	0.0683833	3.0445030	20	1	30 days	0.86	Williams	1998 RL ₆₀
1998 RM ₆₀	16.0	0.15	19980904	333.50460	89.94166	304.16143	4.37943	0.1697725	2.3356741	16	1	13 days	0.91	Williams	1998 RM ₆₀
1998 RN ₆₀	13.8	0.15	19980924	32.74349	111.97123	211.97332	8.72658	0.1201354	3.0718016	20	1	30 days	0.68	Williams	1998 RN ₆₀
1998 RO ₆₀	15.4	0.15	19980924	39.26642	59.53498	253.19259	3.68908	0.1498559	2.2044207	21	1	30 days	0.59	Williams	1998 RO ₆₀
1998 RR ₆₀	15.5	0.15	19980904	310.15611	157.97523	270.64065	3.99197	0.2002256	2.3459695	18	1	13 days	1.04	Williams	1998 RR ₆₀
1998 RU ₆₀	14.5	0.15	19980904	295.24169	220.79494	215.58702	9.76071	0.0877221	2.7753186	26	1	18 days	0.93	Williams	1998 RU ₆₀
1998 RV ₆₀	15.8	0.15	19980904	353.76611	141.71761	224.83445	5.54292	0.1979611	2.3009147	21	1	13 days	0.80	Williams	1998 RV ₆₀
1998 RW ₆₀	15.0	0.15	19980904	43.66391	349.37142	312.38433	5.34660	0.1518079	2.3353713	18	1	13 days	0.57	Williams	1998 RW ₆₀
1998 RX ₆₀	15.1	0.15	19980924	32.38869	23.60892	297.07063	4.38009	0.1762643	2.5826306	28	1	30 days	0.52	Williams	1998 RX ₆₀
1998 RY ₆₀	14.2	0.15	19980924	30.18534	336.94086	346.87266	13.63586	0.1774423	2.5450188	21	1	34 days	0.45	Williams	1998 RY ₆₀
1998 RA ₆₁	15.0	0.15	19980904	32.48390	334.05402	348.28133	11.22668	0.1016958	2.9599315	14	1	13 days	0.99	Williams	1998 RA ₆₁
1998 RC ₆₁	14.0	0.15	19980904	342.10723	177.96433	204.06635	8.77408	0.0407407	3.0732584	17	1	13 days	0.73	Williams	1998 RC ₆₁
1998 RG ₆₁	16.0	0.15	19980904	349.08716	26.38014	344.93300	4.40735	0.1637966	2.2448633	18	1	13 days	0.47	Williams	1998 RG ₆₁
1998 RH ₆₁	16.4	0.15	19980924	337.22454	149.35581	255.44475	1.69100	0.2730697	2.5567843	20	1	30 days	0.68	Williams	1998 RH ₆₁
1998 RK ₆₁	14.3	0.15	19980904	315.51033	61.75605	354.82966	9.91038	0.1154190	2.9866980	21	1	13 days	0.63	Williams	1998 RK ₆₁
1998 RM ₆₁	16.0	0.15	19980904	31.94711	111.47845	197.10924	6.51495	0.2108909	2.4713057	17	1	13 days	0.84	Williams	1998 RM ₆₁
1998 RN ₆₁	14.8	0.15	19980924	339.33062	120.58526	272.52429	1.72010	0.1688855	2.5736397	21	1	30 days	0.40	Williams	1998 RN ₆₁
1998 RO ₆₁	16.0	0.15	19980904	313.15003	207.36541	214.44217	3.46193	0.1880889	2.2530761	17	1	13 days	0.98	Williams	1998 RO ₆₁
1998 RP ₆₁	15.0	0.15	19980904	321.05932	78.14102	348.80313	7.53327	0.3075065	2.7534041	17	1	13 days	0.71	Williams	1998 RP ₆₁
1998 RQ ₆₁	14.8	0.15	19980924	307.82680	102.81720	329.68667	3.96687	0.1537690	2.5987599	21	1	30 days	0.49	Williams	1998 RQ ₆₁
1998 RR ₆₁	13.5	0.15	19980924	331.11405	164.87308	238.45539	2.92532	0.1340459	3.4724115	20	1	30 days	0.64	Williams	1998 RR ₆₁
1998 RT ₆₁	15.0	0.15	19980904	69.86749	21.34787	249.25335	1.47023	0.1608676	2.4853797	18	1	13 days	0.82	Williams	1998 RT ₆₁
1998 RW ₆₁	14.5	0.15	19980904	347.82386	109.76234	265.12168	1.23056	0.0690798	3.0581533	17	1	13 days	0.85	Williams	1998 RW ₆₁
1998 RY ₆₁	16.0	0.15	19980924	35.57618	338.94833	332.99699	2.01050	0.1828384	2.2319062	20	1	30 days	0.55	Williams	1998 RY ₆₁
1998 RA ₆₂	16.5	0.15	19980904	3.90571	29.32066	320.87428	1.66074	0.1513208	2.3834648	17	1	13 days	1.12	Williams	1998 RA ₆₂
1998 RB ₆₂	13.9	0.15	19980924	0.19385	9.90939	353.55401	9.62048	0.1052296	2.9832624	21	1	30 days	0.49	Williams	1998 RB ₆₂
1998 RC ₆₂	16.0	0.15	19980904	17.15167	148.47368	184.13697	6.63205	0.1419761	2.3174417	17	1	13 days	0.69	Williams	1998 RC ₆₂
1998 RF ₆₂	15.0	0.15	19980904	277.22229	94.92509	357.78406	6.94087	0.1073527	2.4132701	16	1	13 days	0.69	Williams	1998 RF ₆₂
1998 RG ₆₂	17.0	0.15	19980904	4.68200	168.64098	177.62633	6.03898	0.2142952	2.3033787	15	1	13 days	1.03	Williams	1998 RG ₆₂
1998 RJ ₆₂	15.0	0.15	19980904	64.25995	263.74210	5.39368	5.29967	0.1976169	2.5622857	18	1	13 days	0.82	Williams	1998 RJ ₆₂

1998 RL ₆₂	14.0	0.15	19980904	242.84005	310.23137	175.56688	13.86064	0.1207035	2.5757080	18	1	13 days	0.52	Williams	1998 RL ₆₂
1998 RM ₆₂	17.0	0.15	19980924	16.73414	330.14568	4.55339	5.03763	0.2114248	2.1726245	27	1	36 days	0.63	Williams	1998 RM ₆₂
1998 RN ₆₂	14.0	0.15	19980904	84.72778	120.55281	137.26627	1.48867	0.1297490	3.0732575	18	1	13 days	1.05	Williams	1998 RN ₆₂
1998 RO ₆₂	17.0	0.15	19980904	359.72111	196.02205	156.66016	2.63540	0.1879519	2.2555171	17	1	13 days	0.70	Williams	1998 RO ₆₂
1998 RR ₆₂	16.5	0.15	19980904	3.72289	174.42853	169.85082	6.73006	0.3093461	2.5129766	16	1	13 days	0.58	Williams	1998 RR ₆₂
1998 RT ₆₂	16.0	0.15	19980904	13.83341	177.46655	154.33228	4.00563	0.1925806	2.3093971	18	1	13 days	0.69	Williams	1998 RT ₆₂
1998 RU ₆₂	15.5	0.15	19980904	94.15248	223.86026	20.49332	5.78811	0.1496119	2.2774030	16	1	13 days	1.08	Williams	1998 RU ₆₂
1998 RX ₆₂	15.5	0.15	19980924	53.15752	167.52931	118.33934	2.76493	0.1952931	2.2895686	21	1	33 days	0.59	Williams	1998 RX ₆₂
1998 RY ₆₂	14.0	0.15	19980904	324.19658	19.41998	17.17851	9.24003	0.0938433	3.1744758	16	1	13 days	0.86	Williams	1998 RY ₆₂
1998 RB ₆₃	15.2	0.15	19980924	325.11085	252.27391	155.89429	11.57194	0.1841768	2.6789460	23	1	28 days	0.56	Williams	1998 RB ₆₃
1998 RF ₆₃	16.5	0.15	19980924	352.96937	317.22612	54.86933	3.82722	0.2680236	2.3225299	20	1	33 days	0.50	Williams	1998 RF ₆₃
1998 RG ₆₃	15.5	0.15	19980904	5.76726	204.41421	136.44489	5.71512	0.2673134	2.5630649	28	1	13 days	0.63	Williams	1998 RG ₆₃
1998 RH ₆₃	16.0	0.15	19980904	0.00241	242.46329	108.08135	3.16426	0.1874255	2.2172160	16	1	13 days	0.46	Williams	1998 RH ₆₃
1998 RL ₆₃	16.5	0.15	19980904	325.50810	247.75811	163.16967	13.30719	0.2657604	2.6784121	16	1	13 days	1.01	Williams	1998 RL ₆₃
1998 RN ₆₃	15.5	0.15	19980904	22.38881	224.76536	99.42370	3.35561	0.1160781	2.1888900	18	1	13 days	0.55	Williams	1998 RN ₆₃
1998 RP ₆₃	15.0	0.15	19980904	216.35224	113.63265	33.63975	7.62183	0.1406782	2.3089029	16	1	13 days	1.05	Williams	1998 RP ₆₃
1998 RQ ₆₃	15.0	0.15	19980904	321.06913	240.97339	165.37648	15.04106	0.1513813	2.6599274	17	1	13 days	0.87	Williams	1998 RQ ₆₃
1998 RR ₆₃	14.5	0.15	19980904	303.82953	269.33730	147.21097	6.31756	0.0442030	2.7549470	18	1	13 days	0.73	Williams	1998 RR ₆₃
1998 RS ₆₃	17.0	0.15	19980904	338.23160	284.10758	101.47752	2.55122	0.2186037	2.2256571	18	1	13 days	0.89	Williams	1998 RS ₆₃
1998 RT ₆₃	14.0	0.15	19980904	214.67661	350.26508	159.56113	12.25220	0.1199663	2.5305090	17	1	13 days	0.51	Williams	1998 RT ₆₃
1998 RU ₆₃	14.0	0.15	19980904	154.23159	34.63482	163.70539	14.43879	0.1362019	2.6710268	17	1	13 days	1.07	Williams	1998 RU ₆₃
1998 RV ₆₃	15.8	0.15	19980924	33.83298	155.78845	153.99453	5.88923	0.2141854	2.2042523	20	1	33 days	0.58	Williams	1998 RV ₆₃
1998 RY ₆₃	14.0	0.15	19980904	328.16871	233.99086	160.94478	9.14607	0.0794864	3.1832239	17	1	13 days	0.92	Williams	1998 RY ₆₃
1998 RZ ₆₃	14.3	0.15	19980904	312.40804	299.24091	114.52024	3.25573	0.0978340	2.9395198	21	1	13 days	0.80	Williams	1998 RZ ₆₃
1998 RA ₆₄	14.5	0.15	19980904	231.45235	14.84818	121.63121	3.38825	0.1326051	2.4293921	18	1	13 days	0.66	Williams	1998 RA ₆₄
1998 RB ₆₄	14.0	0.15	19980904	256.75710	106.20100	9.39361	12.66700	0.1404639	2.7231068	17	1	13 days	0.70	Williams	1998 RB ₆₄
1998 RE ₆₄	14.5	0.15	19980904	167.96041	67.58411	120.48819	3.24113	0.1338160	2.6939804	16	1	13 days	1.08	Williams	1998 RE ₆₄
1998 RF ₆₄	15.5	0.15	19980904	326.86545	26.16713	6.36686	14.99493	0.0469856	2.6152333	17	1	13 days	0.93	Williams	1998 RF ₆₄
1998 RJ ₆₄	15.6	0.15	19980924	25.53159	179.67213	143.08990	2.71302	0.2137099	2.3988544	21	1	33 days	0.47	Williams	1998 RJ ₆₄
1998 RK ₆₄	16.2	0.15	19980924	351.88812	2.29862	13.57700	1.84724	0.2516483	2.6911179	26	1	43 days	0.47	Williams	1998 RK ₆₄
1998 RL ₆₄	14.0	0.15	19980904	13.57393	332.31418	8.33601	5.19768	0.0942255	2.8410961	18	1	13 days	0.48	Williams	1998 RL ₆₄
1998 RM ₆₄	17.0	0.15	19980904	351.10955	330.66245	35.26480	1.57339	0.1553594	2.2597349	16	1	13 days	0.87	Williams	1998 RM ₆₄
1998 RN ₆₄	16.5	0.15	19980924	36.01745	151.53070	159.41762	2.81137	0.1846332	2.3400385	24	1	39 days	0.63	Williams	1998 RN ₆₄
1998 RU ₆₄	14.5	0.15	19980904	284.64431	89.44718	13.44828	4.13851	0.2441220	2.7417624	18	1	13 days	1.15	E Williams	1998 RU ₆₄
1998 RV ₆₄	16.7	0.15	19980924	12.97137	96.29204	243.22437	0.32240	0.2732523	2.3433244	21	1	30 days	0.55	Williams	1998 RV ₆₄
1998 RW ₆₄	15.0	0.15	19980904	297.41785	86.30486	358.45031	7.69867	0.2147559	2.5418833	17	1	13 days	0.63	Williams	1998 RW ₆₄
1998 RY ₆₄	14.5	0.15	19980904	16.38984	331.93884	2.56084	4.22103	0.1575265	2.6225452	18	1	13 days	0.42	Williams	1998 RY ₆₄
1998 RB ₆₅	13.4	0.15	19980924	114.71920	159.80375	79.09075	0.09000	0.1156741	3.2319334	26	1	40 days	0.70	Williams	1998 RB ₆₅
1998 RD ₆₅	14.5	0.15	19980904	359.71201	65.82564	293.86893	0.96468	0.0936257	3.0039661	17	1	13 days	0.77	Williams	1998 RD ₆₅
1998 RE ₆₅	15.2	0.15	19980924	334.21503	127.77812	266.95819	0.96408	0.0932790	2.6975849	20	1	30 days	0.76	Williams	1998 RE ₆₅
1998 RF ₆₅	16.5	0.15	19980904	321.04640	215.67508	189.18023	5.28983	0.1168593	2.2691949	16	1	13 days	1.14	Williams	1998 RF ₆₅
1998 RH ₆₅	16.0	0.15	19980904	0.63073	7.64087	347.96288	1.02524	0.1845413	2.4820003	18	1	13 days	0.66	Williams	1998 RH ₆₅
1998 RK ₆₅	13.8	0.15	19980924	62.15740	303.92657	352.50131	2.55480	0.0600993	2.6772934	21	1	30 days	0.33	Williams	1998 RK ₆₅
1998 RM ₆₅	15.6	0.15	19980924	335.93114	225.23316	184.42793	1.90319	0.3081254	2.6510648	29	1	44 days	0.77	Williams	1998 RM ₆₅
1998 RN ₆₅	17.0	0.15	19980924	352.32254	194.39309	180.87710	3.69876	0.1865623	2.3051644	23	1	31 days	0.69	Williams	1998 RN ₆₅
1998 RO ₆₅	16.2	0.15	19980904	357.71200	6.00157	354.59469	1.50343	0.2241584	2.6170213	21	1	13 days	0.63	Williams	1998 RO ₆₅
1998 RQ ₆₅	15.0	0.15	19980924	7.84642	131.30141	216.15795	1.76309	0.3608449	3.9819715	27	1	30 days	0.71	Williams	1998 RQ ₆₅
1998 RV ₆₅	15.2	0.15	19980904	307.64053	218.63335	203.93642	1.78938	0.0992508	2.7270893	21	1	13 days	0.76	Williams	1998 RV ₆₅
1998 RY ₆₅	16.0	0.15	19980904	38.13453	112.64042	186.39359	5.43892	0.2287498	2.3420085	16	1	13 days	0.73	Williams	1998 RY ₆₅
1998 RA ₆₆	16.1	0.15	19980924	6.96172	172.76024	184.45993	9.24285	0.0867828	2.2559040	21	1	30 days	0.64	Williams	1998 RA ₆₆
1998 RB ₆₆	14.9	0.15	19990122	260.91864	313.33592	190.89950	7.20430	0.0599333	2.2565457	30	1	62 days	0.53	M-v 5 Williams	1998 RB ₆₆
1998 RC ₆₆	15.5	0.15	19980904	120.57011	25.86697	203.75883	3.60528	0.1129533	2.2186048	17	1	13 days	0.83	Williams	1998 RC ₆₆
1998 RD ₆₆	14.4	0.15	19980904	350.31617	143.82486	229.00679	2.06302	0.1009672	2.7528454	21	1	13 days	0.52	Williams	1998 RD ₆₆

1998 RF ₆₆	16.5	0.15	19980904	330.98057	170.19213	227.39024	1.05387	0.1502625	2.3798280	17	1	13 days	0.95	Williams	1998 RF ₆₆
1998 RG ₆₆	15.0	0.15	19980904	287.01713	256.30253	190.86185	11.80404	0.1139366	2.5237998	21	1	13 days	0.58	Williams	1998 RG ₆₆
1998 RH ₆₆	14.6	0.15	19990122	335.05938	243.94296	189.92158	15.39079	0.1526243	2.6505070	26	1	61 days	0.55	M-v 5 Williams	1998 RH ₆₆
1998 RJ ₆₆	15.9	0.15	19980904	10.37122	120.67034	215.58832	2.25563	0.2989409	2.5475961	20	1	13 days	0.44	Williams	1998 RJ ₆₆
1998 RK ₆₆	14.1	0.15	19980904	350.87489	122.81748	250.18663	2.10536	0.0981742	2.8693330	24	1	31 days	0.61	Williams	1998 RK ₆₆
1998 RM ₆₆	16.5	0.15	19980904	30.15634	100.52524	207.31834	5.45598	0.2568528	2.3786257	17	1	13 days	0.84	Williams	1998 RM ₆₆
1998 RN ₆₆	15.5	0.15	19980924	6.24508	4.37888	353.20813	13.38406	0.1902889	2.6383759	26	1	30 days	0.81	Williams	1998 RN ₆₆
1998 RO ₆₆	14.0	0.15	19980904	301.90126	101.93465	340.44140	7.06433	0.1858836	3.0897290	18	1	13 days	0.74	Williams	1998 RO ₆₆
1998 RQ ₆₆	15.0	0.15	19980904	318.74011	173.44215	231.80417	3.13570	0.0295997	2.4578235	18	1	13 days	0.78	Williams	1998 RQ ₆₆
1998 RR ₆₆	16.0	0.15	19980924	66.73234	300.31967	338.55834	5.25501	0.1854808	2.2425503	20	1	30 days	0.79	Williams	1998 RR ₆₆
1998 RS ₆₆	15.2	0.15	19980924	0.87723	94.99990	271.34589	2.35839	0.1010178	2.7341291	20	1	30 days	0.92	Williams	1998 RS ₆₆
1998 RT ₆₆	13.7	0.15	19980904	23.79053	114.58584	217.12314	6.77672	0.1418076	3.0775460	21	1	13 days	0.48	Williams	1998 RT ₆₆
1998 RW ₆₆	13.8	0.15	19980815	337.47348	42.91812	349.44334	16.41274	0.2149274	3.1238458	26	1	56 days	0.62	Williams	1998 RW ₆₆
1998 RX ₆₆	14.8	0.15	19980904	22.39296	351.04271	339.87349	10.95452	0.1494350	2.5274032	24	1	31 days	0.71	Williams	1998 RX ₆₆
1998 RY ₆₆	15.7	0.15	19980904	335.17947	108.27804	281.99374	4.22688	0.1184094	2.1797694	21	1	13 days	0.77	Williams	1998 RY ₆₆
1998 RZ ₆₆	13.6	0.15	19980924	144.90198	291.91655	289.97509	5.59855	0.0429657	3.1850404	17	1	30 days	0.91	Williams	1998 RZ ₆₆
1998 RA ₆₇	15.3	0.15	19980924	344.84346	172.85215	219.13596	7.60622	0.2203077	3.0010700	23	1	30 days	0.77	Williams	1998 RA ₆₇
1998 RD ₆₇	14.9	0.15	19980904	62.76033	69.62486	203.08315	12.78076	0.2370256	2.4282797	20	1	13 days	0.66	Williams	1998 RD ₆₇
1998 RE ₆₇	14.5	0.15	19980904	157.77425	259.61345	301.12849	4.28267	0.1409475	2.2634323	17	1	13 days	0.71	Williams	1998 RE ₆₇
1998 RH ₆₇	13.7	0.15	19990122	24.20970	70.79573	293.81051	3.63725	0.1540531	3.1633728	33	1	63 days	0.74	M-v 5 Williams	1998 RH ₆₇
1998 RJ ₆₇	15.0	0.15	19980924	267.05823	227.32692	243.51901	3.60948	0.0894710	2.1275853	33	1	28 days	1.06	Williams	1998 RJ ₆₇
1998 RK ₆₇	14.0	0.15	19980904	32.62095	120.53104	208.62137	10.27688	0.0448502	2.8856513	18	1	13 days	0.84	Williams	1998 RK ₆₇
1998 RN ₆₇	16.5	0.15	19980924	6.07285	16.83545	341.49448	7.59250	0.1732754	2.2074072	23	1	34 days	1.06	Williams	1998 RN ₆₇
1998 RP ₆₇	14.0	0.15	19980904	142.78366	230.33931	350.19006	10.74590	0.0321176	3.0082536	17	1	13 days	0.98	Williams	1998 RP ₆₇
1998 RQ ₆₇	15.0	0.15	19980904	310.98441	65.82107	350.54181	11.27293	0.0493508	2.5275374	16	1	13 days	0.69	Williams	1998 RQ ₆₇
1998 RR ₆₇	16.0	0.15	19980924	353.57142	135.91680	241.45632	2.88004	0.2077717	2.5843392	23	1	30 days	0.97	Williams	1998 RR ₆₇
1998 RS ₆₇	14.2	0.15	19980904	42.95847	46.80720	258.16970	2.87463	0.1821507	3.0939025	23	1	31 days	0.79	Williams	1998 RS ₆₇
1998 RT ₆₇	14.9	0.15	19980904	13.21064	98.25509	247.20629	2.53331	0.1020012	2.6522553	23	1	47 days	0.79	Williams	1998 RT ₆₇
1998 RU ₆₇	15.5	0.15	19980904	9.54279	6.63732	341.25528	5.06150	0.1648285	2.7589659	17	1	13 days	0.87	Williams	1998 RU ₆₇
1998 RV ₆₇	16.0	0.15	19980904	13.89692	87.45464	249.94897	2.05400	0.1793076	2.2096319	21	1	30 days	0.48	Williams	1998 RV ₆₇
1998 RZ ₆₇	16.5	0.15	19980904	328.55077	190.16989	213.85904	3.37915	0.2006548	2.1884788	21	1	13 days	0.57	Williams	1998 RZ ₆₇
1998 RB ₆₈	14.2	0.15	19980904	296.44558	225.96475	216.64025	3.53265	0.1374012	2.9838425	21	1	13 days	0.90	Williams	1998 RB ₆₈
1998 RC ₆₈	15.0	0.15	19980904	301.72840	229.70412	209.46382	4.46852	0.1707634	2.6611129	21	1	13 days	0.70	Williams	1998 RC ₆₈
1998 RD ₆₈	15.3	0.15	19980904	338.82938	158.81515	227.04196	2.00846	0.0868131	2.3438647	27	1	48 days	0.66	Williams	1998 RD ₆₈
1998 RE ₆₈	16.5	0.15	19980904	349.28260	20.91732	356.38523	6.62411	0.2573212	2.7084205	17	1	13 days	1.06	Williams	1998 RE ₆₈
1998 RF ₆₈	15.9	0.15	19980924	39.77554	318.20182	350.60857	4.94636	0.1955165	2.2343115	24	1	30 days	0.63	Williams	1998 RF ₆₈
1998 RG ₆₈	15.0	0.15	19980904	339.25474	174.05197	211.25218	2.60434	0.0530187	2.6600804	21	1	13 days	0.53	E Williams	1998 RG ₆₈
1998 RH ₆₈	14.1	0.15	19980904	261.57348	280.13404	195.03993	4.97251	0.1246732	2.5977944	21	1	13 days	0.57	Williams	1998 RH ₆₈
1998 RI ₆₈	15.0	0.15	19980904	6.83658	351.79902	0.21308	12.94165	0.1750858	2.9402102	16	1	13 days	0.67	Williams	1998 RI ₆₈
1998 RO ₆₈	15.0	0.15	19980924	61.85399	282.23872	2.77240	12.18554	0.1854178	2.6822863	24	1	30 days	0.79	Williams	1998 RO ₆₈
1998 RR ₆₈	16.1	0.15	19980924	354.84835	28.05620	345.64363	1.65353	0.1803631	2.5199258	23	1	30 days	0.88	Williams	1998 RR ₆₈
1998 RW ₆₈	15.5	0.15	19980924	38.77877	294.84272	15.60261	2.91852	0.1904043	2.3164303	24	1	35 days	0.55	Williams	1998 RW ₆₈
1998 RA ₆₉	15.1	0.15	19980924	355.91627	54.63271	316.52826	0.35126	0.1600889	2.6618044	13	1	35 days	0.42	Williams	1998 RA ₆₉
1998 RB ₆₉	15.7	0.15	19980924	347.62645	16.57571	4.91222	2.14221	0.1399624	2.2880072	24	1	30 days	0.42	Williams	1998 RB ₆₉
1998 RC ₆₉	13.8	0.15	19980924	13.05753	324.96943	21.59668	0.52482	0.1955378	3.1788635	24	1	30 days	0.41	Williams	1998 RC ₆₉
1998 RD ₆₉	15.5	0.15	19980904	105.62624	170.72448	69.53293	0.93570	0.1304266	2.2541675	18	1	13 days	0.76	Williams	1998 RD ₆₉
1998 RE ₆₉	15.5	0.15	19980904	28.33858	141.11009	175.98177	7.04882	0.1987791	2.7644164	16	1	13 days	1.11	Williams	1998 RE ₆₉
1998 RF ₆₉	16.7	0.15	19980904	26.94703	140.54434	172.71149	5.61473	0.2240234	2.2185981	21	1	13 days	0.82	Williams	1998 RF ₆₉
1998 RG ₆₉	14.4	0.15	19980924	1.49737	200.01645	163.31506	3.01690	0.1080498	2.7321910	23	1	30 days	0.38	Williams	1998 RG ₆₉
1998 RH ₆₉	16.2	0.15	19980924	11.01792	342.18316	5.77717	2.22231	0.1743944	2.3776085	20	1	30 days	0.96	Williams	1998 RH ₆₉
1998 RI ₆₉	14.2	0.15	19980924	325.35900	37.22917	7.42431	10.57379	0.0703523	3.0776730	20	1	30 days	1.01	Williams	1998 RI ₆₉
1998 RJ ₆₉	14.3	0.15	19980904	270.87668	291.12584	162.04873	2.20568	0.0242527	2.8568323	19	1	13 days	0.85	Williams	1998 RJ ₆₉
1998 RK ₆₉	14.5	0.15	19980904	315.54453	276.43328	148.61679	2.37953	0.2148205	3.1624131	17	1	13 days	0.83	Williams	1998 RK ₆₉

1998 RQ ₆₉	16.0	0.15	19980904	357.93213	334.37031	24.31494	2.78660	0.1908274	2.6324628	17	1	13 days	0.74	Williams	1998 RQ ₆₉
1998 RR ₆₉	16.0	0.15	19980924	0.77301	203.65590	157.79656	2.82767	0.1822670	2.3800456	21	1	33 days	0.64	Williams	1998 RR ₆₉
1998 RS ₆₉	16.0	0.15	19980904	337.38891	16.81972	11.23198	6.60077	0.1631587	2.5667206	17	1	13 days	0.67	Williams	1998 RS ₆₉
1998 RT ₆₉	15.7	0.15	19980924	11.20880	334.73341	11.16403	7.38764	0.2003291	2.5477116	22	1	32 days	0.76	Williams	1998 RT ₆₉
1998 RU ₆₉	15.0	0.15	19980904	265.49603	303.79244	162.44300	3.93493	0.1203889	2.3621452	18	1	13 days	0.70	Williams	1998 RU ₆₉
1998 RW ₆₉	15.0	0.15	19980904	0.40062	216.11208	139.30520	2.72378	0.2672188	3.0666511	17	1	13 days	0.46	Williams	1998 RW ₆₉
1998 RX ₆₉	16.0	0.15	19980904	319.28075	271.98319	143.90027	2.83067	0.2135626	2.4238980	17	1	13 days	0.79	Williams	1998 RX ₆₉
1998 RY ₆₉	17.0	0.15	19980924	359.83034	344.49245	18.31806	4.23850	0.2686891	2.5207743	21	1	31 days	0.75	Williams	1998 RY ₆₉
1998 RZ ₆₉	16.5	0.15	19980904	334.44200	8.58492	19.72741	6.08784	0.1358102	2.3205042	18	1	13 days	0.86	Williams	1998 RZ ₆₉
1998 RB ₇₀	17.0	0.15	19980924	3.18177	317.39686	39.63197	3.71527	0.1903733	2.3767591	20	1	39 days	0.75	Williams	1998 RB ₇₀
1998 RD ₇₀	15.5	0.15	19980904	289.14884	358.53130	86.78084	3.19116	0.1589917	2.3793981	15	1	13 days	0.87	Williams	1998 RD ₇₀
1998 RE ₇₀	15.9	0.15	19980924	28.39634	157.07447	150.12324	5.42678	0.3288294	2.6617633	20	1	33 days	0.66	Williams	1998 RE ₇₀
1998 RF ₇₀	16.5	0.15	19980924	26.57317	291.16161	33.74915	4.66706	0.1676509	2.2407423	21	1	39 days	0.82	Williams	1998 RF ₇₀
1998 RG ₇₀	16.5	0.15	19980904	13.64147	211.74857	122.17031	3.63098	0.1791052	2.3068819	16	1	13 days	0.81	Williams	1998 RG ₇₀
1998 RK ₇₀	15.0	0.15	19980904	323.18463	338.59250	78.75468	5.04933	0.2828506	3.0937520	17	1	13 days	0.93	Williams	1998 RK ₇₀
1998 RN ₇₀	14.0	0.15	19980904	251.41541	83.18038	42.90817	7.48953	0.2195013	2.5521469	18	1	13 days	0.73	Williams	1998 RN ₇₀
1998 RO ₇₀	14.5	0.15	19980904	300.64762	39.72003	32.64496	9.56386	0.1536022	2.7813577	17	1	13 days	0.61	Williams	1998 RO ₇₀
1998 RP ₇₀	13.0	0.15	19980904	180.30190	120.86664	58.43097	7.69590	0.1256777	3.3913944	17	1	13 days	0.88	Williams	1998 RP ₇₀
1998 RQ ₇₀	14.0	0.15	19980904	235.99410	336.43961	156.91293	12.00853	0.1297703	2.6629186	17	1	13 days	0.73	Williams	1998 RQ ₇₀
1998 RT ₇₀	15.0	0.15	19980904	318.05168	282.34007	118.86404	5.86993	0.0174509	2.7331583	17	1	13 days	0.92	Williams	1998 RT ₇₀
1998 RV ₇₀	16.0	0.15	19980904	32.38069	216.90268	87.59929	4.39896	0.2213207	2.3269253	18	1	13 days	0.66	Williams	1998 RV ₇₀
1998 RX ₇₀	15.0	0.15	19980904	316.81146	284.74899	143.42869	6.70346	0.2789322	2.6871389	23	1	13 days	0.65	Williams	1998 RX ₇₀
1998 RZ ₇₀	14.5	0.15	19980904	122.85680	167.12949	53.59134	4.67758	0.1784436	2.3608662	17	1	13 days	0.97	Williams	1998 RZ ₇₀
1998 RC ₇₁	15.5	0.15	19980904	313.05895	267.18943	144.29598	5.80694	0.0748654	2.4821204	16	1	13 days	1.18	Williams	1998 RC ₇₁
1998 RE ₇₁	14.0	0.15	19980904	299.25310	303.14140	136.26766	5.63127	0.1697924	3.0623028	17	1	13 days	0.86	Williams	1998 RE ₇₁
1998 RG ₇₁	14.1	0.15	19980924	12.31030	309.43028	36.34221	5.73539	0.1689839	3.0628709	21	1	33 days	0.55	Williams	1998 RG ₇₁
1998 RK ₇₁	15.5	0.15	19980924	246.02353	94.52968	28.69706	6.08812	0.0590619	2.2301191	21	1	39 days	0.70	Williams	1998 RK ₇₁
1998 RN ₇₁	16.0	0.15	19980904	282.16563	61.02106	20.74729	6.29828	0.0596649	2.2836440	17	1	13 days	0.87	Williams	1998 RN ₇₁
1998 RO ₇₁	15.5	0.15	19980904	354.08856	342.42664	23.21986	6.41677	0.1276196	2.7615310	18	1	13 days	1.00	Williams	1998 RO ₇₁
1998 RQ ₇₁	16.5	0.15	19980904	5.68033	303.57950	41.59979	3.12329	0.2216729	2.3438306	18	1	13 days	0.68	Williams	1998 RQ ₇₁
1998 RR ₇₁	15.6	0.15	19980924	344.48082	277.21994	107.97431	1.99788	0.1615463	2.3951358	27	1	43 days	0.73	Williams	1998 RR ₇₁
1998 RS ₇₁	15.5	0.15	19980904	37.68979	285.69592	23.30773	6.16186	0.1191852	2.2076458	18	1	13 days	0.51	Williams	1998 RS ₇₁
1998 RU ₇₁	14.5	0.15	19980904	305.06519	29.78814	37.48160	2.96678	0.1261596	2.9341955	18	1	13 days	0.99	Williams	1998 RU ₇₁
1998 RX ₇₁	14.8	0.15	19980904	255.76163	88.57174	19.65038	6.27187	0.0451308	2.4189510	20	1	13 days	0.50	Williams	1998 RX ₇₁
1998 RY ₇₁	15.2	0.15	19980924	357.01716	350.32223	17.70431	6.65177	0.1267148	2.2500848	20	1	44 days	0.46	Williams	1998 RY ₇₁
1998 RZ ₇₁	13.9	0.15	19980924	354.45061	308.19139	63.48348	2.76584	0.0417271	2.8837763	27	1	33 days	0.55	Williams	1998 RZ ₇₁
1998 RA ₇₂	14.2	0.15	19980924	325.84417	323.80564	91.50534	1.26697	0.1976085	3.1151560	27	1	43 days	0.49	Williams	1998 RA ₇₂
1998 RB ₇₂	15.8	0.15	19980904	349.91135	205.54348	165.54452	5.21337	0.1062827	2.5101281	19	1	13 days	0.60	Williams	1998 RB ₇₂
1998 RD ₇₂	16.6	0.15	19980924	342.86575	329.16449	61.94404	1.26348	0.2168702	2.3531161	27	1	43 days	0.68	Williams	1998 RD ₇₂
1998 RE ₇₂	14.4	0.15	19980904	50.41661	128.89997	175.74791	10.36572	0.0703484	2.9681959	20	1	13 days	0.83	Williams	1998 RE ₇₂
1998 RF ₇₂	14.3	0.15	19980904	81.29214	91.97896	178.37533	15.04792	0.0795465	2.5467261	21	1	13 days	0.66	Williams	1998 RF ₇₂
1998 RH ₇₂	15.0	0.15	19980904	25.39379	191.43390	133.84091	2.63033	0.1682092	3.0715087	15	1	13 days	0.70	Williams	1998 RH ₇₂
1998 RK ₇₂	13.1	0.15	19980904	60.96074	170.63596	116.04530	2.21156	0.1468452	3.1754663	21	1	13 days	0.40	Williams	1998 RK ₇₂
1998 RL ₇₂	15.5	0.15	19980924	308.04419	53.28727	13.78818	5.00540	0.0980807	2.3450339	26	1	35 days	0.71	Williams	1998 RL ₇₂
1998 RN ₇₂	14.9	0.15	19980924	38.09309	296.56473	15.48810	5.37491	0.1841690	2.5706450	27	1	29 days	0.65	Williams	1998 RN ₇₂
1998 RO ₇₂	16.1	0.15	19980904	14.54389	176.93555	156.37888	2.64412	0.2247554	2.3558786	21	1	13 days	0.81	Williams	1998 RO ₇₂
1998 RP ₇₂	14.0	0.15	19980904	2.79384	180.98844	179.21271	9.22620	0.1725535	3.9387659	23	1	13 days	1.05	Williams	1998 RP ₇₂
1998 RQ ₇₂	16.4	0.15	19980924	347.13679	357.88415	26.84638	2.62479	0.1936953	2.3832647	20	1	30 days	0.59	Williams	1998 RQ ₇₂
1998 RR ₇₂	14.4	0.15	19980924	348.19617	235.23314	146.87480	2.63695	0.1123116	2.8913634	24	1	33 days	0.60	Williams	1998 RR ₇₂
1998 RU ₇₂	15.5	0.15	19980924	277.62996	74.55285	27.86854	2.35128	0.1168282	2.2857257	24	1	30 days	0.60	Williams	1998 RU ₇₂
1998 RV ₇₂	16.0	0.15	19980904	334.23402	26.99787	13.40559	2.92964	0.2347167	2.5427499	17	1	13 days	0.82	Williams	1998 RV ₇₂
1998 RW ₇₂	16.0	0.15	19980904	28.64315	293.54796	22.89004	1.93498	0.2165423	2.5947275	19	1	13 days	0.66	Williams	1998 RW ₇₂
1998 RX ₇₂	14.4	0.15	19990122	6.16749	211.48562	182.95199	8.64211	0.2484383	3.0591632	29	1	76 days	0.37	M-v 4 Williams	1998 RX ₇₂

1998 RY ₇₂	14.8	0.15	19980924	306.02359	256.01356	176.98371	2.45993	0.1111184	2.6503625	24	1	30 days	0.79	Williams	1998 RY ₇₂
1998 RB ₇₃	15.0	0.15	19980924	33.41844	301.41006	0.27873	7.42335	0.3429394	2.4171902	18	1	45 days	0.68	Williams	1998 RB ₇₃
1998 RC ₇₃	16.0	0.15	19980904	344.76167	18.42203	2.04387	7.04593	0.1209258	2.3897503	17	1	13 days	0.98	Williams	1998 RC ₇₃
1998 RD ₇₃	15.9	0.15	19980924	347.48947	197.16797	191.72086	8.93735	0.2432644	2.7769627	24	1	30 days	0.88	Williams	1998 RD ₇₃
1998 RE ₇₃	17.1	0.15	19980904	14.71276	7.80927	323.26523	1.36929	0.2661226	2.2907151	21	1	31 days	0.81	Williams	1998 RE ₇₃
1998 RG ₇₃	16.1	0.15	19980924	15.08580	129.58858	213.72060	1.68975	0.2199953	2.3606198	32	1	45 days	0.61	Williams	1998 RG ₇₃
1998 RL ₇₃	14.6	0.15	19980904	61.11400	1.11066	292.77624	2.18599	0.0840317	2.5465026	24	1	47 days	0.84	Williams	1998 RL ₇₃
1998 RM ₇₃	15.4	0.15	19980924	329.47996	57.34590	355.91078	9.64530	0.1978574	2.5610939	24	1	30 days	0.64	Williams	1998 RM ₇₃
1998 RN ₇₃	15.3	0.15	19980904	13.02235	88.23757	253.35942	2.68857	0.1837739	2.5200708	21	1	13 days	0.49	Williams	1998 RN ₇₃
1998 RO ₇₃	14.5	0.15	19980904	22.32241	114.22584	222.19099	4.74987	0.1026953	2.8013185	16	1	13 days	0.60	Williams	1998 RO ₇₃
1998 RP ₇₃	14.5	0.15	19980904	73.77236	28.33959	250.87114	3.29864	0.1062280	2.8013729	16	1	13 days	0.88	Williams	1998 RP ₇₃
1998 RQ ₇₃	14.0	0.15	19980924	353.46548	140.00613	238.14404	3.17160	0.1542865	3.0037926	26	1	45 days	0.76	Williams	1998 RQ ₇₃
1998 RR ₇₃	13.7	0.15	19980904	98.07769	50.76982	200.78397	13.23518	0.1440576	2.6784007	29	1	49 days	0.56	Williams	1998 RR ₇₃
1998 RV ₇₃	14.8	0.15	19980924	241.04285	218.58566	281.02002	3.95799	0.1094200	2.5253762	19	1	30 days	0.70	Williams	1998 RV ₇₃
1998 RW ₇₃	14.8	0.15	19980924	237.14295	201.63484	298.76085	4.09930	0.0805311	2.4598626	24	1	30 days	0.69	Williams	1998 RW ₇₃
1998 RX ₇₃	14.5	0.15	19980924	349.97148	161.03154	225.22934	6.43130	0.2272780	3.0455130	24	1	45 days	0.70	Williams	1998 RX ₇₃
1998 RY ₇₃	15.4	0.15	19980904	5.42874	31.32080	322.68867	5.76331	0.1320244	2.3238329	27	1	59 days	0.50	Williams	1998 RY ₇₃
1998 RZ ₇₃	15.1	0.15	19980904	359.58900	16.30533	346.38807	11.92134	0.2295413	2.6720340	25	1	52 days	0.47	Williams	1998 RZ ₇₃
1998 RB ₇₄	13.9	0.15	19980924	260.37830	161.14074	322.64035	7.14979	0.1064075	2.6249654	25	1	34 days	0.79	Williams	1998 RB ₇₄
1998 RC ₇₄	14.0	0.15	19980904	14.20342	112.34420	235.16771	6.29510	0.1119803	2.7419420	20	1	13 days	1.01	Williams	1998 RC ₇₄
1998 RD ₇₄	15.3	0.15	19980924	11.24294	98.69557	256.97016	4.15292	0.1430824	2.6171470	24	1	27 days	0.79	Williams	1998 RD ₇₄
1998 RF ₇₄	13.9	0.15	19980924	40.08423	355.82761	332.35057	5.99462	0.0335294	2.6758361	33	1	45 days	0.74	Williams	1998 RF ₇₄
1998 RG ₇₄	16.6	0.15	19980904	0.59025	124.06727	234.42636	3.12498	0.2109420	2.2864287	20	1	13 days	0.91	Williams	1998 RG ₇₄
1998 RH ₇₄	13.4	0.15	19980924	35.15677	48.42743	276.09783	3.79158	0.1545495	3.0416484	24	1	36 days	0.64	Williams	1998 RH ₇₄
1998 RK ₇₄	16.5	0.15	19980904	12.12003	130.89015	200.84453	6.81984	0.3252189	2.3530266	27	1	48 days	0.47	Williams	1998 RK ₇₄
1998 RM ₇₄	16.0	0.15	19980904	1.28926	152.65031	205.83068	7.02745	0.1670587	2.2965859	21	1	13 days	0.66	Williams	1998 RM ₇₄
1998 RN ₇₄	16.5	0.15	19980904	322.71521	227.60337	196.99508	11.96701	0.2784681	2.5459390	13	1	13 days	1.12	Williams	1998 RN ₇₄
1998 RO ₇₄	15.4	0.15	19980904	283.16324	136.36932	317.66047	3.58575	0.1214565	2.2192945	21	1	13 days	0.76	Williams	1998 RO ₇₄
1998 RQ ₇₄	15.9	0.15	19980924	349.32762	188.27717	197.23037	7.55417	0.2120609	2.5758814	24	1	30 days	0.83	Williams	1998 RQ ₇₄
1998 RR ₇₄	15.5	0.15	19980904	318.78665	63.78505	348.56912	6.53741	0.1018048	2.2971144	18	1	13 days	0.68	Williams	1998 RR ₇₄
1998 RS ₇₄	14.4	0.15	19980924	317.11144	71.02326	354.81311	8.85569	0.1462216	2.7756879	24	1	30 days	0.50	Williams	1998 RS ₇₄
1998 RU ₇₄	15.8	0.15	19980924	329.67529	204.90548	200.02177	4.35696	0.0961824	2.2996009	22	1	30 days	0.75	Williams	1998 RU ₇₄
1998 RV ₇₄	15.5	0.15	19980904	11.94622	21.72087	320.61242	1.54165	0.2182478	2.6042507	21	1	13 days	0.74	Williams	1998 RV ₇₄
1998 RW ₇₄	15.5	0.15	19980924	13.60953	28.79762	319.20774	1.51830	0.1971302	2.5154162	26	1	45 days	0.81	Williams	1998 RW ₇₄
1998 RY ₇₄	16.1	0.15	19980924	353.81377	24.72667	351.53423	3.73876	0.1136060	2.2294015	23	1	32 days	0.85	Williams	1998 RY ₇₄
1998 RA ₇₅	14.5	0.15	19980924	300.24739	80.98747	4.27513	11.35061	0.1478051	2.6509154	27	1	31 days	0.65	Williams	1998 RA ₇₅
1998 RB ₇₅	15.4	0.15	19990122	13.16175	32.41376	2.12842	7.26302	0.1118727	2.2628803	27	1	73 days	0.53	M-v 4 Williams	1998 RB ₇₅
1998 RC ₇₅	14.1	0.15	19980924	336.24211	34.10865	6.89976	11.98967	0.1362625	3.1007261	31	1	45 days	0.94	Williams	1998 RC ₇₅
1998 RD ₇₅	14.2	0.15	19980924	27.65511	151.51444	179.49542	5.26176	0.1631546	3.1486383	27	1	30 days	0.62	Williams	1998 RD ₇₅
1998 RF ₇₅	13.3	0.15	19980924	100.94120	81.63989	184.30066	9.96271	0.0323844	3.2369129	24	1	30 days	0.79	Williams	1998 RF ₇₅
1998 RG ₇₅	14.2	0.15	19980924	282.27935	278.70942	182.34983	13.00024	0.1286650	2.6192374	24	1	33 days	0.42	Williams	1998 RG ₇₅
1998 RH ₇₅	14.3	0.15	19980924	154.25283	27.48247	181.65392	12.35344	0.1281314	2.4728845	24	1	33 days	0.74	Williams	1998 RH ₇₅
1998 RK ₇₅	13.5	0.15	19980924	212.16598	149.48360	13.84765	11.51224	0.1066668	2.6689779	24	1	30 days	0.51	Williams	1998 RK ₇₅
1998 RL ₇₅	14.0	0.15	19980904	214.29440	338.35537	178.24949	11.27684	0.0797411	2.7817809	17	1	13 days	0.93	Williams	1998 RL ₇₅
1998 RM ₇₅	13.5	0.15	19980924	16.32609	327.58699	22.42691	7.27069	0.0659499	3.2146398	24	1	30 days	0.50	Williams	1998 RM ₇₅
1998 RO ₇₅	14.5	0.15	19980904	42.41291	285.57471	26.38668	5.90509	0.1075651	2.8990944	17	1	13 days	0.82	Williams	1998 RO ₇₅
1998 RP ₇₅	15.3	0.15	19980904	67.11752	240.60571	47.33498	2.82879	0.0554230	2.2416953	21	1	13 days	0.41	Williams	1998 RP ₇₅
1998 RQ ₇₅	14.2	0.15	19980904	0.12756	187.62106	177.11623	10.90276	0.0899824	3.0802793	25	1	13 days	0.82	Williams	1998 RQ ₇₅
1998 RT ₇₅	16.2	0.15	19980924	25.67669	166.44223	163.73242	6.61627	0.1725565	2.2375712	23	1	33 days	0.77	Williams	1998 RT ₇₅
1998 RV ₇₅	13.0	0.15	19980904	144.07848	191.82133	16.09888	14.31506	0.2404485	2.8317193	18	1	13 days	0.99	Williams	1998 RV ₇₅
1998 RX ₇₅	16.0	0.15	19980904	352.53665	268.50739	103.17432	2.07995	0.2519219	2.9878823	15	1	13 days	1.04	Williams	1998 RX ₇₅
1998 RY ₇₅	15.5	0.15	19980904	67.55930	102.37933	167.32565	7.84519	0.1952750	2.3286497	18	1	13 days	1.06	Williams	1998 RY ₇₅
1998 RZ ₇₅	13.7	0.15	19980924	58.53314	131.29558	170.32381	9.87476	0.0629766	2.9931246	34	1	33 days	0.80	Williams	1998 RZ ₇₅

1998 RA ₇₆	15.6	0.15	19980924	346.45956	305.52517	78.67369	2.23835	0.1511673	2.7697536	23	1	30 days	0.91	Williams	1998 RA ₇₆
1998 RB ₇₆	14.7	0.15	19980924	146.26463	184.50205	27.58451	5.94212	0.0969720	2.2814522	24	1	33 days	0.62	Williams	1998 RB ₇₆
1998 RE ₇₆	15.5	0.15	19980904	26.76596	298.16599	21.65516	6.11625	0.1602614	2.3629098	18	1	13 days	0.56	Williams	1998 RE ₇₆
1998 RF ₇₆	15.5	0.15	19980904	111.53404	219.94853	22.29264	6.93407	0.0455401	2.2817593	17	1	13 days	0.65	Williams	1998 RF ₇₆
1998 RG ₇₆	15.5	0.15	19980904	47.68385	130.77854	163.83867	8.49337	0.1566101	2.3017542	17	1	13 days	0.65	Williams	1998 RG ₇₆
1998 RJ ₇₆	16.6	0.15	19980924	8.53617	199.89803	149.76955	4.60267	0.2308432	2.1956786	24	1	33 days	0.51	Williams	1998 RJ ₇₆
1998 RK ₇₆	15.8	0.15	19980924	22.28409	198.43436	131.79079	3.28525	0.2085597	2.4360014	21	1	33 days	0.47	Williams	1998 RK ₇₆
1998 RL ₇₆	13.7	0.15	19980904	6.79251	256.14553	95.24069	3.29118	0.0879388	2.8845903	21	1	13 days	0.53	Williams	1998 RL ₇₆
1998 RM ₇₆	13.8	0.15	19980904	316.08516	27.38908	22.77433	11.38126	0.0714576	3.0718551	21	1	13 days	0.71	Williams	1998 RM ₇₆
1998 RN ₇₆	15.5	0.15	19980904	18.96378	284.70484	37.19447	4.34644	0.2753063	2.5746281	28	1	15 days	0.68	Williams	1998 RN ₇₆
1998 RO ₇₆	14.2	0.15	19980904	39.98816	289.16162	20.64092	11.17689	0.1253278	3.0493261	21	1	13 days	0.89	Williams	1998 RO ₇₆
1998 RQ ₇₆	15.6	0.15	19980924	34.57454	206.84076	104.88403	3.29397	0.2141992	2.3807926	24	1	33 days	0.65	Williams	1998 RQ ₇₆
1998 RR ₇₆	16.2	0.15	19980924	19.31238	272.06213	61.99561	3.44110	0.2094384	2.3902682	22	1	33 days	0.79	Williams	1998 RR ₇₆
1998 RT ₇₆	15.0	0.15	19980904	22.95914	287.37301	30.85861	7.63774	0.2519957	2.7362135	21	1	13 days	0.56	Williams	1998 RT ₇₆
1998 RV ₇₆	14.6	0.15	19980904	258.80330	311.23696	156.21574	9.70059	0.0527437	2.5918737	24	1	13 days	0.67	Williams	1998 RV ₇₆
1998 RW ₇₆	15.7	0.15	19980924	307.61898	8.92648	50.64934	5.10964	0.0345173	2.1576388	27	1	33 days	0.77	Williams	1998 RW ₇₆
1998 RX ₇₆	16.5	0.15	19980904	311.60801	290.86050	134.52744	5.59621	0.1886620	2.4135497	15	1	13 days	1.07	Williams	1998 RX ₇₆
1998 RY ₇₆	16.6	0.15	19980904	18.95124	267.22198	57.15832	3.42600	0.2294798	2.2734780	20	1	13 days	0.67	Williams	1998 RY ₇₆
1998 RZ ₇₆	14.5	0.15	19980924	309.69045	263.49330	166.23857	13.25662	0.1439787	2.6847312	24	1	33 days	0.56	Williams	1998 RZ ₇₆
1998 RA ₇₇	16.3	0.15	19980904	27.96780	271.45768	33.72195	4.69063	0.0876710	2.2851923	21	1	13 days	0.61	Williams	1998 RA ₇₇
1998 RB ₇₇	13.8	0.15	19980924	320.55867	281.98351	130.22344	4.70510	0.2919661	2.7573943	27	1	33 days	0.56	Williams	1998 RB ₇₇
1998 RD ₇₇	14.7	0.15	19980924	260.22698	345.27278	134.62309	5.31666	0.1384246	2.2379811	19	1	33 days	0.66	Williams	1998 RD ₇₇
1998 RE ₇₇	15.4	0.15	19980924	335.77211	8.99344	34.31515	6.28636	0.2260591	2.5702395	24	1	33 days	0.59	Williams	1998 RE ₇₇
1998 RF ₇₇	13.5	0.15	19980924	37.47859	283.78969	33.75674	7.14506	0.1301406	3.1772350	24	1	33 days	0.52	Williams	1998 RF ₇₇
1998 RG ₇₇	15.0	0.15	19980904	294.79042	281.87662	150.62661	6.62383	0.0593228	2.5831622	15	1	13 days	0.85	Williams	1998 RG ₇₇
1998 RH ₇₇	14.1	0.15	19980924	289.54168	285.47959	160.36467	9.81934	0.0771109	2.9951501	22	1	33 days	0.83	Williams	1998 RH ₇₇
1998 RK ₇₇	14.5	0.15	19980904	260.56537	80.49472	31.81351	7.47288	0.0940263	2.7796332	18	1	13 days	0.90	Williams	1998 RK ₇₇
1998 RN ₇₇	13.2	0.15	19980924	244.04650	316.57105	177.74707	24.42786	0.1039060	3.1938814	24	1	33 days	0.71	Williams	1998 RN ₇₇
1998 RO ₇₇	16.5	0.15	19980904	21.78854	175.24318	147.36400	4.88371	0.2047953	2.1441392	17	1	13 days	0.66	Williams	1998 RO ₇₇
1998 RV ₇₇	14.0	0.15	19980904	17.22250	305.47724	30.44703	8.10428	0.1986552	3.1866120	18	1	13 days	0.85	Williams	1998 RV ₇₇
1998 RQ ₇₇	12.7	0.15	19980924	7.10873	316.28363	40.74212	7.13364	0.2051369	3.9960310	33	1	45 days	0.63	Williams	1998 RQ ₇₇
1998 RR ₇₇	15.0	0.15	19980904	208.69479	29.37764	132.41628	3.66030	0.1846429	2.2506265	18	1	13 days	0.84	Williams	1998 RR ₇₇
1998 RT ₇₇	15.5	0.15	19980904	51.08126	138.53734	153.95489	5.12206	0.1585861	2.3416872	18	1	13 days	0.72	Williams	1998 RT ₇₇
1998 RU ₇₇	15.7	0.15	19980904	44.36620	125.85236	158.16376	5.75858	0.2957020	2.4110334	21	1	13 days	0.48	Williams	1998 RU ₇₇
1998 RV ₇₇	13.7	0.15	19980904	9.97208	329.79259	20.71118	11.88790	0.0765844	2.9784563	21	1	13 days	0.67	Williams	1998 RV ₇₇
1998 RW ₇₇	15.4	0.15	19980904	27.19623	151.89749	172.61673	14.63761	0.1425445	2.5652256	21	1	13 days	0.63	Williams	1998 RW ₇₇
1998 RY ₇₇	14.4	0.15	19980904	152.38005	52.38521	152.53473	5.31151	0.1140002	2.2984592	21	1	13 days	0.82	Williams	1998 RY ₇₇
1998 RA ₇₈	13.9	0.15	19980904	266.78542	12.87296	90.48646	3.27112	0.0505499	2.9370107	19	1	13 days	0.98	Williams	1998 RA ₇₈
1998 RB ₇₈	15.0	0.15	19980904	354.77216	353.84086	14.87265	17.71465	0.1295056	2.8860020	17	1	13 days	0.89	Williams	1998 RB ₇₈
1998 RC ₇₈	14.5	0.15	19980924	345.10378	252.79206	133.59200	4.46015	0.1071488	2.7999837	23	1	33 days	0.56	Williams	1998 RC ₇₈
1998 RD ₇₈	16.0	0.15	19980904	347.47661	254.80118	123.16362	3.02665	0.1930775	2.4506771	16	1	13 days	1.16	Williams	1998 RD ₇₈
1998 RE ₇₈	15.3	0.15	19980904	55.89942	176.22049	106.45085	3.46488	0.2030724	2.4088868	20	1	13 days	0.72	Williams	1998 RE ₇₈
1998 RF ₇₈	13.2	0.15	19980924	301.61939	303.77291	124.37272	4.57616	0.0143022	3.1472490	24	1	33 days	0.72	Williams	1998 RF ₇₈
1998 RJ ₇₈	16.5	0.15	19980904	322.27694	322.96281	87.68118	3.59884	0.1651492	2.3558943	18	1	13 days	1.00	Williams	1998 RJ ₇₈
1998 RL ₇₈	15.6	0.15	19980924	20.42855	283.97673	53.26294	4.53047	0.1703160	2.2721278	24	1	33 days	0.48	Williams	1998 RL ₇₈
1998 RM ₇₈	14.0	0.15	19980904	200.75271	122.89814	40.78085	7.09548	0.0761948	2.4669753	18	1	13 days	0.40	Williams	1998 RM ₇₈
1998 RP ₇₈	15.3	0.15	19980924	339.43183	241.14181	150.63665	7.38640	0.1190674	2.3202866	21	1	33 days	0.77	Williams	1998 RP ₇₈
1998 RQ ₇₈	15.0	0.15	19980904	36.36568	238.65723	77.70806	4.39050	0.1139810	2.7634513	17	1	13 days	0.66	Williams	1998 RQ ₇₈
1998 RR ₇₈	15.8	0.15	19980904	353.02353	333.23116	34.01629	7.23904	0.1563538	2.4479303	21	1	13 days	0.67	Williams	1998 RR ₇₈
1998 RS ₇₈	16.4	0.15	19980924	355.39797	325.12326	46.33297	4.95549	0.1956958	2.2861888	24	1	33 days	0.60	Williams	1998 RS ₇₈
1998 RU ₇₈	14.0	0.15	19980924	356.38829	246.59200	125.41342	6.01855	0.1850268	3.1402712	24	1	33 days	0.57	Williams	1998 RU ₇₈
1998 RV ₇₈	14.5	0.15	19980904	335.76975	352.27934	35.63008	10.77500	0.0698668	2.7694342	21	1	13 days	0.77	Williams	1998 RV ₇₈
1998 RX ₇₈	15.0	0.15	19980904	313.16767	281.94193	131.60193	6.68935	0.0526627	2.7082444	15	1	13 days	0.96	Williams	1998 RX ₇₈

1998 RY ₇₈	13.7	0.15	19980924	283.01329	342.29052	111.39675	6.28871	0.0803572	3.1622155	25	1	33 days	0.74	Williams	1998 RY ₇₈
1998 RC ₇₉	15.4	0.15	19980924	331.55738	273.22308	134.41654	5.10491	0.1870419	2.4244897	24	1	33 days	0.51	Williams	1998 RC ₇₉
1998 RE ₇₉	14.5	0.15	19980904	6.87822	332.51457	21.15868	19.11267	0.1286784	3.0974146	18	1	13 days	0.81	Williams	1998 RE ₇₉
1998 RG ₇₉	15.6	0.15	19980924	24.98388	236.64976	93.26515	4.01955	0.1842689	2.2027060	36	1	45 days	0.73	Williams	1998 RG ₇₉
1998 RH ₇₉	15.0	0.15	19980904	310.20424	64.69333	22.08594	17.77294	0.3200321	2.8704483	17	1	13 days	0.96	Williams	1998 RH ₇₉
1998 RK ₇₉	13.2	0.15	19980904	157.71856	123.61168	82.60816	6.00768	0.0707322	3.1912948	19	1	13 days	0.95	Williams	1998 RK ₇₉
1998 RN ₇₉	14.5	0.15	19980904	7.42256	319.70980	36.90871	10.72350	0.0623139	3.1474726	15	1	13 days	0.89	Williams	1998 RN ₇₉
1998 RO ₇₉	14.8	0.15	19980904	343.63787	344.65589	41.22470	6.44451	0.1490834	3.0623787	18	1	13 days	0.97	Williams	1998 RO ₇₉
1998 RP ₇₉	14.8	0.15	19980904	61.14891	265.98743	23.24188	12.89668	0.1152580	2.5743579	21	1	13 days	1.03	E Williams	1998 RP ₇₉
1998 RQ ₇₉	13.4	0.15	19980904	65.73027	151.17522	135.55511	5.54405	0.1243392	3.1908809	21	1	13 days	0.66	Williams	1998 RQ ₇₉
1998 RR ₇₉	16.2	0.15	19980924	14.69211	293.21397	48.64998	3.34487	0.2536116	2.5601173	24	1	33 days	0.72	Williams	1998 RR ₇₉
1998 RS ₇₉	16.5	0.15	19980904	3.65244	191.17083	161.50294	5.96457	0.2653191	2.6037058	17	1	13 days	1.08	Williams	1998 RS ₇₉
1998 RT ₇₉	15.3	0.15	19980904	70.85799	206.92080	62.30240	3.01345	0.1973691	2.3545572	21	1	13 days	0.75	Williams	1998 RT ₇₉
1998 RU ₇₉	15.8	0.15	19980904	299.82356	44.25836	28.69051	7.14282	0.1114225	2.2176210	21	1	13 days	0.83	Williams	1998 RU ₇₉
1998 RV ₇₉	13.5	0.15	19980904	95.61454	144.61650	107.32238	3.46853	0.1645733	2.6706603	21	1	13 days	0.55	Williams	1998 RV ₇₉
1998 RW ₇₉	15.3	0.15	19980924	285.30236	282.14298	183.96473	5.40761	0.1911576	2.4390725	14	1	35 days	0.86	Williams	1998 RW ₇₉
1998 RX ₇₉	14.0	0.15	19980904	322.48605	77.74905	340.97932	8.28832	0.1892620	2.5742810	27	1	53 days	1.35	Williams	1998 RX ₇₉
1998 RY ₇₉	14.0	0.15	19980924	357.49520	158.77325	217.77104	10.60975	0.1284843	2.9899283	20	1	27 days	0.82	Williams	1998 RY ₇₉
1998 RB ₈₀	13.5	0.15	19980924	140.26485	126.35392	96.03604	6.07617	0.1011313	2.7412571	24	1	34 days	0.66	Williams	1998 RB ₈₀
1998 RE ₈₀	15.0	0.15	19980924	350.02199	340.62490	44.59424	8.07678	0.2447206	2.7514366	20	1	33 days	0.69	Williams	1998 RE ₈₀
1998 RK ₈₀	15.1	0.15	19980904	279.55178	342.70193	114.58771	2.75282	0.1126756	2.2533243	20	1	13 days	0.89	Williams	1998 RK ₈₀
1998 RL ₈₀	14.8	0.15	19980924	231.23074	84.04841	56.06489	4.11398	0.0187505	2.1645260	23	1	33 days	0.63	Williams	1998 RL ₈₀
1998 RM ₈₀	13.4	0.15	19980924	9.25099	344.36661	16.64166	9.32433	0.1358002	3.1770144	24	1	45 days	0.54	Williams	1998 RM ₈₀
1998 RN ₈₀	15.5	0.15	19980904	328.04242	222.10484	183.53237	5.93640	0.1229153	2.4636349	16	1	13 days	0.83	Williams	1998 RN ₈₀
1998 RP ₈₀	13.0	0.15	19980924	45.09466	122.72414	198.65711	8.84077	0.0925258	3.1683593	30	1	31 days	0.58	Williams	1998 RP ₈₀
1998 SA	14.3	0.15	19980924	34.18332	129.83522	197.09175	4.28632	0.2461291	2.5250980	28	1	54 days	0.92	Williams	1998 SA
1998 SC	13.6	0.15	19980924	129.25102	174.33397	46.60001	9.99000	0.2110843	2.7444272	30	1	35 days	0.62	Williams	1998 SC
1998 SD	15.0	0.15	19990122	263.78465	204.65302	314.51864	19.36846	0.0175758	1.9351959	22	3	1987–1998	0.71	M-v 4 Williams	32725 1998 SD
1998 SP	14.0	0.15	19980904	30.19807	313.56843	19.30117	4.89606	0.1864200	3.2348044	25	1	13 days	0.73	Marsden	1998 SP
1998 SQ	11.5	0.15	19980924	324.74360	246.82704	181.35107	0.86766	0.0948601	5.2707632	30	1	31 days	0.92	Williams	1998 SQ
1998 SW	17.0	0.15	19980904	20.54561	286.73743	45.69616	1.16093	0.2447055	2.2031858	21	1	5 days	1.05	E Marsden	1998 SW
1998 SX	16.5	0.15	19980904	37.51095	306.93396	22.83663	6.54398	0.0767910	2.2946084	15	1	5 days	0.59	Marsden	1998 SX
1998 SY	15.5	0.15	19980904	304.42826	64.22276	28.28423	4.97768	0.2097877	2.5224968	21	1	5 days	1.26	E Marsden	1998 SY
1998 SA ₁	14.0	0.15	19980924	3.16710	212.60329	164.60899	1.37166	0.1961773	3.1766399	27	1	45 days	0.81	Williams	1998 SA ₁
1998 SB ₁	14.5	0.15	19980924	42.29605	304.38213	31.22397	6.09089	0.0720828	3.1976134	21	1	33 days	0.26	Williams	1998 SB ₁
1998 SE ₁	14.0	0.15	19980904	99.21831	81.39942	197.87565	10.88268	0.0200716	3.0567232	12	1	5 days	0.71	E Marsden	1998 SE ₁
1998 SG ₁	16.0	0.15	19980904	2.78090	194.63863	175.99469	2.14790	0.1797826	2.7839952	12	1	5 days	0.36	Marsden	1998 SG ₁
1998 SL ₁	15.5	0.15	19980924	290.06940	74.60385	29.61282	6.17588	0.1182339	2.3468217	18	1	33 days	0.53	Williams	1998 SL ₁
1998 SM ₁	14.0	0.15	19980924	42.22399	127.08123	200.87797	33.83940	0.1603254	3.2154716	31	1	45 days	0.81	Williams	1998 SM ₁
1998 SN ₁	14.5	0.15	19980904	60.42253	102.02772	190.86202	6.61945	0.2279281	2.8347201	9	1	4 days	0.30	Marsden	1998 SN ₁
1998 SO ₁	14.5	0.15	19980904	23.31752	188.04058	150.44228	1.50458	0.2233238	2.8146086	15	1	5 days	0.35	Marsden	1998 SO ₁
1998 SP ₁	15.5	0.15	19980904	63.45539	132.94458	137.29851	6.25904	0.2020343	2.2701896	22	1	10 days	0.47	Williams	1998 SP ₁
1998 SQ ₁	15.0	0.15	19980904	264.35102	39.64464	77.69448	5.82372	0.1972909	2.5537591	20	1	10 days	0.51	Williams	1998 SQ ₁
1998 SR ₁	15.0	0.15	19990122	43.05959	254.01258	95.93002	4.56122	0.1961054	2.3192720	31	3	1991–1998	0.34	M-v 3 Williams	32725 1998 SR ₁
1998 SW ₁	12.8	0.15	19990122	255.50517	92.97681	46.50952	10.93338	0.0626939	3.0161921	37	2	1993–1998	0.69	M-v 5 Williams	32725 1998 SW ₁
1998 SX ₁	15.0	0.15	19980924	12.60103	318.29335	29.39056	13.49323	0.1672684	2.6573206	19	1	30 days	0.48	Williams	1998 SX ₁
1998 SB ₂	16.7	0.15	19980924	39.61415	134.75869	182.47324	4.70944	0.1377808	2.1242840	27	1	28 days	0.58	Williams	1998 SB ₂
1998 SE ₂	16.3	0.15	19980924	25.08042	87.04346	231.73296	23.02200	0.2693767	2.3434527	18	1	31 days	0.48	Williams	1998 SE ₂
1998 SF ₂	15.5	0.15	19980924	11.92368	232.94401	105.87378	5.39660	0.2163724	2.1871348	15	1	32 days	0.22	Williams	1998 SF ₂
1998 SG ₂	19.7	0.15	19990122	31.69784	219.56461	152.44958	2.50278	0.4586312	2.2457842	148	1	83 days	0.57	M-v 5 Marsden	32777 1998 SG ₂
1998 SJ ₂	18.0	0.15	19990122	43.08577	332.12399	9.11189	10.33561	0.5003832	2.3298810	112	1	50 days	0.54	M-v 4 Williams	1998 SJ ₂
1998 SK ₂	13.8	0.15	19980924	10.36644	317.66046	30.72827	1.41018	0.2247522	3.1585504	56	1	46 days	0.41	Williams	1998 SK ₂
1998 SO ₂	14.5	0.15	19980924	2.20021	328.84037	73.81417	14.28528	0.1742273	2.5785764	7	1	30 days	0.82	Williams	1998 SO ₂

1998 SQ ₂	14.5	0.15	19990122	55.63499	37.46595	296.58342	16.75069	0.3207598	2.5322744	34	2	1996–1998	0.51	M-v	4	Williams	32725	1998 SQ ₂
1998 SR ₂	12.5	0.15	19980924	132.93316	272.93551	338.82229	27.09435	0.2065994	3.2390909	17	1	39 days	0.91			Williams		1998 SR ₂
1998 SS ₂	13.2	0.15	19980924	45.35265	57.62186	259.26229	12.34008	0.1823463	2.5766759	43	1	52 days	0.58			Nakano		1998 SS ₂
1998 ST ₂	14.5	0.15	19980924	358.90446	79.45537	295.20773	12.61861	0.0769638	2.5475139	15	1	38 days	0.92			Williams		1998 ST ₂
1998 SU ₂	15.0	0.15	19980924	5.24233	8.25837	356.15857	1.69512	0.0421859	2.6797959	23	1	39 days	0.63			Williams		1998 SU ₂
1998 SV ₂	17.0	0.15	19980924	3.89804	45.00390	310.75600	24.79708	0.3111737	2.2764737	27	1	27 days	0.80			Williams		1998 SV ₂
1998 SX ₂	16.2	0.15	19980924	58.42234	78.43365	202.96635	9.72814	0.2621075	2.3635606	35	1	26 days	1.18			Williams		1998 SX ₂
1998 SY ₂	16.1	0.15	19980924	33.04044	100.77087	212.68945	0.87927	0.2577780	2.2775557	26	1	33 days	0.66			Nakano		1998 SY ₂
1998 SZ ₂	14.5	0.15	19980924	19.25006	239.76089	97.38229	13.03151	0.1269063	2.7887318	20	1	37 days	0.28			Williams		1998 SZ ₂
1998 SA ₃	16.0	0.15	19980924	10.28454	278.12050	63.43297	12.13658	0.3029144	2.7902541	34	1	37 days	0.88			D Williams		1998 SA ₃
1998 SB ₃	13.5	0.15	19980924	196.97913	14.70814	157.00234	31.93646	0.0816539	2.7135966	18	1	40 days	0.37			Williams		1998 SB ₃
1998 SC ₃	17.0	0.15	19980904	1.70629	194.22573	158.27602	10.15066	0.1997605	2.3245952	17	1	10 days	0.83			Williams		1998 SC ₃
1998 SN ₃	15.5	0.15	19980904	263.24700	19.19972	90.82963	5.94874	0.1084352	2.7298242	17	1	9 days	0.55			Williams		1998 SN ₃
1998 SR ₃	16.0	0.15	19980904	45.96335	285.95215	19.66859	6.75804	0.2012203	2.3198344	21	1	9 days	0.63			Williams		1998 SR ₃
1998 SZ ₃	17.0	0.15	19980924	13.75456	327.37091	29.47698	2.91170	0.2027160	2.4127846	18	1	31 days	0.48			Williams		1998 SZ ₃
1998 SA ₄	16.0	0.15	19980924	334.23252	15.27279	39.58818	2.14103	0.1604721	2.3966193	18	1	38 days	1.16			Williams		1998 SA ₄
1998 SB ₄	15.5	0.15	19980904	344.95195	201.57616	194.38283	11.33280	0.1720854	2.6645946	12	1	3 days	0.91			E Marsden		1998 SB ₄
1998 SC ₄	14.0	0.15	19980924	114.60094	225.99081	29.35812	11.90633	0.1451938	2.6414814	21	1	31 days	0.58			Williams		1998 SC ₄
1998 SD ₄	18.7	0.15	19990122	94.58699	143.94930	181.89067	13.67286	0.1254065	1.5149365	87	1	46 days	0.69	M-v	5	Williams		1998 SD ₄
1998 SE ₄	13.7	0.15	19980924	356.74364	9.39073	6.37902	10.80468	0.1148628	2.9806690	39	1	59 days	0.50			Marsden		1998 SE ₄
1998 SF ₄	16.0	0.15	19980904	23.26559	329.35942	3.20610	4.23018	0.1570509	2.6291778	11	1	28 days	0.19			Williams		1998 SF ₄
1998 SG ₄	16.0	0.15	19980904	122.12204	289.48734	293.58943	2.95027	0.0952149	2.1658210	42	1	9 days	0.80			Williams		1998 SG ₄
1998 SH ₄	14.0	0.15	19990122	114.92868	108.01733	137.53088	2.17848	0.1208779	3.1936056	21	2	1991–1998	0.59	M-v	5	Williams	32726	1998 SH ₄
1998 SJ ₄	15.5	0.15	19980924	316.31760	29.93572	29.26869	1.71987	0.2149371	2.4249072	21	1	21 days	0.46			Williams		1998 SJ ₄
1998 SM ₄	15.0	0.15	19980924	353.81967	174.45157	203.96650	1.75597	0.2164498	2.4218029	25	1	29 days	0.75			Williams		1998 SM ₄
1998 SN ₄	16.2	0.15	19980924	19.85554	280.87915	56.81981	2.16481	0.1976597	2.3874966	29	1	33 days	0.90			Williams		1998 SN ₄
1998 SS ₄	21.5	0.15	19980924	0.91245	174.27797	180.95944	9.56712	0.5105482	2.2733872	35	1	24 days	0.70			Williams		1998 SS ₄
1998 ST ₄	16.5	0.15	19990122	355.88423	206.98915	239.39590	9.28969	0.5969768	2.8183057	46	1	62 days	0.60	M-v	4	Williams	32778	1998 ST ₄
1998 SV ₄	18.5	0.15	19980924	169.57830	359.46076	177.27871	53.25013	0.6420598	0.8163433	83	1	27 days	0.66			Williams		1998 SV ₄
1998 SW ₄	15.5	0.15	19980924	346.36453	354.18783	33.04379	5.84534	0.1527090	2.1845748	30	1	35 days	0.54			Williams		1998 SW ₄
1998 SY ₄	16.7	0.15	19980924	11.25375	237.55486	114.53492	2.99678	0.2174664	2.4639647	15	1	30 days	0.54			Williams		1998 SY ₄
1998 SZ ₄	15.8	0.15	19980924	359.17780	245.54140	125.81754	3.27509	0.1750751	2.3537423	31	1	42 days	0.68			Williams		1998 SZ ₄
1998 SB ₅	16.0	0.15	19980924	28.01420	331.14127	355.66870	13.05617	0.1655810	2.6081999	23	1	24 days	0.81			Williams		1998 SB ₅
1998 SE ₅	16.5	0.15	19980924	5.85130	100.93680	249.10758	20.01408	0.3561558	3.0486033	9	1	27 days	0.55			Williams		1998 SE ₅
1998 SX ₇	13.0	0.15	19980924	150.99919	156.95210	42.54841	0.78711	0.1397025	3.1192362	27	1	26 days	0.56			Williams		1998 SX ₇
1998 SH ₈	16.0	0.15	19980924	11.76534	15.11730	331.87772	0.36491	0.2376842	2.2681529	42	1	30 days	0.71			Williams		1998 SH ₈
1998 SK ₈	15.0	0.15	19980924	275.57696	272.26989	189.82112	11.46213	0.0719132	2.7129631	19	1	7 days	0.68			Williams		1998 SK ₈
1998 SM ₈	16.0	0.15	19980924	288.43435	274.71576	186.27811	1.99087	0.1785787	2.3912764	15	1	7 days	0.82			Williams		1998 SM ₈
1998 SO ₈	16.7	0.15	19980904	0.27287	171.62560	185.39696	8.12869	0.3097803	2.5449509	33	1	30 days	0.77			Williams		1998 SO ₈
1998 SX ₈	14.2	0.15	19980924	8.80304	170.88399	186.75947	13.41429	0.1792586	2.6880404	50	1	44 days	0.80			Williams		1998 SX ₈
1998 SZ ₈	15.0	0.15	19980904	343.02586	14.71388	13.95964	16.27564	0.1174419	3.0697355	28	1	10 days	0.64			Williams		1998 SZ ₈
1998 SC ₉	16.0	0.15	19980904	37.83797	300.04695	15.89270	6.66500	0.1328222	2.4357623	28	1	10 days	0.81			Williams		1998 SC ₉
1998 SF ₉	14.5	0.15	19980924	29.98567	249.13425	66.34057	0.60922	0.3159361	3.2281412	35	1	12 days	0.74			Williams		1998 SF ₉
1998 SH ₉	15.0	0.15	19980924	318.75645	233.95477	186.59083	4.83084	0.0917730	2.7019081	26	1	28 days	0.82			Williams		1998 SH ₉
1998 SJ ₉	16.6	0.15	19980924	5.34790	353.80710	5.98839	1.86270	0.2260285	2.1762998	25	1	29 days	0.64			Williams		1998 SJ ₉
1998 SM ₉	14.5	0.15	19980924	334.90254	208.87724	199.06840	8.97635	0.1618524	2.7304639	23	1	37 days	0.66			Williams		1998 SM ₉
1998 SN ₉	16.6	0.15	19980924	2.60640	157.33318	209.51548	2.01913	0.2119709	2.3534306	40	1	42 days	1.10			Williams		1998 SN ₉
1998 SO ₉	14.0	0.15	19980924	342.29444	193.50070	202.34363	5.35629	0.1027600	2.8081006	33	1	41 days	0.68			Williams		1998 SO ₉
1998 SQ ₉	15.5	0.15	19980904	32.09803	264.12525	53.48632	4.96209	0.1762407	2.3959831	18	1	13 days	0.68			D Williams		1998 SQ ₉
1998 SR ₉	15.0	0.15	19980904	24.71498	243.40935	93.53115	4.33986	0.0880165	2.7487659	21	1	13 days	1.09			Williams		1998 SR ₉
1998 SV ₉	13.8	0.15	19980924	35.73231	156.09281	161.75105	1.68956	0.1456215	3.1316673	48	1	43 days	0.70			Williams		1998 SV ₉
1998 SW ₉	14.0	0.15	19980924	26.42974	205.35396	125.97927	1.40964	0.2116813	3.1798811	40	1	35 days	0.64			Williams		1998 SW ₉
1998 SX ₉	15.2	0.15	19980924	10.72683	162.81920	184.12769	6.03226	0.3248921	2.5933090	63	1	45 days	0.66			Williams		1998 SX ₉

1998 SY ₉	15.5	0.15	19980904	307.37092	194.36936	231.38377	1.31572	0.1966899	2.3477989	35	1	16 days	0.84	Williams	1998 SY ₉
1998 SE ₁₀	15.8	0.15	19980924	89.16155	252.66287	31.24087	8.75525	0.1131716	2.2811088	15	1	41 days	0.22	Williams	1998 SE ₁₀
1998 SL ₁₀	15.0	0.15	19980924	296.91884	256.18712	216.94316	13.12549	0.1175130	2.7387417	11	1	39 days	0.10	Williams	1998 SL ₁₀
1998 SN ₁₀	16.2	0.15	19980924	356.55773	56.91796	312.48498	6.81350	0.1309101	2.2888129	7	1	13 days	0.56	Nakano	1998 SN ₁₀
1998 SO ₁₀	15.4	0.15	19980924	45.17724	22.03520	199.92496	41.81253	0.7730110	2.3032162	50	1	29 days	0.52	Williams	1998 SO ₁₀
1998 SU ₁₀	13.8	0.15	19980924	326.65908	195.13888	201.10092	0.54698	0.1529268	3.1397811	40	1	32 days	0.73	Williams	1998 SU ₁₀
1998 SW ₁₀	16.5	0.15	19980924	30.22570	152.14149	183.37609	12.44626	0.3019631	2.5698044	14	1	23 days	0.37	Williams	1998 SW ₁₀
1998 SX ₁₁	16.0	0.15	19980924	159.23743	151.42548	52.03603	7.42068	0.0558122	2.4211016	15	1	7 days	0.72	Williams	1998 SX ₁₁
1998 SB ₁₂	15.7	0.15	19980924	346.41506	210.99729	197.31282	3.28553	0.2385118	3.0573516	12	1	28 days	0.48	Williams	1998 SB ₁₂
1998 SD ₁₂	15.5	0.15	19980924	2.73480	178.19202	200.95925	19.15328	0.2102760	2.5659889	10	1	7 days	0.60	Williams	1998 SD ₁₂
1998 SF ₁₂	16.0	0.15	19980924	14.55239	242.12746	128.97426	0.85107	0.0948654	2.9527341	11	1	31 days	0.14	Williams	1998 SF ₁₂
1998 SJ ₁₂	14.5	0.15	19980904	77.32976	75.41041	173.20034	2.09175	0.1933839	2.3865209	19	1	16 days	0.66	Williams	1998 SJ ₁₂
1998 SK ₁₂	16.4	0.15	19980924	354.58641	185.78462	183.21973	8.33452	0.2566700	2.3477500	46	1	33 days	0.53	Williams	1998 SK ₁₂
1998 SM ₁₂	16.0	0.15	19980924	17.49697	159.78978	181.55694	4.76056	0.2198613	2.2003396	38	1	36 days	0.82	Williams	1998 SM ₁₂
1998 SP ₁₂	15.0	0.15	19980924	330.12048	119.96489	289.63295	24.77370	0.1952688	2.3130198	16	1	34 days	0.62	Williams	1998 SP ₁₂
1998 SR ₁₂	15.5	0.15	19980924	11.50004	89.85127	258.57092	21.93402	0.2668221	2.7793284	10	1	36 days	0.62	Williams	1998 SR ₁₂
1998 SS ₁₂	16.5	0.15	19980924	281.61997	189.81558	264.06932	19.85149	0.0572920	1.9371958	7	1	21 days	0.23	Williams	1998 SS ₁₂
1998 ST ₁₂	17.0	0.15	19980924	359.07784	81.71457	292.33017	16.04613	0.3924134	3.1003135	11	1	21 days	0.47	Williams	1998 ST ₁₂
1998 SW ₁₂	15.0	0.15	19980924	11.63416	302.42957	50.28565	32.19674	0.3070026	2.6005592	14	1	23 days	0.40	Williams	1998 SW ₁₂
1998 SX ₁₂	14.5	0.15	19980924	357.98339	244.17706	149.34474	27.59059	0.0241673	2.6502039	10	1	35 days	0.31	Williams	1998 SX ₁₂
1998 SY ₁₂	14.5	0.15	19980924	68.49876	174.07120	107.47939	14.59501	0.1359434	2.5455389	18	1	38 days	0.25	Williams	1998 SY ₁₂
1998 SZ ₁₂	14.5	0.15	19980924	56.22537	208.08465	90.57919	13.41728	0.0774916	2.6899536	17	1	37 days	0.67	Williams	1998 SZ ₁₂
1998 SA ₁₃	14.0	0.15	19980924	205.28238	324.40222	292.28781	14.52080	0.0783200	2.6592406	12	1	29 days	0.27	Williams	1998 SA ₁₃
1998 SB ₁₃	15.8	0.15	19980924	50.31809	150.28831	148.02957	6.46353	0.2135370	2.2365627	26	1	24 days	0.48	Williams	1998 SB ₁₃
1998 SD ₁₃	16.0	0.15	19980924	86.76265	126.28919	146.44281	7.09618	0.1121600	2.3634625	10	1	33 days	0.39	Williams	1998 SD ₁₃
1998 SG ₁₃	15.3	0.15	19980924	1.54793	285.89536	76.23470	4.75310	0.1318925	2.6223054	30	1	33 days	0.63	Williams	1998 SG ₁₃
1998 SJ ₁₃	15.6	0.15	19980924	45.87020	190.90801	113.39691	4.41724	0.1519235	2.1890234	39	1	45 days	0.62	Williams	1998 SJ ₁₃
1998 SK ₁₃	17.0	0.15	19980924	333.19623	308.30651	91.05563	4.22170	0.1314018	2.1902579	16	1	5 days	0.78	Williams	1998 SK ₁₃
1998 SN ₁₃	15.7	0.15	19980924	326.98211	297.01050	107.88339	4.86062	0.0962419	2.2428875	17	1	33 days	0.49	Williams	1998 SN ₁₃
1998 SP ₁₃	16.0	0.15	19980924	342.85132	349.28871	44.07462	8.67226	0.2227650	2.7589032	18	1	6 days	0.43	Williams	1998 SP ₁₃
1998 SR ₁₃	15.1	0.15	19980924	359.85883	358.90977	27.40750	6.84263	0.0831031	2.7783845	12	1	26 days	0.47	Williams	1998 SR ₁₃
1998 SK ₁₄	14.8	0.15	19990122	14.94297	5.65568	356.47555	24.99847	0.2826462	2.9169077	21	2	1993–1998	0.69	M-v 4 Williams	32726 1998 SK ₁₄
1998 SR ₁₄	15.1	0.15	19980924	339.01990	343.50213	54.53825	5.45571	0.1479706	2.4294293	31	1	30 days	0.79	Williams	1998 SR ₁₄
1998 SS ₁₄	15.8	0.15	19980924	0.36819	286.28451	82.58208	4.15325	0.2835964	2.6536778	22	1	30 days	0.47	Williams	1998 SS ₁₄
1998 ST ₁₄	16.3	0.15	19980924	17.90842	229.03504	114.08572	2.98418	0.2363641	2.2215404	22	1	32 days	0.52	Williams	1998 ST ₁₄
1998 SU ₁₄	15.2	0.15	19980924	24.22704	261.20906	80.05432	4.43871	0.1816160	2.5671224	25	1	32 days	0.63	Williams	1998 SU ₁₄
1998 SX ₁₄	15.0	0.15	19980924	54.59904	298.74223	344.79676	14.09361	0.1763081	2.9887109	27	1	30 days	0.73	Marsden	1998 SX ₁₄
1998 SY ₁₄	20.5	0.15	19990122	12.24102	21.71868	40.25151	3.51681	0.6644453	2.8448422	55	1	36 days	0.50	M-v 5 Williams	1998 SY ₁₄
1998 SZ ₁₄	19.0	0.15	19980924	1.87353	270.17822	80.86212	5.60810	0.4776613	2.3920563	30	1	36 days	0.70	Williams	1998 SZ ₁₄
1998 SA ₁₅	19.5	0.15	19990122	15.41599	331.05413	114.38665	7.07468	0.5574211	1.9131468	23	1	34 days	0.62	M-v 7 Williams	1998 SA ₁₅
1998 SB ₁₅	21.0	0.15	19990122	29.74428	67.53249	6.87434	15.62610	0.1612168	1.2260747	77	1	30 days	0.49	M-v 6 Williams	1998 SB ₁₅
1998 SC ₁₅	19.1	0.15	19981014	300.73486	277.28487	198.86779	16.07411	0.4145784	1.2737550	67	1	28 days	0.60	Nakano	1998 SC ₁₅
1998 SD ₁₅	19.0	0.15	19980924	107.52523	35.77385	184.01207	26.79188	0.3448912	0.9324733	120	1	28 days	0.67	Williams	1998 SD ₁₅
1998 SG ₁₅	15.5	0.15	19980924	255.94393	175.40036	306.71881	1.76000	0.1342522	2.4003510	9	1	28 days	0.44	Williams	1998 SG ₁₅
1998 SY ₁₅	13.0	0.15	19980904	258.28160	154.01995	309.34090	0.80818	0.0821673	3.1681232	23	1	13 days	0.92	Williams	1998 SY ₁₅
1998 SL ₁₆	17.0	0.15	19980904	0.52481	348.20869	10.43965	11.61432	0.1590577	2.5458796	15	1	11 days	0.73	Williams	1998 SL ₁₆
1998 SO ₁₆	15.0	0.15	19980904	267.60312	97.94033	7.99720	2.10232	0.1119642	2.6747636	15	1	10 days	0.63	E Williams	1998 SO ₁₆
1998 SR ₁₆	17.0	0.15	19980904	8.50430	314.10340	27.40147	0.71026	0.2698022	2.6638093	16	1	10 days	0.66	Williams	1998 SR ₁₆
1998 SY ₁₆	15.9	0.15	19980924	9.58451	275.88531	74.28221	0.82319	0.2165642	2.4722123	30	1	30 days	0.70	Williams	1998 SY ₁₆
1998 SC ₁₇	14.5	0.15	19980904	340.71398	275.80856	113.34358	1.95904	0.1207956	3.0827399	30	1	13 days	0.78	Williams	1998 SC ₁₇
1998 SF ₁₇	16.0	0.15	19980904	22.18319	267.68412	59.08590	2.11720	0.2044823	2.4318470	30	1	13 days	0.83	Williams	1998 SF ₁₇
1998 SG ₁₇	15.0	0.15	19980904	34.48386	215.16481	91.98671	2.23680	0.2698117	3.2931353	22	1	10 days	0.60	Williams	1998 SG ₁₇
1998 SM ₁₇	15.7	0.15	19980924	341.64098	231.58991	164.17623	4.83610	0.1877458	2.5768881	24	1	30 days	0.60	Williams	1998 SM ₁₇

1998 SV ₁₈	16.0	0.15	19980904	349.64629	208.69066	167.54400	6.54886	0.1268865	2.3033200	17	1	9 days	0.91	Williams	1998 SV ₁₈
1998 SV ₂₀	16.5	0.15	19980924	19.06828	146.75090	195.38783	3.30719	0.1484676	2.5600930	14	1	6 days	0.80	Williams	1998 SV ₂₀
1998 SD ₂₁	14.5	0.15	19980924	295.28488	86.37082	13.98644	3.81405	0.2131894	3.1862871	14	1	6 days	0.93	E Williams	1998 SD ₂₁
1998 SG ₂₁	17.0	0.15	19980904	343.49774	15.48467	14.47276	6.05532	0.2297976	2.7646209	9	1	3 days	0.67	Williams	1998 SG ₂₁
1998 SK ₂₁	15.0	0.15	19980924	65.08932	98.05288	188.03258	12.30047	0.1861848	2.7799263	25	1	7 days	0.96	Williams	1998 SK ₂₁
1998 SL ₂₁	15.5	0.15	19980924	1.61117	107.73911	273.00414	2.26430	0.0792298	3.1922505	17	1	30 days	0.57	Williams	1998 SL ₂₁
1998 SN ₂₁	17.5	0.15	19980924	66.65223	312.35083	346.34928	2.77094	0.1244201	2.1914713	18	1	30 days	0.46	Williams	1998 SN ₂₁
1998 SO ₂₁	16.2	0.15	19980924	56.39222	313.65212	345.99141	2.51892	0.2086974	2.2142666	32	1	30 days	0.80	Williams	1998 SO ₂₁
1998 SP ₂₁	15.5	0.15	19980924	17.95138	107.44522	238.45412	1.84159	0.2601473	2.4031663	21	1	20 days	0.78	Williams	1998 SP ₂₁
1998 SQ ₂₁	16.5	0.15	19980924	42.43495	318.56237	1.05445	4.34163	0.1843209	2.3345787	23	1	35 days	0.69	Williams	1998 SQ ₂₁
1998 SY ₂₁	15.2	0.15	19980924	30.44558	138.94536	185.56118	6.01140	0.2232856	2.3461064	28	1	32 days	0.48	Williams	1998 SY ₂₁
1998 SZ ₂₁	15.0	0.15	19980924	288.98421	93.74948	18.49218	2.81991	0.2351133	2.4074895	16	1	4 days	0.84	E Williams	1998 SZ ₂₁
1998 SA ₂₂	14.5	0.15	19980924	255.12937	116.78745	9.32930	7.11319	0.0671084	2.2752345	24	1	32 days	0.78	Williams	1998 SA ₂₂
1998 SB ₂₂	14.5	0.15	19980924	111.17407	60.96882	196.43179	5.98802	0.0553842	2.3639519	29	1	32 days	0.70	Williams	1998 SB ₂₂
1998 SF ₂₂	16.0	0.15	19980924	9.14739	105.12755	237.17343	3.35417	0.1805809	2.3600777	23	1	25 days	0.62	Williams	1998 SF ₂₂
1998 SJ ₂₂	12.4	0.15	19980924	45.94937	303.71772	353.07529	12.46500	0.1746698	3.0543889	38	1	30 days	1.26	Williams	1998 SJ ₂₂
1998 SO ₂₂	14.9	0.15	19980924	34.25879	326.82817	351.30899	3.00533	0.1987231	2.5995316	32	1	31 days	0.74	Williams	1998 SO ₂₂
1998 SP ₂₂	13.0	0.15	19980924	131.59983	230.37270	2.30209	6.78867	0.0666959	2.7337610	33	1	31 days	0.70	Williams	1998 SP ₂₂
1998 SQ ₂₂	14.8	0.15	19990122	18.99809	17.82638	1.05000	8.03250	0.2420723	2.7956676	33	1	74 days	0.47	M-v 4 Williams	1998 SQ ₂₂
1998 SR ₂₂	13.8	0.15	19980924	355.97624	14.88600	0.06262	6.80503	0.1243306	3.1582036	29	1	31 days	1.17	Williams	1998 SR ₂₂
1998 SS ₂₂	15.3	0.15	19980924	351.81752	20.21432	358.86768	6.79714	0.1292815	2.4225915	43	1	31 days	1.14	Williams	1998 SS ₂₂
1998 ST ₂₂	13.6	0.15	19980924	20.84955	318.07772	45.59818	14.40096	0.1915507	2.6143337	26	1	35 days	0.62	Williams	1998 ST ₂₂
1998 SV ₂₂	15.0	0.15	19990122	6.86192	206.05632	205.32469	5.90878	0.1050625	2.3872880	43	2	1994–1998	0.69	M-v 4 Williams	32726 1998 SV ₂₂
1998 SX ₂₂	14.3	0.15	19990122	39.87654	205.02913	145.39309	5.42715	0.1722716	2.7531938	69	2	1997–1998	0.61	M-v 3 Williams	32726 1998 SX ₂₂
1998 SY ₂₂	15.0	0.15	19980924	33.80389	134.52902	207.42664	10.29621	0.1082367	2.9698646	12	1	27 days	0.34	Williams	1998 SY ₂₂
1998 SD ₂₃	15.5	0.15	19980904	9.07372	187.73419	150.98678	4.21076	0.1704671	2.5925563	16	1	10 days	0.69	Williams	1998 SD ₂₃
1998 SG ₂₃	15.5	0.15	19980904	25.09440	152.72080	164.35499	12.42570	0.1887282	2.6220247	24	1	13 days	0.88	Williams	1998 SG ₂₃
1998 SJ ₂₃	16.5	0.15	19980904	348.67539	213.63424	154.67657	7.03393	0.1383111	2.3159521	16	1	10 days	0.88	Williams	1998 SJ ₂₃
1998 SL ₂₃	14.5	0.15	19980904	44.45242	131.61306	164.44273	13.44523	0.1628092	2.6241040	24	1	13 days	0.59	Williams	1998 SL ₂₃
1998 SN ₂₃	15.5	0.15	19980904	350.44994	245.29688	124.73786	4.77603	0.1804083	2.5925733	17	1	10 days	0.69	Williams	1998 SN ₂₃
1998 SO ₂₃	15.5	0.15	19980904	15.62680	178.05643	157.15179	10.05454	0.1696346	2.5530718	16	1	10 days	0.70	Williams	1998 SO ₂₃
1998 SP ₂₃	15.5	0.15	19980904	303.98920	17.19305	44.45370	7.82070	0.0845439	2.3980788	16	1	10 days	0.48	Williams	1998 SP ₂₃
1998 SQ ₂₃	14.5	0.15	19980904	342.98415	251.99734	125.73470	7.17946	0.0358162	2.7429885	14	1	10 days	0.77	Williams	1998 SQ ₂₃
1998 SR ₂₃	14.5	0.15	19980904	237.31517	81.33566	49.19983	7.98745	0.1026989	2.3715403	14	1	10 days	0.50	Williams	1998 SR ₂₃
1998 ST ₂₃	15.5	0.15	19980904	70.22257	128.85337	144.85037	7.84859	0.1100326	2.3292757	16	1	10 days	0.42	Williams	1998 ST ₂₃
1998 SU ₂₃	16.0	0.15	19980904	44.65727	237.77135	59.11364	5.17623	0.1510653	2.3557875	16	1	10 days	0.74	Williams	1998 SU ₂₃
1998 SV ₂₃	14.0	0.15	19980904	314.82042	35.42300	18.81540	19.06518	0.1268693	3.1494679	15	1	10 days	0.40	Williams	1998 SV ₂₃
1998 SW ₂₃	14.5	0.15	19980904	221.39670	96.92244	43.27665	7.95632	0.0575097	2.3900658	16	1	10 days	0.64	Williams	1998 SW ₂₃
1998 SY ₂₃	16.1	0.15	19980815	341.44061	302.44044	69.09552	3.82469	0.1964808	2.3243589	27	1	54 days	2.03	Williams	1998 SY ₂₃
1998 SZ ₂₃	16.0	0.15	19980904	337.04184	325.72056	60.73194	4.96850	0.1747295	2.5581863	16	1	10 days	0.54	Williams	1998 SZ ₂₃
1998 SA ₂₄	14.5	0.15	19980904	266.99543	352.32804	104.27292	5.67801	0.0600934	2.8197240	23	1	13 days	0.90	Williams	1998 SA ₂₄
1998 SB ₂₄	16.0	0.15	19980904	311.60474	10.04291	40.62376	4.72958	0.1182866	2.2350738	27	1	13 days	1.19	Williams	1998 SB ₂₄
1998 SE ₂₄	15.0	0.15	19990122	24.49182	215.22811	153.36844	4.22013	0.2604760	2.4078856	25	2	1993–1998	0.43	M-v 4 Williams	32726 1998 SE ₂₄
1998 SH ₂₄	17.0	0.15	19980904	350.91842	236.47950	127.87068	3.14427	0.2288258	2.3676040	26	1	13 days	0.94	Williams	1998 SH ₂₄
1998 SJ ₂₄	13.8	0.15	19990122	9.70187	296.67685	77.00539	3.76315	0.0651644	2.8764581	32	1	31 days	0.51	M-v 6 Williams	32727 1998 SJ ₂₄
1998 SK ₂₄	17.0	0.15	19980904	346.25812	351.44885	19.63698	6.66329	0.2237453	2.3045639	16	1	10 days	0.63	Williams	1998 SK ₂₄
1998 SM ₂₄	15.0	0.15	19980904	315.57681	1.34786	44.97174	3.50336	0.1052162	2.6583128	31	1	13 days	0.78	Williams	1998 SM ₂₄
1998 SN ₂₄	15.5	0.15	19980904	2.14314	254.34064	95.18551	3.80853	0.1146907	2.8136559	15	1	10 days	0.88	Williams	1998 SN ₂₄
1998 SO ₂₄	16.5	0.15	19980904	339.65072	254.90205	126.23109	3.36326	0.2037300	2.3122819	23	1	13 days	0.80	Williams	1998 SO ₂₄
1998 SQ ₂₄	15.0	0.15	19990122	342.33248	24.76865	33.58105	6.39629	0.1492057	2.5501522	31	2	1978–1998	0.80	M-v 5 Williams	32727 1998 SQ ₂₄
1998 SR ₂₄	15.3	0.15	19980924	39.88400	156.18507	149.31733	5.70462	0.2618215	2.3948924	29	1	42 days	0.73	Williams	1998 SR ₂₄
1998 SS ₂₄	15.5	0.15	19980924	1.04672	293.49867	75.08149	5.00113	0.1594932	2.6138438	21	1	32 days	0.58	Williams	1998 SS ₂₄
1998 ST ₂₄	15.7	0.15	19980924	326.75450	302.73226	109.12853	4.67971	0.1292062	2.2167453	19	1	30 days	0.38	Williams	1998 ST ₂₄

1998 SV ₂₄	15.2	0.15	19980924	328.51064	322.08215	91.12370	4.36593	0.1460034	2.5671803	18	1	30 days	0.69	Williams	1998 SV ₂₄
1998 SW ₂₄	15.0	0.15	19980904	310.23515	278.47598	140.30781	7.06480	0.0333860	2.4083917	16	1	10 days	0.57	Williams	1998 SW ₂₄
1998 SY ₂₄	15.5	0.15	19980924	26.33892	178.34660	160.78586	5.98102	0.1608321	2.6660166	18	1	23 days	0.96	Williams	1998 SY ₂₄
1998 SZ ₂₄	14.5	0.15	19980924	48.83469	163.20722	153.13943	7.19648	0.1558395	2.5343065	15	1	32 days	0.56	Williams	1998 SZ ₂₄
1998 SB ₂₅	15.9	0.15	19980924	11.70452	312.70465	37.95210	5.13158	0.2343902	2.4929510	20	1	26 days	0.75	Williams	1998 SB ₂₅
1998 SC ₂₅	15.0	0.15	19980924	135.04754	192.59744	37.96882	6.09377	0.0805062	2.2379078	22	1	12 days	0.60	Williams	1998 SC ₂₅
1998 SD ₂₅	15.4	0.15	19980924	46.99129	274.30891	32.45589	6.23325	0.1748253	2.2364656	21	1	30 days	0.54	Williams	1998 SD ₂₅
1998 SE ₂₅	14.5	0.15	19980924	351.06879	215.89532	173.15466	13.01904	0.1819543	2.6282255	16	1	5 days	0.45	Williams	1998 SE ₂₅
1998 SF ₂₅	16.2	0.15	19980924	348.85946	322.64516	68.46951	5.73099	0.1939989	2.4086845	22	1	28 days	0.63	Williams	1998 SF ₂₅
1998 SG ₂₅	13.0	0.15	19980924	196.45433	139.23247	46.24021	13.67598	0.1161533	2.6597450	22	1	28 days	0.52	Williams	1998 SG ₂₅
1998 SJ ₂₅	15.3	0.15	19980924	274.66634	4.06348	109.39854	5.66406	0.0951842	2.2494646	12	1	28 days	0.52	Williams	1998 SJ ₂₅
1998 SO ₂₅	16.0	0.15	19980924	354.16427	334.95716	46.94420	6.30983	0.2389068	2.3925377	19	1	19 days	0.56	Williams	1998 SO ₂₅
1998 SP ₂₅	17.0	0.15	19980924	22.01487	278.59492	56.95766	4.56755	0.2389618	2.1797270	19	1	19 days	0.47	Williams	1998 SP ₂₅
1998 SQ ₂₅	16.5	0.15	19980924	27.38225	193.77056	133.93245	4.13276	0.2489506	2.3049603	16	1	5 days	0.70	Williams	1998 SQ ₂₅
1998 SR ₂₅	15.6	0.15	19980924	11.24214	283.12036	72.44027	5.07087	0.2338578	2.5999560	31	1	37 days	0.55	Williams	1998 SR ₂₅
1998 SS ₂₅	15.5	0.15	19980924	332.60133	347.70472	63.96104	6.22133	0.1620411	2.3270774	31	1	37 days	0.51	Williams	1998 SS ₂₅
1998 SU ₂₅	15.2	0.15	19980924	22.76964	280.21281	56.68265	5.37052	0.2141767	2.4480741	24	1	25 days	0.39	Williams	1998 SU ₂₅
1998 SV ₂₅	16.3	0.15	19980924	29.73687	261.08366	68.78020	4.51469	0.1797141	2.2646424	18	1	25 days	0.55	Williams	1998 SV ₂₅
1998 SX ₂₅	15.6	0.15	19980904	46.85644	202.24192	96.42174	3.38945	0.1941805	2.4254926	19	1	10 days	0.56	Williams	1998 SX ₂₅
1998 SY ₂₅	14.0	0.15	19980924	296.94464	62.54317	31.19528	7.15487	0.1620052	2.7172694	15	1	5 days	0.37	E Williams	1998 SY ₂₅
1998 SZ ₂₅	14.5	0.15	19980924	221.12994	355.14790	162.82327	6.06329	0.0929148	2.2813761	18	1	5 days	0.73	Williams	1998 SZ ₂₅
1998 SA ₂₆	15.6	0.15	19980924	288.52433	42.73267	56.55811	5.50220	0.1408060	2.3036288	22	1	27 days	0.49	Williams	1998 SA ₂₆
1998 SB ₂₆	14.0	0.15	19980924	24.52087	305.04640	28.76329	13.05575	0.2046241	2.6892370	18	1	28 days	0.38	Williams	1998 SB ₂₆
1998 SC ₂₆	15.5	0.15	19980924	25.51299	193.49883	135.31268	5.86495	0.2476296	2.3501535	15	1	5 days	0.39	Williams	1998 SC ₂₆
1998 SD ₂₆	16.0	0.15	19980924	8.02956	255.22074	106.28046	4.96318	0.1524244	2.2245984	16	1	5 days	0.76	Williams	1998 SD ₂₆
1998 SM ₂₆	15.4	0.15	19980924	349.39560	66.59984	320.09996	1.06546	0.1959999	3.1064837	20	1	20 days	0.77	Williams	1998 SM ₂₆
1998 SN ₂₆	14.1	0.15	19980924	44.31639	347.69320	320.12207	5.10458	0.0480196	3.1270773	26	1	30 days	0.56	Williams	1998 SN ₂₆
1998 SO ₂₆	16.0	0.15	19980924	347.61901	69.45512	313.98652	14.25238	0.1293094	2.6016589	23	1	26 days	0.34	Marsden	1998 SO ₂₆
1998 SP ₂₆	16.0	0.15	19980924	17.50549	71.56734	271.08298	0.60428	0.1645213	2.5977509	28	1	26 days	0.58	Marsden	1998 SP ₂₆
1998 SQ ₂₆	16.5	0.15	19980924	324.08125	230.56240	189.94292	11.94359	0.2131755	2.3797427	28	1	26 days	0.45	Marsden	1998 SQ ₂₆
1998 SR ₂₆	14.5	0.15	19980924	310.69686	222.76217	207.14794	8.57476	0.1520470	2.7445903	47	1	38 days	0.62	Williams	1998 SR ₂₆
1998 SS ₂₆	13.5	0.15	19980924	328.75040	64.21856	17.10896	13.91858	0.1495342	2.5304098	19	1	29 days	0.26	Williams	1998 SS ₂₆
1998 SU ₂₆	14.0	0.15	19980924	341.39700	150.18686	307.83139	16.70723	0.0921777	3.0519144	11	1	20 days	0.33	Williams	1998 SU ₂₆
1998 SV ₂₆	13.5	0.15	19980924	268.38650	299.34305	265.10089	12.24942	0.1523487	2.5906866	11	1	27 days	0.15	Williams	1998 SV ₂₆
1998 SW ₂₆	16.0	0.15	19980904	282.40339	98.50478	359.89461	4.84505	0.1265513	2.2117768	17	1	10 days	0.61	Williams	1998 SW ₂₆
1998 SZ ₂₆	16.0	0.15	19980924	18.10265	159.98807	182.35262	4.96874	0.1924082	2.2784472	28	1	29 days	0.65	Williams	1998 SZ ₂₆
1998 SA ₂₇	15.5	0.15	19980924	323.85468	58.67666	14.74306	13.01370	0.2797957	3.0573908	17	1	30 days	0.55	Williams	1998 SA ₂₇
1998 SB ₂₇	16.5	0.15	19980924	19.52090	293.88662	42.57445	1.18470	0.2356763	2.1967257	23	1	7 days	0.49	Williams	1998 SB ₂₇
1998 SD ₂₇	17.0	0.15	19980924	359.86791	155.01339	215.82464	1.80851	0.2495015	2.4314538	15	1	7 days	0.60	E Williams	1998 SD ₂₇
1998 SF ₂₇	14.5	0.15	19980904	288.79637	278.53733	161.42079	1.59551	0.1504901	2.4218895	22	1	16 days	0.79	Williams	1998 SF ₂₇
1998 SH ₂₇	16.5	0.15	19980924	354.95866	299.44615	97.08502	6.01734	0.2084694	2.4041111	13	1	26 days	0.37	Williams	1998 SH ₂₇
1998 SJ ₂₇	18.0	0.15	19980924	21.23670	325.25011	7.34504	25.21305	0.2066113	2.1857256	16	1	26 days	0.51	Williams	1998 SJ ₂₇
1998 SN ₂₇	13.4	0.15	19980924	156.16115	296.77203	281.63946	27.10833	0.0979796	2.6521419	13	1	24 days	0.62	Williams	1998 SN ₂₇
1998 SO ₂₇	14.5	0.15	19980924	1.94578	320.47374	50.49359	23.31216	0.2358709	2.2717340	7	1	31 days	0.18	Williams	1998 SO ₂₇
1998 SP ₂₇	15.5	0.15	19980924	268.94688	57.96149	63.96323	23.46047	0.1081309	1.9352713	5	1	21 days	0.48	Williams	1998 SP ₂₇
1998 SQ ₂₇	14.5	0.15	19980924	65.11069	176.31050	144.57202	22.33664	0.0251419	2.5745547	5	1	35 days	0.42	Williams	1998 SQ ₂₇
1998 SR ₂₇	15.0	0.15	19980924	338.97783	136.55681	269.75367	23.06923	0.2684094	2.3652420	14	1	30 days	0.72	Williams	1998 SR ₂₇
1998 SS ₂₇	13.0	0.15	19980924	77.80686	352.40914	305.16164	27.63903	0.0497604	2.6103304	17	1	30 days	0.49	Williams	1998 SS ₂₇
1998 ST ₂₇	19.5	0.15	19980924	226.13855	322.40277	197.65958	21.02137	0.5297785	0.8192555	77	1	27 days	0.59	Williams	1998 ST ₂₇
1998 SU ₂₇	19.0	0.15	19980924	339.29503	169.35747	271.62171	7.06951	0.5914215	2.1176159	76	1	29 days	0.60	Williams	1998 SU ₂₇
1998 SW ₂₇	14.0	0.15	19981014	344.82128	127.17017	283.97142	15.49061	0.1994207	3.1268994	19	1	45 days	0.43	Williams	1998 SW ₂₇
1998 SB ₂₈	13.7	0.15	19980924	55.40668	286.39755	24.57859	10.47069	0.1404298	3.0480114	31	1	29 days	0.67	Williams	1998 SB ₂₈
1998 SF ₂₈	17.5	0.15	19980924	0.21255	350.00003	14.66838	5.52780	0.2519110	2.3567810	26	1	26 days	0.71	Williams	1998 SF ₂₈

1998 NOV. 10

M.P.C. 33109

1998 SJ ₂₈	15.5	0.15	19980904	323.18648	37.27897	17.75430	11.98946	0.1826034	2.6453891	15	1	10 days	0.60		Williams	1998 SJ ₂₈
1998 SP ₂₈	14.0	0.15	19980924	335.75713	2.96015	35.40274	8.01506	0.0321590	2.7533403	23	1	42 days	0.87		Williams	1998 SP ₂₈
1998 SX ₂₈	16.0	0.15	19980904	260.37117	16.25505	97.31638	1.70853	0.0878972	2.4038256	15	1	9 days	0.67		Williams	1998 SX ₂₈
1998 SA ₂₉	13.5	0.15	19980904	240.38158	80.21289	69.52547	2.54162	0.2484191	3.1139690	15	1	9 days	0.62		Williams	1998 SA ₂₉
1998 SC ₂₉	15.0	0.15	19980924	17.51787	317.46923	30.52039	6.05453	0.1269597	3.0907236	19	1	13 days	0.67		Williams	1998 SC ₂₉
1998 SG ₃₀	16.5	0.15	19980904	48.55520	274.94632	17.48420	1.63286	0.2017326	2.2827098	15	1	8 days	0.62	E	Williams	1998 SG ₃₀
1998 SO ₃₀	14.0	0.15	19980904	263.22344	300.04926	187.43520	11.08846	0.1976055	3.1724280	14	1	8 days	0.76		Williams	1998 SO ₃₀
1998 SS ₃₀	15.5	0.15	19980904	237.12699	77.12147	57.32131	1.20567	0.0579594	2.4307452	17	1	10 days	0.68		Williams	1998 SS ₃₀
1998 ST ₃₀	16.5	0.15	19980904	18.05506	151.68653	178.47648	9.56584	0.2491672	2.4198412	13	1	8 days	0.73		Williams	1998 ST ₃₀
1998 SU ₃₀	14.3	0.15	19980924	41.13009	134.20542	176.25985	8.79682	0.2169629	3.1572660	29	1	32 days	0.69		Williams	1998 SU ₃₀
1998 SH ₃₂	17.0	0.15	19980924	68.63413	101.25619	198.84028	21.33963	0.0696296	1.8810620	24	1	38 days	0.91		Williams	1998 SH ₃₂
1998 SW ₃₂	15.0	0.15	19990122	325.44660	82.51836	5.40072	4.81975	0.2337409	2.5624985	43	2	1986–1998	0.90	M-v 5	Williams	32727 1998 SW ₃₂
1998 SE ₃₃	16.5	0.15	19980924	225.08946	327.57000	178.99869	22.46784	0.0465841	1.9472616	18	1	28 days	1.15		Williams	1998 SE ₃₃
1998 SP ₃₃	15.2	0.15	19980815	295.77821	99.75193	347.39578	4.87474	0.3026855	2.2626553	24	1	56 days	0.56		Williams	1998 SP ₃₃
1998 SS ₃₃	16.2	0.15	19980904	34.40155	94.48925	204.35455	9.39429	0.2674078	2.3414630	20	1	13 days	0.89		Williams	1998 SS ₃₃
1998 SX ₃₃	16.5	0.15	19980924	43.54484	298.11577	8.45913	21.27673	0.0973350	1.9162109	21	1	15 days	0.88		Williams	1998 SX ₃₃
1998 SB ₃₄	14.3	0.15	19980924	297.64694	79.25624	356.94924	21.83604	0.0515022	2.6163886	29	1	34 days	1.04		Williams	1998 SB ₃₄
1998 SE ₃₄	15.5	0.15	19980904	0.81599	356.37752	356.72170	25.88584	0.2745629	3.2469318	12	1	10 days	0.82		Williams	1998 SE ₃₄
1998 SK ₃₄	16.5	0.15	19980924	4.54890	346.42527	10.69317	16.65444	0.1439594	2.5537063	16	1	28 days	0.96		Williams	1998 SK ₃₄
1998 SP ₃₄	16.2	0.15	19980924	24.97587	305.11550	15.12051	13.62037	0.2991032	2.6248020	24	1	30 days	0.84		Williams	1998 SP ₃₄
1998 SS ₃₄	16.3	0.15	19980924	345.67114	18.18059	14.32386	13.30739	0.2740552	2.5713975	30	1	31 days	0.75		Williams	1998 SS ₃₄
1998 SV ₃₄	15.0	0.15	19980924	29.34596	298.81250	17.28459	20.50722	0.2926556	2.7946662	22	1	19 days	0.53		Williams	1998 SV ₃₄
1998 SX ₃₄	16.4	0.15	19980924	21.72793	148.60126	197.14715	23.15688	0.0775773	1.9554598	30	1	32 days	0.85		Williams	1998 SX ₃₄
1998 SB ₃₅	16.0	0.15	19980924	338.88922	197.91745	198.86010	21.96505	0.0621145	1.9628494	29	1	33 days	1.13		Williams	1998 SB ₃₅
1998 SC ₃₅	14.5	0.15	19980924	57.58501	270.75556	16.74846	29.05420	0.2699825	2.5706752	28	1	33 days	1.06		Williams	1998 SC ₃₅
1998 SD ₃₅	16.5	0.15	19980924	116.16765	69.94152	178.75550	20.46035	0.0442686	1.8970468	13	1	20 days	0.91		Williams	1998 SD ₃₅
1998 SE ₃₅	19.0	0.15	19980924	357.82257	43.38642	334.55292	14.86193	0.5969146	3.0200419	63	1	27 days	0.64		Williams	1998 SE ₃₅
1998 SF ₃₅	17.4	0.15	19990122	340.54828	253.69437	218.69637	35.20427	0.2734411	1.6857295	42	1	45 days	0.53	M-v 5	Marsden	1998 SF ₃₅
1998 SG ₃₅	11.2	0.15	19990122	236.21455	331.40986	173.14985	15.21937	0.2969153	8.5824862	23	1	35 days	0.27	M-v 7	Williams	1998 SG ₃₅
1998 SJ ₃₅	17.0	0.15	19980924	4.84597	207.88152	141.93116	2.67464	0.2021988	2.2002123	25	1	39 days	0.92		Williams	1998 SJ ₃₅
1998 SK ₃₅	14.5	0.15	19980924	28.45853	313.16659	4.58006	6.52282	0.1157395	2.6745921	25	1	42 days	0.57		Williams	1998 SK ₃₅
1998 SL ₃₅	15.8	0.15	19980924	319.90021	244.84111	164.64106	4.99540	0.1692957	2.2682576	31	1	42 days	0.54		Williams	1998 SL ₃₅
1998 SP ₃₅	16.3	0.15	19980924	190.46964	168.61223	33.47308	7.11363	0.0491209	2.3960639	15	1	37 days	0.26		Williams	1998 SP ₃₅
1998 SU ₃₅	15.4	0.15	19980924	358.67654	343.66793	21.96258	11.95959	0.1983997	2.5810913	26	1	33 days	0.71		Williams	1998 SU ₃₅
1998 SY ₃₅	17.0	0.15	19980924	347.10330	155.34676	227.43499	1.73194	0.1972565	2.4016495	9	1	26 days	0.41		Williams	1998 SY ₃₅
1998 SZ ₃₅	15.5	0.15	19980924	7.54417	316.48809	41.97892	8.57767	0.2223676	2.5779101	37	1	27 days	0.49		Williams	1998 SZ ₃₅
1998 SA ₃₆	16.5	0.15	19980924	25.31812	314.56693	25.72209	3.58513	0.1949887	2.5375894	14	1	29 days	0.67		Williams	1998 SA ₃₆
1998 SB ₃₆	14.0	0.15	19980924	78.89121	113.47599	170.48147	13.83711	0.1058395	3.1366402	23	1	25 days	0.77		Marsden	1998 SB ₃₆
1998 SD ₃₆	15.5	0.15	19980904	242.13022	88.12702	33.79423	5.99085	0.1054792	2.2504386	33	1	16 days	1.10		Williams	1998 SD ₃₆
1998 SE ₃₆	19.5	0.15	19980924	129.91182	26.95294	199.34980	11.65331	0.0988072	1.3410290	22	1	18 days	0.54		Williams	1998 SE ₃₆
1998 SF ₃₆	19.0	0.15	19980924	104.19326	160.01390	71.72128	1.71075	0.2781093	1.3237893	49	1	22 days	1.03		Williams	1998 SF ₃₆
1998 SG ₃₆	15.6	0.15	19990122	194.74107	29.55650	186.70188	24.84817	0.3373909	1.6458478	69	1	33 days	0.66	M-v 6	Nakano	1998 SG ₃₆
1998 SH ₃₆	20.5	0.15	19990122	34.79137	278.50235	218.15538	2.10606	0.5697401	1.0867723	97	1	21 days	0.62	M-v 8	Williams	1998 SH ₃₆
1998 SK ₃₆	16.5	0.15	19981014	0.56430	308.12675	87.19192	6.16699	0.2935786	2.5729358	13	1	32 days	0.27		Williams	1998 SK ₃₆
1998 SV ₃₆	16.5	0.15	19980924	49.68153	106.56361	185.13592	1.84348	0.2646023	2.5949198	13	1	7 days	0.84		Williams	1998 SV ₃₆
1998 SK ₃₇	15.5	0.15	19980924	89.25679	5.97988	274.81130	1.76778	0.1292484	3.0048394	18	1	31 days	0.53		Williams	1998 SK ₃₇
1998 SM ₃₇	16.5	0.15	19980924	285.99791	119.90323	342.47391	2.15284	0.0504587	2.6064833	18	1	31 days	0.43		Williams	1998 SM ₃₇
1998 SN ₃₇	16.0	0.15	19980924	288.58517	123.59485	347.44005	2.40068	0.1625780	2.3415859	21	1	35 days	0.32		Williams	1998 SN ₃₇
1998 SR ₃₇	14.5	0.15	19980924	29.27384	131.26545	216.29783	5.33722	0.0891337	2.6298098	18	1	31 days	0.44		Williams	1998 SR ₃₇
1998 SF ₃₉	15.0	0.15	19980924	301.57190	109.87871	325.05806	1.02273	0.1828206	2.8547036	13	1	5 days	1.73	E	Williams	1998 SF ₃₉
1998 SR ₃₉	15.5	0.15	19980924	52.31767	93.43398	190.89821	12.20115	0.2966068	3.0243658	15	1	4 days	0.99	E	Williams	1998 SR ₃₉
1998 SN ₄₀	14.5	0.15	19980924	51.63988	299.64680	5.74416	6.64935	0.0472672	2.8421426	33	1	31 days	0.77		Williams	1998 SN ₄₀
1998 SW ₄₀	14.5	0.15	19980904	42.29442	350.83316	301.38069	0.96649	0.2227039	3.2959294	13	1	14 days	0.75		Williams	1998 SW ₄₀

1998 SM ₄₁	14.5	0.15	19980924	274.87080	108.56581	359.43224	9.93523	0.1903441	2.4568112	33	1	35 days	0.73		Williams	1998 SM ₄₁
1998 SO ₄₁	15.5	0.15	19980924	355.76454	156.80198	210.89086	0.39672	0.1932871	3.1944645	12	1	20 days	0.36		Williams	1998 SO ₄₁
1998 SU ₄₁	17.5	0.15	19980924	301.83920	66.69684	3.97007	6.59726	0.0998918	2.3566618	12	1	21 days	0.19		Williams	1998 SU ₄₁
1998 SJ ₄₂	18.0	0.15	19980924	359.44032	11.95392	338.06506	2.42400	0.2337295	2.3249913	11	1	25 days	0.31		Williams	1998 SJ ₄₂
1998 SU ₄₂	14.0	0.15	19980904	260.67193	307.13129	189.34641	8.40616	0.2638540	2.8344230	14	1	10 days	0.75		Williams	1998 SU ₄₂
1998 SV ₄₂	16.0	0.15	19980924	36.28174	181.35563	134.33104	4.36802	0.2083347	2.3595792	27	1	32 days	0.55		Williams	1998 SV ₄₂
1998 SW ₄₂	13.5	0.15	19980924	275.64949	114.61653	16.63773	12.96648	0.3008756	3.1769563	20	1	7 days	0.61		Williams	1998 SW ₄₂
1998 SA ₄₃	13.0	0.15	19990122	17.86866	255.28751	126.24209	1.64924	0.0859173	2.7428124	75	4	1980–1998	0.61	M-v 4	Williams	32727 1998 SA ₄₃
1998 SB ₄₃	16.0	0.15	19980924	295.90273	257.53191	189.28776	4.24285	0.1102946	2.2430357	27	1	29 days	0.66		Williams	1998 SB ₄₃
1998 SD ₄₃	14.5	0.15	19980924	189.64777	167.40906	17.69111	7.13416	0.1507361	2.2450100	22	1	22 days	0.55		Williams	1998 SD ₄₃
1998 SE ₄₃	14.5	0.15	19980924	177.07571	187.48510	8.44693	7.02820	0.0408165	2.2864036	35	1	35 days	0.69		Williams	1998 SE ₄₃
1998 SH ₄₃	14.2	0.15	19980924	310.99510	52.14891	20.77094	16.36392	0.1023132	3.1379680	25	1	33 days	0.52		Williams	1998 SH ₄₃
1998 SJ ₄₃	15.0	0.15	19980924	350.65458	55.09600	331.12660	1.83416	0.1635838	2.5632773	25	1	29 days	0.45		Williams	1998 SJ ₄₃
1998 SK ₄₃	14.5	0.15	19980924	250.15632	122.95717	6.06109	7.81433	0.0462941	2.3897344	27	1	27 days	0.66		Williams	1998 SK ₄₃
1998 SM ₄₃	14.8	0.15	19980924	11.68514	349.91299	9.43798	14.60632	0.1172786	2.6495322	21	1	20 days	1.02		Williams	1998 SM ₄₃
1998 SN ₄₃	14.7	0.15	19980924	326.81454	0.92373	52.02557	5.18580	0.0873909	2.7255634	31	1	25 days	0.58		Williams	1998 SN ₄₃
1998 SO ₄₃	14.1	0.15	19980924	36.62851	80.82049	228.41273	0.76122	0.1741662	3.1245198	26	1	30 days	0.67		Williams	1998 SO ₄₃
1998 SP ₄₃	15.5	0.15	19980904	45.80043	291.85233	358.09327	6.70378	0.1826363	2.3109604	20	1	15 days	0.69		Williams	1998 SP ₄₃
1998 SQ ₄₃	16.5	0.15	19980924	15.65052	153.67362	192.13694	4.31600	0.1922366	2.3017567	16	1	4 days	0.62		Williams	1998 SQ ₄₃
1998 SS ₄₃	14.5	0.15	19990122	35.74650	175.64490	183.77263	9.74729	0.1519329	2.7349094	57	3	1989–1998	0.76	M-v 3	Williams	32727 1998 SS ₄₃
1998 ST ₄₃	15.0	0.15	19980924	358.17679	233.88581	139.83856	2.87705	0.2286002	2.3955678	30	1	31 days	0.65		Williams	1998 ST ₄₃
1998 SX ₄₃	14.5	0.15	19980924	300.58494	253.51609	186.08423	12.77048	0.1720014	2.8121806	18	1	5 days	0.58		Williams	1998 SX ₄₃
1998 SA ₄₄	15.0	0.15	19980924	4.41307	337.65266	12.79733	1.66124	0.2118023	3.1284892	21	1	22 days	0.95		Williams	1998 SA ₄₄
1998 SC ₄₄	17.5	0.15	19980924	13.60718	51.64650	304.93559	1.39691	0.2164779	2.4457050	18	1	31 days	0.28		Williams	1998 SC ₄₄
1998 SE ₄₄	13.0	0.15	19980924	296.77042	263.34221	171.46078	7.14666	0.1246482	3.1680483	35	1	33 days	0.64		Williams	1998 SE ₄₄
1998 SG ₄₄	16.3	0.15	19980924	338.17423	16.38297	358.98578	5.33127	0.1017230	2.3996159	9	1	34 days	0.28		Williams	1998 SG ₄₄
1998 SO ₄₄	16.0	0.15	19980924	10.32299	289.49274	64.16954	1.51359	0.1554607	3.0363865	13	1	6 days	0.99		E Williams	1998 SO ₄₄
1998 SP ₄₄	15.9	0.15	19980924	15.64466	320.85548	22.45528	4.11019	0.1845070	2.2579661	32	1	31 days	0.71		Williams	1998 SP ₄₄
1998 SQ ₄₄	15.0	0.15	19980924	131.36043	216.46426	15.22167	13.93592	0.0686886	2.7289856	15	1	6 days	0.60		E Williams	1998 SQ ₄₄
1998 SS ₄₄	16.0	0.15	19980924	292.10853	202.72401	263.21572	2.30118	0.1558401	2.5273569	21	1	27 days	0.71		Williams	1998 SS ₄₄
1998 SX ₄₄	17.0	0.15	19980924	10.54833	163.84244	182.99395	4.01691	0.2426413	2.3583238	15	1	5 days	0.58		Williams	1998 SX ₄₄
1998 SA ₄₅	17.0	0.15	19980924	46.72914	275.02963	23.93109	0.73611	0.2011519	2.3050129	11	1	2 days	0.95		E Williams	1998 SA ₄₅
1998 SG ₄₅	16.0	0.15	19980924	302.93958	260.68005	179.41950	3.84069	0.1561997	2.3820494	16	1	5 days	0.59		Williams	1998 SG ₄₅
1998 SK ₄₅	13.9	0.15	19980924	81.72532	231.26287	39.44584	1.83498	0.1361627	3.1521068	21	1	27 days	0.65		Williams	1998 SK ₄₅
1998 SL ₄₅	16.0	0.15	19980924	330.77139	18.49747	18.23419	4.91589	0.0054123	2.5029928	14	1	5 days	0.93		E Williams	1998 SL ₄₅
1998 SO ₄₅	18.0	0.15	19980924	23.90254	228.58838	105.11632	0.94087	0.1566075	2.1586423	14	1	5 days	1.38		E Williams	1998 SO ₄₅
1998 SP ₄₅	17.0	0.15	19980924	353.61846	200.76410	174.10696	3.60996	0.1316757	2.1320566	16	1	5 days	0.43		Williams	1998 SP ₄₅
1998 SU ₄₅	16.0	0.15	19980924	77.63862	111.64631	170.70999	4.32765	0.0756201	2.3391222	15	1	5 days	0.70		Williams	1998 SU ₄₅
1998 SY ₄₅	14.0	0.15	19980924	322.21813	218.56280	208.61946	10.43607	0.0739778	3.2080714	12	1	23 days	0.16		Williams	1998 SY ₄₅
1998 SA ₄₆	17.5	0.15	19980924	5.80412	354.92202	16.06599	7.05924	0.1870920	2.6596394	12	1	31 days	0.37		Williams	1998 SA ₄₆
1998 SB ₄₆	16.0	0.15	19980924	330.91870	50.80893	14.29147	6.24323	0.2448160	2.4044990	18	1	20 days	0.25		Williams	1998 SB ₄₆
1998 SC ₄₆	13.5	0.15	19980924	297.83935	258.45036	217.35446	3.16842	0.2641211	3.0667216	9	1	10 days	0.26		Marsden	1998 SC ₄₆
1998 SG ₄₆	15.0	0.15	19980924	345.26929	30.42207	12.58857	3.22934	0.2234759	2.6211429	15	1	24 days	0.41		Williams	1998 SG ₄₆
1998 SK ₄₆	16.0	0.15	19980924	323.42471	102.99096	345.11188	0.44211	0.3050161	3.1219378	15	1	18 days	0.42		Williams	1998 SK ₄₆
1998 SP ₄₆	15.5	0.15	19980924	54.07691	285.53763	24.71207	8.89207	0.1840411	2.7699233	15	1	20 days	0.35		Williams	1998 SP ₄₆
1998 SU ₄₆	16.0	0.15	19980924	296.07121	89.13417	24.59050	2.94491	0.2435624	2.3183308	25	1	33 days	0.64		Williams	1998 SU ₄₆
1998 SY ₄₆	17.5	0.15	19980924	328.38443	262.40650	160.37337	0.30695	0.1551261	2.1911188	12	1	18 days	0.24		Williams	1998 SY ₄₆
1998 SZ ₄₆	15.0	0.15	19980924	291.82001	301.90600	171.92228	0.52834	0.1650830	3.0898834	12	1	18 days	0.28		Williams	1998 SZ ₄₆
1998 SA ₄₇	18.0	0.15	19980924	348.35045	13.55000	23.62223	7.77014	0.1889074	2.3228519	12	1	24 days	0.36		Williams	1998 SA ₄₇
1998 SC ₄₇	15.5	0.15	19980924	194.15290	157.70492	37.30600	3.57569	0.0766780	2.7580310	8	1	17 days	0.16		Williams	1998 SC ₄₇
1998 SD ₄₇	16.5	0.15	19980924	219.21002	138.77611	33.11159	4.31285	0.0916200	2.2783470	15	1	23 days	0.19		Williams	1998 SD ₄₇
1998 SF ₄₇	18.0	0.15	19980924	347.31213	8.74339	29.45912	3.40459	0.1740850	2.2578386	11	1	23 days	0.14		Williams	1998 SF ₄₇
1998 SG ₄₇	15.8	0.15	19980904	322.80180	35.72432	1.47064	6.98623	0.1149675	2.3436299	28	1	16 days	0.75		Williams	1998 SG ₄₇

1998 NOV. 10

M.P.C. 33111

1998 SL ₄₇	15.5	0.15	19980924	95.83738	232.75688	16.16069	2.30341	0.1250687	2.2620282	29	1	29 days	0.92	Williams	1998 SL ₄₇
1998 SX ₄₇	15.5	0.15	19980924	275.10818	95.06915	18.78849	2.70333	0.0428559	2.6394635	15	1	17 days	0.36	Williams	1998 SX ₄₇
1998 SB ₄₈	17.5	0.15	19980924	345.12437	202.71874	199.67558	1.26782	0.1817772	2.4468590	9	1	16 days	0.11	Williams	1998 SB ₄₈
1998 SM ₄₈	15.5	0.15	19980924	327.06036	205.01544	215.25871	3.24343	0.0428133	2.6097366	12	1	21 days	0.31	Williams	1998 SM ₄₈
1998 SN ₄₈	15.3	0.15	19980924	312.90858	82.94623	6.42112	1.64364	0.1910938	2.6259055	16	1	22 days	1.12	Williams	1998 SN ₄₈
1998 SR ₄₈	15.0	0.15	19980924	25.03199	334.96444	4.39819	4.16683	0.2340524	2.5765258	12	1	14 days	0.41	Williams	1998 SR ₄₈
1998 SS ₄₈	17.5	0.15	19980924	359.09813	169.57311	211.44559	7.12605	0.1221294	2.3744262	12	1	16 days	0.30	Williams	1998 SS ₄₈
1998 SU ₄₈	17.5	0.15	19980924	197.96950	203.26926	342.67058	1.97612	0.0457718	2.2964285	15	1	25 days	0.30	Williams	1998 SU ₄₈
1998 SV ₄₈	17.5	0.15	19980924	12.98759	139.04352	217.22422	4.40553	0.2924922	2.9977919	12	1	18 days	0.29	Williams	1998 SV ₄₈
1998 SW ₄₈	16.0	0.15	19980924	152.70016	217.92149	6.67800	4.21485	0.1946982	2.6024918	12	1	18 days	0.22	Williams	1998 SW ₄₈
1998 SB ₄₉	15.5	0.15	19980904	333.21236	213.72777	171.00246	3.41057	0.1188941	2.4028553	27	1	16 days	1.06	Williams	1998 SB ₄₉
1998 SC ₄₉	13.6	0.15	19980924	299.61243	264.17569	157.98298	2.31024	0.0476388	2.8672946	36	1	28 days	0.92	Williams	1998 SC ₄₉
1998 SF ₄₉	12.8	0.15	19980924	266.95744	107.64396	19.61305	2.38155	0.0659576	3.3397563	38	1	44 days	1.19	Williams	1998 SF ₄₉
1998 SM ₄₉	14.9	0.15	19980924	356.92530	309.95354	73.32840	0.43458	0.2433593	3.1438243	35	1	31 days	0.84	Williams	1998 SM ₄₉
1998 SP ₄₉	16.9	0.15	19980924	32.23050	122.89352	189.03948	4.96121	0.3377063	2.3169894	38	1	31 days	1.12	Williams	1998 SP ₄₉
1998 SR ₄₉	17.5	0.15	19990122	16.23487	54.41538	21.62139	29.21840	0.5351426	2.4813605	46	1	30 days	0.57	M-v 6 Williams	1998 SR ₄₉
1998 SS ₄₉	15.9	0.15	19990122	8.20141	102.25836	41.72658	10.75917	0.6392404	1.9235655	81	1	34 days	0.45	M-v 6 Williams	1998 SS ₄₉
1998 ST ₄₉	18.0	0.15	19980924	347.53845	47.39423	18.78287	24.64198	0.5936486	2.3062374	45	1	21 days	0.77	Williams	1998 ST ₄₉
1998 SV ₄₉	13.0	0.15	19980924	153.29566	173.57360	22.47143	6.85490	0.2539027	3.0313276	28	1	6 days	1.08	E Williams	1998 SV ₄₉
1998 SW ₄₉	16.5	0.15	19980924	85.31871	332.97002	301.88617	1.63863	0.1883353	2.3581876	8	1	27 days	0.11	Williams	1998 SW ₄₉
1998 SX ₄₉	17.5	0.15	19980924	340.28901	39.53283	351.20984	2.13447	0.2034933	2.1026188	19	1	6 days	0.87	Williams	1998 SX ₄₉
1998 SY ₄₉	14.0	0.15	19980924	349.81731	7.85745	13.29848	0.80657	0.1728780	3.8547192	15	1	6 days	0.44	E Williams	1998 SY ₄₉
1998 SH ₅₀	16.0	0.15	19980924	358.88989	347.28838	24.73186	10.35476	0.2601112	2.6509757	15	1	6 days	0.53	Williams	1998 SH ₅₀
1998 SK ₅₀	15.4	0.15	19980924	340.80402	355.47261	47.29994	4.29919	0.2485041	2.5379152	29	1	40 days	0.60	Williams	1998 SK ₅₀
1998 SM ₅₀	17.0	0.15	19980924	9.64559	344.80162	25.86698	8.16619	0.1577256	2.9674003	12	1	23 days	0.33	Williams	1998 SM ₅₀
1998 ST ₅₀	13.5	0.15	19980924	217.42948	168.89388	9.70400	3.78491	0.1666044	3.1415476	12	1	22 days	0.25	Williams	1998 ST ₅₀
1998 SW ₅₀	15.0	0.15	19980924	346.98069	22.54437	16.44311	5.66005	0.0844782	2.9938244	15	1	22 days	0.47	Williams	1998 SW ₅₀
1998 SY ₅₀	17.5	0.15	19980924	13.28270	7.41310	356.33495	1.39447	0.1297814	2.5810423	12	1	19 days	0.20	Williams	1998 SY ₅₀
1998 SA ₅₁	16.0	0.15	19980924	13.59352	345.65465	17.42462	3.11393	0.2346029	3.9179187	12	1	17 days	0.21	Williams	1998 SA ₅₁
1998 SG ₅₁	16.5	0.15	19980924	230.18254	286.18076	244.47012	0.53352	0.2081944	2.3890699	9	1	16 days	0.23	Williams	1998 SG ₅₁
1998 SJ ₅₁	17.5	0.15	19980924	15.40750	339.06039	17.05582	1.89250	0.2378394	2.7483381	11	1	22 days	0.14	Williams	1998 SJ ₅₁
1998 SK ₅₁	16.0	0.15	19980924	12.89457	346.41198	14.30374	12.92340	0.1774526	2.6275819	15	1	5 days	0.61	Williams	1998 SK ₅₁
1998 SM ₅₁	15.5	0.15	19980924	166.91404	9.41078	208.66924	11.11370	0.0725710	2.7554291	9	1	15 days	0.17	Williams	1998 SM ₅₁
1998 SB ₅₂	16.5	0.15	19980924	68.24896	254.75672	355.20539	3.91319	0.3725989	2.5673681	9	1	14 days	0.27	Williams	1998 SB ₅₂
1998 SC ₅₂	18.0	0.15	19980924	5.41847	160.20167	192.24782	1.97886	0.2269686	2.6216999	12	1	17 days	0.43	Williams	1998 SC ₅₂
1998 SD ₅₂	18.0	0.15	19980924	342.29120	57.17344	336.50544	0.80015	0.2838208	3.0827210	9	1	14 days	0.31	Williams	1998 SD ₅₂
1998 SF ₅₂	16.0	0.15	19980924	142.19815	214.88065	356.83198	3.86281	0.1229931	2.6446505	12	1	17 days	0.20	Williams	1998 SF ₅₂
1998 SK ₅₂	14.7	0.15	19980924	11.25892	335.09374	11.06960	0.04759	0.1741768	3.1527076	29	1	41 days	0.69	Williams	1998 SK ₅₂
1998 SQ ₅₂	14.5	0.15	19980904	146.41736	209.68599	356.77681	5.66709	0.0623368	2.3918555	24	1	17 days	0.77	Williams	1998 SQ ₅₂
1998 SU ₅₂	11.5	0.15	19980924	316.40534	156.42575	285.08964	2.28411	0.1189199	5.1307150	27	1	31 days	0.64	Williams	1998 SU ₅₂
1998 SW ₅₂	15.5	0.15	19980924	293.89766	234.87358	218.92813	5.62345	0.0688275	2.3025119	24	1	33 days	0.94	Williams	1998 SW ₅₂
1998 SA ₅₃	17.5	0.15	19980924	10.23047	343.89861	15.75081	6.03369	0.2420001	2.3392865	9	1	15 days	0.12	Williams	1998 SA ₅₃
1998 SE ₅₃	15.5	0.15	19980924	13.06289	340.53097	27.17623	9.51989	0.1874767	3.9739730	12	1	18 days	0.25	Williams	1998 SE ₅₃
1998 SG ₅₃	16.5	0.15	19980924	326.81725	44.69812	26.02012	4.82001	0.1739829	2.9889094	12	1	18 days	0.30	Williams	1998 SG ₅₃
1998 SJ ₅₃	18.5	0.15	19980924	343.24578	20.45332	24.55031	1.76915	0.1909938	2.3788192	12	1	18 days	0.21	Williams	1998 SJ ₅₃
1998 SK ₅₃	14.0	0.15	19980904	61.68846	86.97770	194.80218	14.45057	0.0978445	3.2201541	25	1	13 days	0.74	Williams	1998 SK ₅₃
1998 SM ₅₃	16.0	0.15	19980904	34.52833	323.91108	338.05654	7.72864	0.1806066	2.4217490	15	1	11 days	0.73	Williams	1998 SM ₅₃
1998 SN ₅₃	16.0	0.15	19980924	17.76051	356.89135	337.21513	5.42990	0.1423083	2.1817552	29	1	27 days	0.48	Williams	1998 SN ₅₃
1998 SO ₅₃	14.5	0.15	19980904	350.43184	170.57857	194.16227	9.04114	0.1105866	3.1248300	25	1	13 days	0.76	Williams	1998 SO ₅₃
1998 SP ₅₃	14.3	0.15	19980924	355.38550	54.98452	309.32326	4.57043	0.1380413	2.8459376	19	1	28 days	0.48	Williams	1998 SP ₅₃
1998 SQ ₅₃	14.5	0.15	19980904	352.05336	22.11715	342.89799	13.14028	0.1924699	3.0943701	24	1	13 days	0.52	Williams	1998 SQ ₅₃
1998 SS ₅₃	14.5	0.15	19980904	325.53613	216.55969	188.57190	9.37356	0.2265130	2.7565632	25	1	13 days	0.44	Williams	1998 SS ₅₃
1998 SX ₅₃	14.7	0.15	19980904	340.58025	175.62357	198.61475	8.84043	0.0869378	2.7650546	21	1	42 days	0.53	Williams	1998 SX ₅₃

1998 SZ ₅₃	15.2	0.15	19980924	355.86344	44.52983	321.54756	3.75867	0.1234847	2.3304734	29	1	30 days	0.42	Williams	1998 SZ ₅₃
1998 SC ₅₄	17.0	0.15	19980904	335.47658	204.17071	186.09476	5.62994	0.2041417	2.2680279	15	1	11 days	0.59	Williams	1998 SC ₅₄
1998 SD ₅₄	15.0	0.15	19980904	357.51175	0.21940	358.86946	3.52706	0.1305955	2.6908420	24	1	13 days	0.48	Williams	1998 SD ₅₄
1998 SE ₅₄	13.0	0.15	19980904	94.62823	53.19727	186.64264	11.88440	0.2219955	2.7690089	14	1	11 days	0.33	Williams	1998 SE ₅₄
1998 SG ₅₄	15.5	0.15	19980904	41.40404	304.43849	356.89928	12.50782	0.1553153	2.5634929	24	1	13 days	0.72	Williams	1998 SG ₅₄
1998 SJ ₅₄	15.5	0.15	19980904	14.54878	343.17489	356.45913	11.93866	0.0906983	2.6444305	24	1	13 days	0.87	Williams	1998 SJ ₅₄
1998 SK ₅₄	14.5	0.15	19980924	17.33243	346.05942	346.87153	10.19606	0.2235588	3.1499114	37	1	36 days	0.70	Williams	1998 SK ₅₄
1998 SM ₅₄	14.5	0.15	19980904	1.46722	4.78092	348.34920	12.49782	0.0867225	2.5269904	31	1	13 days	0.56	Williams	1998 SM ₅₄
1998 SO ₅₄	15.0	0.15	19980904	69.05468	81.92857	189.80412	10.81997	0.1231567	2.3313682	15	1	11 days	0.67	Williams	1998 SO ₅₄
1998 SQ ₅₄	15.5	0.15	19980904	42.03253	67.90507	228.91920	2.40864	0.1768045	2.4594843	24	1	13 days	0.58	Williams	1998 SQ ₅₄
1998 SR ₅₄	15.0	0.15	19980924	61.84543	92.30410	188.25744	12.26050	0.1698684	2.6479591	21	1	29 days	0.79	Williams	1998 SR ₅₄
1998 SS ₅₄	13.5	0.15	19980924	231.15022	131.00178	1.63776	15.91156	0.0272933	3.0409614	28	1	34 days	0.61	Williams	1998 SS ₅₄
1998 SU ₅₄	16.5	0.15	19980904	19.57871	321.88774	2.87644	4.71882	0.1799389	2.2284056	24	1	13 days	0.61	Williams	1998 SU ₅₄
1998 SW ₅₄	15.5	0.15	19980924	37.21918	136.32338	167.55195	3.39666	0.2358595	2.6060488	26	1	33 days	0.74	Williams	1998 SW ₅₄
1998 SX ₅₄	16.0	0.15	19980904	342.43991	209.92854	168.96344	5.29706	0.1871476	2.2226664	23	1	13 days	0.56	Williams	1998 SX ₅₄
1998 SY ₅₄	15.5	0.15	19980924	345.00509	18.74118	6.81839	9.68948	0.2228078	2.6032015	28	1	32 days	0.45	Williams	1998 SY ₅₄
1998 SB ₅₅	16.0	0.15	19980924	2.17457	167.74074	188.90936	1.93103	0.2112668	2.3728124	30	1	33 days	0.63	Williams	1998 SB ₅₅
1998 SD ₅₅	16.0	0.15	19980904	323.40782	223.69199	182.89681	2.61993	0.1954012	2.5069108	21	1	11 days	0.70	Williams	1998 SD ₅₅
1998 SE ₅₅	12.5	0.15	19980904	193.22783	165.21157	0.12173	14.78207	0.0539735	3.2249341	30	1	17 days	0.58	Williams	1998 SE ₅₅
1998 SF ₅₅	16.5	0.15	19980904	15.77384	169.61650	155.07724	2.28781	0.2484089	2.3647521	24	1	13 days	0.71	Williams	1998 SF ₅₅
1998 SG ₅₅	14.5	0.15	19980904	342.38915	231.31327	148.75511	0.90261	0.1659879	3.1097296	23	1	13 days	0.69	Williams	1998 SG ₅₅
1998 SH ₅₅	16.5	0.15	19980924	19.11844	330.86717	353.99761	5.03575	0.2971325	2.2843121	22	1	33 days	0.37	Williams	1998 SH ₅₅
1998 SJ ₅₅	16.0	0.15	19980904	16.58238	156.67598	174.96861	6.63622	0.1365296	2.4032363	23	1	13 days	0.89	Williams	1998 SJ ₅₅
1998 SK ₅₅	16.0	0.15	19980904	305.28564	246.43480	182.66429	2.15464	0.1866334	2.4808982	17	1	11 days	0.73	Williams	1998 SK ₅₅
1998 SL ₅₅	14.5	0.15	19980904	349.23387	200.61282	166.81507	1.14396	0.0462557	2.6387019	22	1	13 days	0.52	Williams	1998 SL ₅₅
1998 SM ₅₅	15.5	0.15	19980904	335.89468	25.75748	3.30842	2.94486	0.1767484	2.7323193	23	1	13 days	0.74	Williams	1998 SM ₅₅
1998 SN ₅₅	15.5	0.15	19980904	313.86554	41.84346	14.85557	3.15938	0.1704397	2.4898055	21	1	11 days	0.76	Williams	1998 SN ₅₅
1998 SO ₅₅	15.0	0.15	19980924	349.83229	15.75927	357.66066	2.72314	0.0947714	2.8079389	22	1	29 days	0.73	Williams	1998 SO ₅₅
1998 SQ ₅₅	15.5	0.15	19980904	337.44903	216.32322	167.13290	0.64557	0.1283052	2.4203424	24	1	13 days	0.61	Williams	1998 SQ ₅₅
1998 SR ₅₅	15.5	0.15	19980924	27.14306	297.85870	30.04306	2.54349	0.0941907	2.7087887	27	1	39 days	0.74	Williams	1998 SR ₅₅
1998 ST ₅₅	16.5	0.15	19980904	358.72736	183.71794	170.34765	2.50744	0.2255462	2.3283098	24	1	13 days	0.66	Williams	1998 ST ₅₅
1998 SU ₅₅	14.0	0.15	19980924	47.80350	297.48509	1.05286	4.77923	0.1548731	3.0938855	30	1	31 days	0.78	Williams	1998 SU ₅₅
1998 SW ₅₅	15.5	0.15	19980924	288.72800	86.35572	354.46729	6.82143	0.1000100	2.2634722	29	1	30 days	0.66	Williams	1998 SW ₅₅
1998 SX ₅₅	14.5	0.15	19980904	267.39966	113.74666	352.29430	13.66011	0.1727811	2.5924605	26	1	13 days	0.72	Williams	1998 SX ₅₅
1998 SY ₅₅	17.0	0.15	19980904	6.01630	161.24530	179.36510	7.12217	0.2179873	2.3128012	16	1	11 days	0.75	Williams	1998 SY ₅₅
1998 SB ₅₆	16.1	0.15	19980924	26.61284	140.18609	175.87411	6.99220	0.2424179	2.2713215	29	1	33 days	0.57	Williams	1998 SB ₅₆
1998 SC ₅₆	15.0	0.15	19980924	322.21103	200.62812	207.69747	3.45339	0.1457838	2.6402946	29	1	30 days	0.56	Williams	1998 SC ₅₆
1998 SD ₅₆	15.5	0.15	19980904	64.60265	290.38282	339.52534	5.34366	0.1627404	2.2064926	26	1	13 days	0.67	Williams	1998 SD ₅₆
1998 SE ₅₆	15.0	0.15	19980904	40.94730	317.46723	349.53573	16.09524	0.0840252	2.5650220	24	1	13 days	0.87	Williams	1998 SE ₅₆
1998 SF ₅₆	16.0	0.15	19980924	9.51403	156.82435	188.49940	3.61358	0.1972948	2.3487376	33	1	30 days	0.61	Williams	1998 SF ₅₆
1998 SG ₅₆	12.9	0.15	19980924	351.30147	22.48350	347.12327	12.23016	0.0211596	3.1792246	40	1	38 days	0.52	Williams	1998 SG ₅₆
1998 SH ₅₆	14.9	0.15	19980924	50.74755	297.12965	358.89228	4.14663	0.1564786	2.5679186	27	1	44 days	0.65	Williams	1998 SH ₅₆
1998 SJ ₅₆	16.0	0.15	19980904	69.91878	275.14611	1.98420	3.82828	0.0800846	2.1899080	15	1	11 days	0.78	Williams	1998 SJ ₅₆
1998 SL ₅₆	14.3	0.15	19980924	41.92453	304.36382	4.81315	9.10152	0.1375479	3.0408832	30	1	30 days	0.73	Williams	1998 SL ₅₆
1998 SM ₅₆	15.0	0.15	19980904	6.45724	347.84079	2.21134	3.71811	0.1363284	3.0929985	15	1	11 days	0.71	Williams	1998 SM ₅₆
1998 SN ₅₆	16.3	0.15	19980924	16.07939	333.18543	0.67197	7.89240	0.2748558	2.5489380	26	1	30 days	0.59	Williams	1998 SN ₅₆
1998 SQ ₅₆	15.5	0.15	19980924	66.89543	180.10033	90.99105	1.42692	0.1774184	2.3454391	26	1	27 days	0.64	Williams	1998 SQ ₅₆
1998 ST ₅₆	15.0	0.15	19980924	46.42626	279.33198	15.02090	2.67912	0.1835866	2.4325024	32	1	35 days	0.48	Williams	1998 ST ₅₆
1998 SV ₅₆	14.0	0.15	19980904	359.79690	224.08043	130.51980	1.33297	0.0692855	2.9851014	23	1	13 days	0.81	Williams	1998 SV ₅₆
1998 SW ₅₆	17.0	0.15	19980924	348.07739	2.25457	16.03462	5.51228	0.2294750	2.3998143	19	1	36 days	0.73	Williams	1998 SW ₅₆
1998 SX ₅₆	15.6	0.15	19980924	328.54813	25.77415	24.46027	3.05604	0.2467630	2.3866119	32	1	33 days	0.48	Williams	1998 SX ₅₆
1998 SY ₅₆	15.0	0.15	19980904	277.67096	299.40301	155.47916	5.35151	0.1659933	2.3540224	29	1	13 days	0.72	Williams	1998 SY ₅₆
1998 SZ ₅₆	14.5	0.15	19980904	314.10820	284.05069	123.59051	3.04408	0.0827487	2.9405792	28	1	13 days	1.06	Williams	1998 SZ ₅₆

1998 NOV. 10

M.P.C. 33113

1998 SB ₅₇	15.0	0.15	19980924	49.45116	281.70353	4.26861	16.14619	0.2255768	3.0613003	18	1	28 days	0.64	Williams	1998 SB ₅₇
1998 SC ₅₇	15.0	0.15	19980924	352.43968	334.45086	37.35857	1.82482	0.2279863	3.1405977	39	1	39 days	0.62	Williams	1998 SC ₅₇
1998 SD ₅₇	16.0	0.15	19980904	25.73367	188.32852	126.75068	2.16499	0.1833025	2.4355245	14	1	10 days	0.71	Williams	1998 SD ₅₇
1998 SE ₅₇	16.0	0.15	19980904	50.97997	263.01803	29.25593	3.92065	0.0971084	2.2683331	31	1	13 days	0.86	Williams	1998 SE ₅₇
1998 SF ₅₇	15.5	0.15	19980904	4.92261	282.76066	60.82902	1.54319	0.2149253	2.4061880	28	1	18 days	0.58	Williams	1998 SF ₅₇
1998 SG ₅₇	14.5	0.15	19980904	305.62334	17.34137	38.98239	2.53360	0.0694368	2.8686135	24	1	13 days	0.85	Williams	1998 SG ₅₇
1998 SJ ₅₇	14.0	0.15	19980904	171.76518	11.91511	169.69179	13.31862	0.0942369	2.5836637	24	1	13 days	0.69	Williams	1998 SJ ₅₇
1998 SK ₅₇	15.5	0.15	19980924	116.27047	219.75807	14.18295	5.46862	0.1005864	2.2212814	33	1	39 days	0.62	Williams	1998 SK ₅₇
1998 SL ₅₇	14.5	0.15	19980904	190.51052	144.16068	22.51713	4.68838	0.1036203	2.3100823	27	1	13 days	0.62	Williams	1998 SL ₅₇
1998 SM ₅₇	14.0	0.15	19980904	296.20402	322.58306	107.23944	3.02957	0.0967276	2.8998698	23	1	10 days	0.67	Williams	1998 SM ₅₇
1998 SO ₅₇	15.0	0.15	19980904	277.75291	20.95961	70.42274	2.40753	0.1186457	2.5800948	29	1	13 days	0.82	Williams	1998 SO ₅₇
1998 SP ₅₇	16.0	0.15	19980904	46.89436	247.19019	47.61446	3.71973	0.1317614	2.3849239	14	1	11 days	0.70	Williams	1998 SP ₅₇
1998 SQ ₅₇	14.5	0.15	19980904	280.68084	12.43273	84.17089	3.33630	0.1779890	3.1104642	15	1	10 days	0.67	Williams	1998 SQ ₅₇
1998 SR ₅₇	17.0	0.15	19980904	30.95247	257.99499	47.61523	2.99115	0.2084434	2.1540809	24	1	13 days	0.77	Williams	1998 SR ₅₇
1998 SS ₅₇	15.5	0.15	19980904	309.26784	349.69157	71.93453	3.07574	0.1563544	2.6027026	14	1	10 days	0.63	Williams	1998 SS ₅₇
1998 ST ₅₇	16.0	0.15	19980904	30.02997	210.81307	100.73754	2.25845	0.1866145	2.4901639	23	1	13 days	0.93	Williams	1998 ST ₅₇
1998 SW ₅₇	14.5	0.15	19980904	269.59806	75.11284	32.23437	6.18231	0.1703892	2.5714879	23	1	13 days	0.75	Williams	1998 SW ₅₇
1998 SX ₅₇	15.0	0.15	19980904	341.11290	261.55653	117.95878	3.74563	0.0625035	2.8113232	16	1	10 days	0.92	Williams	1998 SX ₅₇
1998 SY ₅₇	13.5	0.15	19980904	38.68948	239.39366	76.43120	3.06695	0.0560768	2.8960446	23	1	13 days	0.47	Williams	1998 SY ₅₇
1998 SZ ₅₇	14.5	0.15	19980904	98.30035	154.69752	85.74513	3.24686	0.1777387	2.3627011	24	1	13 days	0.73	Williams	1998 SZ ₅₇
1998 SA ₅₈	13.5	0.15	19980904	43.10417	287.82218	16.31098	18.04257	0.1242635	3.1872048	24	1	13 days	0.58	Williams	1998 SA ₅₈
1998 SB ₅₈	16.0	0.15	19980924	296.45423	59.05303	25.74535	7.22719	0.1674740	2.3422434	22	1	36 days	0.68	Williams	1998 SB ₅₈
1998 SC ₅₈	13.5	0.15	19980904	56.34636	286.79620	12.93906	23.79893	0.0254343	3.1894688	23	1	13 days	0.79	Williams	1998 SC ₅₈
1998 SJ ₅₈	14.7	0.15	19980924	233.09973	120.23052	20.50048	1.59474	0.1133917	2.4033204	18	1	27 days	0.68	Williams	1998 SJ ₅₈
1998 SK ₅₈	15.5	0.15	19980904	20.25918	323.21437	10.59285	1.71170	0.0979237	2.5286181	16	1	10 days	0.71	E Williams	1998 SK ₅₈
1998 SO ₅₈	15.5	0.15	19980924	26.38393	142.54085	177.44702	13.25167	0.2651646	2.7562898	27	1	33 days	0.66	Williams	1998 SO ₅₈
1998 SP ₅₈	14.5	0.15	19980904	23.48999	159.53784	175.07956	9.53208	0.0695626	2.9670204	24	1	13 days	0.82	Williams	1998 SP ₅₈
1998 SQ ₅₈	13.5	0.15	19980904	54.45225	124.90089	178.85088	15.29863	0.0474615	3.1995852	16	1	10 days	0.58	Williams	1998 SQ ₅₈
1998 SS ₅₈	14.8	0.15	19980924	2.69375	186.62785	176.14161	8.41289	0.0794842	2.6089978	30	1	33 days	0.51	Williams	1998 SS ₅₈
1998 ST ₅₈	15.4	0.15	19990122	83.01680	129.00330	172.61831	3.53513	0.1829231	2.1679170	29	1	73 days	0.51	M-v 5 Williams	1998 ST ₅₈
1998 SU ₅₈	16.5	0.15	19980904	12.19747	159.37356	177.75551	7.56931	0.2271495	2.3595968	23	1	13 days	0.69	Williams	1998 SU ₅₈
1998 SV ₅₈	14.8	0.15	19980924	308.71755	261.45530	174.35078	5.67765	0.1720144	2.6363471	27	1	42 days	0.85	Williams	1998 SV ₅₈
1998 SX ₅₈	16.0	0.15	19980904	13.74121	327.40544	9.16088	4.25873	0.2269787	2.5253196	24	1	13 days	0.65	Williams	1998 SX ₅₈
1998 SY ₅₈	15.7	0.15	19980924	17.55129	314.19585	27.39885	3.05251	0.1646103	2.3247827	20	1	35 days	0.44	Williams	1998 SY ₅₈
1998 SZ ₅₈	15.5	0.15	19980904	17.98632	164.36521	169.58013	4.50929	0.1865351	2.5900427	16	1	10 days	0.56	Williams	1998 SZ ₅₈
1998 SA ₅₉	14.2	0.15	19980924	353.66425	348.39695	27.39869	5.60788	0.1470197	2.7648771	37	1	45 days	0.57	Williams	1998 SA ₅₉
1998 SC ₅₉	15.5	0.15	19980904	324.16687	7.81576	44.94209	3.22086	0.2045581	2.4794131	24	1	13 days	0.80	Williams	1998 SC ₅₉
1998 SD ₅₉	14.5	0.15	19980924	2.20818	201.95945	164.21222	2.24076	0.1056315	2.9310513	19	1	27 days	0.52	Williams	1998 SD ₅₉
1998 SE ₅₉	13.0	0.15	19980904	118.54040	139.43439	99.78117	2.82975	0.0972114	3.2533689	23	1	13 days	0.83	Williams	1998 SE ₅₉
1998 SG ₅₉	15.2	0.15	19980924	332.71670	225.04793	180.33319	10.52373	0.1421225	2.8012042	19	1	30 days	0.58	Williams	1998 SG ₅₉
1998 SH ₅₉	12.5	0.15	19980904	275.88235	26.20345	94.87238	2.63308	0.2605730	3.3063595	16	1	10 days	0.71	Williams	1998 SH ₅₉
1998 SJ ₅₉	16.0	0.15	19980904	346.87978	218.78565	159.43974	5.10056	0.1614496	2.3426567	16	1	10 days	0.51	Williams	1998 SJ ₅₉
1998 SK ₅₉	15.5	0.15	19980924	26.77921	265.04237	62.00388	1.63234	0.2096155	2.3876282	28	1	42 days	0.82	Williams	1998 SK ₅₉
1998 SL ₅₉	16.0	0.15	19980904	59.24067	227.48996	56.82936	2.15467	0.1776363	2.3918453	16	1	10 days	0.61	Williams	1998 SL ₅₉
1998 SM ₅₉	17.0	0.15	19980904	348.13142	212.13672	164.44069	5.06992	0.2029317	2.2576280	16	1	10 days	0.57	Williams	1998 SM ₅₉
1998 SN ₅₉	14.5	0.15	19980904	139.37365	180.67148	41.27676	5.23323	0.0270912	2.3456211	24	1	13 days	0.76	E Williams	1998 SN ₅₉
1998 SO ₅₉	14.1	0.15	19980924	234.64277	117.06206	24.68245	9.81516	0.0809207	2.4404890	30	1	35 days	0.53	Williams	1998 SO ₅₉
1998 SR ₅₉	16.5	0.15	19980904	0.90962	218.25228	141.44766	4.76361	0.1110299	2.1629091	15	1	10 days	0.66	Williams	1998 SR ₅₉
1998 SS ₅₉	14.5	0.15	19980904	3.34914	306.48267	55.00711	7.52279	0.1326979	3.0998975	16	1	10 days	0.53	Williams	1998 SS ₅₉
1998 SW ₅₉	16.0	0.15	19980904	350.68434	225.30425	149.85051	5.85237	0.2478557	2.5201081	16	1	10 days	0.58	Williams	1998 SW ₅₉
1998 SX ₅₉	14.5	0.15	19980904	15.38859	281.37392	56.04247	5.52217	0.2417612	3.0870802	15	1	10 days	0.51	E Williams	1998 SX ₅₉
1998 SA ₆₀	13.9	0.15	19980924	209.24348	49.00350	111.41654	4.02625	0.0476748	2.7303123	27	1	33 days	0.59	Williams	1998 SA ₆₀
1998 SB ₆₀	14.0	0.15	19980904	245.70264	28.58992	97.71435	3.09758	0.0911583	2.5585851	24	1	13 days	0.74	Williams	1998 SB ₆₀

1998 SC ₆₀	13.5	0.15	19980904	222.41642	115.02705	30.72694	9.92291	0.0490419	3.1668857	24	1	13 days	0.74	Williams	1998 SC ₆₀
1998 SD ₆₀	15.5	0.15	19980904	308.64495	351.09571	76.41364	3.14652	0.1552515	2.4414722	22	1	13 days	0.67	Williams	1998 SD ₆₀
1998 SE ₆₀	14.9	0.15	19980924	5.72149	321.24439	38.99024	4.95707	0.1134630	2.6366753	27	1	33 days	0.66	Williams	1998 SE ₆₀
1998 SH ₆₀	16.0	0.15	19980904	0.94681	267.89928	88.20813	1.98911	0.1389710	2.4157043	24	1	13 days	0.84	Williams	1998 SH ₆₀
1998 SK ₆₀	15.9	0.15	19980924	1.04293	349.75092	12.32374	5.77375	0.3176520	2.5622046	27	1	30 days	0.45	Williams	1998 SK ₆₀
1998 SM ₆₀	15.6	0.15	19980924	41.64414	252.10789	51.35601	2.72315	0.2095059	2.3892692	27	1	33 days	0.51	Williams	1998 SM ₆₀
1998 SN ₆₀	14.5	0.15	19980924	6.40945	235.55338	122.40330	2.85760	0.0996611	3.0704183	18	1	30 days	0.48	Williams	1998 SN ₆₀
1998 SO ₆₀	15.0	0.15	19980904	20.64390	205.00620	128.35435	2.33357	0.1377432	2.8790257	24	1	13 days	0.91	Williams	1998 SO ₆₀
1998 SP ₆₀	16.0	0.15	19980904	38.87060	145.19977	158.01814	4.96289	0.1816500	2.3011743	24	1	13 days	0.70	Williams	1998 SP ₆₀
1998 SQ ₆₀	17.0	0.15	19980904	15.18562	304.72341	29.15917	5.57770	0.1928959	2.3411778	15	1	10 days	0.71	Williams	1998 SQ ₆₀
1998 ST ₆₀	14.5	0.15	19980904	14.69736	273.73269	71.40854	3.08611	0.0662021	2.8774201	24	1	13 days	0.72	Williams	1998 ST ₆₀
1998 SU ₆₀	15.8	0.15	19980924	47.89935	244.83532	66.56466	3.12021	0.0670943	2.1523067	27	1	33 days	0.66	Williams	1998 SU ₆₀
1998 SW ₆₀	13.0	0.15	19980904	36.78255	304.13609	9.39455	19.53418	0.1162322	3.2317951	23	1	13 days	0.51	Williams	1998 SW ₆₀
1998 SZ ₆₀	15.5	0.15	19980904	35.94319	141.77600	162.83021	5.50572	0.2024753	2.6178644	23	1	13 days	0.82	Williams	1998 SZ ₆₀
1998 SA ₆₁	14.0	0.15	19980924	330.32779	355.15501	42.80299	2.70228	0.0684851	2.9007283	29	1	30 days	0.82	Williams	1998 SA ₆₁
1998 SB ₆₁	16.0	0.15	19980904	343.11940	210.53540	173.88853	9.14853	0.2351727	2.6901445	16	1	10 days	0.60	Williams	1998 SB ₆₁
1998 SC ₆₁	16.0	0.15	19980904	352.37289	203.01689	163.58897	3.91085	0.1324196	2.3108045	24	1	13 days	0.54	Williams	1998 SC ₆₁
1998 SD ₆₁	15.6	0.15	19980924	18.58138	123.01773	218.22010	11.63470	0.1859990	2.6544544	13	1	31 days	0.46	Williams	1998 SD ₆₁
1998 SL ₆₁	14.5	0.15	19980924	59.44376	25.78475	266.42406	4.70144	0.1831824	2.2901036	19	1	24 days	0.76	Williams	1998 SL ₆₁
1998 SM ₆₁	15.5	0.15	19980904	42.76787	329.56407	330.13598	4.47254	0.2184766	2.3465744	15	1	10 days	0.62	Williams	1998 SM ₆₁
1998 SP ₆₁	13.0	0.15	19980904	203.27391	311.09594	213.12969	12.50030	0.0871674	2.5581496	16	1	10 days	0.78	Williams	1998 SP ₆₁
1998 SQ ₆₁	13.5	0.15	19980904	75.27757	25.06030	248.63388	5.53426	0.1434982	3.2449607	15	1	10 days	0.81	Williams	1998 SQ ₆₁
1998 SR ₆₁	14.1	0.15	19980904	275.20850	117.83230	337.15326	11.22931	0.0412569	2.7868459	20	1	52 days	0.77	Williams	1998 SR ₆₁
1998 SU ₆₁	14.1	0.15	19980924	17.67253	7.28830	340.23571	10.42234	0.1091174	3.0816172	26	1	34 days	0.99	Williams	1998 SU ₆₁
1998 SV ₆₁	14.5	0.15	19980904	232.84384	260.96559	235.30523	6.22902	0.0432841	2.7382340	16	1	10 days	0.73	Williams	1998 SV ₆₁
1998 SB ₆₂	15.5	0.15	19980904	355.25975	46.25403	316.59065	5.94168	0.1364807	2.2717035	15	1	11 days	0.51	Williams	1998 SB ₆₂
1998 SL ₆₂	15.6	0.15	19980924	281.76769	253.82161	201.05092	20.87872	0.0977608	1.9336107	19	1	26 days	0.43	Williams	1998 SL ₆₂
1998 SM ₆₂	14.0	0.15	19980904	13.93785	121.52089	225.14831	11.16615	0.0829406	2.9491219	12	1	6 days	0.74	Williams	1998 SM ₆₂
1998 SP ₆₂	14.5	0.15	19980924	331.55189	22.14994	21.56443	5.86459	0.0583644	2.7551652	24	1	29 days	0.65	Williams	1998 SP ₆₂
1998 SQ ₆₂	15.5	0.15	19980924	319.46585	224.27828	199.26996	10.24160	0.1149762	2.5837488	15	1	25 days	0.48	Williams	1998 SQ ₆₂
1998 SS ₆₂	15.5	0.15	19980924	308.63999	348.50731	86.43197	1.71991	0.1229143	2.5439464	21	1	26 days	0.68	Williams	1998 SS ₆₂
1998 ST ₆₂	13.5	0.15	19980924	152.96101	17.67106	183.66217	13.44968	0.1286438	2.6834502	9	1	12 days	0.25	Williams	1998 ST ₆₂
1998 SV ₆₂	16.0	0.15	19980924	348.22122	181.63155	205.28880	5.71941	0.1274885	2.3268294	21	1	32 days	0.56	Williams	1998 SV ₆₂
1998 SW ₆₂	16.0	0.15	19980924	40.56722	312.67562	8.30549	6.49838	0.1291456	2.3512965	25	1	25 days	0.77	Williams	1998 SW ₆₂
1998 SX ₆₂	13.9	0.15	19980924	319.43684	55.83944	12.93640	12.49379	0.1545695	3.1006110	27	1	39 days	0.72	Williams	1998 SX ₆₂
1998 SY ₆₂	16.0	0.15	19980924	327.74414	216.70771	194.54839	6.40353	0.1220671	2.4207035	9	1	17 days	0.35	Williams	1998 SY ₆₂
1998 SA ₆₃	14.0	0.15	19980924	13.05817	179.18241	180.85733	7.92053	0.0605101	3.2013386	21	1	18 days	0.82	Williams	1998 SA ₆₃
1998 SD ₆₃	14.5	0.15	19980924	330.05505	122.97671	225.71684	6.56690	0.0931365	2.3391743	15	1	27 days	0.33	Williams	1998 SD ₆₃
1998 SE ₆₃	14.3	0.15	19980924	6.75383	142.36235	209.84710	8.62526	0.0966758	3.1624618	24	1	31 days	0.84	Williams	1998 SE ₆₃
1998 SF ₆₃	15.5	0.15	19980904	341.76869	291.30878	85.48063	4.20486	0.1837709	2.2972470	29	1	17 days	0.49	Williams	1998 SF ₆₃
1998 SG ₆₃	17.0	0.15	19980924	350.46704	287.93531	83.48860	4.39674	0.1553708	2.3220929	14	1	6 days	0.72	Williams	1998 SG ₆₃
1998 SH ₆₃	14.5	0.15	19980924	269.47986	110.08246	356.43430	11.27120	0.1238359	2.7379168	15	1	4 days	0.72	Williams	1998 SH ₆₃
1998 SJ ₆₃	14.0	0.15	19981014	354.59255	97.03049	297.32341	3.51920	0.3222084	2.4688976	25	1	43 days	0.36	Williams	1998 SJ ₆₃
1998 SK ₆₃	12.9	0.15	19980924	269.71501	35.13783	79.45940	3.88476	0.1062717	3.0430555	36	1	35 days	0.60	Williams	1998 SK ₆₃
1998 SL ₆₃	15.8	0.15	19980904	359.23012	26.48232	324.80979	6.77119	0.1684470	2.2268525	18	1	17 days	0.28	Williams	1998 SL ₆₃
1998 SN ₆₃	15.1	0.15	19980924	330.03590	206.83720	196.08928	2.37322	0.1774492	2.5717413	25	1	19 days	0.45	Williams	1998 SN ₆₃
1998 SO ₆₃	14.1	0.15	19980924	2.78255	168.02969	190.42415	10.46383	0.0997287	2.9663745	30	1	32 days	0.67	Williams	1998 SO ₆₃
1998 SP ₆₃	17.0	0.15	19980924	1.08222	313.94123	52.14302	3.39032	0.2563861	2.3348988	18	1	19 days	0.50	Williams	1998 SP ₆₃
1998 SQ ₆₃	14.8	0.15	19980924	16.06991	296.74988	56.51110	2.79420	0.0742806	2.3369186	21	1	23 days	0.64	Williams	1998 SQ ₆₃
1998 SS ₆₃	14.5	0.15	19980924	336.59767	50.19785	348.47906	8.74968	0.2107470	2.6198636	22	1	22 days	0.60	Williams	1998 SS ₆₃
1998 ST ₆₃	13.8	0.15	19980924	323.86987	200.96243	211.98883	3.17135	0.2070400	2.6072818	39	1	30 days	0.49	Williams	1998 ST ₆₃
1998 SU ₆₃	16.5	0.15	19980924	344.59489	95.04214	282.49863	12.15555	0.2197987	2.5418583	18	1	34 days	0.26	Williams	1998 SU ₆₃
1998 SV ₆₃	16.0	0.15	19980924	24.70397	301.86636	41.02589	7.33878	0.1626117	2.3464709	18	1	39 days	0.86	Williams	1998 SV ₆₃

1998 NOV. 10

M.P.C. 33115

1998 SX ₆₃	14.5	0.15	19980924	327.76351	351.74419	72.50665	5.76662	0.1534071	3.0670580	18	1	39 days	0.96		Williams	1998 SX ₆₃
1998 SY ₆₃	13.5	0.15	19980904	224.36028	113.19146	51.86636	7.65603	0.1913937	2.2989176	12	1	3 days	0.83	E	Marsden	1998 SY ₆₃
1998 SZ ₆₃	16.5	0.15	19980924	7.38828	336.12701	28.07539	10.36977	0.1967418	2.2164182	20	1	39 days	1.07		Williams	1998 SZ ₆₃
1998 SA ₆₄	14.8	0.15	19980924	96.86929	102.50525	179.00855	8.78276	0.0219941	2.4674360	12	1	30 days	0.44		Williams	1998 SA ₆₄
1998 SL ₆₄	14.5	0.15	19980924	176.84532	94.55198	108.37685	4.52391	0.0685391	2.2867858	15	1	39 days	0.85		Williams	1998 SL ₆₄
1998 SM ₆₄	13.4	0.15	19980924	305.25499	280.28542	188.37576	21.53955	0.2783960	3.1577575	12	1	30 days	0.53		Williams	1998 SM ₆₄
1998 SN ₆₄	14.1	0.15	19980924	41.14741	133.11853	187.12279	12.17502	0.2028250	2.5557780	12	1	30 days	0.59		Williams	1998 SN ₆₄
1998 SO ₆₄	14.8	0.15	19980924	46.98415	125.43042	188.97436	12.53709	0.1942369	2.5787104	18	1	30 days	1.38		Williams	1998 SO ₆₄
1998 SW ₆₄	14.6	0.15	19980924	34.31606	167.98753	167.85381	8.99869	0.1568635	3.1145468	12	1	30 days	0.55		Williams	1998 SW ₆₄
1998 SK ₆₅	14.0	0.15	19980924	62.61590	152.39844	146.61646	5.20219	0.1817159	2.7327871	12	1	30 days	0.48		Williams	1998 SK ₆₅
1998 SP ₆₅	16.2	0.15	19980924	34.92124	235.97116	89.01966	4.52100	0.2089243	2.2626439	12	1	30 days	3.01		Williams	1998 SP ₆₅
1998 SS ₆₅	15.2	0.15	19980924	5.39967	238.08976	130.69242	3.74720	0.2472895	2.5936700	12	1	30 days	0.35		Williams	1998 SS ₆₅
1998 SA ₆₆	15.9	0.15	19980924	47.42992	173.26947	134.05315	4.19046	0.2343471	2.3166140	12	1	30 days	0.60		Williams	1998 SA ₆₆
1998 SB ₆₆	14.9	0.15	19980924	26.23592	258.55139	78.06911	4.99827	0.2347153	2.5787169	12	1	30 days	0.52		Williams	1998 SB ₆₆
1998 SP ₆₆	15.1	0.15	19980924	93.23667	200.05894	67.97041	6.38593	0.1718194	2.1882789	12	1	30 days	0.74		Williams	1998 SP ₆₆
1998 SH ₆₇	15.0	0.15	19980924	48.16004	146.50475	169.32704	5.82412	0.1730089	2.3425018	13	1	21 days	0.71		Williams	1998 SH ₆₇
1998 SQ ₆₇	16.1	0.15	19980924	5.18532	338.78308	27.59305	13.74556	0.2908306	2.3598977	33	1	39 days	0.73		Williams	1998 SQ ₆₇
1998 SU ₆₇	14.0	0.15	19980924	226.92460	90.07104	78.92874	6.92539	0.1496841	2.6127724	9	1	21 days	0.68		Williams	1998 SU ₆₇
1998 SJ ₇₀	18.5	0.15	19990122	56.30968	244.29558	23.91115	7.43571	0.7053236	2.2355890	78	1	33 days	0.70	M-v 6	Williams	1998 SJ ₇₀
1998 SO ₇₀	15.5	0.15	19980924	298.45554	281.71264	178.87788	7.38475	0.2043212	2.3218290	29	1	32 days	1.68		Williams	1998 SO ₇₀
1998 SQ ₇₀	13.5	0.15	19980924	5.00662	235.31137	137.30622	2.41004	0.0961503	2.9824843	16	1	38 days	0.88		Williams	1998 SQ ₇₀
1998 SR ₇₀	14.0	0.15	19980904	23.82690	309.19176	30.71447	8.51058	0.1771046	3.1674591	19	1	9 days	0.76		Williams	1998 SR ₇₀
1998 SY ₇₀	13.5	0.15	19980924	252.81934	314.19107	181.32654	9.35552	0.0759452	3.0023149	15	1	6 days	1.05		Williams	1998 SY ₇₀
1998 SA ₇₁	14.2	0.15	19980924	282.11258	287.50161	183.49301	9.52468	0.1274349	2.5577460	22	1	29 days	1.24		Williams	1998 SA ₇₁
1998 SD ₇₁	15.7	0.15	19980924	329.59501	333.64893	74.25016	2.12573	0.0229220	2.1342025	12	1	6 days	0.84	E	Williams	1998 SD ₇₁
1998 SE ₇₁	14.5	0.15	19980924	308.54982	273.62070	180.25623	6.71932	0.2306787	2.6631741	15	1	6 days	1.70	E	Williams	1998 SE ₇₁
1998 SF ₇₁	17.0	0.15	19980924	51.68588	15.34508	296.44813	2.05600	0.1469853	2.2208295	12	1	26 days	0.52		Williams	1998 SF ₇₁
1998 SG ₇₁	14.5	0.15	19980924	15.31767	309.52602	48.55096	5.02594	0.1235677	2.7408710	16	1	6 days	0.80	E	Williams	1998 SG ₇₁
1998 SH ₇₁	15.2	0.15	19980924	338.72838	261.47278	144.21386	2.88869	0.1678616	2.3914555	26	1	29 days	1.05		Williams	1998 SH ₇₁
1998 SJ ₇₁	15.5	0.15	19980924	17.04713	323.20344	24.70315	6.73452	0.2152277	2.3072165	16	1	6 days	0.52		Williams	1998 SJ ₇₁
1998 SL ₇₁	14.5	0.15	19980904	307.36504	312.55350	157.11262	2.43704	0.3620940	3.1871645	18	1	9 days	1.14		Marsden	1998 SL ₇₁
1998 SM ₇₁	14.5	0.15	19980924	312.26800	54.14361	42.17351	7.33707	0.2807788	3.0815970	15	1	6 days	0.87	E	Williams	1998 SM ₇₁
1998 SN ₇₁	13.5	0.15	19980924	31.76290	261.02793	85.10539	3.22043	0.0293648	2.9077408	17	1	20 days	0.85		Williams	1998 SN ₇₁
1998 ST ₇₁	16.0	0.15	19980924	23.06222	285.54433	50.50794	3.69126	0.2494720	2.3728333	16	1	6 days	0.99	E	Williams	1998 ST ₇₁
1998 SW ₇₁	13.7	0.15	19980924	1.15461	188.39954	190.51564	14.50966	0.1235139	3.1412219	22	1	29 days	1.47		Williams	1998 SW ₇₁
1998 SX ₇₁	15.0	0.15	19980924	53.04062	256.14945	45.56844	3.40446	0.2221295	2.6051418	14	1	6 days	0.73	E	Williams	1998 SX ₇₁
1998 SC ₇₂	14.0	0.15	19980904	251.77648	110.30309	36.14231	5.64232	0.2336971	2.3613229	12	1	5 days	1.16	E	Marsden	1998 SC ₇₂
1998 SF ₇₂	14.5	0.15	19980924	42.73096	161.59198	153.16153	4.33908	0.2311138	3.0117368	15	1	6 days	1.69	E	Williams	1998 SF ₇₂
1998 SH ₇₂	15.0	0.15	19980924	351.15848	347.19300	42.43187	3.19696	0.1998855	2.3987316	16	1	6 days	0.53	E	Williams	1998 SH ₇₂
1998 SK ₇₂	15.5	0.15	19980924	36.56757	264.78840	58.19042	3.39563	0.2092304	2.4708147	15	1	6 days	0.85	E	Williams	1998 SK ₇₂
1998 SQ ₇₂	14.5	0.15	19980924	27.37714	147.00135	189.28220	13.24142	0.2144409	2.5697075	15	1	23 days	1.37		Williams	1998 SQ ₇₂
1998 SF ₇₃	15.5	0.15	19980924	15.89092	319.10105	28.94971	13.21298	0.2595532	2.9612619	14	1	6 days	0.78		Williams	1998 SF ₇₃
1998 SG ₇₃	15.2	0.15	19980924	300.14350	300.44428	160.64098	4.52236	0.2158484	2.6080409	12	1	29 days	0.59		Williams	1998 SG ₇₃
1998 SH ₇₃	15.1	0.15	19980924	346.75709	299.87327	94.39309	2.31696	0.1931337	2.3851564	34	1	23 days	0.75		Williams	1998 SH ₇₃
1998 SK ₇₃	15.0	0.15	19980924	55.00713	171.85727	147.28305	4.44293	0.0213230	2.2564249	14	1	6 days	1.08		Williams	1998 SK ₇₃
1998 SN ₇₃	15.5	0.15	19980924	333.86961	335.01618	70.97567	2.44072	0.0734403	2.2309449	16	1	6 days	1.61	E	Williams	1998 SN ₇₃
1998 SP ₇₃	14.4	0.15	19980924	29.22277	303.74627	27.24979	17.70260	0.2348950	3.0817808	21	1	23 days	1.30		Williams	1998 SP ₇₃
1998 SQ ₇₃	13.5	0.15	19980924	103.72130	233.13125	33.26686	15.06950	0.0892012	3.0581192	28	1	20 days	0.99		Williams	1998 SQ ₇₃
1998 SR ₇₃	13.8	0.15	19980924	50.24649	132.39074	171.07680	8.96966	0.2417002	3.1545152	22	1	29 days	0.84		Williams	1998 SR ₇₃
1998 SU ₇₃	14.4	0.15	19980924	39.72487	266.02876	52.76429	4.24585	0.1922136	2.3256664	36	1	23 days	0.73		Williams	1998 SU ₇₃
1998 SX ₇₃	16.0	0.15	19980924	318.88947	345.05149	88.08988	3.20079	0.1679804	2.5742891	12	1	29 days	0.68		Williams	1998 SX ₇₃
1998 SZ ₇₃	14.0	0.15	19980924	52.58624	252.05272	38.76513	11.00910	0.3155432	3.0464187	23	1	11 days	1.17		Williams	1998 SZ ₇₃
1998 SA ₇₄	14.2	0.15	19980924	48.21077	275.34494	49.63223	6.54566	0.0542029	2.5563638	31	1	23 days	0.83		Williams	1998 SA ₇₄

1998 SC ₇₄	16.1	0.15	19980924	332.98615	332.42249	83.48252	3.27441	0.1988961	2.4158213	20	1	29 days	1.45	Williams	1998 SC ₇₄
1998 SF ₇₄	15.7	0.15	19980924	317.79176	303.96340	133.91076	3.06889	0.2056787	2.3920915	12	1	29 days	0.53	Williams	1998 SF ₇₄
1998 SH ₇₄	15.3	0.15	19980904	324.37988	4.29562	57.50313	4.97459	0.2006719	2.5126029	19	1	9 days	0.64	Williams	1998 SH ₇₄
1998 SJ ₇₄	14.6	0.15	19980924	20.61672	266.99739	86.08211	4.02211	0.0981677	2.6787753	22	1	29 days	0.53	Williams	1998 SJ ₇₄
1998 SM ₇₄	14.5	0.15	19980924	303.87369	328.56145	123.07063	3.32808	0.1693613	2.4010183	25	1	32 days	0.74	Williams	1998 SM ₇₄
1998 SN ₇₄	13.8	0.15	19980924	237.78831	48.91940	96.33749	4.79245	0.0355651	2.7325983	24	1	32 days	0.61	Williams	1998 SN ₇₄
1998 SO ₇₄	15.4	0.15	19980924	356.80477	216.94712	165.04729	5.98568	0.2638555	2.7296380	25	1	32 days	0.81	Williams	1998 SO ₇₄
1998 SQ ₇₄	14.3	0.15	19980904	44.28533	233.16230	81.61928	4.19809	0.1691708	2.9257965	19	1	9 days	0.71	Williams	1998 SQ ₇₄
1998 SR ₇₄	13.8	0.15	19980904	270.83727	88.93918	44.70210	8.72410	0.2606565	2.6243069	19	1	9 days	0.76	E Williams	1998 SR ₇₄
1998 ST ₇₄	15.2	0.15	19980924	70.56956	191.10834	87.56876	3.20517	0.2469309	2.2995998	21	1	29 days	0.72	Williams	1998 ST ₇₄
1998 SU ₇₄	14.1	0.15	19980924	154.20118	154.75471	64.80316	5.76099	0.1436965	2.4435019	25	1	32 days	0.87	Williams	1998 SU ₇₄
1998 SV ₇₄	14.0	0.15	19980924	343.55773	346.03604	55.64723	5.82698	0.1336402	3.1136394	19	1	20 days	0.76	Williams	1998 SV ₇₄
1998 SY ₇₄	14.3	0.15	19980924	50.88043	221.88323	82.91414	4.27166	0.2190743	2.6434114	25	1	32 days	0.89	Williams	1998 SY ₇₄
1998 SZ ₇₄	15.1	0.15	19980924	37.91658	202.56674	120.08778	3.44372	0.2053681	2.6627156	21	1	38 days	0.98	Williams	1998 SZ ₇₄
1998 SA ₇₅	14.9	0.15	19980924	358.34628	291.13368	89.43351	4.92712	0.1144416	2.6961478	24	1	32 days	0.82	Williams	1998 SA ₇₅
1998 SJ ₇₅	15.5	0.15	19980924	320.45120	49.88208	34.54654	15.40931	0.2850923	2.7396592	18	1	38 days	0.83	Williams	1998 SJ ₇₅
1998 SK ₇₅	14.3	0.15	19980904	162.49974	78.67505	132.54387	4.98100	0.0618998	2.4815756	19	1	9 days	0.71	Williams	1998 SK ₇₅
1998 SL ₇₅	15.1	0.15	19980924	38.81867	222.94757	98.54724	3.61191	0.2085359	2.6628729	12	1	29 days	0.56	Williams	1998 SL ₇₅
1998 SV ₇₅	15.5	0.15	19980924	10.65866	316.00246	41.55885	5.50462	0.2260536	2.5440264	35	1	33 days	0.91	Williams	1998 SV ₇₅
1998 SX ₇₅	14.4	0.15	19980924	80.09153	131.41741	149.55092	3.77131	0.1507481	2.5443424	27	1	27 days	1.13	Williams	1998 SX ₇₅
1998 SY ₇₅	16.0	0.15	19980924	306.49007	64.23789	352.71125	4.34103	0.0904517	2.3245354	9	1	34 days	0.47	Williams	1998 SY ₇₅
1998 SW ₇₇	16.0	0.15	19980924	317.51157	256.45702	178.73836	8.36163	0.1684617	2.3848978	17	1	33 days	0.87	Williams	1998 SW ₇₇
1998 SF ₇₉	14.3	0.15	19980924	31.04557	288.56986	27.81687	10.48520	0.1280204	3.0230548	13	1	16 days	0.80	Williams	1998 SF ₇₉
1998 SQ ₇₉	16.0	0.15	19980924	19.19995	325.14714	6.57482	14.51088	0.1609867	2.6001040	16	1	23 days	0.64	Williams	1998 SQ ₇₉
1998 SS ₇₉	14.5	0.15	19980924	271.27890	95.15103	5.57901	12.21917	0.1158113	3.0998189	16	1	23 days	0.65	Williams	1998 SS ₇₉
1998 SU ₇₉	15.5	0.15	19980924	336.97845	7.86708	20.68316	2.12150	0.1261276	2.9938956	15	1	27 days	0.77	Williams	1998 SU ₇₉
1998 SC ₈₀	15.0	0.15	19980924	317.76890	115.46138	302.59661	3.65368	0.1642178	2.6272559	15	1	22 days	0.79	Williams	1998 SC ₈₀
1998 SY ₈₀	14.5	0.15	19980924	255.05155	152.96058	337.82500	5.02377	0.2350996	2.4020986	19	1	23 days	0.97	Williams	1998 SY ₈₀
1998 SC ₈₁	15.5	0.15	19980924	355.42239	122.70792	245.17877	1.59588	0.2027093	2.7184429	22	1	22 days	0.37	Williams	1998 SC ₈₁
1998 SF ₈₁	14.0	0.15	19980924	49.57349	310.17795	355.33465	9.76436	0.0637345	2.9794729	19	1	22 days	0.50	Williams	1998 SF ₈₁
1998 SL ₈₁	18.0	0.15	19980924	327.81418	279.94385	128.75712	0.80049	0.2071928	2.1031078	12	1	23 days	0.86	Williams	1998 SL ₈₁
1998 SQ ₈₁	14.0	0.15	19980924	313.23356	249.29697	163.47135	2.31292	0.0578050	2.8673773	40	1	25 days	1.25	Williams	1998 SQ ₈₁
1998 SR ₈₁	16.5	0.15	19980924	9.97433	165.09830	182.80909	10.40375	0.1322006	2.5412049	16	1	27 days	0.93	Williams	1998 SR ₈₁
1998 SN ₈₃	16.0	0.15	19980924	51.04137	300.02220	2.14701	5.80854	0.1004847	2.4293309	15	1	28 days	0.69	Williams	1998 SN ₈₃
1998 SE ₈₄	15.5	0.15	19980924	37.33761	135.54816	166.17984	4.94721	0.2517636	3.2217347	18	1	27 days	0.68	Williams	1998 SE ₈₄
1998 SF ₈₅	15.0	0.15	19980924	352.07354	355.25490	17.24179	11.98114	0.1653071	3.1651113	13	1	27 days	0.54	Williams	1998 SF ₈₅
1998 ST ₈₆	15.5	0.15	19980924	359.61092	34.90807	332.04774	4.27686	0.1869585	3.1564008	13	1	18 days	0.72	Williams	1998 ST ₈₆
1998 SZ ₈₆	14.4	0.15	19980924	23.08383	124.84185	213.75293	9.45044	0.1140244	3.0381159	12	1	18 days	0.75	Williams	1998 SZ ₈₆
1998 SD ₈₇	14.1	0.15	19980924	359.20097	133.33337	235.63974	7.96183	0.0797662	3.1318192	11	1	18 days	0.92	Williams	1998 SD ₈₇
1998 SE ₈₇	15.1	0.15	19980924	3.83189	117.05076	242.85709	5.64673	0.2647546	2.7719772	22	1	33 days	0.68	Williams	1998 SE ₈₇
1998 SG ₈₇	15.5	0.15	19980924	352.28037	135.95368	245.64943	4.54380	0.2931542	2.6450466	18	1	33 days	0.82	Williams	1998 SG ₈₇
1998 SM ₉₁	14.5	0.15	19980924	233.53973	188.36205	313.16243	4.83070	0.0603313	2.3645561	16	1	33 days	0.79	Williams	1998 SM ₉₁
1998 SR ₉₁	15.5	0.15	19980924	337.79125	78.26324	320.08958	4.17677	0.1500325	2.3775696	21	1	33 days	0.75	Williams	1998 SR ₉₁
1998 SZ ₉₁	15.2	0.15	19980924	352.83929	26.60455	352.58850	9.09900	0.2205773	2.7665308	18	1	16 days	0.87	Williams	1998 SZ ₉₁
1998 SK ₉₂	16.4	0.15	19980924	0.38181	140.14810	226.14139	2.39030	0.1737876	2.2403373	13	1	18 days	0.37	Williams	1998 SK ₉₂
1998 SV ₉₄	14.0	0.15	19980924	160.02991	171.33291	25.23903	9.90649	0.1922393	2.4444318	13	1	21 days	0.75	Williams	1998 SV ₉₄
1998 SE ₉₈	14.0	0.15	19980924	334.07385	211.93978	184.56471	13.46881	0.0760916	3.1282272	12	1	18 days	0.55	Williams	1998 SE ₉₈
1998 SX ₉₉	16.6	0.15	19980924	332.41880	141.47499	271.18365	3.24993	0.2271720	2.5565396	15	1	18 days	0.84	Williams	1998 SX ₉₉
1998 SC ₁₀₀	15.5	0.15	19980924	335.07027	127.28173	274.93190	4.38884	0.1276107	2.2765397	11	1	15 days	0.57	Williams	1998 SC ₁₀₀
1998 SK ₁₀₀	14.0	0.15	19980924	40.76258	20.98413	305.81167	4.37999	0.0587177	2.4078938	23	1	33 days	0.56	Williams	1998 SK ₁₀₀
1998 SN ₁₀₀	15.5	0.15	19980924	23.78516	22.03329	312.93241	3.23346	0.1904731	2.2038113	21	1	33 days	0.58	Williams	1998 SN ₁₀₀
1998 SO ₁₀₀	15.0	0.15	19980924	266.84053	124.67168	351.41614	8.01370	0.0922699	2.4179389	12	1	15 days	0.66	Williams	1998 SO ₁₀₀
1998 SA ₁₀₁	15.0	0.15	19980924	99.31660	268.78612	341.55801	6.13031	0.2036696	2.2047903	16	1	18 days	0.48	Williams	1998 SA ₁₀₁

1998 NOV. 10

M.P.C. 33117

1998 SH ₁₀₁	16.6	0.15	19980924	9.80954	146.36847	206.51779	5.27889	0.2469707	2.8118082	13	1	18 days	0.92	Williams	1998 SH ₁₀₁
1998 SO ₁₀₁	16.5	0.15	19980924	314.88455	75.76261	352.37134	2.27146	0.1503358	2.2856200	14	1	21 days	0.52	Williams	1998 SO ₁₀₁
1998 SP ₁₀₁	16.3	0.15	19980924	358.75404	17.08157	352.41393	2.32421	0.1864365	2.3619608	13	1	18 days	0.35	Williams	1998 SP ₁₀₁
1998 SX ₁₀₁	15.9	0.15	19980924	28.91706	307.42692	11.56328	4.18657	0.2595046	2.3471919	16	1	23 days	0.35	Williams	1998 SX ₁₀₁
1998 SG ₁₀₂	15.5	0.15	19980924	10.10683	329.78639	28.36947	3.03979	0.0527326	2.6129318	12	1	18 days	0.49	Williams	1998 SG ₁₀₂
1998 SC ₁₀₃	15.8	0.15	19980924	298.66252	39.33944	34.12877	3.46247	0.0552343	2.2825908	16	1	23 days	0.51	Williams	1998 SC ₁₀₃
1998 SU ₁₀₅	16.4	0.15	19980924	4.78543	231.21825	127.67533	1.70181	0.2170426	2.2991849	14	1	8 days	0.41	Nakano	1998 SU ₁₀₅
1998 SH ₁₀₆	13.8	0.15	19980924	17.82768	320.45022	22.66327	11.52631	0.1982716	3.1952880	16	1	23 days	0.50	Williams	1998 SH ₁₀₆
1998 SJ ₁₀₆	15.9	0.15	19980924	1.20647	185.40145	181.79030	12.13498	0.2318487	2.7405641	21	1	23 days	0.54	Williams	1998 SJ ₁₀₆
1998 SM ₁₀₆	15.1	0.15	19980924	256.91836	108.47365	20.50221	5.13503	0.1563855	2.2139960	16	1	23 days	0.61	Williams	1998 SM ₁₀₆
1998 SO ₁₀₆	16.4	0.15	19980924	14.19525	167.41257	178.56518	5.32485	0.2036981	2.2242904	16	1	23 days	0.66	Williams	1998 SO ₁₀₆
1998 SU ₁₀₆	15.7	0.15	19980924	55.58105	99.79665	196.27129	2.24739	0.1673261	2.3232102	16	1	23 days	0.68	Williams	1998 SU ₁₀₆
1998 SY ₁₀₆	15.0	0.15	19980924	293.65117	76.29254	10.02976	6.52584	0.0882540	2.3863656	18	1	33 days	0.80	Williams	1998 SY ₁₀₆
1998 SA ₁₀₇	15.4	0.15	19980924	38.07097	115.92440	193.56502	3.16311	0.2403041	2.3522022	19	1	22 days	0.31	Williams	1998 SA ₁₀₇
1998 SJ ₁₀₇	16.0	0.15	19980924	48.98711	100.71585	201.19166	2.95221	0.1944677	2.5774649	13	1	21 days	0.76	Williams	1998 SJ ₁₀₇
1998 SK ₁₀₇	16.8	0.15	19980924	344.16647	202.21244	192.84755	5.56321	0.2524945	2.2866411	16	1	23 days	0.53	Williams	1998 SK ₁₀₇
1998 SR ₁₀₇	14.5	0.15	19980924	196.41635	186.34383	351.01742	3.89547	0.0758743	2.2745835	13	1	15 days	0.46	Williams	1998 SR ₁₀₇
1998 SX ₁₀₇	14.0	0.15	19980924	336.26984	46.67156	352.98369	6.11187	0.0745948	2.7926519	19	1	33 days	0.68	Williams	1998 SX ₁₀₇
1998 SJ ₁₀₈	14.0	0.15	19980924	6.19076	11.20210	353.35175	6.69662	0.1583665	3.1751693	19	1	33 days	0.90	Williams	1998 SJ ₁₀₈
1998 SK ₁₀₈	15.5	0.15	19980924	266.89721	239.21072	228.77628	4.10134	0.0288013	2.1567417	18	1	33 days	0.70	Williams	1998 SK ₁₀₈
1998 SL ₁₀₈	15.5	0.15	19980924	301.23066	211.27239	237.17115	3.45461	0.1595496	2.5894583	16	1	22 days	0.61	Williams	1998 SL ₁₀₈
1998 SQ ₁₀₈	12.5	0.15	19980924	58.51065	329.46276	329.86594	4.58697	0.1541704	3.1571211	23	1	33 days	0.43	Williams	1998 SQ ₁₀₈
1998 SU ₁₀₈	15.0	0.15	19980924	9.43166	61.58977	297.69018	3.12411	0.1535275	2.5932940	21	1	33 days	0.83	Williams	1998 SU ₁₀₈
1998 SZ ₁₀₈	16.5	0.15	19980924	19.33689	118.77657	224.25452	5.63920	0.1734944	2.2471581	13	1	15 days	0.65	Williams	1998 SZ ₁₀₈
1998 SP ₁₀₉	15.3	0.15	19980924	345.06124	153.68024	236.83057	6.23317	0.1044325	2.2617068	21	1	33 days	0.90	Williams	1998 SP ₁₀₉
1998 SQ ₁₀₉	14.3	0.15	19980924	321.20825	179.95678	248.16072	5.65415	0.1894992	2.5301844	19	1	20 days	0.54	Williams	1998 SQ ₁₀₉
1998 SJ ₁₁₀	15.5	0.15	19980924	325.92077	175.81927	247.14933	2.87760	0.2162886	2.3344241	24	1	22 days	0.26	Marsden	1998 SJ ₁₁₀
1998 SP ₁₁₀	16.0	0.15	19980924	352.58058	170.61013	210.34492	6.99943	0.1232828	2.3159753	26	1	33 days	0.82	Williams	1998 SP ₁₁₀
1998 SS ₁₁₀	15.5	0.15	19980924	32.52064	75.34494	245.44194	2.35935	0.2409757	2.6176278	24	1	29 days	0.72	Williams	1998 SS ₁₁₀
1998 ST ₁₁₀	14.0	0.15	19980924	132.03458	7.91060	229.41404	2.49978	0.0574658	2.6923539	18	1	23 days	0.51	Williams	1998 ST ₁₁₀
1998 SU ₁₁₀	16.0	0.15	19980924	311.20344	204.43793	226.85730	1.92040	0.1053257	2.4269227	14	1	23 days	0.66	Williams	1998 SU ₁₁₀
1998 SV ₁₁₀	15.0	0.15	19980924	266.04179	113.86245	2.52019	6.86434	0.0822553	2.3001710	19	1	26 days	0.76	D Williams	1998 SV ₁₁₀
1998 SE ₁₁₁	15.5	0.15	19980924	327.33964	198.63822	219.16385	1.79990	0.1944950	2.3809804	16	1	22 days	0.42	Williams	1998 SE ₁₁₁
1998 SF ₁₁₁	16.0	0.15	19980924	12.77483	112.32618	235.71099	1.12300	0.2404767	2.3783948	11	1	22 days	0.29	Williams	1998 SF ₁₁₁
1998 SK ₁₁₁	15.4	0.15	19980924	340.09722	49.91477	346.15015	1.26472	0.1041500	2.7757569	15	1	18 days	3.39	Williams	1998 SK ₁₁₁
1998 SQ ₁₁₁	16.1	0.15	19980924	359.18741	352.67302	17.83165	8.09078	0.1495010	2.2716163	21	1	33 days	0.76	Williams	1998 SQ ₁₁₁
1998 SX ₁₁₁	13.9	0.15	19980924	18.83159	176.15857	167.99405	8.10588	0.1629598	3.1963230	19	1	33 days	0.84	Williams	1998 SX ₁₁₁
1998 SY ₁₁₁	13.2	0.15	19980924	273.18756	27.29432	76.55493	3.39840	0.0477085	3.4087643	16	1	23 days	0.48	Williams	1998 SY ₁₁₁
1998 SA ₁₁₂	14.0	0.15	19980924	308.19669	281.67458	155.75862	5.95376	0.1450481	3.1802287	16	1	23 days	0.69	Williams	1998 SA ₁₁₂
1998 SC ₁₁₂	14.7	0.15	19980924	180.78337	151.60712	37.94580	6.99099	0.0633114	2.4114394	16	1	23 days	0.52	Williams	1998 SC ₁₁₂
1998 SD ₁₁₂	15.7	0.15	19980924	359.66422	239.75570	129.41449	2.90422	0.1860885	2.3984145	15	1	23 days	0.50	Williams	1998 SD ₁₁₂
1998 SE ₁₁₂	16.2	0.15	19980924	33.60992	189.04496	122.21016	2.32615	0.2736414	2.2431885	16	1	23 days	0.51	Williams	1998 SE ₁₁₂
1998 SH ₁₁₃	15.5	0.15	19980924	333.29136	327.51641	84.80541	4.32070	0.2713531	2.6290778	19	1	33 days	0.88	Williams	1998 SH ₁₁₃
1998 SS ₁₁₃	16.0	0.15	19980924	356.25813	218.31623	154.64005	5.17251	0.2432238	2.3533454	21	1	33 days	0.71	Williams	1998 SS ₁₁₃
1998 SA ₁₁₄	15.6	0.15	19980924	29.71355	294.25009	24.38746	13.51754	0.2595574	2.6755287	16	1	23 days	0.66	Williams	1998 SA ₁₁₄
1998 SC ₁₁₄	16.5	0.15	19980924	359.61445	299.68505	68.48503	3.52873	0.2490806	2.3618514	16	1	23 days	0.48	Williams	1998 SC ₁₁₄
1998 SR ₁₁₄	15.4	0.15	19980924	67.61748	170.17044	117.73791	3.01010	0.1341364	2.2527336	15	1	21 days	0.59	Williams	1998 SR ₁₁₄
1998 SV ₁₁₄	14.5	0.15	19980924	355.72011	257.18528	121.55917	1.91671	0.1846915	3.1714331	16	1	23 days	0.53	Williams	1998 SV ₁₁₄
1998 SF ₁₁₅	14.5	0.15	19980924	2.57527	353.73460	14.78456	9.72989	0.1547763	2.7232071	21	1	32 days	0.74	Williams	1998 SF ₁₁₅
1998 SJ ₁₁₅	14.0	0.15	19980924	324.40045	102.66802	314.88274	1.00932	0.1041303	2.9476492	18	1	24 days	0.59	Williams	1998 SJ ₁₁₅
1998 SK ₁₁₅	13.5	0.15	19980924	269.54042	106.78271	12.92910	12.68299	0.1329985	2.6599632	20	1	32 days	0.48	Williams	1998 SK ₁₁₅
1998 SM ₁₁₅	13.5	0.15	19980924	305.89656	112.73735	336.42521	0.39884	0.1885520	3.1462233	18	1	31 days	0.55	Williams	1998 SM ₁₁₅
1998 SN ₁₁₅	15.5	0.15	19980924	48.43169	298.02396	13.67676	14.40994	0.1421314	2.6030918	15	1	24 days	0.68	Williams	1998 SN ₁₁₅

1998 SP ₁₁₅	13.5	0.15	19980924	13.27991	68.59149	283.32791	1.47241	0.2305389	3.0542932	22	1	24 days	0.67	Williams	1998 SP ₁₁₅
1998 SR ₁₁₅	13.5	0.15	19980924	324.67504	52.67801	5.89831	12.19020	0.1112597	2.8617494	23	1	33 days	0.46	Williams	1998 SR ₁₁₅
1998 SU ₁₁₅	17.0	0.15	19980924	21.70932	353.76337	342.67788	2.43260	0.2299402	2.3055709	18	1	24 days	0.62	Williams	1998 SU ₁₁₅
1998 SW ₁₁₅	15.0	0.15	19980924	119.87085	312.24036	290.95589	1.68876	0.1316641	2.4091242	14	1	24 days	0.51	Williams	1998 SW ₁₁₅
1998 SX ₁₁₅	15.0	0.15	19980924	237.22636	158.82962	342.84990	2.60019	0.0413440	2.5234492	15	1	24 days	0.57	Williams	1998 SX ₁₁₅
1998 SZ ₁₁₅	13.5	0.15	19980924	121.13675	21.65274	226.19255	4.57997	0.0911337	3.2180614	16	1	26 days	0.46	Williams	1998 SZ ₁₁₅
1998 SB ₁₁₆	14.0	0.15	19980924	351.48521	170.15230	217.70506	5.41382	0.2321372	3.0920736	26	1	33 days	0.70	Williams	1998 SB ₁₁₆
1998 SH ₁₁₆	13.5	0.15	19980924	340.04091	156.15841	241.75719	5.06059	0.0646038	2.7840607	18	1	32 days	0.44	Williams	1998 SH ₁₁₆
1998 SJ ₁₁₆	14.5	0.15	19980924	316.00363	237.84945	203.74429	27.12030	0.2303328	3.1943376	29	1	32 days	1.12	Williams	1998 SJ ₁₁₆
1998 SM ₁₁₆	14.0	0.15	19980924	326.27440	186.74279	230.00064	5.32711	0.1046125	2.7940393	13	1	15 days	0.31	Williams	1998 SM ₁₁₆
1998 SR ₁₁₆	14.0	0.15	19980924	275.96694	177.65151	293.24137	3.59257	0.0939681	2.5652949	20	1	33 days	0.72	Williams	1998 SR ₁₁₆
1998 SA ₁₁₇	14.4	0.15	19980924	24.26262	107.55822	239.94008	8.15447	0.1099078	3.1054276	12	1	16 days	0.55	Williams	1998 SA ₁₁₇
1998 SE ₁₁₇	13.5	0.15	19980924	241.92154	276.67328	232.12979	7.02942	0.1534007	2.3974470	20	1	33 days	0.60	Williams	1998 SE ₁₁₇
1998 SF ₁₁₇	15.7	0.15	19980924	2.07618	29.93132	341.80828	6.84539	0.1195437	2.2883807	12	1	16 days	0.60	Williams	1998 SF ₁₁₇
1998 SK ₁₁₇	15.5	0.15	19980924	39.09706	338.27220	341.99417	4.60444	0.1733294	2.2738396	17	1	33 days	0.94	Williams	1998 SK ₁₁₇
1998 SL ₁₁₇	14.0	0.15	19980924	165.77680	353.59888	214.69730	10.11755	0.1040509	2.5939578	20	1	33 days	0.96	Williams	1998 SL ₁₁₇
1998 SP ₁₁₇	16.0	0.15	19980924	334.42534	159.52913	249.79093	2.57521	0.1657460	2.3562736	21	1	33 days	0.83	Williams	1998 SP ₁₁₇
1998 SA ₁₁₈	14.0	0.15	19980924	314.32760	65.83593	4.83330	8.63964	0.1068887	2.6905545	18	1	32 days	0.46	Williams	1998 SA ₁₁₈
1998 SD ₁₁₈	14.5	0.15	19980924	13.78059	92.30225	262.37785	1.60049	0.1608195	2.5227165	25	1	33 days	0.63	Williams	1998 SD ₁₁₈
1998 SH ₁₁₈	15.5	0.15	19980924	45.51362	102.31384	198.61673	13.30758	0.2704338	2.6757113	15	1	23 days	0.78	Williams	1998 SH ₁₁₈
1998 SK ₁₁₈	14.0	0.15	19980924	102.34895	250.79207	10.80193	7.00481	0.1042057	2.3439462	20	1	33 days	0.44	Williams	1998 SK ₁₁₈
1998 SZ ₁₁₈	15.0	0.15	19980924	354.32031	7.24596	14.04024	5.78535	0.1846724	2.7594139	15	1	24 days	0.45	Williams	1998 SZ ₁₁₈
1998 SC ₁₁₉	16.5	0.15	19980924	322.77785	43.17116	14.40367	6.53839	0.1080229	2.2248307	15	1	23 days	0.69	Williams	1998 SC ₁₁₉
1998 SD ₁₁₉	14.0	0.15	19980924	315.50637	55.89719	16.76694	14.86528	0.1466674	3.1009142	26	1	33 days	0.89	Williams	1998 SD ₁₁₉
1998 SE ₁₁₉	15.5	0.15	19980924	354.23563	359.03593	21.78098	3.42015	0.0869344	2.7177892	17	1	33 days	0.64	Williams	1998 SE ₁₁₉
1998 SH ₁₁₉	15.5	0.15	19980924	1.31884	302.91983	67.62771	1.35879	0.2418084	3.0859155	13	1	21 days	0.73	Williams	1998 SH ₁₁₉
1998 SJ ₁₁₉	15.1	0.15	19980924	115.38038	136.43846	114.49230	1.14668	0.0563720	2.2069571	15	1	23 days	0.49	Williams	1998 SJ ₁₁₉
1998 SQ ₁₁₉	15.5	0.15	19980924	20.17997	285.28989	57.73223	2.74868	0.1740619	2.5385780	18	1	19 days	0.46	Williams	1998 SQ ₁₁₉
1998 ST ₁₁₉	14.3	0.15	19980924	290.00033	40.58956	56.76499	4.82636	0.1295249	2.5986502	16	1	23 days	0.62	Williams	1998 ST ₁₁₉
1998 SB ₁₂₁	14.7	0.15	19980924	282.26003	285.51509	177.67292	6.50522	0.1082957	2.6980082	14	1	23 days	0.78	Williams	1998 SB ₁₂₁
1998 SN ₁₂₁	14.7	0.15	19980924	357.24433	92.03633	290.38493	3.64155	0.1618444	3.1521707	13	1	16 days	0.55	Williams	1998 SN ₁₂₁
1998 SS ₁₂₁	15.1	0.15	19980924	325.23058	174.81984	245.26831	4.20509	0.1058465	2.7232367	23	1	33 days	0.85	Williams	1998 SS ₁₂₁
1998 ST ₁₂₁	16.4	0.15	19980924	358.45286	50.81319	325.80586	2.95540	0.2717466	2.5461138	22	1	41 days	0.56	Williams	1998 ST ₁₂₁
1998 SJ ₁₂₂	14.5	0.15	19980924	13.48802	136.58578	219.11734	4.83974	0.2103385	3.2169867	13	1	15 days	0.43	Williams	1998 SJ ₁₂₂
1998 SL ₁₂₂	16.5	0.15	19980924	6.89435	151.90547	208.68568	4.47837	0.2458978	2.3463719	16	1	21 days	0.56	Williams	1998 SL ₁₂₂
1998 SM ₁₂₂	15.0	0.15	19980924	76.24381	72.04828	215.86739	5.52770	0.1096315	2.5504251	13	1	15 days	0.74	Williams	1998 SM ₁₂₂
1998 SP ₁₂₂	16.0	0.15	19980924	9.89245	355.81399	3.78303	6.71504	0.1651566	2.2530442	19	1	33 days	0.97	Williams	1998 SP ₁₂₂
1998 SQ ₁₂₂	16.6	0.15	19980924	0.69131	159.42614	213.57137	4.16606	0.2519895	2.6348350	11	1	21 days	0.71	Williams	1998 SQ ₁₂₂
1998 SW ₁₂₂	15.7	0.15	19980924	348.36921	114.19348	277.53713	0.70620	0.2161969	2.4149433	16	1	21 days	0.49	Williams	1998 SW ₁₂₂
1998 SX ₁₂₂	16.0	0.15	19980924	21.94983	105.07282	232.48338	1.52513	0.2380043	2.3785204	25	1	33 days	0.72	Williams	1998 SX ₁₂₂
1998 SY ₁₂₂	16.0	0.15	19980924	344.96847	19.29815	13.48834	6.94167	0.1139643	2.3757139	13	1	31 days	0.72	Williams	1998 SY ₁₂₂
1998 SA ₁₂₃	16.0	0.15	19980924	16.21071	2.72557	329.29393	0.38920	0.4229741	3.3404903	12	1	15 days	0.62	Williams	1998 SA ₁₂₃
1998 SC ₁₂₃	15.0	0.15	19980924	25.65433	316.13684	15.36007	4.32384	0.2708747	3.2519749	13	1	15 days	0.91	Williams	1998 SC ₁₂₃
1998 SS ₁₂₃	13.3	0.15	19981014	11.55780	175.72100	190.96435	8.44238	0.0918155	2.9971402	16	1	26 days	0.39	Nakano	1998 SS ₁₂₃
1998 ST ₁₂₃	13.5	0.15	19981014	309.11308	247.12314	191.86249	9.49722	0.0790928	2.7407090	15	1	26 days	0.50	Nakano	1998 ST ₁₂₃
1998 SC ₁₂₄	15.7	0.15	19980924	321.67433	37.54909	23.99668	9.72621	0.1096153	2.6978397	17	1	33 days	0.72	Williams	1998 SC ₁₂₄
1998 SP ₁₂₄	16.5	0.15	19980924	3.41669	186.34253	180.51772	4.54696	0.2238865	2.5969827	16	1	23 days	0.51	Williams	1998 SP ₁₂₄
1998 SQ ₁₂₄	15.5	0.15	19980924	36.86806	296.17532	26.82894	6.01943	0.1601851	2.4234051	32	1	33 days	0.96	Williams	1998 SQ ₁₂₄
1998 SU ₁₂₄	13.9	0.15	19980924	311.78605	285.28795	141.69129	2.80804	0.0486644	2.8353654	25	1	33 days	0.63	Williams	1998 SU ₁₂₄
1998 SC ₁₂₅	13.7	0.15	19980924	12.29539	310.14841	43.87980	6.50974	0.2532441	3.9955828	16	1	23 days	0.53	Williams	1998 SC ₁₂₅
1998 SL ₁₂₅	16.5	0.15	19980924	322.19145	5.10896	64.18352	4.22876	0.2297222	2.3624664	15	1	23 days	0.73	Williams	1998 SL ₁₂₅
1998 ST ₁₂₆	14.0	0.15	19980924	46.96691	261.90251	43.04774	11.19704	0.1909426	3.0907843	19	1	23 days	0.59	Williams	1998 ST ₁₂₆
1998 SX ₁₂₆	13.3	0.15	19980924	78.27264	225.34036	58.49330	8.30947	0.0828443	2.7232848	21	1	33 days	0.61	Williams	1998 SX ₁₂₆

1998 SC ₁₂₇	14.5	0.15	19980924	349.38105	260.65922	127.29932	6.18746	0.1645284	3.1813759	19	1	25 days	0.62	Marsden	1998 SC ₁₂₇
1998 SF ₁₂₇	12.5	0.15	19980924	270.77491	66.57186	39.89137	12.24546	0.0267049	3.1325652	23	1	33 days	0.46	Williams	1998 SF ₁₂₇
1998 SL ₁₂₇	15.2	0.15	19980924	354.25061	346.82311	34.94101	10.17719	0.2906904	2.6952871	26	1	33 days	0.53	Williams	1998 SL ₁₂₇
1998 SQ ₁₂₇	16.5	0.15	19980924	342.31652	317.35102	82.18690	3.40064	0.2332309	2.3205061	16	1	23 days	0.55	Williams	1998 SQ ₁₂₇
1998 SV ₁₂₇	15.0	0.15	19980924	27.86059	195.21916	140.74240	5.74091	0.1697488	3.0633880	12	1	23 days	0.86	Williams	1998 SV ₁₂₇
1998 SW ₁₂₇	15.5	0.15	19980924	21.12569	193.77922	148.30582	3.76468	0.1573902	2.1862747	15	1	23 days	0.48	Williams	1998 SW ₁₂₇
1998 SY ₁₂₇	14.0	0.15	19980924	309.93959	274.36260	155.80981	5.79656	0.0570056	2.7724909	15	1	23 days	0.48	Williams	1998 SY ₁₂₇
1998 SG ₁₂₈	16.1	0.15	19980924	55.76971	253.54355	58.27268	3.26294	0.0555192	2.2578071	16	1	23 days	0.63	Williams	1998 SG ₁₂₈
1998 SK ₁₂₈	15.6	0.15	19980924	328.24383	268.40626	147.85759	2.99293	0.1624446	2.3851795	26	1	33 days	0.62	Williams	1998 SK ₁₂₈
1998 SV ₁₂₈	13.0	0.15	19980924	20.28007	321.34316	34.89626	9.18413	0.0165172	3.1734866	20	1	33 days	0.72	Williams	1998 SV ₁₂₈
1998 SB ₁₂₉	13.9	0.15	19980924	124.90544	77.22881	166.27391	6.48272	0.0930302	2.4324280	13	1	24 days	0.45	Williams	1998 SB ₁₂₉
1998 SK ₁₂₉	14.4	0.15	19980924	289.61520	279.93322	172.28854	4.87940	0.0418085	2.7268169	16	1	24 days	0.57	Williams	1998 SK ₁₂₉
1998 SW ₁₂₉	14.1	0.15	19980924	278.00683	94.87371	20.71018	13.18818	0.1440752	2.6790300	16	1	21 days	0.50	Williams	1998 SW ₁₂₉
1998 SC ₁₃₀	16.1	0.15	19980924	4.96285	353.10018	12.32897	4.10034	0.1970150	2.2869478	15	1	21 days	0.58	Williams	1998 SC ₁₃₀
1998 SD ₁₃₀	14.1	0.15	19980924	48.07022	132.57487	192.02568	1.76279	0.0575061	2.8590450	16	1	21 days	0.53	Williams	1998 SD ₁₃₀
1998 SE ₁₃₀	13.8	0.15	19980924	83.49128	98.09548	191.44340	1.87584	0.0473196	2.9346738	16	1	21 days	0.67	Williams	1998 SE ₁₃₀
1998 SP ₁₃₀	16.4	0.15	19980924	19.88665	142.49750	205.96339	5.70841	0.1358605	2.2765624	16	1	21 days	0.46	Williams	1998 SP ₁₃₀
1998 SR ₁₃₀	13.8	0.15	19980924	61.20700	98.25931	213.73478	5.63841	0.0503779	2.7780677	15	1	21 days	0.39	Williams	1998 SR ₁₃₀
1998 SA ₁₃₁	15.5	0.15	19980924	180.77125	192.20838	6.21604	9.75003	0.0081632	2.6485276	15	1	25 days	0.85	Williams	1998 SA ₁₃₁
1998 SK ₁₃₁	16.2	0.15	19980924	344.07234	113.94411	286.97687	2.91191	0.2192941	2.5703535	12	1	16 days	0.83	Williams	1998 SK ₁₃₁
1998 SQ ₁₃₁	15.5	0.15	19980924	350.88200	28.05563	3.18998	13.55315	0.1965815	2.5941395	15	1	24 days	0.51	Williams	1998 SQ ₁₃₁
1998 SR ₁₃₁	14.0	0.15	19980924	31.64199	347.96986	348.29102	9.04018	0.1605067	2.7979477	22	1	26 days	0.66	Williams	1998 SR ₁₃₁
1998 SS ₁₃₁	15.5	0.15	19980924	30.78282	329.21308	359.41811	12.92215	0.2349190	2.5196789	19	1	26 days	0.35	Williams	1998 SS ₁₃₁
1998 SC ₁₃₂	15.5	0.15	19980924	62.80017	348.27267	304.62316	4.03459	0.1970638	2.2199307	20	1	26 days	0.67	Williams	1998 SC ₁₃₂
1998 SF ₁₃₂	16.5	0.15	19980924	357.90967	29.10047	350.52027	6.78564	0.1232970	2.2597400	12	1	15 days	0.84	Williams	1998 SF ₁₃₂
1998 SU ₁₃₂	15.1	0.15	19980924	353.37439	151.06876	235.22926	4.45458	0.1029714	2.4886484	25	1	25 days	0.44	Williams	1998 SU ₁₃₂
1998 SV ₁₃₂	13.5	0.15	19980924	12.30142	131.81525	234.75435	6.40149	0.0747848	3.0042532	17	1	21 days	0.45	Williams	1998 SV ₁₃₂
1998 SW ₁₃₂	13.7	0.15	19980924	1.44555	160.50957	218.26333	8.96182	0.1264346	3.0764749	20	1	21 days	0.70	Williams	1998 SW ₁₃₂
1998 SX ₁₃₂	14.7	0.15	19980924	155.47174	252.42540	330.39370	3.11325	0.0253397	2.5172774	15	1	21 days	0.83	Williams	1998 SX ₁₃₂
1998 SG ₁₃₃	14.6	0.15	19980924	275.67332	260.78499	208.15188	13.02610	0.0458625	2.6052623	16	1	21 days	0.62	Williams	1998 SG ₁₃₃
1998 SH ₁₃₃	13.0	0.15	19980924	213.24089	324.39511	209.53810	13.34955	0.0927570	3.1525443	22	1	33 days	0.62	Williams	1998 SH ₁₃₃
1998 SK ₁₃₃	15.5	0.15	19980924	0.18187	164.25355	214.24145	4.98510	0.1337165	2.7580115	12	1	21 days	0.86	Williams	1998 SK ₁₃₃
1998 SL ₁₃₃	16.2	0.15	19980924	324.21188	194.00402	235.39185	1.97239	0.2136014	2.3971873	17	1	25 days	0.49	Williams	1998 SL ₁₃₃
1998 SP ₁₃₃	14.9	0.15	19980924	89.62464	39.21169	228.79084	1.42034	0.1794940	2.3768540	15	1	21 days	0.74	Williams	1998 SP ₁₃₃
1998 SQ ₁₃₃	15.6	0.15	19980924	305.92677	79.92043	8.83343	2.40911	0.1748372	2.3971455	16	1	21 days	0.55	Williams	1998 SQ ₁₃₃
1998 SZ ₁₃₃	14.7	0.15	19980924	314.51513	231.49373	200.34207	5.66427	0.0963510	2.4490501	24	1	31 days	1.03	Williams	1998 SZ ₁₃₃
1998 SE ₁₃₄	14.5	0.15	19980924	9.49174	168.54889	196.71260	4.14296	0.1179786	2.6457827	19	1	29 days	0.67	Williams	1998 SE ₁₃₄
1998 SG ₁₃₄	14.7	0.15	19980924	356.54900	1.69162	19.63896	13.63868	0.1274024	2.5702264	22	1	29 days	0.72	Williams	1998 SG ₁₃₄
1998 SO ₁₃₄	16.0	0.15	19980924	295.31791	274.72462	184.18936	5.48752	0.1634001	2.3151598	11	1	15 days	0.97	Williams	1998 SO ₁₃₄
1998 SP ₁₃₄	14.9	0.15	19980924	347.62825	5.29754	26.55364	3.41244	0.1312202	2.4308328	23	1	33 days	0.68	Williams	1998 SP ₁₃₄
1998 SV ₁₃₄	13.5	0.15	19980924	14.68443	241.19995	116.25722	1.81843	0.1541587	3.1189196	13	1	15 days	0.33	Williams	1998 SV ₁₃₄
1998 SX ₁₃₄	14.5	0.15	19980924	0.54383	349.75068	25.87539	9.72822	0.1703954	2.7571637	16	1	21 days	0.33	Williams	1998 SX ₁₃₄
1998 SB ₁₃₅	14.5	0.15	19980924	345.59459	258.25893	139.24198	3.22454	0.1711747	3.0733603	14	1	24 days	0.41	Williams	1998 SB ₁₃₅
1998 SD ₁₃₅	14.0	0.15	19980924	58.49343	107.02881	182.01190	9.10301	0.2743967	3.0616813	24	1	30 days	0.66	Williams	1998 SD ₁₃₅
1998 SH ₁₃₅	13.5	0.15	19980924	13.25298	180.12506	182.85131	10.71772	0.0651544	3.1117322	16	1	24 days	0.79	Williams	1998 SH ₁₃₅
1998 SM ₁₃₅	14.9	0.15	19980924	322.74723	4.11900	63.72690	3.28358	0.1911990	2.3763389	16	1	24 days	0.38	Williams	1998 SM ₁₃₅
1998 SN ₁₃₅	14.4	0.15	19980924	339.42942	357.83024	40.45677	7.76128	0.0540563	2.3756267	16	1	24 days	0.37	Williams	1998 SN ₁₃₅
1998 SQ ₁₃₅	15.3	0.15	19980924	353.16901	331.82627	49.77942	5.42868	0.1219091	2.1846252	23	1	33 days	0.51	Williams	1998 SQ ₁₃₅
1998 SR ₁₃₅	14.0	0.15	19980924	19.30033	253.34503	96.39052	3.95624	0.1626080	3.1027341	16	1	24 days	0.59	Williams	1998 SR ₁₃₅
1998 ST ₁₃₅	15.4	0.15	19980924	24.19167	174.43239	168.05780	6.73324	0.1372579	2.3250830	16	1	24 days	0.48	Williams	1998 ST ₁₃₅
1998 SW ₁₃₅	14.6	0.15	19980924	10.56893	288.65050	75.77701	3.94874	0.0149974	2.2596257	16	1	24 days	0.32	Williams	1998 SW ₁₃₅
1998 SX ₁₃₅	14.3	0.15	19980924	357.04532	198.78139	181.68897	14.17004	0.1646965	2.7873952	16	1	24 days	0.39	Williams	1998 SX ₁₃₅
1998 SA ₁₃₆	14.4	0.15	19980924	49.69123	260.30998	40.79471	6.71299	0.2178111	2.3573804	25	1	33 days	0.54	Williams	1998 SA ₁₃₆

1998 SM ₁₃₆	15.3	0.15	19980924	30.66033	294.32227	27.25421	22.76354	0.2666572	3.0267861	16	1	23 days	0.44	Williams	1998 SM ₁₃₆
1998 SU ₁₃₆	15.5	0.15	19980924	358.45767	278.00551	96.92549	4.59859	0.2136451	2.5970864	16	1	24 days	0.39	Williams	1998 SU ₁₃₆
1998 SX ₁₃₆	15.5	0.15	19980924	333.10678	277.58055	127.77967	5.22709	0.0904563	2.2916890	16	1	19 days	0.47	Williams	1998 SX ₁₃₆
1998 SJ ₁₃₇	14.9	0.15	19980924	19.85856	281.85596	66.87230	7.45513	0.1597291	3.2057282	19	1	24 days	0.78	Williams	1998 SJ ₁₃₇
1998 SK ₁₃₇	14.7	0.15	19980924	119.28457	154.99880	94.44412	5.71006	0.0838750	2.6349910	15	1	24 days	0.82	Williams	1998 SK ₁₃₇
1998 SL ₁₃₇	16.0	0.15	19980924	326.89761	17.88874	51.60785	7.76880	0.2716461	2.5688707	23	1	24 days	0.55	Williams	1998 SL ₁₃₇
1998 SO ₁₃₇	16.1	0.15	19980924	321.09564	359.36807	67.43851	5.35095	0.1583123	2.3763876	18	1	24 days	0.62	Williams	1998 SO ₁₃₇
1998 SS ₁₃₇	14.1	0.15	19980924	329.61914	333.55195	85.30490	5.00623	0.1464599	3.2172992	13	1	24 days	0.69	Williams	1998 SS ₁₃₇
1998 SZ ₁₃₇	13.7	0.15	19980924	309.17079	59.79222	25.20815	13.59002	0.1476046	3.0991268	13	1	21 days	0.63	Williams	1998 SZ ₁₃₇
1998 SE ₁₃₈	14.4	0.15	19980924	41.17936	298.40270	14.88760	5.02008	0.2575904	3.0178577	18	1	11 days	0.77	Nakano	1998 SE ₁₃₈
1998 SK ₁₃₈	16.0	0.15	19980924	353.40630	8.57666	17.46222	2.68400	0.2183674	2.3716978	24	1	41 days	0.93	Williams	1998 SK ₁₃₈
1998 SS ₁₃₈	14.9	0.15	19980924	7.53714	160.87872	201.84973	12.20817	0.2692753	2.6992656	25	1	22 days	0.61	Williams	1998 SS ₁₃₈
1998 ST ₁₃₈	15.5	0.15	19980924	7.83603	358.67003	8.22308	7.63563	0.1380104	2.4086127	28	1	32 days	1.31	Williams	1998 ST ₁₃₈
1998 SY ₁₃₈	15.0	0.15	19980924	136.01069	230.10124	9.00595	7.29035	0.0779166	2.3933219	25	1	34 days	0.83	Williams	1998 SY ₁₃₈
1998 SZ ₁₃₈	15.9	0.15	19980924	60.18468	53.55261	228.58445	4.98974	0.3026499	2.1174203	54	1	30 days	0.58	Williams	1998 SZ ₁₃₈
1998 SC ₁₃₉	15.3	0.15	19980924	81.55603	48.31392	236.04142	4.17043	0.1199714	2.3211387	22	1	21 days	0.64	Williams	1998 SC ₁₃₉
1998 SE ₁₃₉	15.0	0.15	19980924	315.50332	220.18815	215.89656	12.32339	0.1261008	2.6964714	15	1	24 days	1.07	Williams	1998 SE ₁₃₉
1998 SJ ₁₃₉	16.0	0.15	19980924	359.36926	65.23395	312.88234	3.39978	0.2834901	2.6201911	13	1	15 days	0.57	Williams	1998 SJ ₁₃₉
1998 SY ₁₃₉	12.5	0.15	19980924	76.90325	66.85705	237.40349	9.98766	0.0346014	3.1089988	16	1	21 days	0.41	Williams	1998 SY ₁₃₉
1998 SD ₁₄₀	16.5	0.15	19980924	0.91910	24.33712	353.09534	6.64805	0.2335870	2.5549268	10	1	15 days	0.83	Williams	1998 SD ₁₄₀
1998 SL ₁₄₀	15.5	0.15	19980924	23.71240	55.71462	279.02264	2.15925	0.2896063	2.5940870	13	1	15 days	0.46	Williams	1998 SL ₁₄₀
1998 SM ₁₄₀	15.5	0.15	19980924	318.38537	201.34525	229.54451	3.81438	0.1204234	2.2887089	15	1	25 days	0.40	Williams	1998 SM ₁₄₀
1998 SO ₁₄₀	15.4	0.15	19980924	19.84604	127.59701	221.78190	3.57899	0.1526118	2.1542459	16	1	21 days	0.52	Williams	1998 SO ₁₄₀
1998 SE ₁₄₁	15.5	0.15	19980924	335.98802	213.43217	199.26860	12.98250	0.1709772	2.5733724	18	1	33 days	0.88	Williams	1998 SE ₁₄₁
1998 SP ₁₄₁	14.5	0.15	19980924	133.88553	59.93515	173.45454	4.84865	0.1736314	2.2498470	17	1	19 days	0.63	Williams	1998 SP ₁₄₁
1998 SS ₁₄₁	14.4	0.15	19980924	319.73806	245.66406	180.52864	9.72637	0.0648734	3.0340433	15	1	24 days	0.87	Williams	1998 SS ₁₄₁
1998 SV ₁₄₁	15.4	0.15	19980924	108.77839	161.92037	98.32619	4.66788	0.0790713	2.1718076	16	1	24 days	0.57	Williams	1998 SV ₁₄₁
1998 SK ₁₄₂	14.6	0.15	19980924	190.02758	45.85967	145.28163	6.18699	0.0842826	2.4521679	15	1	24 days	0.67	Williams	1998 SK ₁₄₂
1998 SM ₁₄₂	15.4	0.15	19980924	307.96012	42.66472	59.79748	7.04203	0.2953304	2.5992593	14	1	24 days	0.57	Williams	1998 SM ₁₄₂
1998 SN ₁₄₂	14.9	0.15	19980924	356.06733	271.32534	112.57787	5.22891	0.0902803	2.7608217	15	1	24 days	0.59	Williams	1998 SN ₁₄₂
1998 SQ ₁₄₂	15.4	0.15	19980924	272.59916	3.25589	118.62608	3.94293	0.1435160	2.2436186	15	1	24 days	0.67	Williams	1998 SQ ₁₄₂
1998 SX ₁₄₂	13.5	0.15	19980924	116.70346	235.59177	12.93664	16.42124	0.1625902	3.0500933	14	1	21 days	0.74	Williams	1998 SX ₁₄₂
1998 SC ₁₄₃	16.4	0.15	19980924	347.44600	211.62456	187.29493	13.46218	0.3143756	2.6731399	15	1	21 days	0.46	Williams	1998 SC ₁₄₃
1998 SL ₁₄₃	15.1	0.15	19980924	354.52390	189.69255	195.55886	9.04877	0.2077926	2.6557543	14	1	11 days	0.85	Nakano	1998 SL ₁₄₃
1998 SM ₁₄₄	14.0	0.15	19980924	308.61958	237.82301	210.06317	2.16430	0.1633354	2.3849982	12	1	28 days	0.64	Williams	1998 SM ₁₄₄
1998 SP ₁₄₄	13.5	0.15	19980924	359.09086	176.85038	206.30801	4.72461	0.0943986	2.7389727	21	1	28 days	0.55	Williams	1998 SP ₁₄₄
1998 SU ₁₄₄	15.0	0.15	19980924	13.65861	328.50702	30.90489	3.66552	0.1575868	2.3359517	15	1	28 days	0.50	Williams	1998 SU ₁₄₄
1998 SC ₁₄₅	16.3	0.15	19990122	42.37289	319.63426	2.98653	1.14896	0.4657844	3.0090261	11	1	39 days	0.66	M-v 7 Williams	1998 SC ₁₄₅
1998 SX ₁₄₅	14.0	0.15	19980924	52.49012	268.70933	45.42975	5.76527	0.1534253	2.7572012	23	1	50 days	0.63	Williams	1998 SX ₁₄₅
1998 SD ₁₄₆	15.5	0.15	19980924	343.41569	211.42164	192.49643	9.63061	0.0916746	3.0079677	12	1	33 days	0.49	Williams	1998 SD ₁₄₆
1998 SF ₁₄₆	14.0	0.15	19980924	27.64075	318.47658	21.90731	15.40794	0.2255855	3.1331637	18	1	30 days	0.73	Williams	1998 SF ₁₄₆
1998 SR ₁₄₆	15.8	0.15	19981014	355.32342	17.32852	16.84717	5.52356	0.1755842	2.2314725	20	1	47 days	0.56	Williams	1998 SR ₁₄₆
1998 SS ₁₄₆	13.7	0.15	19980924	109.26136	82.98135	190.74547	9.67321	0.0243614	2.9917828	15	1	33 days	0.36	Williams	1998 SS ₁₄₆
1998 SU ₁₄₆	13.7	0.15	19980924	329.51575	223.63717	195.98359	10.78005	0.0561484	3.0849458	18	1	39 days	0.99	Williams	1998 SU ₁₄₆
1998 SZ ₁₄₆	15.5	0.15	19980924	23.78055	313.33243	20.01147	12.73686	0.3202372	2.6004727	27	1	39 days	0.79	Williams	1998 SZ ₁₄₆
1998 SE ₁₄₇	14.2	0.15	19980924	319.58922	2.66556	73.80032	1.39900	0.1223879	3.0856204	12	1	30 days	0.66	Williams	1998 SE ₁₄₇
1998 SG ₁₄₇	15.7	0.15	19981014	359.58479	4.75018	23.68273	8.20150	0.1744660	2.2918750	11	1	47 days	1.50	Williams	1998 SG ₁₄₇
1998 SJ ₁₄₇	16.0	0.15	19980924	321.68551	260.76298	171.67394	3.72711	0.1540825	2.3683591	12	1	30 days	0.52	Williams	1998 SJ ₁₄₇
1998 SM ₁₄₇	14.9	0.15	19980924	5.14026	297.03116	81.11280	3.28622	0.0986484	2.9356011	12	1	30 days	0.59	Williams	1998 SM ₁₄₇
1998 SP ₁₄₇	12.9	0.15	19980924	116.62035	149.90927	112.90145	2.77093	0.0735118	3.0253012	12	1	30 days	0.42	Williams	1998 SP ₁₄₇
1998 SS ₁₄₇	12.9	0.15	19980924	189.64785	167.00640	31.90185	22.06317	0.0532589	3.2373671	18	1	39 days	0.61	Williams	1998 SS ₁₄₇
1998 SV ₁₄₇	14.0	0.15	19980924	287.64991	86.27331	27.48651	13.41398	0.1427998	2.6791904	17	1	39 days	0.82	Williams	1998 SV ₁₄₇
1998 SY ₁₄₇	15.9	0.15	19980924	10.36411	175.50373	192.06568	6.31146	0.1434951	2.3623559	12	1	30 days	0.48	Williams	1998 SY ₁₄₇

1998 SA ₁₄₈	15.0	0.15	19980924	325.88688	255.48406	173.17389	4.06890	0.1494812	2.5821836	12	1	30 days	0.60	Williams	1998 SA ₁₄₈
1998 SJ ₁₅₁	16.8	0.15	19980924	17.31588	320.85105	18.11532	5.53001	0.1873015	2.6274330	18	1	32 days	0.97	Williams	1998 SJ ₁₅₁
1998 SK ₁₅₁	15.5	0.15	19980924	266.37615	83.77932	32.66460	2.83962	0.1597346	2.3689263	14	1	24 days	0.71	Williams	1998 SK ₁₅₁
1998 SG ₁₅₂	15.5	0.15	19980924	7.31104	190.25072	168.41432	2.45113	0.0866410	2.6598322	18	1	21 days	0.64	Williams	1998 SG ₁₅₂
1998 SS ₁₅₄	15.0	0.15	19980924	35.85471	113.29052	203.48191	15.53183	0.2309514	2.9180654	20	1	26 days	0.37	Williams	1998 SS ₁₅₄
1998 ST ₁₅₄	16.0	0.15	19980924	22.81327	358.96089	334.49777	3.70878	0.2353551	2.3316934	18	1	33 days	0.94	Williams	1998 ST ₁₅₄
1998 SV ₁₅₄	16.5	0.15	19980924	352.57281	153.81112	231.13618	5.13419	0.2890934	2.5648771	20	1	33 days	0.83	Williams	1998 SV ₁₅₄
1998 SC ₁₅₅	15.6	0.15	19980924	346.35809	38.16917	349.97324	2.64646	0.0857407	2.7724206	11	1	18 days	0.76	Williams	1998 SC ₁₅₅
1998 SD ₁₅₅	16.5	0.15	19980924	31.60470	126.90001	194.35246	4.90953	0.2185869	2.2458136	14	1	23 days	0.58	Williams	1998 SD ₁₅₅
1998 SB ₁₅₆	16.7	0.15	19980924	323.82082	19.17981	44.37216	2.88755	0.2068983	2.3183950	15	1	23 days	0.86	Williams	1998 SB ₁₅₆
1998 SD ₁₅₆	15.5	0.15	19980924	328.36285	34.67975	15.48835	3.98593	0.0991064	2.6634682	14	1	22 days	0.58	Williams	1998 SD ₁₅₆
1998 SE ₁₅₆	15.0	0.15	19980924	15.91031	332.45744	23.01876	1.99202	0.0461381	2.9183658	13	1	26 days	0.79	Williams	1998 SE ₁₅₆
1998 SO ₁₅₆	15.0	0.15	19980924	49.38913	297.52309	5.34616	7.62594	0.2139398	2.8022220	17	1	24 days	0.52	Williams	1998 SO ₁₅₆
1998 SP ₁₅₆	15.0	0.15	19980924	326.87001	146.39629	270.15608	1.83352	0.1494798	2.3320904	24	1	24 days	0.35	Williams	1998 SP ₁₅₆
1998 SR ₁₅₆	15.5	0.15	19980924	319.61668	162.69995	269.59344	1.63912	0.2036803	2.6464928	15	1	23 days	0.71	Williams	1998 SR ₁₅₆
1998 SC ₁₅₇	16.7	0.15	19980924	41.41272	290.28608	16.06764	3.10516	0.2446961	2.2967737	17	1	31 days	0.61	Williams	1998 SC ₁₅₇
1998 SG ₁₅₇	16.0	0.15	19980924	349.26434	350.34247	35.65440	2.20727	0.1357480	2.3829196	23	1	26 days	0.55	Williams	1998 SG ₁₅₇
1998 SL ₁₅₈	15.9	0.15	19980924	46.12075	114.92115	191.45415	5.18399	0.1992494	2.4422410	14	1	23 days	0.59	Williams	1998 SL ₁₅₈
1998 SD ₁₅₉	14.3	0.15	19980924	295.41471	125.11034	323.07130	3.26326	0.0529411	2.7327833	14	1	21 days	0.53	Williams	1998 SD ₁₅₉
1998 SG ₁₅₉	14.6	0.15	19980924	278.28311	105.28371	9.79868	11.93954	0.1234388	3.0865946	14	1	21 days	0.68	Williams	1998 SG ₁₅₉
1998 SM ₁₅₉	16.5	0.15	19980924	1.72143	343.90510	25.85743	6.88632	0.1421182	2.4253039	15	1	26 days	0.79	Williams	1998 SM ₁₅₉
1998 SE ₁₆₁	14.0	0.15	19980924	335.13876	186.60553	224.29722	10.08272	0.1020423	3.0573192	21	1	33 days	0.82	Williams	1998 SE ₁₆₁
1998 SG ₁₆₁	17.5	0.15	19980924	349.79191	60.52800	330.87073	2.93262	0.2430945	2.3045504	12	1	15 days	0.94	Williams	1998 SG ₁₆₁
1998 SO ₁₆₁	16.4	0.15	19980924	325.71574	31.53087	24.93663	7.64922	0.1057143	2.2182661	15	1	21 days	0.50	Williams	1998 SO ₁₆₁
1998 SP ₁₆₁	14.5	0.15	19980924	251.12684	310.81284	192.47690	13.07152	0.1548591	2.7048325	16	1	33 days	1.01	Williams	1998 SP ₁₆₁
1998 SS ₁₆₁	15.4	0.15	19980924	328.35630	276.23529	145.13394	2.51083	0.2028034	2.4293353	15	1	24 days	0.48	Williams	1998 SS ₁₆₁
1998 ST ₁₆₁	15.7	0.15	19980924	30.33764	164.74880	165.19342	6.61985	0.1827439	2.3918940	14	1	24 days	0.65	Williams	1998 ST ₁₆₁
1998 SW ₁₆₁	16.5	0.15	19980924	357.73849	293.01442	82.70354	3.05326	0.2146434	2.3413691	14	1	24 days	0.65	Williams	1998 SW ₁₆₁
1998 SX ₁₆₁	15.5	0.15	19980924	348.88210	243.37761	146.69026	3.99339	0.1725443	2.5236672	14	1	24 days	0.52	Williams	1998 SX ₁₆₁
1998 SC ₁₆₂	13.9	0.15	19980924	310.82366	36.10937	39.76223	16.92904	0.0899855	3.1984354	14	1	24 days	0.58	Williams	1998 SC ₁₆₂
1998 SL ₁₆₂	16.0	0.15	19980924	83.01283	48.97255	232.44368	5.48572	0.1312714	2.3502220	13	1	26 days	0.68	Williams	1998 SL ₁₆₂
1998 SP ₁₆₂	13.5	0.15	19980924	86.27971	59.14157	231.01148	11.54581	0.0660742	2.7931355	16	1	24 days	0.87	Williams	1998 SP ₁₆₂
1998 SY ₁₆₂	16.9	0.15	19980924	20.95188	323.10009	21.66757	2.83144	0.1909363	2.2114402	12	1	21 days	0.72	Williams	1998 SY ₁₆₂
1998 SE ₁₆₃	14.9	0.15	19980924	78.75479	158.12261	120.10355	5.35583	0.1828090	2.2949254	14	1	24 days	0.44	Williams	1998 SE ₁₆₃
1998 SH ₁₆₃	15.0	0.15	19980924	42.12232	305.73528	11.26662	8.35178	0.1809286	2.7506108	14	1	26 days	0.73	Williams	1998 SH ₁₆₃
1998 ST ₁₆₃	16.1	0.15	19980924	356.45081	350.56431	37.18002	8.30442	0.3131408	2.5633664	12	1	32 days	0.54	Williams	1998 ST ₁₆₃
1998 SX ₁₆₃	13.5	0.15	19980924	51.96277	282.81953	46.69257	11.52548	0.0889957	3.0900118	12	1	32 days	0.51	Williams	1998 SX ₁₆₃
1998 SA ₁₆₄	16.0	0.15	19980924	128.54544	221.17266	29.35021	21.90593	0.0514002	1.9118258	17	1	41 days	0.57	Williams	1998 SA ₁₆₄
1998 SC ₁₆₄	14.9	0.15	19980924	81.76899	139.17565	149.11713	4.61470	0.1499811	2.3246417	12	1	32 days	0.94	Williams	1998 SC ₁₆₄
1998 SE ₁₆₄	13.6	0.15	19980924	76.23169	245.31077	42.58941	14.30182	0.2207093	2.7086691	12	1	32 days	0.45	Williams	1998 SE ₁₆₄
1998 TA	13.8	0.15	19980924	110.90411	258.37502	0.31435	7.34276	0.0888418	2.3156514	43	1	47 days	0.54	Nakano	1998 TA
1998 TC	14.0	0.15	19981014	341.48369	198.65229	284.09613	11.87840	0.1198807	2.3908126	12	1	24 days	0.51	Williams	1998 TC
1998 TD	14.9	0.15	19981014	70.30873	301.01330	347.70904	4.67582	0.1838475	2.2875812	22	1	54 days	0.63	Nakano	1998 TD
1998 TE	14.7	0.15	19981014	332.46709	189.34584	233.32042	5.64464	0.1020245	2.2642816	33	1	36 days	0.49	Nakano	1998 TE
1998 TF	13.2	0.15	19981014	270.96019	122.43023	16.88620	7.89183	0.1779046	2.7179282	38	1	28 days	0.45	Williams	1998 TF
1998 TH	16.0	0.15	19981014	351.18643	175.35994	225.65333	4.57080	0.1606887	2.4255871	9	1	14 days	0.74	Williams	1998 TH
1998 TJ	15.8	0.15	19981014	46.97600	315.69846	13.69356	5.73974	0.1371943	2.3044728	15	1	28 days	0.49	Nakano	1998 TJ
1998 TK	12.7	0.15	19981103	193.29482	342.22290	221.03342	9.97275	0.0612201	3.0497489	12	1	28 days	0.50	Nakano	1998 TK
1998 TL	15.3	0.15	19981103	356.46448	40.28342	2.86016	6.46336	0.2370811	2.5286471	12	1	28 days	0.38	Nakano	1998 TL
1998 TM	13.8	0.15	19981103	34.42467	115.88942	235.62708	9.09899	0.1348703	3.1012413	11	1	28 days	0.44	Nakano	1998 TM
1998 TO	15.0	0.15	19981014	11.79961	225.43876	130.60739	14.21428	0.1615540	2.6327029	12	1	8 days	0.48	Williams	1998 TO
1998 TP	15.0	0.15	19981014	286.73618	69.64702	44.74953	23.14758	0.2646235	2.2693716	17	1	8 days	0.83	Williams	1998 TP
1998 TU	16.1	0.15	19981014	321.25977	43.73957	31.73640	5.72668	0.0985595	2.2503444	15	1	8 days	0.54	Williams	1998 TU

1998 TV	15.5	0.15	19981014	15.17099	336.54648	34.33268	3.91491	0.1045897	2.5293658	12	1	8 days	0.37	Williams	1998 TV
1998 TY	16.0	0.15	19981014	51.83418	285.62890	35.73238	8.02771	0.1788633	3.2133048	9	1	6 days	0.14	Williams	1998 TY
1998 TE ₁	17.5	0.15	19981014	90.17706	247.84209	36.91205	4.78181	0.1364259	2.2455334	9	1	6 days	0.19	E Williams	1998 TE ₁
1998 TF ₁	17.0	0.15	19981014	333.54030	26.95220	36.06019	6.24660	0.0962230	2.7269794	9	1	6 days	0.48	E Williams	1998 TF ₁
1998 TG ₁	16.5	0.15	19981014	11.65063	333.67803	39.62214	3.55430	0.1810389	2.6794453	9	1	6 days	0.14	Williams	1998 TG ₁
1998 TL ₁	14.9	0.15	19980924	51.86335	100.31276	209.68325	11.53003	0.2326608	2.9740912	9	1	2 days	0.21	E Williams	1998 TL ₁
1998 TN ₁	15.5	0.15	19981014	3.58846	353.23228	34.38850	6.37370	0.0018669	2.6785100	9	1	6 days	0.12	E Williams	1998 TN ₁
1998 TR ₁	15.5	0.15	19981014	85.53024	100.23166	124.02487	13.76265	0.2756496	1.9379014	12	1	9 days	0.49	E Williams	1998 TR ₁
1998 TS ₁	16.0	0.15	19980924	245.01768	11.36427	119.23199	7.05655	0.0540677	2.3399676	9	1	5 days	0.63	Marsden	1998 TS ₁
1998 TU ₁	14.3	0.15	19980924	357.86134	157.73246	217.22371	12.28294	0.1865185	2.5312964	18	1	5 days	0.71	Williams	1998 TU ₁
1998 TV ₁	13.0	0.15	19981014	358.25923	341.07396	54.47698	13.62544	0.2491025	2.3926860	23	1	17 days	0.41	Williams	1998 TV ₁
1998 TW ₁	13.9	0.15	19981014	3.33754	338.56377	54.19749	10.29088	0.1374154	2.7300158	12	1	15 days	0.53	Williams	1998 TW ₁
1998 TY ₁	16.0	0.15	19981014	18.04873	272.72724	77.82351	7.16213	0.0727044	2.7250452	8	1	14 days	0.66	Williams	1998 TY ₁
1998 TA ₂	17.0	0.15	19981014	352.62608	7.02989	22.78149	6.95401	0.2333031	2.3255949	24	1	24 days	0.45	Williams	1998 TA ₂
1998 TB ₂	17.0	0.15	19981014	3.40130	54.71806	324.92461	2.69177	0.1434889	2.4826951	10	1	5 days	0.48	Marsden	1998 TB ₂
1998 TC ₂	15.0	0.15	19981014	295.12126	115.17543	350.44570	4.59931	0.1329989	3.2112029	9	1	9 days	0.10	Williams	1998 TC ₂
1998 TD ₂	15.5	0.15	19981014	336.76002	37.42320	17.70955	10.73764	0.0891125	2.9626821	9	1	14 days	0.13	Williams	1998 TD ₂
1998 TK ₂	17.0	0.15	19981014	302.80326	216.85611	238.30049	4.34470	0.0863675	2.3087174	12	1	8 days	0.14	Williams	1998 TK ₂
1998 TL ₂	16.0	0.15	19981014	4.18425	18.98656	3.23451	4.16029	0.1638722	2.2500672	15	1	4 days	0.38	Williams	1998 TL ₂
1998 TM ₂	16.5	0.15	19981014	338.73385	175.55194	239.22956	4.08886	0.0790690	2.5967255	9	1	7 days	0.16	Williams	1998 TM ₂
1998 TP ₂	13.5	0.15	19981014	14.59457	81.96792	283.72181	1.76633	0.2347441	2.6849637	18	1	27 days	0.26	Williams	1998 TP ₂
1998 TQ ₂	16.5	0.15	19981014	358.55025	158.43516	233.28496	4.07048	0.2095088	2.5886248	18	1	10 days	0.38	Williams	1998 TQ ₂
1998 TR ₂	16.5	0.15	19981014	4.15482	36.25084	348.37869	2.55770	0.1475220	2.5919962	12	1	8 days	0.33	Williams	1998 TR ₂
1998 TS ₂	16.5	0.15	19981014	45.11950	359.98375	326.90093	2.03058	0.1956784	2.6845737	12	1	8 days	0.26	Williams	1998 TS ₂
1998 TT ₂	16.0	0.15	19981014	313.50992	107.99387	342.99960	2.09510	0.1526687	2.3595544	15	1	8 days	0.41	Williams	1998 TT ₂
1998 TV ₂	17.0	0.15	19981014	341.89715	182.88091	230.98809	4.54150	0.1302618	2.4894786	15	1	8 days	1.05	E Williams	1998 TV ₂
1998 TX ₂	14.5	0.15	19981014	247.01232	143.64930	4.77290	3.89598	0.0217227	3.0828057	12	1	7 days	0.48	E Williams	1998 TX ₂
1998 TA ₃	17.5	0.15	19981014	334.37205	41.89991	13.49464	21.09076	0.1051082	1.8698561	17	1	6 days	0.78	Williams	1998 TA ₃
1998 TB ₃	16.0	0.15	19980924	8.86346	101.74893	256.14458	23.56395	0.1873929	2.7569489	11	1	34 days	0.78	Williams	1998 TB ₃
1998 TC ₃	15.5	0.15	19981014	147.56887	314.33377	277.70163	17.35855	0.0421451	1.9263953	16	1	15 days	0.93	Williams	1998 TC ₃
1998 TD ₃	13.5	0.15	19981014	79.63455	318.88965	330.23060	25.13638	0.1627763	3.1929739	7	1	11 days	0.42	Williams	1998 TD ₃
1998 TE ₃	16.5	0.15	19981014	41.88937	1.45518	337.92033	18.21406	0.0633104	1.9636469	10	1	13 days	0.45	Williams	1998 TE ₃
1998 TF ₃	16.2	0.15	19981014	307.20419	50.37365	15.78783	21.23491	0.0581879	1.9291673	10	1	3 days	0.86	Williams	1998 TF ₃
1998 TG ₃	14.2	0.15	19981014	34.88314	108.71158	203.64486	21.53705	0.3037124	2.4235689	23	1	15 days	0.42	Williams	1998 TG ₃
1998 TH ₃	16.4	0.15	19981014	12.10746	321.36741	35.51047	9.39803	0.2525160	2.1511203	11	1	3 days	0.86	E Williams	1998 TH ₃
1998 TK ₃	17.8	0.15	19981014	357.60272	170.74550	215.67971	10.68859	0.2632936	2.3508191	13	1	5 days	0.97	E Williams	1998 TK ₃
1998 TM ₃	15.9	0.15	19981014	41.85325	273.56026	37.78315	13.29102	0.2917145	2.3616162	13	1	9 days	0.58	Williams	1998 TM ₃
1998 TN ₃	15.0	0.15	19981014	6.24340	332.44533	41.92553	14.50017	0.1863350	2.5617666	13	1	6 days	0.48	Williams	1998 TN ₃
1998 TO ₃	15.5	0.15	19981014	280.51954	82.40296	31.35650	21.01862	0.0825184	1.9244974	17	1	15 days	0.54	Williams	1998 TO ₃
1998 TQ ₃	14.2	0.15	19981014	353.84332	2.97430	34.86389	14.00608	0.2049690	2.4029489	20	1	15 days	0.42	Williams	1998 TQ ₃
1998 TT ₃	18.5	0.15	19981014	343.59505	48.06872	27.82118	21.70192	0.5008972	2.3214142	98	1	25 days	0.71	Marsden	1998 TT ₃
1998 TU ₃	15.0	0.15	19981014	145.19754	84.58688	102.32037	5.41817	0.4843207	0.7876646	87	1	26 days	0.49	Williams	1998 TU ₃
1998 TA ₅	19.0	0.15	19981014	4.32902	173.35125	197.99369	4.96727	0.2737334	2.2813344	9	1	4 days	0.31	E Williams	1998 TA ₅
1998 TB ₅	18.5	0.15	19981014	93.20988	58.74813	197.94624	11.74615	0.2690333	2.1420978	9	1	4 days	0.47	E Williams	1998 TB ₅
1998 TE ₅	14.1	0.15	19981014	235.62343	96.73624	68.41879	6.01281	0.0596687	2.5328894	16	1	8 days	0.91	E Williams	1998 TE ₅
1998 TF ₅	15.5	0.15	19981014	59.04580	243.22223	67.83855	5.13540	0.2079449	2.2392324	7	1	7 days	0.45	Williams	1998 TF ₅
1998 TG ₅	14.5	0.15	19981014	348.72173	347.05514	61.71660	6.65637	0.1477713	2.5023033	12	1	7 days	0.40	E Williams	1998 TG ₅
1998 TJ ₅	14.1	0.15	19981014	39.54432	276.24939	70.23614	5.60007	0.1150903	2.7927942	17	1	24 days	1.00	Williams	1998 TJ ₅
1998 TL ₅	14.7	0.15	19981014	0.34298	336.79776	57.51918	4.39300	0.1960074	2.8683600	23	1	16 days	0.72	Williams	1998 TL ₅
1998 TM ₅	14.5	0.15	19981014	101.83953	215.66783	62.81480	4.26203	0.1512458	2.5469575	15	1	11 days	0.47	Williams	1998 TM ₅
1998 TN ₅	12.5	0.15	19981014	239.93601	314.11440	212.91493	13.07001	0.0903488	3.1190623	15	1	16 days	0.25	Williams	1998 TN ₅
1998 TO ₅	14.0	0.15	19981014	339.25393	212.04381	211.67427	11.09601	0.1628395	2.6228585	18	1	24 days	0.46	Williams	1998 TO ₅
1998 TR ₅	14.4	0.15	19980924	354.23908	3.13491	32.18720	6.12012	0.0613039	2.3469897	19	1	22 days	0.47	Williams	1998 TR ₅

1998 TS ₅	13.5	0.15	19981014	353.07722	353.01330	50.33535	14.88010	0.1500201	2.6160317	7	1	7 days	0.21	Williams	1998 TS ₅
1998 TT ₅	13.0	0.15	19981014	5.41586	325.14181	65.91402	10.03122	0.0461503	3.1661214	9	1	7 days	0.71	E Williams	1998 TT ₅
1998 TU ₅	15.7	0.15	19981014	51.79408	271.73275	50.84912	5.63803	0.1885618	2.2791612	16	1	15 days	0.78	Williams	1998 TU ₅
1998 TV ₅	14.3	0.15	19981014	197.05515	96.90625	104.91391	1.99745	0.0832320	2.2931910	11	1	7 days	0.91	E Williams	1998 TV ₅
1998 TY ₅	15.8	0.15	19981014	11.35280	298.27242	71.75206	3.94057	0.2873214	2.5033352	11	1	5 days	0.99	Williams	1998 TY ₅
1998 TD ₆	14.8	0.15	19981014	34.94606	269.51667	75.03446	3.43361	0.1921148	2.5725332	16	1	15 days	0.71	Williams	1998 TD ₆
1998 TE ₆	14.6	0.15	19981014	33.65579	283.97627	63.46799	2.99944	0.1744523	2.3732484	12	1	5 days	0.55	Williams	1998 TE ₆
1998 TF ₆	15.0	0.15	19981014	340.49338	352.80611	68.09480	3.17143	0.1407825	2.4494821	17	1	13 days	0.52	Williams	1998 TF ₆
1998 TH ₆	14.9	0.15	19981014	332.64662	15.73677	35.58512	19.32519	0.1209366	3.0670947	15	1	7 days	0.16	Marsden	1998 TH ₆
1998 TJ ₆	13.2	0.15	19981014	98.24108	175.32275	102.57385	2.52980	0.1804122	3.1418131	20	1	11 days	0.36	Marsden	1998 TJ ₆
1998 TL ₆	15.5	0.15	19981014	316.77877	335.15665	122.42732	7.76432	0.1681027	2.5882798	6	1	7 days	0.11	Williams	1998 TL ₆
1998 TM ₆	14.5	0.15	19981014	94.74407	141.34322	141.79301	6.31547	0.2083273	2.2340299	6	1	6 days	0.21	Williams	1998 TM ₆
1998 TO ₆	16.0	0.15	19981014	103.26523	59.25468	216.98932	4.24306	0.1720105	2.3478154	12	1	10 days	0.41	Williams	1998 TO ₆
1998 TP ₆	16.0	0.15	19981014	13.64808	198.97489	127.44612	10.40281	0.2679435	2.6525221	8	1	6 days	0.36	Williams	1998 TP ₆
1998 TQ ₆	14.5	0.15	19981014	33.68668	241.32022	113.41218	7.73286	0.1492772	2.3564993	11	1	14 days	0.34	Williams	1998 TQ ₆
1998 TT ₆	14.0	0.15	19981014	142.14063	192.00438	56.73235	7.62818	0.0913872	2.3740306	12	1	13 days	0.68	Williams	1998 TT ₆
1998 TW ₆	18.1	0.15	19981014	68.73799	258.98228	20.74710	5.29758	0.3378702	2.2251194	12	1	27 days	0.30	Williams	1998 TW ₆
1998 TX ₆	19.2	0.15	19981014	32.69391	98.01448	211.56200	5.33808	0.4690518	2.1316054	35	1	14 days	0.59	Williams	1998 TX ₆
1998 TY ₆	14.5	0.15	19981014	46.42784	223.81495	104.56129	8.68157	0.2489300	2.7144278	10	1	14 days	0.65	Williams	1998 TY ₆
1998 TZ ₆	14.5	0.15	19981014	53.96054	143.54937	184.18127	13.35647	0.2004942	2.7008809	9	1	14 days	0.67	Williams	1998 TZ ₆
1998 TE ₇	17.5	0.15	19981014	326.06323	27.01582	17.76403	1.54469	0.0930316	2.5875123	9	1	8 days	0.20	Williams	1998 TE ₇
1998 TH ₇	16.0	0.15	19981014	119.79302	53.11631	178.80627	10.90879	0.1521833	2.6228454	9	1	8 days	0.12	Williams	1998 TH ₇
1998 TJ ₇	14.5	0.15	19981014	34.98098	29.51366	307.79403	20.74761	0.1734259	3.0441254	8	1	10 days	0.88	Williams	1998 TJ ₇
1998 TK ₇	15.0	0.15	19981014	326.73530	117.64052	324.79575	20.22925	0.2639560	3.0468160	8	1	9 days	0.40	Williams	1998 TK ₇
1998 TL ₇	16.8	0.15	19981014	26.17308	305.40081	39.42158	2.51676	0.2399307	2.3593713	13	1	9 days	0.43	Williams	1998 TL ₇
1998 TG ₈	17.8	0.15	19981014	347.84561	12.49015	21.65223	15.78054	0.1202601	2.5525475	9	1	17 days	0.20	Williams	1998 TG ₈
1998 TO ₈	16.0	0.15	19981014	314.87273	62.26958	31.83483	8.01584	0.1902513	3.1677250	9	1	11 days	0.09	Williams	1998 TO ₈
1998 TP ₈	17.5	0.15	19981014	24.80787	318.68097	31.69952	10.94319	0.2331046	3.1282703	9	1	11 days	0.13	Williams	1998 TP ₈
1998 TS ₈	18.0	0.15	19981014	49.49409	292.64454	36.74234	5.62260	0.1212867	2.3839936	9	1	11 days	0.20	Williams	1998 TS ₈
1998 TT ₈	17.0	0.15	19981014	304.64878	63.82869	35.52760	10.16737	0.1213004	2.6853386	9	1	11 days	0.17	Williams	1998 TT ₈
1998 TF ₉	17.0	0.15	19981014	44.74876	310.68613	24.70378	2.01619	0.1147742	2.8913063	9	1	11 days	0.18	Williams	1998 TF ₉
1998 TK ₉	14.0	0.15	19981014	109.02732	242.45155	32.17592	5.09800	0.0789029	3.2758473	9	1	11 days	0.10	Williams	1998 TK ₉
1998 TM ₉	17.5	0.15	19981014	37.08560	289.70556	39.55415	0.72481	0.2517718	2.3533218	9	1	11 days	0.52	Williams	1998 TM ₉
1998 TP ₉	17.0	0.15	19981014	28.56480	322.17505	35.72895	3.13020	0.0841077	3.0264202	9	1	11 days	0.20	Williams	1998 TP ₉
1998 TQ ₉	15.0	0.15	19981014	335.57088	217.77035	209.34781	5.36786	0.1928917	3.0853282	12	1	8 days	0.49	Williams	1998 TQ ₉
1998 TS ₉	16.5	0.15	19981014	205.16370	156.47162	34.44648	5.63067	0.1019346	2.5336870	9	1	11 days	0.21	Williams	1998 TS ₉
1998 TT ₉	18.5	0.15	19981014	10.22126	278.56083	93.41749	0.26762	0.2282858	2.3734748	9	1	11 days	0.12	Williams	1998 TT ₉
1998 TU ₉	17.0	0.15	19981014	182.29441	176.19762	33.85850	8.39721	0.1926361	2.3165116	9	1	11 days	0.11	Williams	1998 TU ₉
1998 TA ₁₀	14.6	0.15	19981014	38.65749	305.36792	36.56603	8.34790	0.1435170	3.0610944	12	1	11 days	0.43	Williams	1998 TA ₁₀
1998 TC ₁₀	13.8	0.15	19981014	344.94641	349.35706	63.40974	1.47461	0.1419027	3.2390911	12	1	8 days	0.66	E Williams	1998 TC ₁₀
1998 TF ₁₀	16.5	0.15	19981014	26.69781	313.11770	42.91367	3.67336	0.1566312	3.0213874	9	1	11 days	0.12	Williams	1998 TF ₁₀
1998 TH ₁₀	16.0	0.15	19981014	301.80873	76.17296	54.70043	1.99160	0.3392847	3.3417922	9	1	11 days	0.32	Williams	1998 TH ₁₀
1998 TJ ₁₀	14.8	0.15	19981014	12.92456	318.38999	53.06426	1.68487	0.2203436	3.1057736	12	1	8 days	0.55	E Williams	1998 TJ ₁₀
1998 TE ₁₁	17.5	0.15	19981014	316.92158	58.77160	20.22298	5.00025	0.1930199	2.4131634	9	1	9 days	0.16	Williams	1998 TE ₁₁
1998 TF ₁₁	16.5	0.15	19981014	324.84950	39.02687	19.72370	6.25319	0.0820099	2.7382976	8	1	10 days	0.08	Williams	1998 TF ₁₁
1998 TR ₁₁	16.0	0.15	19981014	255.81642	268.80567	252.93646	0.56822	0.2637834	2.8009122	9	1	10 days	0.21	Williams	1998 TR ₁₁
1998 TX ₁₁	17.0	0.15	19981014	352.03664	189.18274	211.16172	3.86514	0.0786960	2.7876958	9	1	10 days	0.11	Williams	1998 TX ₁₁
1998 TY ₁₁	18.0	0.15	19981014	36.48600	120.26340	218.75930	0.52616	0.1743016	2.4186961	9	1	10 days	0.10	Williams	1998 TY ₁₁
1998 TA ₁₂	17.5	0.15	19981014	284.09246	90.93835	32.94398	1.84498	0.1513063	2.3750436	9	1	10 days	0.24	Williams	1998 TA ₁₂
1998 TC ₁₂	15.5	0.15	19981014	347.92401	195.77562	212.49061	5.14966	0.1530217	3.0957437	9	1	10 days	0.14	Williams	1998 TC ₁₂
1998 TG ₁₂	15.7	0.15	19981014	342.28356	205.20229	208.80289	4.57879	0.1222656	2.7530113	9	1	7 days	0.27	Williams	1998 TG ₁₂
1998 TJ ₁₂	17.5	0.15	19981014	338.65529	211.98957	208.54399	2.93903	0.1616153	2.6415077	9	1	10 days	0.14	Williams	1998 TJ ₁₂
1998 TD ₁₃	15.5	0.15	19981014	34.51268	316.19043	39.71185	2.35890	0.0933830	2.6547063	13	1	15 days	0.36	Williams	1998 TD ₁₃

1998 TJ ₁₃	15.3	0.15	19981014	9.57957	340.97903	41.17492	3.29523	0.1236539	2.2112597	8	1	15 days	0.07	Williams	1998 TJ ₁₃
1998 TZ ₁₃	18.5	0.15	19981014	342.68337	22.39434	30.92143	3.22609	0.1724496	2.3842188	9	1	10 days	0.21	Williams	1998 TZ ₁₃
1998 TA ₁₄	15.5	0.15	19981014	70.44946	272.84047	33.95169	7.20229	0.1149068	2.2795821	9	1	5 days	0.26	Williams	1998 TA ₁₄
1998 TJ ₁₄	16.0	0.15	19981014	95.58794	69.43619	189.46176	1.77571	0.2157300	2.9162333	11	1	9 days	0.22	Williams	1998 TJ ₁₄
1998 TL ₁₄	16.5	0.15	19981014	337.44675	212.73158	194.30076	5.12071	0.1249793	3.0992679	9	1	8 days	0.27	Williams	1998 TL ₁₄
1998 TP ₁₄	16.5	0.15	19981014	197.33318	146.84516	36.17317	1.20109	0.0561199	2.1972150	12	1	9 days	0.25	Williams	1998 TP ₁₄
1998 TU ₁₄	17.5	0.15	19981014	81.99987	85.26202	191.38182	2.95760	0.1782879	2.2903610	9	1	8 days	0.22	Williams	1998 TU ₁₄
1998 TW ₁₄	18.0	0.15	19981014	51.50662	125.07007	186.06214	2.08066	0.1647955	2.3291305	9	1	8 days	0.22	Williams	1998 TW ₁₄
1998 TY ₁₄	18.5	0.15	19981014	1.42351	178.03454	198.79159	12.45938	0.1872184	2.6607541	9	1	8 days	0.20	Williams	1998 TY ₁₄
1998 TZ ₁₄	16.5	0.15	19981014	343.11393	202.40088	198.10443	16.51092	0.1165478	2.8413740	8	1	8 days	0.18	Williams	1998 TZ ₁₄
1998 TM ₁₅	17.7	0.15	19981014	139.48424	309.28695	289.06658	2.12550	0.0884284	1.8296584	28	1	6 days	0.64	Williams	1998 TM ₁₅
1998 TN ₁₅	15.0	0.15	19981014	233.71918	296.18928	220.24076	10.60952	0.0443580	3.0551219	9	1	6 days	0.19	Williams	1998 TN ₁₅
1998 TO ₁₅	13.1	0.15	19981014	298.46004	243.24292	222.35539	11.69048	0.1378845	2.6836420	19	1	27 days	0.50	Williams	1998 TO ₁₅
1998 TP ₁₅	15.5	0.15	19981014	224.97492	315.90780	221.53680	14.66613	0.1792565	2.5707923	9	1	6 days	0.19	Williams	1998 TP ₁₅
1998 TQ ₁₅	16.5	0.15	19981014	218.54937	289.75473	248.36211	4.16946	0.1016393	2.4380276	9	1	6 days	0.15	Williams	1998 TQ ₁₅
1998 TR ₁₅	16.0	0.15	19981014	256.57356	138.73814	5.24254	5.04551	0.1004086	2.3295542	15	1	16 days	0.44	Williams	1998 TR ₁₅
1998 TS ₁₅	17.0	0.15	19981014	41.56153	358.76168	331.35717	2.39419	0.2088647	3.1493037	9	1	6 days	0.30	Williams	1998 TS ₁₅
1998 TT ₁₅	17.0	0.15	19981014	28.81171	105.63598	251.21771	3.10652	0.0751577	2.5536797	9	1	6 days	0.18	Williams	1998 TT ₁₅
1998 TV ₁₅	18.0	0.15	19981014	14.51943	116.46844	251.61032	2.20314	0.1549103	2.0774482	9	1	6 days	0.09	Williams	1998 TV ₁₅
1998 TX ₁₅	17.5	0.15	19981014	66.20123	337.66076	319.32643	1.88332	0.2409481	2.4413087	9	1	6 days	0.21	Williams	1998 TX ₁₅
1998 TZ ₁₅	16.5	0.15	19981014	63.84041	82.41977	229.00948	5.41022	0.1454669	2.4429383	9	1	6 days	0.19	E Williams	1998 TZ ₁₅
1998 TB ₁₆	15.5	0.15	19981014	77.59663	51.34463	244.55672	2.71273	0.1530318	2.2162602	9	1	6 days	0.14	E Williams	1998 TB ₁₆
1998 TD ₁₆	16.0	0.15	19981014	116.14737	356.59871	266.76064	1.83326	0.1387971	2.3365590	9	1	6 days	0.12	Williams	1998 TD ₁₆
1998 TE ₁₆	16.5	0.15	19981014	81.73488	308.55636	347.36732	1.79431	0.1262794	2.3536977	9	1	6 days	0.08	Williams	1998 TE ₁₆
1998 TF ₁₆	17.0	0.15	19981014	57.28049	307.28320	1.12938	2.33147	0.2370686	2.4343067	9	1	6 days	0.18	Williams	1998 TF ₁₆
1998 TH ₁₆	14.8	0.15	19981014	45.06201	254.02876	93.61499	5.20116	0.0428140	2.3196163	8	1	7 days	0.18	E Williams	1998 TH ₁₆
1998 TJ ₁₆	15.5	0.15	19981014	7.87608	329.15982	49.41162	13.66490	0.2966686	2.6399013	16	1	15 days	0.32	Williams	1998 TJ ₁₆
1998 TO ₁₆	16.5	0.15	19980924	339.31210	173.51008	230.07050	5.39435	0.1355588	2.2876249	14	1	25 days	0.79	Williams	1998 TO ₁₆
1998 TG ₁₇	15.5	0.15	19981014	46.22863	88.57797	225.68611	4.46227	0.2567951	2.4197143	12	1	17 days	0.28	Williams	1998 TG ₁₇
1998 TP ₁₇	11.5	0.15	19981014	75.24718	188.82999	117.82246	10.90758	0.0818264	3.0468019	17	1	14 days	0.80	Williams	1998 TP ₁₇
1998 TQ ₁₇	14.5	0.15	19981014	26.30021	306.87671	54.02441	8.27199	0.1049798	2.2945624	6	1	14 days	0.29	E Williams	1998 TQ ₁₇
1998 TR ₁₇	14.8	0.15	19981014	304.81226	269.90257	184.68370	1.45161	0.0314833	2.5721621	10	1	7 days	1.07	E Williams	1998 TR ₁₇
1998 TX ₁₇	13.5	0.15	19981014	233.99768	353.40306	180.11479	8.22392	0.0755770	3.1968169	5	1	11 days	0.59	E Williams	1998 TX ₁₇
1998 TY ₁₇	14.0	0.15	19981014	209.48749	33.22540	162.26054	3.92146	0.1081992	2.5824538	6	1	13 days	0.74	Williams	1998 TY ₁₇
1998 TZ ₁₇	11.8	0.15	19981014	236.01423	171.28737	342.51624	13.62586	0.0959785	2.6695301	11	1	16 days	0.59	Nakano	1998 TZ ₁₇
1998 TE ₁₈	14.0	0.15	19981014	331.03324	200.80480	223.73219	16.65472	0.1666850	3.0861425	18	1	17 days	1.05	Williams	1998 TE ₁₈
1998 TF ₁₈	13.5	0.15	19981014	332.02889	223.46275	204.38667	4.67279	0.1967653	2.5946598	15	1	5 days	0.13	E Williams	1998 TF ₁₈
1998 TM ₁₈	17.0	0.15	19981014	16.16780	63.88912	294.63469	4.38381	0.2056750	2.3050533	10	1	3 days	0.41	E Williams	1998 TM ₁₈
1998 TP ₁₈	15.0	0.15	19981014	301.15743	244.14427	226.08726	14.16740	0.2458392	2.6518274	9	1	6 days	0.23	Williams	1998 TP ₁₈
1998 TQ ₁₈	15.5	0.15	19981014	44.87646	79.00748	234.35194	8.28110	0.2536018	2.3337847	12	1	8 days	0.62	Williams	1998 TQ ₁₈
1998 TR ₁₈	17.8	0.15	19981014	327.52530	238.77628	191.45173	0.43640	0.2324146	2.2557238	15	1	13 days	1.11	Williams	1998 TR ₁₈
1998 TV ₁₈	16.0	0.15	19981014	17.99608	334.44607	21.36488	6.44320	0.1246535	2.7673543	12	1	5 days	0.54	E Williams	1998 TV ₁₈
1998 TW ₁₈	15.5	0.15	19981014	10.49917	165.86799	203.65516	4.37067	0.2043416	2.4250361	9	1	3 days	0.19	E Williams	1998 TW ₁₈
1998 TC ₁₉	13.5	0.15	19981014	288.88875	264.02983	219.91334	8.83167	0.2084318	3.0881187	9	1	3 days	0.29	E Williams	1998 TC ₁₉
1998 TD ₁₉	16.0	0.15	19981014	14.21009	104.46834	257.26387	1.56188	0.2649575	2.5753118	15	1	16 days	0.23	Williams	1998 TD ₁₉
1998 TE ₁₉	14.0	0.15	19981014	322.46788	46.62883	22.29714	12.93185	0.0287583	2.9797931	12	1	4 days	0.49	E Williams	1998 TE ₁₉
1998 TJ ₁₉	17.5	0.15	19981014	18.45027	329.45550	19.75083	22.23288	0.2018688	2.1218844	9	1	3 days	0.33	E Williams	1998 TJ ₁₉
1998 TL ₁₉	14.5	0.15	19981014	341.99315	175.10509	232.14740	13.58015	0.1283449	3.1798729	10	1	7 days	0.40	Williams	1998 TL ₁₉
1998 TN ₁₉	16.0	0.15	19981014	285.27632	124.94221	353.75229	2.16852	0.1451203	2.4308561	12	1	13 days	0.27	Williams	1998 TN ₁₉
1998 TO ₁₉	15.6	0.15	19981014	314.03177	223.46578	229.49028	3.07059	0.2075893	2.3448510	15	1	17 days	0.30	Williams	1998 TO ₁₉
1998 TR ₁₉	15.5	0.15	19981014	273.75793	98.58806	24.10366	20.50252	0.0802423	1.9220150	27	1	18 days	0.49	Williams	1998 TR ₁₉
1998 TS ₁₉	14.0	0.15	19981014	340.49632	214.15569	201.33973	1.38925	0.1833359	3.0520756	20	1	11 days	0.53	Williams	1998 TS ₁₉
1998 TA ₂₀	15.5	0.15	19981014	44.54289	309.82255	25.54122	9.33526	0.1134732	3.0685021	9	1	14 days	0.18	Williams	1998 TA ₂₀

1998 TY ₂₀	15.5	0.15	19981014	26.64056	46.52426	300.45532	0.73421	0.2344762	3.0091871	9	1	8 days	0.54	Williams	1998 TY ₂₀
1998 TH ₂₁	16.9	0.15	19981014	8.86643	357.53810	20.60181	3.80360	0.1391975	2.6870179	8	1	14 days	0.07	Williams	1998 TH ₂₁
1998 TK ₂₁	13.2	0.15	19981014	282.47643	264.54794	225.58692	4.58314	0.1611135	5.1452303	9	1	14 days	0.12	Williams	1998 TK ₂₁
1998 TN ₂₁	17.7	0.15	19981014	345.21878	93.44520	314.69870	0.51743	0.0831919	2.6382739	9	1	14 days	0.14	Williams	1998 TN ₂₁
1998 TO ₂₁	17.2	0.15	19981014	314.20574	211.60455	228.47173	1.98308	0.0386089	2.6024289	9	1	14 days	0.28	Williams	1998 TO ₂₁
1998 TE ₂₂	17.0	0.15	19981014	294.38038	80.76450	30.42163	5.97496	0.1238186	2.5994523	9	1	14 days	0.12	Williams	1998 TE ₂₂
1998 TJ ₂₂	16.9	0.15	19981014	334.65764	35.41359	26.83712	1.01270	0.0902234	2.6197874	9	1	14 days	0.27	Williams	1998 TJ ₂₂
1998 TN ₂₂	15.2	0.15	19981014	332.65554	215.82990	210.65120	3.50534	0.0925822	3.2157556	9	1	14 days	0.17	Williams	1998 TN ₂₂
1998 TP ₂₂	16.9	0.15	19981014	325.56331	46.58647	21.45479	4.41716	0.0375659	2.7724967	8	1	14 days	0.10	Williams	1998 TP ₂₂
1998 TQ ₂₂	17.1	0.15	19981014	9.32249	356.31497	21.80667	1.31766	0.1678326	3.0788899	8	1	14 days	0.14	Williams	1998 TQ ₂₂
1998 TU ₂₂	15.9	0.15	19981014	12.35543	358.60852	19.18855	1.29097	0.1768231	3.1313704	9	1	16 days	0.14	Williams	1998 TU ₂₂
1998 TW ₂₄	16.2	0.15	19981014	93.72910	73.22362	197.00085	4.04854	0.1351765	2.7885326	9	1	13 days	0.10	Williams	1998 TW ₂₄
1998 TY ₂₄	16.6	0.15	19981014	20.83606	237.35558	113.82885	0.27958	0.1476102	3.0002476	9	1	13 days	0.11	Williams	1998 TY ₂₄
1998 TK ₂₅	16.9	0.15	19981014	38.54451	296.03919	35.11149	1.91806	0.1258715	2.6258533	9	1	13 days	0.19	Williams	1998 TK ₂₅
1998 TR ₂₆	16.3	0.15	19981014	23.51363	327.91183	27.69531	4.41809	0.2319188	2.3007730	9	1	5 days	0.15	Williams	1998 TR ₂₆
1998 TD ₂₇	14.0	0.15	19981014	61.53647	285.34656	39.05840	5.41995	0.1295384	2.8531891	9	1	5 days	0.26	E Williams	1998 TD ₂₇
1998 TE ₂₇	15.0	0.15	19981014	21.26137	163.11404	203.59583	0.71883	0.1939817	2.8322818	9	1	5 days	0.25	E Williams	1998 TE ₂₇
1998 TO ₂₈	14.8	0.15	19981014	57.81214	278.04415	28.08248	10.42657	0.2516686	2.5651987	12	1	10 days	0.84	Williams	1998 TO ₂₈
1998 TS ₂₈	16.6	0.15	19981014	159.74274	202.24148	29.36987	10.37490	0.0763717	2.6606624	9	1	14 days	0.30	Williams	1998 TS ₂₈
1998 TB ₂₉	15.5	0.15	19981014	35.52754	315.37210	31.52391	6.51173	0.1306897	2.2702129	12	1	10 days	0.86	Williams	1998 TB ₂₉
1998 TU ₂₉	16.5	0.15	19981014	1.52367	240.19604	147.30586	15.01748	0.3521783	2.7237448	7	1	13 days	0.32	Williams	1998 TU ₂₉
1998 TV ₂₉	14.5	0.15	19981014	106.88959	53.67189	220.35014	7.53651	0.1439141	2.2467524	8	1	13 days	0.45	Williams	1998 TV ₂₉
1998 UA	13.8	0.15	19980924	158.77792	328.57819	225.58672	34.40847	0.1466546	2.7605229	10	1	33 days	0.58	Williams	1998 UA
1998 UD	14.5	0.15	19980904	281.98666	135.25874	316.52447	23.37990	0.1082520	2.2925141	17	1	54 days	0.57	Williams	1998 UD
1998 UG	14.0	0.15	19981014	339.23013	118.60485	305.16981	21.97254	0.2321054	2.2881376	7	1	3 days	0.13	Williams	1998 UG
1998 UH	14.0	0.15	19981014	23.07075	30.23531	323.32137	25.53433	0.3474428	3.1392825	9	1	8 days	0.37	Williams	1998 UH
1998 UJ	15.5	0.15	19981014	314.68179	135.77850	333.87060	23.84067	0.2363917	2.2757928	9	1	8 days	0.84	Williams	1998 UJ
1998 UK	15.5	0.15	19981014	47.45952	99.57377	222.43379	9.51451	0.1585011	3.0949910	17	1	5 days	0.46	Williams	1998 UK
1998 UL	14.0	0.15	19981014	102.84601	330.18654	284.51102	9.32615	0.0743876	2.9684524	11	1	7 days	0.25	Williams	1998 UL
1998 UP	16.8	0.15	19980924	1.13774	144.87377	228.49219	5.03964	0.2065854	2.3327655	21	1	28 days	0.91	Williams	1998 UP
1998 UR	23.0	0.15	19981014	17.79064	311.94265	28.23023	17.30032	0.3764828	1.6436927	23	1	11 days	0.63	Williams	1998 UR
1998 US	15.5	0.15	19981014	59.42873	55.16921	225.98624	12.97137	0.2880912	2.3897632	6	1	6 days	0.11	Williams	1998 US
1998 UT	16.5	0.15	19981014	195.25464	232.28645	307.03895	18.26562	0.0465482	1.9077024	8	1	7 days	0.29	Williams	1998 UT
1998 UU	15.5	0.15	19981014	307.05816	163.27129	286.87110	19.50226	0.0768514	1.9123264	9	1	12 days	0.79	Williams	1998 UU
1998 UV	16.5	0.15	19981014	298.13019	163.12388	315.36723	17.49606	0.1162698	1.8851024	10	1	7 days	0.79	Williams	1998 UV
1998 UW	16.0	0.15	19981014	315.00197	118.04855	324.21060	24.75230	0.2321277	2.2931436	6	1	3 days	0.38	Williams	1998 UW
1998 UX	16.1	0.15	19980924	357.32606	120.69943	254.53139	21.32203	0.2938360	2.3213277	12	1	25 days	0.46	Williams	1998 UX
1998 UY	15.1	0.15	19981014	5.64732	354.39762	36.60005	6.63142	0.0789950	3.0957922	8	1	12 days	0.12	Williams	1998 UY
1998 UZ	13.3	0.15	19981014	293.69995	265.77971	215.04508	11.97436	0.1935447	2.6152385	34	1	20 days	0.38	Williams	1998 UZ
1998 UA ₁	15.0	0.15	19981014	336.79720	14.24408	49.75582	4.87238	0.1727039	2.3098940	15	1	11 days	0.20	Williams	1998 UA ₁
1998 UB ₁	15.8	0.15	19981014	27.94547	151.89135	202.95266	0.50028	0.2022586	2.8220896	12	1	11 days	0.53	Williams	1998 UB ₁
1998 UD ₁	16.2	0.15	19990122	15.37469	67.25154	317.69901	20.34726	0.4230760	3.1449073	34	1	46 days	0.38	Williams	1998 UD ₁
1998 UE ₁	17.4	0.15	19980924	18.22473	68.58712	276.46674	18.84533	0.1074897	1.8907567	11	1	33 days	0.39	Williams	1998 UE ₁
1998 UF ₁	16.3	0.15	19980924	334.16182	150.89719	261.01432	24.14900	0.2108822	2.3467734	15	1	30 days	0.43	Williams	1998 UF ₁
1998 UG ₁	15.0	0.15	19980924	2.53925	98.68482	275.13704	24.65993	0.2525505	3.1900853	11	1	34 days	0.32	Williams	1998 UG ₁
1998 UH ₁	16.7	0.15	19980924	57.38300	20.77087	295.16661	18.42753	0.0613909	1.9082403	11	1	34 days	0.59	Williams	1998 UH ₁
1998 UL ₁	16.4	0.15	19981014	166.65758	353.06968	214.92366	41.97096	0.2141450	1.5269562	57	1	22 days	0.54	Marsden	1998 UL ₁
1998 UM ₁	23.0	0.15	19981014	6.09780	0.87458	3.53647	4.84259	0.3993960	1.6940335	33	1	11 days	0.68	Williams	1998 UM ₁
1998 UN ₁	18.2	0.15	19981014	48.37675	87.59680	217.97309	32.40548	0.2205880	1.5127286	84	1	20 days	0.98	Marsden	1998 UN ₁
1998 UO ₁	16.3	0.15	19981014	44.01734	252.02770	358.96787	25.58281	0.7632793	1.5966261	83	1	20 days	0.49	Williams	1998 UO ₁
1998 UP ₁	20.5	0.15	19981014	87.48145	236.91183	18.54021	35.19006	0.3568852	1.0210155	37	1	9 days	0.74	Williams	1998 UP ₁
1998 UQ ₁	16.3	0.15	19981014	354.55180	182.96739	222.53951	64.56111	0.5210527	3.2062899	82	1	21 days	0.76	Williams	1998 UQ ₁
1998 UR ₁	16.5	0.15	19981014	98.70644	62.12094	209.99107	5.78733	0.2093764	2.1676567	9	1	5 days	0.57	E Williams	1998 UR ₁

M-v 4

1998 US ₁	18.0	0.15	19981014	72.43176	62.40323	212.60397	9.02521	0.3696362	2.3038805	9	1	4 days	0.31		Williams	1998 US ₁
1998 UU ₁	16.5	0.15	19981014	358.58416	337.97376	112.84681	3.28522	0.1895607	2.4112618	12	1	3 days	0.61	E	Williams	1998 UU ₁
1998 UV ₁	17.0	0.15	19981014	7.42449	13.76789	356.08178	8.00627	0.3650803	2.7112183	9	1	9 days	0.47		Williams	1998 UV ₁
1998 UW ₁	12.0	0.15	19981014	44.00703	243.03894	102.90003	14.01776	0.1973622	2.6712647	8	1	13 days	0.11		Williams	1998 UW ₁
1998 UX ₁	13.0	0.15	19981014	48.39650	208.84581	143.01726	11.11566	0.1316148	3.0200059	8	1	13 days	0.40		Williams	1998 UX ₁
1998 UG ₂	17.0	0.15	19981014	21.88022	349.35103	0.28149	3.03740	0.2742590	2.4913593	9	1	10 days	0.25		Williams	1998 UG ₂
1998 UH ₂	13.5	0.15	19981014	86.14338	268.53584	16.52583	7.10038	0.1874657	3.1894714	14	1	9 days	0.83		Williams	1998 UH ₂
1998 UO ₂	14.5	0.15	19981014	123.64299	228.58649	27.23923	13.93642	0.1631629	2.7173370	12	1	6 days	0.63	E	Williams	1998 UO ₂
1998 UP ₂	17.0	0.15	19981014	354.42789	12.28448	25.58269	11.47008	0.0301157	2.5322964	12	1	6 days	0.68	E	Williams	1998 UP ₂
1998 UQ ₂	15.5	0.15	19981014	3.70480	22.58791	2.21784	2.51812	0.1789985	2.4816949	12	1	6 days	0.25		Williams	1998 UQ ₂
1998 UR ₂	16.0	0.15	19981014	335.92045	202.07681	226.42229	6.00689	0.2244221	2.6150985	12	1	5 days	0.46	E	Williams	1998 UR ₂
1998 UW ₂	15.9	0.15	19981014	29.62615	327.12063	22.49842	5.64238	0.1794304	2.5380083	15	1	14 days	0.82		Williams	1998 UW ₂
1998 UC ₃	14.4	0.15	19981014	352.37193	74.50470	327.74300	1.28671	0.0541769	2.8539111	21	1	19 days	0.92		Williams	1998 UC ₃
1998 UM ₃	16.9	0.15	19981014	346.69574	177.57967	197.83717	0.82524	0.2453721	2.4202603	9	1	10 days	0.34		Williams	1998 UM ₃
1998 UA ₄	13.5	0.15	19981014	113.66773	227.63004	111.16239	12.31382	0.1506935	2.7632640	15	1	6 days	0.39		Williams	1998 UA ₄
1998 UD ₄	14.5	0.15	19981014	72.76703	219.57637	82.75023	7.23818	0.1795879	2.2517940	10	1	15 days	0.31		Williams	1998 UD ₄
1998 UE ₄	14.5	0.15	19981014	30.14727	235.37019	126.52243	9.89446	0.2180680	2.3031811	7	1	9 days	0.14		Williams	1998 UE ₄
1998 UF ₄	14.0	0.15	19981014	63.71234	219.02604	104.28381	11.41277	0.2162360	2.2607137	12	1	9 days	0.38		Williams	1998 UF ₄
1998 UG ₄	14.5	0.15	19981014	351.80535	318.47187	44.74776	12.04741	0.1286447	3.0638592	6	1	6 days	0.39		Williams	1998 UG ₄
1998 UP ₅	16.0	0.15	19981014	323.76457	43.54841	47.47787	12.26208	0.2807031	2.9057297	9	1	5 days	0.11		Williams	1998 UP ₅
1998 UW ₅	16.0	0.15	19981014	259.98532	42.41721	100.98165	4.08933	0.1124685	2.5326212	9	1	5 days	0.19		Williams	1998 UW ₅
1998 UY ₅	15.8	0.15	19981014	17.37435	294.48278	62.19128	5.69076	0.2841411	2.5317816	12	1	15 days	0.22		Williams	1998 UY ₅
1998 UE ₆	15.6	0.15	19981014	22.72117	302.15794	58.22209	7.95964	0.1235394	2.2936869	12	1	15 days	0.17		Williams	1998 UE ₆
1998 UG ₆	15.0	0.15	19981014	106.96935	155.87640	113.56880	4.40991	0.1593753	2.6253018	9	1	5 days	0.29		Williams	1998 UG ₆
1998 UL ₆	13.0	0.15	19981014	358.41400	358.79905	112.44785	11.94282	0.2242432	3.8399919	9	1	4 days	0.52	E	Williams	1998 UL ₆
1998 UM ₆	15.3	0.15	19981014	65.37676	251.60913	57.66489	5.17237	0.1691091	2.6207402	18	1	18 days	0.42		Marsden	1998 UM ₆
1998 UN ₆	16.0	0.15	19981014	42.67974	285.83564	47.06595	7.61265	0.1749554	2.2562879	26	1	25 days	0.37		Marsden	1998 UN ₆
1998 UO ₆	14.9	0.15	19981014	24.63958	219.04557	136.92252	2.55404	0.2168729	2.8848549	13	1	4 days	0.28		Marsden	1998 UO ₆
1998 UQ ₆	13.5	0.15	19981014	311.12308	67.81363	16.37251	2.99393	0.0381353	5.2633156	14	1	43 days	0.36		Williams	1998 UQ ₆
1998 UT ₆	13.4	0.15	19981103	16.26392	357.28685	37.44649	1.73134	0.1006913	2.9303566	11	1	13 days	0.35		Nakano	1998 UT ₆
1998 UU ₆	13.0	0.15	19981103	63.62884	297.90886	64.65419	14.21675	0.2192050	2.5196985	11	1	13 days	0.23		Nakano	1998 UU ₆
1998 UV ₆	14.0	0.15	19981014	342.21788	139.64730	269.85909	1.08973	0.0877321	2.9436095	12	1	10 days	0.37		Williams	1998 UV ₆
1998 UW ₆	13.2	0.15	19981014	229.78579	152.63676	351.91453	7.93372	0.0676089	3.2086234	9	1	6 days	0.34	E	Williams	1998 UW ₆
1998 UX ₆	16.1	0.15	19981014	45.11283	49.04125	282.53729	3.58131	0.1450488	2.2720382	8	1	10 days	0.32		Williams	1998 UX ₆
1998 UY ₆	16.7	0.15	19981014	50.13258	267.08768	46.40239	4.90301	0.2056725	2.2898777	9	1	10 days	0.65		Williams	1998 UY ₆
1998 UZ ₆	12.5	0.15	19981014	258.98976	15.68184	149.49500	12.82916	0.0731545	2.7052056	11	1	9 days	0.88		Williams	1998 UZ ₆
1998 UA ₇	12.5	0.15	19981014	46.51631	260.99116	94.25639	22.02252	0.1469297	3.2519685	10	1	9 days	0.28		Williams	1998 UA ₇
1998 UB ₇	14.0	0.15	19981014	14.04671	300.60472	73.45941	9.02002	0.1944838	2.3531328	7	1	6 days	0.21		Williams	1998 UB ₇
1998 UC ₇	13.1	0.15	19981014	1.87380	180.96839	219.33566	11.17949	0.0267047	2.9383602	14	1	12 days	0.57		Williams	1998 UC ₇
1998 UD ₇	13.0	0.15	19981014	69.04096	265.42422	34.67276	3.23899	0.2766425	2.5598557	7	1	7 days	0.39	E	Williams	1998 UD ₇
1998 UF ₇	14.0	0.15	19981014	38.42017	178.77378	186.31357	15.01212	0.1352988	2.6471703	8	1	7 days	0.26		Williams	1998 UF ₇
1998 UH ₇	15.5	0.15	19981014	338.48967	315.63957	107.43167	5.50363	0.1306484	2.4098060	9	1	14 days	0.41		Williams	1998 UH ₇
1998 UJ ₇	14.0	0.15	19981014	245.05716	71.85758	93.59548	1.94440	0.1031360	2.6196987	8	1	6 days	0.98	E	Williams	1998 UJ ₇
1998 UK ₇	14.1	0.15	19981014	341.29521	14.61271	45.99965	15.95615	0.0867594	2.5719089	10	1	11 days	0.31		Williams	1998 UK ₇
1998 UL ₇	14.5	0.15	19981014	351.68309	333.71428	72.50350	8.27605	0.1318823	2.3550722	6	1	5 days	0.16		Williams	1998 UL ₇
1998 UN ₇	15.2	0.15	19981014	51.61946	274.97022	50.30961	7.67195	0.2010024	2.2387113	15	1	12 days	0.68		Williams	1998 UN ₇
1998 UO ₇	15.0	0.15	19981014	327.29976	42.09120	43.63408	4.95580	0.1858950	2.5743291	9	1	7 days	0.49		Williams	1998 UO ₇
1998 UP ₇	15.5	0.15	19981014	348.28076	9.84773	42.97110	7.50577	0.0970107	2.3397575	10	1	9 days	0.56		Williams	1998 UP ₇
1998 UQ ₇	14.5	0.15	19981014	303.01150	62.40204	42.78205	13.15735	0.1172778	2.5835939	9	1	7 days	0.27	E	Williams	1998 UQ ₇
1998 UR ₇	15.0	0.15	19981014	10.72588	171.63033	208.02955	10.31255	0.2419956	3.0616388	11	1	6 days	1.01		Williams	1998 UR ₇
1998 US ₇	14.0	0.15	19981014	129.01513	54.54563	210.56578	13.45561	0.0700592	2.6334190	9	1	6 days	0.58	E	Williams	1998 US ₇
1998 UT ₇	14.5	0.15	19981014	16.29621	151.86414	215.40395	6.30496	0.1285140	2.7606421	11	1	14 days	0.81		Williams	1998 UT ₇
1998 UV ₇	14.5	0.15	19981014	329.49806	32.64060	45.74724	16.52373	0.1664790	2.7617664	6	1	5 days	0.44	E	Williams	1998 UV ₇

1998 UW ₇	14.0	0.15	19981014	295.67665	303.09443	172.96110	8.26285	0.1112130	2.5794918	8	1	6 days	0.93	Williams	1998 UW ₇
1998 UX ₇	13.0	0.15	19981014	39.94863	148.42347	202.27403	11.41136	0.1349251	3.2302978	8	1	7 days	0.36	Williams	1998 UX ₇
1998 UY ₇	13.5	0.15	19981014	11.50964	189.67869	195.95033	10.11152	0.0964269	2.5992794	7	1	5 days	0.22	Williams	1998 UY ₇
1998 UD ₈	12.5	0.15	19981014	72.94295	242.01954	78.60334	2.97900	0.0876180	2.9395067	10	1	12 days	0.26	Williams	1998 UD ₈
1998 UE ₈	12.9	0.15	19981014	329.04619	272.94421	170.29150	1.75868	0.1303903	3.2200616	9	1	12 days	0.45	Williams	1998 UE ₈
1998 UF ₈	13.6	0.15	19981014	205.64451	148.54273	50.71638	7.12074	0.0697896	2.2605281	14	1	12 days	0.61	Williams	1998 UF ₈
1998 UG ₈	12.6	0.15	19981014	315.61155	224.93764	227.71673	20.98203	0.0434085	3.2397505	10	1	12 days	0.35	Williams	1998 UG ₈
1998 UJ ₈	14.9	0.15	19981014	352.81996	211.90156	202.85639	3.74084	0.1524661	2.2760596	9	1	18 days	0.48	Williams	1998 UJ ₈
1998 UK ₈	14.2	0.15	19981103	303.82872	307.16801	173.38316	4.72179	0.0917346	2.4517993	6	1	14 days	0.43	Nakano	1998 UK ₈
1998 UL ₈	13.3	0.15	19981014	6.77144	312.61203	89.28323	2.39136	0.1751395	3.2000041	12	1	18 days	0.58	Williams	1998 UL ₈
1998 UM ₈	13.2	0.15	19981103	161.08131	155.63879	93.63522	4.92526	0.1849996	2.2035754	6	1	14 days	0.18	Nakano	1998 UM ₈
1998 UO ₈	13.5	0.15	19981014	39.27866	94.29848	249.70577	3.40389	0.0699686	2.7835937	18	1	9 days	0.22	Williams	1998 UO ₈
1998 UP ₈	14.0	0.15	19981014	24.16867	79.81612	272.13353	1.78337	0.1970085	2.7000201	18	1	9 days	0.38	Williams	1998 UP ₈
1998 UV ₈	15.5	0.15	19981014	356.29273	186.56715	204.75467	1.72820	0.2152042	2.3076581	16	1	9 days	0.80	Williams	1998 UV ₈
1998 UX ₈	13.0	0.15	19981014	248.57483	283.47765	221.62410	11.67383	0.0453257	2.8175545	9	1	3 days	0.17	E Williams	1998 UX ₈
1998 UB ₉	14.5	0.15	19981014	269.13225	280.87957	218.92645	2.26475	0.1133515	2.6394271	9	1	5 days	0.38	E Williams	1998 UB ₉
1998 UG ₉	18.3	0.15	19981014	1.58854	356.21293	12.69093	4.90740	0.1708336	2.2655880	9	1	12 days	0.24	Williams	1998 UG ₉
1998 UZ ₉	17.8	0.15	19981014	343.45349	212.75273	182.50449	0.85959	0.1666752	2.3678187	9	1	12 days	0.42	Williams	1998 UZ ₉
1998 UN ₁₁	15.2	0.15	19981014	302.43334	270.84233	198.45269	4.04857	0.1492951	3.0507417	8	1	12 days	0.12	Williams	1998 UN ₁₁
1998 US ₁₁	13.1	0.15	19981014	315.95461	29.64626	63.91923	7.14393	0.0926407	5.0109255	8	1	12 days	0.07	Williams	1998 US ₁₁
1998 UB ₁₂	16.3	0.15	19981014	348.76459	225.30699	183.02594	2.70924	0.0383926	2.6726342	8	1	12 days	0.24	Williams	1998 UB ₁₂
1998 UK ₁₂	16.1	0.15	19981014	354.78619	7.16531	31.36406	4.05866	0.2829943	2.9881810	9	1	9 days	0.21	Williams	1998 UK ₁₂
1998 UT ₁₂	15.9	0.15	19981014	50.38924	117.97996	208.69043	2.83319	0.1363887	2.3156154	9	1	5 days	0.53	E Williams	1998 UT ₁₂
1998 UU ₁₂	15.6	0.15	19981014	85.66593	84.23415	207.55403	2.65891	0.1227128	2.3581047	9	1	5 days	0.36	E Williams	1998 UU ₁₂
1998 UW ₁₂	16.3	0.15	19981014	48.13245	129.58284	193.80938	1.72603	0.1930049	2.3031333	9	1	5 days	0.20	Williams	1998 UW ₁₂
1998 UF ₁₄	13.3	0.15	19981014	45.59679	276.10799	68.22310	3.22572	0.0658771	2.9246218	9	1	4 days	0.14	E Williams	1998 UF ₁₄
1998 UL ₁₄	17.8	0.15	19981014	7.84275	333.10805	47.64991	8.76105	0.2527140	3.1321259	8	1	6 days	0.39	E Williams	1998 UL ₁₄
1998 UO ₁₄	16.9	0.15	19981014	119.99033	197.44284	65.61754	2.92263	0.1311316	2.2086119	8	1	6 days	0.47	E Williams	1998 UO ₁₄
1998 UP ₁₄	17.9	0.15	19981014	25.16332	306.69896	51.09509	6.46447	0.1839193	2.6824726	8	1	6 days	0.20	Williams	1998 UP ₁₄
1998 UR ₁₄	16.7	0.15	19981014	56.57403	274.32971	50.05337	5.92339	0.1260242	2.2937217	8	1	6 days	0.08	Williams	1998 UR ₁₄
1998 UV ₁₄	16.6	0.15	19981014	67.10593	262.92596	47.58992	8.99520	0.1505027	2.2915117	8	1	6 days	0.11	E Williams	1998 UV ₁₄
1998 UZ ₁₄	12.5	0.15	19981014	278.02305	53.13831	75.19206	4.11755	0.0531390	5.1842455	8	1	6 days	0.10	E Williams	1998 UZ ₁₄
1998 UA ₁₅	14.8	0.15	19981014	275.19688	73.15931	52.53234	6.20550	0.0668271	2.3872323	19	1	18 days	0.32	Marsden	1998 UA ₁₅
1998 UC ₁₅	15.5	0.15	19981014	294.20658	342.88502	139.06741	6.83045	0.1182077	2.4780524	8	1	7 days	0.26	Williams	1998 UC ₁₅
1998 UD ₁₅	15.0	0.15	19981014	357.32553	227.61796	133.03358	3.11790	0.1267430	3.1526133	11	1	3 days	0.82	E Williams	1998 UD ₁₅
1998 UE ₁₅	15.1	0.15	19981014	50.59591	208.48513	121.03009	8.84887	0.2408322	2.1774947	14	1	13 days	0.69	Williams	1998 UE ₁₅
1998 UF ₁₅	13.8	0.15	19981014	354.02145	116.52441	290.31525	5.52931	0.1269582	2.4369365	37	1	15 days	0.61	Williams	1998 UF ₁₅
1998 UH ₁₅	13.5	0.15	19981014	59.83288	127.08131	193.53733	13.17323	0.2161358	2.6410471	9	1	9 days	0.23	Williams	1998 UH ₁₅
1998 UL ₁₅	15.0	0.15	19981014	337.03690	294.76531	138.37114	4.30158	0.2275405	2.5742827	9	1	6 days	0.96	Williams	1998 UL ₁₅
1998 UM ₁₅	15.0	0.15	19981014	57.99084	251.99805	65.78185	5.17780	0.2211058	2.2319334	7	1	7 days	0.86	E Williams	1998 UM ₁₅
1998 UN ₁₅	13.0	0.15	19981014	32.09097	272.94847	87.57397	1.96428	0.1600428	3.1089225	9	1	8 days	0.56	Williams	1998 UN ₁₅
1998 UO ₁₅	14.8	0.15	19981014	42.55943	51.21127	285.94305	0.33233	0.2274452	2.5475671	10	1	9 days	0.61	E Williams	1998 UO ₁₅
1998 UP ₁₅	14.4	0.15	19981014	254.71689	74.53770	84.55865	3.13717	0.1021800	2.4418354	9	1	12 days	0.51	Williams	1998 UP ₁₅
1998 UR ₁₅	12.8	0.15	19981014	325.79045	78.44878	11.07515	0.68471	0.1633678	3.1725332	12	1	12 days	0.18	Williams	1998 UR ₁₅
1998 US ₁₅	14.5	0.15	19981014	337.62464	334.37895	93.49566	3.02545	0.1596026	2.2412107	7	1	5 days	0.38	E Williams	1998 US ₁₅
1998 UU ₁₅	14.0	0.15	19981014	319.37522	251.71577	197.25956	2.78219	0.1009131	2.6174420	10	1	11 days	0.29	Williams	1998 UU ₁₅
1998 UV ₁₅	14.6	0.15	19981014	47.98123	264.00111	63.92418	2.94610	0.2197974	2.3518306	14	1	12 days	0.35	Williams	1998 UV ₁₅
1998 UW ₁₅	14.4	0.15	19981014	45.67746	298.06567	44.27131	7.85660	0.1255334	2.3830659	9	1	12 days	0.57	Williams	1998 UW ₁₅
1998 UX ₁₅	14.5	0.15	19981014	309.60742	56.36701	48.36853	2.57704	0.1484636	2.5204404	6	1	5 days	0.80	E Williams	1998 UX ₁₅
1998 UL ₁₆	13.5	0.15	19981014	233.77171	128.03148	61.06287	9.91253	0.2475721	2.3400883	8	1	8 days	0.87	E Williams	1998 UL ₁₆
1998 UM ₁₆	15.7	0.15	19981014	7.63191	186.84677	199.59990	5.23862	0.2162697	2.4518647	12	1	13 days	0.88	Williams	1998 UM ₁₆
1998 UN ₁₆	13.2	0.15	19981014	311.02248	54.80931	53.47303	14.38605	0.1723224	3.0677334	10	1	13 days	0.37	Williams	1998 UN ₁₆
1998 UO ₁₆	14.0	0.15	19981014	311.69020	317.24791	140.98943	4.63570	0.0957354	2.8012015	6	1	4 days	0.95	E Williams	1998 UO ₁₆

1998 UP ₁₆	15.1	0.15	19981014	87.92786	81.45717	221.37188	3.93313	0.0409232	2.2705602	11	1	11 days	0.78		Williams	1998 UP ₁₆	
1998 UQ ₁₆	10.5	0.15	19981014	267.35411	92.41489	57.98386	9.40066	0.1046623	5.2545117	6	1	2 days	0.95	E	Williams	1998 UQ ₁₆	
1998 UR ₁₆	12.0	0.15	19981014	179.33283	150.23772	74.44938	3.50895	0.2745906	2.9187417	7	1	4 days	0.57	E	Williams	1998 UR ₁₆	
1998 US ₁₆	15.5	0.15	19981014	62.61346	191.62952	124.74292	6.43124	0.1894369	2.2790466	12	1	7 days	0.59		Williams	1998 US ₁₆	
1998 UU ₁₆	16.3	0.15	19981014	335.23479	92.30555	338.72293	23.02229	0.3323726	2.7510955	11	1	12 days	0.50		Williams	1998 UU ₁₆	
1998 UV ₁₆	17.5	0.15	19981014	354.58780	290.89650	108.21684	13.27252	0.2987713	2.3211945	7	1	2 days	0.86	E	Williams	1998 UV ₁₆	
1998 UW ₁₆	15.5	0.15	19981014	0.56429	209.25128	187.89902	30.56869	0.2042295	2.5258326	7	1	2 days	0.22		Williams	1998 UW ₁₆	
1998 UX ₁₆	14.5	0.15	19981014	28.49091	263.75657	87.41324	24.73196	0.2369363	2.3544442	7	1	2 days	0.17		Williams	1998 UX ₁₆	
1998 UY ₁₆	16.0	0.15	19981014	11.84426	227.46195	150.30251	17.96230	0.2875447	2.5872188	12	1	3 days	0.33		Williams	1998 UY ₁₆	
1998 UZ ₁₆	15.5	0.15	19981014	96.92858	140.07049	157.55220	28.00654	0.0207511	2.3508605	9	1	2 days	0.90	E	Williams	1998 UZ ₁₆	
1998 UA ₁₇	15.5	0.15	19981014	111.09037	116.53248	177.74876	21.20617	0.0309269	1.9241013	7	1	2 days	1.08	E	Williams	1998 UA ₁₇	
1998 UB ₁₇	14.5	0.15	19981014	54.20480	243.57903	93.33606	27.03649	0.1386397	2.1347105	7	1	2 days	0.17		Williams	1998 UB ₁₇	
1998 UD ₁₇	13.6	0.15	19981014	284.41488	199.47004	266.37119	8.28894	0.0523719	3.0687100	9	1	7 days	0.29		Williams	1998 UD ₁₇	
1998 UR ₁₇	14.5	0.15	19981014	343.71983	167.74651	237.73518	12.28000	0.1487353	2.7750572	15	1	4 days	0.27		Williams	1998 UR ₁₇	
1998 UT ₁₇	16.0	0.15	19981014	32.80911	4.00226	332.58699	1.65123	0.2245235	2.3419561	9	1	9 days	0.30		Williams	1998 UT ₁₇	
1998 UB ₁₈	16.0	0.15	19981014	39.86160	52.70354	273.47342	6.17974	0.1964278	2.2751703	12	1	3 days	0.28		Williams	1998 UB ₁₈	
1998 UC ₁₈	15.5	0.15	19981014	315.15895	187.17880	260.68941	7.64852	0.2030028	2.4533567	9	1	3 days	0.26		Williams	1998 UC ₁₈	
1998 UP ₁₈	13.7	0.15	19981103	10.56770	143.19259	261.79476	5.38190	0.0986091	2.3316924	6	1	13 days	0.22		Nakano	1998 UP ₁₈	
1998 UQ ₁₈	12.1	0.15	19981103	162.29333	204.13449	55.09158	11.06566	0.0519233	3.0116525	6	1	13 days	0.22		Nakano	1998 UQ ₁₈	
1998 US ₁₈	20.5	0.15	19981014	8.01880	115.20846	207.64022	9.61607	0.6757511	2.5860065	20	1	5 days	0.55		Williams	1998 US ₁₈	
1998 UT ₁₈	19.1	0.15	19981014	310.27875	49.76395	64.78787	13.60540	0.3303720	1.4072522	32	1	12 days	0.47		Marsden	1998 UT ₁₈	
1998 UW ₁₈	13.3	0.15	19981014	336.71297	34.74557	41.40681	6.01055	0.1419076	3.1396701	7	1	11 days	0.55		Williams	1998 UW ₁₈	
1998 UC ₁₉	16.2	0.15	19981014	325.42792	57.78601	30.26003	1.41636	0.2530061	2.1989748	7	1	1 days	0.16	E	Williams	1998 UC ₁₉	
1998 UF ₁₉	15.3	0.15	19981014	356.82771	238.51034	160.97359	2.70157	0.1861091	2.4089762	6	1	10 days	0.69		Williams	1998 UF ₁₉	
1998 UM ₁₉	16.7	0.15	19981014	332.60023	22.75882	34.20157	22.49226	0.1032684	1.9658825	11	1	9 days	0.64		Williams	1998 UM ₁₉	
1998 UR ₁₉	15.0	0.15	19981014	7.59724	329.27042	40.91617	14.72198	0.2145120	2.3547323	14	1	12 days	0.44		Williams	1998 UR ₁₉	
1998 UW ₁₉	13.0	0.15	19981014	28.76720	346.95172	18.14365	1.65807	0.1400783	3.1743234	5	1	7 days	0.33		Williams	1998 UW ₁₉	
1998 UX ₁₉	13.7	0.15	19981014	297.64904	36.27471	93.64688	0.19200	0.2219619	3.2036575	7	1	12 days	0.39	E	Williams	1998 UX ₁₉	
1998 UC ₂₀	14.2	0.15	19981014	71.92499	248.55096	48.51112	3.67428	0.2366871	2.4180068	6	1	9 days	0.60	E	Williams	1998 UC ₂₀	
1998 UD ₂₀	15.0	0.15	19981014	335.09545	318.35528	117.88418	4.37976	0.2223552	2.5407274	6	1	2 days	1.88	E	Williams	1998 UD ₂₀	
1998 UK ₂₀	11.9	0.15	19981103	135.48940	239.47724	20.97392	14.93644	0.1140619	2.7450212	6	1	8 days	0.77		Nakano	1998 UK ₂₀	
1998 UL ₂₀	12.5	0.15	19981103	75.77910	89.11300	244.21227	8.10855	0.0645328	2.8845156	8	1	3 days	1.06	E	Nakano	1998 UL ₂₀	
1998 UQ ₂₀	16.1	0.15	19981014	21.33688	266.87660	95.32483	1.01325	0.2471510	2.2887330	10	1	12 days	0.37		Williams	1998 UQ ₂₀	
1998 UP ₂₁	13.7	0.15	19981014	315.33089	256.91585	178.07577	8.65075	0.1317759	3.0241400	16	1	19 days	0.86		Williams	1998 UP ₂₁	
1998 UZ ₂₁	13.8	0.15	19981014	56.23142	253.21474	53.57945	10.10570	0.1705180	2.7352587	12	1	9 days	0.63		Williams	1998 UZ ₂₁	
1998 UQ ₂₂	14.5	0.15	19981014	7.40093	311.29277	66.87436	5.52257	0.1421836	3.1442750	12	1	18 days	0.68		Williams	1998 UQ ₂₂	
1998 UU ₂₂	13.2	0.15	19981103	21.59607	146.00740	234.46711	9.22581	0.1167099	2.9833052	8	1	7 days	0.25		Nakano	1998 UU ₂₂	
1998 UV ₂₂	13.1	0.15	19981103	117.77885	33.42125	232.61528	14.16988	0.2871935	2.5430617	9	1	7 days	0.28		Nakano	1998 UV ₂₂	
1998 UW ₂₂	14.9	0.15	19981014	8.36187	147.73114	232.88002	23.38880	0.2640952	2.4314762	9	1	15 days	0.73		Williams	1998 UW ₂₂	
1998 UX ₂₂	14.3	0.15	19981014	299.88412	71.06251	60.48139	3.94216	0.2369428	2.6405799	8	1	14 days	0.47		Williams	1998 UX ₂₂	
1998 UJ ₂₃	15.3	0.15	19981014	357.59455	101.69574	291.28862	15.01275	0.2482500	3.0790656	8	1	3 days	0.29		Williams	1998 UJ ₂₃	
1998 UL ₂₃	14.8	0.15	19981103	19.84874	309.60577	60.58495	2.92738	0.3540704	2.8316686	6	1	6 days	0.84		Nakano	1998 UL ₂₃	
1998 UM ₂₃	13.7	0.15	19981103	309.38151	246.75037	228.15437	6.51568	0.1056829	2.3884824	9	1	6 days	1.04		Nakano	1998 UM ₂₃	
1998 UN ₂₃	12.8	0.15	19981103	16.67640	288.64843	101.99878	2.03253	0.1928880	3.3348090	6	1	6 days	1.22	E	Nakano	1998 UN ₂₃	
1998 UX ₂₄	20.3	0.15	19981014	345.61403	16.18912	25.64205	14.14239	0.2863997	1.8378642	13	1	12 days	0.50		Williams	1998 UX ₂₄	
1998 UY ₂₄	21.6	0.15	19981103	49.46073	275.56215	38.86747	16.89550	0.3214708	1.3643726	16	1	10 days	0.58		Williams	1998 UY ₂₄	
1998 VA	13.3	0.15	19981103	320.78619	62.77841	42.59525	19.56827	0.1731496	2.6821597	25	1	2 days	0.72		Williams	1998 VA	
1998 VC	14.5	0.15	19981103	37.97161	76.15210	284.90341	0.99158	0.0992041	2.3754654	9	1	7 days	0.58		Nakano	1998 VC	
2076 P-L	14.2	0.15	19990122	42.47315	167.54469	213.34037	6.66677	0.2181653	2.2784894	19	2	1960–1998	0.81	M-v	4	Williams	32536 2076 P-L
2079 P-L	13.5	0.15	19990122	10.45384	77.93088	338.86051	4.85945	0.0697453	2.8087298	36	7	1953–1998	0.64	M-v	1	Williams	27938 2079 P-L
2206 P-L	14.0	0.15	19990122	317.19818	286.35517	192.50203	5.28124	0.1220948	2.5981915	20	3	1960–1998	0.71	M-v	3	Williams	28891 2206 P-L
2530 P-L	14.7	0.15	19990122	349.83545	35.38481	22.95328	4.68756	0.1309986	2.2870427	52	3	1960–1998	0.70	M-v	4	Williams	32785 2530 P-L
2549 P-L	13.9	0.15	19990122	295.90028	283.70101	167.68402	2.13781	0.0348446	2.8340978	52	2	1960–1998	0.69	M-v	5	Williams	32727 2549 P-L

2577 P-L	14.5	0.15	19990122	128.66148	293.74810	348.80517	0.54206	0.1305049	2.4224014	34	4	1960-1998	0.81	M-v	3	Williams	24409	2577 P-L
2590 P-L	15.1	0.15	19990122	99.29998	264.60931	11.09573	4.65892	0.1764508	2.4359500	47	3	1960-1998	0.85	M-v	4	Williams	32785	2590 P-L
2635 P-L	15.0	0.15	19990122	130.72667	72.66926	190.19351	3.15585	0.1612470	2.2806603	48	3	1960-1998	0.84	M-v	4	Williams	30474	2635 P-L
2650 P-L	16.8	0.15	19990122	13.92980	221.86645	166.50240	1.76717	0.1910236	2.2873842	29	2	1960-1998	0.72	M-v	5	Williams	32728	2650 P-L
2664 P-L	15.0	0.15	19990122	345.91711	46.65723	5.03491	8.16242	0.0924607	3.0909686	22	2	1960-1998	0.57	M-v	5	Williams	32728	2664 P-L
2674 P-L	15.5	0.15	19990122	131.21082	217.16807	60.44727	1.74856	0.0743256	2.5998350	22	2	1960-1998	0.85	M-v	5	Williams	32728	2674 P-L
2768 P-L	15.0	0.15	19990122	144.93240	111.31697	126.57902	2.77490	0.1197711	2.6152034	26	3	1960-1998	0.92	M-v	6	Williams	32785	2768 P-L
2808 P-L	15.0	0.15	19990122	309.83788	311.31469	180.30030	2.03994	0.1499417	2.4248550	26	6	1960-1998	0.76	M-v	1	Williams	26929	2808 P-L
3024 P-L	13.6	0.15	19990122	202.80548	251.92746	290.85225	11.09466	0.1828080	2.6201387	35	4	1960-1998	0.64	M-v	3	Williams	32785	3024 P-L
3087 P-L	12.0	0.15	19990122	67.70206	87.00375	261.44140	8.31223	0.1055905	3.0616325	35	3	1960-1998	0.49	M-v	2	Williams	32536	3087 P-L
4075 P-L	15.7	0.15	19990122	352.29944	108.88057	326.72526	0.71563	0.0964402	2.4260872	17	3	1960-1998	0.61	M-v	4	Williams	22701	4075 P-L
4098 P-L	14.0	0.15	19990122	326.12551	248.72375	208.36179	8.34563	0.1207361	2.8134442	31	3	1960-1998	0.82	M-v	4	Williams	32785	4098 P-L
4526 P-L	13.8	0.15	19990122	276.33645	136.54107	358.31183	2.34514	0.1420779	2.4357059	63	4	1960-1998	0.65	M-v	2	Williams	32785	4526 P-L
4543 P-L	15.5	0.15	19990122	40.48730	295.53293	16.28381	2.43380	0.1597649	2.1688130	25	3	1960-1998	0.63	M-v	3	Williams	32343	4543 P-L
4602 P-L	14.1	0.15	19990122	15.79946	249.57937	150.01733	0.92580	0.1824695	3.0761765	38	2	1960-1998	0.52	M-v	3	Williams	32503	4602 P-L
4611 P-L	14.5	0.15	19990122	335.16702	130.72268	9.37795	12.72017	0.1285231	2.4040676	19	4	1960-1998	0.73	M-v	2	Williams	22086	4611 P-L
4625 P-L	15.0	0.15	19990122	159.22308	191.38523	33.86545	2.22878	0.0917374	2.2887669	32	3	1960-1998	0.60	M-v	4	Williams	32729	4625 P-L
4646 P-L	12.5	0.15	19990122	293.47714	288.59895	186.08038	10.83144	0.1211188	3.0878028	69	2	1960-1998	0.69	M-v	4	Williams	32729	4646 P-L
4655 P-L	10.3	0.15	19990122	322.74821	91.22306	6.50092	17.03860	0.0327681	5.3181786	17	3	1960-1998	0.50	M-v	4	Williams	29649	4655 P-L
4792 P-L	14.5	0.15	19990122	320.22568	251.92629	14.94005	2.41088	0.0428796	2.9328026	14	2	1960-1998	0.49	M-v	6	Williams	32729	4792 P-L
4882 P-L	14.0	0.15	19990122	201.42383	191.54723	20.56044	10.03202	0.0519028	2.5992850	28	3	1960-1998	0.76	M-v	4	Williams	21978	4882 P-L
6063 P-L	15.3	0.15	19990122	50.70541	5.03972	314.55278	2.39257	0.1454432	2.1628436	36	5	1960-1998	0.65	M-v	2	Williams	32536	6063 P-L
6103 P-L	15.0	0.15	19990122	324.59180	58.48743	0.86138	5.13527	0.2165292	3.1102886	20	3	1960-1998	0.47	M-v	4	Williams	22966	6103 P-L
6105 P-L	14.5	0.15	19990122	21.01538	150.79268	198.94045	11.97959	0.1121724	2.8347406	29	2	1960-1998	0.62	M-v	4	Williams	32785	6105 P-L
6245 P-L	14.5	0.15	19990122	192.11467	14.48930	193.49544	13.03127	0.0864328	2.6036813	39	3	1960-1998	0.95	M-v	5	Williams	32785	6245 P-L
6328 P-L	14.5	0.15	19990122	234.87885	180.81824	9.29678	3.04270	0.0906872	2.5916732	42	4	1960-1998	0.69	M-v	2	Williams	27328	6328 P-L
6335 P-L	13.5	0.15	19990122	111.51459	60.33398	179.91027	0.90045	0.1298784	3.1183623	27	3	1960-1998	0.81	M-v	4	Williams	32785	6335 P-L
6523 P-L	13.0	0.15	19990122	27.08676	326.43418	13.74759	13.40671	0.1819230	2.6206053	29	4	1960-1998	0.80	M-v	2	Williams	32785	6523 P-L
6540 P-L	11.0	0.15	19990122	321.00701	79.98179	24.46623	9.15537	0.0437599	5.3069738	18	4	1960-1998	0.78	M-v	1	Williams	29649	6540 P-L
6591 P-L	11.0	0.15	19990122	291.51332	107.31904	18.86139	7.47211	0.0081515	5.2807613	28	6	1954-1998	0.87	M-v	1	Williams	28620	6591 P-L
6594 P-L	15.0	0.15	19990122	21.44436	195.54494	177.78103	6.35719	0.0722405	2.4341611	48	3	1960-1998	0.88	M-v	4	Williams	32785	6594 P-L
6607 P-L	14.0	0.15	19990122	193.34682	75.11176	134.41598	3.84784	0.1414929	2.4262083	49	3	1960-1998	0.72	M-v	5	Williams	32786	6607 P-L
6625 P-L	14.5	0.15	19990122	116.88676	148.85204	135.98758	2.63331	0.1205015	2.4234520	15	3	1960-1998	0.76	M-v	3	Williams	23532	6625 P-L
6637 P-L	15.4	0.15	19990122	283.85970	321.74664	157.74059	4.79876	0.1119007	2.2867222	30	3	1960-1998	0.57	M-v	3	Williams	32730	6637 P-L
6645 P-L	16.0	0.15	19990122	32.45365	339.88424	19.10639	9.27873	0.2352420	2.4349394	41	2	1960-1998	0.62	M-v	3	Williams	32730	6645 P-L
6722 P-L	16.0	0.15	19990122	8.95142	15.00015	17.04379	6.80305	0.0928891	2.2844878	35	2	1960-1998	0.74	M-v	5	Williams	32731	6722 P-L
6761 P-L	13.1	0.15	19990122	281.65013	316.94861	174.80976	9.73575	0.0569327	3.0693778	38	3	1960-1998	0.69	M-v	4	Williams	32786	6761 P-L
6818 P-L	14.5	0.15	19990122	51.89008	234.28798	70.34050	3.50573	0.1959351	2.6221388	28	2	1960-1998	0.79	M-v	4	Williams	32731	6818 P-L
7061 P-L	15.2	0.15	19990122	13.11174	178.73602	213.48302	5.56141	0.1285221	2.4328377	52	3	1960-1998	0.65	M-v	3	Williams	32786	7061 P-L
7066 P-L	12.5	0.15	19990122	129.80029	109.74108	205.20315	11.73584	0.1604470	3.0269466	12	3	1960-1997	0.48	M-v	4	Williams	32731	7066 P-L
7072 P-L	14.5	0.15	19990122	269.25922	298.63735	196.92481	21.21797	0.0776580	1.9489470	62	4	1960-1998	0.74	M-v	3	Williams	32786	7072 P-L
9518 P-L	15.0	0.15	19990122	99.37064	258.69273	12.74596	2.42641	0.1663555	2.4343931	39	3	1960-1998	0.56	M-v	3	Williams	32786	9518 P-L
9534 P-L	14.4	0.15	19990122	151.94222	63.03294	172.36111	3.21496	0.1328113	2.4298792	65	4	1960-1998	0.71	M-v	3	Williams	32786	9534 P-L
1104 T-1	14.0	0.15	19990122	356.89395	73.26764	352.86628	11.68003	0.1275921	2.3544184	32	4	1971-1998	0.70	M-v	2	Williams	32537	1104 T-1
1148 T-1	15.5	0.15	19990122	142.10642	260.08241	359.04971	2.31015	0.0971154	2.1916223	29	3	1971-1998	0.95	M-v	5	Williams	30682	1148 T-1
2172 T-1	15.0	0.15	19990122	114.28264	244.71661	56.80803	2.45665	0.1813243	2.1880312	27	4	1971-1998	0.94	M-v	2	Williams	32537	2172 T-1
2175 T-1	14.5	0.15	19990122	301.21425	302.92709	177.14658	5.79495	0.0887590	2.3579461	51	3	1971-1998	0.78	M-v	4	Williams	32786	2175 T-1
3064 T-1	15.0	0.15	19990122	260.15395	266.82648	276.37338	0.26887	0.1435850	2.3503327	30	5	1971-1998	0.77	M-v	2	Williams	30696	3064 T-1
3306 T-1	15.0	0.15	19990122	105.94347	136.21963	167.87305	2.46098	0.2113701	2.3846990	29	4	1971-1998	0.72	M-v	3	Williams	27732	3306 T-1
3314 T-1	14.5	0.15	19990122	123.30354	55.36248	194.93679	12.70248	0.1456935	2.6448878	45	2	1971-1998	0.84	M-v	4	Williams	32786	3314 T-1
4033 T-1	14.7	0.15	19990122	102.78307	128.73697	172.80905	5.33520	0.1364767	2.3812213	31	4	1971-1998	0.91	M-v	2	Williams	30914	4033 T-1
4114 T-1	14.5	0.15	19990122	210.62159	137.89251	79.27444	3.04561	0.1603504	2.3635436	36	8	1971-1998	0.78	M-v	2	Williams	28620	4114 T-1
4172 T-1	15.5	0.15	19990122	111.86194	113.79793	130.65559	1.69613	0.1300640	2.4107874	24	3	1971-1998	0.89	M-v	4	Williams	32537	4172 T-1

4271 T-1	15.1	0.15	19990122	107.38731	258.64784	38.94814	6.82300	0.1340795	2.3814107	54	5	1954–1998	0.71	M-v	1	Williams	30474	4271 T-1
4406 T-1	14.5	0.15	19990122	216.00773	150.53407	18.76941	15.06337	0.0084834	2.6242039	32	2	1971–1998	0.88	M-v	4	Williams	32786	4406 T-1
1004 T-2	15.0	0.15	19990122	32.32405	18.27285	356.98291	6.92252	0.0462128	2.5756817	27	3	1973–1998	0.98	M-v	5	Williams	27927	1004 T-2
1041 T-2	14.0	0.15	19990122	21.43574	161.45603	175.95165	2.05051	0.1195637	2.9465772	79	5	1973–1998	0.72	M-v	3	Williams	32786	1041 T-2
1196 T-2	14.5	0.15	19990122	119.67966	241.68575	2.20915	5.10382	0.1500487	2.6004881	41	3	1973–1998	0.91	M-v	4	Williams	32786	1196 T-2
1231 T-2	13.5	0.15	19990122	327.30951	45.22101	9.22537	1.88532	0.0522092	2.9373211	38	3	1973–1998	0.87	M-v	5	Williams	32786	1231 T-2
1237 T-2	14.5	0.15	19990122	266.86029	131.84004	350.35510	1.43084	0.0336377	2.9285644	35	3	1973–1998	0.99	M-v	5	Williams	32786	1237 T-2
1296 T-2	15.0	0.15	19990122	188.13204	52.62871	162.07491	2.03481	0.1438646	2.5725436	32	5	1973–1998	0.82	M-v	1	Williams	30294	1296 T-2
1494 T-2	15.5	0.15	19990122	178.49555	150.63548	74.16894	1.55610	0.0113204	2.5796778	24	3	1973–1998	0.88	M-v	5	Williams	23867	1494 T-2
2049 T-2	15.5	0.15	19990122	115.04199	274.89005	341.50467	1.59131	0.1997895	2.3393367	43	2	1973–1998	0.89	M-v	5	Williams	32733	2049 T-2
2078 T-2	15.0	0.15	19990122	58.77462	177.68816	186.13524	4.51172	0.1665119	2.3206038	26	4	1973–1998	1.02	M-v	2	Williams	23681	2078 T-2
2104 T-2	14.5	0.15	19990122	19.65913	118.54465	251.27494	1.15685	0.1112567	2.9242676	56	3	1973–1998	0.94	M-v	4	Williams	32786	2104 T-2
2132 T-2	15.0	0.15	19990122	334.37692	229.82877	189.10717	11.75523	0.0437190	2.9259049	26	3	1973–1998	0.95	M-v	5	Williams	32786	2132 T-2
2158 T-2	16.0	0.15	19990122	106.36027	116.40623	172.48046	2.80447	0.1610272	2.3273120	25	3	1973–1998	1.03	M-v	3	Williams	29650	2158 T-2
2245 T-2	15.6	0.15	19990122	34.93797	92.92563	186.29523	2.44531	0.1742673	2.3776515	22	2	1973–1998	0.85	M-v	5	Williams	32733	2245 T-2
3025 T-2	15.7	0.15	19990122	78.56772	256.97946	121.95256	2.35470	0.1869341	2.3013227	32	6	1973–1998	0.78	M-v	3	Williams	28608	3025 T-2
3109 T-2	17.0	0.15	19990122	357.51191	150.80829	167.33786	10.74703	0.1220371	2.9880798	20	2	1973–1998	0.78	M-v	6	Williams	32734	3109 T-2
3118 T-2	15.5	0.15	19990122	70.74560	144.38254	161.49613	6.45273	0.1773920	2.3375210	55	2	1973–1998	0.95	M-v	5	Williams	32786	3118 T-2
3200 T-2	14.5	0.15	19990122	31.58947	241.76711	109.60152	3.40541	0.0959475	2.9242566	39	2	1973–1998	0.94	M-v	5	Williams	32734	3200 T-2
3335 T-2	14.5	0.15	19990122	2.74821	340.03559	66.08131	3.59182	0.1669165	2.5827426	52	2	1973–1998	0.55	M-v	5	Williams	32734	3335 T-2
4136 T-2	14.0	0.15	19990122	45.04651	306.14031	32.32161	7.50293	0.2187833	2.9142140	64	5	1973–1998	0.71	M-v	2	Williams	32734	4136 T-2
4230 T-2	14.5	0.15	19990122	47.58464	246.41226	91.37049	3.39105	0.0990957	2.9218850	43	2	1973–1998	0.91	M-v	5	Williams	32734	4230 T-2
5211 T-2	12.6	0.15	19990122	355.47760	207.55478	228.67669	9.19003	0.2098192	2.9043583	27	3	1973–1998	0.62	M-v	3	Williams	22972	5211 T-2
1078 T-3	14.1	0.15	19990122	257.21287	268.44410	237.47318	14.05378	0.0701909	2.6098760	23	4	1954–1998	0.90	M-v	3	Williams	32787	1078 T-3
1080 T-3	13.0	0.15	19990122	165.13760	257.29830	332.56647	11.16272	0.1090006	2.6051225	37	4	1977–1998	0.86	M-v	2	Williams	32787	1080 T-3
1140 T-3	14.0	0.15	19990122	37.87388	108.65383	263.69975	6.89359	0.1336006	3.0025577	23	3	1977–1998	0.73	M-v	5	Williams	30683	1140 T-3
1164 T-3	14.0	0.15	19990122	123.44558	46.51205	243.98931	11.04414	0.0886805	2.9841545	27	4	1977–1998	0.66	M-v	2	Williams	30474	1164 T-3
1214 T-3	12.5	0.15	19990122	28.19364	63.52702	326.83485	9.11822	0.0944341	3.0000925	34	5	1977–1998	0.86	M-v	1	Williams	22972	1214 T-3
2114 T-3	13.0	0.15	19990122	82.20807	111.25692	215.91269	8.93884	0.0955330	2.9895611	40	4	1977–1998	0.74	M-v	2	Williams	30474	2114 T-3
2272 T-3	14.5	0.15	19990122	359.87364	66.25780	2.49778	4.78513	0.1481566	2.2993637	32	4	1977–1998	0.87	M-v	4	Williams	26755	2272 T-3
2288 T-3	15.0	0.15	19990122	40.53502	7.41160	351.92709	5.07903	0.1977807	2.3062923	59	4	1977–1998	0.70	M-v	3	Williams	32787	2288 T-3
2369 T-3	15.5	0.15	19990122	296.43536	221.58803	276.05264	3.02663	0.0915596	2.2949763	21	3	1977–1998	0.90	M-v	5	Williams	24120	2369 T-3
3101 T-3	15.0	0.15	19990122	79.91855	285.35516	39.65549	8.49725	0.0974050	2.3014658	50	3	1977–1998	0.96	M-v	5	Williams	32787	3101 T-3
3261 T-3	14.0	0.15	19990122	106.86118	200.53118	71.93623	1.30002	0.0690652	3.0387997	41	3	1977–1998	0.86	M-v	3	Williams	32787	3261 T-3
3517 T-3	14.5	0.15	19990122	357.85810	353.19762	34.41737	2.05520	0.1106688	2.6219322	38	3	1977–1998	0.82	M-v	4	Williams	32787	3517 T-3
4071 T-3	15.0	0.15	19990122	6.17770	18.04855	62.67714	4.98057	0.1444793	2.2873701	26	8	1977–1998	1.01	M-v	2	Williams	29142	4071 T-3
4183 T-3	16.5	0.15	19990122	10.91262	208.91366	184.18484	11.19484	0.1969457	2.3113210	39	2	1977–1998	0.81	M-v	5	Williams	32735	4183 T-3
4203 T-3	13.9	0.15	19990122	222.69026	5.12414	185.61503	13.01569	0.1048625	2.5958697	46	4	1960–1998	0.78	M-v	3	Williams	32787	4203 T-3
4221 T-3	13.8	0.15	19990122	106.47078	349.35768	177.04348	9.31280	0.1435373	2.7458583	25	2	1977–1998	0.78	M-v	5	Williams	32735	4221 T-3
4310 T-3	14.5	0.15	19990122	198.39808	167.34451	65.72295	5.67601	0.0957041	2.2852651	29	4	1977–1998	0.84	M-v	4	Williams	31577	4310 T-3
4327 T-3	14.0	0.15	19990122	240.60660	138.90634	56.07584	9.28707	0.1104276	2.5738905	18	3	1977–1998	0.89	M-v	5	Williams	22702	4327 T-3
4336 T-3	14.9	0.15	19990122	206.16502	52.31402	161.80652	7.69330	0.0482343	2.2968856	18	3	1977–1998	1.09	M-v	5	Williams	24579	4336 T-3
4391 T-3	16.0	0.15	19990122	44.67301	240.47244	96.54561	5.10047	0.2852503	2.3106132	47	4	1977–1998	1.02	M-v	3	Williams	32787	4391 T-3
5041 T-3	13.0	0.15	19990122	99.71520	118.03196	152.26615	11.71318	0.0992967	3.0472807	62	4	1977–1998	0.79	M-v	2	Williams	32787	5041 T-3

1998 SA₃ = 1998 SX₂₇ (G. V. Williams)1998 SQ₉ = 1998 RB₁₆ (G. V. Williams)1998 SV₁₁₀ = 1998 SN₁₆₄ (G. V. Williams)

EPHEMERIDES

1997 GZ₃

Date	TT	α_{2000}	δ_{2000}	Δ	r	Elements <i>MPC</i> 29883		
						Variation	V	
1998 11 03		21 47.00	−20 32.8	2.365	2.742	−0.91	−10.4	19.1
1998 11 13		21 53.06	−18 37.6	2.534	2.778	−0.82	−9.8	19.3
1998 11 23		22 00.62	−16 43.4	2.706	2.814	−0.74	−9.2	19.4
1998 12 03		22 09.38	−14 49.9	2.878	2.849	−0.67	−8.7	19.6

1998 12 13	22 19.08	−12 56.9	3.049	2.885	−0.62	−8.3	19.7
1998 12 23	22 29.53	−11 04.0	3.215	2.922	−0.57	−7.8	19.8
1999 01 02	22 40.55	−09 11.2	3.375	2.958	−0.52	−7.5	19.9

C/1998 T1 (LINEAR)					Elements MPC 32866				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 11 03		00 43.61	+16 05.7	2.409	3.329	153.9	7.5	15.1	
1998 11 13		00 22.12	+13 11.2	2.417	3.229	138.9	11.6	15.0	
1998 11 23		00 03.41	+10 20.7	2.469	3.129	123.9	15.2	14.9	
1998 12 03		23 48.12	+07 46.0	2.553	3.029	109.5	17.9	14.8	
1998 12 13		23 36.32	+05 33.4	2.658	2.928	96.0	19.5	14.8	
1998 12 23		23 27.76	+03 44.5	2.771	2.828	83.2	20.2	14.7	
1999 01 02		23 22.00	+02 18.1	2.882	2.728	71.1	19.9	14.7	
1999 01 12		23 18.58	+01 11.3	2.982	2.628	59.8	18.9	14.6	
1999 01 22		23 17.04	+00 20.8	3.064	2.528	48.9	17.1	14.5	
1999 02 01		23 16.98	−00 16.6	3.122	2.430	38.5	14.6	14.3	

P/1998 S1 (LINEAR-Mueller)					Elements <i>MPC</i> 32866				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 11 03		00 47.02	+13 04.3	1.616	2.548	154.5	9.6	16.6	
1998 11 13		00 43.04	+13 07.4	1.682	2.549	143.9	13.2	16.7	
1998 11 23		00 41.57	+13 16.9	1.767	2.552	133.7	16.2	16.8	
1998 12 03		00 42.76	+13 35.7	1.869	2.556	124.1	18.6	16.9	
1998 12 13		00 46.50	+14 04.7	1.985	2.563	115.1	20.4	17.1	
1998 12 23		00 52.59	+14 43.9	2.110	2.571	106.7	21.5	17.2	
1999 01 02		01 00.77	+15 32.7	2.242	2.582	98.8	22.1	17.4	
1999 01 12		01 10.75	+16 29.7	2.379	2.594	91.2	22.3	17.5	
1999 01 22		01 22.27	+17 33.4	2.517	2.607	84.1	22.1	17.7	
1999 02 01		01 35.13	+18 42.4	2.656	2.623	77.3	21.5	17.8	
1999 02 11		01 49.13	+19 54.8	2.794	2.640	70.8	20.7	17.9	
1999 02 21		02 04.10	+21 09.1	2.929	2.658	64.5	19.6	18.1	
1999 03 03		02 19.93	+22 23.7	3.060	2.679	58.5	18.4	18.2	
1999 03 13		02 36.48	+23 37.3	3.186	2.700	52.6	17.0	18.3	
1999 03 23		02 53.66	+24 48.4	3.306	2.723	46.8	15.5	18.4	
1999 04 02		03 11.38	+25 56.0	3.418	2.747	41.3	13.9	18.6	
1999 04 12		03 29.54	+26 58.8	3.523	2.773	35.8	12.2	18.7	
1999 04 22		03 48.07	+27 56.2	3.619	2.799	30.4	10.5	18.8	

P/1998 U2 (Mueller)					Elements MPC 32866				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 11 03		01 19.26	+12 04.2	1.061	2.028	162.1	8.6	16.2	
1998 11 13		01 16.91	+11 51.6	1.109	2.035	151.6	13.4	16.3	
1998 11 23		01 17.21	+11 50.1	1.177	2.045	141.6	17.4	16.5	
1998 12 03		01 20.43	+12 02.7	1.262	2.059	132.4	20.7	16.6	
1998 12 13		01 26.48	+12 29.6	1.361	2.077	123.8	23.2	16.8	
1998 12 23		01 35.08	+13 09.6	1.473	2.098	115.8	25.0	17.1	
1999 01 02		01 45.91	+14 00.6	1.595	2.122	108.4	26.1	17.3	
1999 01 12		01 58.60	+14 59.8	1.725	2.149	101.5	26.7	17.5	
1999 01 22		02 12.85	+16 04.6	1.861	2.178	94.9	26.8	17.7	
1999 02 01		02 28.38	+17 12.4	2.003	2.211	88.6	26.5	18.0	
1999 02 11		02 44.95	+18 20.8	2.148	2.245	82.6	25.8	18.2	
1999 02 21		03 02.38	+19 27.6	2.295	2.282	76.8	24.9	18.4	
1999 03 03		03 20.51	+20 31.2	2.444	2.321	71.1	23.8	18.6	
1999 03 13		03 39.16	+21 29.9	2.592	2.362	65.6	22.5	18.8	

1999 03 23	03 58.24	+22 22.5	2.740	2.404	60.1	21.1	19.0
1999 04 02	04 17.61	+23 07.9	2.884	2.448	54.8	19.5	19.2
1999 04 12	04 37.16	+23 45.5	3.025	2.493	49.5	17.8	19.4
1999 04 22	04 56.80	+24 14.7	3.161	2.539	44.2	16.0	19.5
1999 05 02	05 16.42	+24 35.2	3.291	2.586	38.9	14.2	19.7
1999 05 12	05 35.92	+24 46.9	3.414	2.634	33.7	12.3	19.9

C/1998 U1 (LINEAR)				Elements MPC 32866					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 11 03		03 25.52	+31 23.5	3.336	4.279	159.5	4.7	18.4	
1998 11 13		03 04.98	+29 29.7	3.337	4.311	168.3	2.7	18.5	
1998 11 23		02 45.62	+27 20.6	3.390	4.344	163.0	3.8	18.5	
1998 12 03		02 28.44	+25 05.4	3.492	4.378	150.7	6.3	18.6	
1998 12 13		02 14.01	+22 53.6	3.638	4.414	137.4	8.7	18.8	
1998 12 23		02 02.52	+20 52.5	3.820	4.450	124.4	10.5	18.9	
1999 01 02		01 53.87	+19 06.5	4.028	4.489	111.9	11.7	19.0	
1999 01 12		01 47.75	+17 37.1	4.254	4.528	99.9	12.4	19.2	
1999 01 22		01 43.83	+16 24.1	4.487	4.568	88.5	12.4	19.4	
1999 02 01		01 41.75	+15 26.2	4.721	4.609	77.5	12.0	19.5	
1999 02 11		01 41.19	+14 41.3	4.948	4.652	67.0	11.3	19.6	
1999 02 21		01 41.84	+14 07.3	5.162	4.695	56.9	10.2	19.8	
1999 03 03		01 43.46	+13 42.3	5.359	4.739	47.0	8.8	19.9	
1999 03 13		01 45.81	+13 24.3	5.535	4.784	37.4	7.3	20.0	

P/1998 U4 (Spahr)				Elements MPC 32866					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 11 03		04 06.02	−12 48.9	3.027	3.872	143.8	8.7	16.3	
1998 11 13		04 01.08	−14 00.0	3.005	3.865	145.9	8.3	16.3	
1998 11 23		03 55.59	−14 53.5	3.009	3.858	144.8	8.5	16.3	
1998 12 03		03 50.10	−15 26.4	3.037	3.852	140.9	9.3	16.3	
1998 12 13		03 45.16	−15 38.1	3.089	3.847	134.9	10.5	16.3	
1998 12 23		03 41.23	−15 29.2	3.161	3.842	127.7	11.7	16.3	
1999 01 02		03 38.70	−15 02.1	3.251	3.838	120.0	12.8	16.4	
1999 01 12		03 37.75	−14 20.0	3.354	3.835	112.1	13.7	16.5	
1999 01 22		03 38.49	−13 26.3	3.468	3.832	104.3	14.4	16.5	
1999 02 01		03 40.89	−12 24.3	3.589	3.829	96.6	14.8	16.6	
1999 02 11		03 44.88	−11 17.2	3.713	3.828	89.2	14.9	16.7	
1999 02 21		03 50.34	−10 07.5	3.837	3.827	82.0	14.8	16.7	
1999 03 03		03 57.11	−08 57.5	3.960	3.826	75.1	14.5	16.8	
1999 03 13		04 05.05	−07 49.0	4.079	3.827	68.4	14.0	16.9	
1999 03 23		04 14.02	−06 43.5	4.192	3.827	62.0	13.3	16.9	
1999 04 02		04 23.87	−05 42.4	4.297	3.829	56.0	12.5	17.0	
1999 04 12		04 34.48	−04 46.4	4.394	3.831	50.2	11.6	17.0	
1999 04 22		04 45.73	−03 56.6	4.481	3.834	44.8	10.6	17.1	
1999 05 02		04 57.51	−03 13.6	4.557	3.837	39.8	9.7	17.1	
1999 05 12		05 09.71	−02 37.8	4.622	3.841	35.2	8.7	17.2	
1999 05 22		05 22.24	−02 09.7	4.675	3.846	31.3	7.8	17.2	

C/1998 U5 (LINEAR)					Elements MPC 32866				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 11 03		06 36.84	+34 31.1	0.645	1.442	121.9	35.7	11.6	
1998 11 13		04 21.26	+56 17.2	0.459	1.371	139.4	28.0	10.7	
1998 11 23		23 22.14	+51 53.5	0.507	1.313	119.4	40.9	10.7	
1998 12 03		21 52.79	+34 31.0	0.736	1.270	94.0	50.7	11.4	

1998 12 13	21 26.70	+25 22.1	1.016	1.245	77.0	50.4	12.0
1998 12 23	21 16.07	+20 27.4	1.296	1.238	64.1	45.6	12.5
1999 01 02	21 11.10	+17 34.0	1.555	1.251	53.5	39.2	12.9
1999 01 12	21 08.70	+15 46.0	1.785	1.282	44.3	32.4	13.3
1999 01 22	21 07.61	+14 38.2	1.980	1.330	36.8	26.3	13.7
1999 02 01	21 07.12	+13 57.8	2.135	1.392	31.4	21.6	14.1

P/1998 U3 (Jäger)					Elements <i>MPC</i> 32866				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 11 03		06 52.09	+41 36.3	1.813	2.446	118.4	20.9	11.7	
1998 11 13		06 57.90	+41 34.4	1.679	2.404	126.6	19.3	11.4	
1998 11 23		07 00.26	+41 24.1	1.558	2.365	135.3	17.1	11.2	
1998 12 03		06 58.97	+41 01.0	1.455	2.329	144.5	14.2	11.0	
1998 12 13		06 54.21	+40 19.6	1.371	2.295	153.7	10.9	10.8	
1998 12 23		06 46.69	+39 14.2	1.309	2.265	161.8	7.8	10.6	
1999 01 02		06 37.84	+37 41.6	1.273	2.238	165.1	6.5	10.5	
1999 01 12		06 29.34	+35 43.9	1.263	2.214	160.4	8.6	10.5	
1999 01 22		06 22.80	+33 28.3	1.278	2.194	151.6	12.3	10.4	
1999 02 01		06 19.37	+31 04.7	1.316	2.178	141.8	16.2	10.5	
1999 02 11		06 19.50	+28 42.4	1.375	2.165	132.2	19.7	10.5	
1999 02 21		06 23.16	+26 27.4	1.451	2.157	123.2	22.6	10.6	
1999 03 03		06 30.04	+24 22.2	1.540	2.153	114.9	24.7	10.8	
1999 03 13		06 39.64	+22 26.6	1.639	2.153	107.2	26.2	10.9	
1999 03 23		06 51.48	+20 38.8	1.747	2.157	100.1	27.0	11.0	
1999 04 02		07 05.12	+18 56.6	1.860	2.166	93.6	27.4	11.2	
1999 04 12		07 20.11	+17 17.4	1.978	2.178	87.5	27.4	11.4	
1999 04 22		07 36.15	+15 39.1	2.099	2.195	81.8	27.0	11.5	
1999 05 02		07 52.94	+14 00.2	2.222	2.215	76.5	26.2	11.7	
1999 05 12		08 10.24	+12 19.3	2.347	2.239	71.3	25.3	11.9	
1999 05 22		08 27.87	+10 35.6	2.472	2.266	66.4	24.2	12.0	
1999 06 01		08 45.67	+08 48.7	2.597	2.297	61.7	22.9	12.2	
1999 06 11		09 03.52	+06 58.5	2.721	2.330	57.1	21.5	12.3	
1999 06 21		09 21.35	+05 05.0	2.843	2.367	52.5	19.9	12.5	
1999 07 01		09 39.07	+03 08.5	2.963	2.406	48.1	18.3	12.7	
1999 07 11		09 56.66	+01 09.4	3.080	2.448	43.7	16.7	12.8	
1999 07 21		10 14.07	−00 51.9	3.194	2.492	39.3	15.0	13.0	
1999 07 31		10 31.28	−02 54.8	3.303	2.537	34.9	13.2	13.1	
1999 08 10		10 48.29	−04 58.8	3.407	2.585	30.5	11.5	13.3	

1991 JG ₁			$a, e, i = 1.37, 0.18, 34$					Elements <i>MPC</i> 23516	
Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation		V	
1998 11 03	06 59.61	−02 59.8	0.763	1.455	−3.30	+23.2	20.8		
1998 11 13	07 06.67	−11 52.5	0.697	1.430	−3.90	+21.7	20.5		
1998 11 23	07 09.33	−21 33.3	0.651	1.404	−4.66	+19.7	20.4		
1998 12 03	07 06.73	−31 19.0	0.627	1.378	−5.59	+19.0	20.3		
1998 12 13	06 58.17	−40 17.2	0.621	1.351	−6.61	+21.2	20.3		
1998 12 23	06 43.39	−47 43.1	0.628	1.323	−7.58	+27.5	20.3		
1999 01 02	06 23.57	−53 12.9	0.643	1.296	−8.18	+37.1	20.4		
1999 01 12	06 01.46	−56 47.1	0.660	1.269	−8.15	+48.1	20.5		
1999 01 22	05 40.86	−58 41.3	0.673	1.242	−7.44	+58.5	20.5		
1999 02 01	05 25.35	−59 20.1	0.678	1.217	−6.31	+66.9	20.6		
1999 02 11	05 16.81	−59 07.3	0.673	1.194	−5.07	+73.5	20.6		
1999 02 21	05 15.94	−58 19.4	0.657	1.174	−3.97	+78.7	20.5		
1999 03 03	05 22.81	−57 06.8	0.629	1.156	−3.13	+83.3	20.4		

1999 03 13	05 37.33	−55 30.5	0.590	1.141	−2.61	+87.6	20.3
1999 03 23	05 59.98	−53 22.1	0.540	1.130	−2.47	+91.9	20.1
1999 04 02	06 31.55	−50 22.1	0.483	1.123	−2.81	+95.2	19.9
1999 04 12	07 12.83	−45 49.4	0.423	1.120	−3.72	+94.6	19.6
1999 04 22	08 03.89	−38 38.7	0.368	1.121	−5.12	+82.9	19.3
1999 05 02	09 02.23	−27 45.9	0.328	1.127	−6.63	+50.1	19.0
1999 05 12	10 02.47	−13 41.9	0.318	1.137	−7.62	−0.7	18.9
1999 05 22	10 58.96	+00 13.2	0.343	1.151	−7.76	−41.7	19.1
1999 06 01	11 48.38	+10 48.5	0.398	1.168	−7.25	−57.6	19.4
1999 06 11	12 30.34	+17 36.4	0.473	1.188	−6.43	−57.8	19.8
1999 06 21	13 06.18	+21 32.5	0.557	1.211	−5.57	−53.0	20.2
1999 07 01	13 37.47	+23 34.9	0.645	1.235	−4.79	−47.5	20.5
1999 07 11	14 05.56	+24 22.6	0.733	1.261	−4.13	−42.5	20.8
1999 07 21	14 31.63	+24 20.0	0.819	1.288	−3.58	−38.1	21.0
1999 07 31	14 56.47	+23 43.0	0.901	1.315	−3.13	−34.3	21.2
1999 08 10	15 20.66	+22 41.6	0.980	1.343	−2.77	−30.8	21.4
1999 08 20	15 44.68	+21 22.8	1.055	1.370	−2.48	−27.7	21.6
1999 08 30	16 08.82	+19 52.6	1.126	1.397	−2.25	−24.9	21.7
1999 09 09	16 33.28	+18 15.2	1.195	1.423	−2.07	−22.2	21.9
1999 09 19	16 58.24	+16 34.7	1.262	1.448	−1.92	−19.6	22.0

1991 BB			$a, e, i = 1.19, 0.27, 38$					Elements <i>MPC</i> 28316	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 11 03	10 55.19	−01 27.0	1.603	1.317	55.1	38.2	19.2		
1998 11 08	11 06.90	−04 29.5	1.552	1.299	56.4	39.4	19.1		
1998 11 13	11 19.00	−07 41.2	1.503	1.280	57.5	40.7	19.0		
1998 11 18	11 31.57	−11 02.0	1.455	1.261	58.5	41.9	19.0		
1998 11 23	11 44.76	−14 31.8	1.410	1.241	59.3	43.2	18.9		
1998 11 28	11 58.70	−18 10.0	1.367	1.220	59.9	44.4	18.8		
1998 12 03	12 13.60	−21 55.5	1.327	1.199	60.3	45.6	18.7		
1998 12 08	12 29.68	−25 46.8	1.292	1.178	60.6	46.7	18.7		
1998 12 13	12 47.22	−29 41.6	1.260	1.156	60.5	47.9	18.6		
1998 12 18	13 06.54	−33 36.4	1.233	1.134	60.3	48.9	18.6		
1998 12 23	13 28.01	−37 27.1	1.210	1.112	59.8	49.9	18.5		
1998 12 28	13 52.03	−41 08.0	1.193	1.089	59.2	50.8	18.5		
1999 01 02	14 19.00	−44 32.7	1.180	1.067	58.2	51.6	18.4		
1999 01 07	14 49.21	−47 33.7	1.173	1.045	57.2	52.2	18.4		
1999 01 12	15 22.73	−50 03.1	1.171	1.023	55.9	52.7	18.3		
1999 01 17	15 59.20	−51 53.3	1.173	1.002	54.5	53.1	18.3		
1999 01 22	16 37.72	−52 58.3	1.179	0.981	53.1	53.3	18.3		
1999 01 27	17 16.95	−53 14.7	1.188	0.962	51.5	53.3	18.2		
1999 02 01	17 55.37	−52 43.2	1.200	0.943	50.0	53.1	18.2		
1999 02 06	18 31.67	−51 27.4	1.215	0.926	48.4	52.8	18.2		
1999 02 11	19 04.99	−49 33.6	1.231	0.911	46.9	52.3	18.2		
1999 02 16	19 35.02	−47 08.4	1.248	0.897	45.5	51.8	18.2		
1999 02 21	20 01.83	−44 18.3	1.265	0.885	44.2	51.1	18.1		
1999 02 26	20 25.75	−41 08.6	1.283	0.876	43.0	50.4	18.1		

1994 ES ₂			$a, e, i = 45.54, 0.11, 1$					Elements <i>MPC</i> 32051	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 11 03	11 03.21	+06 14.5	45.883	45.334	55.9	1.0	24.2		
1998 11 13	11 03.72	+06 11.5	45.728	45.331	65.8	1.1	24.3		
1998 11 23	11 04.09	+06 09.2	45.561	45.328	75.8	1.2	24.2		
1998 12 03	11 04.34	+06 07.7	45.386	45.325	85.8	1.2	24.2		

1998 NOV. 10

M.P.C. 33133

1998 12 13	11 04.44	+06 07.2	45.210	45.322	95.9	1.2	24.2
1998 12 23	11 04.40	+06 07.5	45.036	45.319	106.1	1.2	24.2
1999 01 02	11 04.22	+06 08.7	44.871	45.316	116.4	1.1	24.2
1999 01 12	11 03.91	+06 10.7	44.720	45.313	126.6	1.0	24.2
1999 01 22	11 03.49	+06 13.4	44.587	45.311	136.9	0.8	24.2
1999 01 27	11 03.23	+06 15.0	44.528	45.309	142.1	0.8	24.2
1999 02 06	11 02.66	+06 18.7	44.430	45.306	152.4	0.6	24.1
1999 02 16	11 02.01	+06 22.8	44.359	45.303	162.7	0.4	24.1
1999 02 26	11 01.32	+06 27.1	44.318	45.300	172.9	0.2	24.1
1999 03 08	11 00.61	+06 31.5	44.307	45.297	176.8	0.1	24.0
1999 03 18	10 59.91	+06 35.9	44.326	45.295	166.7	0.3	24.1
1999 03 28	10 59.25	+06 40.1	44.374	45.292	156.6	0.5	24.1
1999 04 07	10 58.64	+06 43.9	44.451	45.289	146.5	0.7	24.1
1999 04 17	10 58.11	+06 47.2	44.552	45.286	136.6	0.9	24.2
1999 04 27	10 57.68	+06 49.8	44.674	45.283	126.7	1.0	24.2
1999 05 07	10 57.36	+06 51.8	44.815	45.280	116.9	1.1	24.2
1999 05 17	10 57.17	+06 53.0	44.968	45.277	107.2	1.2	24.2
1999 05 27	10 57.11	+06 53.3	45.130	45.274	97.6	1.3	24.2
1999 06 06	10 57.18	+06 52.9	45.296	45.271	88.0	1.3	24.2
1999 06 16	10 57.39	+06 51.6	45.460	45.269	78.5	1.3	24.2
1999 06 26	10 57.73	+06 49.5	45.619	45.266	69.0	1.2	24.2
1999 07 06	10 58.18	+06 46.7	45.768	45.263	59.6	1.1	24.2
1999 07 16	10 58.75	+06 43.2	45.903	45.260	50.2	1.0	24.2
1999 07 26	10 59.42	+06 39.0	46.020	45.257	40.9	0.8	24.2
1999 08 05	11 00.18	+06 34.4	46.116	45.254	31.5	0.7	24.2

1994 GV ₉		$a, e, i = 43.47, 0.06, 1$				Elements <i>MPC</i> 32307		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 11 03	12 01.62	-00 08.8	42.957	42.201	42.201	40.0	0.9	23.4
1998 11 13	12 02.34	-00 13.5	42.835	42.203	42.203	49.8	1.0	23.4
1998 11 23	12 02.96	-00 17.5	42.694	42.204	42.204	59.7	1.2	23.4
1998 12 03	12 03.45	-00 20.6	42.537	42.205	42.205	69.7	1.3	23.4
1998 12 13	12 03.81	-00 22.9	42.371	42.207	42.207	79.8	1.3	23.4
1998 12 23	12 04.01	-00 24.2	42.199	42.208	42.208	89.9	1.3	23.4
1999 01 02	12 04.07	-00 24.6	42.027	42.210	42.210	100.0	1.3	23.4
1999 01 12	12 03.98	-00 24.0	41.860	42.211	42.211	110.3	1.3	23.4
1999 01 22	12 03.74	-00 22.4	41.704	42.212	42.212	120.5	1.2	23.4
1999 02 01	12 03.37	-00 19.9	41.563	42.214	42.214	130.8	1.0	23.4
1999 02 11	12 02.88	-00 16.7	41.443	42.215	42.215	141.0	0.8	23.4
1999 02 21	12 02.28	-00 12.8	41.346	42.216	42.216	151.3	0.6	23.3
1999 03 03	12 01.62	-00 08.4	41.276	42.218	42.218	161.5	0.4	23.3
1999 03 13	12 00.90	-00 03.7	41.235	42.219	42.219	171.7	0.2	23.3
1999 03 23	12 00.16	+00 01.1	41.224	42.220	42.220	178.1	0.0	23.2
1999 04 02	11 59.42	+00 05.9	41.244	42.222	42.222	168.0	0.3	23.3
1999 04 12	11 58.72	+00 10.5	41.292	42.223	42.223	158.0	0.5	23.3
1999 04 22	11 58.07	+00 14.7	41.369	42.224	42.224	148.0	0.7	23.3
1999 05 02	11 57.51	+00 18.4	41.470	42.226	42.226	138.1	0.9	23.4
1999 05 12	11 57.05	+00 21.4	41.593	42.227	42.227	128.3	1.1	23.4
1999 05 22	11 56.70	+00 23.7	41.735	42.229	42.229	118.6	1.2	23.4
1999 06 01	11 56.48	+00 25.1	41.890	42.230	42.230	108.9	1.3	23.4
1999 06 11	11 56.40	+00 25.6	42.055	42.231	42.231	99.3	1.4	23.4
1999 06 21	11 56.47	+00 25.3	42.224	42.233	42.233	89.8	1.4	23.4
1999 07 01	11 56.67	+00 23.9	42.393	42.234	42.234	80.3	1.4	23.5

1999 07 11	11 57.01	+00 21.7	42.558	42.235	70.9	1.3	23.5
1999 07 21	11 57.48	+00 18.7	42.713	42.237	61.5	1.2	23.5
1999 07 31	11 58.08	+00 14.8	42.855	42.238	52.1	1.1	23.5
1999 08 10	11 58.77	+00 10.3	42.979	42.240	42.7	0.9	23.4
1999 08 20	11 59.57	+00 05.2	43.083	42.241	33.3	0.8	23.4

1988 PA		$a, e, i = 2.15, 0.41, 8$				Elements <i>MPC</i> 29133		
Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation	V	
1998 11 13	06 07.60	+11 22.4	1.746	2.561	-1.04	-1.4	21.1	
1998 11 23	05 58.96	+10 56.8	1.703	2.596	-1.11	-1.5	20.9	
1998 12 03	05 48.09	+10 39.9	1.684	2.629	-1.16	-1.7	20.8	
1998 12 13	05 36.06	+10 33.4	1.693	2.662	-1.18	-1.8	20.7	
1998 12 23	05 24.09	+10 37.9	1.733	2.692	-1.17	-1.8	20.8	
1999 01 02	05 13.45	+10 53.1	1.802	2.722	-1.13	-1.8	21.1	
1999 01 12	05 05.04	+11 17.7	1.897	2.750	-1.07	-1.8	21.3	
1999 01 22	04 59.37	+11 49.9	2.015	2.776	-1.00	-1.7	21.6	
1999 02 01	04 56.61	+12 27.6	2.151	2.801	-0.93	-1.6	21.8	
1999 02 11	04 56.63	+13 08.7	2.300	2.825	-0.86	-1.4	22.0	

1995 HM ₅		$a, e, i = 39.27, 0.25, 5$				Elements <i>MPC</i> 32308		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 11 13	12 55.20	-05 16.7	32.939	32.141	35.7	1.0	23.3	
1998 11 23	12 56.27	-05 22.9	32.820	32.135	45.5	1.3	23.3	
1998 12 03	12 57.20	-05 28.3	32.680	32.129	55.3	1.4	23.3	
1998 12 13	12 57.98	-05 32.6	32.523	32.124	65.3	1.6	23.3	
1998 12 23	12 58.58	-05 35.9	32.353	32.118	75.3	1.7	23.3	
1999 01 02	12 59.00	-05 38.0	32.176	32.112	85.4	1.7	23.3	
1999 01 12	12 59.22	-05 38.8	31.997	32.106	95.5	1.7	23.3	
1999 01 22	12 59.24	-05 38.4	31.820	32.101	105.7	1.7	23.3	
1999 02 01	12 59.06	-05 36.8	31.652	32.095	115.9	1.6	23.2	
1999 02 11	12 58.70	-05 34.0	31.497	32.089	126.2	1.4	23.2	
1999 02 21	12 58.16	-05 30.2	31.360	32.084	136.4	1.2	23.2	
1999 03 03	12 57.48	-05 25.4	31.246	32.078	146.6	1.0	23.2	
1999 03 13	12 56.69	-05 20.0	31.156	32.072	156.9	0.7	23.1	
1999 03 23	12 55.80	-05 14.1	31.095	32.067	167.0	0.4	23.1	
1999 04 02	12 54.87	-05 07.9	31.063	32.061	177.1	0.1	23.0	
1999 04 12	12 53.93	-05 01.7	31.061	32.055	172.7	0.2	23.1	
1999 04 22	12 53.01	-04 55.7	31.089	32.050	162.6	0.5	23.1	
1999 05 02	12 52.16	-04 50.0	31.146	32.044	152.7	0.8	23.1	
1999 05 12	12 51.39	-04 45.0	31.228	32.039	142.8	1.1	23.2	
1999 05 22	12 50.75	-04 40.9	31.334	32.033	133.0	1.3	23.2	
1999 06 01	12 50.26	-04 37.6	31.460	32.027	123.3	1.5	23.2	
1999 06 11	12 49.93	-04 35.4	31.602	32.022	113.6	1.7	23.2	
1999 06 21	12 49.78	-04 34.4	31.755	32.016	104.0	1.8	23.3	
1999 07 01	12 49.81	-04 34.5	31.915	32.011	94.5	1.8	23.3	
1999 07 11	12 50.03	-04 35.8	32.078	32.005	85.0	1.8	23.3	
1999 07 21	12 50.44	-04 38.3	32.237	31.999	75.6	1.8	23.3	
1999 07 31	12 51.02	-04 41.9	32.390	31.994	66.2	1.7	23.3	
1999 08 10	12 51.77	-04 46.5	32.532	31.988	56.8	1.5	23.3	
1999 08 20	12 52.67	-04 52.0	32.658	31.983	47.4	1.3	23.3	
1999 08 30	12 53.70	-04 58.4	32.766	31.977	38.1	1.1	23.3	

1993 FW		$a, e, i = 43.45, 0.04, 8$				Elements <i>MPC</i> 32049			1999 02 06		04 48.92	+22 51.7	0.556	1.333	116.9	41.3	19.5								
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	1999 02 11	04 56.56	+22 49.8	0.604	1.348	113.6	42.1	19.7									
1998 11 13		12 59.22	−05 18.7	42.793	41.984	34.7	0.8	23.4	1999 02 16	05 04.67	+22 49.2	0.653	1.361	110.4	42.9	19.9									
1998 11 23		13 00.02	−05 23.2	42.680	41.983	44.6	0.9	23.4	1999 02 21	05 13.20	+22 49.3	0.702	1.373	107.3	43.4	20.1									
1998 12 03		13 00.73	−05 27.1	42.547	41.982	54.6	1.1	23.4	1999 02 26	05 22.11	+22 49.4	0.752	1.383	104.3	43.9	20.3									
1998 12 13		13 01.31	−05 30.2	42.395	41.982	64.5	1.2	23.4	1999 03 03	05 31.34	+22 49.0	0.802	1.393	101.4	44.2	20.4									
1998 12 23		13 01.76	−05 32.4	42.231	41.981	74.6	1.3	23.4	1999 03 08	05 40.86	+22 47.7	0.851	1.401	98.6	44.5	20.6									
1999 01 02		13 02.06	−05 33.7	42.059	41.980	84.7	1.3	23.4	1999 03 13	05 50.65	+22 45.0	0.901	1.408	95.9	44.6	20.7									
1999 01 12		13 02.22	−05 34.1	41.885	41.979	94.9	1.3	23.4	1999 03 18	06 00.68	+22 40.8	0.949	1.413	93.2	44.7	20.8									
1999 01 22		13 02.22	−05 33.5	41.712	41.979	105.1	1.3	23.4	1999 03 23	06 10.94	+22 34.7	0.998	1.417	90.6	44.7	21.0									
1999 02 01		13 02.07	−05 32.0	41.548	41.978	115.3	1.2	23.4	1999 03 28	06 21.41	+22 26.5	1.045	1.420	88.1	44.6	21.1									
1999 02 11		13 01.77	−05 29.6	41.397	41.977	125.5	1.1	23.4	1999 04 02	06 32.04	+22 15.9	1.091	1.422	85.6	44.5	21.2									
1999 02 21		13 01.35	−05 26.4	41.263	41.976	135.7	0.9	23.3	1999 04 07	06 42.84	+22 02.9	1.137	1.422	83.2	44.3	21.2									
1999 03 03		13 00.81	−05 22.6	41.151	41.976	145.9	0.8	23.3	1999 04 12	06 53.77	+21 47.2	1.181	1.421	80.8	44.1	21.3									
1999 03 13		13 00.19	−05 18.2	41.065	41.975	156.1	0.6	23.3	1999 04 17	07 04.84	+21 28.7	1.223	1.419	78.5	43.9	21.4									
1999 03 23		12 59.49	−05 13.5	41.006	41.974	166.2	0.3	23.3	1999 04 22	07 16.04	+21 07.3	1.264	1.416	76.2	43.6	21.4									
1999 04 02		12 58.76	−05 08.6	40.976	41.974	176.2	0.1	23.2	1999 04 27	07 27.34	+20 42.8	1.304	1.411	74.0	43.3	21.5									
1999 04 12		12 58.02	−05 03.6	40.977	41.973	173.6	0.2	23.2	1999 05 02	07 38.73	+20 15.4	1.341	1.405	71.9	43.0	21.5									
1999 04 22		12 57.29	−04 58.8	41.007	41.972	163.6	0.4	23.3	1999 05 07	07 50.21	+19 44.8	1.377	1.398	69.8	42.6	21.6									
1999 05 02		12 56.61	−04 54.3	41.066	41.971	153.7	0.6	23.3	1999 05 12	08 01.77	+19 11.0	1.410	1.389	67.7	42.3	21.6									
1999 05 12		12 55.99	−04 50.3	41.150	41.971	143.9	0.8	23.3	1999 05 17	08 13.42	+18 33.9	1.441	1.379	65.7	41.9	21.6									
1999 05 22		12 55.46	−04 46.8	41.259	41.970	134.1	1.0	23.3	1999 05 22	08 25.15	+17 53.6	1.470	1.368	63.8	41.6	21.6									
1999 06 01		12 55.05	−04 44.1	41.388	41.969	124.4	1.1	23.4	1999 05 27	08 36.96	+17 10.0	1.497	1.356	61.9	41.2	21.7									
1999 06 11		12 54.75	−04 42.2	41.533	41.969	114.7	1.3	23.4	1999 06 01	08 48.83	+16 23.1	1.521	1.342	60.1	40.9	21.7									
1999 06 21		12 54.59	−04 41.1	41.691	41.968	105.1	1.3	23.4	1999 06 06	09 00.79	+15 32.9	1.542	1.327	58.3	40.6	21.7									
1999 07 01		12 54.57	−04 40.9	41.856	41.967	95.6	1.4	23.4	1999 06 11	09 12.83	+14 39.4	1.561	1.311	56.5	40.2	21.6									
1999 07 11		12 54.69	−04 41.7	42.023	41.966	86.1	1.4	23.4	1995 EK₁									$a, e, i = 2.27, 0.78, 9$				Elements <i>MPC</i> 26581			
1999 07 21		12 54.96	−04 43.3	42.189	41.966	76.6	1.3	23.4	Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation			V							
1999 07 31		12 55.36	−04 45.8	42.348	41.965	67.2	1.3	23.4	1998 11 23		19 48.43	−17 32.9	0.712	0.827	−5.39	−36.8	19.6								
1999 08 10		12 55.90	−04 49.0	42.496	41.964	57.8	1.2	23.4	1998 11 28		20 31.29	−13 49.3	0.711	0.897	−5.44	−43.2	19.6								
1999 08 20		12 56.55	−04 53.0	42.629	41.964	48.3	1.0	23.4	1998 12 03		21 11.12	−09 48.0	0.728	0.967	−5.28	−46.4	19.7								
1999 08 30		12 57.30	−04 57.6	42.744	41.963	38.9	0.9	23.4	1998 12 08		21 47.16	−05 48.9	0.763	1.037	−4.98	−46.6	19.8								
1999 09 09		12 58.15	−05 02.7	42.836	41.962	29.5	0.7	23.4	1998 12 13		22 19.24	−02 05.8	0.813	1.106	−4.59	−44.4	19.9								
									1998 12 18		22 47.60	+01 14.3	0.874	1.173	−4.18	−40.8	20.1								
									1998 12 23		23 12.69	+04 09.8	0.946	1.240	−3.77	−36.7	20.2								
									1998 12 28		23 34.98	+06 42.3	1.025	1.305	−3.40	−32.6	20.4								
									1999 01 02		23 54.96	+08 54.7	1.111	1.369	−3.06	−28.7	20.6								
									1999 01 07		00 13.02	+10 50.0	1.201	1.431	−2.77	−25.3	20.8								
									1999 01 12		00 29.53	+12 31.3	1.296	1.492	−2.50	−22.2	21.0								
									1999 01 17		00 44.76	+14 00.9	1.394	1.552	−2.27	−19.6	21.2								
									1999 01 22		00 58.95	+15 21.1	1.494	1.611	−2.07	−17.3	21.4								
									1999 01 27		01 12.29	+16 33.3	1.595	1.668	−1.90	−15.3	21.6								
									1999 02 01		01 24.91	+17 38.9	1.699	1.724	−1.74	−13.6	21.7								
									1999 02 06		01 36.93	+18 38.9	1.803	1.779	−1.60	−12.1	21.9								
									1999 02 11		01 48.46	+19 34.2	1.908	1.832	−1.48	−10.7	22.0								
									1997 YX₃									$a, e, i = 2.78, 0.42, 28$				Elements <i>MPC</i> 31796			
									Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V								
									1998 11 23		11 41.77	−19 48.1	3.974	3.563	58.7	13.7	20.5								
									1998 12 03		11 48.31	−21 38.0	3.872	3.588	66.1	14.5	20.5								
									1998 12 13		11 53.65	−23 26.6	3.762	3.612	73.7	15.2	20.5								
									1998 12 23		11 57.60	−25 12.9	3.645	3.635	81.6	15.5	20.5								
									1999 01 02		11 59.93	−26 55.1	3.527	3.657	89.8	15.6	20.4								

1999 01 12	12 00.45	-28 31.2	3.409	3.679	98.1	15.3	20.3
1999 01 22	11 58.95	-29 58.5	3.295	3.700	106.7	14.8	20.3
1999 02 01	11 55.35	-31 13.6	3.191	3.720	115.2	13.9	20.2
1999 02 11	11 49.69	-32 12.7	3.100	3.739	123.7	12.7	20.1
1999 02 21	11 42.17	-32 52.0	3.026	3.757	131.7	11.3	20.0
1999 03 03	11 33.27	-33 08.6	2.973	3.774	138.7	10.0	19.9
1999 03 13	11 23.64	-33 01.1	2.944	3.791	143.8	8.9	19.8
1999 03 23	11 14.04	-32 30.4	2.940	3.807	145.9	8.4	19.8
1999 04 02	11 05.27	-31 40.1	2.964	3.822	144.5	8.7	19.9
1999 04 12	10 57.93	-30 35.7	3.012	3.836	140.1	9.6	19.9
1999 04 22	10 52.47	-29 23.5	3.085	3.849	133.8	10.9	20.1
1999 05 02	10 49.07	-28 09.8	3.178	3.862	126.4	12.1	20.2
1999 05 12	10 47.74	-26 59.9	3.288	3.874	118.6	13.2	20.3
1999 05 22	10 48.39	-25 57.6	3.411	3.885	110.6	14.1	20.4
1999 06 01	10 50.82	-25 05.7	3.543	3.895	102.7	14.7	20.5
1999 06 11	10 54.83	-24 25.4	3.682	3.904	95.0	15.0	20.6
1999 06 21	11 00.20	-23 57.4	3.822	3.913	87.5	15.0	20.7
1999 07 01	11 06.75	-23 41.6	3.962	3.921	80.3	14.8	20.8
1999 07 11	11 14.29	-23 37.5	4.098	3.927	73.2	14.3	20.8
1999 07 21	11 22.67	-23 44.6	4.229	3.934	66.4	13.7	20.9
1999 07 31	11 31.77	-24 01.8	4.351	3.939	59.8	12.9	20.9

1998 BE ₇		$a, e, i = 3.10, 0.51, 14$			Elements <i>MPC</i> 31797		
Date	TT	α_{2000}	δ_{2000}	Δ	r	Variation	V
1998 11 23	12 23.76	+09 58.6	3.633	3.250	-0.40	+1.9	20.7
1998 12 03	12 33.16	+09 36.8	3.547	3.297	-0.39	+2.0	20.7
1998 12 13	12 41.42	+09 26.1	3.452	3.342	-0.39	+2.1	20.7
1998 12 23	12 48.40	+09 27.5	3.350	3.387	-0.39	+2.3	20.7
1999 01 02	12 53.90	+09 41.9	3.244	3.432	-0.40	+2.4	20.6
1999 01 12	12 57.76	+10 09.6	3.140	3.475	-0.41	+2.6	20.6
1999 01 22	12 59.78	+10 50.6	3.040	3.517	-0.43	+2.8	20.5
1999 02 01	12 59.83	+11 43.7	2.949	3.559	-0.45	+3.0	20.4
1999 02 11	12 57.87	+12 46.9	2.873	3.600	-0.47	+3.2	20.3

C/1998 P1 (Williams)		Elements <i>MPC</i> 32595					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	m_1 m_2
1998 11 23	13 22.52	-19 17.8	1.953	1.283	35.4	26.5	10.0
1998 12 03	13 18.45	-16 42.1	1.830	1.359	46.7	31.9	10.1
1998 12 13	13 11.99	-13 33.1	1.678	1.447	59.2	35.8	10.2
1998 12 23	13 01.76	-09 29.2	1.508	1.543	73.1	37.6	10.3
1999 01 02	12 45.75	-03 59.2	1.334	1.645	89.1	36.7	10.3
1999 01 12	12 21.20	+03 32.9	1.179	1.751	107.8	32.3	10.3
1999 01 22	11 44.90	+13 21.0	1.072	1.860	129.5	24.1	10.3
1999 02 01	10 55.44	+24 11.4	1.049	1.972	151.4	13.8	10.6
1999 02 11	09 57.49	+33 15.0	1.128	2.084	160.4	9.1	11.0
1999 02 21	09 02.20	+38 43.3	1.298	2.198	147.6	13.9	11.5
1999 03 03	08 18.82	+41 10.6	1.531	2.311	131.6	18.7	12.1
1999 03 13	07 49.06	+41 57.8	1.802	2.425	117.3	21.4	12.6
1999 03 23	07 30.43	+42 00.6	2.093	2.538	104.8	22.3	13.1
1999 04 02	07 19.82	+41 46.6	2.393	2.651	93.6	22.1	13.6
1999 04 12	07 14.75	+41 28.0	2.692	2.763	83.4	21.1	14.1
1999 04 22	07 13.55	+41 09.7	2.985	2.874	74.0	19.6	14.5
1999 05 02	07 15.07	+40 53.5	3.266	2.985	65.1	17.8	14.8
1999 05 12	07 18.51	+40 40.1	3.532	3.095	56.7	15.8	15.1

1999 05 22	07 23.32	+40 29.6	3.780	3.205	48.8	13.7	15.4
1999 06 01	07 29.10	+40 22.1	4.008	3.313	41.2	11.6	15.7
1999 06 11	07 35.54	+40 17.6	4.213	3.421	34.2	9.6	16.0

C/1998 K1 (Mueller)		Elements <i>MPC</i> 32169						
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 11 23	13 46.37	-12 30.8	4.303	3.498	31.4	8.5	16.1	
1998 12 03	13 57.33	-14 36.6	4.238	3.518	38.3	10.0	16.1	
1998 12 13	14 07.86	-16 40.3	4.162	3.540	45.4	11.4	16.1	
1998 12 23	14 17.85	-18 42.1	4.074	3.565	52.7	12.7	16.1	
1999 01 02	14 27.14	-20 42.0	3.978	3.591	60.2	13.7	16.1	
1999 01 12	14 35.56	-22 40.3	3.874	3.620	67.9	14.6	16.0	
1999 01 22	14 42.93	-24 37.1	3.765	3.650	75.8	15.2	16.0	
1999 02 01	14 49.03	-26 32.4	3.653	3.683	84.0	15.4	16.0	
1999 02 11	14 53.65	-28 26.2	3.542	3.716	92.4	15.4	15.9	
1999 02 21	14 56.55	-30 17.7	3.434	3.752	101.1	15.0	15.9	
1999 03 03	14 57.51	-32 06.0	3.334	3.789	110.0	14.2	15.9	
1999 03 13	14 56.41	-33 49.3	3.246	3.828	119.1	13.1	15.9	
1999 03 23	14 53.16	-35 25.2	3.173	3.868	128.2	11.7	15.9	
1999 04 02	14 47.88	-36 50.7	3.119	3.910	137.0	10.0	15.9	
1999 04 12	14 40.85	-38 03.0	3.088	3.953	145.2	8.3	15.9	
1999 04 22	14 32.58	-38 59.4	3.083	3.998	151.9	6.8	16.0	
1999 05 02	14 23.76	-39 38.9	3.105	4.043	155.4	6.0	16.0	
1999 05 12	14 15.13	-40 02.3	3.155	4.090	154.6	6.1	16.1	
1999 05 22	14 07.41	-40 11.8	3.231	4.138	149.9	7.1	16.2	
1999 06 01	14 01.15	-40 11.2	3.333	4.187	143.0	8.4	16.3	
1999 06 11	13 56.72	-40 04.5	3.456	4.237	135.1	9.7	16.5	
1999 06 21	13 54.28	-39 55.5	3.599	4.287	126.9	10.9	16.6	
1999 07 01	13 53.83	-39 47.7	3.758	4.339	118.7	11.9	16.7	
1999 07 11	13 55.28	-39 43.2	3.929	4.392	110.7	12.5	16.9	
1999 07 21	13 58.48	-39 43.5	4.109	4.445	102.8	12.9	17.0	
1999 07 31	14 03.25	-39 49.6	4.294	4.499	95.1	13.0	17.2	
1999 08 10	14 09.40	-40 01.4	4.482	4.554	87.6	12.9	17.3	
1999 08 20	14 16.80	-40 19.1	4.670	4.609	80.3	12.5	17.5	
1999 08 30	14 25.26	-40 42.1	4.855	4.665	73.3	12.0	17.6	
1999 09 09	14 34.67	-41 09.9	5.035	4.722	66.4	11.3	17.8	
1999 09 19	14 44.91	-41 41.9	5.208	4.779	59.6	10.5	17.9	
1999 09 29	14 55.86	-42 17.5	5.371	4.837	53.1	9.5	18.0	
1999 10 09	15 07.42	-42 56.0	5.523	4.895	46.9	8.6	18.1	
1999 10 19	15 19.52	-43 36.9	5.662	4.954	41.0	7.6	18.2	
1999 10 29	15 32.05	-44 19.5	5.787	5.013	35.6	6.6	18.3	
1999 11 08	15 44.93	-45 03.5	5.897	5.072	30.9	5.8	18.4	

10P/Tempel 2		Elements <i>MPC</i> 27082						
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1 m_2
1998 11 23	14 01.94	-02 32.5	3.657	2.873	32.4	10.6	19.3	20.3
1998 12 03	14 16.81	-03 39.5	3.523	2.818	38.4	12.6	19.0	20.2
1998 12 13	14 31.92	-04 41.4	3.377	2.762	44.5	14.5	18.7	20.2
1998 12 23	14 47.20	-05 37.4	3.222	2.706	50.6	16.3	18.3	20.1
1999 01 02	15 02.60	-06 26.6	3.058	2.649	56.7	18.1	18.0	20.0
1999 01 12	15 18.06	-07 08.4	2.888	2.591	62.8	19.7	17.6	19.9
1999 01 22	15 33.49	-07 41.8	2.713	2.533	69.0	21.3	17.3	19.7
1999 02 01	15 48.77	-08 06.2	2.535	2.474	75.2	22.6	16.9	19.6
1999 02 11	16 03.81	-08 21.2	2.356	2.415	81.5	23.8	16.4	19.4

1999 02 21	16 18.43	−08 26.3	2.177	2.355	87.8	24.8	16.0	19.2
1999 03 03	16 32.47	−08 21.3	2.000	2.295	94.1	25.5	15.5	19.0
1999 03 13	16 45.72	−08 06.4	1.828	2.236	100.6	25.9	15.0	18.7
1999 03 23	16 57.92	−07 42.1	1.661	2.176	107.2	25.9	14.5	18.5
1999 04 02	17 08.79	−07 09.7	1.502	2.116	114.0	25.5	14.0	18.2
1999 04 12	17 17.99	−06 31.1	1.352	2.057	121.1	24.7	13.5	17.9
1999 04 22	17 25.14	−05 49.1	1.213	1.999	128.3	23.2	12.9	17.5
1999 05 02	17 29.85	−05 08.4	1.086	1.941	135.9	21.2	12.4	17.2
1999 05 12	17 31.79	−04 34.9	0.974	1.885	143.7	18.5	11.8	16.8
1999 05 22	17 30.69	−04 17.0	0.876	1.830	151.4	15.3	11.3	16.4
1999 06 01	17 26.70	−04 24.2	0.796	1.778	158.3	12.2	10.8	16.0
1999 06 11	17 20.36	−05 05.7	0.733	1.728	162.0	10.5	10.3	15.7
1999 06 21	17 12.83	−06 28.5	0.690	1.681	160.0	11.9	9.8	15.5
1999 07 01	17 05.83	−08 33.5	0.664	1.638	153.5	16.1	9.5	15.6
1999 07 11	17 01.12	−11 14.8	0.654	1.598	145.3	21.3	9.2	15.6
1999 07 21	17 00.28	−14 21.5	0.659	1.564	136.9	26.4	9.0	15.8
1999 07 31	17 04.32	−17 40.5	0.677	1.535	129.1	30.9	8.8	15.9
1999 08 10	17 13.64	−20 58.7	0.704	1.512	122.2	34.6	8.7	16.1
1999 08 20	17 28.28	−24 04.7	0.741	1.495	116.2	37.4	8.7	16.2
1999 08 30	17 47.87	−26 48.4	0.785	1.485	111.0	39.4	8.8	16.4
1999 09 09	18 11.79	−29 01.3	0.836	1.482	106.6	40.7	8.9	16.6
1999 09 19	18 39.29	−30 36.7	0.895	1.486	102.8	41.3	9.1	16.7
1999 09 29	19 09.36	−31 30.6	0.960	1.496	99.4	41.3	9.3	16.9
1999 10 09	19 40.90	−31 41.3	1.034	1.514	96.3	41.0	9.6	17.1
1999 10 19	20 12.94	−31 10.6	1.116	1.538	93.3	40.3	9.9	17.3
1999 10 29	20 44.58	−30 02.6	1.206	1.568	90.4	39.3	10.3	17.4
1999 11 08	21 15.19	−28 23.2	1.304	1.603	87.5	38.1	10.7	17.6
1999 11 18	21 44.44	−26 18.9	1.411	1.642	84.5	36.8	11.1	17.8
1999 11 28	22 12.18	−23 56.3	1.525	1.686	81.3	35.3	11.6	18.0
1999 12 08	22 38.42	−21 21.2	1.647	1.733	77.9	33.8	12.1	18.2
1999 12 18	23 03.27	−18 38.6	1.776	1.784	74.4	32.1	12.5	18.4
1999 12 28	23 26.89	−15 52.7	1.910	1.837	70.7	30.4	13.0	18.5
2000 01 07	23 49.43	−13 06.6	2.049	1.891	66.8	28.5	13.5	18.7
2000 01 17	00 11.07	−10 22.8	2.192	1.948	62.7	26.7	13.9	18.9
2000 01 27	00 31.94	−07 43.5	2.336	2.005	58.5	24.7	14.4	19.0
2000 02 06	00 52.18	−05 09.8	2.481	2.064	54.1	22.8	14.8	19.1
2000 02 16	01 11.89	−02 43.1	2.626	2.123	49.6	20.7	15.3	19.3
2000 02 26	01 31.14	−00 24.0	2.768	2.183	45.0	18.7	15.7	19.4
2000 03 07	01 50.02	+01 46.7	2.906	2.243	40.3	16.6	16.1	19.5
2000 03 17	02 08.57	+03 48.7	3.039	2.302	35.5	14.5	16.5	19.5
2000 03 27	02 26.83	+05 41.5	3.165	2.362	30.7	12.4	16.8	19.6

C/1997 T1 (Utsunomiya)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03		14 05.01	−33 37.0	5.336	4.565	35.1	7.1	18.2	
1998 12 13		14 07.90	−34 51.1	5.330	4.660	43.2	8.3	18.3	
1998 12 23		14 09.81	−36 06.1	5.302	4.755	51.6	9.3	18.4	
1999 01 02		14 10.50	−37 21.3	5.258	4.849	60.5	10.2	18.5	
1999 01 12		14 09.76	−38 35.7	5.199	4.942	69.5	10.7	18.5	
1999 01 22		14 07.36	−39 47.8	5.131	5.035	78.9	11.1	18.6	
1999 02 01		14 03.10	−40 55.8	5.059	5.127	88.4	11.1	18.6	
1999 02 11		13 56.84	−41 57.1	4.988	5.219	98.0	10.8	18.7	
1999 02 21		13 48.54	−42 48.8	4.925	5.310	107.7	10.2	18.7	

Elements MPC 32168

1999 03 03	13 38.31	−43 27.4	4.875	5.401	117.2	9.4	18.8
1999 03 13	13 26.46	−43 49.9	4.844	5.491	126.3	8.4	18.8
1999 03 23	13 13.47	−43 53.8	4.837	5.580	134.4	7.3	18.9
1999 04 02	13 00.02	−43 38.3	4.859	5.670	140.9	6.4	19.0
1999 04 12	12 46.82	−43 04.4	4.912	5.758	144.6	5.8	19.1
1999 04 22	12 34.52	−42 14.8	4.996	5.846	144.8	5.7	19.2
1999 05 02	12 23.65	−41 13.9	5.113	5.934	141.5	6.1	19.3
1999 05 12	12 14.51	−40 06.5	5.258	6.021	135.6	6.7	19.4
1999 05 22	12 07.24	−38 57.2	5.429	6.108	128.3	7.5	19.5
1999 06 01	12 01.81	−37 50.2	5.622	6.195	120.2	8.1	19.7
1999 06 11	11 58.11	−36 48.6	5.832	6.281	111.8	8.6	19.8
1999 06 21	11 55.97	−35 54.4	6.054	6.366	103.4	8.9	19.9

37P/Forbes

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03		14 15.80	−17 47.7	2.857	2.102	33.2	14.9	16.7	20.7
1998 12 13		14 38.42	−19 52.8	2.728	2.038	37.6	17.1	16.4	20.6
1998 12 23		15 02.43	−21 53.9	2.597	1.975	41.8	19.4	16.1	20.5
1999 01 02		15 27.97	−23 48.4	2.465	1.913	45.8	21.6	15.8	20.4
1999 01 12		15 55.19	−25 33.6	2.333	1.853	49.5	23.8	15.6	20.3
1999 01 22		16 24.17	−27 05.9	2.205	1.794	53.0	26.0	15.3	20.2
1999 02 01		16 54.95	−28 21.2	2.081	1.738	56.2	28.1	15.0	20.0
1999 02 11		17 27.49	−29 15.2	1.962	1.685	59.1	30.2	14.7	19.9
1999 02 21		18 01.59	−29 43.3	1.852	1.635	61.8	32.2	14.4	19.8
1999 03 03		18 36.87	−29 41.3	1.749	1.590	64.1	34.1	14.1	19.6
1999 03 13		19 12.87	−29 06.4	1.656	1.549	66.2	35.9	13.9	19.5
1999 03 23		19 48.97	−27 57.1	1.572	1.515	68.1	37.6	13.6	19.4
1999 04 02		20 24.52	−26 14.3	1.499	1.487	69.8	39.1	13.4	19.3
1999 04 12		20 58.95	−24 01.1	1.434	1.466	71.5	40.4	13.3	19.2
1999 04 22		21 31.77	−21 22.8	1.379	1.452	73.2	41.5	13.1	19.1
1999 05 02		22 02.63	−18 25.7	1.330	1.446	75.0	42.3	13.0	19.1
1999 05 12		22 31.33	−15 16.6	1.288	1.448	77.1	42.8	13.0	19.0
1999 05 22		22 57.70	−12 02.5	1.251	1.459	79.5	43.0	13.0	19.0
1999 06 01		23 21.66	−08 49.5	1.216	1.477	82.4	42.9	13.0	18.9
1999 06 11		23 43.13	−05 42.6	1.183	1.502	85.8	42.4	13.0	18.9
1999 06 21		00 01.94	−02 46.2	1.151	1.534	89.9	41.5	13.0	18.9
1999 07 01		00 17.93	−00 03.4	1.118	1.572	94.7	40.1	13.1	18.8
1999 07 11		00 30.84	+02 23.3	1.086	1.615	100.3	38.3	13.2	18.8
1999 07 21		00 40.33	+04 31.5	1.054	1.662	106.8	35.8	13.3	18.7
1999 07 31		00 46.07	+06 19.3	1.025	1.714	114.3	32.7	13.4	18.6
1999 08 10		00 47.80	+07 44.5	1.000	1.769	122.9	28.8	13.5	18.5
1999 08 20		00 45.38	+08 44.9	0.983	1.827	132.6	24.1	13.6	18.4
1999 08 30		00 39.18	+09 19.1	0.978	1.886	143.3	18.7	13.8	18.3
1999 09 09		00 30.00	+09 27.5	0.989	1.948	154.7	12.8	14.0	18.2
1999 09 19		00 19.22	+09 13.4	1.021	2.011	166.0	7.0	14.2	18.1
1999 09 29		00 08.52	+08 44.0	1.076	2.074	172.8	3.5	14.5	18.1
1999 10 09		23 59.34	+08 08.2	1.156	2.139	165.7	6.6	14.8	18.5
1999 10 19		23 52.71	+07 34.7	1.260	2.203	155.1	11.0	15.1	18.9
1999 10 29		23 49.09	+07 10.0	1.385	2.268	144.5	14.7	15.5	19.3
1999 11 08		23 48.43	+06 57.4	1.529	2.333	134.5	17.6	15.8	19.7
1999 11 18		23 50.51	+06 58.4	1.689	2.398	125.1	19.7	16.2	20.0
1999 11 28		23 54.92	+07 12.5	1.862	2.462	116.2	21.1	16.5	20.3
1999 12 08		00 01.26	+07 38.5	2.045	2.526	107.8	21.8	16.9	20.6

1998 NOV. 10

M.P.C. 33137

1999 12 18	00 09.20	+08 15.2	2.235	2.590	99.7	22.0	17.2	20.9
1999 12 28	00 18.40	+09 00.7	2.430	2.653	92.0	21.7	17.5	21.1
2000 01 07	00 28.63	+09 53.5	2.627	2.715	84.5	21.1	17.8	21.3
2000 01 17	00 39.67	+10 52.2	2.823	2.777	77.3	20.2	18.1	21.5
2000 01 27	00 51.36	+11 55.2	3.016	2.838	70.2	19.1	18.3	21.6
2000 02 06	01 03.56	+13 01.4	3.205	2.899	63.3	17.7	18.6	21.8
2000 02 16	01 16.17	+14 09.8	3.387	2.958	56.5	16.2	18.8	21.9
2000 02 26	01 29.09	+15 19.1	3.560	3.017	49.8	14.5	19.0	22.0
2000 03 07	01 42.26	+16 28.6	3.723	3.075	43.2	12.8	19.2	22.0
2000 03 17	01 55.61	+17 37.5	3.873	3.132	36.7	10.9	19.4	22.1
2000 03 27	02 09.07	+18 45.0	4.011	3.189	30.3	9.1	19.6	22.1

47P/Ashbrook-Jackson

Elements MPC 31662

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03		14 17.49	-19 20.8	5.392	4.591	32.5	6.6		21.5
1998 12 13		14 26.21	-20 17.6	5.272	4.566	40.3	8.0		21.5
1998 12 23		14 34.58	-21 13.0	5.135	4.540	48.3	9.3		21.5
1999 01 02		14 42.44	-22 06.5	4.983	4.514	56.4	10.5		21.4
1999 01 12		14 49.67	-22 58.0	4.819	4.487	64.7	11.4		21.4
1999 01 22		14 56.09	-23 47.2	4.645	4.460	73.1	12.2		21.3
1999 02 01		15 01.53	-24 33.7	4.465	4.433	81.8	12.7		21.2
1999 02 11		15 05.80	-25 17.2	4.281	4.405	90.7	12.9		21.1
1999 02 21		15 08.72	-25 57.3	4.097	4.377	99.9	12.9		21.0
1999 03 03		15 10.11	-26 33.3	3.918	4.349	109.4	12.4		20.9
1999 03 13		15 09.83	-27 04.4	3.748	4.320	119.1	11.6		20.8
1999 03 23		15 07.78	-27 29.5	3.591	4.290	129.2	10.4		20.6
1999 04 02		15 03.98	-27 47.3	3.452	4.261	139.4	8.8		20.4
1999 04 12		14 58.57	-27 56.6	3.335	4.231	149.7	6.9		20.3
1999 04 22		14 51.84	-27 56.4	3.244	4.200	159.6	4.8		20.1
1999 05 02		14 44.26	-27 46.7	3.180	4.169	167.2	3.1		19.9
1999 05 12		14 36.39	-27 28.3	3.147	4.138	167.2	3.1		19.9
1999 05 22		14 28.82	-27 03.0	3.143	4.106	159.5	4.9		20.0
1999 06 01		14 22.15	-26 33.7	3.166	4.074	149.7	7.2		20.1
1999 06 11		14 16.81	-26 03.8	3.215	4.042	139.5	9.4		20.2
1999 06 21		14 13.12	-25 36.3	3.285	4.009	129.5	11.3		20.3
1999 07 01		14 11.23	-25 13.8	3.372	3.976	119.7	12.8		20.4
1999 07 11		14 11.17	-24 58.0	3.471	3.942	110.4	14.0	20.4	20.5
1999 07 21		14 12.91	-24 50.0	3.579	3.908	101.3	14.8	20.3	20.6
1999 07 31		14 16.34	-24 50.0	3.691	3.874	92.7	15.2	20.3	20.6
1999 08 10		14 21.33	-24 57.9	3.804	3.839	84.4	15.2	20.3	20.7
1999 08 20		14 27.77	-25 13.1	3.913	3.805	76.4	15.0	20.2	20.7
1999 08 30		14 35.50	-25 34.7	4.017	3.769	68.7	14.5	20.2	20.7
1999 09 09		14 44.43	-26 01.9	4.114	3.734	61.2	13.7	20.1	20.7
1999 09 19		14 54.46	-26 33.7	4.200	3.698	53.9	12.7	20.0	20.7
1999 09 29		15 05.47	-27 09.0	4.274	3.662	46.8	11.5	19.9	20.7
1999 10 09		15 17.39	-27 46.8	4.335	3.626	39.9	10.2	19.8	20.6
1999 10 19		15 30.16	-28 26.1	4.381	3.589	33.2	8.7	19.7	20.6

C/1998 K3 (LINEAR)

Elements MPC 32169

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 03		14 43.01	+01 38.2	5.053	4.299	36.4	7.8	19.9	
1998 12 13		14 44.58	+01 54.2	4.984	4.348	45.3	9.3	19.9	
1998 12 23		14 45.38	+02 19.6	4.892	4.399	54.8	10.5	19.9	
1999 01 02		14 45.21	+02 55.1	4.782	4.450	64.6	11.5	19.9	

1999 01 12	14 43.83	+03 41.6	4.658	4.503	74.9	12.2	19.9
1999 01 22	14 41.02	+04 39.6	4.526	4.556	85.5	12.4	19.9
1999 02 01	14 36.54	+05 49.2	4.394	4.610	96.5	12.3	19.9
1999 02 11	14 30.23	+07 09.8	4.267	4.665	107.8	11.6	19.8
1999 02 21	14 21.95	+08 39.8	4.156	4.720	119.4	10.5	19.8
1999 03 03	14 11.72	+10 16.2	4.068	4.777	131.0	9.0	19.8
1999 03 13	13 59.69	+11 54.9	4.011	4.833	142.1	7.3	19.9
1999 03 23	13 46.22	+13 30.4	3.991	4.891	151.6	5.6	19.9
1999 04 02	13 31.86	+14 57.3	4.013	4.949	157.0	4.5	20.0
1999 04 12	13 17.27	+16 10.9	4.079	5.007	155.4	4.8	20.0
1999 04 22	13 03.15	+17 07.9	4.186	5.066	148.0	6.0	20.2
1999 05 02	12 50.11	+17 47.2	4.331	5.126	138.1	7.5	20.3
1999 05 12	12 38.59	+18 09.7	4.508	5.185	127.5	8.9	20.4
1999 05 22	12 28.85	+18 17.2	4.711	5.246	116.8	9.9	20.6
1999 06 01	12 20.96	+18 12.4	4.932	5.306	106.3	10.6	20.7
1999 06 11	12 14.89	+17 57.9	5.165	5.367	96.0	10.8	20.9
1999 06 21	12 10.48	+17 36.1	5.402	5.429	86.1	10.8	21.0

1994 RH

 $a, e, i = 2.25, 0.44, 19$

Elements MPC 29945

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 12 13		12 58.29	-13 40.2	2.460	2.184	62.3	23.5	20.8
1998 12 23		13 09.52	-16 01.0	2.390	2.235	69.0	24.3	20.8
1999 01 02		13 19.17	-18 15.9	2.312	2.286	76.2	24.7	20.8
1999 01 12		13 26.99	-20 24.7	2.228	2.335	83.7	24.8	20.7
1999 01 22		13 32.62	-22 26.8	2.140	2.383	91.8	24.4	20.7
1999 02 01		13 35.70	-24 20.7	2.052	2.429	100.3	23.5	20.6
1999 02 11		13 35.86	-26 04.4	1.967	2.474	109.3	22.1	20.5
1999 02 21		13 32.77	-27 34.5	1.889	2.518	118.8	20.1	20.4
1999 03 03		13 26.33	-28 46.1	1.823	2.561	128.6	17.6	20.3
1999 03 13		13 16.77	-29 34.2	1.773	2.603	138.5	14.6	20.1
1999 03 23		13 04.74	-29 53.8	1.745	2.643	147.8	11.6	20.0
1999 04 02		12 51.44	-29 42.9	1.743	2.681	154.9	9.1	20.0
1999 04 12		12 38.26	-29 04.3	1.767	2.719	157.2	8.2	20.0
1999 04 22		12 26.54	-28 04.8	1.819	2.755	153.4	9.4	20.1
1999 05 02		12 17.28	-26 54.4	1.897	2.790	145.9	11.7	20.3
1999 05 12		12 10.93	-25 42.7	1.998	2.823	137.1	14.1	20.6
1999 05 22		12 07.59	-24 37.3	2.118	2.855	128.0	16.2	20.8
1999 06 01		12 07.08	-23 43.4	2.253	2.886	119.1	17.9	21.0
1999 06 11		12 09.05	-23 03.4	2.400	2.915	110.5	19.0	21.2
1999 06 21		12 13.17	-22 38.1	2.553	2.943	102.4	19.7	21.4
1999 07 01		12 19.09	-22 27.0	2.711	2.970	94.6	20.0	21.5
1999 07 11		12 26.52	-22 29.0	2.870	2.996	87.1	19.8	21.7
1999 07 21		12 35.23	-22 42.7	3.027	3.020	79.9	19.3	21.8
1999 07 31		12 45.00	-23 06.7	3.181	3.043	73.0	18.6	21.9
1999 08 10		12 55.68	-23 39.5	3.329	3.064	66.2	17.6	22.0

29P/Schwassmann-Wachmann 1

Elements MPC 23105

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 13		14 46.50	-24 47.3	6.984	6.202	35.0	5.2	16.1	19.6
1998 12 23		14 53.46	-25 24.5	6.880	6.200	43.2	6.2	16.1	19.6
1999 01 02		14 59.94	-26 00.2	6.760	6.198	51.7	7.1	16.1	19.6
1999 01 12		15 05.84	-26 34.3	6.624	6.196	60.3	7.9	16.0	19.6
1999 01 22		15 11.01	-27 06.3	6.476	6.194	69.1	8.5	16.0	19.6
1999 02 01		15 15.36	-27 36.0	6.320	6.191	78.1	9.0	15.9	19.6

M.P.C. 33138

1998 NOV. 10

1999 02 11	15 18.75	-28 02.9	6.158	6.189	87.2	9.2	15.9	19.5
1999 02 21	15 21.09	-28 26.7	5.995	6.187	96.6	9.1	15.8	19.5
1999 03 03	15 22.28	-28 46.9	5.835	6.185	106.1	8.9	15.7	19.4
1999 03 13	15 22.29	-29 02.8	5.684	6.182	115.9	8.3	15.7	19.3
1999 03 23	15 21.10	-29 13.9	5.544	6.180	125.8	7.5	15.6	19.2
1999 04 02	15 18.78	-29 19.6	5.422	6.178	135.8	6.5	15.6	19.1
1999 04 12	15 15.45	-29 19.4	5.320	6.175	145.8	5.2	15.5	19.0
1999 04 22	15 11.31	-29 13.1	5.243	6.173	155.6	3.9	15.5	18.9
1999 05 02	15 06.62	-29 00.9	5.194	6.170	164.4	2.5	15.5	18.8
1999 05 12	15 01.71	-28 43.3	5.174	6.168	168.9	1.8	15.5	18.7
1999 05 22	14 56.87	-28 21.5	5.183	6.165	164.8	2.5	15.5	18.8
1999 06 01	14 52.45	-27 56.9	5.221	6.163	156.3	3.8	15.5	18.9
1999 06 11	14 48.70	-27 31.2	5.286	6.160	146.7	5.2	15.5	19.0
1999 06 21	14 45.84	-27 06.0	5.376	6.158	137.0	6.5	15.5	19.1
1999 07 01	14 44.01	-26 42.9	5.486	6.155	127.3	7.6	15.6	19.2
1999 07 11	14 43.27	-26 23.1	5.613	6.152	117.7	8.4	15.6	19.3
1999 07 21	14 43.67	-26 07.4	5.754	6.150	108.4	9.0	15.7	19.4
1999 07 31	14 45.18	-25 56.5	5.902	6.147	99.2	9.4	15.7	19.4
1999 08 10	14 47.74	-25 50.3	6.055	6.145	90.3	9.5	15.8	19.5
1999 08 20	14 51.30	-25 49.0	6.208	6.142	81.6	9.4	15.8	19.5
1999 08 30	14 55.77	-25 52.2	6.357	6.139	73.0	9.1	15.9	19.6
1999 09 09	15 01.05	-25 59.5	6.500	6.136	64.6	8.5	15.9	19.6
1999 09 19	15 07.08	-26 10.4	6.633	6.134	56.4	7.8	16.0	19.6
1999 09 29	15 13.76	-26 24.5	6.753	6.131	48.2	7.0	16.0	19.6
1999 10 09	15 21.00	-26 41.0	6.858	6.128	40.2	6.0	16.1	19.6
1999 10 19	15 28.72	-26 59.6	6.945	6.125	32.2	5.0	16.1	19.6

1999 08 10	15 06.65	-18 58.2	7.572	7.684	92.6	7.6	20.3	22.4
1999 08 20	15 08.69	-19 01.7	7.760	7.710	83.4	7.5	20.3	22.4
1999 08 30	15 11.47	-19 08.3	7.945	7.735	74.5	7.2	20.4	22.5
1999 09 09	15 14.93	-19 17.6	8.123	7.761	65.6	6.8	20.4	22.5
1999 09 19	15 19.01	-19 29.3	8.290	7.786	56.8	6.2	20.5	22.5
1999 09 29	15 23.62	-19 42.7	8.444	7.812	48.2	5.5	20.6	22.5
1999 10 09	15 28.68	-19 57.6	8.581	7.837	39.5	4.7	20.6	22.5
1999 10 19	15 34.12	-20 13.5	8.700	7.862	30.9	3.7	20.7	22.5

C/1998 M3 (Larsen)

Elements MPC 32410

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 13		16 25.10	+06 49.0	6.665	5.862	32.8	5.2	18.3	
1998 12 23		16 29.87	+07 40.4	6.611	5.875	38.7	6.0	18.3	
1999 01 02		16 34.36	+08 40.7	6.535	5.889	45.6	6.8	18.3	
1999 01 12		16 38.44	+09 50.6	6.443	5.904	53.1	7.7	18.3	
1999 01 22		16 41.96	+11 10.4	6.336	5.920	60.9	8.4	18.2	
1999 02 01		16 44.77	+12 40.4	6.218	5.936	69.0	8.9	18.2	
1999 02 11		16 46.74	+14 20.5	6.094	5.954	77.2	9.3	18.2	
1999 02 21		16 47.72	+16 10.1	5.968	5.972	85.5	9.5	18.1	
1999 03 03		16 47.54	+18 08.2	5.846	5.991	93.6	9.5	18.1	
1999 03 13		16 46.09	+20 13.0	5.732	6.010	101.5	9.3	18.1	
1999 03 23		16 43.26	+22 22.3	5.632	6.030	109.0	9.0	18.1	
1999 04 02		16 38.99	+24 32.8	5.550	6.052	115.8	8.6	18.0	
1999 04 12		16 33.28	+26 40.8	5.490	6.073	121.5	8.1	18.0	
1999 04 22		16 26.22	+28 42.0	5.455	6.096	125.7	7.7	18.0	
1999 05 02		16 18.00	+30 32.3	5.447	6.119	128.0	7.5	18.0	
1999 05 12		16 08.90	+32 08.1	5.467	6.143	128.2	7.4	18.1	
1999 05 22		15 59.30	+33 26.6	5.515	6.168	126.3	7.6	18.1	
1999 06 01		15 49.62	+34 26.5	5.587	6.193	122.6	7.9	18.2	
1999 06 11		15 40.28	+35 07.6	5.683	6.219	117.6	8.3	18.2	
1999 06 21		15 31.67	+35 31.1	5.797	6.246	111.8	8.7	18.3	
1999 07 01		15 24.11	+35 39.3	5.926	6.273	105.4	9.0	18.3	
1999 07 11		15 17.77	+35 34.8	6.065	6.301	98.8	9.2	18.4	
1999 07 21		15 12.79	+35 20.4	6.211	6.329	92.1	9.2	18.5	
1999 07 31		15 09.19	+34 59.1	6.358	6.359	85.4	9.2	18.6	
1999 08 10		15 06.93	+34 33.6	6.504	6.388	79.0	9.0	18.6	
1999 08 20		15 05.94	+34 06.1	6.644	6.419	72.8	8.7	18.7	
1999 08 30		15 06.11	+33 38.7	6.775	6.449	67.1	8.3	18.7	
1999 09 09		15 07.33	+33 13.3	6.895	6.481	61.9	7.9	18.8	
1999 09 19		15 09.47	+32 51.4	7.001	6.513	57.3	7.5	18.9	
1999 09 29		15 12.40	+32 34.3	7.091	6.545	53.5	7.1	18.9	
1999 10 09		15 16.01	+32 23.2	7.164	6.578	50.8	6.8	19.0	
1999 10 19		15 20.18	+32 19.3	7.220	6.612	49.2	6.5	19.0	
1999 10 29		15 24.78	+32 23.5	7.257	6.646	48.9	6.5	19.0	
1999 11 08		15 29.71	+32 36.6	7.276	6.681	49.9	6.5	19.1	
1999 11 18		15 34.84	+32 59.6	7.278	6.716	52.1	6.7	19.1	
1999 11 28		15 40.04	+33 33.0	7.264	6.751	55.3	6.9	19.1	
1999 12 08		15 45.20	+34 17.4	7.235	6.787	59.4	7.2	19.1	
1999 12 18		15 50.18	+35 13.3	7.194	6.824	64.2	7.5	19.1	
1999 12 28		15 54.84	+36 20.8	7.144	6.861	69.4	7.7	19.1	
2000 01 07		15 59.02	+37 39.7	7.088	6.898	74.9	7.9	19.1	
2000 01 17		16 02.56	+39 09.7	7.028	6.936	80.6	8.0	19.1	
2000 01 27		16 05.29	+40 49.7	6.969	6.974	86.2	8.1	19.2	

P/1996 A1 (Jedicke)

Elements MPC 31893

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 12 13		15 10.26	-20 06.7	7.864	7.031	30.2	4.0	19.9	22.1
1998 12 23		15 16.28	-20 28.9	7.797	7.059	38.9	5.0	19.9	22.1
1999 01 02		15 21.86	-20 48.9	7.711	7.087	47.7	5.9	19.9	22.2
1999 01 12		15 26.89	-21 06.6	7.608	7.116	56.7	6.6	19.9	22.2
1999 01 22		15 31.27	-21 21.8	7.490	7.144	65.8	7.2	19.9	22.2
1999 02 01		15 34.91	-21 34.2	7.362	7.172	75.1	7.6	19.9	22.2
1999 02 11		15 37.71	-21 43.7	7.226	7.200	84.6	7.8	19.9	22.1
1999 02 21		15 39.61	-21 50.0	7.088	7.228	94.2	7.8	19.8	22.1
1999 03 03		15 40.55	-21 53.2	6.951	7.256	104.0	7.6	19.8	22.1
1999 03 13		15 40.50	-21 52.9	6.822	7.283	114.0	7.2	19.8	22.0
1999 03 23		15 39.48	-21 49.3	6.704	7.311	124.2	6.5	19.8	21.9
1999 04 02		15 37.54	-21 42.2	6.602	7.338	134.6	5.6	19.8	21.9
1999 04 12		15 34.79	-21 31.8	6.522	7.365	145.1	4.5	19.7	21.8
1999 04 22		15 31.37	-21 18.4	6.466	7.393	155.6	3.2	19.7	21.7
1999 05 02		15 27.48	-21 02.4	6.437	7.420	166.2	1.9	19.7	21.6
1999 05 12		15 23.35	-20 44.6	6.438	7.447	176.4	0.5	19.8	21.5
1999 05 22		15 19.21	-20 25.8	6.470	7.474	172.0	1.1	19.8	21.6
1999 06 01		15 15.30	-20 06.9	6.531	7.500	161.6	2.4	19.8	21.7
1999 06 11		15 11.83	-19 48.9	6.621	7.527	151.2	3.7	19.9	21.8
1999 06 21		15 08.95	-19 32.7	6.737	7.553	140.9	4.9	19.9	21.9
1999 07 01		15 06.81	-19 19.1	6.875	7.580	130.9	5.8	20.0	22.0
1999 07 11		15 05.48	-19 08.5	7.032	7.606	121.0	6.6	20.0	22.1
1999 07 21		15 05.01	-19 01.5	7.204	7.632	111.3	7.1	20.1	22.2
1999 07 31		15 05.41	-18 58.0	7.385	7.658	101.8	7.5	20.2	22.3

2000 02 06	16 07.02	+42 38.5	6.914	7.012	91.6	8.1	19.2
2000 02 16	16 07.54	+44 34.0	6.867	7.051	96.7	8.0	19.2
2000 02 26	16 06.68	+46 33.9	6.831	7.090	101.2	7.9	19.2
2000 03 07	16 04.25	+48 35.1	6.809	7.130	105.0	7.7	19.2
2000 03 17	16 00.09	+50 34.0	6.803	7.170	107.8	7.6	19.2
2000 03 27	15 54.12	+52 27.0	6.815	7.210	109.6	7.5	19.2
2000 04 06	15 46.35	+54 10.2	6.845	7.251	110.2	7.4	19.3
2000 04 16	15 36.89	+55 40.1	6.893	7.292	109.6	7.4	19.3
2000 04 26	15 26.07	+56 53.8	6.959	7.334	108.0	7.5	19.4
2000 05 06	15 14.32	+57 49.3	7.041	7.375	105.5	7.6	19.4
2000 05 16	15 02.20	+58 25.9	7.137	7.417	102.2	7.7	19.5
2000 05 26	14 50.35	+58 44.1	7.245	7.459	98.3	7.7	19.5
2000 06 05	14 39.30	+58 45.4	7.361	7.502	94.1	7.8	19.6
2000 06 15	14 29.53	+58 32.3	7.483	7.545	89.6	7.7	19.6
2000 06 25	14 21.32	+58 07.7	7.607	7.588	85.1	7.7	19.7

OPPOSITION DATA

Planet	Opposition	α_{2000}	δ_{2000}	V	$\dot{\alpha}$	$\dot{\delta}$	ϕ_{MIN}	MPC
(9571)	1998 10 10.0	01 00.93	+06 37.3	17.0	-1.05	- 5.0	0.1/10.1	32882
1997 GM ₆	1998 10 10.0	01 00.97	+10 08.7	17.6	-0.79	- 9.8	1.3/11.3	32959
1998 SN ₁₀₈	1998 10 10.0	01 01.05	+09 39.6	17.4	-0.70	- 7.0	1.0/11.1	33040
1994 PE ₂₀	1998 10 10.0	01 01.15	+09 13.5	17.1	-0.85	- 5.5	1.3/10.9	32938
1998 SA ₄₃	1998 10 10.0	01 01.19	+03 44.5	16.1	-0.82	- 5.3	1.0/09.2	33110
(9665)	1998 10 10.0	01 01.26	+11 31.8	17.7	-0.72	- 6.0	1.3/11.8	32904
3335 T-2	1998 10 10.0	01 01.27	+01 01.1	16.9	-0.89	- 3.9	2.3/08.4	33130
1998 QV ₆₃	1998 10 10.1	01 01.42	+04 31.4	16.5	-0.77	- 6.8	0.7/09.5	33086
1996 BK	1998 10 10.1	01 01.53	+23 18.7	17.9	-1.14	- 2.1	6.8/14.7	33075
3477 T-3	1998 10 10.2	01 01.62	+03 23.2	18.2	-0.79	- 3.8	1.0/09.2	33061
1996 AS	1998 10 10.2	01 01.66	-01 13.0	17.6	-0.89	- 6.6	2.9/07.7	33075
1998 SA ₁₂₆	1998 10 10.2	01 01.82	-01 39.9	18.1	-0.78	- 4.6	2.8/07.6	33042
1997 GM ₂₁	1998 10 10.3	01 02.16	+07 17.2	18.7	-0.87	- 5.0	0.2/10.6	32961
(9611)	1998 10 10.3	01 02.18	+03 10.4	17.3	-0.76	- 3.5	1.0/09.3	32891
1981 EL ₁₄	1998 10 10.3	01 02.20	+17 06.9	18.9	-0.94	- 1.7	3.5/13.3	26917
1997 CC ₁₇	1998 10 10.3	01 02.21	+05 35.5	17.4	-1.06	- 5.3	0.4/10.1	33076
3042 T-3	1998 10 10.4	01 02.73	-00 10.3	17.9	-1.02	- 3.8	2.5/08.5	33061
1998 SL ₁₂	1998 10 10.5	01 02.69	+04 03.0	17.6	-0.80	- 5.5	0.9/09.7	33016
1998 SX ₂₂	1998 10 10.5	01 02.75	-01 13.3	17.0	-0.77	- 6.5	3.1/07.9	33107
1998 SF ₄₃	1998 10 10.5	01 03.01	+08 59.8	17.1	-1.11	- 2.9	1.0/11.2	33025
1997 JQ	1998 10 10.5	01 03.03	-05 49.9	18.9	-0.90	- 3.3	4.5/06.9	32965
(9289)	1998 10 10.6	01 03.25	+17 26.2	16.6	-1.11	- 0.4	4.2/13.4	32603
1998 SU ₂₄	1998 10 10.6	01 03.28	-01 42.8	17.1	-1.01	- 4.4	3.6/08.2	33020
1986 PL ₁	1998 10 10.7	01 03.52	-02 41.8	16.9	-0.73	- 5.0	3.0/07.6	33066
1994 PV ₁₉	1998 10 10.7	01 03.65	+09 07.1	17.4	-0.95	- 5.7	1.0/11.5	32938
(7904)	1998 10 10.7	01 03.68	+10 40.3	16.2	-0.88	- 6.1	1.6/12.0	30646
1993 CB	1998 10 10.7	01 03.77	-01 24.4	17.6	-0.92	- 6.5	2.8/08.2	32929
(9681)	1998 10 10.8	01 03.94	+08 06.9	17.6	-0.71	- 6.9	0.4/11.3	32908
(7655)	1998 10 10.8	01 03.99	-00 36.3	17.6	-0.93	- 5.7	2.8/08.5	32737
1998 SL ₉	1998 10 10.8	01 04.11	+08 36.4	18.7	-0.92	- 5.1	0.6/11.4	33015
1998 SE ₁₅₇	1998 10 10.8	01 04.12	+05 57.1	17.6	-0.94	- 4.7	0.4/10.6	33046
2564 P-L	1998 10 10.9	01 04.46	+05 21.0	17.7	-0.90	- 4.1	0.6/10.5	33052
1998 SD ₁₁₀	1998 10 10.9	01 04.56	+13 44.6	16.8	-0.92	- 9.4	2.6/13.3	33040

1998 RF ₁₆	1998 10 11.0	01 04.80	-01 08.4	17.3	-0.86	- 6.0	2.9/08.5	33093
1996 BR ₈	1998 10 11.0	01 04.86	-03 41.7	16.0	-0.85	- 4.3	3.7/07.8	32948
(9697)	1998 10 11.0	01 04.90	+06 18.1	17.2	-0.76	- 6.7	0.2/10.9	32913
1997 HQ ₁	1998 10 11.1	01 05.00	+07 13.5	17.7	-1.04	- 4.4	0.1/11.2	33077
1991 BK	1998 10 11.1	01 05.03	-01 03.9	17.0	-0.96	- 4.5	2.9/08.7	33068
1998 TS ₆	1998 10 11.1	01 05.06	-03 03.8	17.2	-1.86	+12.3	5.5/10.2	33048
1995 WW ₁₇	1998 10 11.1	01 05.13	+06 19.0	17.9	-1.09	- 4.4	0.2/11.0	33074
1994 PL ₁₁	1998 10 11.1	01 05.21	+16 58.1	17.2	-0.98	- 5.1	4.1/14.3	33072
1993 FX ₂₉	1998 10 11.1	01 05.23	+12 53.2	18.1	-0.94	- 6.9	2.2/13.1	32930
(9623)	1998 10 11.1	01 05.34	+13 16.0	16.6	-0.95	- 5.1	2.7/13.1	32894
(7509)	1998 10 11.2	01 05.42	-03 24.1	16.8	-0.98	- 6.7	4.0/08.0	29288
1985 RN ₃	1998 10 11.2	01 05.51	+11 24.3	17.4	-1.07	- 2.7	2.2/12.5	32919
1998 SU ₁₅₄	1998 10 11.2	01 05.72	+15 44.0	17.4	-0.91	- 5.7	3.5/14.0	33046
(7361)	1998 10 11.3	01 05.73	+08 28.7	16.3	-0.89	- 4.2	0.6/11.8	28578
3182 T-2	1998 10 11.3	01 05.83	-01 41.8	17.9	-0.92	- 7.2	3.1/08.6	33058
(7363)	1998 10 11.3	01 05.88	+04 40.0	15.8	-0.77	- 8.3	0.8/10.5	28579
4136 T-2	1998 10 11.3	01 05.98	+03 17.9	16.8	-0.91	- 1.3	1.5/10.4	33130
1990 EJ	1998 10 11.3	01 06.04	+14 30.1	17.6	-0.79	- 3.2	1.9/13.7	32921
(9262)	1998 10 11.4	01 06.15	+14 23.9	15.5	-1.19	+ 2.7	3.2/13.0	32595
1997 GB ₁₉	1998 10 11.4	01 06.18	+10 38.4	17.3	-0.92	- 9.2	1.4/12.7	32961
(9387)	1998 10 11.4	01 06.33	+47 27.1	16.0	-1.95	+ 9.1	21.0/20.4	32626
(9692)	1998 10 11.5	01 06.63	+05 07.2	17.8	-0.80	- 7.0	0.9/10.9	32911
1997 GC ₁₅	1998 10 11.5	01 06.67	+10 11.9	18.4	-1.03	- 4.1	1.3/12.5	32960
1998 SW ₂₅	1998 10 11.6	01 06.89	+00 30.2	18.0	-0.74	- 6.3	2.4/09.4	33021
1990 TJ	1998 10 11.6	01 06.90	+01 18.9	16.4	-0.93	- 3.6	2.3/09.9	33068
(9587)	1998 10 11.7	01 07.19	+05 47.8	16.7	-0.80	-10.6	0.5/11.2	32886
6245 P-L	1998 10 11.7	01 07.40	+05 29.3	18.2	-0.79	- 9.3	0.5/11.2	33129
1998 SB ₁₁₉	1998 10 11.7	01 07.43	+06 29.3	18.4	-0.95	- 4.8	0.2/11.6	33041
1997 JZ ₇	1998 10 11.8	01 07.60	+10 16.6	17.2	-0.79	- 9.4	1.0/12.9	32965
1994 PV ₃₇	1998 10 11.8	01 07.76	+05 14.5	17.0	-0.93	- 6.8	0.8/11.2	33073
1998 RU ₁₅	1998 10 11.8	01 07.85	+03 44.8	16.9	-0.93	- 7.8	1.3/10.8	33093
2214 T-1	1998 10 11.8	01 07.89	+04 33.2	16.8	-0.87	- 7.7	1.1/11.0	33056
1992 EB ₂₆	1998 10 11.9	01 07.88	+16 06.0	17.9	-1.08	- 1.9	3.5/14.3	33070
(9272)	1998 10 11.9	01 07.90	+03 45.1	17.0	-0.80	- 7.2	1.3/10.8	32598
2197 T-2	1998 10 11.9	01 08.17	+07 22.8	18.2	-0.97	- 4.3	0.1/12.0	33058
1990 SK ₂₈	1998 10 12.0	01 08.26	+09 57.4	15.6	-0.91	- 4.0	1.2/12.8	33068
(9688)	1998 10 12.0	01 08.36	+03 49.8	16.2	-0.96	- 2.9	1.5/11.1	32910
6631 P-L	1998 10 12.0	01 08.40	-00 53.8	17.3	-0.83	- 8.2	3.8/09.3	33055
1994 UQ ₁	1998 10 12.0	01 08.49	+07 40.9	15.8	-0.81	- 7.5	0.2/12.2	33073
1998 SL ₁₁₅	1998 10 12.0	01 08.52	+07 39.1	18.3	-0.85	- 4.2	0.1/12.2	33041
1998 SX ₄	1998 10 12.1	01 08.97	-00 26.7	17.4	-0.67	- 8.1	2.5/09.4	33014
(9614)	1998 10 12.2	01 09.13	+03 39.4	17.5	-0.96	- 6.1	1.3/11.1	32892
1997 GS ₂₁	1998 10 12.2	01 09.22	+00 12.9	17.3	-1.01	- 1.3	3.0/10.4	32961
1991 UR	1998 10 12.2	01 09.25	+09 29.2	16.4	-1.08	- 1.4	1.0/12.8	33070
1982 UE ₁₂	1998 10 12.2	01 09.30	+21 34.5	16.8	-1.03	- 2.7	5.3/16.4	33065
1993 SU ₄	1998 10 12.2	01 09.34	+16 42.6	17.3	-0.98	- 1.5	3.2/14.9	32933
1998 SS ₄₃	1998 10 12.2	01 09.37	+02 52.5	17.2	-0.72	- 9.8	1.7/10.7	33110
1991 RU ₂	1998 10 12.2	01 09.40	+14 01.6	17.5	-0.98	- 6.9	2.5/14.4	33069
(7721)	1998 10 12.3	01 09.34	+04 05.1	17.8	-0.83	- 6.9	1.3/11.2	30074
1987 WD	1998 10 12.3	01 09.47	+09 04.2	16.1	-1.10	- 0.7	0.7/12.8	33066
1998 SR ₆₃	1998 10 12.4	01 09.74	+03 46.9	17.2	-0.79	- 4.6	1.4/11.3	33036

1997 KH ₄	1998 10 12.5	01 10.09 -04 06.5 17.4 -0.98 - 5.4 4.4/09.0 32967	1998 SD ₁₂₈	1998 10 14.9	01 18.99 +03 07.9 17.0 -0.84 - 5.1 1.8/13.3 33043
1992 OB	1998 10 12.5	01 10.10 -09 12.2 18.3 -0.93 - 0.0 5.2/08.2 22407	1991 RE ₂	1998 10 14.9	01 19.02 +17 12.3 16.8 -0.93 - 6.8 4.1/17.7 33069
(7663)	1998 10 12.5	01 10.21 -08 58.2 15.9 -0.85 -12.7 5.9/06.5 29902	6607 P-L	1998 10 14.9	01 19.10 +02 26.2 17.7 -0.91 - 5.9 2.0/13.1 33129
1998 SB ₆₃	1998 10 12.6	01 10.46 +04 04.0 16.3 -1.19 + 2.3 1.3/11.9 33036	1998 US ₆	1998 10 14.9	01 19.38 +05 18.9 17.9 -0.93 - 3.0 1.2/14.1 33050
1994 VY ₆	1998 10 12.7	01 10.91 +14 02.2 16.8 -0.73 - 5.8 3.2/15.0 32942	1998 SD ₂₄	1998 10 14.9	01 19.47 +04 24.2 17.2 -1.80 +10.1 2.1/14.6 33020
1991 RW ₁₇	1998 10 12.7	01 11.23 +07 11.0 16.6 -0.93 - 7.7 0.2/12.7 32925	1998 QH ₅₆	1998 10 15.0	01 19.34 -26 51.9 18.9 -0.90 -39.9 34.3/09.0 33085
1998 SE ₂₂	1998 10 12.8	01 11.34 +08 15.6 17.4 -0.86 - 7.0 0.3/13.1 33018	1995 YE ₆	1998 10 15.0	01 19.78 +09 38.2 19.5 -0.99 - 7.0 0.4/15.5 29946
(7786)	1998 10 12.8	01 11.43 +16 01.6 15.5 -0.91 - 2.7 4.0/15.3 30267	(9547)	1998 10 15.2	01 20.19 +05 28.4 17.3 -0.94 - 6.0 1.2/14.3 32875
1994 VF ₂	1998 10 12.9	01 11.81 -06 49.2 16.9 -1.00 - 2.1 5.0/08.9 33073	1994 OB	1998 10 15.2	01 20.47 +02 07.6 16.5 -0.97 - 5.5 2.6/13.4 33072
1989 TD ₁₆	1998 10 13.0	01 11.92 +10 25.6 16.5 -0.89 - 4.1 1.1/13.8 33067	1979 QA ₂	1998 10 15.3	01 20.47 +08 30.3 17.8 -0.96 - 5.2 0.0/15.3 33065
1998 SR ₁₁₉	1998 10 13.0	01 12.13 +01 10.0 17.4 -0.70 - 9.3 2.6/10.7 33041	1998 SK ₁₂₁	1998 10 15.3	01 20.84 +14 23.6 18.3 -0.74 - 6.3 1.6/17.4 33041
1996 ES ₁	1998 10 13.0	01 12.13 +05 44.3 18.2 -0.72 - 5.1 0.5/12.4 33075	(7382)	1998 10 15.5	01 21.28 +04 57.7 15.5 -0.74 - 4.7 1.4/14.4 32737
(9621)	1998 10 13.0	01 12.21 +11 31.7 16.7 -0.94 - 7.8 1.7/14.3 32894	1993 TW ₃₈	1998 10 15.5	01 21.33 +00 07.8 17.8 -0.73 - 7.0 2.6/12.7 32936
1977 TO ₆	1998 10 13.0	01 12.22 -06 39.9 16.3 -0.95 - 1.9 6.9/09.1 33064	1994 UW ₉	1998 10 15.5	01 21.44 +12 30.2 17.6 -0.84 - 4.2 1.9/16.8 32942
1998 SX ₂₁	1998 10 13.0	01 12.28 +03 27.1 16.9 -0.86 - 6.3 1.9/11.8 33018	1978 SH ₃	1998 10 15.5	01 21.59 +10 26.4 15.9 -0.82 - 8.9 0.9/16.2 33064
1989 AF ₃	1998 10 13.1	01 12.53 -04 21.2 17.6 -0.97 - 6.0 4.4/09.4 33067	1990 VS ₄	1998 10 15.6	01 21.59 +10 29.4 16.8 -0.73 -12.8 0.8/16.3 33068
1985 QP	1998 10 13.1	01 12.57 +10 32.5 16.4 -0.99 - 2.9 1.5/14.0 33066	1998 SK ₁₂₃	1998 10 15.6	01 21.86 +09 02.1 16.9 -0.78 - 3.7 0.2/15.8 33042
(9707)	1998 10 13.3	01 13.15 +02 51.6 16.6 -1.03 - 1.0 1.9/12.1 32915	(9651)	1998 10 15.6	01 21.94 +11 57.1 17.1 -0.97 - 5.6 1.3/16.7 32901
1998 ST ₁₂₄	1998 10 13.3	01 13.25 +05 57.0 19.0 -0.98 - 2.2 0.7/12.9 33042	1997 GL ₁₄	1998 10 15.7	01 21.98 +13 44.3 18.5 -1.00 - 5.8 2.0/17.2 32960
1990 UU ₁	1998 10 13.3	01 13.38 +04 26.0 16.6 -0.68 -14.0 1.4/12.1 33068	(9295)	1998 10 15.7	01 22.16 +13 28.7 16.7 -1.06 - 2.6 2.1/17.0 32604
(9708)	1998 10 13.4	01 13.62 -01 49.9 18.7 -0.86 - 5.4 3.1/10.4 32915	1998 SB ₁₃₆	1998 10 15.7	01 22.18 +01 46.8 17.0 -0.86 - 6.0 3.1/13.6 33044
(9143)	1998 10 13.5	01 13.97 +15 34.7 15.1 -1.04 - 3.3 3.9/15.8 32411	3290 T-1	1998 10 15.7	01 22.24 +14 14.7 18.0 -1.04 - 3.6 2.1/17.3 33056
1998 UJ ₁	1998 10 13.5	01 14.07 -02 26.2 18.4 -0.95 - 3.4 3.7/10.7 33050	1993 FM ₁₀	1998 10 15.9	01 22.71 +05 12.2 18.9 -0.95 - 5.0 1.2/14.9 32745
1997 KH	1998 10 13.5	01 14.14 +07 31.5 17.4 -0.85 - 6.1 0.1/13.5 33077	(9546)	1998 10 15.9	01 22.71 +11 07.8 16.5 -1.06 - 1.0 1.2/16.5 32875
1990 EN ₃	1998 10 13.5	01 14.16 +09 28.9 17.7 -0.95 - 8.3 0.6/14.1 32921	(9588)	1998 10 15.9	01 22.73 +08 43.5 16.9 -0.82 -11.1 0.0/15.9 32886
1993 FY ₃₄	1998 10 13.7	01 14.62 +02 51.8 18.2 -0.88 - 7.6 1.8/12.1 33071	1998 QN ₉₁	1998 10 15.9	01 22.76 +20 40.4 16.6 -1.25 + 2.4 5.5/18.6 33089
(9548)	1998 10 13.7	01 14.72 -03 30.7 17.2 -0.83 -11.1 4.9/09.5 32876	1997 HD ₉	1998 10 15.9	01 22.86 +11 29.1 18.7 -0.92 - 5.8 1.0/16.8 32964
1148 T-1	1998 10 13.8	01 14.99 +09 33.6 18.0 -1.06 - 5.2 0.7/14.3 33129	1989 TU ₄	1998 10 15.9	01 22.87 +00 42.6 18.5 -0.86 - 4.6 2.9/13.6 33067
1991 PO ₁₈	1998 10 13.9	01 15.27 +14 25.0 16.5 -1.12 - 4.4 2.6/15.7 32924	(9447)	1998 10 15.9	01 22.92 -07 50.8 16.6 -0.88 - 2.3 6.3/11.3 32641
1998 SM ₁₂₃	1998 10 13.9	01 15.44 +07 43.5 17.1 -1.00 - 3.6 0.1/13.9 33042	1991 RU ₉	1998 10 15.9	01 23.10 +11 14.2 17.1 -0.94 - 5.8 1.2/16.8 32925
1990 EL ₂	1998 10 13.9	01 15.52 +10 14.7 18.5 -0.95 - 8.3 0.8/14.7 33068	1997 JL ₁₃	1998 10 16.0	01 23.41 +08 04.2 17.5 -0.90 - 6.6 0.2/15.9 33077
1997 FN ₁	1998 10 13.9	01 15.63 +11 38.0 19.0 -0.96 - 7.1 1.2/15.1 32958	1995 UW ₄	1998 10 16.1	01 23.41 +00 35.1 16.7 -1.13 - 0.2 3.9/14.2 33074
1997 EB ₅₄	1998 10 13.9	01 15.66 +09 29.4 16.4 -0.99 - 4.7 10.5/04.0 33076	1988 RQ ₈	1998 10 16.1	01 23.86 +05 50.9 16.7 -1.08 - 2.0 1.4/15.4 32920
1998 SY ₁₁₇	1998 10 14.0	01 15.83 +11 30.0 17.7 -0.98 - 5.2 1.5/15.0 33041	4858 P-L	1998 10 16.2	01 23.86 +02 51.3 18.2 -0.71 - 7.8 1.9/14.2 33054
(7688)	1998 10 14.0	01 16.00 +07 41.9 16.1 -1.11 - 1.0 0.2/14.0 29908	1997 FW ₃	1998 10 16.2	01 24.06 +13 46.1 18.0 -1.07 - 4.1 2.1/17.6 32959
1494 T-2	1998 10 14.1	01 16.20 +05 51.1 18.8 -0.89 - 5.0 0.8/13.5 33130	2621 P-L	1998 10 16.2	01 24.10 +09 56.9 17.9 -1.13 - 1.2 0.5/16.5 33053
1998 SZ ₁₃	1998 10 14.1	01 16.33 +11 10.4 17.4 -1.82 +12.5 1.8/14.4 33017	1997 GU ₆	1998 10 16.2	01 24.11 +08 33.5 17.7 -1.05 - 2.1 0.1/16.2 32959
1996 AL ₁₉	1998 10 14.2	01 16.37 +07 46.2 18.1 -0.87 - 8.4 0.1/14.1 32948	(9562)	1998 10 16.2	01 24.19 +02 56.1 16.1 -0.78 - 4.6 2.0/14.5 32879
1998 SD ₁₂₃	1998 10 14.2	01 16.58 +09 24.9 16.7 -1.05 - 2.6 0.6/14.6 33042	1978 VP ₃	1998 10 16.3	01 24.18 +02 58.4 17.6 -0.80 - 4.1 1.9/14.5 33065
1985 CL ₂	1998 10 14.2	01 16.77 +06 26.8 17.9 -0.92 - 6.0 0.6/13.8 32919	1995 ED ₉	1998 10 16.3	01 24.33 +01 55.9 16.7 -0.72 - 6.2 2.3/14.0 32944
1998 SN ₁₂₃	1998 10 14.3	01 17.16 +08 45.5 16.6 -0.93 - 3.7 0.3/14.6 33042	1992 GA	1998 10 16.3	01 24.41 +27 18.0 18.3 -0.97 - 3.8 5.7/22.0 33070
(9639)	1998 10 14.4	01 17.42 +10 32.8 16.6 -0.91 - 6.6 1.0/15.2 32898	1998 ST ₁₃₁	1998 10 16.4	01 24.83 +17 50.8 17.1 -1.07 - 6.0 3.4/19.1 33043
(9635)	1998 10 14.5	01 17.46 +04 29.3 17.7 -0.78 - 4.4 1.1/13.4 32897	2635 P-L	1998 10 16.4	01 24.93 +07 40.5 17.8 -0.97 - 7.2 0.5/16.1 33129
1991 RY ₈	1998 10 14.5	01 17.74 +10 00.9 16.1 -1.00 - 2.9 0.9/15.1 33069	1994 NO ₁	1998 10 16.5	01 25.01 +16 15.3 17.5 -1.01 - 7.0 2.6/18.8 33072
1997 JL	1998 10 14.5	01 17.81 +02 28.2 18.3 -0.90 - 5.7 2.2/12.8 32964	(9390)	1998 10 16.6	01 25.38 +10 02.9 16.5 -0.96 - 6.7 0.5/17.0 32627
1998 SK ₁₃₀	1998 10 14.5	01 17.86 +10 42.7 17.7 -1.14 - 2.5 1.1/15.2 33043	1998 SN ₂₅	1998 10 16.8	01 26.09 +00 49.5 17.5 -0.81 - 5.7 2.8/14.2 33021
1998 SZ ₁₂₂	1998 10 14.6	01 17.91 +08 35.6 18.3 -0.79 - 4.3 7.9/04.0 33041	1996 AJ ₂	1998 10 16.8	01 26.30 +03 03.0 17.8 -0.94 - 5.6 2.2/15.1 33075
(9553)	1998 10 14.6	01 17.97 +04 58.6 16.2 -0.93 - 6.7 1.5/13.6 32877	1978 SD ₇	1998 10 16.8	01 26.32 +10 54.8 16.4 -0.95 - 8.7 0.8/17.5 33064
(7601)	1998 10 14.6	01 18.15 -03 00.5 15.6 -1.10 + 1.6 4.5/12.2 29601	1982 US ₆	1998 10 16.8	01 26.35 +02 13.6 16.3 -1.00 - 0.5 3.0/15.2 33065
1998 SH ₄₉	1998 10 14.7	01 18.50 +08 30.9 17.1 -0.80 -11.7 9.9/04.0 33026	1995 YH ₁	1998 10 16.8	01 26.36 +16 15.3 16.2 -0.94 - 6.2 3.3/19.1 33075
1991 RC ₉	1998 10 14.8	01 18.70 +08 39.5 16.8 -1.03 - 3.2 11.3/04.0 32925	1988 FM	1998 10 16.9	01 26.58 +12 43.5 17.3 -1.04 - 1.6 1.2/17.9 33066

1981 RW ₄	1998 10 16.9	01 26.71 +06 13.1 15.8	-0.88 - 2.1	1.3/16.2	32918
1993 SO ₂	1998 10 16.9	01 26.72 +10 01.3 18.1	-0.79 - 6.8	0.3/17.3	33072
1994 PS ₂₇	1998 10 16.9	01 26.74 +05 50.9 18.2	-0.95 - 4.5	1.4/16.0	32939
1997 FB	1998 10 16.9	01 26.79 +06 25.6 18.3	-1.00 - 7.6	1.0/16.2	33076
1998 TC ₅	1998 10 17.0	01 26.85 +20 34.5 16.3	-0.72 -10.8	4.0/21.4	33047
1996 AH ₆	1998 10 17.0	01 26.93 +04 10.1 17.8	-0.93 - 3.1	2.4/15.7	32948
1990 TO ₄	1998 10 17.0	01 27.08 -08 11.3 17.6	-0.96 - 2.7	6.8/12.0	33068
1997 CL ₂₀	1998 10 17.0	01 27.21 +06 11.5 17.7	-1.06 - 4.7	1.2/16.3	32956
1993 TU ₂₉	1998 10 17.1	01 27.15 +03 39.5 18.1	-0.79 - 4.7	1.8/15.4	32935
1997 EM ₁₅	1998 10 17.1	01 27.49 +13 47.3 18.8	-1.12 - 3.7	1.8/18.4	32957
1992 AJ ₁	1998 10 17.1	01 27.53 +17 00.6 16.8	-0.92 - 5.9	2.6/19.6	32926
1991 FG	1998 10 17.1	01 27.54 +09 26.9 18.1	-0.80 - 7.5	0.1/17.3	33069
1998 SL ₁₆₁	1998 10 17.1	01 27.58 +09 48.0 17.8	-0.86 - 5.4	0.2/17.4	33046
(9678)	1998 10 17.2	01 27.81 +08 26.7 18.2	-0.86 - 6.5	0.3/17.0	32908
1993 UX ₄	1998 10 17.3	01 27.95 -05 21.8 18.4	-0.84 - 2.2	4.5/13.2	32936
1998 SA ₁₃₃	1998 10 17.3	01 28.26 +14 40.9 17.1	-1.17 - 2.1	2.3/18.8	33044
1990 TF ₈	1998 10 17.3	01 28.28 +14 37.6 17.0	-0.82 -11.3	2.0/19.3	32923
(9684)	1998 10 17.3	01 28.31 +09 16.1 17.5	-0.93 - 6.4	0.0/17.4	32909
1998 SS ₁₃₂	1998 10 17.4	01 28.52 +16 41.1 17.6	-1.07 - 2.2	3.1/19.4	33043
1296 T-2	1998 10 17.4	01 28.57 +07 05.6 18.9	-0.87 - 5.6	0.7/16.8	33130
1998 SD ₁₃₁	1998 10 17.4	01 28.59 +12 51.5 18.0	-0.80 - 3.5	1.0/18.5	33043
(9528)	1998 10 17.4	01 28.65 +08 54.5 18.0	-0.84 - 4.0	0.1/17.4	32870
1004 T-2	1998 10 17.5	01 29.02 +15 16.9 18.1	-0.99 - 2.7	2.3/19.2	33130
1998 SG ₁₃₂	1998 10 17.5	01 29.04 +16 23.9 17.2	-1.08 - 4.5	2.6/19.6	33043
(9658)	1998 10 17.5	01 29.07 +07 02.2 17.8	-1.01 - 4.3	0.9/17.0	32903
1997 FQ ₃	1998 10 17.6	01 29.21 +11 22.4 16.9	-1.02 - 4.2	1.0/18.2	33076
1996 AA	1998 10 17.6	01 29.29 +19 59.9 16.8	-1.00 - 5.4	4.0/20.8	32947
(9290)	1998 10 17.6	01 29.39 +09 31.7 15.9	-0.87 - 9.0	0.1/17.7	32603
(9557)	1998 10 17.7	01 29.39 +12 50.3 17.1	-0.78 - 3.9	1.0/18.8	32878
1187 T-2	1998 10 17.7	01 29.73 +13 58.1 18.2	-0.87 - 2.6	2.2/19.1	33057
(7773)	1998 10 17.8	01 29.87 +07 18.6 16.3	-0.92 - 3.2	0.7/17.2	30263
(7531)	1998 10 17.8	01 30.08 +09 41.3 17.1	-0.95 - 7.1	0.1/17.9	29294
1998 SO ₁₃₅	1998 10 18.0	01 30.53 +04 45.1 17.7	-0.87 - 1.1	1.6/16.8	33044
1991 RJ ₄₁	1998 10 18.0	01 30.66 +12 59.6 16.8	-1.12 - 0.2	1.7/18.9	33070
1998 SW ₇₃	1998 10 18.1	01 31.27 +06 19.8 16.6	-1.12 - 1.0	1.4/17.4	33038
1997 ES ₂	1998 10 18.2	01 31.58 +03 47.2 17.2	-0.98 - 5.5	2.3/16.6	33076
(9540)	1998 10 18.2	01 31.65 +05 20.7 16.6	-0.78 - 4.5	1.4/17.0	32874
1994 UM ₁	1998 10 18.3	01 31.68 +14 08.6 16.6	-0.90 - 6.7	1.8/20.0	33073
1998 SV ₇₃	1998 10 18.3	01 31.79 +04 40.4 16.9	-1.09 - 0.9	2.3/17.2	33038
1992 OF ₁	1998 10 18.3	01 32.04 -07 21.3 15.6	-0.73 - 4.3	6.4/13.0	33071
(9594)	1998 10 18.3	01 32.04 +12 22.8 17.0	-0.99 - 7.4	1.0/19.2	32887
1991 RL ₈	1998 10 18.5	01 32.62 +10 42.1 16.6	-1.10 + 0.8	0.5/18.8	33069
1993 NA ₂	1998 10 18.5	01 32.63 -08 13.1 16.4	-0.83 - 5.5	7.2/12.7	33072
1987 SD ₁₃	1998 10 18.6	01 32.81 +06 53.0 16.4	-0.90 - 3.9	1.4/17.8	32919
1994 PH ₁₈	1998 10 18.6	01 32.83 +07 02.4 19.4	-0.95 - 6.2	0.9/17.8	30092
1997 NU ₆	1998 10 18.6	01 33.20 +16 38.8 17.7	-0.81 - 6.7	2.1/20.9	33077
1995 YS ₂₅	1998 10 18.7	01 33.14 +05 03.4 19.3	-1.03 - 3.3	1.9/17.5	32750
1998 ST ₇₃	1998 10 18.7	01 33.46 +03 30.6 17.9	-0.96 - 6.2	2.2/16.9	33038
1987 UX	1998 10 18.7	01 33.53 +09 55.4 16.1	-0.56 -29.3	0.1/18.8	33066
1993 FS ₃₁	1998 10 18.8	01 33.93 +05 53.0 17.3	-1.00 - 3.6	1.5/17.8	32930
(9322)	1998 10 18.9	01 34.04 +06 37.0 17.0	-0.76 - 4.7	1.1/18.0	32611

(9597)	1998 10 18.9	01 34.17 +14 48.9 16.5	-0.93 - 6.0	2.3/20.5	32888
1993 FW ₉	1998 10 18.9	01 34.17 +05 57.1 16.9	-0.97 - 4.4	1.5/17.9	32930
(9687)	1998 10 19.0	01 34.30 +11 34.9 17.4	-0.90 - 3.0	0.6/19.5	32910
1995 BQ ₈	1998 10 19.0	01 34.32 +04 56.0 18.4	-0.80 - 4.2	1.6/17.5	33074
1996 DM ₂	1998 10 19.0	01 34.36 +00 21.9 17.8	-0.84 - 4.4	3.1/16.2	32949
(9666)	1998 10 19.0	01 34.36 +07 20.7 16.8	-1.09 + 0.7	1.0/18.5	32905
(9530)	1998 10 19.1	01 34.66 +11 21.8 17.5	-0.83 - 4.8	0.5/19.6	32871
1996 FA ₄	1998 10 19.1	01 34.91 +02 53.7 17.9	-1.02 - 0.8	2.5/17.4	32951
4174 T-2	1998 10 19.1	01 34.94 +05 19.5 18.4	-0.80 - 5.0	1.5/17.8	33058
1987 WJ ₁	1998 10 19.1	01 34.99 +08 13.9 16.4	-0.85 - 2.0	0.6/18.7	33066
1998 SM ₇₃	1998 10 19.2	01 35.07 +04 02.1 17.6	-0.82 - 6.5	2.0/17.4	33038
1998 SJ ₇₃	1998 10 19.2	01 35.23 +03 00.7 16.6	-0.83 - 5.5	3.2/17.1	33037
1991 TH ₁	1998 10 19.2	01 35.24 +18 48.8 16.2	-1.79 +15.5	4.9/20.0	33070
(9550)	1998 10 19.3	01 35.47 +19 30.1 16.4	-0.85 - 7.7	3.6/22.5	32876
1998 QF ₉₂	1998 10 19.3	01 35.51 +12 43.2 16.9	-1.80 + 8.7	1.5/20.0	33089
1104 T-1	1998 10 19.3	01 35.53 +23 51.3 16.4	-1.21 + 0.9	6.3/22.5	33129
(9606)	1998 10 19.3	01 35.62 +05 32.3 16.6	-0.96 - 4.5	1.8/18.1	32890
1994 TK ₁₁	1998 10 19.3	01 35.72 +11 56.9 17.2	-0.91 - 6.3	0.8/20.0	33073
1996 CP ₂	1998 10 19.4	01 35.82 +08 03.3 17.5	-0.89 - 2.9	0.5/18.9	32948
1997 CX ₅	1998 10 19.4	01 35.88 +57 03.0 20.2	-2.07 + 6.6	26.0/31.1	29310
1998 SO ₄₉	1998 10 19.4	01 36.09 +08 52.0 17.2	-0.82 - 5.2	0.4/19.1	33026
(7368)	1998 10 19.5	01 36.16 -01 30.5 17.2	-0.98 - 6.3	4.3/16.1	28818
1994 PP ₁₇	1998 10 19.5	01 36.56 +11 51.1 17.1	-0.84 - 5.3	0.9/20.1	32938
1998 SA ₂₈	1998 10 19.6	01 36.57 +09 51.8 17.2	-0.90 - 3.5	0.1/19.6	33021
1971 UK ₁	1998 10 19.6	01 36.72 +10 08.8 17.1	-0.81 -10.5	11.0/30.0	32916
1996 EW	1998 10 19.6	01 36.79 -04 27.5 18.6	-0.82 - 8.0	4.7/14.8	32949
1991 VM ₅	1998 10 19.6	01 36.97 +00 04.7 16.0	-1.01 - 0.9	4.9/17.3	33070
6184 P-L	1998 10 19.7	01 36.92 +09 51.6 17.9	-0.86 - 9.6	0.1/19.6	33054
1998 SY ₁₄₃	1998 10 19.7	01 37.27 +13 03.5 17.1	-1.05 - 4.8	1.3/20.6	33045
1998 SG ₇₄	1998 10 19.7	01 37.30 +04 39.2 17.5	-1.00 - 3.5	2.3/18.3	33038
1998 SQ ₁₄₀	1998 10 19.8	01 37.40 +13 59.6 18.0	-1.10 - 4.0	1.7/20.9	33044
1994 UQ ₇	1998 10 19.8	01 37.55 +13 49.1 19.4	-0.98 - 3.4	1.3/20.9	32942
1991 GZ ₉	1998 10 19.8	01 37.56 +21 47.9 18.2	-0.90 - 5.1	3.6/23.4	33069
(9561)	1998 10 19.8	01 37.57 +18 26.1 17.1	-1.10 - 4.9	3.1/22.2	32879
2048 P-L	1998 10 19.8	01 37.63 +15 54.7 18.5	-0.93 - 4.8	1.8/21.6	33052
1981 EU ₁₄	1998 10 19.8	01 37.64 +17 22.5 19.7	-0.99 - 4.3	2.5/21.9	26917
(9589)	1998 10 19.9	01 37.66 +03 18.7 17.7	-0.87 - 5.5	2.4/17.8	32886
1998 SL ₇₄	1998 10 19.9	01 37.70 +05 55.3 17.5	-0.98 - 1.2	1.4/18.8	33039
1997 KO ₂	1998 10 19.9	01 37.75 -02 32.9 16.7	-0.98 - 3.1	5.9/16.4	32966
1975 VW ₅	1998 10 20.0	01 38.07 -01 26.4 16.4	-1.01 - 1.0	5.1/17.2	33064
1994 VH ₁	1998 10 20.0	01 38.26 +04 02.7 17.1	-0.89 - 4.3	2.1/18.3	32942
2175 T-1	1998 10 20.0	01 38.31 +05 07.0 17.3	-0.91 - 7.9	2.0/18.5	33129
1984 DQ	1998 10 20.0	01 38.41 +25 15.0 18.0	-1.00 - 3.6	4.5/24.4	30468
(9261)	1998 10 20.1	01 38.42 +08 29.4 15.5	-0.82 - 8.9	0.8/19.5	32595
1997 FX ₃	1998 10 20.2	01 38.93 +11 40.8 16.6	-0.85 - 6.8	0.6/20.7	33076
1993 KR	1998 10 20.2	01 39.01 +22 41.7 17.9	-0.96 -11.1	4.0/24.5	26744
1992 SF ₁₁	1998 10 20.2	01 39.01 +09 04.9 17.8	-0.75 - 4.7	0.4/19.9	33071
1995 YX ₁	1998 10 20.2	01 39.13 +11 08.3 17.1	-0.98 - 6.7	0.3/20.5	32947
1998 SW ₇₄	1998 10 20.2	01 39.17 +04 07.2 16.8	-1.06 - 2.0	2.6/18.7	33039
(9539)	1998 10 20.2	01 39.21 +09 01.1 16.5	-0.77 - 4.9	0.5/19.9	32873
1991 LL ₂	1998 10 20.3	01 39.39 +10 35.9 17.8	-0.76 - 4.9	0.1/20.4	32924

1998 SH ₂₅	1998 10 20.3	01 39.40 +02 33.1 16.9	-0.88 - 3.3	2.6/18.2	33021
1998 SU ₇₁	1998 10 20.4	01 39.70 +07 35.9 17.3	-0.75 - 4.6	0.8/19.6	33037
1990 RY ₂	1998 10 20.5	01 39.95 +13 55.9 17.1	-0.69 - 4.2	1.1/21.6	33068
1998 SV	1998 10 20.5	01 40.12 +10 44.7 19.4	-1.08 - 4.2	0.2/20.6	33013
1995 CD ₂	1998 10 20.5	01 40.30 +23 12.8 17.3	-0.73 - 8.5	3.4/25.1	33074
1993 FV ₂₄	1998 10 20.5	01 40.34 +12 34.4 18.9	-0.96 - 5.7	0.8/21.2	33071
1998 SK ₇₄	1998 10 20.6	01 40.30 +02 27.7 17.5	-0.84 - 5.0	2.9/18.2	33038
1998 SC ₂₈	1998 10 20.6	01 40.45 +09 29.0 18.3	-0.79 - 4.7	0.3/20.4	33022
1993 TF ₆	1998 10 20.6	01 40.69 +14 00.0 19.2	-0.75 - 9.2	1.2/21.9	32933
1998 SV ₁₄	1998 10 20.6	01 40.71 +02 00.7 17.3	-1.03 - 4.7	3.3/18.4	33017
1994 PK ₈	1998 10 20.7	01 40.67 +11 50.1 18.2	-0.99 - 5.9	0.5/21.1	33072
(9514)	1998 10 20.7	01 41.08 +07 31.0 16.7	-1.03 - 4.0	1.4/20.0	32867
1997 GR ₂₄	1998 10 20.8	01 41.23 +06 09.2 16.9	-0.78 -10.5	1.6/19.3	33077
1997 GA ₃₈	1998 10 20.8	01 41.25 +06 03.5 16.9	-0.90 - 7.2	1.8/19.5	33077
1998 ST	1998 10 20.8	01 41.38 +10 30.2 17.6	-1.01 - 4.5	0.0/20.9	33013
1989 DB	1998 10 20.9	01 41.43 +09 42.7 17.5	-0.99 - 4.5	0.3/20.7	32920
(9534)	1998 10 20.9	01 41.55 +10 33.2 16.3	-0.79 - 4.0	0.0/20.9	32872
2589 P-L	1998 10 20.9	01 41.77 +05 54.7 17.4	-0.88 - 5.5	1.5/19.6	33053
1998 SF ₁₄₁	1998 10 21.0	01 41.83 +10 33.8 17.6	-0.93 - 4.5	0.0/21.0	33044
1993 HC ₁	1998 10 21.0	01 42.19 +18 22.9 18.5	-1.40 + 2.1	2.8/22.6	32746
1991 VZ ₂	1998 10 21.1	01 42.19 +11 28.3 15.8	-0.75 + 2.9	0.5/21.3	33070
1991 UO ₂	1998 10 21.1	01 42.36 -00 07.9 15.7	-0.87 - 4.5	5.3/18.0	33070
1998 SD ₇₂	1998 10 21.1	01 42.42 +07 32.4 16.7	-0.81 - 3.2	1.3/20.3	33037
1993 FD ₄₀	1998 10 21.1	01 42.49 +04 43.1 19.1	-0.91 - 7.7	2.2/19.3	30471
1990 UE ₅	1998 10 21.1	01 42.59 +05 42.9 17.2	-0.85 -25.4	2.2/19.2	33068
(9607)	1998 10 21.1	01 42.59 +17 38.1 16.8	-1.03 - 2.8	2.5/23.1	32890
1996 EH ₁	1998 10 21.2	01 42.55 +07 07.9 17.9	-0.69 - 7.0	0.9/20.1	32950
2266 T-2	1998 10 21.3	01 42.92 +05 03.5 17.7	-0.92 - 7.6	2.2/19.6	33058
1093 T-2	1998 10 21.3	01 42.94 +16 38.3 17.7	-1.09 - 2.0	2.7/22.8	33057
1992 RJ ₇	1998 10 21.3	01 43.17 +04 07.0 17.9	-0.74 - 5.1	1.9/19.3	32929
1996 DX	1998 10 21.4	01 43.39 +05 04.1 17.1	-0.98 - 5.2	2.3/19.8	32949
1997 GJ ₂₃	1998 10 21.4	01 43.58 +04 05.9 17.6	-1.08 + 0.4	2.6/20.0	32962
1996 HD ₂₂	1998 10 21.4	01 43.61 +05 01.2 17.7	-1.02 - 1.1	2.0/20.1	32953
1998 QS ₉₁	1998 10 21.4	01 43.61 +18 52.1 16.1	-1.09 + 3.0	4.4/23.2	32985
1996 HY ₁₀	1998 10 21.5	01 43.87 +06 57.6 17.9	-0.84 - 2.1	1.1/20.5	32952
1998 SO ₁₄₂	1998 10 21.5	01 43.96 +03 36.2 18.1	-1.03 - 1.2	3.2/19.8	33044
1994 YJ ₁	1998 10 21.6	01 44.49 +09 30.3 16.7	-0.92 - 2.8	0.5/21.3	33074
(9698)	1998 10 21.7	01 44.46 +15 36.9 17.3	-1.08 - 2.8	1.8/22.9	32913
1996 BX ₁	1998 10 21.7	01 44.53 -10 04.7 17.0	-0.97 - 4.7	8.3/15.3	33075
1990 VP ₆	1998 10 21.7	01 44.60 +08 59.7 16.0	-0.80 -10.4	0.7/21.1	33068
1998 SA ₇₃	1998 10 21.7	01 44.62 +09 09.8 16.2	-1.08 + 0.8	0.8/21.4	33037
1998 ST ₁₄₀	1998 10 21.7	01 44.74 +14 30.9 17.6	-0.92 - 4.5	1.8/22.8	33044
(7516)	1998 10 21.7	01 44.90 +02 07.6 15.6	-0.94 - 8.4	3.7/19.1	29290
1990 HG	1998 10 21.7	01 44.91 -08 02.5 17.3	-1.31 + 3.2	7.4/18.3	33068
1993 FX ₁₇	1998 10 21.8	01 45.08 -00 35.9 16.1	-0.97 - 5.8	4.8/18.5	25531
1993 EU	1998 10 21.9	01 45.31 +06 32.3 17.1	-0.97 - 4.8	1.5/20.7	32929
1988 VT ₃	1998 10 21.9	01 45.38 +15 38.1 16.7	-0.99 - 7.4	2.0/23.4	32920
1991 PL ₁₈	1998 10 21.9	01 45.41 +18 45.1 17.8	-1.06 - 6.0	3.4/24.2	32924
1979 MC ₈	1998 10 21.9	01 45.42 +12 13.3 19.2	-0.99 - 6.4	0.5/22.3	30779
1997 KC	1998 10 21.9	01 45.44 -12 05.1 18.1	-0.97 - 2.6	7.6/15.7	30691
(9679)	1998 10 21.9	01 45.47 +10 08.4 17.5	-0.90 - 5.9	0.3/21.7	32908

(9537)	1998 10 21.9	01 45.49 +16 29.6 17.4	-0.90 - 4.7	1.8/23.6	32873
(9529)	1998 10 22.0	01 45.62 +10 24.9 17.8	-0.96 - 5.3	0.2/21.9	32871
1981 ES ₂₆	1998 10 22.0	01 45.75 +10 59.2 18.8	-0.92 - 6.1	0.0/22.1	26920
1991 PV	1998 10 22.0	01 45.88 +11 48.2 17.2	-1.00 - 7.0	0.4/22.3	33069
1997 MJ ₆	1998 10 22.0	01 45.98 -02 03.3 19.1	-0.90 - 3.5	5.0/18.5	33077
(9659)	1998 10 22.1	01 45.96 -06 53.5 16.3	-0.81 - 6.4	5.6/16.4	32903
(9568)	1998 10 22.1	01 46.11 +04 39.3 16.4	-0.84 - 8.1	2.7/20.1	32881
1993 TV ₁₉	1998 10 22.2	01 46.43 +06 18.2 16.9	-0.83 - 4.0	1.5/20.9	32934
1998 UJ ₂₀	1998 10 22.2	01 46.47 +20 26.9 15.7	-0.84 - 7.3	4.5/25.3	33052
1989 CT ₂	1998 10 22.2	01 46.49 +13 57.9 17.1	-0.93 - 8.2	1.2/23.2	33067
1998 SD ₁₄₄	1998 10 22.2	01 46.68 +05 22.1 17.2	-0.80 -14.0	2.0/20.2	33045
1997 JN ₁₆	1998 10 22.3	01 46.91 +09 24.3 16.3	-0.83 - 7.2	0.7/21.8	32966
1994 PD ₁₈	1998 10 22.3	01 47.03 +02 03.5 17.5	-0.92 - 6.9	3.4/19.7	33072
1991 RT ₃	1998 10 22.3	01 47.07 +13 53.3 16.1	-0.86 - 9.0	1.3/23.3	33069
(9522)	1998 10 22.4	01 47.12 +18 11.8 17.4	-0.69 - 5.7	1.9/24.7	32869
1998 SJ ₁₄₄	1998 10 22.4	01 47.29 +07 07.7 16.1	-0.92 - 9.3	1.7/21.2	33045
1994 RN ₅	1998 10 22.4	01 47.43 +10 17.0 18.1	-0.93 - 6.4	0.3/22.2	33073
2158 T-2	1998 10 22.5	01 47.60 +08 01.9 18.6	-0.97 - 6.5	1.2/21.6	33130
1993 FL ₁	1998 10 22.5	01 47.66 +08 43.8 16.5	-1.07 - 2.6	0.9/21.9	32929
1996 HU ₁₈	1998 10 22.5	01 47.73 +09 55.1 18.7	-0.75 - 4.4	0.3/22.2	33076
(7846)	1998 10 22.5	01 47.88 +17 07.5 17.8	-1.02 - 5.6	2.2/24.3	30443
1998 SL ₅₀	1998 10 22.6	01 47.94 +14 04.0 18.5	-1.05 - 1.3	1.3/23.3	33027
1994 PY ₂₁	1998 10 22.6	01 48.01 +05 58.3 18.2	-0.96 - 5.8	1.9/21.2	33073
1998 UG ₁₇	1998 10 22.6	01 48.20 +18 50.6 17.7	-0.91 - 4.5	2.9/25.0	33051
1998 SV ₆₄	1998 10 22.7	01 48.25 +04 07.5 17.4	-1.05 - 4.2	2.8/20.8	33036
1997 NE ₃	1998 10 22.7	01 48.37 +22 07.9 17.7	-1.01 - 5.4	3.8/25.9	33077
1998 SP ₄₈	1998 10 22.7	01 48.57 +13 06.1 18.3	-0.89 - 6.5	0.7/23.4	33026
1992 AT ₂	1998 10 22.8	01 48.90 +17 23.5 17.7	-0.95 - 5.4	2.1/25.0	33070
1991 PR ₁₆	1998 10 22.9	01 49.02 +08 23.2 16.7	-0.98 - 5.6	1.3/22.1	33069
(9527)	1998 10 22.9	01 49.20 +13 06.5 17.4	-0.95 - 5.5	0.8/23.5	32870
1991 AS ₁	1998 10 22.9	01 49.26 +67 22.1 16.4	-2.03 + 5.9	22.5/12.1	33068
1998 SV ₁₄₄	1998 10 22.9	01 49.26 +11 10.3 17.7	-0.91 - 3.8	0.0/22.9	33045
1997 GQ ₆	1998 10 22.9	01 49.39 +11 59.4 17.3	-1.00 - 2.9	0.3/23.2	33076
(7792)	1998 10 23.0	01 49.39 +04 23.2 16.3	-1.04 - 3.4	2.4/21.2	30268
1998 SP ₇₅	1998 10 23.0	01 49.57 +02 08.3 18.0	-0.78 - 8.6	3.2/20.1	33039
4203 T-3	1998 10 23.0	01 49.67 +03 11.3 17.8	-0.82 - 8.4	2.6/20.4	33130
6871 P-L	1998 10 23.1	01 49.88 +07 43.4 19.5	-1.00 - 5.6	1.4/22.1	30088
1989 RD ₁	1998 10 23.1	01 49.94 -11 08.7 16.4	-0.95 + 0.8	9.5/17.8	33067
(9307)	1998 10 23.1	01 50.10 +23 33.0 16.5	-1.08 - 4.3	5.3/26.6	32607
(9630)	1998 10 23.2	01 50.14 +15 30.1 17.0	-0.90 - 4.4	1.5/24.4	32896
1998 SY ₁₄₅	1998 10 23.2	01 50.36 +11 20.2 16.4	-1.03 - 4.3	0.0/23.2	33045
1995 BY	1998 10 23.2	01 50.55 +10 52.6 16.8	-0.85 - 3.6	0.2/23.2	33074
3101 T-3	1998 10 23.3	01 50.73 +08 19.7 17.3	-1.13 - 0.8	1.3/22.7	33130
1990 EQ ₂	1998 10 23.3	01 50.95 +16 18.0 17.7	-1.02 - 7.1	2.1/24.8	33068
1993 FE ₇₆	1998 10 23.4	01 50.97 +10 58.8 16.8	-0.89 - 7.8	0.2/23.3	33071
1998 SP ₃₇	1998 10 23.4	01 51.34 +12 32.3 17.2	-0.94 - 7.6	0.5/23.8	33023
1991 CL	1998 10 23.5	01 51.36 -09 32.8 17.2	-0.81 - 4.6	6.1/17.1	33069
1998 SQ ₃₇	1998 10 23.5	01 51.71 +14 11.0 18.0	-0.84 - 4.0	0.9/24.4	33023
(9298)	1998 10 23.6	01 51.69 +12 19.4 15.2	-0.75 -14.1	0.4/23.9	32605
(7905)	1998 10 23.6	01 51.70 -07 11.8 16.2	-0.81 - 2.1	6.1/18.4	30646
(9696)	1998 10 23.6	01 51.88 +09 26.6 17.2	-0.91 - 5.5	0.9/23.1	32912

(9618)	1998 10 23.6	01 51.89 +10 07.4 16.7	-1.10 - 0.3	0.6/23.3	32893	1993 TM ₃₁	1998 10 25.5	01 59.30 +07 11.9 17.8	-0.82 - 4.3	1.6/24.2	32935
1997 JF ₁₆	1998 10 23.7	01 52.21 +08 08.0 17.5	-0.93 - 7.4	1.4/22.7	33077	1998 TG	1998 10 25.8	02 00.20 +15 00.9 17.9	-1.03 - 4.3	1.3/26.6	33046
1998 SW ₁₄₅	1998 10 23.7	01 52.44 +08 26.5 17.1	-0.98 - 5.3	1.1/22.9	33045	1990 VQ ₅	1998 10 25.8	02 00.49 -01 47.4 17.7	-0.87 - 5.0	4.7/21.8	33068
(7895)	1998 10 23.8	01 52.49 -07 02.6 16.1	-0.72 - 4.4	4.9/18.0	30643	1997 JD ₁₂	1998 10 26.0	02 01.13 +14 08.8 17.3	-0.89 - 9.7	0.8/26.6	33077
1998 SV ₂₂	1998 10 23.8	01 52.57 +10 35.3 17.1	-0.87 - 8.8	0.4/23.5	33107	1994 PA ₁₉	1998 10 26.0	02 01.27 +10 52.6 16.6	-0.86 - 6.0	0.7/25.7	33072
1994 TQ ₃	1998 10 23.8	01 52.81 +16 36.3 16.3	-1.15 + 0.8	2.1/25.0	33073	1996 AV ₁	1998 10 26.0	02 01.28 +08 51.8 18.6	-0.95 - 5.1	1.2/25.1	32947
1994 PX ₂₀	1998 10 23.8	01 52.85 +13 58.6 18.0	-1.01 - 5.0	0.9/24.6	32939	6761 P-L	1998 10 26.1	02 01.46 +03 25.1 17.5	-0.74 - 6.2	2.7/23.4	33129
1996 GL ₃	1998 10 23.9	01 52.87 +05 46.3 18.4	-0.87 - 4.1	2.0/22.3	32951	1994 UY	1998 10 26.1	02 01.63 +17 58.4 16.7	-0.94 - 4.4	2.5/27.7	33073
(9543)	1998 10 23.9	01 53.02 +25 25.9 17.3	-0.89 - 3.6	4.6/28.0	32874	1994 PA ₃₉	1998 10 26.2	02 01.83 +12 44.7 18.6	-1.00 - 6.3	0.1/26.4	33073
1993 QP ₉	1998 10 24.0	01 53.26 +02 55.5 17.9	-0.82 - 5.0	3.1/21.5	32932	4234 T-3	1998 10 26.3	02 01.98 -01 21.4 16.9	-0.86 -19.8	5.6/20.9	33062
(9704)	1998 10 24.0	01 53.29 +20 04.2 17.1	-0.97 - 7.9	3.3/26.6	32914	1994 PJ ₄	1998 10 26.3	02 02.13 +13 05.5 18.4	-0.93 - 5.9	0.3/26.5	32937
1994 XQ ₄	1998 10 24.0	01 53.42 +06 01.4 16.9	-0.88 - 3.3	2.2/22.5	32943	1991 VA ₄	1998 10 26.3	02 02.25 +06 06.6 16.4	-0.97 - 4.7	2.9/24.6	32926
1995 WS ₇	1998 10 24.0	01 53.46 +09 49.4 17.2	-1.03 - 5.4	0.7/23.6	33074	1981 EP ₂₇	1998 10 26.3	02 02.31 +03 42.6 17.9	-0.75 - 7.9	2.8/23.6	33065
1995 BB	1998 10 24.0	01 53.58 +13 26.6 16.9	-0.85 - 4.6	0.6/24.6	33074	1997 GX ₃₅	1998 10 26.4	02 02.61 +07 29.7 17.5	-0.92 - 7.3	2.1/25.0	32963
(7804)	1998 10 24.0	01 53.63 +21 39.7 17.0	-0.99 - 6.5	3.5/27.1	30271	1996 HR ₁₀	1998 10 26.4	02 02.64 +12 22.9 16.3	-0.79 - 4.0	0.0/26.4	33076
(9685)	1998 10 24.1	01 53.69 +13 15.2 17.9	-0.95 - 5.5	0.5/24.6	32909	(9613)	1998 10 26.4	02 02.74 +12 36.8 17.1	-1.13 - 1.7	0.1/26.5	32892
1995 FX ₁₀	1998 10 24.1	01 53.78 +17 24.2 19.3	-0.90 - 1.9	1.7/25.6	32945	1995 DL	1998 10 26.5	02 02.77 +17 01.3 17.3	-0.79 - 3.4	1.2/27.8	32944
1997 GX ₂₂	1998 10 24.2	01 54.04 +09 04.1 18.2	-0.96 - 5.6	0.9/23.5	33077	1997 MR ₁	1998 10 26.5	02 03.00 +36 48.5 18.6	-1.08 -11.9	8.5/04.4	33077
1996 HQ ₁₉	1998 10 24.2	01 54.22 +10 56.6 18.2	-0.75 - 4.2	0.2/24.0	32952	(9656)	1998 10 26.5	02 03.13 +03 23.6 17.1	-0.97 - 5.8	3.5/24.0	32902
(9533)	1998 10 24.3	01 54.49 +06 13.1 16.0	-0.96 - 1.2	2.4/23.0	32872	(9694)	1998 10 26.6	02 03.35 +16 59.5 17.2	-0.54 - 2.4	0.8/28.0	32912
(9702)	1998 10 24.3	01 54.51 +10 41.9 17.4	-0.96 - 7.0	0.4/24.0	32914	1988 RY ₅	1998 10 26.7	02 03.53 +10 58.2 16.3	-0.84 - 5.2	0.6/26.3	33067
(7779)	1998 10 24.3	01 54.68 -01 02.3 17.9	-1.20 + 0.9	4.3/21.7	30265	1998 TH ₉	1998 10 26.8	02 04.29 +12 22.2 17.6	-0.91 - 6.1	0.1/26.8	33048
1994 UQ	1998 10 24.4	01 54.70 -00 51.1 16.5	-0.97 - 1.1	4.2/21.4	32941	4098 P-L	1998 10 26.8	02 04.29 +11 27.0 17.3	-0.80 - 7.8	0.4/26.5	33129
(9348)	1998 10 24.4	01 54.80 +02 01.5 16.1	-1.04 - 0.3	4.7/22.2	32617	1992 DJ ₈	1998 10 26.8	02 04.35 +12 16.3 18.8	-0.90 - 6.0	0.1/26.8	33070
1993 HX	1998 10 24.5	01 55.11 +06 27.8 17.0	-0.94 - 5.4	2.0/23.0	32931	(9649)	1998 10 26.9	02 04.58 +11 36.4 16.1	-1.05 - 1.9	0.5/26.7	32900
1998 SQ ₂	1998 10 24.5	01 55.26 +45 39.9 17.0	-1.15 - 6.8	14.5/07.9	33105	(9596)	1998 10 27.0	02 04.74 +11 17.4 16.6	-1.11 - 3.6	0.6/26.7	32888
1998 SK ₁	1998 10 24.5	01 55.35 +10 23.3 17.4	-0.80 - 3.9	0.5/24.2	33013	6625 P-L	1998 10 27.0	02 04.76 +08 06.7 17.6	-0.96 - 5.2	1.7/25.8	33129
1998 SA ₂₅	1998 10 24.5	01 55.43 +01 07.8 16.5	-0.95 - 6.1	4.4/21.5	33020	(9650)	1998 10 27.0	02 04.92 +12 35.2 16.6	-1.01 - 6.7	0.0/27.0	32901
1985 SC ₃	1998 10 24.6	01 55.50 +14 22.1 16.6	-0.84 -11.4	1.3/25.5	33066	1996 HT ₁₅	1998 10 27.1	02 05.44 +09 49.4 16.5	-0.81 - 4.8	1.0/26.4	32952
(9706)	1998 10 24.6	01 55.83 +11 37.8 17.9	-0.80 - 4.2	0.1/24.6	32915	1994 TO ₁₅	1998 10 27.2	02 05.62 +15 24.2 18.1	-1.02 - 3.1	0.8/27.9	33073
1997 MB ₅	1998 10 24.7	01 56.11 +12 43.7 16.7	-0.80 - 4.3	8.8/14.0	32968	1981 EP ₄₁	1998 10 27.2	02 05.87 +15 56.6 17.8	-0.97 - 3.5	1.5/28.1	33065
1998 SM ₁₄₆	1998 10 24.7	01 56.16 +12 19.3 16.3	-0.81 - 4.4	8.1/14.0	33025	1998 UM ₂₀	1998 10 27.3	02 05.87 +09 01.6 17.2	-0.79 - 3.6	1.3/26.3	33052
(9636)	1998 10 24.7	01 56.19 -10 45.2 18.5	-0.78 - 2.0	6.3/18.4	32897	1993 TN ₃₀	1998 10 27.4	02 06.25 +05 39.9 18.7	-0.86 - 3.8	2.4/25.5	32935
(7768)	1998 10 24.8	01 56.70 +15 10.0 16.2	-1.05 - 5.2	1.4/25.8	30262	1993 FW ₄₁	1998 10 27.4	02 06.40 +16 08.4 18.1	-1.05 - 3.7	1.4/28.3	32931
1997 GA ₂₆	1998 10 24.9	01 56.83 +07 18.2 17.6	-1.10 - 3.0	1.7/23.8	32962	1997 JZ	1998 10 27.6	02 07.36 +14 23.0 18.0	-0.90 -11.4	0.6/28.2	32965
(9616)	1998 10 25.0	01 57.18 +11 33.5 16.9	-0.92 - 7.6	0.2/24.9	32893	(7903)	1998 10 27.6	02 07.39 +13 43.6 17.8	-0.77 - 6.5	0.3/27.9	33064
1991 GP ₃	1998 10 25.0	01 57.44 +12 10.5 17.4	-0.79 - 4.9	0.0/25.1	33069	1996 GV ₁	1998 10 27.7	02 07.55 +10 45.3 17.4	-1.05 - 0.5	0.8/27.3	32951
1987 DN ₆	1998 10 25.1	01 57.57 +16 11.9 17.6	-0.93 - 5.1	1.6/26.3	33066	(9652)	1998 10 27.8	02 07.92 +22 29.2 16.9	-1.03 - 4.5	3.2/30.4	32901
1996 AK ₁₀	1998 10 25.1	01 57.59 +14 23.5 17.3	-0.95 - 6.3	1.1/25.8	33075	1993 HR ₁	1998 10 27.9	02 08.41 +08 05.2 18.2	-0.96 - 4.8	1.6/26.7	33071
1994 PS	1998 10 25.2	01 57.86 -03 37.7 16.9	-0.91 - 7.1	5.5/20.4	32937	1998 SE ₄₇	1998 10 28.0	02 08.62 +13 07.8 17.3	-0.87 - 2.5	0.0/28.1	33026
1998 SD ₆₇	1998 10 25.2	01 57.87 +07 57.7 16.2	-1.09 - 0.2	2.1/24.3	33037	6773 P-L	1998 10 28.0	02 08.66 +07 27.2 18.2	-0.96 - 3.8	2.5/26.6	33055
1998 TX ₅	1998 10 25.2	01 57.95 +14 40.6 16.4	-0.87 - 5.1	0.9/26.0	33047	1993 UJ ₁	1998 10 28.0	02 08.95 +07 27.2 15.7	-0.92 -27.0	2.6/25.9	32936
(9369)	1998 10 25.2	01 58.01 +11 42.4 16.9	-0.99 - 5.3	0.1/25.2	32622	(7805)	1998 10 28.1	02 09.05 +05 41.0 17.7	-1.01 - 5.0	2.7/26.2	30271
4882 P-L	1998 10 25.2	01 58.05 +15 32.4 17.6	-1.02 - 1.8	1.2/26.1	33129	(9620)	1998 10 28.1	02 09.30 +07 05.6 15.9	-1.03 - 2.8	2.8/26.7	32893
1979 ML ₅	1998 10 25.3	01 58.16 +06 08.9 17.8	-0.80 - 6.4	2.3/23.5	33065	1997 OY	1998 10 28.2	02 09.56 +27 00.0 17.0	-0.99 - 3.4	5.1/32.0	32968
1992 AO ₁	1998 10 25.3	01 58.55 +07 55.2 16.2	-1.02 - 3.5	1.8/24.3	32926	1994 VR ₂	1998 10 28.3	02 09.87 +09 52.5 16.6	-1.06 - 0.7	1.1/27.6	32942
1994 VL	1998 10 25.4	01 58.57 +13 52.8 17.1	-1.01 - 1.2	0.8/25.8	33073	1991 RU ₁₇	1998 10 28.3	02 10.07 +10 35.8 15.8	-0.98 - 7.0	1.1/27.7	33069
1998 SG ₄₉	1998 10 25.4	01 58.90 +12 31.6 15.6	-0.80 - 8.0	0.1/25.6	33026	1994 WJ ₁	1998 10 28.3	02 10.09 -03 15.1 18.0	-1.10 + 2.2	7.0/25.0	32943
1998 SS ₆₇	1998 10 25.5	01 58.95 +03 51.4 17.1	-1.10 - 2.2	3.9/23.6	33037	1994 RA ₁₁	1998 10 28.4	02 10.14 +16 58.1 17.6	-1.06 - 5.0	1.5/30.0	33073
(9545)	1998 10 25.5	01 58.96 -04 10.0 16.2	-0.84 - 5.5	6.4/20.8	32875	1993 FL ₉	1998 10 28.4	02 10.40 +03 30.8 17.4	-0.94 - 5.3	3.8/25.9	30079
1996 GN ₂	1998 10 25.5	01 59.06 +06 42.3 16.9	-0.78 - 8.7	2.1/23.8	32951	1993 FS ₅₀	1998 10 28.6	02 11.01 +16 22.7 18.4	-1.02 - 4.7	1.2/29.5	33071

1994 WW ₂	1998 10 28.6	02 11.04 +15 07.1	16.8	-0.93	- 3.6	0.7/29.1	33074	1994 PE ₃₅	1998 10 31.1	02 20.87 +09 29.4	17.1	-0.89	- 6.3	2.1/29.9	32939
(7896)	1998 10 28.7	02 11.22 +12 21.6	17.3	-0.77	- 3.6	0.2/28.5	30644	1996 GR ₂₀	1998 10 31.2	02 21.04 +11 04.3	18.6	-0.76	- 3.4	0.8/30.4	28890
1996 GA ₁	1998 10 28.7	02 11.62 +12 38.6	20.6	-0.76	- 3.6	0.2/28.6	32951	(9631)	1998 10 31.2	02 21.07 +11 43.3	17.0	-0.85	- 4.9	0.8/30.6	32896
2272 T-3	1998 10 28.7	02 11.62 +18 50.3	16.3	-1.08	- 2.0	2.7/30.0	33130	(9438)	1998 10 31.2	02 21.24 +09 54.0	18.4	-1.02	- 7.0	1.8/30.1	32639
(9686)	1998 10 28.8	02 11.89 +13 52.5	17.3	-1.06	- 3.9	0.3/29.0	32910	(7740)	1998 10 31.3	02 21.75 +20 28.5	16.0	-1.12	- 2.4	2.5/01.9	30255
1997 FN ₃	1998 10 28.8	02 12.08 +14 16.8	17.4	-1.10	- 2.9	0.4/29.1	32958	1998 SF ₁₀	1998 10 31.4	02 21.77 +14 51.3	18.1	-0.98	- 1.1	0.3/31.6	33015
1989 SA ₂	1998 10 29.0	02 12.71 +08 44.1	18.5	-0.96	- 1.6	1.9/28.0	32920	1989 AK ₆	1998 10 31.4	02 21.81 +01 18.2	18.6	-0.76	- 3.4	3.8/28.0	33067
1998 QL ₅₅	1998 10 29.0	02 12.78 +13 49.5	18.0	-0.81	- 3.8	0.2/29.2	33085	(9573)	1998 10 31.4	02 21.91 +14 00.8	16.5	-0.87	- 3.3	0.0/31.4	32882
1998 SH ₁₀	1998 10 29.1	02 12.83 +12 40.3	16.9	-0.88	- 4.1	0.2/28.9	33016	1981 EZ	1998 10 31.7	02 23.13 +14 56.3	17.3	-1.02	- 4.3	0.3/31.9	33065
2038 P-L	1998 10 29.1	02 12.89 +15 22.4	18.0	-0.98	- 8.2	0.8/29.7	33052	(9598)	1998 10 31.8	02 23.51 +16 14.5	16.2	-1.10	- 3.7	0.8/01.3	32888
(9370)	1998 10 29.1	02 13.22 +12 09.7	17.1	-0.97	- 5.6	0.5/28.9	32622	4271 T-1	1998 10 31.9	02 23.96 +14 09.3	17.8	-1.09	- 2.0	0.1/31.9	33130
1981 ES ₁₁	1998 10 29.2	02 13.36 +18 39.7	19.0	-0.97	- 6.2	1.8/30.7	26917	(9709)	1998 10 31.9	02 24.11 +04 31.6	17.4	-0.88	- 1.1	3.2/29.7	32916
1993 FL ₈	1998 10 29.2	02 13.54 +13 15.5	16.9	-1.08	- 2.3	0.1/29.2	33071	1989 TH ₁	1998 11 01.0	02 24.31 +29 07.3	14.9	-0.97	0.0	7.2/04.6	33067
(9645)	1998 10 29.3	02 13.59 +19 10.2	16.5	-0.90	- 4.8	2.1/30.9	32899	(9572)	1998 11 01.1	02 24.58 +13 02.8	17.0	-1.03	- 5.9	0.6/31.8	32882
5193 T-3	1998 10 29.3	02 13.64 -02 37.0	18.2	-0.74	- 4.6	4.2/24.7	22702	(9560)	1998 11 01.1	02 24.59 +18 30.1	16.4	-1.11	- 5.0	1.7/02.2	32879
1998 QO ₅₅	1998 10 29.3	02 13.83 +11 37.1	18.5	-0.98	- 6.0	0.7/28.9	33085	6513 P-L	1998 11 01.2	02 24.86 +27 11.8	18.2	-1.08	- 1.9	4.1/04.3	23786
(9563)	1998 10 29.3	02 13.89 +12 41.7	16.1	-0.91	- 6.0	0.4/29.2	32880	(9624)	1998 11 01.3	02 25.47 +08 46.5	16.0	-0.96	- 5.1	2.4/30.9	32894
1993 SQ ₁₃	1998 10 29.4	02 13.94 +12 49.3	17.5	-0.87	- 4.2	0.2/29.2	30899	1987 SH ₇	1998 11 01.3	02 25.65 +51 05.6	15.7	-1.44	- 8.5	16.9/15.6	33066
1993 YF	1998 10 29.4	02 14.11 +09 10.5	17.4	-0.80	- 3.9	1.5/28.3	33072	1997 GL ₈	1998 11 01.4	02 25.65 +16 35.4	17.1	-1.06	- 3.1	0.8/01.9	33077
1987 ST ₁₁	1998 10 29.4	02 14.36 +11 25.1	15.8	-1.05	- 1.0	1.0/29.0	33066	4336 T-3	1998 11 01.4	02 25.68 +03 09.3	18.0	-0.95	- 6.5	4.3/29.3	33130
1982 VB ₄	1998 10 29.5	02 14.77 +10 58.7	17.4	-0.98	- 3.5	0.9/29.0	33065	(9538)	1998 11 01.5	02 26.44 +10 42.9	16.0	-0.90	- 5.2	1.6/31.6	32873
(7830)	1998 10 29.6	02 14.72 +08 27.3	17.7	-0.98	- 5.0	1.8/28.3	33064	1994 PN ₃₇	1998 11 01.5	02 26.47 +05 09.3	17.9	-0.98	- 5.8	3.6/30.2	32940
1996 BL ₃	1998 10 29.6	02 15.13 +06 31.1	18.5	-0.94	- 5.7	2.5/27.8	26753	1981 EW ₂₄	1998 11 01.6	02 26.57 +11 15.4	16.6	-0.84	- 4.6	1.1/31.8	33065
(9670)	1998 10 29.7	02 15.22 +03 27.4	16.8	-0.75	- 6.1	3.1/26.7	32906	1977 DF ₂	1998 11 01.7	02 26.80 +19 21.6	17.2	-0.94	- 2.9	1.7/02.9	33064
1988 GQ	1998 10 29.7	02 15.24 -04 18.9	18.2	-0.86	- 3.8	5.2/24.9	33067	1986 CB ₂	1998 11 01.7	02 26.97 +22 24.9	17.3	-1.07	- 5.3	2.9/03.8	33066
(9642)	1998 10 29.7	02 15.28 +12 24.2	16.0	-1.03	- 3.4	10.8/19.0	32899	1990 OS ₁	1998 11 01.9	02 27.69 +24 18.1	17.9	-1.12	- 2.6	3.3/04.2	28614
1996 HE ₂	1998 10 29.8	02 15.68 +03 50.4	17.5	-0.83	- 1.9	2.9/27.4	33076	4033 T-1	1998 11 02.0	02 28.20 +07 45.9	17.6	-0.95	- 6.3	2.7/31.2	33129
1994 VH	1998 10 29.9	02 15.92 +14 50.6	15.8	-1.04	+ 1.8	0.6/30.2	33073	(7780)	1998 11 02.1	02 28.59 +09 24.2	17.6	-0.88	- 7.7	1.7/31.6	30265
(9520)	1998 10 29.9	02 15.93 +12 27.0	16.8	-1.09	- 3.4	11.7/19.0	32868	1981 EG ₂₀	1998 11 02.1	02 28.69 +24 09.0	18.0	-0.94	- 3.2	3.1/04.6	26918
(7690)	1998 10 29.9	02 16.23 +09 24.9	16.4	-0.97	- 3.1	1.7/28.9	29909	(9643)	1998 11 02.2	02 28.80 -03 51.1	15.6	-0.80	- 2.0	9.5/28.5	32899
1994 VB	1998 10 29.9	02 16.29 +13 36.8	16.4	-1.19	+ 2.5	10.6/19.0	33073	1991 UJ ₂	1998 11 02.2	02 29.16 +16 08.8	16.6	-1.12	- 2.7	0.6/02.6	32926
(7996)	1998 10 30.0	02 16.27 -03 01.1	16.4	-0.82	- 7.2	6.1/25.1	30851	(9634)	1998 11 02.3	02 29.18 +12 12.0	17.7	-0.78	- 6.2	0.8/01.6	32897
(9662)	1998 10 30.0	02 16.37 +06 26.5	16.4	-0.76	- 8.6	2.9/27.8	32904	(7362)	1998 11 02.3	02 29.35 +18 10.7	15.6	-0.93	- 4.4	1.6/03.2	28578
1997 MO	1998 10 30.0	02 16.40 +04 17.0	20.8	-0.74	- 6.1	2.6/27.3	32967	1995 DZ ₃	1998 11 02.3	02 29.52 +42 38.8	16.9	-1.11	- 3.0	9.5/11.0	25341
1978 VM ₇	1998 10 30.0	02 16.47 +18 57.7	17.1	-0.91	- 9.2	2.3/31.7	33065	1989 WH	1998 11 02.4	02 29.65 +15 48.4	16.5	-0.81	- 8.5	0.4/02.7	32921
1996 AN ₂	1998 10 30.0	02 16.55 +02 13.9	17.2	-0.99	- 4.8	4.7/27.0	27315	(7715)	1998 11 02.4	02 29.75 -10 24.9	16.9	-0.84	- 4.8	9.5/26.4	30073
1996 GM ₂₀	1998 10 30.1	02 17.01 +13 14.3	18.3	-0.78	- 3.8	0.1/30.1	33076	6328 P-L	1998 11 02.4	02 29.80 +17 20.3	18.1	-0.96	- 3.7	0.9/03.1	33129
1997 PM ₁	1998 10 30.2	02 17.18 +03 28.7	18.0	-0.76	- 3.9	3.0/27.4	33078	1994 PX ₃₁	1998 11 02.5	02 30.06 +25 36.3	17.6	-1.08	- 5.3	4.2/05.3	33073
1993 FC ₄₆	1998 10 30.2	02 17.20 +14 00.2	18.8	-0.99	- 5.2	0.1/30.3	33071	(7433)	1998 11 02.6	02 30.44 +07 54.5	18.1	-0.92	- 8.0	2.3/31.7	28834
1979 MW ₆	1998 10 30.3	02 17.67 +12 27.7	18.6	-0.86	- 5.3	0.4/30.0	32917	2369 T-3	1998 11 02.6	02 30.44 +19 25.4	18.1	-1.05	- 5.8	1.9/03.8	33130
1995 WP ₈	1998 10 30.3	02 17.69 +09 02.8	15.6	-1.14	- 1.0	2.3/29.4	33074	1986 RB ₁₂	1998 11 02.6	02 30.47 +30 31.8	15.7	-0.83	- 7.0	4.9/07.5	33066
1981 RB ₂	1998 10 30.4	02 17.91 +27 10.7	15.9	-0.96	- 9.1	4.8/04.0	33065	1996 HX ₁₆	1998 11 02.7	02 30.82 +12 57.3	17.4	-0.87	- 3.1	0.7/02.3	32952
1994 PC ₂	1998 10 30.4	02 18.08 +16 00.8	17.5	-1.07	- 4.7	0.8/31.0	32937	1993 VD ₄	1998 11 02.8	02 31.14 +10 39.5	16.2	-0.97	+ 0.4	1.4/02.0	32936
1991 RE ₁₅	1998 10 30.6	02 18.59 +26 55.5	16.4	-1.23	- 3.3	5.8/02.9	33069	4081 T-2	1998 11 02.8	02 31.33 +16 38.6	18.3	-1.05	- 2.0	0.7/03.2	33058
1997 OJ	1998 10 30.6	02 18.68 +13 08.2	18.2	-0.80	- 3.7	0.2/30.4	33077	1991 PM ₁₆	1998 11 02.9	02 31.60 -19 55.8	17.2	-0.96	- 5.3	14.2/24.2	32743
(8048)	1998 10 30.7	02 18.98 +15 55.7	16.4	-0.93	- 1.1	0.7/31.2	30863	1992 OP ₁	1998 11 02.9	02 31.67 +22 48.8	16.4	-0.80	- 8.7	2.5/05.4	33071
2674 P-L	1998 10 30.7	02 19.20 +12 43.4	18.9	-0.93	- 4.1	0.4/30.4	33129	(9590)	1998 11 03.0	02 32.11 +16 41.2	18.8	-0.54	- 1.9	0.3/03.5	32886
1991 PJ ₁₃	1998 10 30.8	02 19.39 +18 39.9	17.2	-1.10	- 4.8	2.1/01.0	33069	(9667)	1998 11 03.1	02 32.35 +13 13.3	16.3	-0.98	- 5.8	0.7/02.7	32905
1981 FP	1998 10 30.9	02 19.91 +11 39.7	19.1	-0.95	- 5.5	0.8/30.3	22697	1973 SR ₁	1998 11 03.1	02 32.36 +14 57.8	19.0	-0.56	- 1.6	0.0/03.1	32437
1995 FM ₃	1998 10 30.9	02 19.95 +12 51.3	18.5	-0.79	- 3.0	0.3/30.7	33074	1992 CG ₃	1998 11 03.1	02 32.39 +06 52.4	16.2	-0.90	- 7.1	3.4/31.9	33070
1994 PQ ₃₂	1998 10 31.0	02 20.38 +09 19.8	18.0	-0.92	- 7.4	1.9/29.7	30092	(9535)	1998 11 03.2	02 32.74 +06 41.5	15.6	-0.97	- 3.7	4.0/01.2	32872

1995 HY ₂	1998 11 03.2	02 33.05 +09 47.7 17.6	-0.79 - 3.8	1.7/01.9	32945
1140 T-3	1998 11 03.4	02 33.77 +22 46.2 17.5	-0.84 - 6.0	2.7/05.6	33130
1996 CE ₁	1998 11 03.4	02 33.77 +23 59.5 16.5	-1.12 - 1.8	4.2/05.4	30784
1992 EW ₁₇	1998 11 03.4	02 33.78 +00 58.0 18.0	-0.85 - 7.1	4.6/30.5	32928
(9314)	1998 11 03.4	02 33.92 +04 46.3 15.7	-0.86 - 5.5	4.8/31.7	32609
(9575)	1998 11 03.5	02 34.01 +10 41.5 17.4	-1.03 - 4.3	1.8/02.5	32883
1980 BA	1998 11 03.5	02 34.24 +02 31.7 16.4	-0.95 - 2.9	5.5/31.5	33065
1998 QN ₉₂	1998 11 03.6	02 34.42 +28 59.3 15.9	-1.08 + 0.6	5.2/06.6	32985
(9693)	1998 11 03.6	02 34.70 +15 24.4 15.8	-1.01 - 2.3	11.6/24.0	32912
4075 P-L	1998 11 03.7	02 34.96 +16 29.3 18.0	-0.99 - 4.5	0.6/04.0	33129
1998 TD ₅	1998 11 03.8	02 35.27 +09 42.6 17.1	-0.98 - 2.4	2.4/02.6	33047
1990 QM	1998 11 03.9	02 35.73 +11 00.3 16.8	-0.99 - 5.1	1.6/02.9	33068
1996 AB ₄	1998 11 03.9	02 35.74 +14 52.6 16.6	-0.98 - 7.3	10.8/15.0	32948
1996 HC ₁₂	1998 11 03.9	02 35.87 +15 13.8 19.7	-0.85 - 4.4	8.0/24.0	32471
1998 TE ₈	1998 11 03.9	02 35.91 +14 10.0 18.2	-1.02 - 9.3	10.8/24.0	33048
1996 FO ₅	1998 11 04.0	02 35.87 +21 17.9 16.8	-1.17 - 0.9	2.5/05.2	33075
1998 TK ₅	1998 11 04.0	02 36.00 +10 59.4 16.8	-1.07 - 1.3	1.8/03.1	33047
1994 PQ ₆	1998 11 04.2	02 36.61 +15 27.9 19.6	-1.06 - 4.8	0.1/04.2	32938
4157 P-L	1998 11 04.2	02 36.69 +19 25.8 16.9	-1.09 - 5.0	1.8/05.2	24764
(7942)	1998 11 04.3	02 37.02 +29 26.6 17.1	-0.86 - 3.8	4.0/08.1	33064
1998 TP ₅	1998 11 04.3	02 37.37 +14 14.5 15.7	-0.98 - 5.8	0.5/04.1	33047
1993 EQ	1998 11 04.5	02 38.02 +21 39.3 16.3	-1.16 - 1.9	2.5/05.9	33071
1994 SZ ₁	1998 11 04.5	02 38.16 +15 12.9 19.9	-1.05 - 3.1	0.1/04.5	32940
1998 TU ₆	1998 11 04.5	02 38.22 +12 22.2 17.9	-0.87 - 3.3	1.1/03.8	33048
(9629)	1998 11 04.6	02 38.22 +18 22.3 16.3	-0.93 - 4.0	1.1/05.3	32896
1992 EP ₁₀	1998 11 04.6	02 38.31 -04 48.2 18.3	-0.86 - 6.4	7.0/29.9	33070
(9586)	1998 11 04.6	02 38.51 +14 15.1 17.3	-0.99 - 5.7	0.5/04.4	32885
1997 GJ ₁₃	1998 11 04.6	02 38.53 +14 12.2 16.8	-1.00 - 6.3	0.6/04.3	32960
1998 TH ₅	1998 11 04.6	02 38.54 +10 35.0 17.1	-0.80 - 3.8	1.8/03.4	33047
4602 P-L	1998 11 04.6	02 38.59 +13 56.3 17.1	-0.81 - 3.9	0.6/04.3	33129
1988 VY	1998 11 04.8	02 39.01 +14 24.1 16.9	-0.84 - 4.6	0.4/04.5	33067
1992 PH ₂	1998 11 04.8	02 39.17 +26 44.7 16.9	-0.86 - 6.1	3.7/08.0	33071
1998 TV ₆	1998 11 04.9	02 39.38 +12 40.2 17.3	-0.73 - 7.2	0.8/04.1	33048
1993 GA ₁	1998 11 04.9	02 39.40 +24 02.4 16.1	-1.16 - 0.8	4.0/06.7	33071
1991 QJ	1998 11 04.9	02 39.83 +05 08.6 16.2	-1.00 - 5.9	4.7/02.4	33069
(7739)	1998 11 05.0	02 40.12 +10 20.8 17.5	-1.01 - 5.4	2.0/03.8	30254
1994 VE ₁	1998 11 05.1	02 40.32 +11 57.3 15.8	-0.91 - 5.1	1.6/04.2	32942
1998 TZ ₁	1998 11 05.1	02 40.32 -00 40.7 17.6	-0.85 - 7.1	5.9/31.5	33046
1993 FW ₇₃	1998 11 05.1	02 40.34 +14 55.0 18.8	-0.98 - 5.9	0.2/05.0	32931
1996 CQ ₁	1998 11 05.1	02 40.47 +27 43.7 16.9	-1.09 - 4.3	5.3/08.2	33075
1990 QB ₅	1998 11 05.2	02 40.91 +10 25.1 15.4	-1.00 - 0.2	2.5/04.2	32922
1993 FS ₆	1998 11 05.3	02 41.37 +13 32.2 15.4	-1.06 - 2.8	0.9/04.9	26564
1990 FK ₁	1998 11 05.4	02 41.47 +03 58.9 17.4	-0.72 - 4.7	3.0/02.3	33068
1998 TC ₆	1998 11 05.4	02 41.80 +10 52.4 17.3	-0.97 - 5.2	2.0/04.3	33048
(9669)	1998 11 05.5	02 42.20 +16 17.0 16.2	-0.80 - 3.8	0.2/05.7	32906
1991 LU ₁	1998 11 05.6	02 42.20 +15 30.4 18.1	-0.80 - 5.2	0.1/05.5	33069
1998 TK ₁₆	1998 11 05.6	02 42.55 +03 04.1 16.5	-0.94 - 5.4	5.3/02.4	33049
1997 MR ₈	1998 11 05.6	02 42.55 -03 44.8 19.7	-0.87 - 3.6	5.7/31.8	30474
1994 PS ₁₀	1998 11 05.6	02 42.55 +20 04.3 17.1	-1.04 - 4.5	1.9/06.7	24748
1996 JS ₅	1998 11 05.7	02 42.61 +11 13.8 18.5	-0.78 - 4.1	1.3/04.6	33076
1981 EW ₃₀	1998 11 05.7	02 43.02 +14 13.3 16.4	-1.05 - 5.2	0.8/05.4	33065

1981 EQ ₄₇	1998 11 05.8	02 43.05 +12 29.0 17.0	-0.94 - 4.2	1.5/05.0	33065
(7935)	1998 11 05.8	02 43.14 +15 56.8 17.9	-0.80 - 3.7	0.0/05.9	33064
1998 TA ₆	1998 11 05.9	02 43.53 +02 56.1 17.1	-0.84 - 7.8	4.5/02.2	33048
1997 MB ₉	1998 11 06.0	02 43.80 +48 09.5 17.1	-1.06 - 4.2	10.0/16.1	33077
1993 BJ ₅	1998 11 06.0	02 43.83 +26 26.9 17.8	-0.69 - 2.8	2.3/08.8	30658
1996 ER ₂	1998 11 06.0	02 43.86 +18 35.8 17.8	-0.99 - 5.5	1.1/06.7	33075
1996 DU ₁	1998 11 06.0	02 44.07 +11 58.3 20.0	-0.99 - 6.5	1.6/05.1	32949
1998 QJ ₉₂	1998 11 06.0	02 44.19 +12 07.1 15.7	-0.92 - 0.7	2.0/05.3	32985
5046 T-3	1998 11 06.1	02 44.26 +04 29.1 17.6	-1.02 - 3.7	4.9/03.4	26577
1994 VA ₂	1998 11 06.1	02 44.54 +01 54.3 16.9	-1.10 + 4.0	6.4/04.1	33073
1991 SM ₂	1998 11 06.2	02 44.79 +22 29.0 16.3	-1.18 - 1.0	2.9/07.6	33070
(7807)	1998 11 06.3	02 45.34 +08 46.2 17.6	-0.73 - 6.1	2.0/04.4	30433
1981 EX ₃₈	1998 11 06.5	02 45.74 +25 16.2 17.7	-1.03 - 6.8	3.5/09.0	33065
(7902)	1998 11 06.5	02 45.83 +11 45.5 17.2	-0.85 - 4.0	1.4/05.5	30645
1993 VV ₄	1998 11 06.5	02 46.19 +05 43.2 16.7	-0.86 - 1.4	3.4/04.3	33072
1214 T-3	1998 11 06.6	02 46.22 +30 45.2 16.3	-0.95 - 3.0	5.1/10.3	33130
1998 TG ₁₆	1998 11 06.6	02 46.48 +11 06.4 17.5	-0.51 - 3.8	1.0/05.3	33049
1991 AK	1998 11 06.6	02 46.59 +19 09.2 16.4	-0.95 - 3.9	1.1/07.4	33068
1054 T-3	1998 11 06.8	02 47.19 +46 03.6 19.2	-2.03 + 5.4	14.9/11.6	19330
1992 EK ₁₄	1998 11 06.8	02 47.29 +22 56.3 15.5	-1.00 - 3.7	3.2/09.0	33070
1981 VN	1998 11 07.0	02 47.95 +18 43.5 15.7	-1.19 + 3.3	1.1/07.4	33065
(9581)	1998 11 07.0	02 48.13 +22 20.5 17.1	-1.17 - 3.6	2.5/08.5	32884
1997 NR ₆	1998 11 07.0	02 48.16 -02 22.7 16.9	-0.82 - 2.5	6.4/02.7	33077
2577 P-L	1998 11 07.1	02 48.55 +16 59.1 17.6	-1.02 - 4.4	0.3/07.4	33129
1986 SC ₂	1998 11 07.1	02 48.58 +18 17.4 16.7	-0.96 - 8.8	0.7/07.8	33066
1996 DL	1998 11 07.2	02 48.71 +08 07.5 17.9	-0.98 - 5.3	3.3/05.3	33075
1988 PL	1998 11 07.2	02 48.87 +14 58.9 16.5	-1.05 - 6.0	0.6/07.0	33067
1991 YL ₁	1998 11 07.2	02 48.96 +17 38.5 17.4	-1.04 - 4.6	0.5/07.6	33070
1994 PM ₂₅	1998 11 07.3	02 48.94 +10 31.0 17.0	-0.97 - 4.5	2.6/05.9	27568
1993 FO ₁₂	1998 11 07.3	02 49.08 +15 20.4 17.6	-1.07 - 2.9	0.3/07.1	32930
1973 SX	1998 11 07.4	02 49.65 +24 36.7 18.7	-0.58 - 1.8	1.6/09.6	32916
1995 BA ₃	1998 11 07.4	02 49.73 +15 04.1 17.0	-0.91 - 3.5	0.4/07.2	33074
(7835)	1998 11 07.7	02 50.75 +14 50.9 18.1	-0.91 - 7.6	0.5/07.3	30440
(9608)	1998 11 07.7	02 50.97 +13 01.2 17.2	-0.82 - 5.4	1.0/06.9	32891
1997 MZ ₂	1998 11 07.7	02 50.97 +20 38.2 18.0	-0.97 - 3.6	1.5/08.8	32967
(9663)	1998 11 07.8	02 51.05 +14 56.4 17.7	-0.94 - 4.1	0.5/07.5	32904
4114 T-1	1998 11 07.8	02 51.17 +13 34.7 18.1	-1.03 - 3.7	1.0/07.2	33129
1992 RO ₃	1998 11 07.8	02 51.23 +16 07.7 18.8	-0.83 - 3.8	0.1/07.8	33071
1988 P-L	1998 11 07.8	02 51.35 +13 50.4 17.7	-1.00 - 5.2	1.0/07.3	33129
2902 EA ₆	1998 11 07.9	02 51.69 +02 41.4 16.7	-0.94 - 3.6	6.1/04.7	33070
(9549)	1998 11 07.9	02 51.71 +19 29.7 15.9	-0.91 - 7.7	1.0/08.8	32876
1995 DQ ₂	1998 11 08.0	02 51.80 +64 54.7 19.2	-2.61 +10.1	18.9/11.4	30292
(7459)	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 52.59 +11 17.3 17.1	-0.88 - 7.6	1.7/06.8	33050
1996 AW ₄	1998 11 08.2	02 52.53 +13 44.6 17.9	-1.04 - 3.6	1.0/07.6	33075
1978 PA ₃	1998 11 08.2	02 52.89 +12 46.2 16.8	-1.04 - 5.3	1.8/07.4	33064
1978 RH ₉	1998 11 08.3	02 53.08 +09 04.7 17.6	-1.06 - 4.9	3.2/06.6	33064
1992 HD ₄	1998 11 08.3	02 53.27 +14 08.7 17.9	-0.91 - 6.2	0.8/07.8	32928
1981 EW ₁₃	1998 11 08.3	02 53.36 +18 45.3 17.5	-1.01 - 4.9	0.8/08.9	33065
1992 HS ₄	1998 11 08.4	02 53.73 +04 18.2 17.5	-0.89 - 2.1	3.9/05.9	33071
2114 T-3	1998 11 08.7	02 54.63 +14 14.9 16.9	-0.81 - 6.4	0.8/08.1	33130

1991 UE ₅	1998 11 08.8	02 55.03 +30 46.1 16.5	-1.09 - 4.9	6.6/12.2	33070
(7743)	1998 11 08.8	02 55.08 -00 59.9 17.1	-0.95 - 5.2	6.2/04.6	30255
1996 HT ₁₆	1998 11 08.8	02 55.28 +14 45.8 17.7	-0.85 - 4.1	0.7/08.4	33076
(9699)	1998 11 08.9	02 55.42 +07 25.6 16.8	-0.89 - 7.4	3.3/06.5	32913
2206 P-L	1998 11 08.9	02 55.62 +11 43.2 17.1	-0.91 - 6.1	1.9/07.7	33128
1988 JW	1998 11 08.9	02 55.70 -01 44.6 18.9	-0.90 - 2.2	5.3/05.0	33067
1993 FG ₈	1998 11 08.9	02 55.80 -04 54.2 16.4	-0.80 - 7.9	10.5/02.6	33071
1991 RK ₂₆	1998 11 09.0	02 55.92 +22 56.3 17.4	-1.23 - 1.4	2.7/10.2	29943
1991 VR ₂	1998 11 09.0	02 55.94 +17 38.6 16.4	-1.62 + 8.3	0.4/09.1	32926
(9559)	1998 11 09.0	02 56.08 +18 05.3 17.1	-0.92 - 4.3	0.4/09.4	32878
1995 FV ₁₄	1998 11 09.0	02 56.11 +19 17.6 17.1	-0.87 - 1.6	0.7/09.6	33074
5211 T-2	1998 11 09.0	02 56.17 +17 23.4 15.2	-0.80 - 8.6	0.2/09.3	33130
1997 GK ₂₁	1998 11 09.0	02 56.21 +14 24.2 18.6	-1.06 - 5.4	0.9/08.5	33077
1987 BS ₁	1998 11 09.1	02 56.23 +36 56.7 16.6	-1.06 - 5.6	8.1/14.5	33066
(9595)	1998 11 09.2	02 56.71 +26 09.8 15.4	-1.00 - 5.5	4.7/11.6	32888
1996 KO ₁	1998 11 09.2	02 56.79 +09 17.9 18.1	-0.96 - 5.1	2.6/07.5	27453
1992 DV ₉	1998 11 09.3	02 57.00 +14 30.7 19.3	-0.97 - 5.9	1.0/08.7	27308
1997 JH ₁₆	1998 11 09.3	02 57.22 +13 03.3 17.7	-0.99 - 6.4	1.5/08.4	33077
1984 WJ ₁	1998 11 09.3	02 57.33 +22 14.1 15.4	-1.24 + 4.9	2.8/10.1	33066
1973 SP ₁	1998 11 09.3	02 57.34 +11 48.9 17.8	-0.53 - 2.4	0.9/08.1	33064
(9425)	1998 11 09.4	02 57.42 +36 31.0 15.5	-1.14 - 0.4	10.3/14.0	32636
1989 EZ ₂	1998 11 09.4	02 57.50 +24 53.5 17.6	-1.08 - 6.4	3.1/11.4	33067
1997 JR	1998 11 09.4	02 57.53 +10 28.8 16.0	-1.25 + 5.1	3.1/08.7	32965
1993 EE	1998 11 09.4	02 57.65 +10 12.7 18.2	-1.04 - 4.5	2.4/08.0	33071
(9431)	1998 11 09.5	02 58.12 +05 36.9 17.0	-0.52 - 4.7	2.2/06.5	32637
4655 P-L	1998 11 09.6	02 58.25 +32 24.7 17.3	-0.64 - 0.9	2.8/13.3	33129
1981 EJ ₂₄	1998 11 09.6	02 58.45 +23 17.7 19.0	-1.09 - 2.6	2.3/11.0	26919
1992 SB ₁	1998 11 09.7	02 58.84 +37 33.4 16.2	-1.11 + 0.1	6.8/14.2	33071
1996 JN ₆	1998 11 10.2	03 00.79 +12 36.3 17.2	-0.86 - 3.2	1.5/09.2	33076
1994 YA ₂	1998 11 10.2	03 01.01 +47 35.6 17.3	-1.47 + 2.2	11.1/16.0	33074
1996 GJ ₄	1998 11 10.3	03 01.01 +06 56.6 17.4	-0.87 - 4.7	3.8/07.9	32952
1986 QJ ₂	1998 11 10.3	03 01.30 +21 45.8 17.7	-0.86 - 2.7	1.3/11.4	33066
1989 CB ₃	1998 11 10.4	03 01.57 +23 11.1 16.4	-1.06 - 6.7	2.6/11.9	33067
1981 QJ ₃	1998 11 10.4	03 01.79 +12 56.2 17.3	-0.84 - 3.5	1.4/09.5	33065
(9567)	1998 11 10.5	03 01.86 +22 11.4 15.9	-1.01 - 3.0	2.5/11.6	32881
1981 EC ₁₄	1998 11 10.5	03 01.92 +23 53.8 19.5	-1.05 - 4.2	2.4/12.0	22270
3347 T-2	1998 11 10.5	03 02.05 +13 34.6 16.8	-1.06 - 3.4	1.4/09.8	32537
1973 SA ₂	1998 11 10.5	03 02.16 +13 14.5 17.7	-0.55 - 1.7	0.7/09.6	33064
(9609)	1998 11 10.5	03 02.21 +20 41.5 16.0	-0.84 - 6.3	1.1/11.5	32891
1995 YD ₁	1998 11 10.7	03 02.74 +02 52.2 16.9	-1.05 - 1.7	5.9/07.9	33075
1998 UE ₇	1998 11 10.7	03 03.05 +07 59.8 17.5	-0.81 -12.5	4.2/08.0	33050
(7487)	1998 11 10.8	03 03.06 -04 00.3 15.3	-0.94 + 1.2	9.0/06.9	29087
1998 QB ₉₃	1998 11 10.8	03 03.15 +11 06.4 16.2	-0.92 - 2.2	2.9/09.6	33089
1997 JJ ₁₄	1998 11 10.8	03 03.23 +13 26.8 20.3	-1.03 - 4.4	1.4/10.0	30293
1990 RT ₈	1998 11 10.8	03 03.26 +12 06.2 18.8	-1.01 - 4.4	2.1/09.7	27710
1002 T-2	1998 11 10.8	03 03.38 +19 18.3 17.3	-1.06 - 3.5	0.9/11.3	24236
1998 UB ₈	1998 11 10.9	03 03.74 +17 07.8 17.3	-0.99 - 3.0	0.1/10.9	33051
1982 UC ₁₁	1998 11 10.9	03 03.82 +19 07.9 16.3	-0.91 - 6.3	0.8/11.4	33065
1981 EK ₁₇	1998 11 11.0	03 04.11 +13 50.7 17.5	-0.96 - 6.0	1.3/10.2	32917
1993 GA	1998 11 11.2	03 04.61 +23 36.7 18.8	-1.13 - 2.3	2.3/12.5	24231
1993 FV ₂₇	1998 11 11.2	03 05.12 +20 19.6 17.0	-1.09 - 4.8	1.2/11.9	33071

(7726)	1998 11 11.3	03 05.12 +26 51.1 17.1	-1.20 - 3.8	3.6/13.4	30251
1988 VP ₃	1998 11 11.3	03 05.44 +20 44.6 16.4	-1.17 + 0.3	1.6/11.9	33067
1992 AO ₂	1998 11 11.3	03 05.45 +04 06.7 17.8	-0.98 - 3.0	4.7/08.5	28886
1998 QK ₉₃	1998 11 11.4	03 05.44 +29 21.4 16.0	-1.20 + 2.1	4.9/13.3	33089
(9542)	1998 11 11.4	03 05.48 +17 18.0 15.4	-1.14 + 0.4	0.1/11.4	32874
1164 T-3	1998 11 11.5	03 05.90 +21 39.9 18.3	-0.84 - 6.4	1.3/12.6	33130
1990 EN ₄	1998 11 11.5	03 06.05 +29 25.4 17.7	-0.95 - 2.7	3.8/14.2	33068
1998 UQ ₁₅	1998 11 11.5	03 06.20 +13 43.0 16.6	-0.92 - 2.5	1.4/10.8	33051
1996 OO	1998 11 11.7	03 06.94 +18 13.9 18.0	-0.64 - 4.1	0.2/11.9	33076
1989 TB ₅	1998 11 11.8	03 07.25 +08 08.7 17.8	-0.88 - 4.5	3.2/09.7	28613
1997 JH ₁₈	1998 11 11.8	03 07.53 +09 35.2 18.6	-0.97 - 3.2	2.8/10.3	33077
1987 DF ₆	1998 11 11.9	03 07.79 +36 49.5 17.4	-1.10 - 2.8	6.1/16.3	33066
1998 QP ₉₈	1998 11 12.0	03 07.87 +23 57.7 15.5	-0.89 - 9.3	3.1/14.0	32987
1997 MD ₈	1998 11 12.0	03 07.95 +16 04.6 17.5	-1.03 - 4.7	0.6/11.7	33077
1989 CS ₂	1998 11 12.0	03 08.25 +11 55.2 17.1	-0.99 - 6.4	2.2/10.7	33067
1981 ES ₂₈	1998 11 12.1	03 08.31 +25 07.8 18.4	-1.14 - 2.0	3.1/13.6	26920
(7817)	1998 11 12.1	03 08.49 +16 47.3 16.6	-0.91 - 3.6	0.3/12.0	30435
1989 AT	1998 11 12.1	03 08.61 +00 25.5 16.5	-0.87 - 0.4	5.9/08.8	33067
1998 UZ ₇	1998 11 12.2	03 08.71 +06 42.1 16.9	-0.71 -13.3	5.0/08.6	33051
6591 P-L	1998 11 12.2	03 09.11 +22 44.7 17.9	-0.57 - 1.5	0.9/13.5	33129
1990 QJ ₄	1998 11 12.3	03 09.10 +13 47.2 17.7	-1.02 - 4.3	1.4/11.5	33068
1998 UT ₁₅	1998 11 12.3	03 09.37 +14 47.6 15.5	-0.80 - 7.5	0.9/11.6	33051
1992 FV ₁	1998 11 12.4	03 09.71 +18 29.2 16.5	-1.02 - 1.6	0.3/12.6	33070
1996 GL ₁	1998 11 12.4	03 09.81 +20 00.4 16.3	-1.16 + 0.1	1.1/12.8	33075
1994 RV	1998 11 12.4	03 09.87 +27 06.8 16.7	-1.13 - 3.9	3.8/14.5	33073
1991 RS ₁₃	1998 11 12.5	03 10.00 +24 17.0 17.3	-1.14 - 5.7	2.6/14.0	26398
1981 EY ₁₉	1998 11 12.5	03 10.21 +18 35.0 17.3	-0.89 - 3.8	0.3/12.8	33065
1997 OV ₂	1998 11 12.5	03 10.34 +31 06.9 18.1	-0.99 - 4.7	4.4/15.7	33077
(7901)	1998 11 12.6	03 10.45 +15 38.6 18.0	-0.95 - 3.8	0.7/12.2	30645
1997 QU ₁	1998 11 12.7	03 10.76 +14 16.1 18.3	-0.86 - 3.7	1.1/11.9	32968
1993 YD	1998 11 12.7	03 10.78 -00 06.8 16.2	-0.82 - 0.6	5.3/09.2	27568
1989 SW ₈	1998 11 12.7	03 10.90 +00 18.4 16.3	-0.80 - 7.8	7.3/08.1	33067
1996 BL ₂	1998 11 12.9	03 11.67 +17 49.3 15.9	-0.95 - 7.3	0.0/12.9	33075
1993 FZ ₆	1998 11 13.0	03 11.94 +16 02.5 17.9	-1.06 - 3.0	0.7/12.6	33071
1995 DZ ₁₁	1998 11 13.0	03 12.37 +13 23.2 17.4	-0.86 - 3.4	1.5/12.1	33074
(9566)	1998 11 13.2	03 12.95 +19 08.6 15.7	-1.05 - 6.6	11.4/04.0	32880
2079 P-L	1998 11 13.2	03 12.96 +25 40.3 16.9	-0.97 - 3.0	2.8/14.9	33128
1987 WT ₁	1998 11 13.3	03 13.48 +13 05.5 17.4	-0.82 - 2.4	1.5/12.4	33066
1990 MR	1998 11 13.4	03 13.59 +21 14.0 18.2	-1.05 - 6.2	1.1/14.2	33068
(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 17.0	-1.03 - 4.9	2.1/14.5	33065
1979 MS ₇	1998 11 13.4	03 13.99 +20 39.0 18.9	-0.93 - 5.3	1.0/14.1	30779
1998 QN ₆₀	1998 11 13.5	03 14.15 +31 12.1 16.5	-1.24 + 2.3	5.9/15.6	33085
1990 WR ₂	1998 11 13.5	03 14.33 +04 33.4 15.3	-0.96 + 1.9	6.7/11.4	32742
1984 SA	1998 11 13.6	03 14.39 +22 29.7 15.9	-1.08 - 8.1	2.0/14.7	33065
1995 CN	1998 11 13.6	03 14.47 +06 13.2 18.4	-0.90 - 2.2	4.5/11.3	28075
1998 QQ ₉₃	1998 11 13.6	03 14.75 +15 07.1 14.8	-1.13 + 3.6	1.3/13.3	33089
3064 T-1	1998 11 13.7	03 15.23 +18 23.5 18.0	-1.07 - 4.2	9.3/25.0	33129
1991 GA ₆	1998 11 13.8	03 15.19 +19 15.5 17.1	-0.89 - 3.6	0.4/14.1	33069
1998 UU ₁₈	1998 11 13.8	03 15.21 +16 56.9 16.6	-0.94 - 7.6	12.7/04.0	33052
1998 QO ₆₀	1998 11 13.9	03 15.70 +30 49.8 17.6	-1.12 - 1.5	4.2/16.4	33085

(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 17.6	-1.04 - 0.9	0.4/13.8	33130
1981 UU ₂₉	1998 11 14.0	03 16.11 +18 44.2 17.3	-1.06 - 5.1	0.3/14.2	33065
(9154)	1998 11 14.0	03 16.16 +31 39.9 15.8	-1.02 - 0.9	4.8/16.7	32413
1997 NG ₃	1998 11 14.1	03 16.65 +02 19.0 16.8	-0.80 - 3.8	5.1/10.6	33077
(9558)	1998 11 14.1	03 16.90 +15 28.5 16.4	-0.85 - 2.3	0.9/13.7	32878
1993 DG ₂	1998 11 14.2	03 16.86 +06 51.6 17.0	-1.07 - 3.6	4.5/11.9	33071
1980 FH ₁	1998 11 14.2	03 16.98 +35 25.7 17.3	-1.05 - 1.6	5.5/17.7	33065
1998 UP ₆	1998 11 14.3	03 17.26 +33 54.7 16.0	-1.37 + 1.8	6.1/16.8	33050
1992 EP ₇	1998 11 14.3	03 17.35 -02 55.0 18.8	-0.91 - 2.5	6.9/10.2	30471
1987 SO ₅	1998 11 14.4	03 17.64 +29 18.5 16.4	-0.96 - 1.9	3.6/16.6	22698
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 17.70 +39 38.1 17.1	-0.67 - 4.0	4.2/20.1	30976
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 16.0	-1.18 - 4.1	4.6/16.6	33070
1998 UF ₁₈	1998 11 14.5	03 18.41 +05 26.3 17.9	-0.98 - 5.5	5.3/11.7	33051
1994 AC ₃	1998 11 14.5	03 18.45 +18 35.5 17.0	-0.84 - 3.0	0.1/14.6	32937
(7641)	1998 11 14.6	03 18.60 +25 44.3 16.1	-0.59 - 5.9	1.4/16.6	32737
1997 SR ₈	1998 11 14.6	03 18.82 +24 43.3 18.2	-0.87 - 2.4	1.9/16.0	33078
(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
6605 P-L	1998 11 14.7	03 19.04 +11 18.0 16.3	-0.89 - 3.7	3.2/13.3	23986
1996 RH ₁₀	1998 11 14.8	03 19.39 -02 41.8 19.5	-0.51 - 2.4	3.8/09.8	31545
(9592)	1998 11 14.8	03 19.55 +18 18.6 16.6	-0.90 - 3.9	0.0/14.8	32887
1975 SB ₁	1998 11 14.8	03 19.62 +23 34.5 17.2	-0.92 - 0.7	1.6/15.8	33064
1997 HM ₁₀	1998 11 14.8	03 19.76 +16 54.7 19.8	-1.04 - 4.5	0.5/14.6	29936
1996 HC ₁	1998 11 14.9	03 19.90 +16 29.1 16.5	-1.12 + 1.5	0.7/14.7	33076
1989 SK ₁	1998 11 15.0	03 20.44 +17 44.4 17.9	-1.03 - 1.6	0.3/14.9	32920
1981 EE ₁₉	1998 11 15.1	03 20.60 +17 05.3 18.1	-1.00 - 4.3	0.4/14.8	33065
(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 19.5	-0.89 - 6.3	3.2/13.0	33076
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 17.5	-1.12 - 1.9	0.9/14.9	33130
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 16.6	-0.90 - 7.6	4.6/12.7	33077
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 17.0	-1.00 - 1.0	0.3/15.7	32919
1976 YF ₃	1998 11 15.6	03 22.82 +24 33.9 16.0	-0.84 - 6.7	1.8/17.1	33064
1994 WJ	1998 11 15.6	03 22.95 +18 27.2 15.6	-1.04 + 1.2	0.0/15.7	33073
1992 EZ ₂₈	1998 11 15.7	03 23.08 +00 01.9 18.3	-0.89 - 4.8	6.1/11.6	32928
1994 HB	1998 11 15.8	03 23.84 +15 57.2 19.0	-1.16 - 5.0	1.2/15.4	29945
(7741)	1998 11 15.9	03 23.81 -05 28.0 15.6	-0.88 - 5.7	11.0/10.2	30255
1991 EL	1998 11 15.9	03 23.81 +38 16.2 18.9	-0.61 - 3.2	3.3/20.8	18437
1986 QR ₁	1998 11 15.9	03 24.22 +25 06.5 17.3	-1.10 - 3.1	2.4/17.2	33066
1993 MG ₁	1998 11 16.0	03 24.24 +34 06.6 17.6	-1.13 - 7.2	5.0/19.9	33072
1981 EF ₂	1998 11 16.2	03 25.40 +28 46.8 16.7	-1.09 - 4.8	3.8/18.4	33065
1998 QS ₉₈	1998 11 16.3	03 25.45 +18 05.8 15.3	-1.18 - 1.6	0.3/16.2	33089
(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	32968
1996 FJ ₅	1998 11 16.4	03 25.95 +38 17.1 15.5	-1.33 + 2.4	8.2/19.3	33075
1994 SS ₉	1998 11 16.4	03 26.00 +17 02.8 18.9	-1.07 - 3.9	0.7/16.1	32517

1990 RS ₆	1998 11 16.4	03 26.03 +28 23.0 17.8	-1.15 - 2.7	3.7/18.2	33068
3087 P-L	1998 11 16.4	03 26.11 +24 36.2 16.0	-0.87 - 5.5	1.9/17.8	33129
4812 P-L	1998 11 16.4	03 26.13 +18 35.7 17.7	-0.86 - 2.7	0.1/16.4	25224
(9532)	1998 11 16.5	03 26.30 +17 52.8 15.7	-0.96 - 7.9	0.3/16.3	32871
(9584)	1998 11 16.5	03 26.79 +27 55.1 16.0	-1.08 - 7.0	4.1/19.0	32885
1990 QL ₃	1998 11 16.6	03 27.05 +27 46.7 17.1	-1.15 - 3.0	3.5/18.4	33068
1998 UC ₁	1998 11 16.7	03 27.15 +06 38.7 17.4	-0.97 - 2.9	5.9/14.4	33050
1987 UA ₁	1998 11 16.7	03 27.38 +19 27.5 15.0	-0.98 -10.9	0.3/16.9	33066
4817 P-L	1998 11 16.8	03 27.64 +08 17.8 18.3	-0.93 - 6.1	4.6/14.5	15904
1997 VV ₁	1998 11 16.9	03 28.16 +22 23.6 17.7	-0.61 - 1.6	0.7/17.7	33078
1997 HT ₁₁	1998 11 17.0	03 28.37 +21 24.1 19.5	-1.13 - 2.6	0.9/17.5	30691
1993 OH ₁₂	1998 11 17.0	03 28.39 +20 09.3 17.5	-0.99 - 4.6	0.5/17.3	33072
1981 EV ₄₅	1998 11 17.0	03 28.45 +22 16.1 20.0	-0.90 - 3.5	1.0/17.7	20811
1994 QA	1998 11 17.1	03 28.80 +06 18.6 17.2	-1.27 + 3.4	4.6/15.6	33073
1993 TD ₁₇	1998 11 17.1	03 29.03 +17 22.4 18.7	-0.93 - 2.8	0.5/16.9	32934
1989 AN ₅	1998 11 17.2	03 29.22 +03 18.0 17.8	-0.83 - 1.8	5.5/14.2	30686
1993 FM ₁₄	1998 11 17.2	03 29.51 +21 38.3 15.5	-1.20 - 0.1	1.2/17.7	28616
(9552)	1998 11 17.3	03 29.63 +06 42.3 16.8	-0.73 - 4.1	3.7/14.6	32876
1981 EP ₉	1998 11 17.4	03 30.02 +19 08.6 17.5	-0.97 - 6.8	0.1/17.4	26916
1994 YC	1998 11 17.4	03 30.12 +27 13.5 17.2	-1.05 - 3.6	3.2/19.0	30455
6540 P-L	1998 11 17.5	03 30.62 +25 11.8 17.8	-0.59 - 1.1	1.2/18.8	33129
(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
1994 YX ₁	1998 11 17.7	03 31.35 +22 25.3 17.3	-0.97 - 2.6	1.1/18.4	33074
1992 DZ ₂	1998 11 17.8	03 31.99 +19 10.8 16.5	-1.05 - 3.0	0.0/17.9	33070
1990 VK ₄	1998 11 17.9	03 32.25 +08 37.9 17.2	-0.92 - 2.5	4.9/16.0	33068
(7716)	1998 11 17.9	03 32.51 +10 41.2 15.9	-0.95 - 6.6	3.9/16.1	30073
2228 P-L	1998 11 17.9	03 32.51 +20 15.8 19.3	-1.05 - 5.1	0.4/18.2	25336
1981 EE ₄₈	1998 11 18.0	03 32.58 +06 14.0 21.2	-0.82 - 4.7	3.7/15.2	26923
2078 T-3	1998 11 18.0	03 32.81 +29 59.4 17.1	-1.08 - 2.6	3.6/20.1	30696
1997 TM ₂	1998 11 18.1	03 33.02 +24 08.5 19.5	-0.59 - 1.8	1.0/19.2	32969
1996 GU ₈	1998 11 18.3	03 33.73 +16 52.2 17.8	-0.96 - 2.1	0.8/17.9	33075
(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 11.2 16.2	-0.93 - 1.7	11.0/13.3	30289
5030 T-2	1998 11 18.6	03 34.99 +30 35.1 18.4	-0.63 - 2.9	2.4/21.1	15258
1996 EV	1998 11 18.6	03 35.16 -03 25.0 16.9	-0.91 - 5.1	10.4/13.5	28890
2172 T-1	1998 11 18.6	03 35.44 +19 14.6 17.4	-1.20 - 2.8	10.6/09.0	33129
1991 RA ₅	1998 11 18.7	03 35.43 +26 06.0 17.3	-1.17 - 3.0	3.1/19.9	33069
1991 VG ₃	1998 11 18.9	03 36.22 +03 37.0 16.3	-0.92 -23.6	7.2/13.4	33070
(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
1995 GO ₇	1998 11 18.9	03 36.55 +19 55.2 16.5	-0.85 - 2.4	7.0/30.0	33074
1990 RR ₂	1998 11 18.9	03 36.59 +11 06.9 15.3	-0.95 - 5.9	3.6/17.2	33068
1994 RJ ₁₁	1998 11 18.9	03 36.68 +30 45.5 16.2	-1.20 - 2.8	4.9/21.1	33073
1992 JB ₂	1998 11 18.9	03 36.71 +13 46.6 15.2	-0.90 - 7.7	2.1/17.7	33071
1994 XP	1998 11 19.0	03 36.93 +16 45.5 15.0	-0.90 - 8.1	1.2/18.4	33074
1989 GC ₁	1998 11 19.1	03 37.22 +23 32.3 17.4	-1.07 - 4.4	1.6/19.9	33067
1973 SS	1998 11 19.2	03 37.77 +16 43.1 18.0	-0.57 - 1.6	0.5/18.7	33064
(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 18.6	-1.08 - 2.6	0.6/19.7	33068
1985 PE ₁	1998 11 19.5	03 38.90 +25 11.1 16.6	-1.26 - 5.0	2.6/20.6	33066
1998 UH ₈	1998 11 19.5	03 39.01 +24 27.7 16.3	-1.31 + 3.7	2.4/20.1	33051
(7852)	1998 11 19.5	03 39.22 +16 16.3 16.7	-1.06 - 1.9	1.3/19.1	30444
1997 NZ ₂	1998 11 19.6	03 39.13 +18 53.9 18.8	-0.98 - 1.9	0.2/19.5	30692
1996 CL ₇	1998 11 19.6	03 39.26 +38 13.6 17.1	-1.28 - 1.3	9.0/22.8	30784
1986 QP ₂	1998 11 19.6	03 39.31 +16 11.1 17.8	-0.85 - 2.6	1.0/19.0	33066
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
1994 ST ₇	1998 11 19.7	03 39.63 +15 14.0 18.2	-1.06 - 3.7	1.6/18.9	32668
(7687)	1998 11 19.7	03 39.97 +13 22.9 16.9	-1.06 - 5.9	2.5/18.5	29908
3306 T-1	1998 11 19.8	03 40.00 +15 38.1 18.0	-1.07 - 3.8	1.5/19.1	33129
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
1994 UB ₁	1998 11 20.0	03 40.86 +24 40.2 17.1	-1.17 - 0.6	1.9/20.8	33073
(7400)	1998 11 20.0	03 40.87 +16 36.1 16.9	-0.88 - 3.1	1.0/19.5	28826
1985 SX ₂	1998 11 20.0	03 41.13 +26 16.5 15.9	-1.02 - 3.4	2.8/21.3	33066
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 17.7	-0.86 - 1.2	1.2/19.4	33074
1996 HR ₂₁	1998 11 20.1	03 41.55 +18 06.4 18.3	-0.82 - 2.8	0.4/19.9	33076
(7965)	1998 11 20.1	03 41.63 +53 43.7 16.9	-1.51 - 4.0	9.9/27.8	30750
1973 SO ₁	1998 11 20.2	03 41.72 +10 08.3 16.9	-0.55 - 2.4	2.0/18.3	33064
1997 PG ₃	1998 11 20.2	03 41.77 +15 19.5 18.1	-0.83 - 2.7	1.4/19.4	33078
2151 T-3	1998 11 20.2	03 41.86 +34 09.8 17.6	-1.29 - 1.3	5.9/22.6	23681
1994 UC ₁	1998 11 20.3	03 42.38 +20 42.7 16.3	-1.06 - 2.9	0.4/20.5	33073
(9564)	1998 11 20.3	03 42.49 -09 04.8 17.1	-1.03 - 7.0	11.5/14.5	32880
1994 PE ₃₃	1998 11 20.3	03 42.51 +25 23.5 17.1	-1.16 - 4.6	2.3/21.4	26566
1996 BE ₂	1998 11 20.4	03 42.82 +14 25.0 16.2	-1.15 - 1.0	2.2/19.7	33075
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
1993 FH ₇	1998 11 20.5	03 42.99 +16 43.2 17.8	-1.09 - 2.4	1.1/20.0	33071
1994 PW ₂₇	1998 11 20.6	03 43.68 +25 02.8 16.7	-1.16 - 2.9	2.2/21.6	33073
1995 EF	1998 11 20.6	03 43.74 +07 30.3 17.8	-0.89 - 2.2	3.9/18.5	33074
1979 MZ ₅	1998 11 20.7	03 43.85 +20 34.3 19.6	-0.94 - 3.8	0.3/20.9	30778
1991 BV ₁	1998 11 20.7	03 43.91 +08 02.0 17.8	-0.87 - 3.1	3.4/18.6	31006
1996 CG ₉	1998 11 20.7	03 44.03 +10 44.8 16.3	-1.00 - 6.2	4.1/18.9	33075
1992 UM ₉	1998 11 20.8	03 44.39 +12 08.3 17.3	-0.81 - 3.8	2.5/19.4	33071
5049 T-2	1998 11 20.8	03 44.51 +29 05.1 19.2	-1.15 - 5.9	3.5/22.7	30467
3495 T-3	1998 11 20.9	03 44.79 +21 39.8 19.1	-1.09 - 2.4	0.7/21.3	30089
1996 GJ ₁₉	1998 11 21.0	03 45.00 +17 25.3 18.3	-0.89 - 3.2	0.8/20.6	33076
(8084)	1998 11 21.0	03 45.12 +19 01.6 17.1	-0.91 - 2.3	0.3/20.9	33064
(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
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 19.2	-0.86 - 2.2	0.4/21.1	33076
1996 DQ ₂	1998 11 21.3	03 46.25 +14 30.8 17.5	-1.01 - 1.7	2.0/20.5	33075
1989 NE ₁	1998 11 21.3	03 46.36 +27 26.5 17.8	-1.19 + 0.1	2.6/22.4	33067
1990 ST ₁₅	1998 11 21.3	03 46.51 +29 43.8 16.4	-1.15 - 4.1	3.7/23.2	32513
1994 PU ₃₂	1998 11 21.3	03 46.64 +16 08.2 17.2	-1.06 - 5.3	1.5/20.7	25083
(7812)	1998 11 21.4	03 47.14 +16 33.2 15.5	-0.84 -13.3	1.5/20.6	30434

1991 CC ₃	1998 11 21.5	03 47.21 +14 11.1 17.7	-0.91 - 3.6	1.8/20.5	33069
1981 ED ₁₈	1998 11 21.5	03 47.45 +17 05.4 17.4	-0.90 - 3.4	0.9/21.1	26918
3097 P-L	1998 11 21.5	03 47.55 +28 30.3 18.3	-0.99 - 4.1	2.7/23.3	15423
1996 RJ	1998 11 21.6	03 47.64 +33 10.1 16.8	-0.64 - 5.0	2.5/24.7	33076
1994 PE ₂₉	1998 11 21.7	03 48.05 +18 40.4 18.0	-1.03 - 1.9	0.7/21.5	32939
1993 VL ₃	1998 11 21.7	03 48.07 +17 05.6 17.3	-0.91 - 1.9	1.0/21.3	33072
1994 UB	1998 11 21.7	03 48.21 +04 43.2 18.5	-1.04 - 3.1	5.7/19.3	33073
1989 SY ₁₃	1998 11 21.8	03 48.71 +36 11.6 17.7	-1.10 - 5.1	5.8/25.1	29134
(7799)	1998 11 21.9	03 48.87 +21 02.0 16.3	-1.16 - 1.4	0.4/22.1	30270
4052 T-3	1998 11 21.9	03 49.19 +21 07.2 17.2	-1.20 0.0	0.4/22.1	24758
1992 AM	1998 11 22.0	03 49.22 -19 09.0 16.2	-1.21 +18.5	21.5/26.3	30079
1985 UO ₃	1998 11 22.1	03 49.86 +39 49.9 16.6	-1.45 + 4.5	7.5/24.1	33066
1084 T-3	1998 11 22.2	03 50.08 +22 07.0 17.5	-0.88 - 5.8	0.7/22.6	31411
1981 EJ ₃₅	1998 11 22.2	03 50.27 +11 08.1 19.4	-1.01 - 4.4	4.0/20.6	22271
1169 T-2	1998 11 22.2	03 50.29 +23 23.2 18.3	-0.94 - 2.7	1.0/22.8	22701
1998 SW ₂₂	1998 11 22.4	03 50.88 +00 02.0 17.5	-0.87 - 3.2	7.9/18.7	33019
1990 QN ₇	1998 11 22.5	03 51.37 +21 48.3 18.1	-1.10 - 2.5	0.6/22.8	24228
1989 UX ₇	1998 11 22.5	03 51.41 +14 53.2 15.3	-0.82 -13.4	2.5/21.1	33067
9072 P-L	1998 11 22.5	03 51.56 +16 04.5 18.5	-0.90 - 4.4	1.3/21.8	27321
(9610)	1998 11 22.5	03 51.69 +16 38.8 17.0	-0.89 - 2.0	1.3/22.0	32891
1995 EQ ₁	1998 11 22.6	03 51.70 +19 13.6 17.7	-0.85 - 2.2	0.3/22.4	33074
1997 SJ ₄	1998 11 22.6	03 52.12 +19 20.6 16.4	-0.59 - 2.6	0.2/22.5	33078
1984 SO ₄	1998 11 22.7	03 52.12 +26 47.9 15.4	-1.15 - 5.6	2.9/24.0	32510
1973 SN ₁	1998 11 22.7	03 52.25 +16 36.6 18.8	-0.56 - 1.4	0.7/22.1	33064
1981 ED ₃₀	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
3178 T-2	1998 11 22.7	03 52.33 +22 47.9 17.6	-0.96 - 1.9	0.9/23.2	27323
1994 PZ ₂₉	1998 11 22.7	03 52.60 +19 51.1 16.5	-1.09 - 5.6	0.2/22.7	25083
1991 TO	1998 11 22.8	03 52.60 +11 19.8 17.7	-1.08 - 1.3	4.1/21.5	30449
1988 VR ₂	1998 11 22.8	03 52.65 +08 06.0 16.1	-0.99 + 4.2	5.4/21.6	33067
1990 XZ	1998 11 22.8	03 52.89 +27 47.0 14.8	-1.96 +15.8	4.1/22.7	18635
1994 SH ₁₁	1998 11 22.9	03 53.37 +27 30.9 17.1	-1.20 - 1.1	2.9/24.0	28854
(9515)	1998 11 22.9	03 53.47 +47 06.5 16.2	-1.80 + 5.1	11.3/26.0	32867
1994 YD ₁	1998 11 23.0	03 53.39 +22 22.8 16.8	-0.98 - 3.7	0.9/23.4	33074
1989 OL	1998 11 23.0	03 53.43 +25 33.3 17.6	-1.17 + 1.0	1.9/23.7	28884
1994 WM	1998 11 23.0	03 53.50 +20 12.3 16.9	-1.08 - 0.2	0.0/23.0	33073
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 16.8	-0.93 - 4.5	3.0/21.5	33069
4046 T-3	1998 11 23.1	03 54.13 +13 27.9 17.7	-1.11 - 1.9	2.6/22.2	30294
1994 WP ₁	1998 11 23.1	03 54.20 +24 26.4 17.5	-1.03 - 4.6	1.8/23.9	30276
2076 P-L	1998 11 23.1	03 54.20 +13 44.9 15.6	-0.94 - 8.0	3.4/21.8	33128
3020 T-2	1998 11 23.1	03 54.28 +39 39.7 17.4	-1.21 - 0.4	6.9/26.4	22972
1997 TB ₁₂	1998 11 23.2	03 54.24 +15 45.6 18.5	-0.55 - 2.8	0.9/22.3	32969
1996 DE	1998 11 23.2	03 54.51 -06 22.5 17.2	-0.92 - 1.0	10.0/19.3	30473
1993 DF ₂	1998 11 23.3	03 54.68 +12 07.0 16.9	-1.08 - 3.3	3.3/22.0	24393
(9565)	1998 11 23.3	03 54.98 +15 22.7 16.2	-1.04 - 6.1	2.1/22.4	32880
1988 CU ₁	1998 11 23.3	03 54.99 +23 04.2 17.6	-1.09 - 3.0	1.0/23.8	30469
1978 YM	1998 11 23.4	03 55.38 +34 14.1 16.0	-1.29 - 0.7	6.7/25.5	33065
1993 TV ₁₂	1998 11 23.4	03 55.48 +25 41.8 17.0	-1.08 + 1.5	2.1/24.0	32933
1992 LE	1998 11 23.4	03 55.52 -01 01.4 18.3	-0.86 - 2.0	6.3/20.2	20826
1993 TL ₁₇	1998 11 23.5	03 55.66 +07 59.0 17.6	-0.90 - 4.4	4.1/21.2	31538

(7885)	1998 11 23.5	03 55.76 -14 58.4 19.5	-1.02 - 0.3	11.2/17.7	30640
1986 JD	1998 11 23.5	03 55.76 +10 31.3 17.7	-1.07 - 0.8	3.5/22.2	33066
1996 JJ ₁	1998 11 23.6	03 56.08 +07 52.1 17.8	-0.83 - 3.5	4.0/21.4	30690
1991 XL	1998 11 23.6	03 56.13 +17 44.1 16.9	-1.14 - 1.1	1.1/23.3	32661
(7349)	1998 11 23.6	03 56.31 +16 11.6 17.0	-0.96 - 2.2	1.6/23.0	28575
1993 FU ₁₇	1998 11 23.8	03 56.90 +24 20.1 15.6	-1.21 + 2.5	2.0/24.2	33071
1984 QU	1998 11 23.8	03 57.02 +31 24.6 16.3	-1.15 - 2.0	5.8/25.7	33065
1982 JD ₁	1998 11 23.8	03 57.16 +14 44.8 17.8	-1.01 - 5.4	2.0/22.8	33065
5111 T-3	1998 11 23.9	03 57.21 +26 14.6 17.9	-1.21 + 2.5	2.2/24.5	16040
(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
(9580)	1998 11 23.9	03 57.56 +27 22.8 15.7	-1.04 - 2.8	2.8/25.1	32884
1988 RQ ₂	1998 11 24.0	03 57.63 +35 59.2 16.5	-1.06 - 3.7	5.1/26.8	33067
1989 WD ₃	1998 11 24.0	03 57.75 +20 32.5 16.6	-0.94 - 5.2	0.0/24.0	18632
1973 SJ ₁	1998 11 24.0	03 57.89 +17 27.8 17.8	-0.68 - 2.2	0.7/23.5	30892
(7695)	1998 11 24.0	03 58.00 +28 43.1 15.3	-1.90 +19.8	4.5/23.6	30068
1997 OZ	1998 11 24.0	03 58.01 +18 59.3 18.2	-0.89 - 1.9	0.5/23.8	30674
(9617)	1998 11 24.0	03 58.04 +08 35.0 16.1	-1.02 - 4.2	5.7/22.0	32893
1997 NZ	1998 11 24.0	03 58.11 +33 04.3 16.5	-1.09 - 5.7	4.2/26.6	33077
1987 YU ₁	1998 11 24.1	03 58.18 +14 00.2 16.9	-0.57 - 4.6	1.4/22.8	33066
1995 YN ₃	1998 11 24.3	03 59.02 +26 38.1 17.7	-1.16 - 5.2	2.3/25.4	30689
1990 VG ₆	1998 11 24.4	03 59.40 +07 29.0 16.9	-0.96 - 3.7	5.0/22.1	33068
2078 T-2	1998 11 24.4	03 59.49 +13 21.0 17.1	-1.03 - 4.4	3.4/23.2	33130
1992 RM ₇	1998 11 24.6	04 00.21 +20 22.4 17.2	-0.90 - 1.6	0.1/24.6	30688
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 18.4	-0.92 - 4.5	2.1/26.3	33078
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 TS ₁	1998 11 25.0	04 02.10 +21 37.8 16.6	-0.88 - 5.6	0.3/25.2	32510
1995 YY ₁	1998 11 25.0	04 02.16 +13 33.9 17.3	-1.11 - 1.4	2.7/24.1	31588
1997 QS	1998 11 25.1	04 02.28 +22 43.1 19.0	-0.93 - 2.0	0.7/25.4	30789
1997 RB ₇	1998 11 25.1	04 02.46 +14 04.7 16.5	-0.83 - 4.3	2.0/24.0	32520
1992 SQ ₂₄	1998 11 25.1	04 02.47 +11 17.4 17.2	-0.83 - 4.8	3.0/23.4	32515
1995 AO ₁	1998 11 25.1	04 02.49 +12 04.5 17.8	-0.99 - 6.8	3.3/23.4	27731
1995 AF	1998 11 25.1	04 02.77 +34 56.8 15.9	-1.11 - 5.6	5.0/28.0	33074
2084 T-2	1998 11 25.3	04 03.50 -13 30.4 17.4	-1.06 -10.8	15.8/15.8	30294
1981 EQ ₁₀	1998 11 25.4	04 03.63 +26 23.8 17.7	-1.03 - 3.8	2.8/26.4	27725
(7898)	1998 11 25.4	04 03.91 +13 39.2 15.0	-1.21 + 1.6	3.4/24.8	30644
1981 EJ ₃₁	1998 11 25.5	04 04.01 +12 47.0 20.1	-1.01 - 3.4	2.9/24.2	26921
1997 GO ₁₃	1998 11 25.5	04 04.44 +21 22.3 18.6	-1.22 - 3.6	0.3/25.7	29948
1997 SZ ₂₃	1998 11 25.6	04 04.57 +34 01.0 19.7	-0.68 - 0.3	2.6/27.7	31012
1996 TH ₅₂	1998 11 25.6	04 04.64 +30 55.8 19.6	-0.64 - 1.0	2.0/27.3	32676
1994 NF ₁	1998 11 25.6	04 04.79 +12 07.7 16.4	-1.17 + 0.2	3.6/24.7	33072
1995 BP ₁₅	1998 11 25.8	04 05.31 -03 58.9 17.4	-0.82 + 0.1	7.0/22.6	31106
1992 GB ₁	1998 11 25.8	04 05.48 +39 56.3 16.9	-1.61 + 6.2	7.5/22.7	33070
(7824)	1998 11 25.8	04 05.59 +04 09.3 15.4	-1.02 - 3.1	8.0/23.4	30437
1994 BD ₄	1998 11 25.8	04 05.67 +11 45.1 17.6	-0.83 - 2.4	3.0/24.4	23343
1988 CT ₂	1998 11 25.9	04 05.96 +16 42.7 17.5	-1.03 - 2.2	1.5/25.4	30894
3033 T-2	1998 11 26.0	04 06.17 +19 54.6 17.2	-0.94 - 1.6	0.3/25.9	27939
1973 SF ₁	1998 11 26.0	04 06.21 +25 18.3 17.7	-0.64 - 0.6	0.9/26.7	30866

4281 T-2	1998 11 26.0	04 06.40 +33 24.9 19.7	-1.05 - 0.7	3.7/27.8	32293
1996 DK ₂	1998 11 26.1	04 06.61 +13 29.2 19.3	-0.96 - 2.1	2.3/25.0	30784
1993 TU ₃₈	1998 11 26.1	04 06.98 +15 48.4 17.1	-0.95 - 0.9	1.8/25.5	29662
1993 LW ₁	1998 11 26.1	04 07.01 +21 26.1 17.8	-1.13 + 0.4	0.2/26.3	30782
1996 HW	1998 11 26.2	04 07.41 +36 31.2 16.7	-1.27 + 1.5	5.7/28.0	33076
4129 T-2	1998 11 26.3	04 07.64 +25 46.7 17.9	-1.18 - 1.5	1.8/27.0	27732
1992 RX ₆	1998 11 26.4	04 07.82 +33 29.8 16.4	-1.03 - 0.6	4.3/28.2	33071
1990 RE ₂	1998 11 26.4	04 07.95 +15 43.6 15.9	-0.97 - 4.2	2.5/25.6	33068
4200 P-L	1998 11 26.4	04 08.12 +14 14.4 18.1	-1.11 - 4.3	2.9/25.4	30088
1993 OX ₂	1998 11 26.5	04 08.26 +11 09.7 18.7	-0.93 - 1.8	3.8/25.2	30291
1993 FO ₃₁	1998 11 26.5	04 08.27 +23 56.8 19.0	-1.16 - 2.0	1.2/26.9	27915
1996 EG ₂	1998 11 26.5	04 08.32 +01 36.3 17.2	-0.93 - 3.2	7.1/23.4	30473
(7849)	1998 11 26.5	04 08.35 +17 48.0 16.9	-1.00 0.0	1.2/26.1	30443
(9601)	1998 11 26.5	04 08.68 +18 15.5 15.8	-1.18 - 0.3	1.0/26.3	32889
1976 QA	1998 11 26.6	04 08.72 +25 56.0 16.5	-1.17 - 3.5	2.1/27.4	24758
1997 PY ₁	1998 11 26.6	04 08.81 +35 42.0 19.1	-1.02 - 1.9	4.5/28.9	30789
1981 DJ ₃	1998 11 26.6	04 08.94 +28 41.6 18.4	-0.98 - 5.0	3.1/28.0	26914
1993 FL ₄₁	1998 11 26.7	04 09.08 +14 09.9 18.2	-1.09 - 3.0	2.9/25.7	26759
1996 HB ₁₂	1998 11 26.7	04 09.19 +29 13.4 16.6	-1.02 + 0.4	2.5/27.7	33076
4613 T-2	1998 11 26.8	04 09.53 -11 43.3 18.7	-0.52 - 2.2	5.8/20.6	29651
1996 BS ₁	1998 11 27.0	04 10.70 +24 41.8 16.4	-1.15 - 1.3	1.5/27.5	29947
6556 P-L	1998 11 27.0	04 10.79 +06 02.2 18.1	-0.89 - 3.1	5.5/24.8	28892
1997 RG ₉	1998 11 27.1	04 10.93 +38 28.9 18.3	-0.98 - 3.8	4.6/30.3	31554
1997 UB ₁₁	1998 11 27.1	04 10.94 +50 16.0 17.3	-1.26 + 0.5	8.8/01.3	32969
(9541)	1998 11 27.2	04 11.28 +14 25.3 15.3	-1.14 + 0.8	3.2/26.5	32874
1991 RR ₄	1998 11 27.2	04 11.47 +28 31.9 16.2	-1.15 - 3.0	3.7/28.4	33069
1981 EP ₁₃	1998 11 27.2	04 11.55 +29 30.0 16.4	-1.27 - 4.6	3.8/29.0	33065
5027 T-3	1998 11 27.2	04 11.63 +12 27.2 19.1	-1.11 - 1.4	3.4/26.2	24579
1987 SV ₃	1998 11 27.2	04 11.71 +35 45.7 16.8	-1.33 - 1.1	6.2/29.3	33066
1997 TT ₉	1998 11 27.3	04 11.74 +25 48.1 17.9	-0.64 - 0.4	1.0/28.0	32753
1979 MY ₅	1998 11 27.3	04 11.74 +30 40.9 17.7	-1.03 - 5.3	3.1/29.0	31003
1991 UN ₃	1998 11 27.3	04 11.99 +18 10.2 15.6	-1.13 0.0	1.4/27.0	33070
1991 XN	1998 11 27.3	04 12.02 +21 07.9 15.2	-1.05 + 8.8	0.0/27.4	32926
1993 RQ ₅	1998 11 27.4	04 12.23 +11 08.4 18.0	-0.92 - 3.7	3.7/25.8	30898
1990 QZ ₁	1998 11 27.5	04 12.62 +33 55.1 16.7	-1.21 - 1.8	5.5/29.3	33068
1989 TR ₁₁	1998 11 27.5	04 12.88 +38 03.2 16.5	-1.27 + 0.2	6.4/29.8	33067
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 SV ₁₄	1998 11 27.6	04 12.95 +24 53.2 19.3	-0.61 - 1.9	0.8/28.2	30987
1994 PM ₂₈	1998 11 27.7	04 13.42 +25 55.8 19.4	-1.22 - 1.7	1.9/28.3	26905
6020 P-L	1998 11 27.7	04 13.56 +19 47.4 18.6	-0.54 - 1.4	0.2/27.5	26415
(7848)	1998 11 27.7	04 13.56 +25 52.5 17.5	-1.06 - 2.9	1.5/28.4	30443
(7344)	1998 11 27.7	04 13.80 +00 21.4 17.1	-0.91 - 3.9	7.2/24.2	28574
4084 P-L	1998 11 27.8	04 14.03 +19 48.6 19.3	-1.01 - 3.1	0.5/27.6	30696
(9569)	1998 11 27.9	04 14.61 +12 04.6 16.2	-1.04 - 0.3	4.2/27.0	32881
4536 T-2	1998 11 28.0	04 14.95 +03 14.8 19.6	-0.54 - 2.0	3.6/25.1	33059
1993 FX ₂₅	1998 11 28.0	04 15.11 +28 02.3 18.8	-1.18 - 2.9	2.6/29.1	26926
1996 JK	1998 11 28.1	04 15.12 +12 18.1 15.5	-0.92 + 0.8	3.0/27.2	33076
1997 QG ₄	1998 11 28.2	04 15.69 +03 55.4 17.5	-0.82 - 1.5	4.9/25.8	33078
1991 EN	1998 11 28.3	04 16.16 +37 47.3 17.5	-0.66 - 2.9	3.0/01.3	26420
1997 QD ₂	1998 11 28.4	04 16.32 +05 39.4 16.7	-0.83 - 1.4	4.7/26.3	33078
1991 PG ₃	1998 11 28.4	04 16.37 +19 36.1 18.3	-0.86 - 1.6	0.5/28.2	29942

1988 GF	1998 11 28.4	04 16.75 +14 55.4 16.6	-0.96 - 5.9	2.1/27.4	33067
1993 TN ₁₈	1998 11 28.4	04 16.83 +21 44.6 18.1	-0.99 - 1.3	0.1/28.6	32934
1997 RO ₇	1998 11 28.5	04 16.80 +07 04.7 18.3	-0.80 - 1.2	4.1/26.6	30904
1991 RJ ₇	1998 11 28.5	04 16.90 +25 19.6 17.6	-1.18 - 3.8	1.6/29.1	30470
1998 UO ₁₈	1998 11 28.5	04 17.22 +25 25.1 17.2	-1.11 - 2.1	2.0/29.1	33052
1993 NO	1998 11 28.6	04 17.51 +22 20.3 16.3	-1.03 - 2.5	0.4/28.8	33072
1996 HP	1998 11 28.6	04 17.61 +27 21.6 17.7	-1.20 + 2.9	2.3/29.0	32952
1994 WL ₃	1998 11 28.7	04 17.66 +13 36.2 16.3	-0.98 - 1.6	3.5/27.7	31542
1991 RV ₁₆	1998 11 28.7	04 17.80 +31 33.9 17.0	-1.27 + 0.9	5.0/29.8	33069
1979 QT ₁	1998 11 28.7	04 17.81 +19 18.9 18.6	-1.08 - 2.8	0.7/28.5	30468
(7732)	1998 11 28.8	04 18.08 +22 38.2 17.2	-0.92 - 2.4	0.4/29.0	30253
1991 VQ ₁	1998 11 28.9	04 18.48 +19 56.6 15.0	-1.20 + 3.1	12.1/19.0	33070
1981 EW ₁₁	1998 11 28.9	04 18.60 +21 40.5 20.0	-1.09 - 3.2	9.3/09.0	26917
7639 P-L	1998 11 28.9	04 18.68 +18 09.1 18.3	-1.05 - 1.1	1.2/28.5	27457
1975 SE ₁	1998 11 29.0	04 19.20 +33 21.9 18.0	-1.32 + 0.1	4.9/30.4	26394
1997 OJ ₁	1998 11 29.0	04 19.38 +18 53.7 18.8	-0.93 - 1.3	0.9/28.8	30692
1978 VT ₉	1998 11 29.3	04 20.25 +22 56.2 17.9	-1.23 - 0.5	0.7/29.5	22270
(7795)	1998 11 29.3	04 20.37 +08 59.8 17.8	-1.07 - 0.8	5.3/27.9	30269
1993 FY ₁₁	1998 11 29.4	04 20.78 +26 20.3 18.4	-1.16 - 1.4	1.7/30.0	24393
1995 DK	1998 11 29.4	04 20.92 +06 12.0 17.1	-0.87 - 2.4	5.1/27.2	30689
1981 EW ₁₇	1998 11 29.6	04 21.48 +19 44.2 16.8	-1.02 - 3.6	0.8/29.3	33065
1993 BY ₄	1998 11 29.6	04 21.54 +24 27.1 18.2	-1.20 - 3.1	1.4/30.0	23980
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 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 22.19 -01 26.1 18.1	-0.92 - 1.8	7.8/26.7	30675
1996 BW ₄	1998 11 29.7	04 22.37 +20 50.5 16.3	-1.11 + 0.7	0.4/29.7	33075
1994 RH ₉	1998 11 29.8	04 22.54 +39 02.3 17.2	-1.44 - 2.7	7.6/02.6	32517
1994 SQ ₇	1998 11 29.8	04 22.85 +20 58.1 18.9	-1.15 - 2.2	0.2/29.8	24584
1993 XM	1998 11 29.9	04 23.03 +04 15.1 15.7	-0.91 + 1.7	5.8/28.3	25442
1996 CY ₇	1998 11 29.9	04 23.10 +18 43.8 18.9	-1.10 - 1.8	1.0/29.6	27112
3230 T-2	1998 11 30.2	04 24.26 +18 30.1 18.3	-0.84 - 1.1	1.0/29.9	25337
1992 JQ	1998 11 30.2	04 24.30 +05 31.4 18.0	-0.90 - 3.4	5.0/27.9	30896
1995 OK ₈	1998 11 30.2	04 24.43 +19 31.1 17.6	-0.56 - 2.0	0.4/30.0	32945
1991 RH ₂₇	1998 11 30.2	04 24.48 +13 10.2 17.3	-1.13 - 1.9	3.6/29.3	30078
4302 T-1	1998 11 30.2	04 24.48 +23 53.7 17.8	-1.08 - 0.4	0.8/30.5	29668
(7738)	1998 11 30.3	04 24.53 +21 52.7 17.0	-1.20 - 0.4	0.1/30.3	30254
1981 EF ₃₂	1998 11 30.3	04 24.61 +28 10.7 19.4	-1.11 - 5.0	2.4/01.3	26921
(7705)	1998 11 30.3	04 24.76 +18 38.2 17.8	-1.14 - 1.1	1.2/30.0	30070
1040 T-2	1998 11 30.4	04 25.03 +19 58.4 18.2	-1.12 - 3.1	0.7/30.2	26912
6541 P-L	1998 11 30.4	04 25.10 +11 22.4 18.2	-0.55 - 1.2	2.0/29.0	29668
4572 P-L	1998 11 30.4	04 25.26 +30 47.1 18.6	-0.64 - 0.6	1.8/01.7	31000
1989 WU ₄	1998 11 30.6	04 25.77 +24 21.3 17.6	-0.99 - 3.6	1.0/31.0	30273
1996 JF ₉	1998 11 30.6	04 26.05 +11 59.8 21.1	-0.83 - 1.8	2.6/29.4	27562
(7911)	1998 11 30.7	04 26.72 +43 28.8 17.4	-1.14 - 1.7	6.2/03.8	30739
1989 SF ₁	1998 11 30.8	04 26.64 +09 25.9 17.6	-0.94 - 2.0	4.1/29.3	30686
3181 T-2	1998 11 30.8	04 26.97 +19 18.9 18.2	-0.94 - 1.1	0.8/30.6	30294
(9602)	1998 12 01.0	04 27.78 +25 33.4 16.4	-1.20 - 2.3	1.6/01.5	32889
(8066)	1998 12 01.0	04 27.86 +09 03.7 17.2	-0.79 - 2.9	3.7/29.3	30959
1994 WN ₃	1998 12 01.0	04 27.94 +09 31.4 15.6	-0.96 + 0.8	5.9/30.0	33074
1979 MK	1998 12 01.1	04 28.39 +10 47.1 16.4	-1.05 - 2.2	4.5/29.9	32509
1144 T-3	1998 12 01.2	04 28.81 +35 13.3 17.5	-1.04 - 2.1	4.6/03.1	22088

1997 PC ₁	1998 12 01.2	04 28.86 +21 55.4 19.2	-0.87 - 1.6	0.0/01.3	30788
1981 EQ ₄₃	1998 12 01.3	04 28.90 +20 05.1 20.5	-1.07 - 2.6	0.6/01.1	24406
4100 P-L	1998 12 01.5	04 29.65 +41 18.8 18.6	-1.26 - 1.0	6.6/03.7	25341
9602 P-L	1998 12 01.5	04 29.73 +13 06.8 18.8	-0.55 - 1.0	1.7/30.4	22274
4071 T-3	1998 12 01.5	04 29.97 +22 59.2 16.5	-1.14 + 1.6	0.6/01.7	33130
1996 GG ₂₀	1998 12 01.5	04 30.09 +18 06.2 16.7	-0.93 - 1.6	1.3/01.1	30689
(9531)	1998 12 01.6	04 30.45 +32 24.5 16.1	-1.30 - 1.7	5.0/02.9	32871
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 SO ₈	1998 12 01.7	04 30.60 +26 59.0 17.6	-0.61 - 1.6	1.0/02.4	31278
1993 QE ₁	1998 12 01.7	04 30.95 +02 30.7 16.9	-0.98 + 1.3	6.9/30.3	30451
1987 RN ₆	1998 12 01.7	04 30.99 +20 06.5 16.2	-0.94 0.0	0.6/01.6	30686
(8241)	1998 12 01.9	04 31.37 +25 51.7 18.2	-0.59 - 0.9	0.7/02.4	31206
1996 FJ ₁₈	1998 12 01.9	04 31.44 +26 56.3 17.6	-0.95 - 1.2	1.4/02.5	29114
1990 OK ₃	1998 12 02.0	04 31.91 +17 19.0 17.3	-1.11 - 1.4	1.9/01.5	30091
1996 HR ₂₄	1998 12 02.1	04 32.39 +20 02.9 17.6	-0.87 - 0.8	0.5/01.9	30690
1994 AU ₆	1998 12 02.1	04 32.47 +18 59.0 17.6	-0.87 - 1.4	0.9/01.8	32233
1978 PW ₃	1998 12 02.2	04 33.15 +11 40.4 17.5	-1.02 - 2.3	3.8/01.1	30468
1991 NE ₇	1998 12 02.4	04 34.04 +24 25.9 16.9	-0.89 - 3.4	0.8/02.8	32513
1992 RJ ₅	1998 12 02.5	04 34.10 +20 56.1 17.2	-0.93 - 0.7	0.4/02.4	27729
1993 TO ₁₅	1998 12 02.5	04 34.40 +19 04.6 17.7	-0.96 - 2.5	1.1/02.2	30291
1997 GU ₇	1998 12 02.6	04 34.53 +21 42.5 18.7	-1.19 - 0.7	0.1/02.6	30473
1986 QO ₂	1998 12 02.6	04 34.55 +19 52.7 16.9	-0.88 - 1.5	0.6/02.4	27324
1994 AL ₁	1998 12 02.7	04 34.99 -12 39.8 17.6	-1.64 +13.9	17.8/03.8	30452
(9599)	1998 12 02.8	04 35.50 +20 41.1 16.0	-1.18 + 0.5	0.6/02.7	32888
1993 TF ₁₆	1998 12 03.0	04 36.24 +09 27.8 20.0	-0.93 - 3.2	4.3/01.5	32933
(7971)	1998 12 03.0	04 36.29 +05 23.9 17.9	-0.93 - 4.8	5.7/30.6	30752
1982 SH ₁	1998 12 03.0	04 36.50 -17 38.6 18.6	-1.06 - 7.0	20.3/24.9	8393
6186 P-L	1998 12 03.1	04 36.59 +14 55.9 19.2	-1.11 - 3.5	2.8/02.3	30293
1995 BJ ₁₁	1998 12 03.1	04 36.76 +16 24.1 18.1	-0.87 - 1.3	1.7/02.5	32943
(7814)	1998 12 03.2	04 37.10 +47 20.0 15.7	-1.28 - 5.5	9.8/07.8	30435
1993 FZ ₁₈	1998 12 03.3	04 37.77 +21 59.6 16.6	-1.16 0.0	0.0/03.4	28588
1994 XP ₄	1998 12 03.4	04 37.97 +28 31.5 17.8	-1.12 - 1.8	2.7/04.0	24915
1997 SY ₃₂	1998 12 03.4	04 38.18 +28 42.4 19.1	-0.63 - 0.6	1.3/04.2	30881
1987 UT	1998 12 03.4	04 38.22 +27 30.2 16.8	-1.21 - 4.4	2.4/04.2	33066
2127 T-2	1998 12 03.4	04 38.36 +25 12.7 18.8	-1.07 - 2.3	1.2/03.8	22088
(7686)	1998 12 03.5	04 38.43 +30 06.8 16.8	-1.24 - 1.6	3.3/04.3	29908
1995 CJ	1998 12 03.5	04 38.61 +05 17.3 18.4	-0.81 - 0.2	4.4/01.9	31008
1988 RF ₁₃	1998 12 03.6	04 38.88 +39 24.0 18.4	-1.23 + 1.5	5.6/05.1	28613
(7801)	1998 12 03.6	04 39.03 +23 11.9 17.2	-1.07 - 2.6	9.7/24.0	30270
1997 TQ ₁₂	1998 12 03.7	04 39.19 +20 55.2 19.5	-0.58 - 1.6	0.2/03.6	30988
1987 DK ₆	1998 12 03.7	04 39.26 +26 04.5 17.7	-1.24 - 2.6	1.5/04.1	29940
1994 LY ₁	1998 12 03.7	04 39.39 +08 31.7 17.8	-1.09 + 1.3	6.4/02.7	26744
(9612)	1998 12 03.7	04 39.51 +32 46.2 15.6	-0.96 - 3.7	4.1/05.3	32892
1994 TY ₂	1998 12 03.7	04 39.55 +41 48.4 15.0	-1.20 + 5.3	10.7/04.5	32748
1996 GA ₁₈	1998 12 03.8	04 39.72 +14 12.3 18.4	-0.97 - 3.5	2.7/02.8	29140
2311 T-3	1998 12 03.8	04 39.90 +13 38.3 18.3	-0.86 - 3.6	2.7/02.7	30683
1997 PU ₂	1998 12 03.8	04 39.99 -17 12.8 17.8	-1.04 0.0	16.2/28.4	33078
1981 EJ ₁₁	1998 12 03.9	04 40.34 +26 11.5 18.5	-1.12 - 3.1	1.5/04.4	26917
5137 T-2	1998 12 04.0	04 40.69 +08 24.7 19.3	-0.96 - 5.8	4.9/02.0	20833
1997 JT ₃	1998 12 04.1	04 40.97 +22 17.4 18.5	-1.15 - 1.0	0.0/04.1	30282
(7439)	1998 12 04.2	04 41.85 +22 43.0 16.7	-1.05 0.0	0.2/04.3	28835