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ERRATA

MPC	Line	
25230	-43	<i>For</i> Y. Akiyama <i>read</i> M. Akiyama
27462	-39	<i>For</i> b. 1958 <i>read</i> b. 1956
27462	-35	<i>For</i> meteorite and fossil <i>read</i> meteorite and tektite
31852	-41	<i>For</i> 1978 RE ₁₂ = (8702) <i>read</i> 1978 RE ₁₂ = (8687)
31852	-14	<i>For</i> 0.25-m Mike Candy Telescope <i>read</i> 0.3-m astrophotograph
31853	17	<i>For</i> Starkenberg <i>read</i> Starkenburg
31871	-32	<i>Add</i> D. J. Tholen as an observer (0.61-m reflector)
31947	41	<i>Add</i> The identification 1981 EQ ₃₀ = 1978 RK ₅ (JAM 1901) is invalid.
32005	1	<i>For</i> 1985 SS ₂ <i>read</i> 1985 SE ₇

NEW OBSERVATORY CODES

The following listing is a continuation to that on MPC 31851. 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	$\rho \cos \phi'$	$\rho \sin \phi'$	
148	2.0375	0.72481	+0.68667	Guitalens
149	4.2236	0.65403	+0.75396	Beine-Nauroy
150	2.1572	0.65806	+0.75045	Maisons Laffitte
151	8.7440	0.67719	+0.73346	Eschenberg Observatory, Winterthur
351	135.8678	0.81939	+0.57135	Sakamoto
637	10.0903	0.59326	+0.80232	Hamburg-Himmelsmoor
654	242.3191	0.82647	+0.56172	Table Mountain Observatory, Wrightwood-PHMC
677	242.8281	0.82746	+0.56012	Lake Arrowhead
678	248.2597	0.83352	+0.55083	Fountain Hills
703	249.2680	0.84532	+0.53321	Catalina Sky Survey
705	254.1800	0.8419	+0.5386	Apache Point
720	259.6261	0.90216	+0.43018	Universidad de Monterrey
747	268.9292	0.86373	+0.50227	Baton Rouge Observatory
752	275.4647	0.82278	+0.56659	Puckett Observatory, Mountain Town
832	283.1850	0.7653	+0.6416	Etters

CORRECTED OBSERVATIONS

The following observations correct those previously published.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Mag.	N Obs.
1969 TC	* 1969 10 09.63249		22 58 43.73	-10 43 58.9	MPC 3065		1 323
1997 GL ₁	1997 05 28.85986	11 20 08.22	+04 51 33.2		MPC29990	18.0 V	2 560
1997 GL ₁	1997 05 28.87167	11 20 08.46	+04 51 31.7		MPC29990		2 560
1997 GL ₁	1997 05 28.88182	11 20 08.76	+04 51 31.3		MPC29990		2 560
1997 GL ₁	1997 05 30.85842	11 21 07.32	+04 49 33.5		MPC29990	18.0 V	2 560
1997 GL ₁	1997 05 30.86545	11 21 07.56	+04 49 33.8		MPC29990		2 560
1997 GL ₁	1997 05 30.87766	11 21 07.82	+04 49 32.8		MPC29990		2 560

Note 1: time corrected, time also given incorrectly on MPC 3316. 2: time changed by +1 hour.

DELETED OBSERVATIONS

The following observations are to be deleted.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Obs.
1973 SQ ₃	1993 01 24.43733	10 17 26.32	+03 26 01.8		MPC23391	675
1995 SP ₃	1991 04 19.30087	12 11 41.31	-09 25 23.7		MPC27801	675

IDENTIFICATION CHANGES

Continuation to MPC 31851.

Object	Date	UT	α_{2000}	δ_{2000}	Originally	Mag.	Obs.
1931 CK	* 1931 02 14.29863		11 08 04.38	+06 10 57.7	1931 CD	16	754
1950 TU ₄	* 1950 10 05.85924		00 59 33.11	+18 56 44.8	1950 SM		012
1977 QR ₅	* 1977 08 21.91259		22 11 57.56	-01 47 42.1	1977 PD ₁	16.5	095
1977 QS ₅	* 1977 08 21.91259		22 13 32.99	-01 33 25.8	1977 PC ₁	16.0	095
1985 SE ₇	* 1985 09 21.93536		00 54 38.56	+14 33 24.8	1985 SS ₂	18.0	095
1990 SW ₂₉	* 1990 09 23.82427		22 00 36.24	-06 01 56.6	1990 RA ₁₇	16.3	095
1991 RV ₄₁	* 1991 09 06.10833		21 25 25.73	-15 40 40.4	1991 RH ₁₂	18.8	809
1991 RV ₄₁	1991 09 06.12153		21 25 25.18	-15 40 43.4	1991 RH ₁₂		809
1991 RV ₄₁	1991 09 06.13472		21 25 24.75	-15 40 46.2	1991 RH ₁₂		809
1992 US ₁₀	* 1992 10 28.87145		00 51 39.14	+14 25 38.6	1992 UH ₁₀	15.8	095
1992 YW ₅	* 1992 12 23.64931		08 45 50.38	+15 34 17.2	1992 YZ	17.5	372
1992 YW ₅	1992 12 23.66111		08 45 50.02	+15 34 19.8	1992 YZ		372
1993 DK ₃	* 1993 02 21.43750		09 11 12.37	+20 09 19.1	1993 CT ₁	17.2	399

1993 DK ₃	1993 02 21.45208	09 11 11.57	+20 09 20.7	1993 CT ₁	399
1993 UJ ₉	* 1993 10 21.18611	01 39 57.35	+06 20 06.4	1993 TR ₃₀	18.1 809
1993 UJ ₉	1993 10 21.19931	01 39 56.51	+06 20 02.7	1993 TR ₃₀	809
1993 UJ ₉	1993 10 21.21250	01 39 55.58	+06 20 00.1	1993 TR ₃₀	809
1994 TM ₁₇	* 1994 10 11.22451	00 15 29.15	+01 53 26.4	1994 SD ₄	691
1994 TM ₁₇	1994 10 11.24805	00 15 28.09	+01 53 20.9	1994 SD ₄	19.3 V 691
1994 TM ₁₇	1994 10 11.27129	00 15 27.04	+01 53 14.2	1994 SD ₄	691
1997 SK ₃₅	* 1997 09 26.79240	01 17 28.23	+02 35 38.8	1997 RC ₁₀	327
1997 SK ₃₅	1997 09 26.79672	01 17 28.03	+02 35 38.0	1997 RC ₁₀	327
1997 SK ₃₅	1997 09 26.80106	01 17 27.87	+02 35 35.1	1997 RC ₁₀	327
1997 SK ₃₅	1997 09 26.80574	01 17 27.67	+02 35 32.7	1997 RC ₁₀	19.6 327
1998 BS ₄₈	* 1998 01 23.88598	07 53 28.64	+24 47 18.5	1997 HY ₁₆	18.7 958
1998 BS ₄₈	1998 01 23.90493	07 53 26.14	+24 47 25.6	1997 HY ₁₆	18.2 958
1998 BS ₄₈	1998 01 23.92940	07 53 24.90	+24 47 31.1	1997 HY ₁₆	17.8 958
1998 BS ₄₈	1998 01 23.96292	07 53 21.85	+24 47 41.0	1997 HY ₁₆	17.8 958
1998 EP ₂₁	* 1998 03 02.72925	11 21 23.98	+21 00 05.5	1998 DR ₃₂	17.7 327
1998 EP ₂₁	1998 03 02.73383	11 21 23.73	+21 00 06.5	1998 DR ₃₂	327
1998 EP ₂₁	1998 03 02.73841	11 21 23.45	+21 00 06.8	1998 DR ₃₂	327
1998 HA ₁₅₁	* 1998 04 28.13681	16 08 14.70	-17 41 50.7	1998 HA ₁₄₉	809
1998 HA ₁₅₁	1998 04 28.15000	16 08 14.20	-17 41 47.5	1998 HA ₁₄₉	809
1998 HA ₁₅₁	1998 04 28.16319	16 08 13.69	-17 41 43.1	1998 HA ₁₄₉	809
1998 JN ₄	* 1998 05 05.45502	16 02 44.06	-17 12 58.1	1998 HA ₅₁	17.3 R 699
1998 JN ₄	1998 05 05.46247	16 02 43.68	-17 12 56.4	1998 HA ₅₁	699
1998 JN ₄	1998 05 05.46992	16 02 43.26	-17 12 54.1	1998 HA ₅₁	699
1998 LD ₃	* 1998 06 02.17612	14 19 21.79	+02 57 01.5	1998 HA ₁₂₀	17.5 R 699
1998 LD ₃	1998 06 02.18856	14 19 21.43	+02 56 59.4	1998 HA ₁₂₀	699
1998 LD ₃	1998 06 02.20101	14 19 21.07	+02 56 57.1	1998 HA ₁₂₀	699

IDENTIFICATION

The following identification with a numbered minor planet, by G. V. Williams, continues the list on *MPC* 31852:

1931 CK = (5919)

COMETARY IDENTIFICATION

The following cometary identification, by S. Nakano, continues the list on *MPC* 27749:

1998 HE₄₉ = C/1998 K1 (Mueller)

NUMBERING OF A PERIODIC COMET

Continuation to the list on *MPC* 31852.

138P/1991 V2 = 1998 O1 (Shoemaker-Levy 7)

OBSERVATIONS OF COMETS

Observations are published here for the following observatory codes:

017 Hoher List. 1.m reflector + CCD. Observer J. Sanner.
 046 Kleť. 0.57-m $f/5.2$ reflector + CCD. Observers J. Tichý, M. Tichý and Z. Moravec.

097 Wise Observatory. 1.0-m $f/7$ reflector + CCD. Observer E. O. Ofek.
 104 San Marcello Pistoise. 0.40-m $f/5$ reflector + CCD. Observers L. Tesi, A. Boattini and M. Tombelli. Measured by A. Boattini, L. Tesi, M. Tombelli and G. Forti.
 106 Crni vrh. 0.36-m $f/6.7$ Schmidt-Cassegrain + CCD. Observers H. Mikuz and J. Skvarc.
 107 Cavezzo. 0.40-m $f/5.5$ reflector + CCD. Observers M. Nicolini and P. Negrelli. Measured by M. Nicolini.
 108 Montelupo. 0.30-m $f/5.7$ Schmidt-Cassegrain + CCD. Observers M. Tombelli, A. Boattini and G. Forti.
 118 Modra. 0.6-m $f/5.5$ reflector + CCD. Observers A. Galád, Š. Gajdoš, P. Kolény, L. Kornoš and A. Pravda.
 120 Višňan. 0.4-m $f/4.3$ reflector + CCD. Observer K. Korlević.
 121 Chuguev. 0.70-m $f/4$ reflector + CCD. Observer Yu. N. Krugly.
 126 Monte Viseggi. 0.40-m $f/6$ reflector. Observers L. Zannoni and L. Sannino.
 133 Les Tardieux. 0.20-m $f/3.5$ reflector + CCD. Observer M. Boeuf.
 138 Village-Neuf. 0.20-m $f/6.3$ reflector + CCD. Observer C. Demeautis.
 143 Gnosca. 0.20-m $f/6.3$ reflector + CCD. Observer S. Sposetti.
 292 Burlington. 0.30-m $f/3.0$ Schmidt-Cassegrain + CCD. Observer T. Handley.
 351 Sakamoto. 0.15-m $f/7.0$ lens + CCD. Observer Y. Kitamura.
 352 Konan. 0.25-m $f/6$ reflector + CCD. Observer M. Hotta.
 355 Hadano. 0.28-m $f/5.0$ reflector + CCD. Observer A. Asami.
 360 Kuma Kogen. 0.60-m $f/6.0$ 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. From *Orient. Astron. Assoc. Comet Bull.*
 400 Kitami. 0.25-m $f/3.4$ hyperboloid astrocamera + CCD. Observer K. Endate.
 402 Dync Astronomical Observatory. 0.60-m $f/4.0$ reflector + CCD. Observer A. Sugie.
 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.
 468 Campo Catino. 0.80-m $f/4.0$ reflector + CCD. Observers F. Mallia, G. Masi and M. Di Sora.
 476 Bussoleno. 0.30-m $f/4.0$ reflector. Observer P. Pognant.
 491 Yebes. 0.40-m $f/5$ astrograph + CCD. Observers J. F. Lahulla, J. García and A. Martín.
 504 Le Creusot. 0.40-m $f/5$ reflector + CCD. Observer J. C. Merlin.
 540 Linz. 0.3-m $f/5.2$ Schmidt-Cassegrain + CCD. Observers E. Meyer and H. Raab.
 557 Ondřejov. 0.65-m $f/3.6$ reflector + CCD. Observers P. Pravec and L. Šarounová.
 561 Pizskéstető. 0.60-m Schmidt + CCD. Observer J. Kelemen.
 566 Haleakala-NEAT/GEODSS. 1-m $f/2.2$ Ritchey-Chrétien + CCD. Observers E. F. Helin, S. H. Pravdo, K. J. Lawrence, S. Groom, C. Clark, R. Bamberg, S. Levin, J. Lorre, S. Shaklan, R. Byrd, A. Esquibel, C. Cotton and D. Bascon.
 568 Mauna Kea. 2.2-m University of Hawaii telescope + CCD. Observer J. Bauer. Measured by K. Meech.

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.
610	Pianoro. 0.25-m $f/4$ Schmidt-Cassegrain. Observer V. Goretti.
620	Mallorca. 0.3-m $f/3.3$ and 0.2-m $f/6.3$ Schmidt-Cassegrains + CCD. Observers A. Lopez and R. Pacheco. Measured by A. Lopez and S. Alonso.
627	Blauvac. 0.26-m $f/4.7$ reflector + CCD. Observer R. Roy. Measured by A. Klotz.
628	Mülheim-Ruhr. 0.2-m Schmidt-Cassegrain + CCD. Observer A. Martin.
633	Romito. 0.30-m $f/5.1$ Schmidt-Cassegrain + CCD. Observers N. Biso and M. Bernazzani
658	Dominion Astrophysical Observatory, Victoria. 1.82-m Plaskett telescope + CCD. Observers R. Greimel and D. D. Balam. Measured by D. D. Balam.
665	Frazier Park. 0.32-m $f/9$ Ritchey-Chrétien + CCD. Observer B. D. Wallis.
670	Camarillo. 0.25-m Schmidt-Cassegrain + CCD. Observer J. E. Rogers.
691	Kitt Peak. 0.91-m Spacewatch telescope. Observers J. V. Scotti, J. Larsen and J. Montani.
696	Mt. Hopkins. 1.2-m telescope + CCD. Observer C. W. Hergenrother.
699	LONEOS. 0.59-m Schmidt + CCD. Observers B. A. Skiff and B. W. Koehn. Measured by B. W. Koehn and E. Bowell.
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.
706	Salida. 0.25-m $f/6$ reflector + CCD. Observer J. E. Hall.
709	Cloudcroft. 0.60-m $f/7$ Ritchey-Chrétien + CCD. Observer W. Offutt.
711	McDonald. 0.76-m reflector + CCD. Observer P. J. Shelus.
713	Thornton. 0.20-m $f/10$ Schmidt-Cassegrain + CCD. Observer R. A. Koff.
734	Eskridge. 0.30-m Schmidt-Cassegrain + CCD. Observer G. Hug.
750	Hobbs Observatory, Fall Creek. 0.6-m $f/5$ telescope + CCD. Observer R. Elliott.
752	Mountain Town. 0.30-m $f/6$ reflector + CCD. Observer T. Puckett. Measured by T. Puckett and I. Siegert.
758	Cocoa. 0.3-m reflector + CCD. Observer I. Griffin.
834	Buenos Aires-AAAA. 0.25-m $f/6.3$ reflector + CCD. Observers R. Caprio and R. Mackintosh. Measured by R. Mackintosh and J. R. Carozza.
844	Los Molinos. 0.35-m $f/6.4$ reflector + CCD. Observers J. C. Tulic, R. Salvo and A. Galli.
860	Valinhos. 0.20-m $f/3.3$ reflector + CCD. Observer P. R. Holvorcem.
867	Saji Observatory. 1.03-m $f/4.8$ reflector + CCD. Observers M. Yamanishi, A. Miyamoto, M. Aimoto and T. Oribe.
886	Susono. 0.25-m $f/6.3$ reflector + CCD. Observer M. Akiyama.
897	YGCO Chiyoda Observatory. 0.25-m $f/6.0$ reflector + CCD. Observer T. Kojima.
900	Moriyama. 0.25-m $f/6.3$ reflector + CCD. Observer Y. Ikari.
910	ODAS. 0.90-m Schmidt + CCD. Observers A. Maury, D. Albanese, G. Hahn and M. Hoffmann. Measured by A. Maury and G. Hahn.
965	Algarve. 0.5-m reflector + CCD. Observers G. Bate and D. Penn.

Object	Date	UT	α_{2000}	δ_{2000}	Mag.	N Obs.
P/1994 P1 (Machholz 2)						
P/1994 P1-F	1994 10 05.14455	09 34 00.68	+14 30 19.2			1 557
P/1994 P1-G	1994 10 05.14455	09 34 00.26	+14 30 21.6			1 557
P/1994 P1-F	1994 10 05.14862	09 34 01.30	+14 30 10.1			1 557
P/1994 P1-F	1994 10 05.15436	09 34 02.17	+14 29 57.8			1 557

P/1994 P1-G	1994 10 05.15436	09 34 01.74	+14 29 59.8			1 557
P/1994 P1-F	1994 10 07.13936	09 39 01.51	+13 19 32.0			1 557
P/1994 P1-G	1994 10 07.13936	09 39 01.10	+13 19 32.8			1 557
P/1994 P1-F	1994 10 07.14723	09 39 02.58	+13 19 15.4			1 557
P/1994 P1-G	1994 10 07.14723	09 39 02.29	+13 19 17.6			1 557
P/1994 P1-C	1994 10 11.14483	09 48 47.74	+11 03 49.3			557
P/1994 P1-F	1994 10 11.14483	09 48 47.82	+11 03 55.8			1 557
P/1994 P1-F	1994 10 11.15009	09 48 48.62	+11 03 44.8			1 557
P/1994 P1-G	1994 10 11.15009	09 48 48.08	+11 03 48.5			1 557
P/1994 P1-F	1994 10 11.16598	09 48 50.90	+11 03 13.2			1 557
P/1994 P1-G	1994 10 11.16598	09 48 50.36	+11 03 15.8			1 557
P/1994 P1-F	1994 10 18.15559	10 04 55.57	+07 25 28.2			1 557
P/1994 P1-F	1994 11 02.15458	10 34 59.49	+00 45 03.2			1 557
P/1994 P1-F	1994 11 02.16763	10 35 00.87	+00 44 46.5			1 557
P/1994 P1-F	1994 11 02.17093	10 35 01.13	+00 44 40.2			1 557

C/1995 O1 (Hale-Bopp)

C/1995 O1	1998 04 04.08804	05 03 33.82	-52 51 37.9			834
C/1995 O1	1998 04 19.94131	05 14 05.43	-51 17 23.5			834
C/1995 O1	1998 04 19.99337	05 14 07.74	-51 17 08.2			834
C/1995 O1	1998 04 27.94208	05 20 22.58	-50 41 16.1			834
C/1995 O1	1998 05 03.96178	05 25 26.46	-50 19 25.2			834
C/1995 O1	1998 05 04.94262	05 26 17.15	-50 16 16.1			834
C/1995 O1	1998 05 04.98328	05 26 19.36	-50 16 08.3			834
C/1995 O1	1998 05 07.96316	05 28 56.13	-50 07 26.7			834
C/1995 O1	1998 05 08.96560	05 29 49.42	-50 04 43.3			834
C/1995 O1	1998 05 15.95340	05 36 10.98	-49 49 33.7			834
C/1995 O1	1998 05 15.99769	05 36 13.50	-49 49 29.7			834
C/1995 O1	1998 05 16.95302	05 37 06.58	-49 47 54.9			834
C/1995 O1	1998 05 16.97851	05 37 08.10	-49 47 51.8			834
C/1995 O1	1998 05 17.92087	05 38 00.92	-49 46 25.8			834
C/1995 O1	1998 05 18.94552	05 38 58.58	-49 44 58.6			834
C/1995 O1	1998 06 01.92302	05 52 26.19	-49 38 56.4			834
C/1995 O1	1998 06 04.91409	05 55 23.10	-49 40 51.0			834
C/1995 O1	1998 06 14.35383	06 04 45.95	-49 54 12.1	14.9 N		422
C/1995 O1	1998 06 14.35473	06 04 45.99	-49 54 12.0	15.0 N		422
C/1995 O1	1998 06 14.35563	06 04 46.06	-49 54 12.2	15.0 N		422
C/1995 O1	1998 06 17.36195	06 07 46.14	-50 00 46.8	14.6 N		422
C/1995 O1	1998 06 17.36289	06 07 46.21	-50 00 46.8	14.6 N		422
C/1995 O1	1998 06 17.36383	06 07 46.25	-50 00 46.7	14.5 N		422
C/1995 O1	1998 06 18.91204	06 09 19.25	-50 04 34.5			834
C/1995 O1	1998 06 19.91038	06 10 19.09	-50 07 11.4			834
C/1995 O1	1998 06 21.91409	06 12 19.43	-50 12 46.5			834
C/1995 O1	1998 06 26.90846	06 17 18.71	-50 28 49.4			834
C/1995 O1	1998 06 28.39671	06 18 48.05	-50 34 07.3			844
C/1995 O1	1998 06 28.40141	06 18 48.26	-50 34 09.6			844
C/1995 O1	1998 06 28.40348	06 18 48.42	-50 34 10.4			844
C/1995 O1	1998 07 04.82718	06 25 10.32	-51 00 16.5	14.7 N		422
C/1995 O1	1998 07 04.83018	06 25 10.52	-51 00 17.7	14.5 N		422
C/1995 O1	1998 07 04.83084	06 25 10.55	-51 00 17.9	14.7 N		422
C/1995 O1	1998 07 04.83143	06 25 10.59	-51 00 18.0	14.6 N		422

P/1996 A1 (Jedicke)						
P/1996 A1	1998 06 23.16478	13 45 19.79	-14 56 17.3	22.5 N	691	
P/1996 A1	1998 06 23.17601	13 45 19.74	-14 56 15.7	21.3 T	691	
P/1996 A1	1998 06 23.18615	13 45 19.65	-14 56 15.8	21.3 T	691	
C/1997 BA ₆ (Spacewatch)						
C/1997 BA ₆	1998 05 28.98688	08 45 31.46	-06 04 30.1	17.0 T	860	
C/1997 BA ₆	1998 05 28.99438	08 45 31.60	-06 04 31.5	16.9 T	860	
P/1997 G1 (Montani)						
P/1997 G1	1998 06 18.17380	10 53 40.57	+02 51 08.9	19.2 T	696	
P/1997 G1	1998 06 18.17769	10 53 40.68	+02 51 08.5	20.1 T	696	
P/1997 G1	1998 06 18.18155	10 53 40.83	+02 51 08.0	19.3 T	696	
C/1997 G2 (Montani)						
C/1997 G2	1998 06 08.33524	03 39 41.33	-69 51 01.3	16.1 T	860	
C/1997 G2	1998 06 08.35341	03 39 44.88	-69 50 51.7	16.2 T	860	
C/1997 G2	1998 06 19.29263	04 12 36.90	-68 28 40.3	13.6 T	844	
C/1997 G2	1998 06 19.29690	04 12 37.54	-68 28 37.5	13.6 T	844	
C/1997 G2	1998 06 19.30428	04 12 38.68	-68 28 33.4		844	
C/1997 G2	1998 06 25.33758	04 27 52.96	-67 50 40.9	13.6 T	844	
C/1997 G2	1998 06 25.34409	04 27 54.05	-67 50 37.5	13.6 T	844	
C/1997 G2	1998 06 25.34841	04 27 54.52	-67 50 38.0	13.5 T	844	
C/1997 J1 (Mueller)						
C/1997 J1	1997 12 24.69201	07 22 06.97	+34 52 42.0	17 T	372	
C/1997 J2 (Meunier-Dupouy)						
C/1997 J2	1998 02 05.85278	20 34 52.42	+35 12 56.6	13.5 T	372	
C/1997 J2	1998 03 07.83507	21 22 25.36	+32 38 07.6		372	
C/1997 J2	1998 03 22.78090	21 41 53.12	+31 55 04.6		372	
C/1997 J2	1998 04 02.80313	21 54 25.28	+31 33 25.2	13 T	372	
C/1997 J2	1998 04 25.80243	22 15 15.50	+31 02 53.8	11.5 T	372	
C/1997 J2	1998 04 29.80313	22 18 05.49	+30 58 09.8	12 T	372	
C/1997 J2	1998 05 03.79757	22 20 39.94	+30 53 13.0	12.5 T	372	
C/1997 J2	1998 05 19.71528	22 28 14.10	+30 27 31.5		372	
C/1997 J2	1998 05 20.73576	22 28 33.93	+30 25 21.6		372	
C/1997 J2	1998 05 27.76250	22 30 16.95	+30 08 08.6		372	
C/1997 J2	1998 06 03.78090	22 30 59.58	+29 45 39.3	15.5 T	372	
C/1997 J2	1998 06 05.77656	22 31 00.33	+29 38 04.9		372	
C/1997 J2	1998 06 17.68854	22 29 15.25	+28 39 20.8	12.3 T	360	
C/1997 J2	1998 06 17.69097	22 29 15.20	+28 39 19.9		360	
C/1997 J2	1998 06 17.69757	22 29 14.99	+28 39 17.1		372	
C/1997 J2	1998 06 19.30936	22 28 45.82	+28 29 14.2	10.8 T	292	
C/1997 J2	1998 06 19.32603	22 28 45.51	+28 29 07.0	10.7 T	292	
C/1997 J2	1998 06 23.26893	22 27 19.20	+28 02 12.7	13.6 N	752	
C/1997 J2	1998 06 23.27858	22 27 19.00	+28 02 08.3	13.6 N	752	
C/1997 J2	1998 06 23.28755	22 27 18.74	+28 02 04.5	13.5 N	752	
C/1997 J2	1998 06 23.28847	22 27 18.70	+28 02 03.9	13.5 N	752	
C/1997 J2	1998 06 25.02726	22 26 33.55	+27 48 58.9		017	
C/1997 J2	1998 06 25.02854	22 26 33.52	+27 48 58.2		017	
C/1997 J2	1998 06 25.02983	22 26 33.48	+27 48 57.8		017	
C/1997 J2	1998 06 25.03118	22 26 33.44	+27 48 56.9		017	
C/1997 J2	1998 06 25.03248	22 26 33.40	+27 48 56.4		017	
C/1997 J2	1998 06 25.03380	22 26 33.38	+27 48 55.7		017	

C/1997 J2	1998 06 25.03556	22 26 33.32	+27 48 54.9		017	
C/1997 J2	1998 06 25.03752	22 26 33.26	+27 48 54.0		017	
C/1997 J2	1998 06 25.03949	22 26 33.21	+27 48 53.2		017	
C/1997 J2	1998 06 25.95898	22 26 07.71	+27 41 39.2		017	
C/1997 J2	1998 06 25.96098	22 26 07.67	+27 41 38.5		017	
C/1997 J2	1998 06 25.96620	22 26 07.52	+27 41 36.1		017	
C/1997 J2	1998 06 25.96891	22 26 07.42	+27 41 34.9		017	
C/1997 J2	1998 06 25.97160	22 26 07.34	+27 41 33.4		017	
C/1997 J2	1998 06 26.03983	22 26 05.35	+27 41 01.2		017	
C/1997 J2	1998 06 26.04250	22 26 05.26	+27 40 59.8		017	
C/1997 J2	1998 06 26.04519	22 26 05.20	+27 40 58.5		017	
C/1997 J2	1998 06 26.06163	22 26 04.81	+27 40 52.3	13.1 T	491	
C/1997 J2	1998 06 26.07479	22 26 04.32	+27 40 45.4	13.2 T	491	
C/1997 J2	1998 06 26.10962	22 26 03.38	+27 40 28.2	13.2 T	491	
C/1997 J2	1998 06 27.69115	22 25 16.37	+27 27 30.6		372	
C/1997 J2	1998 06 27.99654	22 25 06.85	+27 24 52.8		126	
C/1997 J2	1998 06 28.01483	22 25 06.32	+27 24 44.0		126	
C/1997 J2	1998 07 02.75417	22 22 22.59	+26 41 20.0	12.0 T	360	
C/1997 J2	1998 07 02.75694	22 22 22.48	+26 41 18.4		360	
C/1997 J2	1998 07 02.77806	22 22 21.63	+26 41 06.2		372	
C/1997 J2	1998 07 03.56214	22 21 51.85	+26 33 16.4	12.1 T	367	
C/1997 J2	1998 07 03.56422	22 21 51.80	+26 33 14.9		367	
C/1997 J2	1998 07 03.56631	22 21 51.72	+26 33 13.9		367	
C/1997 J2	1998 07 03.62735	22 21 49.18	+26 32 37.1	12.1 T	351	
C/1997 J2	1998 07 03.65262	22 21 48.24	+26 32 21.3		351	
C/1997 J2	1998 07 03.65623	22 21 48.17	+26 32 20.4		351	
C/1997 J2	1998 07 03.71302	22 21 45.92	+26 31 44.3	13.0 T	352	
C/1997 J2	1998 07 03.71580	22 21 45.77	+26 31 44.5		352	
C/1997 J2	1998 07 03.71858	22 21 45.65	+26 31 41.3		352	
C/1997 J2	1998 07 04.58986	22 21 11.30	+26 22 45.6	12.6 T	355	
C/1997 J2	1998 07 04.59190	22 21 11.19	+26 22 44.0		355	
C/1997 J2	1998 07 04.59285	22 21 11.16	+26 22 43.8		355	
C/1997 J2	1998 07 05.69687	22 20 25.92	+26 11 04.7	16 T	372	
C/1997 J2	1998 07 05.70352	22 20 25.65	+26 11 00.2	12.0 T	402	
C/1997 J2	1998 07 05.70491	22 20 25.59	+26 10 59.3		402	
C/1997 J2	1998 07 05.70768	22 20 25.47	+26 10 57.6		402	
C/1997 J2	1998 07 08.95794	22 18 03.58	+25 34 22.9	13.0 T	605	
C/1997 J2	1998 07 10.25008	22 17 03.44	+25 18 57.1	14.9 T	750	
C/1997 J2	1998 07 10.26209	22 17 02.85	+25 18 48.0	15.2 T	750	
C/1997 J2	1998 07 18.27997	22 10 05.63	+23 30 15.7	15.8 T	750	
C/1997 J2	1998 07 18.28627	22 10 05.26	+23 30 10.1	16.3 T	750	
C/1997 J2	1998 07 18.51946	22 09 52.17	+23 26 40.6	12.8 T	351	
C/1997 J2	1998 07 18.52928	22 09 51.61	+23 26 31.2		351	
C/1997 J2	1998 07 18.53934	22 09 51.12	+23 26 22.6		351	
C/1997 J2	1998 07 19.98503	22 08 27.93	+23 04 16.1	12.5 T	605	
C/1997 J2	1998 07 20.00405	22 08 26.82	+23 03 58.4	12.5 T	605	
C/1997 J2	1998 07 20.29653	22 08 09.71	+22 59 26.6	15.3 T	750	
C/1997 J2	1998 07 20.30378	22 08 09.27	+22 59 19.5	15.3 T	750	
C/1997 J2	1998 07 22.02489	22 06 27.22	+22 31 51.9		118	
C/1997 J2	1998 07 22.03461	22 06 26.62	+22 31 42.5	12.0 T	118	
C/1997 J2	1998 07 22.90080	22 05 34.37	+22 17 27.8	13.7 T	627	
C/1997 J2	1998 07 22.92296	22 05 32.99	+22 17 05.7	13.7 T	627	
C/1997 J2	1998 07 22.94147	22 05 31.88	+22 16 48.0	13.7 T	627	

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C/1997 J2	1998 07 22.98735	22 05 29.05	+22 16 00.9	12.5 T	605
C/1997 J2	1998 07 22.99977	22 05 28.26	+22 15 48.6	12.6 T	605
C/1997 J2	1998 07 23.00946	22 05 27.65	+22 15 39.2	12.6 T	605
C/1997 J2	1998 07 23.03458	22 05 26.07	+22 15 14.9	14.5 T	138
C/1997 J2	1998 07 23.03894	22 05 25.75	+22 15 10.7	14.4 T	138
C/1997 J2	1998 07 23.04649	22 05 25.34	+22 15 03.3	14.4 T	138
C/1997 J2	1998 07 23.05229	22 05 24.96	+22 14 57.4	14.6 T	138
C/1997 J2	1998 07 28.62073	21 59 33.35	+20 36 50.7	12.0 T	355
C/1997 J2	1998 07 28.62303	21 59 33.20	+20 36 48.1		355
C/1997 J2	1998 07 28.62572	21 59 33.02	+20 36 45.2		355

C/1997 L1 (Zhu-Balam)

C/1997 L1	1998 06 17.26969	16 51 46.41	+28 16 07.6		696
C/1997 L1	1998 06 17.27356	16 51 46.31	+28 16 07.7	18.4 T	696
C/1997 L1	1998 07 27.18613	16 35 47.91	+28 32 40.7	22.5 N	691
C/1997 L1	1998 07 27.19047	16 35 47.86	+28 32 39.1	20.7 T	691
C/1997 L1	1998 07 27.19478	16 35 47.82	+28 32 39.1	21.2 T	691

C/1997 O1 (Tilbrook)

C/1997 O1	1998 01 28.80694	16 04 10.1	+46 00 27	18 T	372
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C/1997 T1 (Utsunomiya)

C/1997 T1	1998 02 26.84622	18 41 53.97	-05 30 22.7		372
C/1997 T1	1998 02 26.85746	18 41 53.53	-05 30 29.5		372
C/1997 T1	1998 03 07.82361	18 35 11.15	-06 56 14.8		372
C/1997 T1	1998 03 29.81330	18 02 55.07	-11 07 20.2		372
C/1997 T1	1998 03 29.82813	18 02 53.23	-11 07 33.0	16.5 T	372
C/1997 T1	1998 03 30.80729	18 00 45.18	-11 20 28.3	17 T	372
C/1997 T1	1998 03 30.81458	18 00 44.18	-11 20 34.5		372
C/1997 T1	1998 04 03.75972	17 51 24.05	-12 14 17.4	17 T	372
C/1997 T1	1998 04 03.77813	17 51 21.16	-12 14 32.4	17 T	372
C/1997 T1	1998 04 25.79583	16 36 41.30	-17 29 57.7	17 T	372
C/1997 T1	1998 04 27.64514	16 28 55.64	-17 53 35.5	17.3 T	372
C/1997 T1	1998 04 29.76285	16 19 52.01	-18 19 12.6	17.5 T	372
C/1997 T1	1998 05 19.60660	14 56 33.77	-20 42 28.8	17.9 T	372
C/1997 T1	1998 05 20.61007	14 52 50.48	-20 45 11.3		372
C/1997 T1	1998 05 21.57257	14 49 20.54	-20 47 27.3	17.5 T	372
C/1997 T1	1998 05 27.58264	14 29 08.76	-20 55 32.7		372
C/1997 T1	1998 06 17.52778	13 41 18.43	-20 48 32.8	16.2 T	360
C/1997 T1	1998 06 17.53056	13 41 18.14	-20 48 32.4		360
C/1997 T1	1998 06 18.21499	13 40 15.79	-20 48 16.0	18.0 T	704
C/1997 T1	1998 06 18.22658	13 40 14.73	-20 48 14.9	18.5 T	704
C/1997 T1	1998 06 18.23812	13 40 13.82	-20 48 15.9	18.7 T	704
C/1997 T1	1998 06 18.24972	13 40 12.35	-20 48 17.3	18.4 T	704
C/1997 T1	1998 06 18.26127	13 40 11.00	-20 48 17.9	18.5 T	704
C/1997 T1	1998 06 18.49922	13 39 50.28	-20 48 05.5	18.6 N	422
C/1997 T1	1998 06 18.50028	13 39 50.20	-20 48 05.3	18.5 N	422

P/1997 T3 (Lagerkvist-Carsenty)

P/1997 T3	1997 12 18.43160	00 55 56.55	+02 31 48.0	19 T	372
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P/1997 V1 (Larsen)

P/1997 V1	1997 12 18.40278	00 23 21.87	+09 42 44.9	17.5 T	372
P/1997 V1	1997 12 18.41614	00 23 22.36	+09 42 44.1		372

P/1998 G1 (LINEAR)

P/1998 G1	1998 06 17.15443	09 39 11.39	+13 36 18.2	18.6 T	696
P/1998 G1	1998 06 17.15649	09 39 11.38	+13 36 16.5	18.5 T	696
P/1998 G1	1998 06 17.15828	09 39 11.37	+13 36 15.0	18.5 T	696

C/1998 H1 (Stonehouse)

C/1998 H1	1998 04 28.64965	15 14 39.96	+16 52 38.1	12 T	372
C/1998 H1	1998 04 28.71632	15 14 12.99	+17 02 25.9		372
C/1998 H1	1998 04 29.68299	15 07 47.15	+19 21 33.0	12 T	372
C/1998 H1	1998 04 29.68576	15 07 45.97	+19 21 56.2		372
C/1998 H1	1998 05 03.76007	14 41 00.19	+27 59 10.8	12.5 T	372
C/1998 H1	1998 05 04.69896	14 35 00.53	+29 41 24.0	13 T	372
C/1998 H1	1998 05 19.61736	13 16 46.81	+45 10 44.4	13.5 T	372
C/1998 H1	1998 05 20.93622	13 11 40.95	+45 49 38.5	16.3 N	143
C/1998 H1	1998 05 20.93817	13 11 40.52	+45 49 41.4	16.5 N	143
C/1998 H1	1998 05 20.94013	13 11 40.10	+45 49 44.5	16.3 N	143
C/1998 H1	1998 05 20.95189	13 11 37.38	+45 50 04.3	16.3 N	143
C/1998 H1	1998 05 20.95384	13 11 36.95	+45 50 07.4	16.3 N	143
C/1998 H1	1998 05 20.95580	13 11 36.50	+45 50 10.7	16.3 N	143
C/1998 H1	1998 05 31.69410	12 40 07.83	+49 03 56.4	16 T	372
C/1998 H1	1998 06 09.87127	12 24 34.57	+50 11 39.7		046
C/1998 H1	1998 06 09.87363	12 24 34.38	+50 11 40.4		046
C/1998 H1	1998 06 09.87465	12 24 34.30	+50 11 40.5		046
C/1998 H1	1998 06 15.53064	12 18 45.29	+50 31 50.0		355
C/1998 H1	1998 06 15.54410	12 18 44.57	+50 31 52.6		355
C/1998 H1	1998 06 15.54977	12 18 44.28	+50 31 53.2		355
C/1998 H1	1998 06 17.53611	12 17 14.54	+50 36 32.3	15.6 T	360
C/1998 H1	1998 06 17.53889	12 17 14.41	+50 36 32.6		360
C/1998 H1	1998 06 17.62535	12 17 10.92	+50 36 41.7		372
C/1998 H1	1998 06 19.90787	12 15 47.50	+50 40 47.5	14.9 T	504
C/1998 H1	1998 06 19.91059	12 15 47.38	+50 40 47.5		504
C/1998 H1	1998 06 20.54757	12 15 27.45	+50 41 44.3		372
C/1998 H1	1998 06 20.93751	12 15 16.05	+50 42 13.7	15.6 T	605
C/1998 H1	1998 06 20.95446	12 15 16.67	+50 42 11.1	15.6 T	605
C/1998 H1	1998 06 27.54705	12 13 14.37	+50 47 42.7	16 T	372
C/1998 H1	1998 07 20.88536	12 19 39.34	+50 44 26.2		118
C/1998 H1	1998 07 20.88880	12 19 39.40	+50 44 26.6	16.1 T	118

C/1998 J1 (SOHO)

C/1998 J1	1998 05 29.33345	06 14 34.42	-11 38 49.3	7.0 T	428
C/1998 J1	1998 05 29.34657	06 14 38.64	-11 40 01.0	6.9 T	428
C/1998 J1	1998 05 31.34300	06 25 08.99	-14 35 12.0	7.5 T	428
C/1998 J1	1998 05 31.34530	06 25 09.72	-14 35 23.8	7.5 T	428
C/1998 J1	1998 05 31.92950	06 28 08.68	-15 23 55.5	6.7 T	860
C/1998 J1	1998 05 31.94333	06 28 12.86	-15 25 04.2	6.9 T	860
C/1998 J1	1998 05 31.94602	06 28 13.60	-15 25 18.3	6.8 T	860
C/1998 J1	1998 06 01.91086	06 33 03.82	-16 42 47.6		834
C/1998 J1	1998 06 01.94432	06 33 13.74	-16 45 24.1		834
C/1998 J1	1998 06 02.93267	06 38 04.47	-18 01 28.0		834
C/1998 J1	1998 06 02.95485	06 38 10.70	-18 03 08.8		834
C/1998 J1	1998 06 03.93029	06 42 51.80	-19 14 58.4		834
C/1998 J1	1998 06 04.34244	06 44 48.89	-19 44 33.2	7.7 T	428
C/1998 J1	1998 06 04.35020	06 44 51.05	-19 45 06.0	7.6 T	428
C/1998 J1	1998 06 04.36101	06 44 54.11	-19 45 52.2	7.6 T	428

C/1998 J1	1998 06 04.92002	06 47 31.31	-20 25 03.8	8.1 T	860
C/1998 J1	1998 06 04.92362	06 47 32.26	-20 25 19.7	8.1 T	860
C/1998 J1	1998 06 04.93178	06 47 34.57	-20 25 54.3	8.0 T	860
C/1998 J1	1998 06 04.93653	06 47 35.86	-20 26 09.4		834
C/1998 J1	1998 06 04.93791	06 47 36.39	-20 26 19.4	7.9 T	860
C/1998 J1	1998 06 04.97088	06 47 45.46	-20 28 31.4		834
C/1998 J1	1998 06 07.90274	07 01 02.06	-23 39 02.0	7.0 T	860
C/1998 J1	1998 06 07.92352	07 01 07.64	-23 40 18.0	7.4 T	860
C/1998 J1	1998 06 07.93304	07 01 10.18	-23 40 53.2	7.7 T	860
C/1998 J1	1998 06 10.35162	07 11 36.63	-26 01 10.8	8.5 T	428
C/1998 J1	1998 06 10.35363	07 11 37.15	-26 01 17.4	8.5 T	428
C/1998 J1	1998 06 11.93819	07 18 14.44	-27 26 01.6		834
C/1998 J1	1998 06 14.36577	07 28 04.83	-29 26 00.3	13.5 N	422
C/1998 J1	1998 06 14.36665	07 28 05.05	-29 26 03.0	13.5 N	422
C/1998 J1	1998 06 14.36840	07 28 05.64	-29 26 10.3	10.9 N	426
C/1998 J1	1998 06 14.37512	07 28 07.25	-29 26 29.5	10.9 N	426
C/1998 J1	1998 06 14.38308	07 28 09.14	-29 26 51.4	10.9 N	426
C/1998 J1	1998 06 14.91669	07 30 16.20	-29 51 46.5	8.4 T	860
C/1998 J1	1998 06 14.92265	07 30 17.57	-29 52 03.2	8.4 T	860
C/1998 J1	1998 06 14.93137	07 30 19.73	-29 52 26.0	8.4 T	860
C/1998 J1	1998 06 17.37301	07 39 49.05	-31 40 07.6	13.5 N	422
C/1998 J1	1998 06 17.37391	07 39 49.26	-31 40 10.1	13.4 N	422
C/1998 J1	1998 06 17.37481	07 39 49.47	-31 40 12.3	13.2 N	422
C/1998 J1	1998 06 18.36908	07 43 36.23	-32 21 24.4	13.9 N	422
C/1998 J1	1998 06 18.37003	07 43 36.44	-32 21 26.9	13.9 N	422
C/1998 J1	1998 06 18.37097	07 43 36.65	-32 21 29.2	13.9 N	422
C/1998 J1	1998 06 19.96388	07 49 34.11	-33 24 31.6	9.4 T	844
C/1998 J1	1998 06 19.98441	07 49 38.64	-33 25 18.4	9.4 T	844
C/1998 J1	1998 06 20.01098	07 49 44.51	-33 26 19.6	9.1 T	844
C/1998 J1	1998 06 21.95893	07 56 52.43	-34 38 50.1	10.8 T	844
C/1998 J1	1998 06 21.97962	07 56 56.86	-34 39 34.4	10.3 T	844
C/1998 J1	1998 06 21.99969	07 57 01.23	-34 40 18.1	10.5 T	844
C/1998 J1	1998 06 24.91781	08 07 24.65	-36 20 30.2		834
C/1998 J1	1998 06 24.94010	08 07 29.42	-36 21 14.0		834
C/1998 J1	1998 06 24.96241	08 07 34.02	-36 21 57.3		834
C/1998 J1	1998 06 24.97933	08 07 37.66	-36 22 32.1		844
C/1998 J1	1998 06 24.97984	08 07 37.79	-36 22 33.2		844
C/1998 J1	1998 06 24.98598	08 07 39.03	-36 22 43.0		834
C/1998 J1	1998 06 24.99622	08 07 41.24	-36 23 04.7		844
C/1998 J1	1998 06 25.36800	08 08 59.19	-36 35 11.6	11.7 N	426
C/1998 J1	1998 06 25.37402	08 09 00.44	-36 35 23.3	11.8 N	426
C/1998 J1	1998 06 25.38123	08 09 01.93	-36 35 36.9	11.9 N	426
C/1998 J1	1998 07 02.36966	08 32 36.29	-40 00 17.1	14.8 N	422
C/1998 J1	1998 07 02.37001	08 32 36.37	-40 00 17.8	14.7 N	422
C/1998 J1	1998 07 02.37037	08 32 36.44	-40 00 18.1	14.8 N	422
C/1998 J1	1998 07 02.37072	08 32 36.52	-40 00 18.6	14.7 N	422
C/1998 J1	1998 07 02.93025	08 34 26.02	-40 15 04.8	10.6 T	860
C/1998 J1	1998 07 02.94838	08 34 29.52	-40 15 33.1	11.0 T	860
C/1998 J1	1998 07 04.94366	08 40 55.33	-41 06 33.5	10.4 T	860
C/1998 J1	1998 07 04.96418	08 40 59.37	-41 07 04.4	10.8 T	860
C/1998 J1	1998 07 10.38058	08 57 56.55	-43 13 54.5	13.9 N	426
C/1998 J1	1998 07 10.38862	08 57 58.01	-43 14 04.8	13.9 N	426
C/1998 J1	1998 07 10.39559	08 57 59.30	-43 14 13.9	13.9 N	426

C/1998 J1	1998 07 12.97946	09 05 50.98	-44 09 40.6	13.3 T	844
C/1998 J1	1998 07 12.99819	09 05 54.23	-44 10 03.4		844
C/1998 J1	1998 07 19.36511	09 24 44.24	-46 15 34.3	16.2 N	422
C/1998 J1	1998 07 19.36560	09 24 44.35	-46 15 34.7	16.1 N	422
C/1998 J1	1998 07 19.36624	09 24 44.46	-46 15 35.6	16.5 N	422
C/1998 J1	1998 07 19.36690	09 24 44.57	-46 15 36.5	16.1 N	422

C/1998 K1 (Mueller)

C/1998 K1	1998 04 22.25175	10 36 22.32	+38 00 56.5	16.3 T	699
C/1998 K1	1998 04 22.26168	10 36 22.28	+38 00 48.1		699
C/1998 K1	1998 04 22.27161	10 36 22.18	+38 00 40.6		699
C/1998 K1	1998 04 23.25369	10 36 12.89	+37 48 12.3	16.1 T	699
C/1998 K1	1998 04 23.26361	10 36 12.73	+37 48 04.6		699
C/1998 K1	1998 04 23.27353	10 36 12.70	+37 47 57.0		699
C/1998 K1	1998 05 20.53993	10 39 47.46	+31 31 53.5		372
C/1998 K1	1998 05 20.54965	10 39 47.70	+31 31 45.5		372
C/1998 K1	1998 05 21.52778	10 40 10.53	+31 17 35.0		372
C/1998 K1	1998 05 21.55087	10 40 11.08	+31 17 14.8		372
C/1998 K1	1998 05 27.56146	10 42 51.21	+29 49 30.3	15 T	372
C/1998 K1	1998 05 28.95663	10 43 33.12	+29 29 00.0	16.4 T	860
C/1998 K1	1998 05 28.96400	10 43 33.52	+29 28 55.1	16.3 T	860
C/1998 K1	1998 05 28.97112	10 43 33.71	+29 28 50.4	16.0 T	860
C/1998 K1	1998 05 31.98079	10 45 09.38	+28 44 34.6	15.9 T	860
C/1998 K1	1998 05 31.98771	10 45 09.46	+28 44 27.5	16.0 T	860
C/1998 K1	1998 05 31.99390	10 45 09.74	+28 44 21.5	15.8 T	860
C/1998 K1	1998 06 09.86475	10 50 33.22	+26 33 03.5		046
C/1998 K1	1998 06 09.86738	10 50 33.40	+26 33 01.0		046
C/1998 K1	1998 06 09.86892	10 50 33.44	+26 32 59.6		046
C/1998 K1	1998 06 15.17639	10 54 13.35	+25 14 11.0	16.5 T	670
C/1998 K1	1998 06 15.18819	10 54 13.71	+25 14 01.2		670
C/1998 K1	1998 06 15.19583	10 54 14.18	+25 13 53.8		670
C/1998 K1	1998 06 17.48976	10 55 54.65	+24 39 49.1	16.1 T	360
C/1998 K1	1998 06 17.49375	10 55 54.81	+24 39 45.5		360
C/1998 K1	1998 06 20.52038	10 58 12.28	+23 54 45.0	16.0 T	402
C/1998 K1	1998 06 20.52212	10 58 12.41	+23 54 43.6		402
C/1998 K1	1998 06 20.52385	10 58 12.44	+23 54 41.6		402
C/1998 K1	1998 06 24.84880	11 01 37.85	+22 50 22.3		104
C/1998 K1	1998 06 24.85017	11 01 37.96	+22 50 21.3		104

C/1998 K2 (LINEAR)

C/1998 K2	1998 05 27.63108	16 48 55.76	-31 10 25.2		372
C/1998 K2	1998 05 27.64184	16 48 54.50	-31 10 42.7		372
C/1998 K2	1998 05 30.60694	16 42 45.21	-32 30 45.0		372
C/1998 K2	1998 05 31.57005	16 40 40.92	-32 56 38.4	15.5 T	372
C/1998 K2	1998 05 31.68715	16 40 25.50	-32 59 46.5		372
C/1998 K2	1998 06 03.66146	16 33 48.77	-34 18 57.4		372
C/1998 K2	1998 06 03.66563	16 33 48.23	-34 19 02.7		372
C/1998 K2	1998 06 04.95047	16 30 52.10	-34 52 48.3	13.2 T	860
C/1998 K2	1998 06 04.99293	16 30 46.14	-34 53 54.7	13.1 T	860
C/1998 K2	1998 06 04.99648	16 30 45.72	-34 53 59.4	12.7 T	860
C/1998 K2	1998 06 08.08166	16 23 30.52	-36 13 36.5	14.6 T	860
C/1998 K2	1998 06 08.08681	16 23 29.72	-36 13 45.4	14.6 T	860
C/1998 K2	1998 06 08.09142	16 23 29.03	-36 13 52.9	14.5 T	860
C/1998 K2	1998 06 16.54792	16 02 45.95	-39 37 25.0	12.4 T	360

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C/1998 K2	1998 06 16.55035	16 02 45.55	-39 37 28.3		360
C/1998 K2	1998 06 16.55313	16 02 45.13	-39 37 32.0		360
C/1998 K2	1998 06 17.41013	16 00 37.65	-39 56 35.4	16.6 N	422
C/1998 K2	1998 06 17.41117	16 00 37.47	-39 56 37.1	16.5 N 2	422
C/1998 K2	1998 06 17.41223	16 00 37.39	-39 56 37.5	16.5 N 2	422
C/1998 K2	1998 06 17.58142	16 00 11.73	-40 00 27.3		372
C/1998 K2	1998 06 17.61458	16 00 06.72	-40 01 12.3	12.4 T	360
C/1998 K2	1998 06 17.61736	16 00 06.33	-40 01 16.2		360
C/1998 K2	1998 06 19.22534	15 56 06.78	-40 36 09.1	13.5 T	844
C/1998 K2	1998 06 19.23096	15 56 05.91	-40 36 15.6	13.2 T	844
C/1998 K2	1998 06 19.23431	15 56 05.44	-40 36 20.1	13.2 T	844
C/1998 K2	1998 06 20.16578	15 53 47.40	-40 56 07.1	14.2 T	844
C/1998 K2	1998 06 20.18589	15 53 44.32	-40 56 32.3	13.8 T	844
C/1998 K2	1998 06 20.20744	15 53 41.11	-40 56 59.3	14.1 T	844
C/1998 K2	1998 06 21.94175	15 49 25.70	-41 32 46.3	14.0 T	860
C/1998 K2	1998 06 21.94787	15 49 24.77	-41 32 54.3	13.9 T	860
C/1998 K2	1998 06 21.97208	15 49 21.12	-41 33 23.3	13.7 T	860
C/1998 K2	1998 06 24.00035	15 44 25.10	-42 13 34.9	12.7 T	860
C/1998 K2	1998 06 24.16336	15 44 01.16	-42 16 42.3	13.0 T	860
C/1998 K2	1998 06 25.42793	15 40 59.78	-42 40 45.7	13.6 T	426
C/1998 K2	1998 06 25.43787	15 40 58.32	-42 40 57.1	13.5 T	426
C/1998 K2	1998 06 25.44818	15 40 56.82	-42 41 08.8	13.6 T	426
C/1998 K2	1998 06 26.52597	15 38 23.22	-43 01 06.4	15.8 N	422
C/1998 K2	1998 06 26.53161	15 38 22.40	-43 01 12.6	15.8 N	422
C/1998 K2	1998 06 26.53249	15 38 22.28	-43 01 13.7	15.8 N	422
C/1998 K2	1998 06 27.55660	15 35 58.37	-43 19 45.7		372
C/1998 K2	1998 06 28.51632	15 33 45.05	-43 36 44.0	14 T	372
C/1998 K2	1998 07 03.04087	15 23 40.32	-44 51 38.3	13.1 T	860
C/1998 K2	1998 07 03.04785	15 23 39.53	-44 51 44.9	13.2 T	860
C/1998 K2	1998 07 03.05329	15 23 38.78	-44 51 50.9	13.3 T	860
C/1998 K2	1998 07 10.50433	15 08 50.31	-46 39 17.0	13.4 T	426
C/1998 K2	1998 07 10.51007	15 08 49.67	-46 39 21.5	13.4 T	426
C/1998 K2	1998 07 10.51602	15 08 49.01	-46 39 26.3	13.4 T	426
C/1998 K2	1998 07 10.52189	15 08 48.35	-46 39 31.0	13.4 T	426
C/1998 K2	1998 07 11.53120	15 06 59.66	-46 52 44.5	15.8 N	422
C/1998 K2	1998 07 11.53220	15 06 59.52	-46 52 45.3	15.8 N	422
C/1998 K2	1998 07 11.53317	15 06 59.43	-46 52 46.1	15.7 N	422
C/1998 K2	1998 07 11.53413	15 06 59.30	-46 52 47.0	15.5 N	422
C/1998 K2	1998 07 19.44998	14 54 34.97	-48 28 11.1	15.3 N	422
C/1998 K2	1998 07 19.45069	14 54 34.92	-48 28 11.4	15.4 N	422
C/1998 K2	1998 07 19.45137	14 54 34.85	-48 28 11.9	15.4 N	422
C/1998 K2	1998 08 02.41913	14 40 45.42	-50 54 12.2	15.7 N	422
C/1998 K2	1998 08 02.41978	14 40 45.39	-50 54 12.5	15.7 N	422
C/1998 K2	1998 08 02.42193	14 40 45.32	-50 54 13.8	15.6 N	422

C/1998 K3 (LINEAR)

C/1998 K3	1998 05 27.61597	16 26 25.29	+03 05 14.4	17.9 T	372
C/1998 K3	1998 05 27.66854	16 26 17.34	+03 05 42.0	18 T	372
C/1998 K3	1998 05 29.20348	16 22 30.99	+03 18 23.1	17.6 T	3 860
C/1998 K3	1998 05 29.21685	16 22 28.73	+03 18 28.9		3 860
C/1998 K3	1998 05 31.67708	16 16 27.25	+03 37 53.9	18.1 T	372
C/1998 K3	1998 06 03.67951	16 09 10.8	+03 59 51	18.4 T	372
C/1998 K3	1998 06 14.99558	15 43 14.68	+05 04 33.9		557

C/1998 K3	1998 06 14.99791	15 43 14.41	+05 04 33.9	18.3 T	557
C/1998 K3	1998 06 16.52708	15 39 58.49	+05 11 07.6	18.1 T	360
C/1998 K3	1998 06 16.53125	15 39 57.94	+05 11 08.9		360
C/1998 K3	1998 06 16.53889	15 39 56.98	+05 11 10.7		360
C/1998 K3	1998 06 16.54122	15 39 56.69	+05 11 13.9	17.9 T	426
C/1998 K3	1998 06 16.55677	15 39 54.66	+05 11 18.0	17.9 T	426
C/1998 K3	1998 06 16.57249	15 39 52.73	+05 11 21.3	18.2 T	426
C/1998 K3	1998 06 17.26241	15 38 25.61	+05 14 05.3	18.0 T	696
C/1998 K3	1998 06 17.26419	15 38 25.39	+05 14 05.6	18.0 T	696
C/1998 K3	1998 06 17.26597	15 38 25.16	+05 14 06.1	18.0 T	696
C/1998 K3	1998 06 17.28134	15 38 23.32	+05 14 08.8	18.7 T	704
C/1998 K3	1998 06 17.29271	15 38 21.72	+05 14 13.0	19.2 T	704
C/1998 K3	1998 06 17.31555	15 38 19.00	+05 14 17.9	19.1 T	704
C/1998 K3	1998 06 17.32689	15 38 17.12	+05 14 20.0	19.4 T	704
C/1998 K3	1998 06 17.58045	15 37 45.75	+05 15 19.1	17.5 T	402
C/1998 K3	1998 06 17.58253	15 37 45.51	+05 15 19.6		402
C/1998 K3	1998 06 17.58462	15 37 45.14	+05 15 19.5		402
C/1998 K3	1998 06 17.89620	15 37 06.45	+05 16 31.8	18.0 T	046
C/1998 K3	1998 06 17.89757	15 37 06.25	+05 16 33.4		046
C/1998 K3	1998 06 17.92105	15 37 03.30	+05 16 36.9		557
C/1998 K3	1998 06 17.92668	15 37 02.61	+05 16 38.5	18.0 T	046
C/1998 K3	1998 06 17.92774	15 37 02.51	+05 16 38.6		046
C/1998 K3	1998 06 17.94147	15 37 00.76	+05 16 41.5		557
C/1998 K3	1998 06 17.94913	15 36 59.80	+05 16 43.2	18.5 T	557
C/1998 K3	1998 06 18.21052	15 36 27.42	+05 17 44.3	18.8 T	704
C/1998 K3	1998 06 18.21866	15 36 26.44	+05 17 44.7	18.6 T	699
C/1998 K3	1998 06 18.22212	15 36 26.01	+05 17 46.2	19.4 T	704
C/1998 K3	1998 06 18.23367	15 36 24.50	+05 17 48.7	19.4 T	704
C/1998 K3	1998 06 18.23854	15 36 24.02	+05 17 50.1		699
C/1998 K3	1998 06 18.24527	15 36 23.15	+05 17 49.7	19.3 T	704
C/1998 K3	1998 06 18.25684	15 36 21.40	+05 17 53.6	19.3 T	704
C/1998 K3	1998 06 18.25844	15 36 21.53	+05 17 53.9		699
C/1998 K3	1998 06 20.59841	15 31 36.85	+05 26 00.2	17.5 T	402
C/1998 K3	1998 06 20.60000	15 31 36.63	+05 26 00.7		402
C/1998 K3	1998 06 20.60160	15 31 36.42	+05 26 00.9		402
C/1998 K3	1998 06 22.91666	15 27 05.22	+05 32 53.7		046
C/1998 K3	1998 06 22.91782	15 27 05.03	+05 32 53.2		046
C/1998 K3	1998 06 22.91887	15 27 04.99	+05 32 53.2		046
C/1998 K3	1998 06 22.91997	15 27 04.85	+05 32 53.2		046
C/1998 K3	1998 07 18.55792	14 49 06.21	+05 46 45.7	18.0 T	402
C/1998 K3	1998 07 18.56069	14 49 06.09	+05 46 45.3		402
C/1998 K3	1998 07 18.56347	14 49 05.95	+05 46 45.3		402
C/1998 K3	1998 07 20.87610	14 46 43.66	+05 43 44.1	18.9 T	046
C/1998 K3	1998 07 20.87988	14 46 43.41	+05 43 44.1		046
C/1998 K3	1998 07 20.88103	14 46 43.35	+05 43 43.3		046
C/1998 K3	1998 07 26.17006	14 41 53.55	+05 35 05.5	18.8 T	691
C/1998 K3	1998 07 26.18025	14 41 53.01	+05 35 04.3	20.6 N	691

C/1998 K5 (LINEAR)

C/1998 K5	1998 06 02.95572	17 53 27.30	+11 48 04.3	15.0 T	610
C/1998 K5	1998 06 02.96521	17 53 29.76	+11 48 58.0		610
C/1998 K5	1998 06 02.96818	17 53 30.54	+11 49 14.8		610
C/1998 K5	1998 06 02.97065	17 53 31.17	+11 49 28.7		610

C/1998 K5	1998 06 02.97326	17 53 31.85	+11 49 43.5		610	C/1998 K5	1998 06 18.23218	19 59 50.63	+42 05 03.8	13.2 T	706
C/1998 K5	1998 06 05.26788	18 04 44.39	+15 36 00.9	14.7 T	860	C/1998 K5	1998 06 19.95841	20 24 51.56	+45 18 37.1	12.9 T	504
C/1998 K5	1998 06 05.26926	18 04 44.82	+15 36 09.9	14.5 T	860	C/1998 K5	1998 06 19.95909	20 24 52.16	+45 18 41.5	12.9 T	504
C/1998 K5	1998 06 05.27235	18 04 45.75	+15 36 28.8	14.6 T	860	C/1998 K5	1998 06 19.95942	20 24 52.45	+45 18 43.6	12.9 T	504
C/1998 K5	1998 06 08.29066	18 22 34.22	+21 09 45.9	13.5 T	860	C/1998 K5	1998 06 19.95976	20 24 52.77	+45 18 45.9	12.9 T	504
C/1998 K5	1998 06 08.29535	18 22 36.01	+21 10 18.9	13.5 T	860	C/1998 K5	1998 06 19.96009	20 24 53.05	+45 18 47.9	12.9 T	504
C/1998 K5	1998 06 08.30233	18 22 38.70	+21 11 07.9	13.5 T	860	C/1998 K5	1998 06 19.96044	20 24 53.37	+45 18 50.2	12.8 T	504
C/1998 K5	1998 06 11.95016	18 50 16.58	+28 41 13.8	14.3 T	610	C/1998 K5	1998 06 19.96079	20 24 53.69	+45 18 52.4	12.9 T	504
C/1998 K5	1998 06 11.95308	18 50 18.09	+28 41 37.1		610	C/1998 K5	1998 06 19.96113	20 24 53.99	+45 18 54.6	12.9 T	504
C/1998 K5	1998 06 11.96227	18 50 22.82	+28 42 50.3		610	C/1998 K5	1998 06 19.96148	20 24 54.31	+45 18 56.9	12.8 T	504
C/1998 K5	1998 06 11.96727	18 50 25.40	+28 43 30.2		610	C/1998 K5	1998 06 19.96223	20 24 54.98	+45 19 01.7	12.9 T	504
C/1998 K5	1998 06 11.97228	18 50 27.98	+28 44 10.1		610	C/1998 K5	1998 06 19.96260	20 24 55.31	+45 19 04.1	12.9 T	504
C/1998 K5	1998 06 13.19099	19 01 34.16	+31 22 32.2	13.4 T	750	C/1998 K5	1998 06 19.96300	20 24 55.68	+45 19 06.6	12.9 T	504
C/1998 K5	1998 06 13.19561	19 01 36.76	+31 23 08.6	13.5 T	750	C/1998 K5	1998 06 19.96635	20 24 58.70	+45 19 28.3	12.8 T	504
C/1998 K5	1998 06 13.20275	19 01 40.74	+31 24 05.1	13.5 T	750	C/1998 K5	1998 06 19.96700	20 24 59.30	+45 19 32.5	12.9 T	504
C/1998 K5	1998 06 13.20569	19 01 42.41	+31 24 28.6	13.3 T	750	C/1998 K5	1998 06 19.96737	20 24 59.63	+45 19 34.7	12.9 T	504
C/1998 K5	1998 06 13.88900	19 08 24.04	+32 53 52.0		108	C/1998 K5	1998 06 20.13773	20 27 33.25	+45 37 37.0		620
C/1998 K5	1998 06 13.89086	19 08 25.21	+32 54 07.4		108	C/1998 K5	1998 06 20.14016	20 27 35.42	+45 37 52.0		620
C/1998 K5	1998 06 13.89509	19 08 27.61	+32 54 40.2	13.5 T	108	C/1998 K5	1998 06 20.14664	20 27 41.17	+45 38 32.6		620
C/1998 K5	1998 06 13.93690	19 08 52.57	+33 00 12.2	13.4 T	143	C/1998 K5	1998 06 20.15394	20 27 47.77	+45 39 16.9		620
C/1998 K5	1998 06 13.93808	19 08 53.26	+33 00 21.5	13.2 T	143	C/1998 K5	1998 06 20.63116	20 35 17.63	+46 27 43.1	12.5 T	355
C/1998 K5	1998 06 13.93848	19 08 53.50	+33 00 24.8	13.2 T	143	C/1998 K5	1998 06 20.63305	20 35 19.36	+46 27 54.8		355
C/1998 K5	1998 06 14.30087	19 12 36.10	+33 48 01.9	12.7 T	670	C/1998 K5	1998 06 20.63385	20 35 20.11	+46 27 59.6		355
C/1998 K5	1998 06 14.30469	19 12 38.47	+33 48 32.5		670	C/1998 K5	1998 06 20.93682	20 40 09.65	+46 57 23.0	14.2 T	610
C/1998 K5	1998 06 14.31267	19 12 43.27	+33 49 35.5		670	C/1998 K5	1998 06 20.94029	20 40 12.96	+46 57 43.5		610
C/1998 K5	1998 06 14.32378	19 12 50.01	+33 51 03.6		670	C/1998 K5	1998 06 20.94376	20 40 16.26	+46 58 04.0		610
C/1998 K5	1998 06 15.00836	19 20 06.68	+35 20 20.6	13.5 N	557	C/1998 K5	1998 06 20.94723	20 40 19.56	+46 58 24.6		610
C/1998 K5	1998 06 15.01044	19 20 08.03	+35 20 37.0	12.8 T	557	C/1998 K5	1998 06 20.95071	20 40 22.86	+46 58 45.1		610
C/1998 K5	1998 06 15.01356	19 20 10.03	+35 21 01.5		557	C/1998 K5	1998 06 21.95874	20 56 55.15	+48 30 26.8	12.5 N	143
C/1998 K5	1998 06 15.18929	19 22 06.14	+35 44 43.8	12.2 T	860	C/1998 K5	1998 06 21.95952	20 56 55.96	+48 30 30.9	12.5 N	143
C/1998 K5	1998 06 15.19869	19 22 12.26	+35 45 57.9	12.4 T	860	C/1998 K5	1998 06 21.96031	20 56 56.70	+48 30 34.9	12.4 N	143
C/1998 K5	1998 06 15.20638	19 22 17.31	+35 46 59.2	12.4 T	860	C/1998 K5	1998 06 21.99010	20 57 26.26	+48 33 11.2	12.5 N	143
C/1998 K5	1998 06 15.21270	19 22 21.41	+35 47 48.8	12.4 T	860	C/1998 K5	1998 06 21.99088	20 57 27.03	+48 33 15.2	12.5 N	143
C/1998 K5	1998 06 15.56979	19 26 24.57	+36 33 19.5	12.8 T	355	C/1998 K5	1998 06 21.99167	20 57 27.80	+48 33 19.4	12.4 N	143
C/1998 K5	1998 06 15.57185	19 26 25.95	+36 33 35.6		355	C/1998 K5	1998 06 22.02149	20 57 57.29	+48 35 53.8	12.4 N	143
C/1998 K5	1998 06 15.57485	19 26 27.94	+36 33 58.9		355	C/1998 K5	1998 06 22.02233	20 57 58.13	+48 35 58.3	12.4 N	143
C/1998 K5	1998 06 15.96400	19 30 57.42	+37 24 00.8	13.0 N	143	C/1998 K5	1998 06 22.02390	20 57 59.69	+48 36 06.2	12.5 N	143
C/1998 K5	1998 06 15.96438	19 30 57.71	+37 24 04.0	13.0 N	143	C/1998 K5	1998 06 23.04521	21 15 26.36	+49 57 00.2	13 T	046
C/1998 K5	1998 06 15.96477	19 30 57.98	+37 24 07.0	13.1 N	143	C/1998 K5	1998 06 23.04624	21 15 27.42	+49 57 04.8		046
C/1998 K5	1998 06 17.35613	19 48 07.43	+40 19 33.7	12.6 T	696	C/1998 K5	1998 06 23.04698	21 15 28.18	+49 57 08.2		046
C/1998 K5	1998 06 17.35659	19 48 07.78	+40 19 37.0	12.6 T	696	C/1998 K5	1998 06 23.04811	21 15 29.33	+49 57 13.2		046
C/1998 K5	1998 06 17.35705	19 48 08.12	+40 19 40.3	12.6 T	696	C/1998 K5	1998 06 23.29446	21 19 47.80	+50 15 05.2	12.6 N	752
C/1998 K5	1998 06 17.64858	19 51 57.65	+40 55 16.5		372	C/1998 K5	1998 06 23.29485	21 19 48.22	+50 15 06.7	12.5 N	752
C/1998 K5	1998 06 17.67361	19 52 17.01	+40 58 20.6	13.0 T	360	C/1998 K5	1998 06 23.29590	21 19 49.29	+50 15 11.4	12.6 N	752
C/1998 K5	1998 06 17.67569	19 52 18.62	+40 58 35.8		360	C/1998 K5	1998 06 23.29698	21 19 50.39	+50 15 15.9	12.5 N	752
C/1998 K5	1998 06 17.67743	19 52 19.95	+40 58 48.5		360	C/1998 K5	1998 06 23.29878	21 19 52.26	+50 15 23.8	12.5 N	752
C/1998 K5	1998 06 18.00169	19 56 40.27	+41 37 41.2	13.2 T	046	C/1998 K5	1998 06 23.92204	21 30 51.90	+50 56 33.2		504
C/1998 K5	1998 06 18.00234	19 56 40.81	+41 37 46.0		046	C/1998 K5	1998 06 23.92234	21 30 52.25	+50 56 34.5	12.7 T	504
C/1998 K5	1998 06 18.00291	19 56 41.24	+41 37 50.0		046	C/1998 K5	1998 06 23.92289	21 30 52.85	+50 56 36.5	12.7 T	504
C/1998 K5	1998 06 18.00339	19 56 41.64	+41 37 53.6		046	C/1998 K5	1998 06 23.92319	21 30 53.14	+50 56 37.7	12.7 T	504
C/1998 K5	1998 06 18.00394	19 56 42.07	+41 37 57.5		046	C/1998 K5	1998 06 23.92350	21 30 53.45	+50 56 38.8	12.7 T	504
C/1998 K5	1998 06 18.00443	19 56 42.47	+41 38 01.2		046	C/1998 K5	1998 06 23.92380	21 30 53.77	+50 56 39.9	12.7 T	504
C/1998 K5	1998 06 18.22560	19 59 45.26	+42 04 16.6	13.1 T	706	C/1998 K5	1998 06 23.92410	21 30 54.07	+50 56 41.2	12.7 T	504

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C/1998 K5	1998 06 23.92441	21 30 54.40	+50 56 42.4	12.7 T	504
C/1998 K5	1998 06 23.92471	21 30 54.71	+50 56 43.6	12.7 T	504
C/1998 K5	1998 06 23.92505	21 30 55.08	+50 56 45.0	12.6 T	504
C/1998 K5	1998 06 23.92704	21 30 57.18	+50 56 52.8	12.6 T	504
C/1998 K5	1998 06 23.92734	21 30 57.52	+50 56 54.0	12.7 T	504
C/1998 K5	1998 06 23.92763	21 30 57.83	+50 56 55.2	12.6 T	504
C/1998 K5	1998 06 23.92794	21 30 58.16	+50 56 56.4	12.7 T	504
C/1998 K5	1998 06 23.92824	21 30 58.45	+50 56 57.6	12.6 T	504
C/1998 K5	1998 06 25.04204	21 50 49.90	+51 59 51.7	12.5 T	046
C/1998 K5	1998 06 25.04278	21 50 50.69	+51 59 54.0		046
C/1998 K5	1998 06 25.04388	21 50 51.86	+51 59 57.3		046
C/1998 K5	1998 06 25.04459	21 50 52.62	+51 59 59.5		046
C/1998 K5	1998 06 25.04510	21 50 53.15	+52 00 01.0		046
C/1998 K5	1998 06 25.28022	21 55 07.73	+52 11 25.7	12.3 N	752
C/1998 K5	1998 06 25.28183	21 55 09.45	+52 11 30.5	12.4 N	752
C/1998 K5	1998 06 25.28303	21 55 10.72	+52 11 33.8	12.5 N	752
C/1998 K5	1998 06 25.28572	21 55 13.60	+52 11 41.7	12.4 N	752
C/1998 K5	1998 06 25.28758	21 55 15.54	+52 11 47.3	12.4 N	752
C/1998 K5	1998 06 25.95800	22 07 19.61	+52 40 09.2	12.8 N	620
C/1998 K5	1998 06 25.96115	22 07 22.94	+52 40 16.9	12.7 N	620
C/1998 K5	1998 06 25.96402	22 07 26.02	+52 40 24.1	12.7 N	620
C/1998 K5	1998 06 25.97113	22 07 33.57	+52 40 41.5	12.7 N	620
C/1998 K5	1998 06 25.97476	22 07 37.46	+52 40 50.7	12.8 N	620
C/1998 K5	1998 06 26.14635	22 10 39.15	+52 47 31.3	13.4 T	491
C/1998 K5	1998 06 27.01072	22 26 07.60	+53 14 43.2	12.7 N	620
C/1998 K5	1998 06 27.01353	22 26 10.46	+53 14 48.0	12.7 N	620
C/1998 K5	1998 06 27.01535	22 26 12.41	+53 14 50.7	12.8 N	620
C/1998 K5	1998 06 27.01748	22 26 14.60	+53 14 54.9	12.7 N	620
C/1998 K5	1998 06 27.02192	22 26 19.25	+53 15 02.1	12.9 N	620
C/1998 K5	1998 06 27.02204	22 26 19.37	+53 15 03.6		620
C/1998 K5	1998 06 27.60938	22 36 42.06	+53 28 45.6		372
C/1998 K5	1998 06 27.94134	22 42 29.19	+53 34 47.3	12.5 T	504
C/1998 K5	1998 06 27.94159	22 42 29.46	+53 34 47.6	12.6 T	504
C/1998 K5	1998 06 27.94182	22 42 29.70	+53 34 48.0	12.5 T	504
C/1998 K5	1998 06 27.94206	22 42 29.97	+53 34 48.3	12.5 T	504
C/1998 K5	1998 06 27.94300	22 42 30.91	+53 34 49.4	12.5 T	504
C/1998 K5	1998 06 27.94326	22 42 31.21	+53 34 49.7	12.5 T	504
C/1998 K5	1998 06 27.94373	22 42 31.68	+53 34 50.2	12.5 T	504
C/1998 K5	1998 06 27.94400	22 42 31.99	+53 34 50.7	12.5 T	504
C/1998 K5	1998 06 27.94427	22 42 32.25	+53 34 50.9	12.5 T	504
C/1998 K5	1998 06 27.94480	22 42 32.80	+53 34 51.5	12.6 T	504
C/1998 K5	1998 06 27.94564	22 42 33.64	+53 34 52.5	12.5 T	504
C/1998 K5	1998 06 27.94612	22 42 34.16	+53 34 53.0	12.5 T	504
C/1998 K5	1998 06 28.10043	22 45 12.45	+53 37 42.0		107
C/1998 K5	1998 06 28.10254	22 45 14.45	+53 37 44.0		107
C/1998 K5	1998 06 28.10439	22 45 16.47	+53 37 46.1		107
C/1998 K5	1998 06 28.62326	22 54 13.86	+53 44 13.4	12 T	372
C/1998 K5	1998 06 30.63540	23 27 09.73	+53 47 03.4	12.6 T	355
C/1998 K5	1998 06 30.63693	23 27 11.12	+53 47 02.6		355
C/1998 K5	1998 06 30.63830	23 27 12.39	+53 47 02.3		355
C/1998 K5	1998 07 02.65786	23 57 06.40	+53 20 11.7	12.1 T	355
C/1998 K5	1998 07 02.65859	23 57 06.99	+53 20 11.2		355
C/1998 K5	1998 07 02.66005	23 57 08.25	+53 20 09.8		355

C/1998 K5	1998 07 03.57448	00 09 32.50	+53 00 21.4	12.5 T	367
C/1998 K5	1998 07 03.57725	00 09 34.69	+53 00 17.8		367
C/1998 K5	1998 07 03.58002	00 09 36.88	+53 00 14.4		367
C/1998 K5	1998 07 03.67056	00 10 47.82	+52 58 21.1	12.4 T	351
C/1998 K5	1998 07 03.68039	00 10 55.35	+52 58 08.1		351
C/1998 K5	1998 07 03.68264	00 10 57.17	+52 58 05.9		351
C/1998 K5	1998 07 03.74132	00 11 42.57	+52 56 47.6	12.4 T	360
C/1998 K5	1998 07 03.74271	00 11 43.64	+52 56 45.7		360
C/1998 K5	1998 07 03.75780	00 11 54.90	+52 56 25.2		352
C/1998 K5	1998 07 03.75954	00 11 56.14	+52 56 22.3		352
C/1998 K5	1998 07 03.76127	00 11 57.53	+52 56 20.6		352
C/1998 K5	1998 07 03.77691	00 12 09.69	+52 55 58.6		372
C/1998 K5	1998 07 03.94747	00 14 23.15	+52 51 21.7	12.3 N	143
C/1998 K5	1998 07 03.94786	00 14 23.37	+52 51 21.1	12.3 N	143
C/1998 K5	1998 07 03.94826	00 14 23.73	+52 51 20.6	12.4 N	143
C/1998 K5	1998 07 03.98628	00 14 52.92	+52 50 28.6	12.4 N	143
C/1998 K5	1998 07 03.98667	00 14 53.18	+52 50 28.2	12.3 N	143
C/1998 K5	1998 07 03.98706	00 14 53.51	+52 50 27.5	12.3 N	143
C/1998 K5	1998 07 04.64554	00 23 09.28	+52 33 15.9	12.4 T	355
C/1998 K5	1998 07 04.64716	00 23 10.49	+52 33 13.7		355
C/1998 K5	1998 07 04.64911	00 23 11.90	+52 33 10.4		355
C/1998 K5	1998 07 05.00153	00 27 27.27	+52 23 15.0		107
C/1998 K5	1998 07 05.00332	00 27 28.54	+52 23 12.3		107
C/1998 K5	1998 07 05.00436	00 27 29.76	+52 23 09.6		107
C/1998 K5	1998 07 05.00818	00 27 31.99	+52 23 04.6		107
C/1998 K5	1998 07 05.00878	00 27 32.93	+52 23 02.4		107
C/1998 K5	1998 07 05.01000	00 27 33.79	+52 23 00.6		107
C/1998 K5	1998 07 13.07649	01 41 32.57	+47 45 11.5	16 T	097
C/1998 K5	1998 07 13.08191	01 41 34.75	+47 45 00.1	16 T	097
C/1998 K5	1998 07 14.05102	01 48 04.64	+47 10 09.1	15 T	097
C/1998 K5	1998 07 14.05266	01 48 05.25	+47 10 05.7	15 T	097
C/1998 K5	1998 07 18.63519	02 14 10.81	+44 32 06.4	12.6 T	351
C/1998 K5	1998 07 18.63793	02 14 11.48	+44 32 02.2		351
C/1998 K5	1998 07 18.74817	02 14 44.06	+44 28 34.4		900
C/1998 K5	1998 07 18.75734	02 14 46.65	+44 28 17.0	12.2 T	900
C/1998 K5	1998 07 25.00358	02 41 20.93	+41 17 32.1		118
C/1998 K5	1998 07 25.00860	02 41 22.02	+41 17 24.0	12.2 T	118

C/1998 M1 (LINEAR)

C/1998 M1	1998 05 22.26640	15 36 16.94	-28 15 25.6	17.5 T	704
C/1998 M1	1998 05 22.28589	15 36 16.34	-28 15 11.6	17.9 T	704
C/1998 M1	1998 05 22.30535	15 36 15.78	-28 15 05.6	18.3 T	704
C/1998 M1	1998 05 22.34470	15 36 14.50	-28 14 43.9	17.8 T	704
C/1998 M1	1998 06 16.23466	15 27 08.87	-25 01 51.9	17.5 T	704
C/1998 M1	1998 06 16.26111	15 27 08.41	-25 01 35.0	18.1 T	704
C/1998 M1	1998 06 16.27875	15 27 08.21	-25 01 27.5	18.2 T	704
C/1998 M1	1998 06 16.29655	15 27 08.13	-25 01 20.2	18.0 T	704
C/1998 M1	1998 06 16.31370	15 27 07.52	-25 01 12.1	18.0 T	704
C/1998 M1	1998 06 16.87784	15 27 00.55	-24 56 45.5		557
C/1998 M1	1998 06 16.88270	15 27 00.34	-24 56 42.5	17.2 N	046
C/1998 M1	1998 06 16.88375	15 27 00.35	-24 56 42.3		046
C/1998 M1	1998 06 16.88480	15 27 00.35	-24 56 41.7		046
C/1998 M1	1998 06 16.88626	15 27 00.30	-24 56 41.7	15.6 T	046

C/1998 M1	1998 06 16.89053	15 27 00.25	-24 56 39.3		046	C/1998 M1	1998 06 18.15453	15 26 44.83	-24 46 45.9	16.6 N	752
C/1998 M1	1998 06 16.89090	15 27 00.29	-24 56 39.6		557	C/1998 M1	1998 06 18.16027	15 26 44.86	-24 46 44.7	15.5 T	709
C/1998 M1	1998 06 16.89417	15 27 00.23	-24 56 37.5	16.7 N	557	C/1998 M1	1998 06 18.16139	15 26 44.73	-24 46 43.6	16.4 N	752
C/1998 M1	1998 06 16.89580	15 27 00.20	-24 56 36.5	15.7 T	557	C/1998 M1	1998 06 18.16939	15 26 44.74	-24 46 40.7	15.5 T	2 709
C/1998 M1	1998 06 16.93628	15 26 59.65	-24 56 17.1		046	C/1998 M1	1998 06 18.19611	15 26 44.34	-24 46 26.8	16.0 T	2 709
C/1998 M1	1998 06 16.93745	15 26 59.65	-24 56 16.6		046	C/1998 M1	1998 06 18.20510	15 26 44.26	-24 46 23.1	15.6 T	709
C/1998 M1	1998 06 16.93856	15 26 59.61	-24 56 16.2		046	C/1998 M1	1998 06 18.21294	15 26 44.20	-24 46 20.4	15.4 T	709
C/1998 M1	1998 06 17.09622	15 26 57.78	-24 55 02.0	17.0 T	752	C/1998 M1	1998 06 18.22329	15 26 44.04	-24 46 15.5	15.4 T	709
C/1998 M1	1998 06 17.15419	15 26 57.07	-24 54 36.9	15.5 T	2 709	C/1998 M1	1998 06 18.27294	15 26 43.33	-24 45 49.4		696
C/1998 M1	1998 06 17.16529	15 26 56.92	-24 54 31.3	15.4 T	2 709	C/1998 M1	1998 06 18.27682	15 26 43.28	-24 45 47.6		696
C/1998 M1	1998 06 17.17766	15 26 56.74	-24 54 25.5	15.6 T	2 709	C/1998 M1	1998 06 18.28069	15 26 43.23	-24 45 45.8		696
C/1998 M1	1998 06 17.18615	15 26 56.63	-24 54 21.7	15.6 T	2 709	C/1998 M1	1998 06 18.38255	15 26 42.37	-24 44 55.6	18.0 N	422
C/1998 M1	1998 06 17.18887	15 26 56.44	-24 54 21.5	15.6 T	752	C/1998 M1	1998 06 18.38647	15 26 42.30	-24 44 53.9	17.7 N	422
C/1998 M1	1998 06 17.19655	15 26 56.44	-24 54 16.2	15.6 T	2 709	C/1998 M1	1998 06 18.38760	15 26 42.30	-24 44 53.5	18.1 N	422
C/1998 M1	1998 06 17.20124	15 26 56.31	-24 54 13.9	15.6 T	752	C/1998 M1	1998 06 18.38874	15 26 42.25	-24 44 53.0	18.2 N	422
C/1998 M1	1998 06 17.20652	15 26 56.21	-24 54 11.5	15.6 T	752	C/1998 M1	1998 06 18.49142	15 26 41.01	-24 44 08.0	14.9 T	402
C/1998 M1	1998 06 17.21317	15 26 56.14	-24 54 08.6	15.5 T	752	C/1998 M1	1998 06 18.49301	15 26 40.98	-24 44 07.4		402
C/1998 M1	1998 06 17.22079	15 26 56.04	-24 54 05.7	15.5 T	752	C/1998 M1	1998 06 18.49461	15 26 40.98	-24 44 06.6		402
C/1998 M1	1998 06 17.24167	15 26 55.78	-24 53 52.8		696	C/1998 M1	1998 06 18.49515	15 26 40.98	-24 44 10.0	16.1 T	400
C/1998 M1	1998 06 17.24552	15 26 55.73	-24 53 51.0		696	C/1998 M1	1998 06 18.50869	15 26 40.81	-24 44 03.6		400
C/1998 M1	1998 06 17.24939	15 26 55.68	-24 53 49.2	15.0 T	696	C/1998 M1	1998 06 18.52188	15 26 40.68	-24 43 57.3		400
C/1998 M1	1998 06 17.38126	15 26 54.26	-24 52 44.9	17.8 N	422	C/1998 M1	1998 06 19.12910	15 26 34.05	-24 39 10.4	16.0 T	709
C/1998 M1	1998 06 17.38890	15 26 54.17	-24 52 41.8	17.7 N	422	C/1998 M1	1998 06 19.14141	15 26 33.89	-24 39 05.9	15.6 T	709
C/1998 M1	1998 06 17.39040	15 26 54.15	-24 52 41.8	17.7 N	422	C/1998 M1	1998 06 19.15130	15 26 33.76	-24 39 01.2	15.7 T	709
C/1998 M1	1998 06 17.39537	15 26 54.08	-24 52 38.4		422	C/1998 M1	1998 06 19.15921	15 26 33.71	-24 38 57.8	15.7 T	709
C/1998 M1	1998 06 17.39772	15 26 54.03	-24 52 37.6	17.6 N	422	C/1998 M1	1998 06 19.16650	15 26 33.60	-24 38 54.3	15.6 T	709
C/1998 M1	1998 06 17.39871	15 26 54.04	-24 52 36.8	17.8 N	422	C/1998 M1	1998 06 19.25910	15 26 32.45	-24 38 09.3	14.7 T	696
C/1998 M1	1998 06 17.40470	15 26 53.97	-24 52 33.4	15.4 T	426	C/1998 M1	1998 06 19.26683	15 26 32.36	-24 38 05.6	14.7 T	696
C/1998 M1	1998 06 17.41133	15 26 53.88	-24 52 30.1	15.6 T	426	C/1998 M1	1998 06 19.86042	15 26 26.60	-24 33 34.6		620
C/1998 M1	1998 06 17.41889	15 26 53.76	-24 52 26.5	15.6 T	426	C/1998 M1	1998 06 19.87569	15 26 26.34	-24 33 25.4		620
C/1998 M1	1998 06 17.42625	15 26 53.68	-24 52 23.1	15.6 T	426	C/1998 M1	1998 06 19.94525	15 26 25.56	-24 32 51.6		620
C/1998 M1	1998 06 17.48652	15 26 52.85	-24 51 58.5	15.1 T	402	C/1998 M1	1998 06 20.54770	15 26 19.69	-24 28 11.7	14.8 T	402
C/1998 M1	1998 06 17.48860	15 26 52.85	-24 51 57.4		402	C/1998 M1	1998 06 20.54944	15 26 19.67	-24 28 11.4		402
C/1998 M1	1998 06 17.49068	15 26 52.80	-24 51 57.1		402	C/1998 M1	1998 06 20.55118	15 26 19.66	-24 28 10.6		402
C/1998 M1	1998 06 17.57760	15 26 51.62	-24 51 14.9	14.9 T	360	C/1998 M1	1998 06 20.89953	15 26 16.44	-24 25 30.3		046
C/1998 M1	1998 06 17.58108	15 26 51.58	-24 51 13.7		360	C/1998 M1	1998 06 20.90082	15 26 16.45	-24 25 29.5		046
C/1998 M1	1998 06 17.58385	15 26 51.53	-24 51 12.2		360	C/1998 M1	1998 06 20.90209	15 26 16.43	-24 25 29.2		046
C/1998 M1	1998 06 17.59340	15 26 51.44	-24 51 08.7	15.3 T	867	C/1998 M1	1998 06 20.90323	15 26 16.44	-24 25 28.5		046
C/1998 M1	1998 06 17.59653	15 26 51.40	-24 51 07.3		867	C/1998 M1	1998 06 22.49469	15 26 03.52	-24 13 14.6	15.4 T	426
C/1998 M1	1998 06 17.59965	15 26 51.36	-24 51 05.3		867	C/1998 M1	1998 06 22.50463	15 26 03.45	-24 13 10.1	15.4 T	426
C/1998 M1	1998 06 17.92427	15 26 47.51	-24 48 33.9		557	C/1998 M1	1998 06 22.51456	15 26 03.36	-24 13 05.2	15.4 T	426
C/1998 M1	1998 06 17.92531	15 26 47.46	-24 48 33.4		557	C/1998 M1	1998 06 22.90539	15 26 00.50	-24 10 10.8		046
C/1998 M1	1998 06 17.93052	15 26 47.40	-24 48 31.1	16.5 N	557	C/1998 M1	1998 06 22.90693	15 26 00.44	-24 10 10.6		046
C/1998 M1	1998 06 17.93078	15 26 47.40	-24 48 30.3		046	C/1998 M1	1998 06 22.90804	15 26 00.49	-24 10 09.5		046
C/1998 M1	1998 06 17.93192	15 26 47.38	-24 48 30.2		046	C/1998 M1	1998 06 23.08789	15 25 59.38	-24 08 48.6	16.6 N	752
C/1998 M1	1998 06 17.93260	15 26 47.37	-24 48 30.1	15.4 T	557	C/1998 M1	1998 06 23.09671	15 25 59.29	-24 08 44.1	16.9 N	752
C/1998 M1	1998 06 17.93311	15 26 47.35	-24 48 29.6		046	C/1998 M1	1998 06 23.09830	15 25 59.30	-24 08 43.6	16.8 N	752
C/1998 M1	1998 06 17.93468	15 26 47.34	-24 48 28.5		046	C/1998 M1	1998 06 23.10498	15 25 59.25	-24 08 40.8	16.8 N	752
C/1998 M1	1998 06 18.12676	15 26 45.17	-24 46 58.3	17.0 N	752	C/1998 M1	1998 06 23.99147	15 25 53.74	-24 01 56.4	16.2 T	860
C/1998 M1	1998 06 18.13374	15 26 45.11	-24 46 56.5	16.4 N	752	C/1998 M1	1998 06 24.03878	15 25 53.34	-24 01 35.4	15.7 T	860
C/1998 M1	1998 06 18.14067	15 26 45.00	-24 46 52.9	16.5 N	752	C/1998 M1	1998 06 24.04462	15 25 53.35	-24 01 32.4	15.9 T	860
C/1998 M1	1998 06 18.14751	15 26 44.97	-24 46 49.3	16.3 N	752	C/1998 M1	1998 06 26.49550	15 25 42.51	-23 43 15.3	15.2 T	426
C/1998 M1	1998 06 18.15329	15 26 44.97	-24 46 48.4	15.6 T	709	C/1998 M1	1998 06 26.50823	15 25 42.48	-23 43 10.1	15.1 T	426

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C/1998 M1	1998 06 26.52100	15 25 42.40	-23 43 05.1	14.9 T	426
C/1998 M1	1998 06 27.58229	15 25 39.81	-23 35 21.2	14 T	372
C/1998 M1	1998 06 28.10308	15 25 38.86	-23 31 29.9	13.8 T	844
C/1998 M1	1998 06 28.10667	15 25 38.80	-23 31 27.5	14.1 T	844
C/1998 M1	1998 06 28.10919	15 25 38.78	-23 31 26.0	14.0 T	844
C/1998 M1	1998 07 03.06418	15 25 46.11	-22 56 27.3	15.7 T	860
C/1998 M1	1998 07 03.06883	15 25 46.17	-22 56 25.5	16.4 T	860
C/1998 M1	1998 07 03.52674	15 25 48.16	-22 53 18.4	15.2 T	367
C/1998 M1	1998 07 03.53089	15 25 48.18	-22 53 16.6		367
C/1998 M1	1998 07 03.53506	15 25 48.22	-22 53 14.6		367
C/1998 M1	1998 07 14.52840	15 27 50.27	-21 43 34.6	18.3 N	422
C/1998 M1	1998 07 14.52987	15 27 50.27	-21 43 33.7	18.7 N	422
C/1998 M1	1998 07 14.53560	15 27 50.35	-21 43 31.5	18.4 N	422
C/1998 M1	1998 07 14.53997	15 27 50.41	-21 43 29.9	18.4 N	422
C/1998 M1	1998 07 14.55140	15 27 50.60	-21 43 25.9	18.5 N	422
C/1998 M1	1998 07 18.54479	15 29 09.50	-21 21 05.6	15.6 T	402
C/1998 M1	1998 07 18.54688	15 29 09.54	-21 21 05.3		402
C/1998 M1	1998 07 18.54896	15 29 09.57	-21 21 04.0		402
C/1998 M1	1998 07 25.16794	15 32 00.39	-20 47 29.2	19.2 N	691
C/1998 M1	1998 07 25.17423	15 32 00.72	-20 47 29.8	15.6 T	691
C/1998 M1	1998 07 25.17855	15 32 00.68	-20 47 26.0	15.5 T	691

C/1998 M2 (LINEAR)

C/1998 M2	1998 05 28.40143	18 35 29.98	-05 18 22.6	17.0 T	704
C/1998 M2	1998 05 28.41367	18 35 29.23	-05 18 01.8		704
C/1998 M2	1998 05 28.42593	18 35 28.83	-05 17 45.6	17.3 T	704
C/1998 M2	1998 05 28.43816	18 35 27.95	-05 17 26.0	17.6 T	704
C/1998 M2	1998 05 28.45039	18 35 27.46	-05 17 01.8	18.3 T	704
C/1998 M2	1998 06 19.25996	18 12 55.00	+03 51 56.2	16.9 T	704
C/1998 M2	1998 06 19.27829	18 12 53.62	+03 52 17.0		704
C/1998 M2	1998 06 19.33347	18 12 49.39	+03 53 34.2		704
C/1998 M2	1998 06 19.94265	18 12 06.81	+04 08 16.1	16.0 T	046
C/1998 M2	1998 06 19.94404	18 12 06.72	+04 08 18.4		046
C/1998 M2	1998 06 19.94471	18 12 06.70	+04 08 19.4		046
C/1998 M2	1998 06 19.94534	18 12 06.67	+04 08 20.1		046
C/1998 M2	1998 06 19.94593	18 12 06.84	+04 08 26.0		046
C/1998 M2	1998 06 19.94799	18 12 06.46	+04 08 24.3		046
C/1998 M2	1998 06 19.98528	18 12 03.76	+04 09 17.2		046
C/1998 M2	1998 06 19.98716	18 12 03.62	+04 09 19.9		046
C/1998 M2	1998 06 19.98881	18 12 03.52	+04 09 22.3		046
C/1998 M2	1998 06 20.20518	18 11 48.39	+04 14 33.2	15.2 T	709
C/1998 M2	1998 06 20.20936	18 11 48.09	+04 14 40.3	15.6 T	709
C/1998 M2	1998 06 20.21539	18 11 47.65	+04 14 48.7	15.4 T	709
C/1998 M2	1998 06 20.22171	18 11 47.19	+04 14 57.9	16.0 T	709
C/1998 M2	1998 06 20.27988	18 11 43.01	+04 16 19.6		658
C/1998 M2	1998 06 20.28271	18 11 42.81	+04 16 23.8		658
C/1998 M2	1998 06 20.28751	18 11 42.47	+04 16 30.6		658
C/1998 M2	1998 06 20.49401	18 11 28.04	+04 21 28.1		897
C/1998 M2	1998 06 20.51578	18 11 26.28	+04 21 58.8		897
C/1998 M2	1998 06 20.52118	18 11 26.07	+04 22 05.0	14.6 T	367
C/1998 M2	1998 06 20.52396	18 11 25.88	+04 22 09.4		367
C/1998 M2	1998 06 20.52477	18 11 25.79	+04 22 10.8	14.4 T	897
C/1998 M2	1998 06 20.52674	18 11 25.68	+04 22 13.6		367

C/1998 M2	1998 06 20.52951	18 11 25.46	+04 22 17.8		367
C/1998 M2	1998 06 20.53547	18 11 25.03	+04 22 26.0	14.5 T	402
C/1998 M2	1998 06 20.53721	18 11 24.90	+04 22 28.6		402
C/1998 M2	1998 06 20.53895	18 11 24.78	+04 22 31.1		402
C/1998 M2	1998 06 20.55571	18 11 23.55	+04 22 55.1		897
C/1998 M2	1998 06 20.59365	18 11 20.86	+04 23 48.8	14.7 T	355
C/1998 M2	1998 06 20.59567	18 11 20.72	+04 23 52.0		355
C/1998 M2	1998 06 20.60087	18 11 20.30	+04 23 59.3		355
C/1998 M2	1998 06 20.60312	18 11 20.14	+04 24 02.7		355
C/1998 M2	1998 06 20.87237	18 11 01.15	+04 30 26.6	14.0 T	596
C/1998 M2	1998 06 20.87705	18 11 00.84	+04 30 33.3		596
C/1998 M2	1998 06 20.89106	18 10 59.80	+04 30 53.6		596
C/1998 M2	1998 06 20.94410	18 10 55.96	+04 32 08.0	15.0 T	120
C/1998 M2	1998 06 20.94870	18 10 55.62	+04 32 13.8	15.0 T	120
C/1998 M2	1998 06 20.97564	18 10 53.67	+04 32 53.5		046
C/1998 M2	1998 06 20.97912	18 10 53.42	+04 32 58.4		046
C/1998 M2	1998 06 20.98433	18 10 53.04	+04 33 05.8		046
C/1998 M2	1998 06 21.01714	18 10 50.71	+04 33 49.6	14.7 T	120
C/1998 M2	1998 06 21.02088	18 10 50.54	+04 33 55.2	14.8 T	120
C/1998 M2	1998 06 21.02307	18 10 50.37	+04 33 58.7	15.0 T	120
C/1998 M2	1998 06 21.90954	18 09 47.51	+04 54 55.9	15.9 N	143
C/1998 M2	1998 06 21.91542	18 09 47.08	+04 55 04.9	15.9 N	143
C/1998 M2	1998 06 21.91737	18 09 46.88	+04 55 07.3	15.9 N	143
C/1998 M2	1998 06 21.91934	18 09 46.81	+04 55 11.5	16.0 N	143
C/1998 M2	1998 06 21.92718	18 09 46.21	+04 55 21.2	16.1 N	143
C/1998 M2	1998 06 22.13358	18 09 31.41	+05 00 17.8	14.6 T	860
C/1998 M2	1998 06 22.13859	18 09 31.07	+05 00 25.1	14.7 T	860
C/1998 M2	1998 06 22.14638	18 09 30.53	+05 00 35.7	14.6 T	860
C/1998 M2	1998 06 22.54473	18 09 02.28	+05 09 55.8	13.7 T	426
C/1998 M2	1998 06 22.55179	18 09 01.75	+05 10 05.6	13.6 T	426
C/1998 M2	1998 06 22.55843	18 09 01.30	+05 10 15.1	13.6 T	426
C/1998 M2	1998 06 22.94764	18 08 33.48	+05 19 12.9		046
C/1998 M2	1998 06 22.94977	18 08 33.32	+05 19 15.8		046
C/1998 M2	1998 06 22.95131	18 08 33.20	+05 19 18.0		046
C/1998 M2	1998 06 23.11862	18 08 21.19	+05 23 08.5	14.8 T	491
C/1998 M2	1998 06 23.24516	18 08 12.25	+05 26 08.1	15.2 N	752
C/1998 M2	1998 06 23.25314	18 08 11.68	+05 26 19.7	15.3 N	752
C/1998 M2	1998 06 23.25994	18 08 11.18	+05 26 28.8	15.2 N	752
C/1998 M2	1998 06 23.90631	18 07 25.11	+05 41 22.1	15.3 T	504
C/1998 M2	1998 06 23.90771	18 07 25.04	+05 41 24.1	15.3 T	504
C/1998 M2	1998 06 23.91264	18 07 24.72	+05 41 31.3	15.3 T	504
C/1998 M2	1998 06 23.91495	18 07 24.56	+05 41 34.8	15.1 T	504
C/1998 M2	1998 06 23.91646	18 07 24.43	+05 41 36.7	15.0 T	504
C/1998 M2	1998 06 25.08690	18 06 00.59	+06 08 21.9		104
C/1998 M2	1998 06 25.08796	18 06 00.52	+06 08 23.7		104
C/1998 M2	1998 06 25.08900	18 06 00.46	+06 08 25.2		104
C/1998 M2	1998 06 25.09005	18 06 00.36	+06 08 26.8		104
C/1998 M2	1998 06 25.23360	18 05 50.27	+06 11 42.3	15.2 N	752
C/1998 M2	1998 06 25.23799	18 05 49.93	+06 11 47.4	15.1 N	752
C/1998 M2	1998 06 25.24373	18 05 49.53	+06 11 55.8	15.2 N	752
C/1998 M2	1998 06 25.25074	18 05 49.01	+06 12 05.8	15.2 N	752
C/1998 M2	1998 06 25.25535	18 05 48.71	+06 12 11.6	15.2 N	752
C/1998 M2	1998 06 25.28056	18 05 46.97	+06 12 47.0	14.4 T	713

C/1998 M2	1998 06 25.29398	18 05 45.97	+06 13 06.0	14.2 T	713	C/1998 M2	1998 07 04.56146	17 54 54.79	+09 29 26.4		355
C/1998 M2	1998 06 25.30763	18 05 44.96	+06 13 24.3	14.4 T	713	C/1998 M2	1998 07 04.56279	17 54 54.67	+09 29 27.8		355
C/1998 M2	1998 06 26.25022	18 04 37.90	+06 34 34.0	14.2 T	713	C/1998 M2	1998 07 05.62433	17 53 42.46	+09 50 07.0	14.8 T	402
C/1998 M2	1998 06 26.27743	18 04 35.68	+06 35 10.8	14.4 T	713	C/1998 M2	1998 07 05.62642	17 53 42.31	+09 50 09.3		402
C/1998 M2	1998 06 27.90200	18 02 40.14	+07 11 04.8	16.3 N	046	C/1998 M2	1998 07 05.62747	17 53 42.24	+09 50 10.2		402
C/1998 M2	1998 06 27.90491	18 02 39.93	+07 11 08.6		046	C/1998 M2	1998 07 06.35666	17 52 53.12	+10 04 05.9		658
C/1998 M2	1998 06 27.90733	18 02 39.75	+07 11 11.8		046	C/1998 M2	1998 07 06.35892	17 52 52.97	+10 04 08.5		658
C/1998 M2	1998 06 27.96192	18 02 35.87	+07 12 22.4		504	C/1998 M2	1998 07 06.36126	17 52 52.81	+10 04 11.2		658
C/1998 M2	1998 06 27.96929	18 02 35.26	+07 12 33.3		107	C/1998 M2	1998 07 08.54721	17 50 28.34	+10 44 49.3	14.7 T	402
C/1998 M2	1998 06 27.97569	18 02 34.81	+07 12 41.0		107	C/1998 M2	1998 07 08.54825	17 50 28.26	+10 44 50.5		402
C/1998 M2	1998 06 27.97600	18 02 34.82	+07 12 41.4		504	C/1998 M2	1998 07 08.54929	17 50 28.20	+10 44 51.5		402
C/1998 M2	1998 06 27.97898	18 02 34.61	+07 12 45.6	14.7 T	504	C/1998 M2	1998 07 08.55034	17 50 28.13	+10 44 52.7		402
C/1998 M2	1998 06 27.98000	18 02 34.55	+07 12 47.0	14.9 T	504	C/1998 M2	1998 07 10.85589	17 47 59.87	+11 25 47.8		108
C/1998 M2	1998 06 27.98152	18 02 34.38	+07 12 48.7	14.9 T	504	C/1998 M2	1998 07 10.85851	17 48 00.03	+11 25 44.7		108
C/1998 M2	1998 06 27.98852	18 02 33.93	+07 12 57.8		107	C/1998 M2	1998 07 10.86042	17 47 59.71	+11 25 48.4		108
C/1998 M2	1998 06 29.55098	18 00 43.30	+07 46 42.5	15.5 T	352	C/1998 M2	1998 07 10.86652	17 47 59.30	+11 25 55.6	15.5 T	108
C/1998 M2	1998 06 29.55376	18 00 43.12	+07 46 45.7		352	C/1998 M2	1998 07 14.97498	17 43 48.05	+12 33 47.9		046
C/1998 M2	1998 06 30.61002	17 59 28.63	+08 09 07.9	14.8 T	355	C/1998 M2	1998 07 14.97628	17 43 48.00	+12 33 49.1		046
C/1998 M2	1998 06 30.61618	17 59 28.19	+08 09 15.3		355	C/1998 M2	1998 07 14.97737	17 43 47.93	+12 33 50.0		046
C/1998 M2	1998 06 30.61843	17 59 28.05	+08 09 17.9		355	C/1998 M2	1998 07 14.97903	17 43 47.82	+12 33 51.6		046
C/1998 M2	1998 07 02.50927	17 57 16.09	+08 48 24.0	14.9 T	355	C/1998 M2	1998 07 17.89087	17 41 01.61	+13 18 02.6	14.1 T	133
C/1998 M2	1998 07 02.51222	17 57 15.92	+08 48 27.5		355	C/1998 M2	1998 07 17.89766	17 41 01.27	+13 18 09.1	13.9 T	133
C/1998 M2	1998 07 02.51579	17 57 15.64	+08 48 32.2		355	C/1998 M2	1998 07 17.90196	17 41 00.89	+13 18 12.6		046
C/1998 M2	1998 07 02.58652	17 57 10.63	+08 49 58.9	14.8 T	402	C/1998 M2	1998 07 17.90303	17 41 00.83	+13 18 13.5		046
C/1998 M2	1998 07 02.58860	17 57 10.48	+08 50 01.3		402	C/1998 M2	1998 07 17.90419	17 41 00.77	+13 18 14.5		046
C/1998 M2	1998 07 02.59068	17 57 10.33	+08 50 03.7		402	C/1998 M2	1998 07 17.90534	17 41 00.70	+13 18 15.4		046
C/1998 M2	1998 07 02.61285	17 57 08.76	+08 50 31.2	14.0 T	360	C/1998 M2	1998 07 17.92109	17 40 59.83	+13 18 29.1	14.6 T	118
C/1998 M2	1998 07 02.61563	17 57 08.57	+08 50 34.6		360	C/1998 M2	1998 07 17.92602	17 40 59.57	+13 18 32.7		118
C/1998 M2	1998 07 02.61840	17 57 08.37	+08 50 38.0		360	C/1998 M2	1998 07 17.93819	17 40 58.91	+13 18 42.8		107
C/1998 M2	1998 07 02.98391	17 56 43.01	+08 58 01.4	14.3 T	118	C/1998 M2	1998 07 17.94203	17 40 58.73	+13 18 46.9		107
C/1998 M2	1998 07 02.98625	17 56 42.86	+08 58 04.4		118	C/1998 M2	1998 07 17.94560	17 40 58.53	+13 18 50.0		107
C/1998 M2	1998 07 03.53853	17 56 04.89	+09 09 11.2	13.5 T	367	C/1998 M2	1998 07 17.95147	17 40 58.25	+13 18 54.6		107
C/1998 M2	1998 07 03.54270	17 56 04.61	+09 09 16.3		367	C/1998 M2	1998 07 17.95404	17 40 57.99	+13 18 57.4		107
C/1998 M2	1998 07 03.54686	17 56 04.31	+09 09 21.2		367	C/1998 M2	1998 07 18.59257	17 40 22.89	+13 28 14.0	15.8 T	351
C/1998 M2	1998 07 03.60853	17 55 59.98	+09 10 35.1	14.3 T	352	C/1998 M2	1998 07 18.61072	17 40 21.91	+13 28 30.1		351
C/1998 M2	1998 07 03.61131	17 55 59.80	+09 10 37.8		352	C/1998 M2	1998 07 18.61476	17 40 21.70	+13 28 33.6		351
C/1998 M2	1998 07 03.61409	17 55 59.57	+09 10 40.7		352	C/1998 M2	1998 07 18.62101	17 40 21.29	+13 28 39.7		351
C/1998 M2	1998 07 03.63733	17 55 57.93	+09 11 09.5	13.9 T	360	C/1998 M2	1998 07 18.65843	17 40 19.25	+13 29 09.8		900
C/1998 M2	1998 07 03.64010	17 55 57.74	+09 11 12.8		360	C/1998 M2	1998 07 18.67050	17 40 18.59	+13 29 20.6	14.4 T	900
C/1998 M2	1998 07 03.64288	17 55 57.54	+09 11 16.1		360	C/1998 M2	1998 07 19.49392	17 39 34.23	+13 41 01.3	15.8 T	566
C/1998 M2	1998 07 03.64604	17 55 57.32	+09 11 19.8	13.9 T	402	C/1998 M2	1998 07 19.51475	17 39 33.12	+13 41 18.3	15.9 T	566
C/1998 M2	1998 07 03.64743	17 55 57.23	+09 11 21.4		402	C/1998 M2	1998 07 19.53570	17 39 31.94	+13 41 34.0	15.6 T	566
C/1998 M2	1998 07 03.65021	17 55 57.03	+09 11 24.6		402	C/1998 M2	1998 07 19.87338	17 39 14.36	+13 46 17.0	15.7 N	633
C/1998 M2	1998 07 03.92140	17 55 38.54	+09 16 47.9	15.4 N	046	C/1998 M2	1998 07 19.90110	17 39 12.85	+13 46 40.4	15.6 N	633
C/1998 M2	1998 07 03.92251	17 55 38.45	+09 16 49.3		046	C/1998 M2	1998 07 19.91451	17 39 12.14	+13 46 51.7	15.6 N	633
C/1998 M2	1998 07 03.92403	17 55 38.34	+09 16 51.3		046	C/1998 M2	1998 07 20.57600	17 38 37.53	+13 55 57.0	14.0 T	886
C/1998 M2	1998 07 03.92564	17 55 38.23	+09 16 53.2		046	C/1998 M2	1998 07 20.61773	17 38 35.31	+13 56 31.0		886
C/1998 M2	1998 07 03.92712	17 55 38.18	+09 16 54.7	15.6 N	143	C/1998 M2	1998 07 20.90198	17 38 20.71	+14 00 21.9	15.7 T	138
C/1998 M2	1998 07 03.92909	17 55 38.02	+09 16 56.6	15.5 N	143	C/1998 M2	1998 07 20.90632	17 38 20.49	+14 00 25.3	15.7 T	138
C/1998 M2	1998 07 03.93104	17 55 37.88	+09 16 58.8	15.6 N	143	C/1998 M2	1998 07 20.91067	17 38 20.25	+14 00 28.9	15.8 T	138
C/1998 M2	1998 07 03.93300	17 55 37.71	+09 17 01.4	15.5 N	143	C/1998 M2	1998 07 21.84527	17 37 32.94	+14 12 54.4		118
C/1998 M2	1998 07 03.93495	17 55 37.63	+09 17 04.0	15.6 N	143	C/1998 M2	1998 07 21.85083	17 37 32.66	+14 12 58.8	13.9 T	118
C/1998 M2	1998 07 04.55985	17 54 54.85	+09 29 24.7	14.2 T	355	C/1998 M2	1998 07 22.55736	17 36 57.58	+14 22 11.7	14.4 T	402

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C/1998 M2	1998 07 22.55841	17 36 57.52	+14 22 12.6		402
C/1998 M2	1998 07 22.55946	17 36 57.46	+14 22 13.3		402
C/1998 M2	1998 07 23.59583	17 36 07.36	+14 35 22.2	14.3 T	360
C/1998 M2	1998 07 23.60087	17 36 07.11	+14 35 25.9		4 360
C/1998 M2	1998 07 23.64132	17 36 05.13	+14 35 56.1		360
C/1998 M2	1998 07 25.19948	17 34 53.02	+14 54 57.5	17.8 N	691
C/1998 M2	1998 07 25.20340	17 34 52.83	+14 55 00.4	14.7 T	691
C/1998 M2	1998 07 25.20750	17 34 52.65	+14 55 03.3	14.7 T	691
C/1998 M2	1998 07 25.87271	17 34 23.15	+15 02 53.9	14.4 T	133
C/1998 M2	1998 07 25.91172	17 34 21.34	+15 03 20.6	14.0 T	133
C/1998 M2	1998 07 29.85966	17 31 39.59	+15 46 47.6	14.1 T	133
C/1998 M2	1998 07 29.87727	17 31 38.91	+15 46 58.7	14.3 T	133
C/1998 M2	1998 07 30.58663	17 31 12.20	+15 54 15.1	14.4 T	360
C/1998 M2	1998 07 30.58941	17 31 12.11	+15 54 16.6		360
C/1998 M2	1998 07 31.86271	17 30 26.87	+16 06 52.0	14.3 T	133
C/1998 M2	1998 07 31.88506	17 30 26.09	+16 07 04.7	14.2 T	133
C/1998 M2	1998 08 04.25488	17 28 38.48	+16 38 02.5		658
C/1998 M2	1998 08 04.25807	17 28 38.39	+16 38 04.2		658
C/1998 M2	1998 08 04.26176	17 28 38.28	+16 38 06.3		658

C/1998 M3 (Larsen)

C/1998 M3	1998 05 26.29656	16 43 58.22	-04 51 11.4	18.9 T	704
C/1998 M3	1998 05 26.31430	16 43 57.14	-04 51 03.7	18.9 T	704
C/1998 M3	1998 05 26.33217	16 43 56.01	-04 50 51.7	18.9 T	704
C/1998 M3	1998 05 26.34996	16 43 55.11	-04 50 40.5	18.2 T	704
C/1998 M3	1998 05 26.36755	16 43 54.13	-04 50 31.8	18.2 T	704
C/1998 M3	1998 06 24.26372	16 17 45.28	-01 00 32.1	20.9 N	691
C/1998 M3	1998 06 24.28486	16 17 44.21	-01 00 23.1	17.4 T	691
C/1998 M3	1998 06 24.30618	16 17 43.17	-01 00 14.9	17.3 T	691
C/1998 M3	1998 06 24.32783	16 17 42.02	-01 00 05.0	21.1 N	691
C/1998 M3	1998 06 24.33236	16 17 41.80	-01 00 03.5	17.6 T	691
C/1998 M3	1998 06 24.33629	16 17 41.59	-01 00 01.8	17.4 T	691
C/1998 M3	1998 06 25.14598	16 17 01.84	-00 54 36.8	17.6 T	709
C/1998 M3	1998 06 25.15299	16 17 01.47	-00 54 33.9	17.6 T	709
C/1998 M3	1998 06 25.15880	16 17 01.19	-00 54 31.5	17.8 T	709
C/1998 M3	1998 06 25.16480	16 17 00.90	-00 54 29.7	18.1 T	2 709
C/1998 M3	1998 06 25.17162	16 17 00.61	-00 54 27.3	17.5 T	691
C/1998 M3	1998 06 25.17536	16 17 00.48	-00 54 24.0	17.2 T	691
C/1998 M3	1998 06 25.17913	16 17 00.14	-00 54 23.6	17.7 T	691
C/1998 M3	1998 06 25.32369	16 16 52.92	-00 53 27.2	17.8 T	691
C/1998 M3	1998 06 25.32804	16 16 52.59	-00 53 24.3	17.6 T	691
C/1998 M3	1998 06 25.33202	16 16 52.50	-00 53 23.4	17.7 T	691
C/1998 M3	1998 06 25.86846	16 16 26.46	-00 49 51.8	18.8 N	046
C/1998 M3	1998 06 25.86958	16 16 26.45	-00 49 51.4		046
C/1998 M3	1998 06 25.87065	16 16 26.33	-00 49 51.5		046
C/1998 M3	1998 06 25.87189	16 16 26.29	-00 49 50.0	18 T	046
C/1998 M3	1998 06 25.93047	16 16 23.40	-00 49 27.4		965
C/1998 M3	1998 06 25.95185	16 16 22.38	-00 49 19.2		965
C/1998 M3	1998 06 26.31553	16 16 04.68	-00 46 56.7		658
C/1998 M3	1998 06 26.31851	16 16 04.52	-00 46 55.8		658
C/1998 M3	1998 06 26.32149	16 16 04.37	-00 46 54.8		658
C/1998 M3	1998 06 26.44733	16 15 58.36	-00 46 05.8		568
C/1998 M3	1998 06 26.45226	16 15 58.10	-00 46 03.7		568

C/1998 M3	1998 06 26.52621	16 15 54.56	-00 45 32.6	17.6 T	426
C/1998 M3	1998 06 26.54131	16 15 53.77	-00 45 27.0	17.7 T	426
C/1998 M3	1998 06 26.54831	16 15 53.44	-00 45 23.6	17.6 T	426
C/1998 M3	1998 06 27.24198	16 15 20.08	-00 40 57.2		658
C/1998 M3	1998 06 27.24576	16 15 19.90	-00 40 55.5		658
C/1998 M3	1998 06 27.24933	16 15 19.71	-00 40 54.8		658
C/1998 M3	1998 06 27.35633	16 15 14.51	-00 40 14.4	17.8 T	691
C/1998 M3	1998 06 27.36017	16 15 14.37	-00 40 11.1	17.4 T	691
C/1998 M3	1998 06 27.36392	16 15 14.13	-00 40 10.1	17.5 T	691
C/1998 M3	1998 06 27.44884	16 15 10.18	-00 39 38.5		568
C/1998 M3	1998 06 27.46293	16 15 09.52	-00 39 33.1		568
C/1998 M3	1998 06 27.88918	16 14 49.21	-00 36 50.4	18.6 N	046
C/1998 M3	1998 06 27.89196	16 14 49.09	-00 36 49.5		046
C/1998 M3	1998 06 27.89381	16 14 48.98	-00 36 47.9		046
C/1998 M3	1998 06 27.89566	16 14 48.95	-00 36 47.3		046
C/1998 M3	1998 06 27.92138	16 14 47.51	-00 36 37.5	18.1 T	504
C/1998 M3	1998 06 27.94053	16 14 46.76	-00 36 30.1		557
C/1998 M3	1998 06 27.94428	16 14 46.55	-00 36 28.7		557
C/1998 M3	1998 06 27.94590	16 14 46.46	-00 36 28.4	18.2 T	557
C/1998 M3	1998 06 30.55012	16 12 44.91	-00 20 18.2	18.4 T	402
C/1998 M3	1998 06 30.55221	16 12 44.77	-00 20 17.1		402
C/1998 M3	1998 06 30.55429	16 12 44.63	-00 20 16.3		402
C/1998 M3	1998 07 02.28013	16 11 26.29	-00 09 56.4		658
C/1998 M3	1998 07 02.28260	16 11 26.20	-00 09 55.8		658
C/1998 M3	1998 07 02.28896	16 11 25.91	-00 09 53.1		658
C/1998 M3	1998 07 02.56181	16 11 13.76	-00 08 16.7	17.6 T	360
C/1998 M3	1998 07 02.56649	16 11 13.55	-00 08 15.2		360
C/1998 M3	1998 07 02.57066	16 11 13.33	-00 08 13.4		360
C/1998 M3	1998 07 02.60539	16 11 11.82	-00 08 00.9	18.5 T	402
C/1998 M3	1998 07 02.60748	16 11 11.75	-00 07 59.3		402
C/1998 M3	1998 07 02.60956	16 11 11.58	-00 07 58.8		402
C/1998 M3	1998 07 03.61296	16 10 27.14	-00 02 09.0	18.5 T	402
C/1998 M3	1998 07 03.61713	16 10 27.04	-00 02 08.1		402
C/1998 M3	1998 07 03.61921	16 10 26.77	-00 02 07.6		402
C/1998 M3	1998 07 10.31909	16 05 47.74	+00 34 14.4		658
C/1998 M3	1998 07 10.32539	16 05 47.52	+00 34 15.5		658
C/1998 M3	1998 07 10.33422	16 05 47.18	+00 34 17.8		658
C/1998 M3	1998 07 17.89155	16 01 11.41	+01 09 57.3		046
C/1998 M3	1998 07 17.89280	16 01 11.40	+01 09 57.2	18.6 T	046
C/1998 M3	1998 07 17.89387	16 01 11.32	+01 09 56.8		046
C/1998 M3	1998 07 17.89565	16 01 11.27	+01 09 57.9		046
C/1998 M3	1998 07 17.89675	16 01 11.23	+01 09 57.5		046
C/1998 M3	1998 07 20.88314	15 59 34.25	+01 22 33.2		046
C/1998 M3	1998 07 20.88799	15 59 34.07	+01 22 34.4	18.6 T	046
C/1998 M3	1998 07 20.88913	15 59 34.06	+01 22 36.0		046
C/1998 M3	1998 07 20.92237	15 59 33.01	+01 22 42.9	17.9 T	118
C/1998 M3	1998 07 20.93465	15 59 32.63	+01 22 45.7	17.6 T	118
C/1998 M3	1998 07 22.47818	15 58 45.40	+01 28 56.3	18.9 T	402
C/1998 M3	1998 07 22.47935	15 58 45.31	+01 28 56.0		402
C/1998 M3	1998 07 22.48051	15 58 45.22	+01 28 56.5		402
C/1998 M3	1998 07 23.56979	15 58 12.96	+01 33 10.5	17.8 T	360
C/1998 M3	1998 07 23.57847	15 58 12.73	+01 33 12.0		360
C/1998 M3	1998 07 25.18531	15 57 26.83	+01 39 14.4	20.8 N	691

C/1998 M3	1998 07 25.18934	15 57 26.73	+01 39 15.0	18.1 T	691
C/1998 M3	1998 07 25.19341	15 57 26.59	+01 39 16.5	17.9 T	691

C/1998 M4 (LINEAR)

C/1998 M4	1998 06 25.34676	19 46 02.51	-10 04 50.6	17.5 T	704
C/1998 M4	1998 06 25.36518	19 45 59.66	-10 05 04.3		704
C/1998 M4	1998 06 25.38359	19 45 56.82	-10 05 18.3		704
C/1998 M4	1998 06 25.40204	19 45 54.07	-10 05 31.7		704
C/1998 M4	1998 06 25.42039	19 45 50.99	-10 05 46.7		704
C/1998 M4	1998 06 26.60160	19 42 49.13	-10 20 22.3	14.7 T	426
C/1998 M4	1998 06 26.61038	19 42 47.75	-10 20 29.2	16.0 T	426
C/1998 M4	1998 06 26.61606	19 42 46.89	-10 20 33.2	14.9 T	426
C/1998 M4	1998 06 26.62300	19 42 45.83	-10 20 38.3	14.8 T	426
C/1998 M4	1998 06 26.89961	19 42 03.12	-10 24 08.3	16.4 T	596
C/1998 M4	1998 06 26.91012	19 42 01.50	-10 24 15.3		596
C/1998 M4	1998 06 26.91956	19 41 59.94	-10 24 23.6		104
C/1998 M4	1998 06 26.92072	19 41 59.80	-10 24 24.6		104
C/1998 M4	1998 06 26.92199	19 41 59.57	-10 24 26.2		104
C/1998 M4	1998 06 26.92338	19 41 59.32	-10 24 27.0		104
C/1998 M4	1998 06 26.92723	19 41 58.78	-10 24 28.4		596
C/1998 M4	1998 06 27.02288	19 41 43.99	-10 25 42.0	17.2 T	468
C/1998 M4	1998 06 27.02634	19 41 43.55	-10 25 41.8	16.5 T	468
C/1998 M4	1998 06 27.22651	19 41 12.43	-10 28 14.2	16.6 T	709
C/1998 M4	1998 06 27.22898	19 41 12.06	-10 28 13.3	16.5 T	709
C/1998 M4	1998 06 27.23436	19 41 11.18	-10 28 18.0	16.5 T	709
C/1998 M4	1998 06 27.23993	19 41 10.24	-10 28 26.0	16.6 T	709
C/1998 M4	1998 06 27.24335	19 41 09.77	-10 28 24.6	16.7 T	709
C/1998 M4	1998 06 27.33895	19 40 54.82	-10 29 35.7		734
C/1998 M4	1998 06 27.34295	19 40 54.22	-10 29 39.3		734
C/1998 M4	1998 06 27.34928	19 40 53.14	-10 29 44.6		734
C/1998 M4	1998 06 27.36581	19 40 50.60	-10 29 56.6		711
C/1998 M4	1998 06 27.36921	19 40 50.06	-10 29 59.1		711
C/1998 M4	1998 06 27.37229	19 40 49.57	-10 30 01.5		711
C/1998 M4	1998 06 27.59352	19 40 15.38	-10 32 43.2	14.7 T	426
C/1998 M4	1998 06 27.60471	19 40 13.59	-10 32 51.7	14.7 T	426
C/1998 M4	1998 06 27.61536	19 40 11.94	-10 32 59.8	14.7 T	426
C/1998 M4	1998 06 27.85245	19 39 35.17	-10 36 01.9		121
C/1998 M4	1998 06 27.85523	19 39 34.68	-10 36 03.6	16.6 T	121
C/1998 M4	1998 06 27.86079	19 39 33.76	-10 36 08.4	16.4 T	121
C/1998 M4	1998 06 27.89595	19 39 28.33	-10 36 35.9	17.1 T	3 540
C/1998 M4	1998 06 27.89956	19 39 27.75	-10 36 35.0		540
C/1998 M4	1998 06 27.90309	19 39 27.25	-10 36 38.4		540
C/1998 M4	1998 06 27.91725	19 39 24.93	-10 36 48.9		046
C/1998 M4	1998 06 27.91834	19 39 24.74	-10 36 50.3		046
C/1998 M4	1998 06 27.91991	19 39 24.58	-10 36 50.7		046
C/1998 M4	1998 06 27.92105	19 39 24.37	-10 36 52.2		046
C/1998 M4	1998 06 27.92213	19 39 24.17	-10 36 52.6		046
C/1998 M4	1998 06 27.92681	19 39 23.43	-10 36 56.0		104
C/1998 M4	1998 06 27.92813	19 39 23.25	-10 36 56.6		104
C/1998 M4	1998 06 27.99156	19 39 13.41	-10 37 44.7	16.0 T	504
C/1998 M4	1998 06 28.00160	19 39 11.82	-10 37 52.1	16.3 T	504
C/1998 M4	1998 06 28.00248	19 39 11.74	-10 37 52.7		504
C/1998 M4	1998 06 28.00353	19 39 11.56	-10 37 53.7	16.3 T	504

C/1998 M4	1998 06 28.00633	19 39 11.12	-10 37 56.0	16.1 T	504
C/1998 M4	1998 06 28.00777	19 39 10.84	-10 37 56.8	16.0 T	504
C/1998 M4	1998 06 28.00888	19 39 10.68	-10 37 57.4	16.2 T	504
C/1998 M4	1998 06 28.00987	19 39 10.55	-10 37 58.0	16.1 T	504
C/1998 M4	1998 06 29.98705	19 34 01.19	-11 02 38.1	16.1 T	120
C/1998 M4	1998 06 29.98983	19 34 00.76	-11 02 39.9	16.3 T	120
C/1998 M4	1998 06 29.99157	19 34 00.53	-11 02 40.0	16.2 T	120
C/1998 M4	1998 06 29.99316	19 34 00.30	-11 02 42.5	16.3 T	120
C/1998 M4	1998 06 29.99512	19 34 00.00	-11 02 43.7	16.2 T	120
C/1998 M4	1998 06 29.99690	19 33 59.72	-11 02 44.0	16.1 T	120
C/1998 M4	1998 06 30.55772	19 32 31.63	-11 09 44.7	16.4 T	402
C/1998 M4	1998 06 30.55980	19 32 31.20	-11 09 46.8		402
C/1998 M4	1998 06 30.56189	19 32 30.94	-11 09 47.8		402
C/1998 M4	1998 06 30.56397	19 32 30.64	-11 09 49.7		402
C/1998 M4	1998 06 30.57092	19 32 29.48	-11 09 54.0		402
C/1998 M4	1998 07 02.40428	19 27 40.30	-11 32 46.2		658
C/1998 M4	1998 07 02.40641	19 27 39.95	-11 32 47.9		658
C/1998 M4	1998 07 02.40852	19 27 39.61	-11 32 49.6		658
C/1998 M4	1998 07 02.57403	19 27 13.59	-11 34 52.2	15.5 T	402
C/1998 M4	1998 07 02.57611	19 27 13.30	-11 34 53.4		402
C/1998 M4	1998 07 02.57819	19 27 12.95	-11 34 55.1		402
C/1998 M4	1998 07 02.61741	19 27 06.77	-11 35 24.4	15.6 T	355
C/1998 M4	1998 07 02.62994	19 27 04.78	-11 35 34.1		355
C/1998 M4	1998 07 02.63361	19 27 04.14	-11 35 36.7		355
C/1998 M4	1998 07 02.68490	19 26 55.97	-11 36 14.7	15.0 T	360
C/1998 M4	1998 07 02.68733	19 26 55.60	-11 36 16.7		360
C/1998 M4	1998 07 02.68976	19 26 55.20	-11 36 18.5		360
C/1998 M4	1998 07 03.59582	19 24 32.16	-11 47 33.1	15.2 T	367
C/1998 M4	1998 07 03.59832	19 24 31.76	-11 47 35.3		367
C/1998 M4	1998 07 03.60081	19 24 31.37	-11 47 36.7		367
C/1998 M4	1998 07 03.66123	19 24 21.71	-11 48 22.3	15.8 T	402
C/1998 M4	1998 07 03.66281	19 24 21.46	-11 48 23.6		402
C/1998 M4	1998 07 03.66440	19 24 21.21	-11 48 24.7		402
C/1998 M4	1998 07 03.67209	19 24 20.01	-11 48 29.5		352
C/1998 M4	1998 07 03.67487	19 24 19.52	-11 48 32.6		352
C/1998 M4	1998 07 03.68472	19 24 17.95	-11 48 39.8		360
C/1998 M4	1998 07 03.68993	19 24 17.11	-11 48 43.5	15.2 T	360
C/1998 M4	1998 07 03.69323	19 24 16.61	-11 48 46.0		360
C/1998 M4	1998 07 05.29463	19 20 03.30	-12 08 31.0	16.0 T	860
C/1998 M4	1998 07 05.29983	19 20 02.40	-12 08 31.7	15.4 T	860
C/1998 M4	1998 07 05.30352	19 20 01.72	-12 08 33.8	15.7 T	860
C/1998 M4	1998 07 05.63818	19 19 09.11	-12 12 47.0	15.8 T	402
C/1998 M4	1998 07 05.64027	19 19 08.79	-12 12 48.6		402
C/1998 M4	1998 07 05.64235	19 19 08.43	-12 12 50.5		402
C/1998 M4	1998 07 14.98281	18 54 54.20	-14 03 49.1		046
C/1998 M4	1998 07 14.98397	18 54 54.03	-14 03 49.3	17.0 N	046
C/1998 M4	1998 07 14.98747	18 54 53.56	-14 03 52.3		046
C/1998 M4	1998 07 14.98824	18 54 53.38	-14 03 52.5		046
C/1998 M4	1998 07 14.98902	18 54 53.24	-14 03 53.1		046
C/1998 M4	1998 07 18.58649	18 45 55.79	-14 43 50.7	16.4 T	402
C/1998 M4	1998 07 18.58753	18 45 55.67	-14 43 51.3		402
C/1998 M4	1998 07 18.58858	18 45 55.52	-14 43 52.1		402
C/1998 M4	1998 07 19.92917	18 42 40.12	-14 58 15.7	16.0 T	5 540

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C/1998 M4	1998 07 19.94269	18 42 37.83	-14 58 25.3		5 540
C/1998 M4	1998 07 22.56139	18 36 24.80	-15 25 44.4	16.7 T	402
C/1998 M4	1998 07 22.56243	18 36 24.62	-15 25 44.6		402
C/1998 M4	1998 07 22.56347	18 36 24.43	-15 25 44.9		402

C/1998 M5 (LINEAR)

C/1998 M5	1998 06 30.30998	23 10 12.61	+17 49 45.4	15.9 T	704
C/1998 M5	1998 06 30.32205	23 10 12.43	+17 50 01.8	16.0 T	704
C/1998 M5	1998 06 30.33430	23 10 12.04	+17 50 14.7	16.3 T	704
C/1998 M5	1998 06 30.34652	23 10 11.72	+17 50 28.4	15.9 T	704
C/1998 M5	1998 06 30.35817	23 10 11.03	+17 50 44.3		704
C/1998 M5	1998 07 01.02361	23 09 52.57	+18 03 54.4		557
C/1998 M5	1998 07 01.02465	23 09 52.54	+18 03 55.6		557
C/1998 M5	1998 07 01.02569	23 09 52.50	+18 03 57.0	13.9 T	557
C/1998 M5	1998 07 01.02683	23 09 52.47	+18 03 58.2	15.4 N	557
C/1998 M5	1998 07 01.05806	23 09 51.46	+18 04 34.9	13.8 T	120
C/1998 M5	1998 07 01.05994	23 09 51.41	+18 04 37.4	13.9 T	120
C/1998 M5	1998 07 01.06163	23 09 51.38	+18 04 39.9	13.8 T	120
C/1998 M5	1998 07 01.06499	23 09 51.25	+18 04 43.4	13.9 T	120
C/1998 M5	1998 07 01.19057	23 09 47.90	+18 07 15.6	14.1 R	758
C/1998 M5	1998 07 01.19456	23 09 47.59	+18 07 19.5	14.2 R	758
C/1998 M5	1998 07 01.19738	23 09 47.60	+18 07 22.0	14.3 R	758
C/1998 M5	1998 07 01.19990	23 09 47.52	+18 07 25.5	14.3 R	758
C/1998 M5	1998 07 01.20306	23 09 47.46	+18 07 29.0	14.4 R	758
C/1998 M5	1998 07 01.20568	23 09 47.40	+18 07 30.5	14.1 R	758
C/1998 M5	1998 07 01.22039	23 09 46.93	+18 07 49.8	14.2 R	758
C/1998 M5	1998 07 01.22365	23 09 46.91	+18 07 53.3	14.3 R	758
C/1998 M5	1998 07 01.24346	23 09 46.24	+18 08 17.6	14.2 R	758
C/1998 M5	1998 07 01.29736	23 09 44.63	+18 09 21.4	16.5 T	750
C/1998 M5	1998 07 01.30089	23 09 44.59	+18 09 26.0	16.6 T	750
C/1998 M5	1998 07 01.31044	23 09 44.29	+18 09 37.5	16.4 T	750
C/1998 M5	1998 07 01.35091	23 09 42.99	+18 10 26.1	15.3 T	750
C/1998 M5	1998 07 01.35347	23 09 42.98	+18 10 28.8		2 670
C/1998 M5	1998 07 01.36736	23 09 42.69	+18 10 45.6		670
C/1998 M5	1998 07 01.38125	23 09 42.22	+18 11 02.2	14.1 T	670
C/1998 M5	1998 07 01.38194	23 09 42.24	+18 11 03.1	14.7 T	709
C/1998 M5	1998 07 01.38558	23 09 42.10	+18 11 07.9	14.6 T	709
C/1998 M5	1998 07 01.39256	23 09 41.89	+18 11 15.9	14.6 T	709
C/1998 M5	1998 07 01.39616	23 09 41.73	+18 11 19.8	14.7 T	734
C/1998 M5	1998 07 01.39840	23 09 41.66	+18 11 22.2	14.4 T	734
C/1998 M5	1998 07 01.40294	23 09 41.55	+18 11 27.8	14.1 T	734
C/1998 M5	1998 07 01.40396	23 09 41.53	+18 11 29.6	14.8 T	709
C/1998 M5	1998 07 01.40524	23 09 41.45	+18 11 30.5	14.2 T	734
C/1998 M5	1998 07 01.40957	23 09 41.35	+18 11 36.2	14.8 T	709
C/1998 M5	1998 07 01.41681	23 09 41.18	+18 11 45.6	14.8 T	709
C/1998 M5	1998 07 01.70586	23 09 32.62	+18 17 34.6	12.8 T	426
C/1998 M5	1998 07 01.71125	23 09 32.46	+18 17 40.8	12.9 T	426
C/1998 M5	1998 07 01.71779	23 09 32.27	+18 17 48.7	12.9 T	426
C/1998 M5	1998 07 01.72289	23 09 32.10	+18 17 54.9	12.8 T	426
C/1998 M5	1998 07 02.17311	23 09 18.39	+18 26 53.4	13.9 T	758
C/1998 M5	1998 07 02.17873	23 09 18.31	+18 26 58.3	13.9 T	758
C/1998 M5	1998 07 02.18102	23 09 18.27	+18 27 01.7	14.0 T	758
C/1998 M5	1998 07 02.33138	23 09 13.41	+18 30 03.0	14.6 T	713

C/1998 M5	1998 07 02.35421	23 09 12.76	+18 30 29.5	14.7 T	713
C/1998 M5	1998 07 02.36890	23 09 12.35	+18 30 48.2	14.6 T	713
C/1998 M5	1998 07 02.39038	23 09 11.68	+18 31 13.9	14.6 T	713
C/1998 M5	1998 07 02.40640	23 09 11.16	+18 31 34.1	14.6 T	713
C/1998 M5	1998 07 02.41211	23 09 10.96	+18 31 39.5		658
C/1998 M5	1998 07 02.41566	23 09 10.85	+18 31 43.7		658
C/1998 M5	1998 07 02.41810	23 09 10.77	+18 31 46.8		658
C/1998 M5	1998 07 02.62318	23 09 04.39	+18 35 54.8		897
C/1998 M5	1998 07 02.63112	23 09 04.13	+18 36 04.2		897
C/1998 M5	1998 07 02.64101	23 09 03.85	+18 36 16.5		897
C/1998 M5	1998 07 02.64921	23 09 03.56	+18 36 26.4	13.8 T	897
C/1998 M5	1998 07 02.67302	23 09 02.80	+18 36 55.0		355
C/1998 M5	1998 07 02.67389	23 09 02.77	+18 36 56.6	13.6 T	355
C/1998 M5	1998 07 02.67551	23 09 02.71	+18 36 58.5		355
C/1998 M5	1998 07 02.69970	23 09 01.95	+18 37 27.4	13.6 T	402
C/1998 M5	1998 07 02.70178	23 09 01.89	+18 37 29.9		402
C/1998 M5	1998 07 02.70387	23 09 01.82	+18 37 32.5		402
C/1998 M5	1998 07 02.71421	23 09 01.39	+18 37 48.3	15.6 N	422
C/1998 M5	1998 07 02.71491	23 09 01.39	+18 37 49.4	15.7 N	422
C/1998 M5	1998 07 02.71554	23 09 01.36	+18 37 50.1	15.8 N	422
C/1998 M5	1998 07 02.71693	23 09 01.31	+18 37 51.7	15.7 N	422
C/1998 M5	1998 07 02.74479	23 09 00.48	+18 38 22.1	13.6 T	360
C/1998 M5	1998 07 02.74722	23 09 00.39	+18 38 24.9		360
C/1998 M5	1998 07 02.74965	23 09 00.31	+18 38 27.9		360
C/1998 M5	1998 07 02.95013	23 08 53.92	+18 42 26.3		620
C/1998 M5	1998 07 02.96823	23 08 53.32	+18 42 50.6		620
C/1998 M5	1998 07 02.97323	23 08 53.30	+18 42 57.7		620
C/1998 M5	1998 07 02.97777	23 08 53.13	+18 43 02.1		620
C/1998 M5	1998 07 02.98407	23 08 52.84	+18 43 10.6		046
C/1998 M5	1998 07 02.98510	23 08 52.81	+18 43 11.9		046
C/1998 M5	1998 07 02.98617	23 08 52.76	+18 43 13.0		046
C/1998 M5	1998 07 02.98771	23 08 52.74	+18 43 15.2		046
C/1998 M5	1998 07 02.98940	23 08 52.78	+18 43 19.2		620
C/1998 M5	1998 07 03.00219	23 08 52.22	+18 43 34.0		620
C/1998 M5	1998 07 03.35324	23 08 40.67	+18 50 40.0	14.4 N	752
C/1998 M5	1998 07 03.35547	23 08 40.60	+18 50 42.6	14.4 N	752
C/1998 M5	1998 07 03.35711	23 08 40.54	+18 50 44.6	14.4 N	752
C/1998 M5	1998 07 03.35906	23 08 40.48	+18 50 46.9	14.4 N	752
C/1998 M5	1998 07 03.36634	23 08 40.22	+18 50 56.2	14.4 N	752
C/1998 M5	1998 07 03.37167	23 08 40.07	+18 51 02.3	14.4 N	752
C/1998 M5	1998 07 03.37228	23 08 40.05	+18 51 02.8	14.3 N	752
C/1998 M5	1998 07 03.60936	23 08 32.31	+18 55 50.7	13.2 T	367
C/1998 M5	1998 07 03.61145	23 08 32.22	+18 55 53.3		367
C/1998 M5	1998 07 03.61353	23 08 32.14	+18 55 56.0		367
C/1998 M5	1998 07 03.61560	23 08 32.11	+18 55 58.2		367
C/1998 M5	1998 07 03.61769	23 08 32.02	+18 56 00.9		367
C/1998 M5	1998 07 03.62781	23 08 31.63	+18 56 13.4	13.6 T	355
C/1998 M5	1998 07 03.63133	23 08 31.52	+18 56 17.1		355
C/1998 M5	1998 07 03.63242	23 08 31.49	+18 56 19.4		355
C/1998 M5	1998 07 03.69433	23 08 29.28	+18 57 33.9		352
C/1998 M5	1998 07 03.69711	23 08 29.29	+18 57 37.5		352
C/1998 M5	1998 07 03.70586	23 08 28.98	+18 57 48.7	13.5 T	402
C/1998 M5	1998 07 03.70690	23 08 28.95	+18 57 49.9		402

C/1998 M5	1998 07 03.70898	23 08 28.87	+18 57 52.5		402
C/1998 M5	1998 07 04.62524	23 07 57.11	+19 16 32.4	13.6 T	355
C/1998 M5	1998 07 04.62646	23 07 57.05	+19 16 34.2		355
C/1998 M5	1998 07 04.62991	23 07 56.92	+19 16 38.2		355
C/1998 M5	1998 07 04.65642	23 07 55.99	+19 17 11.6	13.5 T	372
C/1998 M5	1998 07 04.67536	23 07 55.29	+19 17 34.6		900
C/1998 M5	1998 07 04.68453	23 07 54.93	+19 17 45.9		900
C/1998 M5	1998 07 04.77986	23 07 51.45	+19 19 43.5		372
C/1998 M5	1998 07 05.04565	23 07 41.91	+19 25 08.8		143
C/1998 M5	1998 07 05.04956	23 07 41.77	+19 25 13.6		143
C/1998 M5	1998 07 05.05348	23 07 41.61	+19 25 18.5		143
C/1998 M5	1998 07 05.05741	23 07 41.48	+19 25 23.0		143
C/1998 M5	1998 07 05.06133	23 07 41.33	+19 25 28.2		143
C/1998 M5	1998 07 05.06525	23 07 41.14	+19 25 33.3		143
C/1998 M5	1998 07 05.37094	23 07 29.73	+19 31 55.4	13.9 T	860
C/1998 M5	1998 07 05.37669	23 07 29.46	+19 32 01.6	14.5 T	860
C/1998 M5	1998 07 05.38008	23 07 29.42	+19 32 05.2	14.4 T	860
C/1998 M5	1998 07 05.71076	23 07 17.23	+19 38 50.7		372
C/1998 M5	1998 07 05.72411	23 07 16.72	+19 39 07.2	13.3 T	402
C/1998 M5	1998 07 05.72619	23 07 16.64	+19 39 09.7		402
C/1998 M5	1998 07 05.72828	23 07 16.56	+19 39 12.4		402
C/1998 M5	1998 07 06.70573	23 06 38.61	+19 59 26.4	13.6 T	360
C/1998 M5	1998 07 06.70833	23 06 38.50	+19 59 29.8		360
C/1998 M5	1998 07 06.71094	23 06 38.39	+19 59 32.9		360
C/1998 M5	1998 07 11.21536	23 03 16.30	+21 34 41.6	14.9 T	750
C/1998 M5	1998 07 11.22163	23 03 15.97	+21 34 49.2	17.6 T	750
C/1998 M5	1998 07 11.23104	23 03 15.53	+21 35 01.4	15.3 T	750
C/1998 M5	1998 07 17.21640	22 57 31.90	+23 45 59.7	15.5 T	750
C/1998 M5	1998 07 17.21810	22 57 31.78	+23 46 02.1	15.5 T	750
C/1998 M5	1998 07 17.21891	22 57 31.73	+23 46 02.8	15.7 T	750
C/1998 M5	1998 07 18.25955	22 56 22.40	+24 09 17.1	16.1 T	750
C/1998 M5	1998 07 18.27200	22 56 21.55	+24 09 33.9	16.2 T	750
C/1998 M5	1998 07 18.55534	22 56 02.17	+24 15 53.9	13.8 T	351
C/1998 M5	1998 07 18.56889	22 56 01.30	+24 16 13.3		351
C/1998 M5	1998 07 18.57447	22 56 00.92	+24 16 20.7		351
C/1998 M5	1998 07 18.61513	22 55 58.07	+24 17 15.5	13.0 T	402
C/1998 M5	1998 07 18.61672	22 55 57.99	+24 17 17.3		402
C/1998 M5	1998 07 18.62038	22 55 57.73	+24 17 22.2		402
C/1998 M5	1998 07 18.69016	22 55 52.81	+24 18 56.4	13.0 T	900
C/1998 M5	1998 07 18.69933	22 55 52.13	+24 19 09.1		900
C/1998 M5	1998 07 20.25404	22 54 01.18	+24 54 06.7	15.8 T	750
C/1998 M5	1998 07 20.26160	22 54 00.60	+24 54 17.5	15.9 T	750
C/1998 M5	1998 07 21.05851	22 53 00.92	+25 12 18.4		046
C/1998 M5	1998 07 21.05992	22 53 00.82	+25 12 20.4		046
C/1998 M5	1998 07 21.06118	22 53 00.72	+25 12 22.1		046
C/1998 M5	1998 07 21.17466	22 52 52.15	+25 14 55.7	13.5 N	758
C/1998 M5	1998 07 21.17773	22 52 51.89	+25 15 00.0	13.6 N	758
C/1998 M5	1998 07 21.18844	22 52 51.08	+25 15 14.9	13.5 N	758
C/1998 M5	1998 07 21.95825	22 51 51.40	+25 32 41.0	13.3 T	605
C/1998 M5	1998 07 21.97081	22 51 50.36	+25 32 58.0	13.3 T	605
C/1998 M5	1998 07 21.99015	22 51 48.83	+25 33 24.5	13.3 T	605
C/1998 M5	1998 07 22.16945	22 51 34.86	+25 37 31.6	13.5 N	758
C/1998 M5	1998 07 22.17692	22 51 34.23	+25 37 41.5	13.4 N	758

C/1998 M5	1998 07 22.21469	22 51 31.20	+25 38 32.3	13.5 N	758
C/1998 M5	1998 07 22.94324	22 50 32.50	+25 55 06.1	13.1 T	605
C/1998 M5	1998 07 22.96053	22 50 31.12	+25 55 29.7	13.1 T	605
C/1998 M5	1998 07 25.95325	22 46 13.11	+27 03 55.6	12.6 T	628
C/1998 M5	1998 07 25.96020	22 46 12.40	+27 04 04.6	12.5 T	628
C/1998 M5	1998 07 25.97131	22 46 11.44	+27 04 19.8	12.6 T	628
C/1998 M5	1998 07 26.16374	22 45 53.98	+27 08 45.9	13.0 N	758
C/1998 M5	1998 07 26.16620	22 45 53.72	+27 08 48.9	13.0 N	758
C/1998 M5	1998 07 26.18839	22 45 51.64	+27 09 19.6	12.9 N	758
C/1998 M5	1998 07 26.32204	22 45 39.39	+27 12 24.2		665
C/1998 M5	1998 07 26.33405	22 45 38.28	+27 12 41.0		665
C/1998 M5	1998 07 26.34016	22 45 37.70	+27 12 49.3		665
C/1998 M5	1998 07 26.34516	22 45 37.24	+27 12 56.3		665
C/1998 M5	1998 07 27.08869	22 44 27.97	+27 29 59.6	13.1 N	758
C/1998 M5	1998 07 27.09103	22 44 27.70	+27 30 01.9	13.1 N	758
C/1998 M5	1998 07 27.09498	22 44 27.35	+27 30 07.6	13.1 N	758
C/1998 M5	1998 07 27.59152	22 43 39.94	+27 41 32.5	13.0 T	355
C/1998 M5	1998 07 27.59227	22 43 39.84	+27 41 33.0		355
C/1998 M5	1998 07 27.59299	22 43 39.80	+27 41 34.4		355
C/1998 M5	1998 07 28.63367	22 41 57.84	+28 05 28.8	12.3 T	355
C/1998 M5	1998 07 28.63548	22 41 57.67	+28 05 31.5		355
C/1998 M5	1998 07 28.63640	22 41 57.56	+28 05 32.9		355
C/1998 M5	1998 07 30.93659	22 37 59.57	+28 58 16.4	12.8 T	628
C/1998 M5	1998 07 30.94770	22 37 58.37	+28 58 31.8	12.8 T	628
C/1998 M5	1998 07 30.96506	22 37 56.48	+28 58 56.0	12.9 T	628
C/1998 M5	1998 07 31.12881	22 37 39.05	+29 02 42.6	13.3 N	758
C/1998 M5	1998 07 31.13133	22 37 38.77	+29 02 46.0	13.2 N	758
C/1998 M5	1998 07 31.13412	22 37 38.46	+29 02 49.8	13.2 N	758
C/1998 M5	1998 07 31.13961	22 37 37.87	+29 02 57.4	13.3 N	758
C/1998 M5	1998 07 31.21755	22 37 29.41	+29 04 44.7	16.4 T	750
C/1998 M5	1998 07 31.26354	22 37 24.35	+29 05 48.6	16.2 T	750
C/1998 M5	1998 08 02.13244	22 33 55.83	+29 48 29.0	13.1 N	758
C/1998 M5	1998 08 02.14201	22 33 54.71	+29 48 42.8	13.1 N	758
C/1998 M5	1998 08 02.14659	22 33 54.17	+29 48 49.0	13.1 N	758
C/1998 M5	1998 08 02.45073	22 33 18.86	+29 55 44.7		658
C/1998 M5	1998 08 02.45313	22 33 18.58	+29 55 47.9		658
C/1998 M5	1998 08 02.46047	22 33 17.72	+29 55 57.9		658
C/1998 M5	1998 08 02.75712	22 32 43.14	+30 02 44.0	12.8 T	360
C/1998 M5	1998 08 02.75990	22 32 42.83	+30 02 47.7		360
C/1998 M5	1998 08 02.76285	22 32 42.49	+30 02 51.5		360
C/1998 M5	1998 08 03.38793	22 31 28.75	+30 17 02.3		658
C/1998 M5	1998 08 03.39222	22 31 28.24	+30 17 08.2		658
C/1998 M5	1998 08 03.39551	22 31 27.86	+30 17 13.1		658

C/1998 M6 (Montani)

C/1998 M6	1998 06 30.34038	20 57 58.45	-17 24 09.2	18.9 T	691
C/1998 M6	1998 06 30.36233	20 57 57.44	-17 24 04.7	18.9 T	691
C/1998 M6	1998 06 30.38417	20 57 56.42	-17 23 59.2	19.0 T	691
C/1998 M6	1998 07 01.35790	20 57 11.23	-17 20 25.9	19.0 T	691
C/1998 M6	1998 07 01.36439	20 57 10.92	-17 20 24.6	18.7 T	691
C/1998 M6	1998 07 01.37000	20 57 10.63	-17 20 23.3	18.7 T	691
C/1998 M6	1998 07 01.44301	20 57 07.19	-17 20 07.4	18.7 T	691
C/1998 M6	1998 07 01.44861	20 57 06.93	-17 20 06.3	19.0 T	691

M.P.C. 32143

[illegible]

21P	1998 06 23.89257	16 53 39.75	+27 38 22.5	14.9 T	504
21P	1998 06 23.89560	16 53 39.44	+27 38 24.0	15.0 T	504
21P	1998 06 23.89727	16 53 39.35	+27 38 25.4	15.0 T	504
21P	1998 06 25.47646	16 51 36.53	+27 48 49.9	16.8 T	566
21P	1998 06 25.49758	16 51 34.82	+27 48 57.8	17.0 T	566
21P	1998 06 25.51918	16 51 33.23	+27 49 05.6	18.3 T	566
21P	1998 06 29.53328	16 46 27.21	+28 09 48.2	15.0 T	352
21P	1998 06 29.53605	16 46 26.99	+28 09 49.3		352
21P	1998 06 29.53883	16 46 26.79	+28 09 50.4		352
21P	1998 07 01.25865	16 44 18.68	+28 16 15.1	16.8 T	750
21P	1998 07 01.26939	16 44 17.83	+28 16 17.3	16.9 T	750
21P	1998 07 02.55399	16 42 44.12	+28 20 11.7	15.0 T	360
21P	1998 07 02.55660	16 42 43.92	+28 20 12.2		360
21P	1998 07 03.55034	16 41 32.43	+28 22 36.6	14.6 T	367
21P	1998 07 03.55242	16 41 32.27	+28 22 37.0		367
21P	1998 07 03.55468	16 41 32.10	+28 22 37.2		367
21P	1998 07 03.62157	16 41 27.23	+28 22 45.9	15.4 T	402
21P	1998 07 03.62366	16 41 27.05	+28 22 46.0		402
21P	1998 07 03.62574	16 41 26.88	+28 22 46.1		402
21P	1998 07 11.93484	16 32 18.46	+28 24 07.7		118
21P	1998 07 11.94810	16 32 17.69	+28 24 06.1	14.5 T	118
21P	1998 07 13.86230	16 30 26.44	+28 19 52.5		118
21P	1998 07 13.88069	16 30 25.34	+28 19 50.1		118
21P	1998 07 13.92624	16 30 22.71	+28 19 41.6	15.1 T	605
21P	1998 07 13.95410	16 30 21.14	+28 19 37.3	15.1 T	605
21P	1998 07 15.84141	16 28 38.16	+28 13 47.9	15.2 T	118
21P	1998 07 15.84848	16 28 37.74	+28 13 46.9		118
21P	1998 07 16.97087	16 27 39.84	+28 09 32.6	14.9 T	605
21P	1998 07 16.97653	16 27 39.14	+28 09 31.3	14.8 T	605
21P	1998 07 20.84536	16 24 38.33	+27 50 59.4		118
21P	1998 07 20.85254	16 24 38.01	+27 50 57.3	14.5 T	118
21P	1998 07 20.88094	16 24 36.74	+27 50 47.6	15.4 T	138
21P	1998 07 20.88528	16 24 36.52	+27 50 46.1	15.4 T	138
21P	1998 07 20.88963	16 24 36.35	+27 50 44.7	15.3 T	138
21P	1998 07 22.89751	16 23 15.19	+27 38 41.7	14.9 T	605
21P	1998 07 22.90918	16 23 14.80	+27 38 36.7	16.3 T	605
21P	1998 07 22.92010	16 23 14.33	+27 38 33.4	16.5 T	605
21P	1998 07 23.58438	16 22 49.30	+27 34 16.1	14.4 T	360
21P	1998 07 23.58733	16 22 49.18	+27 34 14.7		360
21P	1998 07 29.88958	16 19 44.41	+26 45 13.7	14.2 T	476
21P	1998 07 29.91146	16 19 43.99	+26 45 01.9	14.2 T	476
21P	1998 07 29.91493	16 19 43.90	+26 45 01.3	14.2 T	476
21P	1998 07 29.91979	16 19 43.81	+26 44 58.3	14.2 T	476
21P	1998 07 30.57882	16 19 29.94	+26 39 05.3	14.1 T	360
21P	1998 07 30.58160	16 19 29.87	+26 39 03.7		360

29P/Schwassmann-Wachmann 1

29P	1998 06 17.51233	13 04 36.75	-17 40 34.4	14.8 T	360
29P	1998 06 17.51580	13 04 36.75	-17 40 34.2		360

43P/Wolf-Harrington

43P	1998 03 16.50750	09 26 42.59	-17 49 31.7	15 T	372
43P	1998 03 17.56007	09 26 27.61	-17 38 15.0	15.5 T	372

52P/Harrington-Abell

52P	1998 07 21.08623	03 36 32.45	+27 20 22.2	14.5 N	910
52P	1998 07 21.09928	03 36 33.90	+27 20 29.2	14.7 N	910
52P	1998 07 21.10961	03 36 35.05	+27 20 34.8	14.7 N	910
52P	1998 07 21.11608	03 36 35.78	+27 20 38.5	14.7 N	910
52P	1998 07 22.02775	03 38 17.39	+27 28 42.5	14.2 N	046
52P	1998 07 22.02856	03 38 17.46	+27 28 43.6		046
52P	1998 07 22.02933	03 38 17.62	+27 28 43.9		046
52P	1998 07 22.03117	03 38 17.82	+27 28 44.7	12.3 T	046
52P	1998 07 22.03363	03 38 18.06	+27 28 46.1		046
52P	1998 07 22.03598	03 38 18.32	+27 28 47.5		046
52P	1998 07 22.07082	03 38 22.24	+27 29 05.9		106
52P	1998 07 22.07237	03 38 22.36	+27 29 06.5		106
52P	1998 07 22.08543	03 38 23.85	+27 29 13.9		106
52P	1998 07 22.09083	03 38 24.45	+27 29 16.8		106
52P	1998 07 22.46807	03 39 06.58	+27 32 37.0	11.0 T	658
52P	1998 07 22.46888	03 39 06.69	+27 32 37.5		658
52P	1998 07 22.46968	03 39 06.77	+27 32 38.0		658
52P	1998 07 23.05926	03 40 12.79	+27 37 50.2		118
52P	1998 07 23.06319	03 40 13.22	+27 37 52.3	12.5 T	118
52P	1998 07 23.06807	03 40 13.80	+27 37 55.2	15.0 T	138
52P	1998 07 23.07579	03 40 14.65	+27 37 58.9	14.8 T	138
52P	1998 07 23.08304	03 40 15.50	+27 38 03.1	15.0 T	138
52P	1998 07 23.09034	03 40 16.30	+27 38 06.6	15.0 T	138
52P	1998 07 23.09620	03 40 16.93	+27 38 09.7	14.7 T	138
52P	1998 07 25.04907	03 43 55.95	+27 55 18.1	12.8 T	118
52P	1998 07 25.43538	03 44 39.43	+27 58 41.4	18.0 N	691
52P	1998 07 25.45320	03 44 41.44	+27 58 51.0	12.8 T	691
52P	1998 07 25.47067	03 44 43.37	+27 59 00.4	11.6 T	691
52P	1998 07 27.05829	03 47 42.46	+28 12 47.0	12.5 T	046
52P	1998 07 27.05936	03 47 42.59	+28 12 47.5	14.9 N	046
52P	1998 07 27.06016	03 47 42.68	+28 12 47.7		046
52P	1998 07 27.06101	03 47 42.76	+28 12 48.4		046
52P	1998 07 28.73322	03 50 52.05	+28 27 13.4	12.4 T	355
52P	1998 07 28.73560	03 50 52.22	+28 27 14.6		355
52P	1998 07 28.73653	03 50 52.34	+28 27 15.2		355

55P/Tempel-Tuttle

55P	1998 07 02.77238	00 21 19.20	-23 08 59.5	17.0 T	402
55P	1998 07 02.77586	00 21 18.64	-23 09 08.3		402
55P	1998 07 05.73863	00 14 21.52	-24 51 19.6	16.5 T	402
55P	1998 07 05.74141	00 14 21.22	-24 51 28.8		402
55P	1998 07 05.74419	00 14 20.75	-24 51 34.6		402

68P/Klemola

68P	1998 07 03.77448	02 05 34.60	+11 18 41.0	16.1 T	360
68P	1998 07 03.77708	02 05 34.92	+11 18 41.7		360
68P	1998 07 28.70163	02 52 47.58	+12 36 39.6		355
68P	1998 07 28.72202	02 52 49.62	+12 36 39.5		355
68P	1998 07 28.72466	02 52 49.88	+12 36 41.2		355

69P/Taylor

69P	1998 01 27.52153	08 16 00.25	+30 33 53.0		372
69P	1998 01 29.61146	08 14 42.62	+31 10 14.0		372

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M.P.C. 32145

69P	1998 02 04.77535	08 11 14.27	+32 48 10.9	13.7 T	372
69P	1998 02 17.60135	08 06 49.42	+35 23 37.7	13.5 T	372
69P	1998 03 05.65573	08 08 49.44	+37 07 43.4		372
69P	1998 03 16.50000	08 15 16.12	+37 30 30.6	16 T	372
69P	1998 03 17.46667	08 16 01.59	+37 31 00.2		372
69P	1998 03 18.60608	08 16 56.78	+37 31 14.4	16.5 T	372
69P	1998 04 27.56319	09 07 29.85	+34 59 43.9	17 T	372
69P	1998 05 20.52708	09 44 59.25	+31 54 29.7	18 T	372
69P	1998 06 17.48160	10 32 17.25	+27 14 06.2	15.4 T	360
69P	1998 06 17.48472	10 32 17.58	+27 14 04.2		360
69P	1998 06 19.16934	10 35 08.10	+26 55 54.2	15.5 T	696
69P	1998 06 19.17292	10 35 08.46	+26 55 52.0	15.6 T	696
69P	1998 06 19.17470	10 35 08.63	+26 55 50.7	15.6 T	696

78P/Gehrels 2

78P	1998 03 16.49236	06 33 07.94	+15 50 29.5	16.5 T	372
78P	1998 03 18.51285	06 34 54.71	+15 54 03.5	17 T	372

81P/Wild 2

81P	1998 06 19.38340	21 13 29.66	-15 09 08.4	16.3 T	696
81P	1998 06 19.39074	21 13 29.47	-15 09 09.3	16.2 T	696
81P	1998 06 19.39807	21 13 29.29	-15 09 10.3	16.3 T	696
81P	1998 06 26.42987	21 10 18.54	-15 25 52.7		568
81P	1998 06 26.53253	21 10 15.24	-15 26 09.4		568
81P	1998 06 27.43101	21 09 47.07	-15 28 34.8		568
81P	1998 06 27.43979	21 09 46.77	-15 28 36.4		568
81P	1998 06 27.50031	21 09 44.78	-15 28 46.4		568
81P	1998 06 27.59203	21 09 41.71	-15 29 01.6		568
81P	1998 06 28.42383	21 09 14.91	-15 31 19.5		568
81P	1998 06 28.47477	21 09 13.20	-15 31 28.3		568
81P	1998 06 28.52374	21 09 11.53	-15 31 36.6		568
81P	1998 07 02.37878	21 06 57.35	-15 42 59.0	17.7 T	691
81P	1998 07 02.40029	21 06 56.52	-15 43 03.4	17.5 T	691
81P	1998 07 02.42181	21 06 55.67	-15 43 07.9	17.4 T	691
81P	1998 07 02.42598	21 06 55.53	-15 43 08.6	18.2 T	699
81P	1998 07 02.44089	21 06 55.11	-15 43 11.6		699
81P	1998 07 02.45578	21 06 54.47	-15 43 13.3		699
81P	1998 07 15.35682	20 57 57.50	-16 27 07.4	20.5 N	691
81P	1998 07 15.37837	20 57 56.51	-16 27 12.6	17.9 T	691
81P	1998 07 15.39992	20 57 55.49	-16 27 17.4	17.9 T	691
81P	1998 07 27.29331	20 48 24.23	-17 11 59.1	20.4 N	691
81P	1998 07 27.29938	20 48 23.92	-17 12 00.4	17.1 T	691
81P	1998 08 02.68212	20 43 09.76	-17 35 51.3	17.0 T	360
81P	1998 08 02.68663	20 43 09.53	-17 35 51.9		360

88P/Howell

88P	1998 05 18.92462	13 00 56.38	-03 17 51.6	16.0 N	143
88P	1998 05 18.93245	13 00 56.18	-03 17 52.8	16.7 N	143
88P	1998 05 18.94029	13 00 55.90	-03 17 52.4	16.3 N	143
88P	1998 06 17.52049	12 59 03.67	-05 08 44.1	15.0 T	360
88P	1998 06 17.52292	12 59 03.73	-05 08 45.0		360
88P	1998 06 24.17344	13 03 16.47	-06 01 13.0	19.0 N	691
88P	1998 06 24.18483	13 03 16.95	-06 01 18.5	15.6 T	691
88P	1998 06 24.19417	13 03 17.33	-06 01 23.2	15.7 T	691

88P	1998 07 20.85124	13 35 44.43	-10 51 39.6		046
88P	1998 07 20.85359	13 35 44.65	-10 51 41.7		046
88P	1998 07 20.85525	13 35 44.80	-10 51 42.6		046
88P	1998 07 27.16270	13 46 46.56	-12 14 45.0	18.6 N	691
88P	1998 07 27.17327	13 46 47.71	-12 14 53.3	14.9 T	691

91P/Russell 3

91P	1998 06 19.33742	20 41 32.81	-02 46 24.1	18.7 T	696
91P	1998 06 19.34128	20 41 32.74	-02 46 22.8	18.5 T	696
91P	1998 06 19.34515	20 41 32.64	-02 46 21.5	18.6 T	696
91P	1998 07 03.66718	20 34 41.35	-01 42 10.3	18.9 T	402
91P	1998 07 03.66926	20 34 41.24	-01 42 09.3		402
91P	1998 07 03.67343	20 34 41.09	-01 42 08.9		402
91P	1998 07 20.96144	20 22 38.17	-01 08 47.2	18.8 T	046
91P	1998 07 20.96539	20 22 37.96	-01 08 47.3		046
91P	1998 07 20.96716	20 22 37.93	-01 08 47.7		046
91P	1998 07 27.25304	20 17 52.26	-01 08 47.0	21.1 N	691
91P	1998 07 27.25699	20 17 52.07	-01 08 47.0	18.4 T	691
91P	1998 07 27.26126	20 17 51.88	-01 08 46.9	18.6 T	691

93P/Lovas 1

93P	1998 06 17.44303	01 16 06.51	+11 16 08.2	17.7 T	696
93P	1998 06 17.45012	01 16 07.36	+11 16 15.7	17.6 T	696
93P	1998 06 17.45368	01 16 07.79	+11 16 19.3	17.7 T	696
93P	1998 06 24.45989	01 29 55.85	+13 15 24.2	20.3 N	691
93P	1998 06 24.46372	01 29 56.32	+13 15 28.1	17.6 T	691
93P	1998 06 24.46752	01 29 56.75	+13 15 32.2	17.6 T	691
93P	1998 07 06.77552	01 54 59.31	+16 48 34.0	17.3 T	360
93P	1998 07 06.77899	01 54 59.77	+16 48 38.4		360
93P	1998 07 25.02338	02 34 16.95	+22 09 58.3		6 118
93P	1998 07 25.03889	02 34 19.01	+22 10 15.1	15.9 T	6 118
93P	1998 07 27.45782	02 39 43.88	+22 52 59.2	19.8 N	691
93P	1998 07 27.46188	02 39 44.39	+22 53 03.5	16.7 T	691
93P	1998 07 27.46620	02 39 44.94	+22 53 08.2	16.8 T	691

98P/Takamizawa

98P	1998 06 19.20459	11 46 22.46	+12 20 11.3	20.3 T	696
98P	1998 06 19.20638	11 46 22.59	+12 20 10.5	20.2 T	696
98P	1998 06 19.20816	11 46 22.70	+12 20 08.9	20.2 T	696

103P/Hartley 2

103P	1998 03 16.44826	05 08 21.83	+07 20 17.4	14.5 T	372
103P	1998 03 17.44236	05 11 40.06	+07 27 19.5		372

110P/Hartley 3

110P	1998 06 18.42632	20 19 16.77	-17 35 22.9		696
110P	1998 06 18.43367	20 19 16.59	-17 35 22.6	22.1 T	696
110P	1998 06 18.44103	20 19 16.38	-17 35 22.7	22.4 T	696

118P/Shoemaker-Levy 4

118P	1998 06 23.17089	13 49 42.52	-01 30 53.1	18.1 T	691
118P	1998 06 23.18072	13 49 42.54	-01 30 54.5	17.9 T	691
118P	1998 06 23.19060	13 49 42.53	-01 30 55.7	18.0 T	691
118P	1998 06 24.16558	13 49 44.71	-01 33 05.0	18.1 T	691
118P	1998 06 24.17818	13 49 44.73	-01 33 06.6	18.1 T	691
118P	1998 06 24.18944	13 49 44.76	-01 33 08.3	17.9 T	691

118P	1998 07 26.15472	13 58 32.83	−03 23 02.8	22.2 N	691
118P	1998 07 26.16515	13 58 33.14	−03 23 05.6	19.9 T	691
118P	1998 07 26.17557	13 58 33.43	−03 23 08.2	19.7 T	691

134P/Kowal-Vávrová

134P	1998 06 18.16138	10 37 25.44	+06 51 52.0	17.5 T	696
134P	1998 06 18.16527	10 37 25.72	+06 51 50.6	17.6 T	696
134P	1998 06 18.16913	10 37 25.98	+06 51 49.3	17.6 T	696

136P/Mueller 3

136P	1998 06 19.40383	21 40 04.22	−11 55 48.1	20.0 T	696
136P	1998 06 19.40770	21 40 04.24	−11 55 48.5	19.9 T	696
136P	1998 06 19.41156	21 40 04.26	−11 55 48.7	19.9 T	696
136P	1998 06 23.43291	21 40 17.66	−12 01 47.2	22.4 N	691
136P	1998 06 23.45231	21 40 17.64	−12 01 49.5	20.8 T	691
136P	1998 07 02.72804	21 39 40.79	−12 22 58.1	19.8 T	402
136P	1998 07 02.73499	21 39 40.66	−12 23 00.5		402
136P	1998 07 02.74193	21 39 40.60	−12 23 00.0		402

138P/Shoemaker-Levy 7

138P	1998 07 25.42696	03 44 14.39	+28 47 29.5	20.7 T	691
138P	1998 07 25.44572	03 44 17.61	+28 47 42.9	20.4 T	691
138P	1998 07 25.46292	03 44 20.63	+28 47 54.6	22.5 N	691
138P	1998 07 26.45868	03 47 14.10	+28 59 13.6	22.1 N	691
138P	1998 07 26.46336	03 47 14.88	+28 59 16.5	20.3 T	691
138P	1998 07 26.46762	03 47 15.71	+28 59 19.5	20.1 T	691

Note 1: These are for the most part remeasurements (but in some cases new measurements) of the observations attributed to P/1994 P1-D on *MPC* 24136–24137, now separated into two components P/1994 P1-F and P1-G, which are termed P1-D₁ and P1-D₂ in *Internat. Comet Q.* **17**, 17, 1995.
 2: involved with star. 3: faint image. 4: poor sky. 5: crowded star field.
 6: measurement difficult.

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

E. W. Elst, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels, Belgium [elst@atmos.oma.be]

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

1990 WM₁, 3, 1, 0; 1991 PL₂, 3, 1, 0; 1997 AZ₁, 3, 1, 0; 1998 BB₄₂, 3, 1, 0; 1998 FT₆₁, 6, 2, 26; 1998 FU₆₂, 3, 1, 0; 1998 FN₇₇, 2, 1, 0; 1998 KE₅, 3, 1, 0; [26, 8, 0*, 1993/10/15–1995/10/23]

033 Tautenburg

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

1.3-m Schmidt telescope

PPM

1982 UV₆, 2, 1, 0; 1987 KF₁, 2, 1, 0; 1989 CH₄, 2, 1, 0; 1994 JR, 2, 1, 0; 1998 BT₁, 2, 1, 0; 1998 FL₇₁, 2, 1, 0; (406), 2, 1, 0; (904), 2, 1, 0; (5569), 2, 1, 0; (5572), 2, 1, 0; (6864), 2, 1, 0; [22, 11, 0*, 1991/10/31–1995/03/04]

046 Kleť

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

Observers J. Tichá, M. Tichý, Z. Moravec

Measurer M. Tichý

0.57-m *f*/5.2 reflector + CCD

GSC, USNO-SA1.0

1980 DN, 6, 2, 1; 1981 EA₂₃, 3, 1, 0; 1983 TE₁, 12, 4, 32; 1984 BS, 17, 6, 43; 1984 SU, 12, 4, 19; 1986 UH₃, 6, 2, 6; 1987 OA, 11, 3, 16; 1987 SC₆, 6, 2, 6; 1988 VP₅, 6, 2, 3; 1989 BE₁, 5, 2, 1; 1989 WG₄, 12, 4, 20; 1991 WB, 3, 1, 0; 1992 JB, 3, 1, 0; 1993 BW₂, 4, 1, 0; 1995 SN₃, 6, 2, 5; 1995 WF₆, 6, 2, 1; 1996 AE, 6, 2, 6; 1996 AO₁, 9, 2, 6; 1996 XT₁₄, 4, 1, 0; 1996 XW₁₈, 6, 2, 1; 1997 BG, 6, 2, 6; 1997 CV₁, 6, 2, 1; 1997 CN₁₃, 5, 2, 1; 1997 MW₁, 7, 1, 0; 1998 BZ₇, 14, 3, 29; 1998 EC₃, 9, 3, 40; 1998 FX₂, 10, 3, 29; 1998 FM₅, 3, 1, 0; 1998 GO₁, 6, 2, 1; 1998 HK₁, 2, 1, 0; 1998 HJ₄₁, 1, 1, 0; 1998 HN₄₉, 6, 2, 1; 1998 HU₁₀₈, 3, 1, 0; 1998 KU₂, 23, 7, 40; 1998 KE₃, 4, 1, 0; 1998 KC₅, 6, 2, 2; 1998 KH₉, 3, 1, 0; 1998 KJ₉, 5, 1, 0; 1998 KK₉, 10, 3, 37; 1998 KH₁₇, 12, 3, 12; 1998 KK₁₇, 19, 5, 40; 1998 KK₅₆, 4, 1, 0; 1998 LD, 4, 1, 0; 1998 LE, 6, 1, 0; 1998 MQ, 27, 7, 28; 1998 MZ, 17, 4, 8; 1998 MA₁, 6, 1, 0; 1998 MR₂, 13, 3, 2; 1998 MS₂, 25, 5, 28; 1998 ME₃, 19, 4, 22; 1998 MV₅, 16, 3, 2; 1998 MW₅, 6, 1, 0; 1998 MX₅, 23, 6, 38; 1998 ML₁₄, 5, 1, 0; 1998 MN₁₄, 19, 5, 20; 1998 MR₁₇, 26, 6, 22; 1998 MR₂₄, 9, 2, 2; 1998 MT₂₄, 9, 3, 3; 1998 MK₃₀, 5, 1, 0; 1998 MQ₃₃, 6, 2, 1; 1998 OH, 4, 1, 0; 1998 OR₂, 5, 1, 0; 1998 OS₄, 6, 1, 0; (1866), 3, 1, 0; (4939), 3, 1, 0; (5066), 3, 1, 0; (7889), 2, 1, 0; [574, 67, 0*, 1998/02/05–1998/08/02]

057 Belgrade

V. Protitch-Benishek, Astronomical Observatory, Volgina 7, YG-11050 Belgrade, Yugoslavia [vprotic@aob.aob.bg.ac.yu]

Observers V. Protitch-Benishek, Vl. Benishek, I. Graovac

0.14-m *f*/10 Askania astrograph + CCD

GSC

(1036), 8, 1, 0; [8, 1, 0*, 1998/07/09]

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, 5, 2, 1; [5, 1, 0*, 1998/07/01–1998/07/02]

104 San Marcello Pistoiese

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

Observers L. Tesi, A. Boattini, G. Forti, M. Tombelli, E. Gregori, V. Goretti

Measurers A. Boattini, G. Forti, L. Tesi, M. Tombelli, E. Gregori

0.40-m *f*/5 reflector + CCD

GSC

1982 SP₆, 3, 1, 0; 1983 XN₁, 3, 1, 0; 1985 PQ, 3, 1, 0; 1988 RK₉, 3, 1, 0; 1990 VC₁₅, 6, 2, 1; 1992 WO₅, 4, 1, 0; 1993 OZ₂, 3, 1, 0; 1994 JE₉, 3, 1, 0; 1995 UN₄, 2, 1, 0; 1996 XL₃₁, 3, 1, 0; 1997 BG₈, 2, 1, 0; 1997 BC₉, 3, 1, 0; 1997 BN₉, 6, 2, 2; 1997 CP₁₃, 6, 2, 2; 1997 FU, 7, 2, 3; 1998 BB₁₀, 3, 1, 0; 1998 EC₃, 3, 1, 0; 1998 KE₃, 4, 1, 0; 1998 KH₉, 3, 1, 0; 1998 KH₁₇, 3, 1, 0; 1998 KK₅₆, 4, 1, 0; 1998 MP *, 21, 7, 9; 1998 MQ, 4, 1, 0; 1998 MZ, 7, 2, 5; 1998 MR₂, 3, 1, 0; 1998 MS₂, 4, 1, 0; 1998 ME₃, 10, 3, 28; 1998 MG₃ *, 14, 5, 5; 1998 MV₅, 9, 2, 3; 1998 MX₅, 4, 1, 0;

1998 MY₅, 5, 1, 0; 1998 MT₁₃ *, 14, 5, 27; 1998 ML₁₄, 8, 3, 22; 1998 MN₁₄, 12, 3, 18; 1998 MR₁₇, 4, 1, 0; 1998 MT₂₄, 4, 1, 0; 1998 MK₃₀, 4, 1, 0; 1998 NU, 4, 1, 0; 1998 OJ *, 17, 6, 11; 1998 OK *, 25, 7, 12; 1998 OA₁ *, 16, 5, 10; 1998 OB₁ *, 5, 2, 1; 1998 OC₁ *, 17, 5, 11; 1998 OD₁ *, 16, 5, 10; 1998 OE₁ *, 14, 5, 11; 1998 OR₂, 3, 1, 0; 1998 OS₄, 4, 1, 0; (895), 3, 1, 0; (6038), 10, 3, 2; (7358), 3, 1, 0; (8641), 3, 1, 0; (8855), 3, 1, 0; [347, 52, 10*, 1998/03/18–1998/07/30]

106 Crni vrh

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

Observers H. Mikuž, J. Skvarc

0.36-m $f/6.7$ Schmidt-Cassegrain + CCD

USNO SA-1, GSC

1997 US₉, 5, 1, 0; 1998 OS₄, 4, 1, 0; [9, 2, 0*, 1998/07/23–1998/07/29]

108 Montelupo

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

[iaiu@arcetri.astro.it]

Observers M. Tombelli, A. Boattini, G. Forti

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

GSC

1998 ME₃, 3, 1, 0; 1998 MX₅, 6, 2, 31; 1998 MT₁₃, 3, 1, 0; 1998 MN₁₄, 7, 3, 31; 1998 MR₁₇, 3, 1, 0; 1998 MT₂₄, 3, 1, 0; 1998 OS₄, 1, 1, 0; (1866), 4, 1, 0; [30, 8, 0*, 1998/06/13–1998/07/31]

118 Modra

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

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

Observers P. Kolény, L. Kornoš, A. Galád, A. Pravda

0.6-m $f/5.5$ reflector + CCD

GSC, USNO-SA1.0

1987 OA, 4, 2, 3; 1993 BD₄, 2, 1, 0; 1995 RC, 5, 2, 4; 1997 FG₁, 5, 2, 1; 1998 EC₃, 2, 1, 0; 1998 KU₂, 2, 1, 0; 1998 KH₁₇, 6, 3, 20; 1998 KK₅₆, 2, 1, 0; 1998 MQ, 6, 3, 7; 1998 ME₃, 13, 6, 18; 1998 MX₅, 6, 3, 5; 1998 MN₁₄, 9, 4, 17; 1998 MR₁₇, 2, 1, 0; 1998 MR₂₄, 4, 2, 2; 1998 MT₂₄, 4, 2, 2; (1036), 2, 1, 0; (1951), 4, 2, 20; (2265), 2, 1, 0; (3400), 2, 1, 0; (4034), 2, 1, 0; (5332), 2, 1, 0; (5672), 5, 2, 4; (6695), 2, 1, 0; (6838), 1, 1, 0; (7889), 6, 3, 18; (8201), 9, 4, 19; (8373), 2, 1, 0; [111, 27, 0*, 1998/07/02–1998/07/24]

120 Višňjan

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

Observers K. Korlević, V. Brcić, O. Persurić, V. Jelić, R. Radonić, B. Andrić,

K. Komugović, M. Dusić, A. Ritosa

Measurers K. Korlević, V. Jelić, R. Radonić, B. Andrić, K. Komugović, M. Jurić

0.41-m $f/4.3$ reflector + CCD

GSC, USNO-SA1.0

1990 TS₄, 5, 1, 0; 1998 HL₅₁, 2, 1, 0; 1998 JA, 7, 2, 18; 1998 KD₂₂, 2, 1, 0; 1998 KF₃₅, 2, 1, 0; 1998 MS₂, 4, 1, 0; 1998 MR₁₇, 5, 1, 0; 1998 MR₂₄, 5, 1, 0; 1998 MK₃₀, 9, 2, 2; 1998 MP₃₂, 4, 2, 2; 1998 OF₁ *, 5, 2, 2; 1998 OP₂, 7, 2, 1; 1998 OT₄ *, 8, 2, 1; 1998 OU₄ *, 7, 2, 1; 1998 OV₄ *, 8, 2, 1; 1998 OW₄ *, 8, 2, 1; 1998 OD₆ *, 8, 2, 1; 1998 OE₆ *, 18, 4, 3; 1998 OF₆ *, 9, 2, 1; 1998 OG₆ *, 8, 2, 1; 1998 OH₆ *, 8, 2, 1; 1998 PA *, 8, 2, 1; (1801), 3, 1, 0; (1829), 4, 1, 0; (2491), 8, 1, 0; (3370), 4, 1, 0; (5141), 4, 1, 0; (7707), 8, 2, 1; [178, 28, 11*, 1998/04/29–1998/08/02]

121 Kharkov University, Chuguevskaya Station

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Street 35 Kharkiv 310022 Ukraine [shevchenko@astron.kharkov.ua]

Yu. N. Krugly, Astronomical Observatory of the Kharkov State University,

Sumskaya Str. 35, UA-310022 Kharkov, Ukraine

[krugly@astron.kharkov.ua]

Observers V. G. Shevchenko, V. G. Chiorny, Yu. N. Krugly

Measurer Yu. N. Krugly

0.70-m $f/4$ reflector + CCD

GSC

1998 KH₁₇, 8, 1, 0; 1998 ME₃, 4, 1, 0; 1998 MN₁₄, 3, 1, 0; (679), 16, 3, 12; (1036), 12, 2, 1; (8201), 2, 1, 0; [45, 6, 0*, 1998/05/19–1998/06/27]

122 Pises Observatory

B. Gaillard, 34 rue du mas de Lemasson, F-34070 Montpellier, France

[observatoire.pises@hol.fr]

Observers B. Gaillard, J. Lopez, C. Cavadore, J. H. Blanc, A. M. Jacquy

Measurer B. Gaillard

0.40-m $f/4.7$ reflector + CCD

USNO-SA1.0

1997 NU₆, 6, 2, 3; [6, 1, 0*, 1998/07/23–1998/07/26]

124 Castres

A. Klotz, 82 rue Maroulet, F-81100 Castres, France [klotz@irsamc1.ups-tlse.fr]

0.20-m $f/6.15$ reflector + CCD

USNO-SA1.0, GSC

1991 PY₂, 3, 1, 0; [3, 1, 0*, 1997/02/15]

127 Bornheim

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

0.19-m $f/4$ FFC + CCD

GSC

1980 UL, 2, 1, 0; 1982 UZ₂, 4, 2, 4; 1986 AE, 6, 3, 3; 1993 OD, 5, 2, 8; 1998 MK₄, 4, 2, 1; 1998 MX₅, 7, 3, 9; 1998 MK₃₀, 4, 1, 0; 1998 NB, 4, 2, 3; (434), 2, 1, 0; (754), 2, 1, 0; (950), 2, 1, 0; (6009), 2, 1, 0; [44, 12, 0*, 1998/06/24–1998/07/30]

130 Lumezzane

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

Observers W. Marinello, G. Pizzetti, M. Marinello

Measurer G. Pizzetti

0.40-m $f/6.5$ reflector + CCD

GSC, USNO-SA1.0

(3731), 3, 1, 0; (3875), 4, 1, 0; (6009), 7, 2, 28; [14, 3, 0*, 1998/05/30–1998/07/05]

132 Bedoin

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

[Pierre.Antonini@wanadoo.fr]

0.26-m $f/3.5$ reflector + CCD, 0.16-m $f/3.3$ reflector + CCD

GSC

1997 FC, 2, 1, 0; 1997 FR₁, 3, 1, 0; 1998 LE₃, 3, 1, 0; (552), 2, 1, 0; (840), 4, 2, 27; (1178), 2, 1, 0; (1476), 2, 1, 0; (1909), 2, 1, 0; (2939), 2, 1, 0; (3455), 1, 1, 0; (3904), 2, 1, 0; (4628), 2, 1, 0; (5641), 2, 1, 0; (6009), 4, 2, 27; (8201), 3, 1, 0; [36, 15, 0*, 1998/06/19–1998/07/26]

133 Les Tardieux

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

[Michel.Boeuf@wanadoo.fr]

0.20-m $f/3.5$ reflector + CCD

GSC

1997 FC, 3, 1, 0; [3, 1, 0*, 1998/06/20]

143 Gnosca

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

0.20-m $f/7.1$ reflector + CCD

GSC, USNO-SA1.0

1998 KH₁₇, 8, 2, 26; 1998 KK₅₆, 3, 1, 0; 1998 MX₅, 5, 1, 0; 1998 MN₁₄, 5, 1, 0; (1036), 12, 1, 0; (3256), 3, 1, 0; (5066), 12, 1, 0; (5672), 3, 1, 0; (6009), 9, 2, 26; (6838), 3, 1, 0; (7889), 5, 1, 0; (8201), 20, 2, 20; [88, 12, 0*, 1998/05/20–1998/07/05]

145 's-Gravenwezel Observatory

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

[Tom.Alderweireldt@ping.be]

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

Hipparcos, ACT, Tycho, PPM, GSC 1.2

(276), 9, 2, 2; (1172), 7, 1, 0; (1784), 2, 1, 0; [18, 3, 0*, 1998/05/11–1998/07/30]

148 Guitalens

A. Klotz, Le Gravel, F-81220 Guitalens, France [klotz@irsamc1.ups-tlse.fr]

0.20-m $f/6.15$ reflector + CCD

GSC

1988 XR₁, 3, 1, 0; 1996 XH₁₉, 5, 1, 0; 1997 FC, 2, 1, 0; 1997 FR₁, 2, 1, 0; (90), 2, 1, 0; (112), 2, 1, 0; (454), 2, 1, 0; (538), 2, 1, 0; (908), 2, 1, 0; (1449), 4, 1, 0; (1866), 5, 1, 0; (3875), 3, 1, 0; (8201), 5, 1, 0; [39, 13, 0*, 1998/06/16–1998/07/05]

149 Beine-Nauroy

O. Labrevoir, 58 Rue Ledru Rollin, F-51100 Reims, France [saros@ebc.net]

Observers O. Labrevoir, T. Gharsa

Measurer O. Labrevoir

0.40-m $f/6$ reflector + CCD

GSC

(456), 4, 2, 12; [4, 1, 0*, 1998/07/03–1998/07/15]

150 Maisons Laffitte

R. Chassagne, 11 Bis Avenue Poniatowski, F-78600 Maisons Laffitte, France

[robin.chassagne@meteo.fr]

0.21-m $f/11.5$ reflector + CCD

GSC

(4628), 2, 2, 5; (6009), 2, 2, 4; [4, 2, 0*, 1998/07/14–1998/07/19]

151 Eschenberg Observatory, Winterthur

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

[griesser@spectraweb.ch]

0.25-m $f/8.0$ reflector + CCD

GSC

1998 MR₁₇, 4, 2, 4; (1237), 4, 2, 4; [8, 2, 0*, 1998/07/25–1998/07/30]

292 Burlington

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

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

GSC

1998 KH₁₇, 3, 1, 0; 1998 NT *, 6, 2, 1; [9, 2, 1*, 1998/07/12–1998/07/13]

323 Perth

J. Biggs, Perth Observatory, Bickley, WA 6076, Australia

[astro@earwax.pd.uwa.edu.au]

Observers G. Lowe, T. Smith

0.3-m astrograph

(258), 3, 3, 59; (376), 2, 2, 33; (2204), 2, 2, 56; [7, 3, 0*, 1996/12/06–1997/12/29]

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 L. C. Deng, J. Zhu, B. Zhao, H. T. Zhang, Z. Y. Zheng, Z. Zheng,

X. Y. Li, Y. J. Chen

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

0.60-m Schmidt + CCD

1975 SG₁, 3, 1, 0; 1978 VD₄, 4, 1, 0; 1981 EM₇, 6, 2, 13; 1981 EB₂₂, 3, 1, 0; 1981 EU₂₈, 3, 1, 0; 1983 BD, 4, 1, 0; 1988 GZ, 3, 1, 0; 1988 PP₂, 3, 1, 0; 1990 SS₇, 3, 1, 0; 1992 EV₄, 4, 1, 0; 1992 EU₅, 3, 1, 0; 1992 UF₁, 4, 1, 0; 1993 BH₁₃, 3, 1, 0; 1993 FX₂, 3, 1, 0; 1993 FN₄₀, 3, 1, 0; 1995 OS₁, 8, 2, 28; 1995 UC₉, 3, 1, 0; 1995 YS₂₁, 3, 1, 0; 1996 XG₃₇ *, 6, 2, 10; 1996 YD₂, 2, 1, 0; 1996 YH₃, 4, 1, 0; 1997 BV₉ *, 3, 1, 0; 1997 SL₃₅, 3, 1, 0; 1997 WR₃₁, 3, 1, 0; 1997 WC₃₅, 6, 2, 1; 1997 WB₅₇ *, 9, 3, 62; 1998 BP₇, 3, 1, 0; 1998 BQ₄₈ *, 6, 2, 6; 1998 CJ₅ *, 6, 2, 4; 1998 CK₅ *, 3, 1, 0; 1998 DU₂₀, 4, 1, 0; 1998 DS₂₉, 7, 2, 4; 1998 DP₃₆ *, 6, 2, 9; 1998 DQ₃₆ *, 7, 2, 1; 1998 DR₃₆ *, 6, 2, 3; 1998 EO₂₁ *, 6, 2, 1; 1998 FT₁₂, 3, 1, 0; 1998 FP₃₀, 3, 1, 0; 1998 FR₃₀, 3, 1, 0; 1998 FD₄₆, 6, 2, 3; 1998 FL₅₁, 9, 3, 9; 1998 FZ₅₃, 3, 1, 0; 1998 FA₅₆, 4, 1, 0; 1998 FL₈₄, 3, 1, 0; 1998 FW₈₄, 9, 3, 21; 1998 FF₉₇, 4, 1, 0; 1998 FX₁₁₁, 3, 1, 0; 1998 FE₁₁₈, 3, 1, 0; 1998 FS₁₂₀, 13, 4, 60; 1998 FZ₁₂₅, 3, 1, 0; 1998 FK₁₂₆, 2, 1, 0; 1998 FW₁₃₅ *, 6, 2, 2; 1998 FX₁₃₅ *, 6, 2, 8; 1998 FY₁₃₅ *, 7, 2, 2; 1998 FZ₁₃₅ *, 7, 2, 2; 1998 HW₁₇, 3, 1, 0; 1998 HF₂₀, 3, 1, 0; 1998 HA₇₅, 5, 1, 0; 1998 HN₉₈, 3, 1, 0; 1998 HF₁₀₁, 3, 1, 0; 1998 HM₁₁₄, 3, 1, 0; 1998 JA₃, 1, 0; 1998 KS₁, 3, 1, 0; 1998 KC₄, 4, 1, 0; 1998 KP₆, 3, 1, 0; 1998 KS₃₉, 3, 1, 0; 1998 KE₅₄, 6, 2, 2; 3033 T-1, 3, 1, 0; (626), 3, 1, 0; (5208), 3, 1, 0; (6866), 3, 1, 0; (7434), 3, 1, 0; (8916), 4, 1, 0; (8928), 2, 1, 0; [316, 74, 14*, 1995/07/16–1998/05/26]

352 Konan

M. Hotta, Kibougauka 2-5-3, Konan-cho, Koka-gun, Shiga 5203333, Japan

[mhotta@mx.biwa.or.jp]

0.28-m $f/5.0$ reflector + CCD

GSC

(1866), 3, 1, 0; (1951), 3, 1, 0; [6, 2, 0*, 1998/05/22–1998/06/07]

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 KU, 5, 2, 5; 1998 MR₁₇, 10, 4, 4; [15, 2, 0*, 1998/05/26–1998/07/03]

360 Kuma Kogen Astronomical Observatory

A. Nakamura, Shimo-Hatanokawa, Kuma, Kamiukena-Gun, Ehime-Ken, 791-12

Japan [a-nakamu@mx2.nisiq.net]

0.60-m $f/6.0$ Ritchey-Chrétien + CCD

GSC, USNO-SA1.0

1987 OA, 3, 1, 0; 1988 RZ₅, 3, 1, 0; 1991 FA, 3, 1, 0; 1993 BW₂, 3, 1, 0; 1994 JT, 9, 4, 46; 1994 VY, 4, 2, 15; 1995 SP₂, 2, 1, 0; 1995 WF, 8, 3, 36; 1997 AW₁₇, 7, 3, 21; 1997 CT₂₁, 4, 2, 3; 1997 DL, 6, 2, 7; 1997 US₉, 3, 1, 0; 1998 BZ₇, 2, 1, 0; 1998 FX₂, 3, 1, 0; 1998 HG₁₄₂, 3, 1, 0; 1998 KN, 2, 1, 0; 1998 KU₂, 3, 1, 0; 1998 KB₅, 5, 2, 1; 1998 KH₉, 3, 1, 0; 1998 KH₁₇, 3, 1, 0; 1998 KK₁₇, 3, 1, 0; 1998 KK₅₆, 3, 1, 0; 1998 MQ, 3, 1, 0; 1998 MZ, 3, 1, 0; 1998 MS₂, 3, 1, 0; 1998 ME₃, 3, 1, 0; 1998 MX₅, 3, 1, 0; 1998 ML₁₄, 6, 2, 20; 1998 MN₁₄, 3, 1, 0; 1998 MR₁₇, 3, 1, 0; 1998 MR₂₄, 3, 1, 0; 1998 MT₂₄, 3, 1, 0; (1081), 2, 1, 0; (2844), 2, 1, 0; (3098), 2, 1, 0; (6836), 5, 2, 1; (8201), 2, 1, 0; [131, 37, 0*, 1998/03/22–1998/08/02]

367 Yatsuka

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

0.26-m $f/6.0$ reflector + CCD

GSC

1996 YY, 3, 1, 0; [3, 1, 0*, 1998/07/03]

369 Chichibu

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

[mxf05524@niftyserve.or.jp]

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

GSC

1997 BT₉ *, 2, 1, 0; [2, 1, 1*, 1997/01/28]

376 Uenohara

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

1998 AUG. 8

M.P.C. 32149

0.30-m reflector + CCD

GSC

1997 YA₄, 2, 1, 0; [2, 1, 0*, 1998/01/31]

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

1995 SL₅₅ *, 4, 2, 9; [4, 1, 1*, 1995/09/21–1995/09/30]

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

1997 MW₁, 6, 2, 13; 1998 EC₃, 3, 1, 0; 1998 HL₇₉, 3, 1, 0; 1998 HS₁₂₄, 3, 1, 0; 1998 KU₂, 6, 2, 35; 1998 KH₉, 3, 1, 0; 1998 KH₁₇, 6, 2, 15; 1998 KK₅₆, 9, 3, 18; 1998 KG₅₈, 4, 1, 0; 1998 LD₃, 1, 0; 1998 MQ₁₀, 3, 28; 1998 MZ₆, 2, 12; 1998 MA₁, 3, 1, 0; 1998 MS₂, 6, 2, 18; 1998 ME₃, 10, 3, 19; 1998 MX₅, 13, 4, 16; 1998 ML₁₄, 6, 2, 3; 1998 MN₁₄, 13, 4, 18; 1998 MR₁₇, 12, 4, 19; 1998 ML₂₄, 3, 1, 0; 1998 MR₂₄, 11, 4, 16; 1998 MT₂₄, 12, 4, 16; 1998 MK₃₀, 8, 3, 16; 1998 ND₁₀, 2, 1; 1998 OH₃, 1, 0; 1998 OK₁, 5, 1, 0; (4034), 3, 1, 0; (5332), 3, 1, 0; [183, 28, 0*, 1998/04/20–1998/07/25]

411 Oizumi

T. Kobayashi, 8-6, Nishi Koizumi 1 Chome, Oizumi, Ora-Gun, Gunma-Ken, 370-05 Japan [kobataka@sannet.ne.jp]

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

GSC

1998 EC₃, 3, 1, 0; (6663), 3, 1, 0; [6, 2, 0*, 1998/04/04–1998/07/27]

413 Siding Spring

R. H. McNaught, Anglo-Australian Observatory, Coonabarabran, NSW 2357, Australia [rmn@aaocbn2.aao.gov.au]

C.-I. Lagerkvist, Uppsala Observatory, Box 515, S-75120 Uppsala, Sweden [classe@laban.uu.se] (3)

Observers K. S. Russell, C. P. Cass

Measurers O. Hernius, R. H. McNaught

1.2-m U.K. Schmidt

1989 HA₂, 2, 1, 0; 1998 FZ₁₅, 2, 1, 0; [4, 2, 0*, 1990/11/08–1993/02/18]

(3) 1995 SR₂₆, 1, 1, 0; 1998 AZ₅, 1, 1, 0; 1998 BE₂₆, 1, 1, 0; 1998 CR₂, 1, 1, 0; 1998 DH₁₀, 1, 1, 0; 1998 FY₂₇, 1, 1, 0; 1998 FA₄₃, 1, 1, 0; 1998 FV₄₃, 1, 1, 0; 1998 FO₇₂, 1, 1, 0; 1998 FR₁₂₄, 1, 1, 0; (8953), 1, 1, 0; [11, 11, 0*, 1993/04/16–1993/04/21]

422 Loomberah

G. J. Garradd, P.O. Box 157, Tamworth, NSW 2340, Australia [gjjg@mpx.com.au]

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

ACT, GSC, USNO-A1.0

1998 HU₁₀₈, 4, 2, 3; 1998 KH₉, 4, 2, 9; 1998 KK₅₆, 3, 1, 0; 1998 MZ₁₀, 4, 15; 1998 ME₃, 3, 1, 0; 1998 MW₅, 6, 2, 6; 1998 MX₅, 4, 1, 0; 1998 MY₅, 10, 3, 15; 1998 ML₁₄, 37, 8, 36; 1998 MM₁₄, 3, 1, 0; 1998 MR₁₇, 4, 1, 0; 1998 ML₂₄, 3, 1, 0; 1998 MR₂₄, 4, 1, 0; 1998 MT₂₄, 8, 2, 2; 1998 MJ₃₀, 2, 1, 0; 1998 MK₃₀, 7, 2, 2; 1998 OK₁, 7, 2, 1; 1998 OR₄, 6, 1, 0; (7), 3, 1, 0; (116), 6, 2, 27; (157), 6, 1, 0; (226), 6, 1, 0; (433), 8, 1, 0; (1474), 2, 1, 0; (2102), 3, 1, 0; (3122), 3, 1, 0; (3353), 5, 1, 0; (4183), 3, 1, 0; (4459), 4, 1, 0; (6053), 3, 1, 0; (8405), 3, 1, 0; [180, 31, 0*, 1998/06/14–1998/08/01]

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

1955 UN₁, 9, 2, 5; 1976 GG₃, 12, 3, 3; 1982 UA₇, 9, 3, 23; 1984 MR₃, 3, 3, 7; 1986 QZ₂, 5, 2, 1; 1987 SJ₃, 5, 2, 1; 1989 GD₅, 15, 3, 15; 1990 OO₂, 12, 3, 14; 1992 RX₈, 8, 3, 4; 1993 FN₁, 7, 1, 0; 1993 RX₃, 4, 2, 1; 1994 FZ₃, 3, 1, 0; 1994 KA₈, 8, 3, 2; 1998 ML₁₄, 10, 3, 4; 1998 MR₁₇, 8, 3, 4; [118, 15, 0*, 1998/06/14–1998/07/31]

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, GSC

1955 SF₆, 6, 2, 3; 1964 VL₁, 5, 2, 1; 1989 OB₅, 5, 2, 4; 1990 HJ₇, 7, 2, 1; 1990 UD₃, 6, 2, 5; 1990 WK₂, 5, 2, 1; 1991 PU₁₆, 6, 2, 1; 1991 RD₂₄, 6, 2, 2; 1992 AE₁, 5, 2, 1; 1992 EX₈, 6, 2, 3; 1993 LF₂, 6, 2, 1; 1993 PB₆, 6, 2, 1; 1995 UP₄, 6, 2, 1; 1996 BQ₃, 5, 2, 6; 1996 VN₆, 6, 2, 1; 1996 YO₁, 6, 2, 1; 1997 AJ₁, 5, 2, 1; 1997 AW₁₈, 6, 2, 1; 1997 UF₉, 5, 1, 0; 1998 FN₅, 6, 2, 2; 1998 GL₁, 12, 4, 36; 1998 HK₅₂, 12, 4, 38; 1998 HL₅₂, 10, 4, 38; 1998 HU₁₀₈, 6, 2, 24; 1998 JF₄, 7, 2, 5; 1998 JG₄, 5, 2, 1; 1998 JH₄, 5, 2, 5; 1998 JJ₄, 8, 3, 38; 1998 JL₄, 6, 2, 5; 1998 KA₆, 6, 2, 3; 1998 KE₃, 9, 3, 23; 1998 KA₄, 6, 2, 1; 1998 KH₉, 8, 2, 15; 1998 KK₁₇, 3, 1, 0; 1998 KZ₂₆, 7, 3, 36; 1998 KO₂₈, 4, 2, 5; 1998 KD₂₉, 6, 2, 1; 1998 KT₄₅, 6, 2, 2; 1998 KS₄₉, 6, 2, 1; 1998 KK₅₆, 7, 2, 14; 1998 MC_{*}, 12, 4, 15; 1998 MD_{*}, 11, 4, 10; 1998 MQ₄, 4, 1, 0; 1998 MZ₇, 2, 4; 1998 MR₂, 6, 2, 9; 1998 MS₂, 4, 1, 0; 1998 ME₃, 8, 2, 17; 1998 MF₃ *, 8, 3, 6; 1998 MW₅, 7, 2, 3; 1998 MX₅, 9, 3, 9; 1998 MY₅, 17, 4, 15; 1998 MM₇ *, 13, 4, 16; 1998 MN₇ *, 11, 4, 11; 1998 MO₇ *, 9, 4, 11; 1998 MV₁₃ *, 15, 5, 22; 1998 MW₁₃ *, 12, 4, 16; 1998 ML₁₄, 18, 6, 26; 1998 MM₁₄, 5, 2, 1; 1998 MN₁₄, 7, 2, 1; 1998 MR₁₇, 7, 2, 6; 1998 ML₂₄, 4, 1, 0; 1998 MP₂₄ *, 10, 4, 26; 1998 MQ₂₄ *, 11, 5, 26; 1998 MR₂₄, 3, 1, 0; 1998 MT₂₄, 4, 1, 0; 1998 MH₂₇, 12, 4, 14; 1998 MV₂₇, 7, 2, 2; 1998 MK₃₀, 3, 1, 0; 1998 ND₄, 4, 1, 0; 1998 NP_{*}, 7, 3, 14; 1998 NQ_{*}, 6, 2, 6; 1998 NR_{*}, 7, 2, 6; 1998 NS_{*}, 6, 2, 6; 1998 OG₁ *, 6, 3, 5; 1998 OH₁ *, 5, 2, 5; 1998 OK₁, 4, 1, 0; (1237), 6, 2, 3; (1290), 6, 2, 1; (3047), 6, 2, 1; (3353), 5, 2, 1; (3646), 3, 1, 0; (4021), 6, 2, 1; (4295), 7, 2, 1; (4655), 7, 2, 6; (5035), 7, 2, 1; (5079), 6, 2, 3; (5149), 7, 2, 1; (5210), 4, 2, 5; (6346), 6, 2, 3; (6350), 5, 2, 3; (6682), 5, 2, 4; (6729), 8, 2, 1; (6800), 6, 2, 3; (6894), 6, 2, 1; (7557), 6, 2, 1; (7642), 3, 1, 0; [657, 96, 16*, 1998/06/14–1998/07/22]

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

1981 EE₁₁, 1, 1, 0; 1981 EB₁₅, 2, 1, 0; 1981 EH₁₉, 3, 2, 1; 1987 BW₁, 4, 2, 11; 1988 VM₉, 2, 1, 0; 1989 SV₂, 6, 3, 4; 1991 PX₆, 4, 2, 1; 1992 YY₄, 2, 1; 1996 WA₁, 4, 2, 1; 1997 CC₂₉, 10, 5, 22; 1997 PE₆, 5, 2, 2; 1998 FH₁₁₈, 7, 3, 33; 1998 FK₁₂₆, 7, 4, 33; 1998 FM₁₂₆, 4, 2, 3; 1998 FN₁₂₆, 6, 3, 31; 1998 GK₁₀, 3, 2, 25; 1998 HU₁₀₁, 8, 5, 46; 1998 HV₁₀₁, 5, 3, 33; 1998 HW₁₀₁, 14, 7, 57; 1998 HD₁₄₈, 7, 4, 5; 1998 HR₁₄₉, 8, 5, 30; 1998 HT₁₄₉, 10, 6, 28; 1998 KH₃₀, 10, 6, 12; 1998 KP₃₀, 8, 4, 5; 1998 KT₃₀, 8, 4, 12; 1998 KJ₃₃, 6, 4, 7; 1998 KR₃₃, 6, 4, 12; 1998 KJ₃₉, 12, 5, 22; 1998 KP₄₁, 7, 4, 4; 1998 KH₅₈ *, 8, 5, 8; 1998 KJ₅₈ *, 7, 5, 28; 1998 KK₅₈ *, 7, 3, 11; 1998 MM₂₉, 9, 5, 11; 1998 MA₃₆, 10, 3, 3; 1998 MZ₄₁ *, 7, 5, 9; 1998 MA₄₂ *, 7, 4, 9; 1998 NF_{*}, 6, 4, 4; (757), 2, 1, 0; (3874), 5, 2, 1; (6187), 4, 2, 1; (6630), 3, 2, 1; (7769), 7, 1, 0; (8749), 4, 3, 33; (8797), 9, 4, 3; (8917), 4, 2, 1; (8958), 6, 3, 33; [286, 46, 6*, 1998/05/06–1998/07/05]

429 Hawker

J. B. Child, 64 Woolner Circuit, Hawker, ACT 2614, Australia

[jbchild@dynamite.com.au]

Observer J. B. Child, J. E. Rogers

Measurers J. B. Child

0.32-m $f/4.8$ reflector + CCD

GSC-1.1

1998 ME₃, 3, 1, 0; 1998 MY₅, 3, 1, 0; (8825), 2, 1, 0; [8, 3, 0*, 1998/07/02]

468 Astronomical Observatory, Campo Catino

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

Observers F. Mallia, G. Masi

Measurers M. Di Sora, F. Mallia

0.80-m $f/4.0$ reflector + CCD

GSC

1998 MN₁₄, 3, 1, 0; [3, 1, 0*, 1998/06/27]**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

1994 FZ, 2, 1, 0; [2, 1, 0*, 1998/06/30]

476 Grange Observatory

P. Pognant, Via Massimo d'Azeglio 34, I-10053 Bussoleno (TO), Italy

[mc2213@mcclink.it]

0.30-m $f/4.0$ reflector + CCD

GSC

(8201), 6, 2, 1; [6, 1, 0*, 1998/06/16–1998/06/17]

482 St. Andrews

M. J. Willis, School of Physics and Astronomy, North Haugh, St. Andrews, Fife

KY12 8YA, Scotland [wjw2@st-and.ac.uk]

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

GSC

(1139), 14, 7, 29; (1235), 4, 2, 2; (1583), 6, 3, 13; (1727), 2, 1, 0; (1951), 4, 2, 3; [30, 5, 0*, 1997/10/31–1998/03/18]

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

1990 QW₉, 3, 1, 0; (433), 3, 2, 4; (1036), 7, 2, 4; (1866), 7, 3, 7; (4183), 2, 1, 0; (8201), 11, 3, 7; [33, 6, 0*, 1998/06/22–1998/06/30]**540 Linz**

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

Observers E. Meyer, E. Obermair, H. Raab

0.30-m $f/5.2$ Schmidt Cassegrain + CCD

GSC

1996 AU₁, 7, 2, 36; 1998 KJ₉, 4, 1, 0; 1998 MS₂, 7, 2, 2; 1998 ME₃, 7, 2, 22; 1998 MX₅, 3, 1, 0; 1998 MN₁₄, 3, 1, 0; 1998 MR₁₇, 4, 1, 0; 1998 MK₃₀, 3, 1, 0; 1998 OR₄ *, 11, 3, 5; (846), 4, 1, 0; [53, 10, 1*, 1998/06/02–1998/07/31]**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

1995 SC₂, 7, 2, 9; [7, 1, 0*, 1998/06/13–1998/06/22]**557 Ondřejov**

P. Pravec, Astronomical Institute, Czech Academy of Sciences, CZ-25165 Ondřejov,

Czech Republic [ppravec@asu.cas.cz]

Observers P. Pravec, L. Šarounová, U. Babiakova

0.65-m $f/3.6$ reflector + CCD

USNO-SA1.0, GSC

1987 OA, 2, 1, 0; 1991 FZ₂, 2, 1, 0; 1993 BW₂, 3, 1, 0; 1997 US₉, 2, 1, 0; 1998 BZ₇, 3, 1, 0; 1998 FX₂, 7, 3, 21; 1998 HK₁, 1, 1, 0; 1998 HR₃₁, 3, 2, 2; 1998 HJ₄₁, 6, 2, 35; 1998 KJ, 3, 1, 0; 1998 KH₉, 3, 1, 0; 1998 KJ₉, 3, 1, 0; 1998 KK₁₇, 5, 2, 13; 1998 LD, 10, 3, 3; 1998 LE, 7, 2, 1; 1998 MQ, 7, 3, 22; 1998 MS₂, 10, 3, 21; 1998 ME₃, 15, 4, 23; 1998 MX₅, 17, 6, 33; 1998 MN₁₄, 15, 5, 24; 1998 MR₁₇, 3, 1, 0; 1998 MR₂₄, 13, 4, 31; 1998 MT₂₄, 25, 6, 31; 1998 MK₃₀, 6, 2, 2; 1998 MY₃₉, 3, 1, 0; 1998 OH, 7, 3, 7; 1998 OS₄, 2, 1, 0; 1998 OY₄ *, 8, 3, 7; 1998 OZ₄ *, 5, 3, 5; (3199), 2, 1, 0; (3553), 3, 1, 0; (4034), 2, 1, 0; (4957), 3, 1, 0; (8201), 8, 2, 6; [214, 34, 2*, 1998/06/08–1998/08/01]**561 Piskéstető**

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

1998 FZ₈₆, 6, 2, 1; 1998 FC₁₄₀ *, 6, 2, 1; 1998 FD₁₄₀ *, 6, 2, 1; (1134), 3, 1, 0; (1362), 3, 1, 0; (1862), 3, 1, 0; (2060), 6, 1, 0; (2204), 3, 1, 0; (5066), 3, 1, 0; [39, 9, 2*, 1998/03/29–1998/04/28]**565 Bassano Bresciano**

U. Quadri, Osservatorio di Bassano Bresciano, Via S. Michele 4, I-25020 Bassano

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

Observers U. Quadri, L. Strabla

0.40-m $f/2.5$ Schmidt + CCD

GSC

(18), 2, 1, 0; (216), 4, 1, 0; [6, 2, 0*, 1998/06/18–1998/06/21]

566 Haleakala-NEAT/GEODSS

E. F. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.

[efh@ipl.jpl.nasa.gov]

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

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

C. Cotton, D. Bascon

1-m $f/2.2$ Ritchey-Chrétien + CCD1964 YJ, 3, 1, 0; 1977 QD₃, 3, 1, 0; 1978 VD₄, 3, 1, 0; 1981 EW₇, 3, 1, 0; 1981 EK₉, 3, 1, 0; 1981 EB₂₂, 3, 1, 0; 1981 EJ₂₈, 3, 1, 0; 1982 JD₂, 3, 1, 0; 1984 UD₃, 3, 1, 0; 1985 PC, 3, 1, 0; 1985 PT, 3, 1, 0; 1986 PX, 3, 1, 0; 1986 QQ₁, 3, 1, 0; 1986 RP₂, 9, 3, 28; 1987 ST₁₇, 3, 1, 0; 1988 CK₄, 3, 1, 0; 1988 RY₂, 3, 1, 0; 1989 SY₂, 3, 1, 0; 1989 SA₁₀, 3, 1, 0; 1989 UX₅, 3, 1, 0; 1990 QZ₁₇, 9, 3, 30; 1990 WW₁, 3, 1, 0; 1990 XU, 6, 2, 46; 1991 AH₂, 6, 2, 3; 1991 EN₂, 3, 1, 0; 1991 EJ₄, 3, 1, 0; 1991 PG₁₁, 3, 1, 0; 1991 RZ₁, 3, 1, 0; 1991 RF₂₉, 6, 2, 4; 1991 YV, 3, 1, 0; 1992 AR₁, 3, 1, 0; 1992 AT₃, 3, 1, 0; 1992 UU₆, 3, 1, 0; 1992 WH₈, 3, 1, 0; 1993 BH₈, 3, 1, 0; 1993 FN₁, 3, 1, 0; 1993 FQ₂, 3, 1, 0; 1993 FF₃₅, 3, 1, 0; 1993 HR, 3, 1, 0; 1994 AY₁₀, 3, 1, 0; 1994 BN₃, 3, 1, 0; 1994 CX₁₂, 3, 1, 0; 1994 GB₉, 3, 1, 0; 1994 RL₁, 3, 1, 0; 1994 WQ₃, 3, 1, 0; 1995 GA, 3, 1, 0; 1995 OS₁, 3, 1, 0; 1995 QE₃, 3, 1, 0; 1995 SR₂₉, 3, 1, 0; 1995 UC₇, 3, 1, 0; 1995 VS, 3, 1, 0; 1995 VU₁₈, 3, 1, 0; 1995 WA, 3, 1, 0; 1995 WN, 3, 1, 0; 1995 WS, 3, 1, 0; 1995 WJ₅, 3, 1, 0; 1995 WT₁₅, 3, 1, 0; 1995 YB, 3, 1, 0; 1996 BQ₃, 3, 1, 0; 1996 RG₅, 6, 2, 28; 1996 VM₃, 6, 2, 27; 1996 WU₁, 3, 1, 0; 1996 XH₁₉, 3, 1, 0; 1997 AS, 3, 1, 0; 1997 AZ₂₁, 3, 1, 0; 1997 BV₉, 3, 1, 0; 1997 CE₂₀, 3, 1, 0; 1997 CZ₂₉ *, 3, 1, 0; 1997 CA₃₀ *, 6, 1, 0; 1997 FB₂, 3, 1, 0; 1997 YQ₂₁ *, 6, 2, 27; 1998 AV₉, 6, 2, 16; 1998 BP₇, 3, 1, 0; 1998 BR₄₈ *, 6, 2, 27; 1998 CE₃, 3, 1, 0; 1998 CK₅, 3, 1, 0; 1998 DP₉, 3, 1, 0; 1998 DU₂₀, 3, 1, 0; 1998 DY₃₃, 3, 1, 0; 1998 EA₁₃, 6, 2, 393; 1998 ED₂₁, 3, 1, 0; 1998 FT₁₃, 9, 3, 64; 1998 FZ₁₅, 3, 1, 0; 1998 FQ₂₃, 3, 1, 0; 1998 FG₂₉, 3, 1, 0; 1998 FB₃₀, 3, 1, 0; 1998 FE₃₀, 3, 1, 0; 1998 FB₃₂, 3, 1, 0; 1998 FJ₃₂, 3, 1, 0; 1998 FC₃₄, 3, 1, 0; 1998 FN₃₄, 3, 1, 0; 1998 FB₃₅, 3, 1, 0; 1998 FC₃₅, 3, 1, 0; 1998 FF₃₅, 3, 1, 0; 1998 FU₃₆, 6, 2, 28; 1998 FZ₃₈, 3, 1, 0; 1998 FW₃₉, 3, 1, 0; 1998 FH₄₀, 3, 1, 0; 1998 FT₄₀, 3, 1, 0; 1998 FA₄₁, 3, 1, 0; 1998 FB₄₁, 6, 2, 28; 1998 FG₄₁, 3, 1, 0; 1998 FH₄₁, 3, 1, 0; 1998 FJ₄₁, 3, 1, 0; 1998 FN₄₁, 3, 1, 0; 1998 FL₄₂, 3, 1, 0; 1998 FG₄₃, 3, 1, 0; 1998 FL₄₃, 3, 1, 0; 1998 FT₄₃,

3, 1, 0; 1998 FK₄₆, 3, 1, 0; 1998 FF₄₇, 6, 2, 30; 1998 FJ₄₉, 3, 1, 0; 1998 FT₆₂, 6, 1, 0; 1998 FH₈₂, 3, 1, 0; 1998 FL₈₄, 3, 1, 0; 1998 FZ₈₆, 6, 2, 28; 1998 FG₈₈, 3, 1, 0; 1998 FA₉₁, 3, 1, 0; 1998 FP₉₃, 3, 1, 0; 1998 FJ₁₀₃, 3, 1, 0; 1998 FU₁₁₇, 3, 1, 0; 1998 FO₁₂₀, 3, 1, 0; 1998 FX₁₂₃, 3, 1, 0; 1998 FW₁₃₃, 3, 1, 0; 1998 FA₁₄₄, 3, 1, 0; 1998 FJ₁₄₄, 3, 1, 0; 1998 GM₆, 3, 1, 0; 1998 GR₇, 3, 1, 0; 1998 GQ₁₀, 3, 1, 0; 1998 HW₁₃, 3, 1, 0; 1998 HK₁₇, 3, 1, 0; 1998 HV₁₉, 3, 1, 0; 1998 HC₂₂, 3, 1, 0; 1998 HS₂₄, 3, 1, 0; 1998 HO₂₇, 3, 1, 0; 1998 HC₃₇, 6, 2, 24; 1998 HM₅₂, 6, 2, 529; 1998 HQ₅₂, 3, 1, 0; 1998 HN₆₈, 6, 2, 473; 1998 HC₇₅, 3, 1, 0; 1998 HH₈₈, 3, 1, 0; 1998 HU₉₄, 3, 1, 0; 1998 HJ₁₀₀, 3, 1, 0; 1998 HM₁₀₀, 3, 1, 0; 1998 HB₁₀₃, 3, 1, 0; 1998 HS₁₀₆, 3, 1, 0; 1998 HU₁₀₆, 3, 1, 0; 1998 HQ₁₁₄, 3, 1, 0; 1998 HL₁₁₇, 3, 1, 0; 1998 HL₁₂₀, 3, 1, 0; 1998 HM₁₂₁, 3, 1, 0; 1998 HK₁₂₄, 3, 1, 0; 1998 HY₁₂₄, 3, 1, 0; 1998 HL₁₂₆, 3, 1, 0; 1998 HJ₁₂₇, 3, 1, 0; 1998 HV₁₂₉, 3, 1, 0; 1998 HH₁₃₀, 3, 1, 0; 1998 HP₁₃₀, 3, 1, 0; 1998 HU₁₃₂, 3, 1, 0; 1998 HO₁₄₈, 3, 1, 0; 1998 HQ₁₄₈, 3, 1, 0; 1998 HR₁₄₉, 3, 1, 0; 1998 JR₃, 3, 1, 0; 1998 JV₆, 2, 23; 1998 KJ₃, 3, 1, 0; 1998 KN₃, 3, 1, 0; 1998 KS₁, 3, 1, 0; 1998 KU₁, 3, 1, 0; 1998 KK₂, 3, 1, 0; 1998 KH₂₇, 3, 1, 0; 1998 KE₃₇, 3, 1, 0; 1998 KM₃₇, 3, 1, 0; 1998 KO₄₂, 3, 1, 0; 1998 KV₄₆, 3, 1, 0; 1998 KD₅₀, 3, 1, 0; 1998 KD₅₁, 6, 2, 30; 1998 KR₆₁, 3, 1, 0; 1998 KT₆₁, 3, 1, 0; 1998 KY₆₅, 3, 1, 0; 1998 MZ₃, 3, 1, 0; 1998 MK₅, 3, 1, 0; 1998 MO₅, 3, 1, 0; 1998 MY₅ *, 6, 2, 1; 1998 MS₉, 3, 1, 0; 1998 ML₁₄, 6, 2, 3; 1998 MW₁₅, 3, 1, 0; 1998 MO₁₉, 3, 1, 0; 1998 MP₃₂, 3, 1, 0; 1998 MR₃₃, 3, 1, 0; 1998 MT₃₄, 3, 1, 0; 1998 MD₃₅, 3, 1, 0; 1998 MJ₃₅, 3, 1, 0; 1998 MK₃₅, 3, 1, 0; 1998 MN₃₅, 3, 1, 0; 1998 MA₃₆, 3, 1, 0; 1998 MV₃₇, 3, 1, 0; 1998 MG₃₈, 3, 1, 0; 1998 NK₃, 3, 1, 0; 1998 OH *, 9, 3, 5; 1998 OF₁, 3, 1, 0; 1998 OR₁ *, 6, 2, 4; 1998 OU₁ *, 3, 1, 0; 1998 OR₂ *, 3, 1, 0; 2728 P-L, 3, 1, 0; 1324 T-2, 3, 1, 0; 1607 T-2, 3, 1, 0; 2180 T-2, 3, 1, 0; 5087 T-2, 3, 1, 0; (2), 6, 1, 0; (18), 3, 1, 0; (28), 3, 1, 0; (58), 3, 1, 0; (114), 3, 1, 0; (150), 3, 1, 0; (157), 3, 1, 0; (165), 3, 1, 0; (175), 3, 1, 0; (188), 6, 2, 4; (205), 3, 1, 0; (249), 3, 1, 0; (251), 3, 1, 0; (263), 3, 1, 0; (321), 3, 1, 0; (458), 3, 1, 0; (474), 6, 2, 4; (485), 6, 2, 26; (490), 3, 1, 0; (595), 6, 2, 30; (657), 3, 1, 0; (661), 3, 1, 0; (664), 3, 1, 0; (677), 3, 1, 0; (709), 3, 1, 0; (747), 3, 1, 0; (757), 3, 1, 0; (758), 3, 1, 0; (765), 3, 1, 0; (782), 3, 1, 0; (829), 3, 1, 0; (893), 3, 1, 0; (908), 3, 1, 0; (916), 3, 1, 0; (938), 3, 1, 0; (954), 3, 1, 0; (958), 3, 1, 0; (993), 3, 1, 0; (1018), 3, 1, 0; (1021), 3, 1, 0; (1040), 3, 1, 0; (1084), 3, 1, 0; (1107), 3, 1, 0; (1126), 3, 1, 0; (1136), 6, 2, 5; (1145), 3, 1, 0; (1181), 3, 1, 0; (1206), 3, 1, 0; (1232), 3, 1, 0; (1247), 6, 2, 5; (1260), 3, 1, 0; (1309), 3, 1, 0; (1322), 3, 1, 0; (1355), 3, 1, 0; (1383), 3, 1, 0; (1419), 2, 1, 0; (1440), 3, 1, 0; (1477), 3, 1, 0; (1516), 3, 1, 0; (1524), 3, 1, 0; (1584), 3, 1, 0; (1589), 3, 1, 0; (1664), 3, 1, 0; (1666), 3, 1, 0; (1725), 3, 1, 0; (1726), 3, 1, 0; (1777), 3, 1, 0; (1811), 6, 2, 1; (1828), 3, 1, 0; (1829), 3, 1, 0; (1903), 3, 1, 0; (1930), 3, 1, 0; (1990), 3, 1, 0; (2038), 3, 1, 0; (2053), 3, 1, 0; (2056), 3, 1, 0; (2120), 3, 1, 0; (2141), 6, 1, 0; (2186), 3, 1, 0; (2217), 3, 1, 0; (2218), 3, 1, 0; (2227), 3, 1, 0; (2305), 3, 1, 0; (2365), 3, 1, 0; (2384), 6, 2, 4; (2399), 3, 1, 0; (2400), 3, 1, 0; (2410), 3, 1, 0; (2423), 6, 1, 0; (2438), 3, 1, 0; (2463), 3, 1, 0; (2621), 3, 1, 0; (2691), 3, 1, 0; (2768), 3, 1, 0; (2774), 3, 1, 0; (2841), 3, 1, 0; (2943), 3, 1, 0; (2946), 3, 1, 0; (2960), 3, 1, 0; (2967), 3, 1, 0; (2993), 3, 1, 0; (3022), 3, 1, 0; (3023), 3, 1, 0; (3108), 3, 1, 0; (3170), 3, 1, 0; (3210), 3, 1, 0; (3286), 3, 1, 0; (3315), 3, 1, 0; (3353), 3, 1, 0; (3355), 3, 1, 0; (3440), 3, 1, 0; (3509), 3, 1, 0; (3550), 3, 1, 0; (3570), 3, 1, 0; (3661), 3, 1, 0; (3690), 6, 1, 0; (3779), 3, 1, 0; (3928), 3, 1, 0; (4036), 3, 1, 0; (4101), 3, 1, 0; (4107), 3, 1, 0; (4114), 3, 1, 0; (4183), 6, 2, 24; (4205), 3, 1, 0; (4215), 6, 1, 0; (4226), 3, 1, 0; (4445), 3, 1, 0; (4551), 3, 1, 0; (4562), 3, 1, 0; (4569), 3, 1, 0; (4714), 3, 1, 0; (4754), 3, 1, 0; (4782), 3, 1, 0; (4921), 3, 1, 0; (5059), 3, 1, 0; (5133), 3, 1, 0; (5192), 3, 1, 0; (5319), 3, 1, 0; (5455), 3, 1, 0; (5515), 3, 1, 0; (5537), 3, 1, 0; (5651), 3, 1, 0; (5795), 6, 1, 0; (5802), 3, 1, 0; (5806), 3, 1, 0; (6015), 3, 1, 0; (6022), 3, 1, 0; (6077), 3, 1, 0; (6537), 3, 1, 0; (6663), 3, 1, 0; (6681), 3, 1, 0; (6689), 3, 1, 0; (6778), 3, 1, 0; (6810), 3, 1, 0; (6928), 3, 1, 0; (7590), 3, 1, 0; (7660), 3, 1, 0; (7752), 3, 1, 0; (7889), 3, 1, 0; (8425), 3, 1, 0; (8855), 3, 1, 0; (8861), 6, 2, 29; [1253, 371, 9*, 1995/12/19–1998/07/24]

568 Mauna Kea

D. C. Jewitt, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, U.S.A. [jewitt@galileo.ifa.hawaii.edu] (1)

K. J. Meech, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, U.S.A. [meech@nihoa.IfA.Hawaii.Edu] (5)

Observers J. Bauer, D. Jewitt, C. Trujillo
Measurers K. J. Meech, D. Jewitt, C. Trujillo
2.2-m Univerity of Hawaii telescope + CCD
USNO-A1.0, USNO-SA1.0

(1) 1997 QH₄, 3, 3, 2; 1997 QJ₄, 3, 2, 1; 1997 RX₉, 3, 2, 1; 1998 KY₆₁, 3, 2, 1; 1998 KG₆₂, 3, 2, 1; [15, 5, 0*, 1998/06/29–1998/07/01]

(5) 1995 DW₂, 2, 2, 1; 1998 MN₁₇ *, 7, 2, 1; 1998 MO₁₇ *, 7, 3, 2; 1998 MP₁₇ *, 6, 2, 1; 1998 MO₂₄ *, 4, 2, 1; (2060), 2, 1, 0; (5145), 1, 1, 0; (7066), 11, 3, 2; (8405), 1, 1, 0; [41, 9, 4*, 1998/06/26–1998/06/28]

587 Sormano

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

Observers A. Testa, V. Giuliani, F. Manca, P. Sicoli
0.5-m reflector + CCD
GSC

1997 BD₂, 5, 2, 11; 1997 DG₄, 4, 2, 8; 1998 KU₂, 9, 4, 33; 1998 KE₃, 2, 1, 0; 1998 KH₉, 3, 1, 0; 1998 KK₁₇, 3, 1, 0; 1998 MQ₆, 6, 3, 36; 1998 MZ₃, 3, 1, 0; 1998 ML₁₄, 4, 2, 5; 1998 MT₂₄, 2, 1, 0; 1998 MK₃₀, 2, 1, 0; 1998 OH₄, 2, 3; 1998 OR₂, 3, 1, 0; 1998 OS₄, 1, 1, 0; (3438), 2, 1, 0; [53, 15, 0*, 1998/05/20–1998/07/28]

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

(8897), 6, 4, 26; [6, 1, 0*, 1998/05/27–1998/06/22]

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

1994 CO₁, 4, 2, 2; 1994 NC₄, 4, 2, 6; 1996 XG₂, 5, 2, 2; 1998 HB₁₄₉, 4, 2, 6; 1998 MR₉, 6, 2, 1; 1998 MS₂₄ *, 19, 6, 29; 1998 MW₃₇, 3, 1, 0; 1998 NB *, 4, 1, 0; 1998 OJ₁ *, 8, 4, 8; 1998 OC₆ *, 5, 2, 1; (3046), 4, 1, 0; [66, 11, 4*, 1998/06/15–1998/07/31]

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

1982 UZ₂, 3, 1, 0; 1997 DC₅, 5, 2, 19; 1998 MS₂, 4, 1, 0; 1998 MX₅, 3, 1, 0; 1998 MR₁₇, 3, 1, 0; 1998 NA *, 15, 4, 20; 1998 NB₃, 3, 1, 0; 4643 P-L, 3, 1, 0; (1575), 3, 1, 0; [42, 9, 1*, 1998/06/19–1998/07/25]

598 Loiano

M. Carpino, Osservatorio Astronomico, via Brera 28, I-20121 Milan, Italy
[carpino@brera.mi.astro.it]

Observers A. Boattini, E. Gregori, S. Amici, M. Tombelli
1.52-m $f/8.0$ reflector + CCD
GSC

1998 CS₁, 5, 1, 0; 1998 KF₃, 6, 1, 0; 1998 LD₇, 1, 0; 1998 MR₂, 4, 1, 0; 1998 MS₂, 4, 1, 0; 1998 NU₈, 8, 2, 2; 1998 OH₄, 4, 1, 0; 1998 OP₄, 3, 1, 0; [41, 8, 0*, 1998/07/24–1998/07/27]

599 Campo Imperatore-CINEOS

A. Carusi, Istituto Astrofisica Spaziale-Planetogia, Viale Università 11, I-00185 Rome, Italy [carusi@saturn.ias.fra.cnr.it]

Observers A. Boattini, A. Di Paola, F. Pedichini, V. S. Casulli, A. Vagnozzi,
T. Scacciafrotte, V. Risoldi, A. Di Clemente, A. Di Muzio

Measurers A. Boattini, A. Di Paola, F. Pedichini, G. Forti
0.60-m $f/3$ Schmidt + CCD
GSC

1997 AG₂₅ *, 4, 2, 1; [4, 1, 1*, 1997/01/15–1997/01/16]

604 Archenhold Sternwarte, Berlin-Treptow

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

Observers A. Doppler, A. Gnädig

0.15-m $f/15$ Schmidt-Cassegrain, 0.50-m Cassegrain reflector + CCD

GSC

1992 EB₅, 2, 1, 0; 1995 GO₇, 8, 2, 2; [10, 2, 0*, 1997/09/22–1998/02/01]

608 Haleakala-AMOS

P. Kervin, Air Force Maui Optical Station, 535 Lipoa Parkway, Suite 200, Kihei,
Maui, HI 96753, U.S.A. [paul@ulua.mhpcc.af.mil]

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

Observers A. Alday, K. Moore, M. Tranilla, T. Goggia, A. Sylva

Measurers J. Africano, P. Sydney, D. Nishimoto, A. Angara, B. McCarthy,

P. Kervin, B. Kraszewski, V. Soo Hoo, B. Africano

1.2-m reflector + CCD

1995 SB₁, 2, 1, 0; [2, 1, 0*, 1997/05/01]

610 Pianoro

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

[astrofil@astbol.bo.cnr.it]

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

GSC

1964 YJ, 13, 3, 7; 1980 TE₇, 8, 2, 1; 1980 UL, 8, 2, 7; 1983 BD, 6, 2, 22; 1984 MR, 8, 2, 2;
1985 PA₁, 6, 2, 2; 1985 RQ₃, 4, 1, 0; 1986 AT₂, 3, 1, 0; 1988 RK₉, 8, 2, 2; 1993 BA, 8, 2, 5;
1993 LE, 8, 2, 1; 1994 NW₁, 8, 2, 1; 1997 BG₈, 10, 2, 1; 1997 BC₉, 13, 3, 27; 1998 MC₁₂, 9, 2, 2;
1998 MX₂₈, 9, 2, 3; (43), 5, 1, 0; (71), 4, 1, 0; (216), 9, 3, 4; (788), 9, 2, 3; (1866), 4, 1, 0; (2227),
4, 1, 0; (2241), 8, 2, 1; (2848), 4, 1, 0; (3256), 5, 1, 0; (5066), 4, 1, 0; (6076), 9, 2, 3; (7633), 17,
4, 9; (8887), 8, 2, 1; [219, 29, 0*, 1998/05/16–1998/07/31]

611 Starkenburg Sternwarte, Heppenheim

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

Observers M. Busch, A. Seib, R. Stoss, W. Ernst, P. Geffert, E. Schwab, S. Delp

Measurers M. Busch, R. Stoss

0.45-m $f/4.4$ Newtonian reflector + CCD, 0.20-m $f/6$ Newtonian reflector + CCD,

0.19-m $f/4$ Flat-Field camera + CCD

USNO-SA1.0, GSC

1994 WC₄, 2, 1, 0; 1995 CS₁, 2, 1, 0; 1996 AU₁, 2, 1, 0; 1998 FW₁₅, 2, 1, 0; 1998 JE₄, 2,
1, 0; 1998 KK, 3, 1, 0; 1998 KH₁₇, 2, 1, 0; 1998 MQ, 3, 1, 0; 1998 MZ, 3, 1, 0; 1998 MR₁₇,
5, 2, 32; 1998 MK₃₀, 2, 1, 0; 1998 OH, 3, 1, 0; (5672), 2, 1, 0; (6838), 2, 1, 0; [35, 14, 0*,
1998/06/14–1998/07/31]

620 Observatorio Astronómico de Mallorca

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

[astroam@dinky.bitel.es]

Observers R. Pacheco, A. Lopez, M. Blasco

Measurers R. Pacheco, A. Lopez, S. Alonso, M. Blasco

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

GSC

1998 HG₂₄, 6, 2, 2; 1998 KW₂₆, 14, 4, 34; 1998 MQ, 11, 3, 13; 1998 MZ, 7, 2, 4; 1998 ME₃, 14, 4,
35; 1998 MM₄ *, 6, 2, 5; 1998 MN₄ *, 6, 2, 5; 1998 MK₃₀, 7, 2, 28; 1998 OH, 3, 1, 0; 1998 OS₂ *,
6, 2, 2; 1998 OT₂ *, 6, 2, 2; (456), 17, 3, 16; [103, 12, 4*, 1998/06/09–1998/07/30]

621 Bergisch Gladbach

W. Bickel, Schau ins Land 21, D-51429 Bergisch Gladbach, Germany [0220455671–
0001@t-online.de]

0.60-m $f/5$ reflector + CCD

USNO-SA1.0

1998 OM₁ *, 6, 3, 3; 1998 ON₁ *, 10, 3, 3; 1998 OO₁ *, 8, 3, 3; 1998 OP₁ *, 7, 3, 3; [31, 4, 4*,
1998/07/18–1998/07/22]

627 Blauvac

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

0.26-m $f/4.7$ reflector + CCD

GSC

1997 FC, 3, 1, 0; 1997 FR₁, 5, 2, 7; 1998 LE₃, 3, 1, 0; (840), 2, 1, 0; (1384), 2, 1, 0; (1449), 3, 1,
0; (3455), 1, 1, 0; (5859), 3, 1, 0; (6009), 2, 1, 0; (6384), 3, 1, 0; (8201), 8, 2, 1; (8821), 2, 1, 0;
[37, 12, 0*, 1998/06/17–1998/07/30]

628 Mülheim-Ruhr

A. Martin, Turtle Star Observatory, Friedhostr. 15, D-45478 Mülheim-Ruhr,
Germany [axelm@bph.ruhr-uni-bochum.de]

0.2-m Schmidt-Cassegrain + CCD

GSC, USNO-SA1.0

1998 MX₅, 14, 4, 14; (1036), 16, 4, 36; (1203), 4, 1, 0; (8201), 25, 5, 28; [59, 4, 0*, 1998/06/14–
1998/07/30]

633 Romito

M. Bernazzani, via Provinciale 170, I-19030 Romito Magra (SP), Italy

[naidabis@col.it]

Observers N. Biso, M. Bernazzani

Measurer M. Bernazzani

0.30-m $f/5.1$ Schmidt-Cassegrain + CCD

GSC

1998 ME₃, 7, 1, 0; 1998 MX₅, 6, 2, 11; 1998 MN₁₄, 7, 2, 21; 1998 MT₂₄, 3, 1, 0; (6009), 3, 1, 0;
[26, 5, 0*, 1998/06/28–1998/07/30]

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

(1449), 2, 2, 1; [2, 1, 0*, 1998/06/22–1998/06/23]

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

GSC

1990 QR, 5, 2, 4; 1993 BA, 3, 1, 0; 1998 MX₅, 5, 2, 9; 1998 MR₁₇, 10, 4, 9; 1998 MK₃₀, 3, 1, 0;
(1036), 18, 7, 26; (6009), 7, 3, 16; (8887), 3, 2, 4; [54, 8, 0*, 1998/06/22–1998/07/23]

637 Hamburg–Himmelsmoor

D. Husar, Himmelsmoor 18, D-22397 Hamburg, Germany

[100655.3400@compuserve.com]

0.2-m $f/6$ Schmidt-Cassegrain + CCD

GSC

(950), 10, 1, 0; (3492), 10, 2, 1; (3728), 1, 1, 0; [21, 3, 0*, 1998/05/05–1998/05/13]

654 Table Mountain Observatory–PHMC

G. Carosi, Harvey Mudd College, 340 E. Foothill Blvd, Claremont, CA 91711,
U.S.A. [gcarosi@orion.ac.hmc.edu]

Observers A. Rudolph, G. Carosi

1.0-m reflector + CCD

USNO-A1.0

(434), 4, 2, 1; [4, 1, 0*, 1998/06/25–1998/06/26]

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 D. D. Balam, G. C. L. Aikman, R. Greimel

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

1.82-m Plaskett telescope + CCD

GSC, USNO-A1.0

1998 FX₂, 3, 1, 0; 1998 FM₅, 3, 1, 0; 1998 HK₁, 6, 2, 4; 1998 HL₁, 3, 1, 0; 1998 HM₃, 9, 3, 19; 1998 HZ₇, 6, 2, 4; 1998 HJ₄₁, 3, 1, 0; 1998 HU₁₀₈, 3, 1, 0; 1998 KD₃, 14, 5, 12; 1998 KF₃, 5, 2, 5; 1998 KH₉, 6, 2, 3; 1998 KH₁₇, 15, 5, 29; 1998 KK₁₇, 6, 2, 4; 1998 KK₅₆, 9, 3, 11; 1998 LD₂₆, 9, 28; 1998 LE₃, 3, 1, 0; 1998 MQ₉, 9, 3, 20; 1998 MA₁, 6, 2, 1; 1998 MR₂, 6, 2, 1; 1998 MS₂, 3, 1, 0; 1998 MK₄, 3, 1, 0; 1998 ML₄, 3, 1, 0; 1998 MV₅, 3, 1, 0; 1998 MR₂₄, 18, 6, 32; 1998 MT₂₄, 9, 3, 24; 1998 MK₃₀, 18, 6, 32; 1998 ND₃, 3, 1, 0; 1998 OS₄, 6, 2, 1; 1998 OX₄, 3, 1, 0; [210, 29, 0*, 1998/06/09–1998/08/03]

665 Wallis Observatory

B. D. Wallis, 7 Vernon Rd, Frazier Park, CA, U.S.A. [bwallis@frazmtn.com]

0.32-m $f/5.85$ Ritchey-Chrétien + CCD

GSC

1998 KH₁₇, 6, 3, 3; [6, 1, 0*, 1998/07/23–1998/07/26]

669 Ojai

S. Stephens, Division of Geological and Planetary Sciences, California Institute of Technology, CA 91125, U.S.A. [stephens@gllsvc.jpl.nasa.gov]

Observers R. Berk, C. Cano, J. Chang, L. Chen, G. Diaz, C. Hearst, W. Ho, D. Ionita-Ariton, D. Larsen, J. Lee, A. Liau, K. McKean, D. Merson-Hess, J. Mori, C. Muller, J. Neubert, R. O'Connell, G. Stahlman, R. Thessin, E. Udi, S. Vassilvitskii, J. Wimbrow, M. Wyman, L. Feng, S. Freeman, G. Greene, C. Tan, G. Horne, S. Stephens

0.18-m $f/6.7$ astrograph

SAOC, PPM

(2), 6, 5, 25; (15), 6, 5, 24; (44), 6, 6, 21; (532), 6, 3, 18; [24, 4, 0*, 1997/07/07–1997/08/04]

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

1998 KU₂, 4, 2, 25; 1998 KH₉, 4, 1, 0; 1998 MS₂, 5, 1, 0; 1998 ME₃, 4, 2, 25; 1998 MX₅, 8, 3, 33; 1998 MN₁₄, 3, 1, 0; 1998 MR₁₇, 4, 1, 0; (1866), 2, 1, 0; (4183), 5, 2, 2; (8201), 3, 1, 0; [42, 10, 0*, 1998/06/14–1998/08/03]

673 Table Mountain Observatory

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

[dlr@ipl.jpl.nasa.gov]

Observers D. L. Rabinowitz, L. Benner

0.6-m reflector + CCD

1998 MO₅, 2, 1, 0; 1998 OH₂, 2, 1, 0; 1998 OU₁, 4, 2, 1; 1998 OR₂, 4, 2, 1; 1998 OP₄, 1, 1, 0; 1998 OS₄, 2, 1, 0; 1998 OX₄, 3, 1, 0; [18, 7, 0*, 1998/07/25–1998/07/28]

675 Palomar

E. F. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.

[efh@alps.jpl.nasa.gov] (2)

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

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

C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands [vanhouten@ruhl11.leidenuniv.nl] (4)

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), E. F. Helin (2, S), H. E. Holt (3, S), K. Lawrence (2, S), D. H. Levy (3, S), C. S. Shoemaker (3, S), E. M. Shoemaker (3, S)

Measurers K. Lawrence (2), T. Melis (6), B. A. Skiff (6), C. S. Shoemaker (3),

C. J. van Houten (4), I. van Houten-Groeneveld (4), A. Wisse (4)

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

(2) 1993 RT₃, 4, 2, 2; 1998 DT₉, 2, 1, 0; [6, 2, 0*, 1990/11/18–1993/08/23]

(4) 2085 P-L *, 7, 7, 32; 2613 P-L *, 8, 7, 32; 2757 P-L *, 6, 6, 32; 3503 P-L *, 11, 6, 28; 4587 P-L *, 11, 9, 32; 9050 P-L *, 4, 4, 9; 9101 P-L *, 4, 4, 9; 1082 T-1 *, 5, 4, 3; 1182 T-1 *, 11, 9, 53; 2020 T-1 *, 4, 3, 2; 2088 T-1 *, 5, 4, 8; 2206 T-1 *, 11, 9, 53; 2297 T-1 *, 4, 3, 2; 3024 T-1 *, 9, 5, 9; 3075 T-1 *, 7, 5, 23; 3285 T-1 *, 13, 9, 53; 3329 T-1 *, 11, 9, 53; 4269 T-1 *, 5, 4, 9; 4310 T-1 *, 10, 7, 51; 1241 T-2 *, 14, 7, 16; 1552 T-2 *, 7, 4, 6; 2079 T-2 *, 10, 5, 10; 2081 T-2 *, 10, 5, 11; 2132 T-2 *, 13, 7, 15; 2199 T-2 *, 15, 8, 16; 2317 T-2 *, 8, 4, 6; 3061 T-2 *, 13, 7, 16; 3169 T-2 *, 15, 8, 16; 4114 T-2 *, 18, 8, 16; 4149 T-2 *, 15, 8, 16; 4281 T-2 *, 17, 7, 15; 4310 T-2 *, 6, 3, 6; 4616 T-2 *, 13, 7, 15; 5117 T-2 *, 11, 6, 11; 2065 T-3 *, 13, 7, 15; 2217 T-3 *, 12, 6, 11; 2222 T-3 *, 12, 4, 9; 2317 T-3 *, 22, 7, 15; 2374 T-3 *, 13, 7, 15; 3138 T-3 *, 11, 7, 15; 3157 T-3 *, 17, 7, 15; 3449 T-3 *, 13, 7, 15; 3465 T-3 *, 13, 7, 15; 3482 T-3 *, 13, 7, 15; 4031 T-3 *, 12, 7, 15; 4229 T-3 *, 12, 4, 6; 4390 T-3 *, 8, 4, 6; [502, 47, 47*, 1960/09/24–1977/10/22]

(6) 1981 EZ₂₆, 2, 1, 0; 1981 EH₄₈, 2, 1, 0; [4, 2, 0*, 1978/07/09–1979/10/18]

(9) 1977 ED₁, 2, 1, 0; 1991 UB₄, 2, 1, 0; 1993 FT₅, 1, 1, 0; 1997 CK₁, 2, 1, 0; 1998 DN₂₇, 2, 1, 0; 1998 FK₁₂₆, 2, 1, 0; 1998 GM₁, 2, 1, 0; 1998 HT₁₂₅, 2, 1, 0; 4053 P-L, 2, 1, 0; [17, 9, 0*, 1989/03/30–1994/02/11]

677 Lake Arrowhead

R. D. Stephens, P.O. Box 602, Blue Jay, CA 92317, U.S.A.

[robert.stephens@eee.org]

0.28-m Schmidt-Cassegrain + CCD

GSC 1.1

(503), 9, 3, 8; (2207), 2, 1, 0; (4114), 2, 1, 0; [13, 3, 0*, 1998/06/18–1998/07/26]

678 Fountain Hills

C. W. Juels, 16421 N. Cobblestone Ln., Fountain Hills, AZ 85268, U.S.A.

[cwjuels@futureone.com]

0.25-m $f/8$ Schmidt-Cassegrain + CCD

(402), 4, 2, 2; (411), 6, 2, 1; (412), 4, 2, 1; (413), 4, 2, 4; (416), 4, 2, 1; (434), 5, 2, 4; (483), 4, 2, 2; (890), 4, 2, 2; (1334), 4, 2, 2; (1617), 4, 2, 2; [43, 10, 0*, 1998/06/09–1998/06/15]

682 Kanab

E. Sheridan, 7205 Sunflower Lane, Kanab, UT 84741, U.S.A.

[mened@xpressweb.com]

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

GSC

1981 RF₂, 5, 2, 1; 1985 RQ₃, 6, 2, 6; 1991 RD₂₄, 5, 2, 4; 1993 PC₅, 4, 2, 1; 1997 AK₇, 6, 2, 6; 1998 HL₁₂₀, 5, 2, 2; 1998 KQ₄₇, 5, 2, 1; 1998 OL₁, 6, 2, 6; (1866), 3, 1, 0; [45, 9, 0*, 1998/06/16–1998/08/01]

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

1995 TX₆, 6, 2, 1; 1997 MW₁, 15, 4, 25; 1998 MW₁₅ *, 8, 3, 2; 1998 MR₁₇, 3, 1, 0; 1998 MU₂₄, 6, 2, 1; [38, 5, 1*, 1998/06/26–1998/07/27]

684 Prescott

P. G. Comba, 1411 Galaxy Lane, Prescott, AZ 86303, U.S.A.
[comba@northlink.com]

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

1988 CL₄, 2, 1, 0; 1990 QB₁₉, 4, 2, 3; 1990 TL₇, 4, 2, 1; 1990 WS₄, 4, 2, 2; 1994 UO₅, 5, 2, 1; 1997 AO₇, 4, 2, 2; 1997 BU₅, 8, 4, 34; 1997 CM₁₉, 3, 1, 0; 1997 CC₂₀, 2, 1, 0; 1997 CK₂₂, 7, 3, 23; 1997 ED₈, 6, 2, 1; 1997 FB₆, 6, 2, 1; 1997 GL₂₈, 6, 3, 23; 1997 HO₂, 8, 4, 34; 1997 JU₃, 4, 2, 1; 1997 JA₈, 7, 2, 1; 1998 HC₂₀, 5, 2, 1; 1998 HE₂₀, 4, 2, 1; 1998 HF₂₀, 2, 1, 0; 1998 HQ₂₃, 4, 2, 1; 1998 HR₂₃, 5, 2, 1; 1998 HS₂₃, 4, 2, 1; 1998 HS₅₁, 3, 1, 0; 1998 HE₁₄₈, 4, 2, 1; 1998 KB₈, 8, 4, 30; 1998 KX₉, 4, 27; 1998 KE₅, 8, 4, 28; 1998 KM₉, 9, 4, 22; 1998 KN₉, 8, 4, 23; 1998 KR₄₃, 6, 2, 1; 1998 LF₄, 4, 2, 1; 1998 MX₁ *, 4, 2, 1; 1998 MY₁ *, 10, 5, 26; 1998 MZ₁ *, 18, 7, 33; 1998 MJ₄ *, 4, 2, 2; 1998 MK₁₄ *, 4, 2, 1; 1998 MQ₁₇ *, 10, 5, 18; 1998 NG *, 4, 2, 1; 1998 NH *, 7, 4, 0; 1998 OS₁ *, 6, 3, 2; 1998 OT₁ *, 10, 5, 8; 1998 OE₂ *, 4, 2, 1; 1998 OF₂ *, 4, 2, 1; 1998 OG₂ *, 4, 2, 1; 1998 OH₂ *, 8, 4, 7; 1998 OJ₂ *, 8, 4, 7; 1998 OK₂ *, 4, 2, 1; 1998 OL₂ *, 10, 4, 6; 1998 OF₄ *, 8, 4, 5; 1998 OQ₄ *, 9, 4, 4; 1998 OW₅ *, 9, 4, 5; 2221 P-L, 4, 2, 1; 2137 T-2, 2, 1, 0; (4359), 2, 1, 0; (4727), 2, 1, 0; (5158), 3, 1, 0; (6912), 4, 2, 1; [325, 57, 21*, 1998/05/29–1998/08/02]

688 Lowell Observatory, Anderson Mesa Station

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

Observer B. A. Skiff

Measurer M. W. Buie

1.07-m Hall reflector + CCD USNO-A1.0

1974 QF₃, 3, 1, 0; 1976 UN₁₄, 3, 1, 0; 1978 TP₂, 3, 1, 0; 1978 UL₄, 3, 1, 0; 1980 VZ₂, 3, 1, 0; 1981 EO₄, 3, 1, 0; 1981 QE₂, 3, 1, 0; 1982 RR₂, 2, 1, 0; 1982 SC₃, 3, 1, 0; 1985 RP₃, 3, 1, 0; 1985 VF₁, 3, 1, 0; 1987 SC₁, 3, 1, 0; 1988 CG₇, 3, 1, 0; 1988 PP₂, 3, 1, 0; 1988 RZ₅, 3, 1, 0; 1989 GJ₄, 3, 1, 0; 1990 QO₆, 3, 1, 0; 1990 QM₉, 3, 1, 0; 1990 SJ₁₆, 3, 1, 0; 1990 TG₈, 3, 1, 0; 1990 VU₃, 3, 1, 0; 1990 VZ₆, 3, 1, 0; 1990 XU₃, 3, 1, 0; 1991 OO₃, 3, 1, 0; 1991 PL₁₃, 3, 1, 0; 1991 PZ₁₄, 3, 1, 0; 1991 PG₁₅, 3, 1, 0; 1991 UA₃, 3, 1, 0; 1991 VJ₁, 3, 1, 0; 1991 VL₁₀, 2, 1, 0; 1991 XD₃, 3, 1, 0; 1992 EG₆, 3, 1, 0; 1992 EK₇, 2, 1, 0; 1992 EV₁₃, 3, 1, 0; 1992 PL₂, 3, 1, 0; 1992 PQ₂, 3, 1, 0; 1992 RL₇, 3, 1, 0; 1992 SY₁₇, 3, 1, 0; 1992 WJ₂, 3, 1, 0; 1992 YA₁, 3, 1, 0; 1992 YE₁, 3, 1, 0; 1992 YM₂, 3, 1, 0; 1993 BA₃, 3, 1, 0; 1993 BD₄, 3, 1, 0; 1993 FO₄, 3, 1, 0; 1993 FW₃₇, 3, 1, 0; 1993 KW₁, 3, 1, 0; 1994 GG₁, 3, 1, 0; 1994 NR₁, 3, 1, 0; 1994 PF₉, 3, 1, 0; 1994 PO₂₅, 3, 1, 0; 1994 VR₆, 3, 1, 0; 1995 GV₃, 3, 1, 0; 1995 QT₃, 3, 1, 0; 1995 SQ₃, 3, 1, 0; 1995 SD₄, 3, 1, 0; 1995 SS₅, 3, 1, 0; 1995 SQ₅₄, 3, 1, 0; 1995 UX₄₄, 3, 1, 0; 1995 VL₃, 3, 1, 0; 1995 WM₂, 3, 1, 0; 1995 YB₃, 3, 1, 0; 1995 YP₁, 3, 1, 0; 1996 BU₃, 5, 2, 323; 1996 RG₅, 3, 1, 0; 1996 TQ₂, 2, 1, 0; 1996 TF₁₈, 3, 1, 0; 1996 UB₁, 3, 1, 0; 1996 UH₅, 2, 1, 0; 1996 VE₂, 3, 1, 0; 1996 VM₃, 3, 1, 0; 1996 VH₄, 3, 1, 0; 1996 VT₅, 3, 1, 0; 1996 WC₃, 3, 1, 0; 1996 WU₁, 3, 1, 0; 1996 XY₃, 3, 1, 0; 1996 XL₅, 3, 1, 0; 1996 XA₆, 3, 1, 0; 1996 XX₁₉, 3, 1, 0; 1996 XY₂₈, 3, 1, 0; 1996 XQ₃₂, 3, 1, 0; 1997 AF₃, 3, 1, 0; 1997 AD₁, 3, 1, 0; 1997 AO₂, 3, 1, 0; 1997 AK₄, 3, 1, 0; 1997 AQ₄, 3, 1, 0; 1997 AC₇, 3, 1, 0; 1997 AK₇, 3, 1, 0; 1997 AO₇, 3, 1, 0; 1997 AM₂₁, 3, 1, 0; 1997 CK₁, 3, 1, 0; 1997 CA₃, 3, 1, 0; 1997 CC₇, 2, 1, 0; 1997 CZ₁₄, 3, 1, 0; 1997 CA₂₀, 3, 1, 0; 1997 CC₂₀, 3, 1, 0; 1997 EL₂, 2, 1, 0; 1997 XH₁₁, 3, 1, 0; 1997 YP₈, 3, 1, 0; 1997 YV₁₃, 3, 1, 0; 1998 AY₆, 3, 1, 0; 1998 AU₉, 4, 1, 0; 1998 BM₁₀, 3, 1, 0; 1998 BD₁₂, 3, 1, 0; 1998 DU₉, 3, 1, 0; 1998 FP₂, 3, 1, 0; 1998 FC₁₂, 3, 1, 0; 1998 FJ₆₁, 3, 1, 0; 1998 FG₁₄₄, 3, 1, 0; 1998 HZ₁, 3, 1, 0; 1998 HA₂₀, 3, 1, 0; 1998 HD₂₄, 3, 1, 0; 1998 HF₂₆, 3, 1, 0; 1998 HG₂₆, 3, 1, 0; 1998 HQ₇₁, 3, 1, 0; 1998 HJ₈₀, 3, 1, 0; 1998 HA₈₆, 3, 1, 0; 1998 HF₈₉, 3, 1, 0; 1998 HN₈₉, 3, 1, 0; 1998 HB₉₄, 3, 1, 0; 1998 HM₁₂₁, 3, 1, 0; 1998 HN₁₄₄, 3, 1, 0; 1998 HJ₁₄₆, 2, 1, 0; 1998 HZ₁₅₀, 6, 2, 62; 1998 HB₁₅₁, 3, 1, 0; 1998 JB₄, 3, 1, 0; 1998 KX₅₄, 3, 1, 0; 1998 KA₆₂, 3, 1, 0; 1998 KB₆₂, 3, 1, 0; 1998 KC₆₂, 3, 1, 0; 1998 KD₆₂, 3, 1, 0; 1998 KE₆₂, 3, 1, 0; 1998 MQ₁₀, 1, 0; 1998 MM₃₂, 3, 1, 0; 2287 T-2, 3, 1, 0; 1097 T-3, 3, 1, 0; (1784), 3, 1, 0; (4746), 3, 1, 0; (5068), 3, 1, 0; (5949), 3, 1, 0; (6683), 3, 1, 0; (7162), 3, 1, 0; (7892), 3, 1, 0; (8779), 3, 1, 0; (8801), 3, 1, 0; (8808), 3, 1, 0; (8814), 3, 1, 0; (8856), 3, 1, 0; (8912), 2, 1, 0; (8927), 3, 1, 0; (8933), 3, 1, 0; (8936), 3, 1, 0; (8940), 3, 1, 0; (8966), 3, 1, 0; (8971), 3, 1, 0; [469, 155, 0*, 1997/03/13–1998/06/22]

689 U.S. Naval Observatory, Flagstaff Station

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

A. K. B. Monet, U. S. Naval Observatory, Flagstaff Station, P.O. Box 1149,
Flagstaff AZ 86002-1149 [alice@nofs.navy.mil]

0.20-m transit telescope + CCD ACT

1973 AW₃, 1, 1, 0; 1979 KO₁, 1, 1, 0; 1980 VG₁, 1, 1, 0; 1981 JO₂, 2, 2, 15; 1982 UA₇, 1, 1, 0; 1986 QZ₂, 1, 1, 0; 1986 TW₉, 1, 1, 0; 1988 VY₂, 1, 1, 0; 1989 CG₁, 1, 1, 0; 1990 AD₁, 1, 1, 0; 1990 EL₈, 1, 1, 0; 1990 OY₁, 1, 1, 0; 1990 QW₉, 1, 1, 0; 1991 RY₂₁, 1, 1, 0; 1991 RF₂₉, 1, 1, 0; 1991 XH₁, 1, 1, 0; 1992 LF₂, 2, 2, 29; 1992 UH₃, 1, 1, 0; 1992 WC₁, 1, 1, 0; 1992 WC₃, 1, 1, 0; 1992 WO₅, 3, 3, 36; 1993 BD₄, 1, 1, 0; 1993 ES₁, 1, 1, 0; 1993 FN₁, 1, 1, 0; 1993 RX₃, 1, 1, 0; 1994 UK₁, 1, 1, 0; 1995 VG₁, 1, 1, 0; 1997 BB₂, 1, 1, 0; 1997 CN₁₃, 2, 2, 1; 1998 KQ₄₇, 1, 1, 0; 1998 KD₅₁, 1, 1, 0; 1998 ME₃, 1, 1, 0; 5485 T-2, 1, 1, 0; (6), 4, 4, 30; (7), 4, 4, 37; (16), 3, 3, 9; (28), 2, 2, 1; (76), 4, 4, 51; (85), 2, 2, 1; (91), 3, 3, 36; (141), 2, 2, 1; (165), 2, 2, 15; (317), 2, 2, 1; (348), 5, 5, 52; (413), 3, 3, 42; (428), 2, 2, 1; (433), 2, 2, 1; (472), 4, 4, 43; (487), 3, 3, 29; (488), 7, 7, 52; (534), 5, 5, 51; (621), 4, 4, 52; (637), 1, 1, 0; (747), 5, 5, 52; (779), 2, 2, 1; (811), 3, 3, 9; (895), 5, 5, 52; (908), 3, 3, 9; (968), 1, 1, 0; (2305), 1, 1, 0; (2430), 3, 3, 9; (2476), 2, 2, 14; (2779), 1, 1, 0; (3025), 1, 1, 0; (4038), 1, 1, 0; (4088), 3, 3, 9; (4295), 2, 2, 1; (4716), 1, 1, 0; (4809), 1, 1, 0; (4855), 2, 2, 1; (5197), 3, 3, 9; (5546), 4, 4, 9; (5672), 1, 1, 0; (5933), 1, 1, 0; (6013), 3, 3, 9; (6748), 2, 2, 8; (6890), 2, 2, 1; (7534), 1, 1, 0; (8201), 1, 1, 0; (8780), 2, 2, 1; (8896), 1, 1, 0; (8931), 2, 2, 1; (8973), 1, 1, 0; [163, 83, 0*, 1998/06/05–1998/07/27]

691 Kitt Peak, Steward Observatory

T. Gehrels, Space Sciences Building, University of Arizona, Tucson, AZ 85721,
U.S.A. [tgehrels@lpl.arizona.edu]

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

Observers T. Gehrels, J. Larsen, J. Montani, J. V. Scotti, S. M. Larson,
C. W. Hergenrother

0.91-m Spacewatch telescope + CCD, 2.3-m reflector + CCD GSC

1975 SG₁, 2, 1, 0; 1976 QK₁, 3, 1, 0; 1977 EU₁, 3, 1, 0; 1978 NF₃, 3, 1, 0; 1978 VN₂, 3, 1, 0; 1978 VD₄, 3, 1, 0; 1979 MM₄, 3, 1, 0; 1981 EA₃, 3, 1, 0; 1981 EW₅, 3, 1, 0; 1981 EW₇, 3, 1, 0; 1981 EK₉, 3, 1, 0; 1981 EE₁₁, 2, 1, 0; 1981 EP₁₂, 3, 1, 0; 1981 EL₁₇, 3, 1, 0; 1981 EN₁₈, 3, 1, 0; 1981 ET₁₈, 3, 1, 0; 1981 EH₂₂, 3, 1, 0; 1981 EG₂₃, 6, 2, 1261; 1981 EG₂₇, 3, 1, 0; 1981 EJ₂₈, 3, 1, 0; 1981 EX₃₈, 3, 1, 0; 1981 SE₉, 3, 1, 0; 1981 WF₉, 6, 2, 7; 1982 JD₂, 3, 1, 0; 1983 CZ₂, 3, 1, 0; 1983 RL₃, 3, 1, 0; 1985 TO₃, 3, 1, 0; 1986 QZ₃, 3, 1, 0; 1986 QU₂, 6, 2, 28; 1986 RW₅, 3, 1, 0; 1987 DO₆, 6, 2, 10; 1987 RB₁, 3, 1, 0; 1988 CY₃, 6, 2, 39; 1988 PC₁, 3, 1, 0; 1988 PQ₂, 3, 1, 0; 1988 RE₆, 8, 3, 12; 1988 SB₂, 3, 1, 0; 1988 SM₂, 6, 2, 814; 1988 ST₂, 2, 1, 0; 1988 VN₅, 3, 1, 0; 1988 XL₃, 3, 1, 0; 1989 AG₇, 3, 1, 0; 1989 RL₃, 3, 1, 0; 1989 UU₅, 3, 1, 0; 1989 YC₆, 6, 2, 1502; 1990 QF₂, 2, 1, 0; 1990 QD₇, 3, 1, 0; 1990 QM₉, 3, 1, 0; 1990 RO₆, 6, 2, 112; 1990 SH₁, 6, 2, 6; 1990 TW₁₁, 3, 1, 0; 1990 VH₁₂, 6, 2, 12; 1990 WR₅, 6, 2, 418; 1991 AH₂, 3, 1, 0; 1991 AY₂, 8, 3, 11; 1991 CX₃, 3, 1, 0; 1991 GO₁, 3, 1, 0; 1991 GU₃, 3, 1, 0; 1991 LV₂, 3, 1, 0; 1991 PE₂, 6, 2, 476; 1991 PH₂, 3, 1, 0; 1991 PJ₁₁, 3, 1, 0; 1991 PF₁₂, 3, 1, 0; 1991 RB₂₄, 9, 3, 994; 1991 TQ₂, 3, 1, 0; 1991 TX₂, 2, 1, 0; 1991 UA₃, 3, 1, 0; 1991 UL₃, 6, 2, 28; 1991 US₃, 3, 1, 0; 1991 XX₆ *, 5, 2, 18; 1992 AY₃, 3, 1, 0; 1992 AX₆ *, 6, 2, 22; 1992 DN₈, 2, 1, 0; 1992 DX₁₃ *, 3, 1, 0; 1992 EV₄, 3, 1, 0; 1992 EV₁₃, 3, 1, 0; 1992 HA₅, 3, 1, 0; 1992 HK₇ *, 3, 1, 0; 1992 OB₃, 3, 1, 0; 1992 PZ₁, 3, 1, 0; 1992 RP₃, 3, 1, 0; 1992 RS₃, 3, 1, 0; 1992 RU₃, 3, 1, 0; 1992 TA₂ *, 3, 1, 0; 1992 UW₂, 3, 1, 0; 1992 WC₃, 6, 2, 11; 1992 YJ₂, 3, 1, 0; 1993 BA₃, 3, 1, 0; 1993 BD₆, 3, 1, 0; 1993 FS₆, 6, 2, 48; 1993 FX₂, 3, 1, 0; 1993 FY₃, 3, 1, 0; 1993 FC₉, 2, 1, 0; 1993 FP₁₀, 3, 1, 0; 1993 FE₂₆, 8, 3, 974; 1993 FR₃₄, 3, 1, 0; 1993 FK₃₇, 3, 1, 0; 1993 FF₄₀, 3, 1, 0; 1993 FN₄₀, 3, 1, 0; 1993 FL₈₂, 3, 1, 0; 1993 KT₃ *, 6, 2, 28; 1993 NV₆, 6, 2, 10; 1993 OV₃, 3, 1, 0; 1993 OK₉, 3, 1, 0; 1993 OM₁₀, 3, 1, 0; 1993 PC₂, 2, 1, 0; 1993 QF₃, 6, 2, 7; 1993 TJ₂₄, 3, 1, 0; 1993 XM₁, 3, 1, 0; 1993 XL₃ *, 6, 2, 35; 1994 AS₈, 3, 1296; 1994 AG₁, 3, 1, 0; 1994 AH₁₇ *, 6, 2, 30; 1994 BF₁, 3, 1, 0; 1994 CK₁, 3, 1, 0; 1994 CJ₈, 3, 1, 0; 1994 CV₉, 3, 1, 0; 1994 CN₂₀ *, 3, 1, 0; 1994 EH₉ *, 6, 2, 27; 1994 FD₁ *, 3, 1, 0; 1994 GS₁₁ *, 6, 2, 31; 1994 PH₁, 3, 1, 0; 1994 PU₂, 3, 1, 0; 1994 PY₂₅, 3, 1, 0; 1994 PC₃₄, 5, 2, 7; 1994 PN₃₆, 3, 1, 0; 1994 SH₃, 3, 1, 0; 1994 TN₁₇ *, 3, 1, 0; 1994 YT₄ *, 4, 2, 7; 1995 QR₂, 2, 1, 0; 1995 QZ₁₀ *, 6, 2, 67; 1995 QA₁₁ *, 2, 1, 0; 1995 SO₃, 3, 1, 0; 1995 SS₅, 3, 1, 0; 1995 SY₁₄, 3, 1, 0; 1995 SH₂₆, 3, 1, 0; 1995 SR₂₉, 2, 1, 0; 1995 SK₅₅ *, 3, 1, 0; 1995 TT₃, 3, 1, 0; 1995 UA₉, 3, 1, 0; 1995 UC₉, 3, 1, 0; 1995 UQ₁₆, 3, 1, 0; 1995 UK₂₈, 3, 1, 0; 1995 WO₃, 3, 1, 0; 1995 WY₆, 6, 2, 6; 1995 WT₂, 3, 1, 0; 1995 WL₄, 5, 2, 13; 1995 WZ₆, 6, 2, 11; 1995 WX₈, 3, 1, 0; 1995 WL₄₃ *, 3, 1, 0; 1995 XE₁, 6, 2, 12; 1995 YB₁, 3, 1, 0; 1995 YX₂₅ *, 6, 2, 6; 1996 CL₉ *, 3, 1, 0; 1996 OM₂,

3, 1, 0; 1996 SU₄, 3, 1, 0; 1996 TF₁₈, 3, 1, 0; 1996 TS₁₈, 2, 1, 0; 1996 TL₂₉, 3, 1, 0; 1996 TM₃₆, 3, 1, 0; 1996 VN₃, 3, 1, 0; 1996 VH₄, 3, 1, 0; 1996 VK₄, 3, 1, 0; 1996 VY₈, 6, 2, 442; 1996 VX₃₀, 3, 1, 0; 1996 XP₁, 8, 3, 5; 1996 XS₅, 6, 2, 18; 1996 XB₆, 3, 1, 0; 1996 XD₆, 3, 1, 0; 1996 XS₁₈, 3, 1, 0; 1996 XU₁₈, 3, 1, 0; 1996 XF₁₉, 3, 1, 0; 1996 XJ₃₁, 3, 1, 0; 1996 XD₃₂, 6, 2, 5; 1996 XF₃₇, 5, 2, 5; 1996 XH₃₇, 6, 2, 3; 1996 YB, 3, 1, 0; 1996 YG, 3, 1, 0; 1996 YU, 3, 1, 0; 1996 YH₁, 3, 1, 0; 1996 YC₂, 2, 1, 0; 1996 YY₂, 5, 2, 418; 1997 AP, 3, 1, 0; 1997 AS, 6, 2, 5; 1997 AU, 3, 1, 0; 1997 AC₁, 2, 1, 0; 1997 AW₂, 3, 1, 0; 1997 AW₅, 3, 1, 0; 1997 AZ₆, 5, 2, 1008; 1997 AJ₇, 3, 1, 0; 1997 AK₇, 3, 1, 0; 1997 AS₁₂, 6, 2, 3; 1997 AG₂₁, 3, 1, 0; 1997 BF₃, 9, 3, 11; 1997 BN₃, 3, 1, 0; 1997 BU₈, 3, 1, 0; 1997 BU₉, 6, 2, 14; 1997 CR₁, 9, 3, 1742; 1997 CX₂₇, 6, 2, 1795; 1997 EU₂, 6, 2, 5; 1997 EK₆, 3, 1, 0; 1997 EX₂₅, 8, 3, 25; 1997 ER₅₉, 5, 2, 5; 1997 FG₁, 3, 1, 0; 1997 GO₆, 2, 1, 0; 1997 GY₇, 3, 1, 0; 1997 HO₂, 3, 1, 0; 1997 HV₈, 3, 1, 0; 1997 HH₁₈, 6, 2, 8; 1997 KR₃, 3, 1, 0; 1997 ST₂₃, 6, 2, 11; 1997 SL₃₅, 3, 1, 0; 1997 XY₃, 3, 1, 0; 1997 XR₈, 3, 1, 0; 1997 XA₉, 3, 1, 0; 1998 AF₆, 3, 1, 0; 1998 AR₁₁, 5, 2, 25; 1998 BE₂, 3, 1, 0; 1998 BB₇, 3, 1, 0; 1998 BP₇, 9, 3, 1659; 1998 BX₂₄, 3, 1, 0; 1998 BY₂₄, 3, 1, 0; 1998 BH₂₅, 3, 1, 0; 1998 BK₂₆, 3, 1, 0; 1998 CF₂, 3, 1, 0; 1998 CR₂, 3, 1, 0; 1998 CS₃, 3, 1, 0; 1998 DT, 9, 3, 1362; 1998 DL₁, 3, 1, 0; 1998 DJ₇, 3, 1, 0; 1998 DR₈, 6, 2, 1039; 1998 DP₉, 3, 1, 0; 1998 DT₉, 3, 1, 0; 1998 DJ₁₀, 3, 1, 0; 1998 DJ₁₁, 6, 2, 7; 1998 DV₁₁, 2, 1, 0; 1998 DQ₁₃, 3, 1, 0; 1998 DS₂₀, 3, 1, 0; 1998 DN₂₇, 3, 1, 0; 1998 DT₃₃, 3, 1, 0; 1998 DU₃₃, 3, 1, 0; 1998 DA₃₄, 3, 1, 0; 1998 DE₃₄, 6, 2, 64; 1998 DF₃₄, 5, 2, 18; 1998 DN₃₄, 3, 1, 0; 1998 DV₃₄, 6, 2, 529; 1998 DB₃₆, 3, 1, 0; 1998 EP₁, 3, 1, 0; 1998 EX₆, 6, 2, 1537; 1998 EK₁₂, 2, 1, 0; 1998 ER₁₃, 3, 1, 0; 1998 EV₁₃, 3, 1, 0; 1998 FD₂, 3, 1, 0; 1998 FQ₂, 2, 1, 0; 1998 FB₃, 3, 1, 0; 1998 FD₃, 3, 1, 0; 1998 FO₈, 3, 1, 0; 1998 FT₈, 6, 2, 1409; 1998 FZ₈, 3, 1, 0; 1998 FW₉, 3, 1, 0; 1998 FA₁₀, 3, 1, 0; 1998 FB₁₀, 6, 2, 2363; 1998 FC₁₀, 3, 1, 0; 1998 FJ₁₀, 3, 1, 0; 1998 FQ₁₀, 3, 1, 0; 1998 FR₁₀, 3, 1, 0; 1998 FX₁₀, 3, 1, 0; 1998 FH₁₁, 3, 1, 0; 1998 FQ₁₁, 9, 3, 1421; 1998 FY₁₃, 3, 1, 0; 1998 FL₁₄, 3, 1, 0; 1998 FM₁₄, 3, 1, 0; 1998 FQ₁₄, 6, 2, 857; 1998 FS₁₄, 3, 1, 0; 1998 FT₁₄, 3, 1, 0; 1998 FU₁₄, 3, 1, 0; 1998 FV₁₄, 3, 1, 0; 1998 FW₁₄, 3, 1, 0; 1998 FY₁₄, 3, 1, 0; 1998 FD₁₅, 3, 1, 0; 1998 FK₁₅, 3, 1, 0; 1998 FS₁₅, 3, 1, 0; 1998 FV₂₀, 3, 1, 0; 1998 FN₃₂, 3, 1, 0; 1998 FA₃₃, 3, 1, 0; 1998 FL₃₆, 6, 2, 466; 1998 FG₄₀, 3, 1, 0; 1998 FV₄₀, 6, 2, 1563; 1998 FH₄₂, 5, 2, 6; 1998 FK₅₁, 3, 1, 0; 1998 FT₅₁, 2, 1, 0; 1998 FG₅₃, 3, 1, 0; 1998 FT₅₃, 3, 1, 0; 1998 FU₅₃, 3, 1, 0; 1998 FW₅₃, 3, 1, 0; 1998 FA₅₄, 3, 1, 0; 1998 FB₅₄, 3, 1, 0; 1998 FC₅₄, 3, 1, 0; 1998 FG₅₆, 3, 1, 0; 1998 FJ₅₆, 3, 1, 0; 1998 FO₅₇, 3, 1, 0; 1998 FY₅₈, 3, 1, 0; 1998 FA₅₉, 3, 1, 0; 1998 FC₅₉, 3, 1, 0; 1998 FT₅₉, 3, 1, 0; 1998 FR₆₀, 3, 1, 0; 1998 FV₆₀, 3, 1, 0; 1998 FN₆₁, 3, 1, 0; 1998 FO₆₂, 2, 1, 0; 1998 FK₆₃, 3, 1, 0; 1998 FR₆₃, 3, 1, 0; 1998 FO₆₄, 3, 1, 0; 1998 FR₆₄, 3, 1, 0; 1998 FA₆₅, 3, 1, 0; 1998 FG₆₅, 3, 1, 0; 1998 FH₆₅, 2, 1, 0; 1998 FV₆₇, 3, 1, 0; 1998 FY₆₇, 3, 1, 0; 1998 FD₆₈, 3, 1, 0; 1998 FF₆₈, 6, 2, 1310; 1998 FO₆₈, 3, 1, 0; 1998 FS₆₈, 6, 2, 36; 1998 FZ₆₈, 3, 1, 0; 1998 FX₆₉, 3, 1, 0; 1998 FF₇₀, 9, 3, 1336; 1998 FR₇₀, 3, 1, 0; 1998 FT₇₀, 3, 1, 0; 1998 FD₇₁, 3, 1, 0; 1998 FH₇₁, 3, 1, 0; 1998 FN₇₁, 3, 1, 0; 1998 FP₇₂, 3, 1, 0; 1998 FZ₇₃, 2, 1, 0; 1998 FA₇₄, 3, 1, 0; 1998 FO₇₄, 3, 1, 0; 1998 FB₇₅, 3, 1, 0; 1998 FC₇₅, 3, 1, 0; 1998 FJ₇₈, 3, 1, 0; 1998 FP₇₉, 6, 2, 13; 1998 FB₈₀, 3, 1, 0; 1998 FF₉₇, 8, 3, 562; 1998 FB₁₀₉, 3, 1, 0; 1998 FQ₁₀₉, 3, 1, 0; 1998 FK₁₁₆, 3, 1, 0; 1998 FE₁₁₇, 3, 1, 0; 1998 FU₁₁₇, 2, 1, 0; 1998 FE₁₁₈, 3, 1, 0; 1998 FL₁₂₁, 3, 1, 0; 1998 FO₁₂₁, 3, 1, 0; 1998 FS₁₂₁, 2, 1, 0; 1998 FC₁₂₂, 3, 1, 0; 1998 FR₁₂₄, 6, 2, 503; 1998 FK₁₂₆, 3, 1, 0; 1998 FN₁₄₁, 3, 1, 0; 1998 GA, 3, 1, 0; 1998 GM₁, 3, 1, 0; 1998 GM₆, 3, 1, 0; 1998 HV₄, 6, 2, 1439; 1998 HQ₁₂, 3, 1, 0; 1998 HJ₁₄, 3, 1, 0; 1998 HQ₁₈, 3, 1, 0; 1998 HR₁₈, 5, 2, 5; 1998 HF₂₀, 3, 1, 0; 1998 HZ₂₀, 3, 1, 0; 1998 HE₂₁, 3, 1, 0; 1998 HB₂₂, 3, 1, 0; 1998 HQ₂₂, 3, 1, 0; 1998 HG₂₃, 3, 1, 0; 1998 HD₂₄, 3, 1, 0; 1998 HM₂₆, 3, 1, 0; 1998 HB₃₀, 6, 2, 1091; 1998 HL₃₀, 3, 1, 0; 1998 HZ₃₁, 3, 1, 0; 1998 HX₃₂, 3, 1, 0; 1998 HW₃₈, 3, 1, 0; 1998 HU₃₉, 3, 1, 0; 1998 HV₃₉, 3, 1, 0; 1998 HE₄₃, 3, 1, 0; 1998 HV₅₀, 3, 1, 0; 1998 HB₅₁, 3, 1, 0; 1998 HG₅₁, 9, 3, 439; 1998 HX₅₁, 6, 2, 31; 1998 HM₅₂, 3, 1, 0; 1998 HR₆₃, 3, 1, 0; 1998 HN₆₈, 2, 1, 0; 1998 HA₈₀, 2, 1, 0; 1998 HF₈₇, 6, 2, 880; 1998 HU₉₄, 6, 2, 896; 1998 HT₉₇, 3, 1, 0; 1998 HF₉₉, 3, 1, 0; 1998 HJ₁₀₁, 3, 1, 0; 1998 HX₁₀₁, 6, 2, 1; 1998 HA₁₀₂, 3, 1, 0; 1998 HL₁₀₂, 3, 1, 0; 1998 HG₁₀₃, 3, 1, 0; 1998 HE₁₂₁, 3, 1, 0; 1998 HG₁₂₁, 3, 1, 0; 1998 HJ₁₂₁, 3, 1, 0; 1998 HD₁₂₄, 3, 1, 0; 1998 HT₁₂₅, 3, 1, 0; 1998 HL₁₂₆, 2, 1, 0; 1998 HF₁₂₇, 3, 1, 0; 1998 HZ₁₂₇, 2, 1, 0; 1998 HH₁₂₉, 3, 1, 0; 1998 HR₁₃₆, 3, 1, 0; 1998 HU₁₄₄, 6, 2, 884; 1998 HC₁₄₆, 3, 1, 0; 1998 HZ₁₄₇, 3, 1, 0; 1998 HQ₁₄₈, 6, 2, 551; 1998 HD₁₄₉, 3, 1, 0; 1998 HU₁₄₉, 3, 1, 0; 1998 JU, 3, 1, 0; 1998 JV₁, 3, 1, 0; 1998 JC₂, 6, 2, 1363; 1998 JO₂, 3, 1, 0; 1998 JF₃, 6, 2, 7; 1998 KC, 3, 1, 0; 1998 KK₁, 3, 1, 0; 1998 KK₂, 6, 2, 7; 1998 KK₂, 3, 1, 0; 1998 KL₂, 6, 2, 4; 1998 KC₄, 3, 1, 0; 1998 KK₄, 9, 3, 29; 1998 KQ₄, 6, 2, 5; 1998 KU₄, 9, 3, 11; 1998 KB₅, 6, 2, 6; 1998 KP₅, 3, 1, 0; 1998 KV₆, 6, 2, 11; 1998 KX₆, 3, 1, 0; 1998 KA₇, 5, 2, 6; 1998 KC₇, 6, 2, 4; 1998 KR₇, 3, 1, 0; 1998 KN₈, 3, 1, 0; 1998 KU₁₀, 2, 1, 0; 1998 KT₁₁, 3, 1, 0; 1998 KY₁₁, 5, 2, 5; 1998 KL₂₃, 3, 1, 0; 1998 KN₂₄, 3, 1, 0; 1998 KW₂₅, 2, 1, 0; 1998 KT₂₈, 2, 1, 0; 1998 KU₂₉, 6, 2, 6; 1998 KE₃₀, 6, 2, 6; 1998 KW₃₀, 6, 2, 5; 1998 KM₃₁, 9, 3, 13; 1998 KN₃₁, 6, 2, 5; 1998 KO₃₁, 9, 3, 23; 1998 KQ₃₁, 9, 3, 13; 1998 KV₃₁, 3, 1, 0; 1998 KC₃₂, 6, 2, 4; 1998 KE₃₂, 3, 1, 0; 1998 KH₃₂, 6, 2, 7; 1998 KO₃₂, 6, 2, 5; 1998 KJ₃₃, 3, 1, 0; 1998 KJ₃₃, 3, 1, 0; 1998 KJ₃₃, 6, 2, 6; 1998 KW₃₃, 6, 2, 5; 1998 KZ₃₃, 6, 2, 6; 1998 KF₃₄, 9, 3, 36; 1998 KH₃₄, 3, 1, 0; 1998 KO₃₄, 9, 3, 11; 1998 KW₃₄, 3, 1, 0; 1998 KY₃₄, 6, 2, 8; 1998 KF₃₅, 6, 2, 11; 1998 KC₃₅, 6, 2, 5; 1998 KL₃₅, 3, 1, 0; 1998 KQ₃₅, 9, 3, 12; 1998 KS₃₅, 6, 2, 6; 1998 KA₃₆, 3, 1, 0; 1998 KL₃₇, 6, 2, 6; 1998 KM₄₆, 3, 1, 0; 1998 KV₄₈, 6, 2, 29; 1998 KA₅₀, 6, 2, 6; 1998 KB₅₁, 9, 3, 1009; 1998 KL₅₂, 3, 1, 0; 1998 KP₅₃, 3, 1, 0; 1998 KT₅₄, 6, 2, 12; 1998 KU₅₄, 6, 2, 4; 1998 KW₅₄, 3,

1, 0; 1998 KJ₅₈, 6, 2, 7; 1998 KN₆₃, 6, 2, 6; 1998 LC₃, 7, 2, 1; 1998 LE₃, 3, 1, 0; 1998 ME*, 12, 4, 14; 1998 MF*, 6, 2, 1; 1998 MG*, 12, 4, 13; 1998 MH*, 8, 3, 6; 1998 MJ*, 9, 3, 6; 1998 MK*, 6, 2, 1; 1998 ML*, 9, 3, 6; 1998 MM*, 9, 3, 6; 1998 MN*, 9, 3, 2; 1998 MO*, 6, 2, 1; 1998 MR*, 12, 4, 14; 1998 MS*, 6, 2, 1; 1998 MZ*, 9, 3, 2; 1998 MB₁, 9, 3, 7; 1998 MC₁, 6, 2, 5; 1998 MD₁, 6, 2, 5; 1998 ME₁, 6, 2, 5; 1998 MF₁, 6, 2, 5; 1998 MG₁, 9, 3, 13; 1998 MH₁, 6, 2, 5; 1998 MJ₁, 6, 2, 5; 1998 MK₁, 6, 2, 5; 1998 ML₁, 6, 2, 5; 1998 MN₁, 6, 2, 5; 1998 MO₁, 9, 3, 13; 1998 MP₁, 5, 2, 5; 1998 MQ₁, 6, 2, 5; 1998 MR₁, 6, 2, 5; 1998 MS₁, 6, 2, 5; 1998 MT₁, 9, 3, 13; 1998 MU₁, 6, 2, 5; 1998 MV₁, 5, 2, 1; 1998 MW₁, 5, 2, 1; 1998 MT₂, 6, 2, 6; 1998 MU₂, 8, 3, 7; 1998 MV₂, 6, 2, 6; 1998 MW₂, 9, 3, 13; 1998 MX₂, 6, 2, 6; 1998 MY₂, 6, 2, 6; 1998 MZ₂, 6, 2, 6; 1998 MA₃, 9, 3, 13; 1998 MB₃, 6, 2, 6; 1998 MC₃, 8, 3, 13; 1998 MD₃, 6, 2, 4; 1998 MH₃, 9, 3, 8; 1998 MJ₃, 6, 2, 7; 1998 MK₃, 6, 2, 7; 1998 ML₃, 6, 2, 6; 1998 MM₃, 6, 2, 6; 1998 MN₃, 6, 2, 5; 1998 MO₃, 6, 2, 5; 1998 MP₃, 6, 2, 5; 1998 MQ₃, 9, 3, 12; 1998 MR₃, 6, 2, 5; 1998 MS₃, 5, 2, 5; 1998 MT₃, 6, 2, 5; 1998 MU₃, 6, 2, 5; 1998 MV₃, 6, 2, 5; 1998 MW₃, 6, 2, 5; 1998 MX₃, 6, 2, 5; 1998 MY₃, 11, 4, 13; 1998 MZ₃, 6, 2, 5; 1998 MA₄, 6, 2, 5; 1998 MB₄, 9, 3, 15; 1998 MC₄, 6, 2, 4; 1998 MD₄, 6, 2, 4; 1998 ME₄, 6, 2, 4; 1998 MF₄, 5, 2, 4; 1998 MG₄, 6, 2, 4; 1998 MO₄, 6, 2, 7; 1998 MP₄, 6, 2, 6; 1998 MQ₄, 12, 4, 13; 1998 MR₄, 9, 3, 13; 1998 MS₄, 6, 2, 5; 1998 MT₄, 6, 2, 5; 1998 MU₄, 6, 2, 5; 1998 MV₄, 6, 2, 5; 1998 MW₄, 6, 2, 5; 1998 MX₄, 6, 2, 5; 1998 MY₄, 6, 2, 5; 1998 MZ₄, 6, 2, 5; 1998 MA₅, 9, 3, 11; 1998 MB₅, 9, 3, 11; 1998 MC₅, 8, 3, 11; 1998 MD₅, 6, 2, 5; 1998 ME₅, 6, 2, 5; 1998 MF₅, 9, 3, 11; 1998 MG₅, 5, 2, 4; 1998 MH₅, 6, 2, 4; 1998 MJ₅, 6, 2, 4; 1998 MK₅, 6, 2, 4; 1998 ML₅, 6, 2, 1; 1998 MM₅, 6, 2, 1; 1998 MZ₅, 6, 2, 6; 1998 MA₆, 9, 3, 7; 1998 MB₆, 6, 2, 6; 1998 MC₆, 6, 2, 6; 1998 MD₆, 6, 2, 6; 1998 ME₆, 6, 2, 6; 1998 MF₆, 6, 2, 6; 1998 MG₆, 5, 2, 6; 1998 MH₆, 9, 3, 12; 1998 MJ₆, 14, 5, 37; 1998 MK₆, 6, 2, 5; 1998 ML₆, 5, 2, 5; 1998 MM₆, 6, 2, 5; 1998 MN₆, 6, 2, 5; 1998 MO₆, 6, 2, 5; 1998 MP₆, 6, 2, 5; 1998 MQ₆, 11, 4, 25; 1998 MR₆, 6, 2, 5; 1998 MS₆, 12, 4, 36; 1998 MT₆, 5, 2, 5; 1998 MU₆, 6, 2, 5; 1998 MV₆, 5, 2, 4; 1998 MW₆, 8, 3, 5; 1998 MX₆, 6, 2, 4; 1998 MY₆, 6, 2, 4; 1998 MZ₆, 6, 2, 4; 1998 MA₇, 5, 2, 4; 1998 MB₇, 9, 3, 10; 1998 MC₇, 6, 2, 4; 1998 MD₇, 6, 2, 4; 1998 ME₇, 5, 2, 4; 1998 MF₇, 6, 2, 4; 1998 MG₇, 6, 2, 4; 1998 MH₇, 15, 5, 36; 1998 MJ₇, 6, 2, 4; 1998 MK₇, 5, 2, 4; 1998 ML₇, 5, 2, 4; 1998 MO₁₄, 6, 2, 7; 1998 MP₁₄, 6, 2, 7; 1998 MQ₁₄, 5, 2, 7; 1998 MR₁₄, 5, 2, 7; 1998 MS₁₄, 6, 2, 6; 1998 MT₁₄, 6, 2, 7; 1998 MU₁₄, 6, 2, 6; 1998 MV₁₄, 6, 2, 6; 1998 MW₁₄, 6, 2, 7; 1998 MX₁₄, 6, 2, 6; 1998 MY₁₄, 6, 2, 6; 1998 MZ₁₄, 6, 2, 6; 1998 MA₁₅, 9, 3, 11; 1998 MB₁₅, 6, 2, 6; 1998 MC₁₅, 5, 2, 6; 1998 MD₁₅, 5, 2, 6; 1998 ME₁₅, 6, 2, 7; 1998 MF₁₅, 6, 2, 7; 1998 MG₁₅, 6, 2, 7; 1998 MH₁₅, 6, 2, 7; 1998 MJ₁₅, 6, 2, 7; 1998 MK₁₅, 5, 2, 7; 1998 ML₁₅, 9, 3, 12; 1998 MM₁₅, 6, 2, 7; 1998 MN₁₅, 6, 2, 7; 1998 MO₁₅, 6, 2, 7; 1998 MP₁₅, 6, 2, 7; 1998 MQ₁₅, 6, 2, 6; 1998 MR₁₅, 8, 3, 11; 1998 MS₁₅, 9, 3, 6; 1998 MT₁₅, 7, 3, 6; 1998 MU₁₅, 6, 2, 1; 1998 MV₁₅, 12, 4, 7; 1998 MX₁₅, 9, 3, 16; 1998 MY₁₅, 6, 2, 8; 1998 MZ₁₅, 9, 3, 12; 1998 MA₁₆, 9, 3, 12; 1998 MB₁₆, 6, 2, 7; 1998 MC₁₆, 6, 2, 7; 1998 MD₁₆, 6, 2, 7; 1998 ME₁₆, 9, 3, 11; 1998 MF₁₆, 6, 2, 5; 1998 MG₁₆, 6, 2, 4; 1998 MH₁₆, 6, 2, 1; 1998 MJ₁₆, 6, 2, 1; 1998 MK₁₆, 6, 2, 1; 1998 ML₁₆, 8, 3, 6; 1998 MM₁₆, 9, 3, 6; 1998 MN₁₆, 6, 2, 1; 1998 MO₁₆, 6, 2, 1; 1998 MP₁₆, 6, 2, 1; 1998 MQ₁₆, 6, 2, 1; 1998 MR₁₆, 9, 3, 6; 1998 MS₁₆, 9, 3, 6; 1998 MT₁₆, 9, 3, 6; 1998 MU₁₆, 9, 3, 6; 1998 MV₁₆, 6, 2, 1; 1998 MW₁₆, 9, 3, 6; 1998 MX₁₆, 6, 2, 1; 1998 MY₁₆, 6, 2, 1; 1998 MZ₁₆, 6, 2, 1; 1998 MA₁₇, 6, 2, 1; 1998 MB₁₇, 6, 2, 1; 1998 MC₁₇, 9, 3, 6; 1998 MD₁₇, 9, 3, 6; 1998 ME₁₇, 6, 2, 1; 1998 MF₁₇, 9, 3, 6; 1998 MG₁₇, 12, 4, 30; 1998 MH₁₇, 6, 2, 1; 1998 MJ₁₇, 6, 2, 1; 1998 MK₁₇, 6, 2, 1; 1998 ML₁₇, 6, 2, 1; 1998 MM₁₇, 5, 2, 1; 1998 MO₁₇, 3, 1, 0; 1998 MS₁₇, 6, 2, 8; 1998 MT₁₇, 6, 2, 8; 1998 MU₁₇, 6, 2, 8; 1998 MV₁₇, 6, 2, 7; 1998 MW₁₇, 5, 2, 7; 1998 MX₁₇, 6, 2, 7; 1998 MY₁₇, 5, 2, 7; 1998 MZ_{17</}

6, 2, 7; 1998 MJ₃₆ *, 6, 2, 7; 1998 MK₃₆ *, 5, 2, 7; 1998 ML₃₆ *, 6, 2, 7; 1998 MM₃₆ *, 6, 2, 7; 1998 MN₃₆ *, 6, 2, 6; 1998 MO₃₆ *, 6, 2, 6; 1998 MP₃₆ *, 6, 2, 6; 1998 MQ₃₆ *, 6, 2, 6; 1998 MR₃₆ *, 6, 2, 6; 1998 MS₃₆ *, 6, 2, 6; 1998 MT₃₆ *, 6, 2, 6; 1998 MU₃₆ *, 6, 2, 6; 1998 MV₃₆ *, 6, 2, 6; 1998 MW₃₆ *, 6, 2, 6; 1998 MX₃₆ *, 6, 2, 6; 1998 MY₃₆ *, 6, 2, 5; 1998 MZ₃₆ *, 6, 2, 5; 1998 MA₃₇ *, 6, 2, 5; 1998 MB₃₇ *, 6, 2, 5; 1998 MC₃₇ *, 6, 2, 5; 1998 MD₃₇ *, 6, 2, 5; 1998 ME₃₇ *, 6, 2, 5; 1998 MF₄₄ *, 3, 1, 0; 1998 MG₄₄ *, 3, 1, 0; 1998 MH₄₆ *, 3, 1, 0; 1998 MI₄₆ *, 3, 1, 0; 1998 MJ₄₆ *, 3, 1, 0; 1998 MK₄₆ *, 3, 1, 0; 1998 ML₄₆ *, 3, 1, 0; 1998 MM₄₆ *, 3, 1, 0; 1998 MN₄₆ *, 3, 1, 0; 1998 MO₄₆ *, 3, 1, 0; 1998 MP₄₆ *, 3, 1, 0; 1998 MQ₄₆ *, 3, 1, 0; 1998 MR₄₆ *, 3, 1, 0; 1998 MS₄₆ *, 3, 1, 0; 1998 MT₄₆ *, 3, 1, 0; 1998 MU₄₆ *, 3, 1, 0; 1998 MV₄₆ *, 3, 1, 0; 1998 MW₄₆ *, 3, 1, 0; 1998 MX₄₆ *, 3, 1, 0; 1998 MY₄₆ *, 3, 1, 0; 1998 MZ₄₆ *, 3, 1, 0; 1998 NA₁ *, 6, 2, 10; 1998 NB₁ *, 6, 2, 11; 1998 NC₁ *, 6, 2, 11; 1998 ND₁ *, 6, 2, 11; 1998 NE₁ *, 6, 2, 11; 1998 NF₁ *, 6, 2, 11; 1998 NG₁ *, 6, 2, 11; 1998 NH₁ *, 6, 2, 11; 1998 NI₁ *, 6, 2, 12; 1998 NJ₁ *, 6, 2, 12; 1998 NK₁ *, 6, 2, 12; 1998 NL₁ *, 6, 2, 12; 1998 OM₁ *, 6, 2, 9; 1998 ON₁ *, 6, 2, 9; 1998 OY₁ *, 5, 2, 9; 1998 OZ₁ *, 6, 2, 9; 1998 OA₂ *, 6, 2, 9; 1998 OB₂ *, 6, 2, 9; 1998 OC₂ *, 6, 2, 9; 1998 OD₂ *, 6, 2, 9; 1998 OE₂ *, 9, 3, 11; 1998 OF₂ *, 6, 2, 10; 1998 OG₂ *, 6, 2, 10; 1998 OH₂ *, 12, 4, 25; 1998 OI₂ *, 6, 2, 10; 1998 OJ₄ *, 6, 2, 11; 1998 OK₄ *, 6, 2, 11; 1998 OL₄ *, 6, 2, 2; 1998 OM₄ *, 6, 2, 1; 1998 ON₄ *, 6, 2, 1; 1998 OO₄ *, 6, 2, 1; 1998 OP₄ *, 10, 2, 1; 1998 OX₄ *, 9, 2, 1; 2102 P-L, 3, 1, 0; 2581 P-L, 9, 3, 11; 2611 P-L, 3, 1, 0; 4584 P-L, 3, 1, 0; 4603 P-L, 3, 1, 0; 4695 P-L, 3, 1, 0; 4822 P-L, 3, 1, 0; 4896 P-L, 3, 1, 0; 6044 P-L, 3, 1, 0; 6585 P-L, 6, 2, 11; 6833 P-L, 3, 1, 0; 1145 T-1, 3, 1, 0; 1166 T-1, 3, 1, 0; 3074 T-1, 3, 1, 0; 4221 T-1, 6, 2, 884; 1158 T-2, 8, 3, 1516; 1251 T-2, 9, 3, 11; 3089 T-2, 3, 1, 0; 3305 T-2, 3, 1, 0; 4062 T-2, 3, 1, 0; 4159 T-2, 3, 1, 0; 3135 T-3, 6, 1, 0; 3150 T-3, 3, 1, 0; 3468 T-3, 3, 1, 0; 4102 T-3, 6, 2, 1065; (352), 1, 1, 0; (360), 3, 1, 0; (557), 3, 1, 0; (627), 3, 1, 0; (644), 6, 2, 5; (657), 3, 1, 0; (662), 3, 1, 0; (679), 3, 1, 0; (743), 3, 1, 0; (982), 6, 2, 7; (1056), 6, 2, 5; (1147), 3, 1, 0; (1194), 3, 1, 0; (1253), 3, 1, 0; (1260), 6, 2, 7; (1442), 3, 1, 0; (1687), 3, 1, 0; (1895), 6, 2, 6; (2016), 3, 1, 0; (2026), 2, 1, 0; (2222), 3, 1, 0; (2464), 3, 1, 0; (2499), 3, 1, 0; (2673), 3, 1, 0; (2674), 3, 1, 0; (2683), 3, 1, 0; (2841), 3, 1, 0; (2879), 3, 1, 0; (2959), 3, 1, 0; (2960), 9, 3, 12; (3170), 3, 1, 0; (3241), 9, 3, 11; (3251), 6, 2, 6; (3404), 2, 1, 0; (3528), 3, 1, 0; (3721), 3, 1, 0; (4235), 3, 1, 0; (4242), 3, 1, 0; (4497), 6, 2, 7; (4567), 6, 2, 12; (4761), 9, 3, 10; (4778), 6, 2, 6; (4779), 6, 2, 5; (4821), 6, 2, 4; (5141), 3, 1, 0; (5161), 6, 2, 12; (5294), 3, 1, 0; (5296), 3, 1, 0; (5386), 3, 1, 0; (5473), 3, 1, 0; (5553), 3, 1, 0; (5662), 3, 1, 0; (5687), 2, 1, 0; (5800), 3, 1, 0; (5943), 3, 1, 0; (6102), 3, 1, 0; (6127), 3, 1, 0; (6221), 3, 1, 0; (6236), 3, 1, 0; (6615), 3, 1, 0; (6666), 3, 1, 0; (6742), 3, 1, 0; (6778), 3, 1, 0; (6793), 6, 2, 1; (6815), 3, 1, 0; (6829), 3, 1, 0; (6883), 3, 1, 0; (6912), 3, 1, 0; (7341), 3, 1, 0; (7386), 6, 2, 7; (7417), 3, 1, 0; (7437), 6, 2, 6; (7438), 6, 2, 6; (7621), 5, 2, 6; (8807), 6, 2, 7; (8834), 3, 1, 0; (8836), 3, 1, 0; (8866), 3, 1, 0; (8877), 3, 1, 0; (8881), 4, 2, 5; (8952), 3, 1, 0; (8974), 6, 2, 6; [4592, 944, 371*, 1991/09/07–1998/07/28]

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Observer C. W. Hergenrother

1.2-m *f*/8 reflector + CCD

USNO-A1.0

1993 EL, 5, 2, 69; 1994 JS, 2, 1, 0; 1996 TL₆₆, 3, 2, 1; 1997 EX₂₅, 2, 1, 0; 1997 MW₁, 5, 2, 1; 1997 WS₂₂, 3, 1, 0; 1998 DV₉, 3, 1, 0; 1998 HK₁, 2, 1, 0; 1998 HL₁, 3, 1, 0; 1998 HK₃, 3, 1, 0; 1998 KV₂, 3, 1, 0; 1998 KM₃, 3, 1, 0; 1998 MQ, 3, 1, 0; 1998 MZ, 3, 1, 0; 1998 MA₂ *, 5, 2, 1; 1998 MB₂ *, 5, 2, 1; 1998 MC₂ *, 5, 2, 1; 1998 MD₂ *, 4, 2, 1; 1998 ME₂ *, 4, 2, 1; 1998 MF₂ *, 5, 2, 1; 1998 MS₂, 3, 1, 0; 1998 ML₄, 3, 1, 0; 1998 OP₄, 8, 3, 4; 1998 OX₄, 2, 1, 0; (3444), 3, 1, 0; [90, 25, 6*, 1998/05/20–1998/07/31]

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Observers B. W. Koehn, C. A. Onken, B. A. Skiff, W. D. Ferris

Measurers B. W. Koehn, E. Bowell, C. A. Onken

0.59-m LONEOS Schmidt + CCD

USNO-A1.0

1942 TB, 6, 1, 0; 1973 SQ₃, 6, 2, 6; 1975 SC₂, 3, 1, 0; 1976 YG₁, 3, 1, 0; 1977 TD₁, 6, 2, 29; 1978 NC, 3, 1, 0; 1978 NF, 3, 1, 0; 1978 SE₅, 6, 2, 6; 1981 EO₄, 3, 1, 0; 1981 EE₁₁, 3, 1, 0; 1981 ES₁₄, 5, 2, 16; 1981 EM₁₇, 2, 1, 0; 1981 EJ₂₈, 6, 2, 10; 1981 EN₃₀, 3, 1, 0; 1981 EU₃₈, 3, 1, 0; 1981 EH₄₈, 3, 1, 0; 1981 QE₂, 3, 1, 0; 1981 QV₂, 3, 1, 0; 1981 RF₂, 6, 2, 38; 1981 UW₂₁, 3, 1, 0; 1981 US₂₂, 3, 1, 0; 1981 WF₉, 3, 1, 0; 1982 JD₂, 6, 2, 57; 1982 RR, 3, 1, 0; 1982 VC₃, 3, 1, 0; 1983 BD, 2, 1, 0; 1984 HJ₁, 12, 3, 22; 1984 UD₃, 3, 1, 0; 1985 PC, 3, 1, 0; 1985 PS, 6, 2, 26; 1985 PT, 9, 3, 14; 1985 UG₅, 3, 1, 0; 1986 AE, 3, 1, 0; 1986 EP₅, 3, 1, 0; 1986 QQ₁, 3, 1, 0; 1986 RP₂, 3, 1, 0; 1986 TW₉, 3, 1, 0; 1987 JG, 9, 3, 27; 1987 SQ, 3, 1, 0; 1987 SC₂, 3, 1, 0; 1987 ST₁₇, 3, 1, 0; 1988 CK₄, 6, 2, 21; 1988 RO₂, 3, 1, 0; 1988 RO₄, 3, 1, 0; 1988 RF₉, 3, 1, 0; 1988 SB₂, 9, 3, 36; 1988 SH₂, 6, 2, 14; 1989 GN₄, 3, 1, 0; 1989 HA, 3,

1, 0; 1989 SR, 3, 1, 0; 1989 SC₄, 3, 1, 0; 1989 UX₅, 3, 1, 0; 1989 WC₃, 6, 2, 8; 1989 YA₅, 3, 1, 0; 1990 EC₁, 3, 1, 0; 1990 FL, 6, 2, 1; 1990 QR, 3, 1, 0; 1990 QB₁₉, 3, 1, 0; 1990 RV₃, 3, 1, 0; 1990 SG₁₂, 3, 1, 0; 1990 VE₁, 6, 2, 19; 1990 VE₆, 3, 1, 0; 1990 VU₈, 3, 1, 0; 1990 WB₄, 3, 1, 0; 1990 YA, 3, 1, 0; 1991 EN₂, 6, 2, 11; 1991 EJ₄, 3, 1, 0; 1991 GB₃, 3, 1, 0; 1991 GH₅, 3, 1, 0; 1991 KA, 6, 2, 23; 1991 LB₃, 3, 1, 0; 1991 NP₂, 3, 1, 0; 1991 OO, 3, 1, 0; 1991 OW, 3, 1, 0; 1991 PJ₃, 3, 1, 0; 1991 PL₅, 3, 1, 0; 1991 PD₁₀, 3, 1, 0; 1991 PO₁₁, 3, 1, 0; 1991 PQ₁₆, 3, 1, 0; 1991 PG₁₇, 6, 2, 14; 1991 RB₂₄, 6, 2, 16; 1991 RQ₂₇, 3, 1, 0; 1991 UA, 3, 1, 0; 1991 UH₃, 3, 1, 0; 1991 VR₁, 3, 1, 0; 1991 YO, 6, 2, 14; 1991 YV, 3, 1, 0; 1992 AR₁, 3, 1, 0; 1992 AV₁, 6, 2, 21; 1992 BD, 3, 1, 0; 1992 DU₅, 6, 2, 26; 1992 ED₁, 3, 1, 0; 1992 EG₆, 9, 3, 73; 1992 EV₁₃, 3, 1, 0; 1992 PJ, 6, 2, 16; 1992 RM, 3, 1, 0; 1992 UJ₆, 3, 1, 0; 1992 WC₃, 6, 2, 2; 1992 YS, 3, 1, 0; 1992 YY, 9, 3, 2; 1992 YJ₂, 6, 2, 19; 1993 BA, 3, 1, 0; 1993 BD₆, 3, 1, 0; 1993 BU₇, 3, 1, 0; 1993 BH₈, 6, 2, 12; 1993 CR₁, 3, 1, 0; 1993 FN₁, 3, 1, 0; 1993 FX₉, 3, 1, 0; 1993 FR₁₁, 3, 1, 0; 1993 FU₂₄, 3, 1, 0; 1993 FF₃₅, 3, 1, 0; 1993 FY₄₃, 6, 2, 22; 1993 KW₁, 3, 1, 0; 1993 LF₂, 3, 1, 0; 1993 OV, 3, 1, 0; 1993 OW₁, 3, 1, 0; 1993 TB, 3, 1, 0; 1993 TS₁, 3, 1, 0; 1994 AY₁₀, 3, 1, 0; 1994 CO₁, 3, 1, 0; 1994 FF, 3, 1, 0; 1994 GM₁, 3, 1, 0; 1994 GL₉, 3, 1, 0; 1994 GW₁₀, 3, 1, 0; 1994 JF, 6, 2, 1; 1994 JE₉, 3, 1, 0; 1994 PX, 3, 1, 0; 1994 PB₂, 3, 1, 0; 1994 PT₃₁, 3, 1, 0; 1994 SF₁₂, 6, 2, 14; 1994 TX₂, 3, 1, 0; 1994 UN₁, 6, 2, 3; 1994 UK₅, 3, 1, 0; 1994 UT₁₁, 3, 1, 0; 1994 WB₁, 3, 1, 0; 1994 WQ₃, 6, 2, 1; 1994 WC₄, 3, 1, 0; 1995 CS₁, 3, 1, 0; 1995 OS₁, 3, 1, 0; 1995 QS, 6, 2, 67; 1995 QD₂, 3, 1, 0; 1995 QE₃, 3, 1, 0; 1995 SU, 3, 1, 0; 1995 SA₃, 6, 2, 3; 1995 ST₄, 3, 1, 0; 1995 SH₂₆, 3, 1, 0; 1995 SB₂₇, 6, 2, 8; 1995 SQ₅₄, 6, 2, 2; 1995 UK₃, 3, 1, 0; 1995 UR₃, 6, 2, 18; 1995 UX₅, 3, 1, 0; 1995 UC₇, 3, 1, 0; 1995 UE₁₅, 3, 1, 0; 1995 UQ₁₆, 6, 2, 1; 1995 UB₂₁, 6, 2, 32; 1995 UK₂₈, 3, 1, 0; 1995 UB₄₅, 3, 1, 0; 1995 VF, 6, 2, 31; 1995 VK, 6, 2, 3; 1995 VU₁₈, 3, 1, 0; 1995 WN, 3, 1, 0; 1995 WY, 3, 1, 0; 1995 WT₂, 6, 2, 26; 1995 WJ₅, 9, 3, 27; 1995 XE₁, 6, 2, 2; 1995 XL₁, 3, 1, 0; 1995 YB, 3, 1, 0; 1995 YM, 3, 1, 0; 1995 YU, 9, 3, 22; 1995 YP₁, 3, 1, 0; 1996 AU, 3, 1, 0; 1996 AB₁, 6, 2, 14; 1996 AU₁, 9, 3, 23; 1996 AY₃, 3, 1, 0; 1996 BB, 6, 2, 12; 1996 BO₂, 3, 1, 0; 1996 BQ₃, 3, 1, 0; 1996 CG₁, 3, 1, 0; 1996 DV, 3, 1, 0; 1996 DW, 3, 1, 0; 1996 TC₁₀, 3, 1, 0; 1996 TD₁₅, 3, 1, 0; 1996 TS₂₅, 3, 1, 0; 1996 UM, 3, 1, 0; 1996 UB₁, 3, 1, 0; 1996 VT₄, 3, 1, 0; 1996 XH₁₉, 6, 2, 20; 1996 YB, 3, 1, 0; 1996 YG₁, 3, 1, 0; 1997 AS, 6, 2, 19; 1997 AJ₄, 6, 2, 26; 1997 AQ₅, 6, 2, 38; 1997 AW₅, 6, 2, 13; 1997 AC₇, 6, 2, 1; 1997 AK₇, 3, 1, 0; 1997 AO₇, 3, 1, 0; 1997 AS₁₂, 6, 2, 22; 1997 AK₁₃, 3, 1, 0; 1997 AX₁₇, 3, 1, 0; 1997 AG₂₁, 3, 1, 0; 1997 BN₃, 3, 1, 0; 1997 CB, 6, 2, 29; 1997 CR, 3, 1, 0; 1997 CW, 3, 1, 0; 1997 CC₁, 3, 1, 0; 1997 CG₁, 3, 1, 0; 1997 CN₅, 3, 1, 0; 1997 CA₂₀, 3, 1, 0; 1997 EL, 6, 2, 19; 1997 EY₂₀, 3, 1, 0; 1997 EQ₂₅, 3, 1, 0; 1997 GA₁₄, 3, 1, 0; 1997 GQ₂₇, 6, 2, 8; 1997 JE₁₅, 3, 1, 0; 1998 AV₉, 3, 1, 0; 1998 DS₉, 3, 1, 0; 1998 FB₁₁, 6, 2, 54; 1998 FA₁₆, 6, 2, 38; 1998 FU₃₆, 3, 1, 0; 1998 FG₄₃, 6, 2, 47; 1998 FF₄₇, 3, 1, 0; 1998 FE₄₉, 3, 1, 0; 1998 FJ₆₁, 3, 1, 0; 1998 FT₆₅, 3, 1, 0; 1998 FY₇₃, 3, 1, 0; 1998 FR₁₁₇, 3, 1, 0; 1998 FE₁₁₈, 3, 1, 0; 1998 FA₁₄₄, 3, 1, 0; 1998 GT₆, 3, 1, 0; 1998 GB₇, 6, 2, 1; 1998 GE₇, 6, 2, 1; 1998 GN₇, 6, 2, 1; 1998 GR₇, 6, 2, 1; 1998 GT₈, 3, 1, 0; 1998 GV₈, 3, 1, 0; 1998 GE₉, 3, 1, 0; 1998 GL₉, 6, 2, 1; 1998 HU₆, 3, 1, 0; 1998 HR₇, 6, 2, 16; 1998 HV₇, 3, 1, 0; 1998 HE₂₁, 3, 1, 0; 1998 HC₂₂, 3, 1, 0; 1998 HP₂₄, 3, 1, 0; 1998 HO₂₇, 9, 3, 36; 1998 HY₃₁, 3, 1, 0; 1998 HA₃₃, 3, 1, 0; 1998 HS₃₇, 3, 1, 0; 1998 HN₃₈, 3, 1, 0; 1998 HT₄₂, 3, 1, 0; 1998 HB₄₅, 3, 1, 0; 1998 HU₄₅, 3, 1, 0; 1998 HW₄₅, 6, 2, 10; 1998 HO₄₉, 3, 1, 0; 1998 HT₅₀, 3, 1, 0; 1998 HL₅₂, 3, 1, 0; 1998 HM₅₂, 9, 3, 19; 1998 HP₅₂, 6, 2, 19; 1998 HG₅₃, 9, 3, 31; 1998 HH₅₅, 9, 3, 31; 1998 HR₆₀, 6, 2, 10; 1998 HS₆₀, 3, 1, 0; 1998 HL₆₇, 9, 3, 31; 1998 HN₆₈, 3, 1, 0; 1998 HC₇₅, 3, 1, 0; 1998 HR₈₄, 3, 1, 0; 1998 HX₈₈, 3, 1, 0; 1998 HR₉₂, 3, 1, 0; 1998 HH₉₃, 9, 2, 23; 1998 HL₉₃, 3, 1, 0; 1998 HN₉₈, 3, 1, 0; 1998 HJ₁₀₀, 3, 1, 0; 1998 HR₁₀₁, 3, 1, 0; 1998 HU₁₀₁, 3, 1, 0; 1998 HF₁₀₂, 3, 1, 0; 1998 HB₁₀₃, 3, 1, 0; 1998 HM₁₁₄, 3, 1, 0; 1998 HN₁₁₅, 3, 1, 0; 1998 HR₁₁₅, 3, 1, 0; 1998 HL₁₁₇, 3, 1, 0; 1998 HL₁₂₀, 3, 1, 0; 1998 HQ₁₂₀, 3, 1, 0; 1998 HF₁₂₁, 3, 1, 0; 1998 HF₁₂₂, 3, 1, 0; 1998 HD₁₂₄, 3, 1, 0; 1998 HJ₁₂₄, 3, 1, 0; 1998 HO₁₂₄, 3, 1, 0; 1998 HX₁₂₄, 3, 1, 0; 1998 HY₁₂₄, 6, 2, 6; 1998 HG₁₂₅, 3, 1, 0; 1998 HT₁₂₅, 3, 1, 0; 1998 HU₁₂₅, 3, 1, 0; 1998 HW₁₂₅, 3, 1, 0; 1998 HV₁₂₉, 6, 2, 17; 1998 HA₁₃₃, 3, 1, 0; 1998 HH₁₄₇, 3, 1, 0; 1998 HA₁₄₈, 3, 1, 0; 1998 HF₁₄₈, 3, 1, 0; 1998 HK₁₄₈, 3, 1, 0; 1998 HN₁₄₈, 3, 1, 0; 1998 HP₁₄₈, 3, 1, 0; 1998 HY₁₄₈, 6, 2, 15; 1998 HB₁₄₉, 3, 1, 0; 1998 HF₁₄₉, 9, 3, 20; 1998 HL₁₄₉, 3, 1, 0; 1998 HD₁₅₁, 3, 1, 0; 1998 HF₁₅₁, 3, 1, 0; 1998 JA₁₂, 4, 51; 1998 JZ₁, 3, 1, 0; 1998 JF₂, 3, 1, 0; 1998 JS₂, 3, 1, 0; 1998 JA₃, 3, 1, 0; 1998 JE₃, 3, 1, 0; 1998 JC₄, 3, 1, 0; 1998 KE₁, 3, 1, 0; 1998 KS₁, 3, 1, 0; 1998 KU₁, 3, 1, 0; 1998 KG₂, 6, 2, 2; 1998 KK₂, 3, 1, 0; 1998 KL₂, 6, 2, 36; 1998 KQ₂, 6, 2, 19; 1998 KE₃, 3, 1, 0; 1998 KP₃, 3, 1, 0; 1998 KA₄, 9, 3, 72; 1998 KC₄, 3, 1, 0; 1998 KK₄, 3, 1, 0; 1998 KM₄, 2, 1, 0; 1998 KN₄, 3, 1, 0; 1998 KO₄, 6, 2, 4; 1998 KQ₄, 6, 2, 20; 1998 KS₄, 6, 2, 56; 1998 KU₄, 3, 1, 0; 1998 KB₅, 6, 2, 2; 1998 KC₅, 3, 1, 0; 1998 KN₆, 2, 1, 0; 1998 KO₆, 9, 3, 56; 1998 KU₆, 3, 1, 0; 1998 KV₆, 6, 2, 4; 1998 KY₆, 3, 1, 0; 1998 KW₇, 6, 2, 4; 1998 KM₈, 3, 1, 0; 1998 KR₈, 6, 2, 19; 1998

1, 0; 1998 KO₄₂, 9, 3, 60; 1998 KR₄₃, 3, 1, 0; 1998 KR₄₄, 6, 2, 3; 1998 KH₄₅, 6, 2, 3; 1998 KL₄₆, 3, 1, 0; 1998 KR₄₆, 3, 1, 0; 1998 KS₄₆, 3, 1, 0; 1998 KW₄₆, 3, 1, 0; 1998 KX₄₆, 3, 1, 0; 1998 KZ₄₆, 3, 1, 0; 1998 KC₄₇, 3, 1, 0; 1998 KK₄₇, 3, 1, 0; 1998 KV₄₈, 3, 1, 0; 1998 KW₄₈, 6, 2, 19; 1998 KX₄₈, 3, 1, 0; 1998 KF₄₉, 3, 1, 0; 1998 KS₄₉, 3, 1, 0; 1998 KA₅₀, 6, 2, 5; 1998 KD₅₀, 3, 1, 0; 1998 KH₅₀, 6, 2, 13; 1998 KR₅₀, 6, 1, 0; 1998 KV₅₀, 3, 1, 0; 1998 KW₅₀, 6, 2, 33; 1998 KB₅₁, 3, 1, 0; 1998 KD₅₁, 9, 3, 19; 1998 KE₅₁, 3, 1, 0; 1998 KG₅₁, 9, 3, 37; 1998 KQ₅₁, 6, 2, 11; 1998 KS₅₁, 6, 2, 11; 1998 KT₅₁, 6, 2, 11; 1998 KU₅₁, 6, 2, 30; 1998 KW₅₁, 12, 4, 41; 1998 KL₅₂, 3, 1, 0; 1998 KB₅₃, 3, 1, 0; 1998 KF₅₃, 3, 1, 0; 1998 KG₅₃, 3, 1, 0; 1998 KE₅₄, 3, 1, 0; 1998 KF₅₄, 9, 3, 31; 1998 KH₅₄, 3, 1, 0; 1998 KP₅₄, 3, 1, 0; 1998 KS₅₄, 3, 1, 0; 1998 KV₅₄, 9, 3, 28; 1998 KW₅₄, 6, 2, 41; 1998 KY₅₄, 3, 1, 0; 1998 KA₅₅, 3, 1, 0; 1998 KH₅₅, 3, 1, 0; 1998 KG₅₆, 3, 1, 0; 1998 KH₅₆, 15, 5, 4; 1998 KG₅₈, 3, 1, 0; 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(585), 3, 1, 0; (598), 3, 1, 0; (611), 3, 1, 0; (621), 3, 1, 0; (625), 3, 1, 0; (627), 3, 1, 0; (638), 3, 1, 0; (643), 3, 1, 0; (644), 3, 1, 0; (655), 3, 1, 0; (657), 3, 1, 0; (662), 3, 1, 0; (664), 3, 1, 0; (667), 9, 3, 4; (742), 3, 1, 0; (743), 3, 1, 0; (747), 3, 1, 0; (758), 3, 1, 0; (770), 3, 1, 0; (780), 6, 2, 19; (781), 3, 1, 0; (782), 3, 1, 0; (788), 3, 1, 0; (789), 6, 2, 1; (797), 3, 1, 0; (811), 3, 1, 0; (831), 6, 2, 19; (846), 3, 1, 0; (873), 6, 2, 15; (884), 3, 1, 0; (908), 6, 2, 12; (950), 6, 2, 1; (951), 6, 2, 8; (993), 3, 1, 0; (1056), 3, 1, 0; (1136), 3, 1, 0; (1149), 9, 3, 38; (1203), 3, 1, 0; (1206), 3, 1, 0; (1239), 3, 1, 0; (1251), 6, 2, 8; (1253), 6, 2, 14; (1281), 3, 1, 0; (1283), 3, 1, 0; (1322), 3, 1, 0; (1326), 3, 1, 0; (1338), 3, 1, 0; (1362), 6, 2, 19; (1371), 3, 1, 0; (1391), 9, 2, 14; (1399), 3, 1, 0; (1419), 9, 3, 28; (1449), 3, 1, 0; (1551), 3, 1, 0; (1559), 3, 1, 0; (1584), 6, 2, 7; (1589), 3, 1, 0; (1624), 3, 1, 0; (1626), 3, 1, 0; (1633), 6, 2, 8; (1646), 6, 2, 14; 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(2549), 3, 1, 0; (2550), 3, 1, 0; (2561), 3, 1, 0; (2604), 5, 2, 9; (2620), 3, 1, 0; (2642), 6, 2, 19; (2673), 6, 2, 22; (2677), 3, 1, 0; (2683), 3, 1, 0; (2686), 3, 1, 0; (2691), 3, 1, 0; (2729), 3, 1, 0; (2768), 3, 1, 0; (2800), 3, 1, 0; (2839), 3, 1, 0; (2841), 3, 1, 0; (2845), 3, 1, 0; (2853), 3, 1, 0; (2874), 3, 1, 0; (2879), 3, 1, 0; (2916), 3, 1, 0; (2934), 6, 2, 5; (2946), 3, 1, 0; (2960), 3, 1, 0; (2961), 9, 3, 17; (2965), 6, 2, 15; (2975), 12, 4, 28; (2988), 3, 1, 0; (3001), 3, 1, 0; (3022), 6, 2, 18; (3023), 3, 1, 0; (3028), 3, 1, 0; (3046), 6, 2, 21; (3073), 3, 1, 0; (3077), 3, 1, 0; (3086), 3, 1, 0; (3098), 3, 1, 0; (3121), 6, 2, 20; (3131), 3, 1, 0; (3164), 6, 2, 8; (3170),

6, 2, 22; (3222), 3, 1, 0; (3241), 6, 2, 8; (3247), 3, 1, 0; (3251), 6, 2, 8; (3264), 3, 1, 0; (3308), 6, 2, 1; (3311), 3, 1, 0; (3313), 3, 1, 0; (3315), 3, 1, 0; (3324), 3, 1, 0; (3355), 3, 1, 0; (3370), 9, 3, 20; (3385), 6, 2, 5; (3410), 3, 1, 0; (3423), 6, 2, 2; (3435), 3, 1, 0; (3440), 6, 2, 5; (3461), 6, 2, 2; (3492), 3, 1, 0; (3518), 6, 2, 1; (3534), 3, 1, 0; (3549), 3, 1, 0; (3569), 3, 1, 0; (3570), 3, 1, 0; (3573), 6, 2, 2; (3615), 6, 2, 9; (3633), 3, 1, 0; (3644), 3, 1, 0; (3661), 6, 2, 14; (3675), 3, 1, 0; (3687), 3, 1, 0; (3699), 6, 2, 3; (3716), 3, 1, 0; (3728), 6, 2, 1; (3731), 3, 1, 0; (3735), 3, 1, 0; (3737), 3, 1, 0; (3756), 3, 1, 0; (3758), 6, 2, 3; (3786), 3, 1, 0; (3796), 3, 1, 0; (3829), 3, 1, 0; (3875), 6, 2, 5; (3885), 3, 1, 0; (3895), 3, 1, 0; (3911), 3, 1, 0; (3913), 3, 1, 0; (3917), 3, 1, 0; (3918), 9, 3, 37; (3920), 3, 1, 0; (3944), 6, 1, 0; (3979), 9, 3, 22; (3981), 9, 3, 22; (3982), 12, 4, 28; (3986), 3, 1, 0; (4005), 3, 1, 0; (4021), 6, 1, 0; (4039), 3, 1, 0; (4056), 3, 1, 0; (4083), 3, 1, 0; (4099), 3, 1, 0; (4149), 6, 2, 19; (4174), 3, 1, 0; (4182), 3, 1, 0; (4183), 6, 2, 2; (4205), 3, 1, 0; (4224), 3, 1, 0; (4226), 3, 1, 0; (4235), 3, 1, 0; (4246), 3, 1, 0; (4271), 6, 2, 37; (4290), 3, 1, 0; (4316), 3, 1, 0; (4330), 3, 1, 0; (4337), 3, 1, 0; (4347), 6, 2, 14; (4359), 3, 1, 0; (4366), 3, 1, 0; (4374), 6, 2, 8; (4379), 3, 1, 0; (4395), 3, 1, 0; (4437), 6, 2, 3; (4459), 6, 2, 9; (4474), 3, 1, 0; (4478), 6, 2, 11; (4494), 3, 1, 0; (4497), 3, 1, 0; (4524), 3, 1, 0; (4562), 3, 1, 0; (4567), 3, 1, 0; (4572), 3, 1, 0; (4628), 6, 2, 28; (4679), 3, 1, 0; (4701), 3, 1, 0; (4723), 3, 1, 0; (4727), 3, 1, 0; (4732), 6, 2, 3; (4770), 3, 1, 0; (4774), 5, 2, 16; (4779), 6, 2, 2; (4794), 3, 1, 0; (4798), 3, 1, 0; (4800), 3, 1, 0; (4818), 6, 2, 3; (4840), 6, 2, 2; (4843), 3, 1, 0; (4912), 3, 1, 0; (4921), 3, 1, 0; (4962), 6, 2, 27; (4971), 3, 1, 0; (4992), 2, 1, 0; (5008), 3, 1, 0; (5009), 3, 1, 0; (5019), 6, 2, 26; (5021), 3, 1, 0; (5066), 3, 1, 0; (5093), 6, 2, 5; (5105), 3, 1, 0; (5113), 3, 1, 0; (5134), 3, 1, 0; (5136), 6, 2, 1; (5139), 3, 1, 0; (5141), 3, 1, 0; (5158), 6, 2, 22; (5161), 3, 1, 0; (5192), 3, 1, 0; (5221), 3, 1, 0; (5265), 3, 1, 0; (5281), 3, 1, 0; (5294), 3, 1, 0; (5296), 3, 1, 0; (5301), 3, 1, 0; (5319), 3, 1, 0; (5354), 6, 2, 11; (5365), 9, 3, 16; (5369), 3, 1, 0; (5386), 3, 1, 0; (5437), 3, 1, 0; (5472), 9, 3, 22; (5473), 3, 1, 0; (5490), 3, 1, 0; (5493), 3, 1, 0; (5501), 6, 2, 1; (5504), 3, 1, 0; (5515), 3, 1, 0; (5516), 3, 1, 0; (5524), 3, 1, 0; (5542), 3, 1, 0; (5545), 6, 2, 2; (5553), 3, 1, 0; (5588), 3, 1, 0; (5599), 3, 1, 0; (5607), 3, 1, 0; (5625), 3, 1, 0; (5687), 6, 2, 19; (5709), 6, 2, 23; (5729), 6, 2, 31; (5733), 3, 1, 0; (5749), 3, 1, 0; (5844), 3, 1, 0; (5857), 3, 1, 0; (5858), 3, 1, 0; (5894), 3, 1, 0; (5921), 3, 1, 0; (5924), 6, 2, 3; (5929), 3, 1, 0; (5943), 3, 1, 0; (5952), 3, 1, 0; (5960), 6, 2, 5; (5965), 3, 1, 0; (5985), 7, 3, 13; (6012), 3, 1, 0; (6016), 3, 1, 0; (6022), 3, 1, 0; (6023), 3, 1, 0; (6059), 3, 1, 0; (6077), 3, 1, 0; (6094), 3, 1, 0; (6127), 3, 1, 0; (6128), 3, 1, 0; (6134), 3, 1, 0; (6161), 3, 1, 0; (6210), 3, 1, 0; (6214), 3, 1, 0; (6232), 3, 1, 0; (6252), 3, 1, 0; (6279), 2, 1, 0; (6384), 3, 1, 0; (6493), 3, 1, 0; (6519), 3, 1, 0; (6537), 3, 1, 0; (6573), 3, 1, 0; (6600), 6, 2, 9; (6609), 3, 1, 0; (6615), 3, 1, 0; (6616), 2, 1, 0; (6633), 3, 1, 0; (6636), 3, 1, 0; (6655), 3, 1, 0; (6663), 3, 1, 0; (6667), 6, 2, 5; (6689), 3, 1, 0; (6698), 3, 1, 0; (6699), 3, 1, 0; (6711), 3, 1, 0; (6726), 6, 2, 26; (6741), 9, 2, 28; (6742), 6, 2, 8; (6759), 6, 2, 11; (6778), 3, 1, 0; (6789), 3, 1, 0; (6806), 3, 1, 0; (6810), 3, 1, 0; (6815), 3, 1, 0; (6829), 3, 1, 0; (6833), 3, 1, 0; (6836), 6, 2, 2; (6839), 6, 2, 2; (6854), 3, 1, 0; (6869), 3, 1, 0; (6892), 3, 1, 0; (6928), 3, 1, 0; (7140), 3, 1, 0; (7189), 6, 2, 5; (7247), 3, 1, 0; (7330), 3, 1, 0; (7357), 3, 1, 0; (7398), 3, 1, 0; (7430), 3, 1, 0; (7435), 3, 1, 0; (7453), 6, 2, 16; (7470), 3, 1, 0; (7478), 3, 1, 0; (7481), 6, 2, 1; (7488), 3, 1, 0; (7494), 3, 1, 0; (7515), 3, 1, 0; (7522), 3, 1, 0; (7530), 3, 1, 0; (7562), 3, 1, 0; (7564), 3, 1, 0; (7570), 3, 1, 0; (7578), 3, 1, 0; (7579), 3, 1, 0; (7590), 6, 2, 12; (7600), 3, 1, 0; (7623), 6, 2, 3; (7627), 9, 3, 22; (7647), 3, 1, 0; (7648), 3, 1, 0; (7657), 6, 2, 8; (7658), 3, 1, 0; (7660), 3, 1, 0; (7707), 5, 2, 9; (7718), 6, 2, 3; (7728), 3, 1, 0; (7752), 3, 1, 0; (7774), 2, 1, 0; (7776), 6, 2, 11; (7821), 3, 1, 0; (7838), 3, 1, 0; (7855), 2, 1, 0; (7889), 3, 1, 0; (7946), 9, 3, 28; (8205), 3, 1, 0; (8654), 3, 1, 0; (8777), 3, 1, 0; (8823), 6, 2, 2; (8827), 6, 2, 15; (8833), 6, 2, 5; (8836), 3, 1, 0; (8837), 3, 1, 0; (8838), 3, 1, 0; (8861), 6, 2, 5; (8862), 3, 1, 0; (8868), 3, 1, 0; (8871), 3, 1, 0; (8885), 3, 1, 0; (8886), 3, 1, 0; (8888), 3, 1, 0; (8895), 3, 1, 0; (8908), 3, 1, 0; (8911), 3, 1, 0; (8936), 9, 3, 19; (8949), 3, 1, 0; (8954), 3, 1, 0; (8965), 3, 1, 0; (8968), 3, 1, 0; (8973), 3, 1, 0; [4293, 1039, 50*, 1998/03/08-1998/07/26]

701 Sierra Vista

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

Observers D. Healy, J. Medkeff

Measurer J. Medkeff

0.4-m Schmidt-Cassegrain + CCD

GSC

1981 EE₄₇, 2, 1, 0; 1990 EC₁, 1, 1, 0; 1990 RD₆, 2, 1, 0; 1992 US₁, 1, 1, 0; 1993 CA₁, 2, 1, 0; 1994 PO₂₅, 3, 1, 0; 1996 VH₄, 2, 1, 0; 1997 AP₁₂, 2, 1, 0; 1997 BY₄, 2, 1, 0; (2815), 2, 1, 0; [19, 10, 0*, 1998/05/28-1998/06/25]

703 Catalina Sky Survey

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

Observers S. M. Larson, T. B. Spahr, J. W. Brownlee, C. W. Hergenrother,
J. L. Levine

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

0.41-m $f/3$ Schmidt + CCD

USNO-A1.0, GSC

1979 QM₁, 3, 1, 0; 1990 TV₁₂, 3, 1, 0; 1998 KV₅₄, 3, 1, 0; 1998 LB₃, 4, 1, 0; 1998 MS₂ *, 8, 2, 1; 1998 MK₄ *, 4, 2, 1; 1998 ML₄ *, 5, 2, 1; 1998 MU₁₃ *, 5, 2, 1; 1998 MH₁₄ *, 5, 2, 2; 1998 MJ₁₄ *, 4, 2, 1; 1998 MU₂₄, 3, 1, 0; 1998 MY₃₇ *, 5, 2, 1; 1998 MD₄₆ *, 4, 1, 0; (822), 3, 1, 0; (1311), 3, 1, 0; (2109), 2, 1, 0; (7493), 3, 1, 0; [67, 17, 8*, 1998/05/27-1998/06/27]

704 Lincoln Laboratory Experimental Test System, New Mexico

H. Viggh, MIT Lincoln Laboratory, 244 Wood Street, Lexington, MA 02173,

U.S.A. [viggh@ll.mit.edu]

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

Measurers J. Stuart, H. Viggh

1.0-m $f/2.15$ reflector + CCD

USNO-SA1.0

1953 TA₁, 5, 1, 0; 1964 YJ, 10, 2, 6; 1966 CM, 4, 1, 0; 1971 UT₁, 4, 1, 0; 1972 AU, 5, 1, 0; 1972 PA, 5, 1, 0; 1974 QF, 13, 3, 32; 1975 SC₂, 5, 1, 0; 1975 TE, 9, 2, 2; 1975 YD, 5, 1, 0; 1976 QK₁, 5, 1, 0; 1976 UB₁₆, 5, 1, 0; 1977 DD₁, 5, 1, 0; 1977 DL₄, 5, 1, 0; 1977 ED₁, 5, 1, 0; 1977 QD₃, 4, 1, 0; 1977 RL₇, 9, 2, 6; 1978 PV₃, 10, 2, 2; 1978 RU, 3, 1, 0; 1978 RX₁, 4, 1, 0; 1978 SE₁, 5, 1, 0; 1978 SH₃, 3, 1, 0; 1978 SF₅, 5, 1, 0; 1978 VD₄, 7, 2, 2; 1978 VH₄, 5, 1, 0; 1978 VF₅, 5, 1, 0; 1979 KO₁, 4, 1, 0; 1979 MP₁, 8, 2, 2; 1979 MM₃, 5, 1, 0; 1979 MA₄, 14, 3, 32; 1979 MM₄, 5, 1, 0; 1979 XJ, 9, 2, 2; 1980 DN, 10, 2, 2; 1980 KE, 4, 1, 0; 1980 PV₁, 10, 2, 2; 1980 RL₂, 4, 1, 0; 1980 TE₇, 10, 2, 6; 1980 UL, 10, 2, 4; 1980 VG, 13, 3, 27; 1981 DG₂, 5, 1, 0; 1981 EP₁, 10, 2, 19; 1981 EJ₄, 5, 1, 0; 1981 EJ₅, 5, 1, 0; 1981 ET₅, 4, 1, 0; 1981 EW₇, 5, 1, 0; 1981 EB₉, 4, 1, 0; 1981 EU₉, 5, 1, 0; 1981 EC₁₀, 8, 2, 2; 1981 EE₁₁, 4, 1, 0; 1981 EG₁₂, 3, 1, 0; 1981 ES₁₂, 9, 2, 6; 1981 EL₁₃, 4, 1, 0; 1981 EQ₁₃, 3, 1, 0; 1981 EV₁₃, 5, 1, 0; 1981 ES₁₄, 4, 1, 0; 1981 ED₁₆, 5, 1, 0; 1981 EP₁₆, 2, 1, 0; 1981 EM₁₇, 4, 1, 0; 1981 EK₂₀, 3, 1, 0; 1981 EB₂₂, 5, 1, 0; 1981 EZ₂₂, 5, 1, 0; 1981 EM₂₃, 10, 1, 0; 1981 EN₂₄, 5, 1, 0; 1981 EB₂₅, 4, 1, 0; 1981 EK₂₆, 8, 2, 5; 1981 EU₂₇, 20, 1, 0; 1981 EJ₂₈, 8, 2, 46; 1981 ER₂₉, 5, 1, 0; 1981 EN₃₀, 5, 1, 0; 1981 EO₃₀, 5, 1, 0; 1981 EQ₃₀, 8, 2, 26; 1981 EG₃₁, 5, 1, 0; 1981 EN₄₂, 3, 1, 0; 1981 ER₄₅, 10, 1, 0; 1981 EH₄₈, 3, 1, 0; 1981 JO, 5, 1, 0; 1981 QV₂, 5, 1, 0; 1981 RF₂, 5, 1, 0; 1981 SE₉, 4, 1, 0; 1981 UL₂₉, 5, 1, 0; 1981 WF₉, 9, 2, 15; 1982 BU, 9, 2, 6; 1982 JD₂, 10, 2, 9; 1982 RK, 4, 1, 0; 1982 SC, 10, 2, 26; 1982 TQ₂, 4, 1, 0; 1982 UE₂, 9, 2, 2; 1982 UU₅, 14, 3, 32; 1982 UV₆, 9, 2, 4; 1982 VY₃, 4, 1, 0; 1983 BD, 4, 1, 0; 1983 RB₂, 4, 1, 0; 1983 TE₁, 8, 2, 27; 1984 BS, 12, 3, 27; 1984 HJ₁, 4, 1, 0; 1984 HM₁, 5, 1, 0; 1984 MR, 10, 2, 6; 1984 SE₆, 4, 1, 0; 1984 UW, 13, 3, 32; 1985 PC, 10, 2, 2; 1985 PQ, 8, 2, 2; 1985 PS, 5, 1, 0; 1985 PA₁, 5, 1, 0; 1985 RP, 3, 1, 0; 1985 UK₃, 4, 1, 0; 1985 UG₅, 4, 1, 0; 1985 VE, 3, 1, 0; 1985 VK, 14, 3, 27; 1985 AE, 5, 1, 0; 1986 CB, 5, 1, 0; 1986 EP₅, 5, 1, 0; 1986 PX, 8, 2, 2; 1986 QN, 9, 2, 2; 1986 QF₁, 15, 1, 0; 1986 QR₂, 5, 1, 0; 1986 QU₂, 3, 1, 0; 1986 RP₂, 5, 1, 0; 1986 TW₉, 4, 1, 0; 1987 BR₁, 10, 2, 2; 1987 BZ₁, 5, 1, 0; 1987 CG, 10, 2, 2; 1987 DO, 3, 1, 0; 1987 DD₆, 8, 2, 21; 1987 KF₁, 10, 2, 85; 1987 QF₃, 8, 2, 2; 1987 QE₇, 3, 1, 0; 1987 RB₁, 12, 3, 32; 1987 RG₁, 7, 2, 2; 1987 SD₄, 5, 1, 0; 1987 SS₁₇, 4, 1, 0; 1988 CT₅, 5, 1, 0; 1988 CF₇, 10, 2, 2; 1988 CO₇, 13, 3, 32; 1988 PP₂, 4, 1, 0; 1988 PQ₂, 5, 1, 0; 1988 QY, 7, 2, 6; 1988 RG₁, 7, 2, 6; 1988 RM₃, 5, 1, 0; 1988 RZ₅, 5, 1, 0; 1988 RK₉, 8, 2, 6; 1988 RX₁₀, 5, 1, 0; 1988 RX₁₂, 4, 1, 0; 1988 SB₂, 5, 1, 0; 1988 SM₂, 4, 1, 0; 1988 TG₅, 4, 1, 0; 1988 UP, 6, 2, 2; 1988 VH₂, 10, 2, 28; 1988 VL₂, 8, 2, 2; 1988 VP₅, 12, 3, 27; 1988 XR₁, 3, 1, 0; 1989 AG₇, 5, 1, 0; 1989 CG₁, 2, 1, 0; 1989 GM, 10, 2, 6; 1989 GJ₄, 9, 2, 2; 1989 HA, 5, 1, 0; 1989 QH, 9, 2, 21; 1989 SR, 4, 1, 0; 1989 SZ₁, 4, 1, 0; 1989 SV₂, 4, 1, 0; 1989 SC₄, 5, 1, 0; 1989 SA₁₀, 3, 1, 0; 1989 TP₇, 4, 1, 0; 1989 UL, 2, 1, 0; 1989 UA₁, 5, 1, 0; 1989 UU₅, 5, 1, 0; 1989 WZ₁, 3, 1, 0; 1989 WG₄, 9, 2, 2; 1989 WK₄, 10, 2, 2; 1989 YC, 4, 1, 0; 1990 AD, 10, 2, 2; 1990 EL₈, 4, 1, 0; 1990 HE, 3, 1, 0; 1990 HJ, 5, 1, 0; 1990 HY, 4, 1, 0; 1990 KD, 5, 1, 0; 1990 KR, 20, 4, 65; 1990 KD₁, 19, 4, 65; 1990 OY₁, 5, 1, 0; 1990 QR, 5, 1, 0; 1990 QF₂, 15, 2, 26; 1990 QZ₅, 5, 1, 0; 1990 QU₇, 10, 2, 15; 1990 QX₈, 3, 1, 0; 1990 QW₉, 10, 2, 6; 1990 QZ₁₇, 9, 2, 6; 1990 RD₅, 7, 2, 2; 1990 SZ₈, 8, 2, 2; 1990 SU₅, 7, 2, 2; 1990 SU₁₅, 4, 1, 0; 1990 SL₂₈, 9, 2, 2; 1990 TV₁₂, 8, 2, 6; 1990 UJ₂, 14, 3, 32; 1990 UU₃, 3, 1, 0; 1990 UB₄, 3, 1, 0; 1990 VL₆, 9, 2, 6; 1990 VH₁₂, 5, 1, 0; 1990 WM₁, 5, 1, 0; 1990 WW₁, 5, 1, 0; 1990 WK₂, 4, 1, 0; 1990 WB₄, 5, 1, 0; 1990 WS₄, 9, 2, 2; 1990 XU, 15, 3, 27; 1990 YA, 5, 1, 0; 1991 AG₂, 9, 2, 6; 1991 AY₂, 10, 2, 10; 1991 BH₁, 14, 3, 27; 1991 CX, 4, 1, 0; 1991 CE₁, 9, 2, 2; 1991 EM₁, 5, 1, 0; 1991 EF₂, 9, 2, 6; 1991 FS, 3, 1, 0; 1991 FL₄, 9, 1, 0; 1991 GU₃, 5, 1, 0; 1991 GV₃, 15, 3, 22; 1991 GY₄, 5, 1, 0; 1991 GC₇, 4, 1, 0; 1991 GL₇, 5, 1, 0; 1991 GP₇, 4, 1, 0; 1991 JC, 9, 2, 1; 1991 JD, 10, 2, 1; 1991 JF, 4, 1, 0; 1991 KA, 5, 1, 0; 1991 LV₂, 4, 1, 0; 1991 NP₂, 5, 1, 0; 1991 NU₃, 5, 1, 0; 1991 NB₄, 2, 1, 0; 1991 PB, 10, 2, 2; 1991 PG₁, 4, 1, 0; 1991 PQ₂, 8, 2, 2; 1991 PL₅, 4, 1, 0; 1991 PX₆, 4, 1, 0; 1991 PG₁₁, 5, 1, 0; 1991 PT₁₄, 8, 2, 2; 1991 PJ₁₅, 4, 1, 0; 1991 PI₁₆, 9, 2, 2; 1991 PU₁₆, 4, 1, 0; 1991 PG₁₇, 5, 1, 0; 1991 PH₁₈, 10, 2, 65; 1991 RO₂, 5, 1, 0; 1991 RA₄, 9, 2, 6; 1991 RD₄, 9, 2, 2; 1991 RU₈, 5, 1, 0; 1991 RP₉, 15, 3, 59; 1991 RQ₉, 4, 1, 0; 1991 RN₁₁, 3, 1, 0; 1991 RK₁₅, 5, 1, 0; 1991 RM₁₅, 10, 2, 2; 1991 RV₁₇, 4, 1, 0; 1991 RY₂₁, 9, 2, 25; 1991 RP₂₃, 8, 2,

24; 1991 RB₂₄, 19, 4, 27; 1991 RD₂₄, 10, 2, 2; 1991 RE₂₅, 5, 1, 0; 1991 RC₂₇, 5, 1, 0; 1991 RQ₂₇, 5, 1, 0; 1991 RF₂₉, 3, 1, 0; 1991 SZ, 4, 1, 0; 1991 SE₂, 10, 2, 2; 1991 TY, 4, 1, 0; 1991 TX₂, 9, 2, 21; 1991 TD₄, 4, 1, 0; 1991 TL₁₃, 13, 3, 30; 1991 UG₃, 13, 3, 32; 1991 UH₃, 5, 1, 0; 1991 UL₃, 9, 2, 9; 1991 US₃, 9, 2, 56; 1991 UB₄, 10, 2, 2; 1991 UJ₄, 14, 3, 27; 1991 VR₁, 9, 2, 2; 1991 VV₁, 10, 2, 6; 1991 VE₂, 5, 1, 0; 1991 VU₅, 8, 2, 21; 1991 VW₅, 5, 1, 0; 1991 VH₆, 5, 1, 0; 1991 VJ₆, 5, 1, 0; 1991 VL₆, 4, 1, 0; 1991 VZ₈, 5, 1, 0; 1991 VY₁₂, 10, 2, 3; 1991 XD, 8, 2, 1; 1991 XU, 3, 1, 0; 1991 YO, 5, 1, 0; 1991 YV, 8, 2, 2; 1992 AE₁, 3, 1, 0; 1992 AT₃, 15, 3, 7; 1992 BD, 4, 1, 0; 1992 CZ₁, 5, 1, 0; 1992 CP₂, 8, 2, 2; 1992 DW₅, 4, 1, 0; 1992 DX₅, 3, 1, 0; 1992 DL₇, 9, 2, 2; 1992 DO₇, 4, 1, 0; 1992 DQ₇, 4, 1, 0; 1992 DN₈, 4, 1, 0; 1992 DD₁₀, 5, 1, 0; 1992 EG₄, 4, 1, 0; 1992 ER₄, 4, 1, 0; 1992 EV₄, 15, 3, 65; 1992 EX₈, 5, 1, 0; 1992 EW₉, 5, 1, 0; 1992 EY₁₁, 5, 1, 0; 1992 EQ₁₄, 16, 4, 32; 1992 EX₂₅, 9, 2, 4; 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1993 FK₂₅, 7, 2, 2; 1993 FX₂₆, 3, 1, 0; 1993 FZ₂₆, 5, 1, 0; 1993 FQ₃₂, 4, 1, 0; 1993 FR₃₄, 5, 1, 0; 1993 FB₃₅, 5, 1, 0; 1993 FF₃₅, 10, 2, 1; 1993 FH₃₆, 10, 2, 6; 1993 FK₃₇, 15, 3, 30; 1993 FF₄₀, 5, 1, 0; 1993 FN₄₀, 10, 2, 1; 1993 FC₄₂, 3, 1, 0; 1993 FB₄₄, 5, 1, 0; 1993 FZ₄₄, 5, 1, 0; 1993 FL₈₂, 5, 1, 0; 1993 HZ₅, 4, 1, 0; 1993 LE, 5, 1, 0; 1993 LF₂, 9, 2, 2; 1993 OD, 5, 1, 0; 1993 OV, 10, 2, 2; 1993 OZ₂, 13, 3, 32; 1993 OU₇, 4, 1, 0; 1993 OR₉, 5, 1, 0; 1993 OB₁₃, 15, 3, 27; 1993 PB₇, 8, 2, 25; 1993 QQ₄, 5, 1, 0; 1993 RX₃, 10, 2, 2; 1993 SQ₁₄, 9, 2, 6; 1993 TA₁₅, 5, 1, 0; 1994 AS, 5, 1, 0; 1994 AB₈, 4, 1, 0; 1994 AY₁₀, 5, 1, 0; 1994 AK₁₆, 15, 2, 26; 1994 BY, 4, 1, 0; 1994 CL, 4, 1, 0; 1994 CD₈, 4, 1, 0; 1994 CV₉, 5, 1, 0; 1994 CX₁₂, 5, 1, 0; 1994 CL₁₈, 9, 2, 28; 1994 ER, 3, 1, 0; 1994 EL₂, 4, 1, 0; 1994 EC₅, 5, 1, 0; 1994 EO₆, 4, 1, 0; 1994 FZ₁₅, 3, 27; 1994 GA₁, 4, 1, 0; 1994 GD₉, 4, 1, 0; 1994 GW₁₀, 5, 1, 0; 1994 JB, 5, 1, 0; 1994 JQ, 5, 1, 0; 1994 JU₈, 15, 3, 57; 1994 JE₉, 9, 2, 2; 1994 LJ₁, 5, 1, 0; 1994 NC, 10, 2, 6; 1994 NR₁, 5, 1, 0; 1994 NW₁, 14, 3, 27; 1994 PX, 9, 2, 6; 1994 PH₁, 20, 4, 85; 1994 PK₁, 4, 1, 0; 1994 PZ₁, 3, 1, 0; 1994 PE₃, 4, 1, 0; 1994 PU₄, 9, 2, 9; 1994 PK₇, 3, 1, 0; 1994 PQ₁₁, 8, 2, 2; 1994 PQ₁₄, 4, 1, 0; 1994 PV₁₆, 10, 2, 25; 1994 PT₁₉, 5, 1, 0; 1994 PW₂₀, 11, 3, 27; 1994 PR₂₇, 4, 1, 0; 1994 PW₃₁, 4, 1, 0; 1994 PD₃₈, 3, 1, 0; 1994 PG₃₉, 5, 1, 0; 1994 RQ, 4, 1, 0; 1994 RL₁, 4, 1, 0; 1994 RU₁, 9, 2, 389; 1994 SF₁₂, 4, 1, 0; 1994 TP, 7, 2, 2; 1994 TR₁, 5, 1, 0; 1994 UN₁, 5, 1, 0; 1994 UJ₁₁, 4, 1, 0; 1994 UT₁₁, 5, 1, 0; 1994 VR₆, 9, 2, 2; 1994 VT₆, 4, 1, 0; 1994 WB₁, 10, 2, 2; 1994 WC₄, 5, 1, 0; 1994 YF, 9, 2, 2; 1995 CS₁, 8, 2, 4; 1995 OA, 5, 1, 0; 1995 ON₄, 3, 1, 0; 1995 OC₈, 14, 3, 24; 1995 PK, 10, 2, 2; 1995 QR, 9, 2, 30; 1995 QS, 9, 2, 55; 1995 QH₂, 5, 1, 0; 1995 QE₃, 8, 2, 9; 1995 QJ₃, 3, 1, 0; 1995 QT₃, 8, 2, 19; 1995 QW₃, 4, 1, 0; 1995 QP₁₀, 3, 1, 0; 1995 SO, 4, 1, 0; 1995 SU, 4, 1, 0; 1995 SB₁, 4, 1, 0; 1995 SN₃, 9, 2, 2; 1995 SP₃, 18, 4, 32; 1995 SQ₃, 9, 2, 2; 1995 SX₄, 4, 1, 0; 1995 SZ₃, 5, 1, 0; 1995 ST₄, 10, 2, 6; 1995 SS₅, 4, 1, 0; 1995 SU₁₅, 9, 2, 4; 1995 SV₁₆, 19, 4, 12; 1995 SD₂₄, 4, 1, 0; 1995 SH₂₆, 10, 2, 9; 1995 SR₂₉, 4, 1, 0; 1995 SV₄₃, 9, 2, 17; 1995 SK₅₁, 5, 1, 0; 1995 SW₅₂, 5, 1, 0; 1995 SV₅₃, 3, 1, 0; 1995 SQ₅₄, 4, 1, 0; 1995 TD, 7, 2, 6; 1995 TX, 5, 1, 0; 1995 TC₈, 8, 2, 2; 1995 UP₃, 4, 1, 0; 1995 UD₄, 4, 1, 0; 1995 UN₄, 10, 2, 2; 1995 UP₄, 10, 2, 2; 1995 UH₅, 14, 3, 12; 1995 UC₆, 5, 1, 0; 1995 UW₆, 9, 2, 2; 1995 UC₇, 2, 1, 0; 1995 UW₈, 5, 1, 0; 1995 UC₉, 5, 1, 0; 1995 UQ₁₆, 10, 2, 2; 1995 UV₁₆, 5, 1, 0; 1995 UQ₄₄, 4, 1, 0; 1995 UX₄₄, 4, 1, 0; 1995 VK, 5, 1, 0; 1995 VV, 5, 1, 0; 1995 VT₁, 5, 1, 0; 1995 VG₁₃, 5, 1, 0; 1995 WA, 4, 1, 0; 1995 WH, 4, 1, 0; 1995 WY, 5, 1, 0; 1995 WT₂, 5, 1, 0; 1995 WV₂, 4, 1, 0; 1995 WW₂, 5, 1, 0; 1995 WX₄, 4, 1, 0; 1995 WJ₅, 5, 1, 0; 1995 WN₅, 10, 2, 2; 1995 WO₈, 10, 2, 6; 1995 WO₄₂, 5, 1, 0; 1995 XE₁, 10, 2, 2; 1995 XJ₁, 4, 1, 0; 1995 XL₁, 4, 1, 0; 1995 YB, 5, 1, 0; 1995 YP, 9, 2, 30; 1995 YU, 4, 1, 0; 1995 YB₁, 4, 1, 0; 1995 YY₄, 7, 2, 2; 1996 AD₂, 8, 2, 2; 1996 BD₂, 8, 2, 6; 1996 BQ₃, 8, 2, 2; 1996 BN₆, 9, 2, 2; 1996 GE₁₉, 5, 1, 0; 1996 RO₄, 5, 1, 0; 1996 RG₅, 4, 1, 0; 1996 SA₁, 15, 3, 29; 1996 SH₆, 3, 1, 0; 1996 TL₁₀, 3, 1, 0; 1996 TG₁₃, 5, 1, 0; 1996 TF₁₈, 8, 2, 1; 1996 TS₁₈, 10, 2, 10;

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0; 1997 AX₆, 3, 1, 0; 1997 AC₇, 4, 1, 0; 1997 AH₇, 9, 2, 6; 1997 AK₇, 5, 1, 0; 1997 AL₇, 9, 2, 2; 1997 AS₁₂, 4, 1, 0; 1997 AK₁₃, 10, 2, 2; 1997 AS₁₆, 5, 1, 0; 1997 AA₁₈, 9, 2, 5; 1997 AW₁₈, 8, 2, 2; 1997 AM₁₉, 10, 2, 2; 1997 AZ₂₁, 5, 1, 0; 1997 AQ₂₂, 10, 2, 2; 1997 BG₅, 1, 0; 1997 BO₁, 5, 1, 0; 1997 BR₁, 5, 1, 0; 1997 BD₂, 8, 2, 6; 1997 BN₃, 8, 2, 9; 1997 BU₃, 10, 2, 2; 1997 BV₄, 5, 1, 0; 1997 BY₄, 20, 4, 32; 1997 BS₆, 4, 1, 0; 1997 BF₇, 9, 2, 21; 1997 BV₈, 10, 2, 2; 1997 BC₉, 8, 2, 2; 1997 BD₉, 9, 2, 2; 1997 CB₄, 4, 1, 0; 1997 CR₇, 7, 2, 29; 1997 CR₁, 5, 1, 0; 1997 CV₁, 8, 2, 2; 1997 CF₃, 4, 1, 0; 1997 CH₄, 4, 1, 0; 1997 CN₅, 3, 1, 0; 1997 CQ₁₁, 5, 1, 0; 1997 CB₁₃, 10, 2, 2; 1997 CK₁₃, 7, 2, 2; 1997 CN₁₃, 10, 2, 6; 1997 CU₁₉, 8, 2, 2; 1997 CZ₁₉, 4, 1, 0; 1997 CA₂₀, 5, 1, 0; 1997 CC₂₀, 4, 1, 0; 1997 CE₂₀, 9, 2, 2; 1997 CF₂₂, 10, 2, 2; 1997 CK₂₂, 5, 1, 0; 1997 DG₁₈, 4, 32; 1997 EK₆, 5, 1, 0; 1997 EQ₁₇, 10, 2, 4; 1997 ES₄₀, 4, 1, 0; 1997 FC₈, 8, 2, 6; 1997 FQ₄, 10, 2, 2; 1997 GO₁, 16, 4, 32; 1997 GD₂₀, 9, 2, 2; 1997 GO₂₄, 5, 1, 0; 1997 GX₂₄, 9, 2, 2; 1997 GQ₂₇, 2, 1, 0; 1997 HW₈, 2, 1, 0; 1997 HE₁₄, 4, 1, 0; 1997 XY₃, 4, 1, 0; 1997 XD₉, 5, 1, 0; 1998 AU₉, 10, 2, 21; 1998 AV₉, 10, 2, 9; 1998 BJ₂₆, 10, 2, 1; 1998 BK₂₆, 13, 3, 33; 1998 CZ₁, 4, 1, 0; 1998 CK₅, 3, 1, 0; 1998 DJ₇, 4, 1, 0; 1998 DF₉, 5, 1, 0; 1998 DJ₁₀, 3, 1, 0; 1998 DJ₁₁, 3, 1, 0; 1998 DV₁₁, 5, 1, 0; 1998 DZ₁₂, 3, 1, 0; 1998 DU₁₃, 5, 1, 0; 1998 DB₁₄, 13, 3, 7; 1998 DF₁₄, 10, 2, 1; 1998 DE₁₆, 3, 1, 0; 1998 DX₁₇, 5, 1, 0; 1998 DF₂₀, 4, 1, 0; 1998 DU₂₀, 10, 3, 12; 1998 DA₃₃, 9, 2, 7; 1998 DU₃₃, 3, 1, 0; 1998 DX₃₃, 3, 1, 0; 1998 DY₃₃, 8, 2, 3; 1998 DA₃₄, 3, 1, 0; 1998 DB₃₄, 7, 2, 83; 1998 DH₃₄, 3, 1, 0; 1998 DF₃₄, 3, 1, 0; 1998 DH₃₄, 8, 2, 24; 1998 DN₃₄, 3, 1, 0; 1998 DT₃₄, 9, 2, 20; 1998 DH₃₅, 7, 2, 23; 1998 DB₃₆, 9, 2, 3; 1998 ED₉, 2, 26; 1998 EP₁, 3, 1, 0; 1998 ER₁, 14, 3, 10; 1998 EU₁, 14, 3, 7; 1998 EV₁, 16, 4, 29; 1998 EX₁, 13, 3, 8; 1998 EB₂, 19, 4, 29; 1998 EC₂, 16, 4, 28; 1998 EF₂, 15, 3, 30; 1998 EL₂, 4, 1, 0; 1998 EP₂, 5, 1, 0; 1998 EW₂, 5, 1, 0; 1998 ED₃, 9, 2, 28; 1998 ER₃, 9, 2, 25; 1998 ES₃, 5, 1, 0; 1998 EL₅, 10, 2, 28; 1998 EP₆, 3, 1, 0; 1998 ER₆, 3, 1, 0; 1998 EX₆, 3, 1, 0; 1998 EV₈, 5, 1, 0; 1998 EX₈, 4, 1, 0; 1998 EA₉, 5, 1, 0; 1998 EE₁₀, 5, 1, 0; 1998 EQ₁₀, 3, 1, 0; 1998 ER₁₀, 5, 1, 0; 1998 EP₁₁, 3, 1, 0; 1998 EW₁₁, 13, 2, 24; 1998 EF₁₂, 8, 2, 24; 1998 EU₁₂, 10, 2, 21; 1998 EZ₁₂, 5, 1, 0; 1998 EA₁₃, 5, 1, 0; 1998 ER₁₃, 10, 2, 1; 1998 EV₁₃, 5, 1, 0; 1998 EG₁₄, 8, 2, 24; 1998 ER₁₄, 4, 1, 0; 1998 FJ₁₀, 10, 2, 1; 1998 FO₃, 10, 2, 1; 1998 FK₁, 10, 2, 1; 1998 FD₂, 19, 3, 26; 1998 FQ₂, 4, 1, 0; 1998 FX₂, 5, 1, 0; 1998 FC₃, 4, 1, 0; 1998 FD₃, 5, 1, 0; 1998 FE₃, 5, 1, 0; 1998 FF₄, 5, 1, 0; 1998 FG₄, 8, 2, 2; 1998 FP₄, 10, 2, 1; 1998 FT₄, 10, 2, 1; 1998 FU₄, 18, 4, 23; 1998 FO₈, 19, 4, 82; 1998 FT₈, 10, 2, 1; 1998 FV₈, 5, 1, 0; 1998 FZ₈, 10, 2, 27; 1998 FC₁₀, 8, 2, 1; 1998 FD₁₀, 14, 3, 22; 1998 FG₁₀, 15, 3, 22; 1998 FH₁₀, 15, 3, 22; 1998 FI₁₀, 10, 2, 1; 1998 FJ₁₀, 15, 3, 22; 1998 FK₁₀, 8, 2, 1; 1998 FL₁₀, 15, 3, 23; 1998 FT₁₀, 14, 3, 4; 1998 FU₁₀, 5, 1, 0; 1998 FV₁₀, 10, 2, 1; 1998 FW₁₀, 9, 2, 1; 1998 FX₁₀, 10, 2, 1; 1998 FB₁₁, 13, 3, 25; 1998 FC₁₁, 18, 4, 32; 1998 FG₁₁, 5, 1, 0; 1998 FH₁₁, 5, 1, 0; 1998 FO₁₁, 10, 2, 1; 1998 FP₁₁, 5, 1, 0; 1998 FR₁₁, 5, 1, 0; 1998 FS₁₁, 9, 2, 27; 1998 FY₁₁, 10, 1, 0; 1998 FC₁₂, 5, 1, 0; 1998 FT₁₃, 5, 1, 0; 1998 FL₁₄, 10, 2, 1; 1998 FM₁₄, 10, 2, 1; 1998 FQ₁₄, 10, 2, 1; 1998 FR₁₄, 14, 3, 22; 1998 FS₁₄, 14, 3, 21; 1998 FT₁₄, 10, 2, 1; 1998 FU₁₄, 10, 2, 1; 1998 FV₁₄, 25, 5, 31; 1998 FW₁₄, 19, 4, 23; 1998 FX₁₄, 9, 2, 1; 1998 FY₁₄, 5, 1, 0; 1998 FD₁₅, 5, 1, 0; 1998 FH₁₅, 5, 1, 0; 1998 FK₁₅, 15, 3, 23; 1998 FO₁₅, 5, 1, 0; 1998 FR₁₅, 10, 2, 1; 1998 FS₁₅, 10, 2, 1; 1998 FV₁₅, 15, 3, 5; 1998 FA₁₆, 14, 3, 12; 1998 FH₁₆, 30, 4, 26; 1998 FV₂₀, 3, 1, 0; 1998 FH₂₃, 7, 2, 23; 1998 FK₂₆, 8, 2, 3; 1998 FT₂₆, 3, 1, 0; 1998 FM₂₇, 3, 1, 0; 1998 FQ₂₇, 9, 2, 3; 1998 FX₂₇, 3, 1, 0; 1998 FA₂₈, 10, 2, 3; 1998 FF₂₈, 8, 2, 3; 1998 FB₂₉, 10, 2, 3; 1998 FG₂₉, 10, 2, 3; 1998 FO₂₉, 14, 3, 20; 1998 FR₂₉, 9, 2, 3; 1998 FW₂₉, 9, 2, 17; 1998 FZ₂₉, 3, 1, 0; 1998 FB₃₀, 10, 2, 3; 1998 FE₃₀, 5, 1, 0; 1998 FG₃₀, 9, 2, 3; 1998 FH₃₀, 9, 2, 3; 1998 FJ₃₀, 8, 2, 3; 1998 FN₃₀, 12, 3, 20; 1998 FP₃₀, 9, 2, 3; 1998 FR₃₀, 13, 3, 21; 1998 FB₃₂, 10, 2, 3; 1998 FE₃₂, 10, 2, 3; 1998 FH₃₂, 9, 2, 3; 1998 FJ₃₂, 13, 3, 21; 1998 FN₃₂, 5, 1, 0; 1998 FA₃₃, 5, 1, 0; 1998 FD₃₃, 5, 1, 0; 1998 FW₃₃, 13, 3, 21; 1998 FC₃₄, 18, 4, 21; 1998 FK₃₄, 15, 3, 21; 1998 FN₃₄, 14, 3, 21; 1998 FS₃₄, 10, 1, 0; 1998 FT₃₄, 14, 3, 20; 1998 FV₃₄, 20, 4, 22; 1998 FW₃₄, 10, 2, 1; 1998 FB₃₅, 15, 3, 22; 1998 FC₃₅, 15, 3, 22; 1998 FD₃₅, 15, 3, 22; 1998 FF₃₅, 15, 3, 22; 1998 FH₃₅, 8, 2, 1; 1998 FK₃₅, 15, 3, 4; 1998 FU₃₆, 15, 3, 22; 1998 FY₃₈, 4, 1, 0; 1998 FZ₃₈, 8, 2, 3; 1998 FW₃₉, 13, 3, 8; 1998 FA₄₀, 7, 2, 3; 1998 FG₄₀, 10, 2, 26; 1998 FM₄₀, 15, 3, 21; 1998 FN₄₀, 10, 2, 3; 1998 FP₄₀, 24, 4, 26; 1998 FR₄₀, 10, 2, 1; 1998 FT₄₀, 9, 2, 1; 1998 FZ₄₀, 14, 3, 22; 1998 FA₄₁, 12, 3, 22; 1998 FB₄₁, 10, 2, 1; 1998 FE₄₁, 8, 2, 1; 1998 FG₄₁, 10, 2, 1; 1998 FH₄₁, 10, 2, 1; 1998 FJ₄₁, 20, 4, 22; 1998 FM₄₁, 10, 2, 1; 1998 FN₄₁, 15, 3, 4; 1998 FP₄₁, 10, 2, 1; 1998 FR₄₁, 14, 3, 21; 1998 FX₄₁, 14, 3, 21; 1998 FY₄₁, 13, 3, 22; 1998 FZ₄₁, 10, 2, 1; 1998 FB₄₂, 10, 2, 1; 1998 FC₄₂, 10, 2, 1; 1998 FD₄₂, 10, 2, 1; 1998 FL₄₂, 14, 3, 21; 1998 FP₄₂, 10, 2, 1; 1998 FQ₄₂, 15, 3, 22; 1998 FS₄₂, 10, 2, 1; 1998 FU₄₂, 10, 2, 1; 1998 FY₄₂, 10, 2, 1; 1998 FB₄₃, 10, 2, 1; 1998 FC₄₃, 9, 2, 1; 1998 FD₄₃, 15, 3, 22; 1998 FF₄₃, 14, 3, 22; 1998 FG₄₃, 15, 3, 22; 1998 FJ₄₃, 15, 3, 22; 1998 FK₄₃, 10, 2, 1; 1998 FL₄₃, 15, 3, 22; 1998 FM₄₃, 12, 3, 22; 1998 FN₄₃, 8, 2, 1; 1998 FP₄₃, 19, 4, 22; 1998 FT₄₃, 15, 3, 22; 1998 FU₄₃, 10, 2, 1; 1998 FW₄₃, 15, 3, 22; 1998 FX₄₃, 15, 3, 22; 1998 FY₄₃, 15, 3, 4; 1998 FC₄₄, 10, 2, 1; 1998 FD₄₄, 10, 2, 1; 1998 FK₄₄, 15, 3, 22; 1998 FL₄₄, 5, 1, 0; 1998 FM₄₄, 15, 3, 22; 1998 FD₄₆, 10, 2, 1; 1998 FK₄₆, 15, 3, 22; 1998 FU₄₆, 14, 3, 22; 1998 FV₄₆, 15, 3, 22; 1998 FW₄₆, 15, 3, 22; 1998 FY₄₆, 9, 2, 1; 1998 FZ₄₆, 10, 2, 1; 1998 FA₄₇, 15, 3, 22; 1998 FB₄₇, 10, 2, 1; 1998 FD₄₇, 10, 2, 1; 1998 FF₄₇, 19, 4, 21; 1998 FG₄₇, 8, 2, 1; 1998 FH₄₇, 10, 2, 1; 1998 FL₄₇, 10, 2, 1; 1998 FM₄₇, 10, 2, 1; 1998 FN₄₇, 9, 2, 1; 1998 FO₄₇, 10, 2, 1; 1998 FP₄₇, 10, 2, 1; 1998 FQ₄₇, 8, 2, 1; 1998 FT₄₇, 9, 2, 1; 1998 FW₄₇, 10, 2, 1; 1998 FX₄₇, 14, 3, 4; 1998 FB₄₈, 10, 2, 1; 1998 FF₄₈, 10, 2, 1; 1998 FK₄₈, 10, 2, 1; 1998 FO₄₈, 9, 2, 1; 1998 FP₄₈, 10, 2, 1; 1998 FR₄₈, 9, 2, 1; 1998 FV₄₈, 13, 3, 22; 1998 FX₄₈, 9, 2, 1; 1998 FY₄₈, 15, 3, 22; 1998 FC₄₉, 10, 2, 1; 1998 FE₄₉, 20, 4, 22; 1998 FF₄₉, 20, 4, 22;

1998 FG₄₉, 9, 2, 1; 1998 FJ₄₉, 10, 2, 1; 1998 FM₄₉, 10, 2, 1; 1998 FN₄₉, 14, 3, 22; 1998 FQ₄₉, 10, 2, 1; 1998 FU₄₉, 10, 2, 1; 1998 FX₄₉, 14, 3, 4; 1998 FY₄₉, 10, 2, 1; 1998 FZ₄₉, 10, 2, 1; 1998 FK₅₁, 10, 2, 26; 1998 FL₅₁, 15, 3, 22; 1998 FT₅₁, 5, 1, 0; 1998 FT₅₂, 14, 3, 5; 1998 FA₅₃, 5, 1, 0; 1998 FE₅₃, 10, 2, 1; 1998 FH₅₃, 14, 3, 22; 1998 FJ₅₃, 13, 3, 22; 1998 FM₅₃, 10, 2, 1; 1998 FN₅₃, 10, 2, 1; 1998 FQ₅₃, 10, 2, 1; 1998 FU₅₃, 14, 3, 22; 1998 FW₅₃, 10, 2, 1; 1998 FZ₅₃, 10, 2, 1; 1998 FA₅₄, 15, 3, 23; 1998 FB₅₄, 15, 3, 23; 1998 FD₅₄, 20, 3, 5; 1998 FE₅₄, 20, 3, 5; 1998 FH₅₄, 14, 3, 5; 1998 FJ₅₄, 10, 2, 1; 1998 FL₅₄, 17, 4, 26; 1998 FO₅₄, 29, 5, 26; 1998 FP₅₄, 17, 4, 27; 1998 FS₅₄, 18, 4, 26; 1998 FT₅₄, 20, 3, 5; 1998 FU₅₄, 20, 3, 5; 1998 FX₅₄, 10, 2, 1; 1998 FY₅₄, 9, 2, 4; 1998 FC₅₅, 20, 4, 27; 1998 FR₅₅, 10, 2, 1; 1998 FG₅₆, 10, 2, 1; 1998 FJ₅₆, 5, 1, 0; 1998 FR₅₆, 14, 3, 33; 1998 FV₅₆, 5, 1, 0; 1998 FE₅₇, 10, 2, 1; 1998 FF₅₇, 9, 2, 1; 1998 FJ₅₇, 10, 2, 1; 1998 FK₅₇, 25, 4, 8; 1998 FL₅₇, 23, 4, 8; 1998 FM₅₇, 14, 3, 4; 1998 FO₅₇, 5, 1, 0; 1998 FP₅₇, 10, 2, 1; 1998 FR₅₇, 5, 1, 0; 1998 FS₅₇, 13, 3, 22; 1998 FT₅₇, 24, 5, 23; 1998 FU₅₇, 10, 2, 1; 1998 FW₅₇, 15, 3, 23; 1998 FX₅₇, 20, 4, 23; 1998 FY₅₇, 15, 3, 4; 1998 FZ₅₇, 23, 5, 23; 1998 FB₅₈, 13, 3, 4; 1998 FC₅₈, 15, 3, 4; 1998 FD₅₈, 15, 3, 4; 1998 FE₅₈, 23, 5, 23; 1998 FF₅₈, 10, 2, 1; 1998 FG₅₈, 14, 3, 4; 1998 FH₅₈, 10, 2, 1; 1998 FJ₅₈, 15, 3, 23; 1998 FK₅₈, 10, 2, 1; 1998 FL₅₈, 15, 3, 4; 1998 FM₅₈, 9, 2, 1; 1998 FN₅₈, 15, 3, 4; 1998 FQ₅₈, 19, 4, 23; 1998 FY₅₈, 10, 2, 1; 1998 FC₅₉, 5, 1, 0; 1998 FO₅₉, 5, 1, 0; 1998 FH₆₀, 10, 2, 1; 1998 FK₆₀, 20, 4, 23; 1998 FP₆₀, 5, 1, 0; 1998 FQ₆₀, 4, 1, 0; 1998 FR₆₀, 10, 2, 1; 1998 FS₆₀, 10, 2, 1; 1998 FT₆₀, 15, 3, 23; 1998 FU₆₀, 9, 2, 22; 1998 FV₆₀, 14, 3, 4; 1998 FW₆₀, 9, 2, 1; 1998 FX₆₀, 10, 2, 1; 1998 FY₆₀, 15, 3, 23; 1998 FA₆₁, 10, 2, 3; 1998 FB₆₁, 20, 4, 22; 1998 FD₆₁, 14, 3, 22; 1998 FG₆₁, 15, 3, 4; 1998 FH₆₁, 15, 3, 4; 1998 FJ₆₁, 20, 4, 22; 1998 FK₆₁, 14, 3, 23; 1998 FM₆₁, 15, 3, 22; 1998 FN₆₁, 10, 2, 1; 1998 FP₆₁, 15, 3, 4; 1998 FQ₆₁, 15, 3, 4; 1998 FR₆₁, 10, 2, 1; 1998 FU₆₁, 14, 3, 22; 1998 FV₆₁, 15, 3, 23; 1998 FA₆₂, 14, 3, 23; 1998 FC₆₂, 9, 2, 1; 1998 FD₆₂, 15, 3, 23; 1998 FE₆₂, 20, 4, 23; 1998 FF₆₂, 5, 1, 0; 1998 FG₆₂, 15, 3, 23; 1998 FJ₆₂, 11, 3, 22; 1998 FL₆₂, 15, 3, 4; 1998 FM₆₂, 19, 4, 22; 1998 FO₆₂, 9, 2, 18; 1998 FT₆₂, 15, 3, 4; 1998 FU₆₂, 4, 1, 0; 1998 FY₆₂, 4, 1, 0; 1998 FZ₆₂, 14, 3, 22; 1998 FA₆₃, 15, 3, 22; 1998 FB₆₃, 14, 3, 22; 1998 FC₆₃, 4, 1, 0; 1998 FD₆₃, 10, 2, 1; 1998 FE₆₃, 14, 3, 22; 1998 FG₆₃, 4, 1, 0; 1998 FH₆₃, 19, 3, 22; 1998 FJ₆₃, 9, 2, 1; 1998 FK₆₃, 4, 1, 0; 1998 FL₆₃, 10, 2, 1; 1998 FX₆₃, 15, 2, 1; 1998 FM₆₄, 4, 1, 0; 1998 FN₆₄, 9, 2, 1; 1998 FO₆₄, 9, 2, 1; 1998 FP₆₄, 9, 2, 1; 1998 FQ₆₄, 14, 3, 22; 1998 FR₆₄, 4, 1, 0; 1998 FS₆₄, 14, 3, 22; 1998 FV₆₄, 16, 4, 22; 1998 FW₆₄, 10, 2, 1; 1998 FX₆₄, 10, 2, 1; 1998 FA₆₅, 9, 2, 4; 1998 FG₆₅, 15, 3, 7; 1998 FH₆₅, 5, 1, 0; 1998 FP₆₅, 5, 1, 0; 1998 FY₆₅, 5, 1, 0; 1998 FC₆₆, 9, 2, 25; 1998 FL₆₆, 4, 1, 0; 1998 FO₆₆, 4, 1, 0; 1998 FY₆₆, 5, 1, 0; 1998 FF₆₇, 4, 1, 0; 1998 FV₆₇, 5, 1, 0; 1998 FX₆₇, 4, 1, 0; 1998 FD₆₈, 14, 3, 4; 1998 FF₆₈, 10, 2, 24; 1998 FO₆₈, 4, 1, 0; 1998 FR₆₈, 21, 5, 28; 1998 FS₆₈, 5, 1, 0; 1998 FX₆₈, 5, 1, 0; 1998 FZ₆₈, 10, 2, 24; 1998 FC₆₉, 13, 3, 24; 1998 FD₆₉, 14, 3, 24; 1998 FE₆₉, 10, 2, 24; 1998 FF₆₉, 20, 4, 24; 1998 FG₆₉, 5, 1, 0; 1998 FO₆₉, 20, 4, 26; 1998 FX₆₉, 5, 1, 0; 1998 FF₇₀, 5, 1, 0; 1998 FJ₇₀, 5, 1, 0; 1998 FM₇₀, 5, 1, 0; 1998 FN₇₀, 10, 2, 1; 1998 FO₇₀, 5, 1, 0; 1998 FP₇₀, 5, 1, 0; 1998 FR₇₀, 9, 2, 24; 1998 FT₇₀, 5, 1, 0; 1998 FV₇₀, 20, 4, 24; 1998 FZ₇₀, 5, 1, 0; 1998 FD₇₁, 4, 1, 0; 1998 FG₇₁, 5, 1, 0; 1998 FH₇₁, 9, 2, 7; 1998 FJ₇₁, 9, 2, 3; 1998 FL₇₁, 10, 2, 7; 1998 FN₇₁, 5, 1, 0; 1998 FU₇₁, 13, 3, 4; 1998 FV₇₁, 10, 2, 1; 1998 FY₇₁, 10, 2, 1; 1998 FZ₇₁, 15, 3, 4; 1998 FC₇₂, 14, 3, 23; 1998 FG₇₂, 19, 4, 22; 1998 FJ₇₂, 13, 3, 22; 1998 FP₇₂, 4, 1, 0; 1998 FQ₇₂, 10, 2, 1; 1998 FD₇₃, 5, 1, 0; 1998 FP₇₃, 5, 1, 0; 1998 FY₇₃, 5, 1, 0; 1998 FA₇₄, 5, 1, 0; 1998 FD₇₄, 4, 1, 0; 1998 FV₇₄, 17, 4, 1

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 1998 FH₁₄₂ *, 10, 2, 3; 1998 FI₁₄₂ *, 10, 2, 3; 1998 FJ₁₄₂ *, 9, 2, 3; 1998 FK₁₄₂ *, 9, 2, 3;
 1998 FL₁₄₂ *, 8, 2, 3; 1998 FM₁₄₂ *, 8, 2, 3; 1998 FN₁₄₂ *, 8, 2, 3; 1998 FO₁₄₂ *, 8, 2, 3;
 1998 FP₁₄₂ *, 22, 5, 29; 1998 FQ₁₄₂ *, 9, 2, 3; 1998 FR₁₄₂ *, 7, 2, 3; 1998 FS₁₄₂ *, 8, 2, 3;
 1998 FT₁₄₂ *, 7, 2, 3; 1998 FU₁₄₂ *, 10, 2, 3; 1998 FV₁₄₂ *, 8, 2, 3; 1998 FW₁₄₂ *, 9, 2, 3;
 1998 FX₁₄₂ *, 8, 2, 3; 1998 FY₁₄₂ *, 9, 2, 3; 1998 FZ₁₄₂ *, 8, 2, 3; 1998 FA₁₄₃ *, 8, 2, 3;
 1998 FB₁₄₃ *, 9, 2, 3; 1998 FC₁₄₃ *, 8, 2, 3; 1998 FD₁₄₃ *, 7, 2, 3; 1998 FE₁₄₃ *, 8, 2, 3;
 1998 FG₁₄₃ *, 10, 2, 3; 1998 FH₁₄₃ *, 7, 2, 3; 1998 FI₁₄₃ *, 10, 2, 3; 1998 FJ₁₄₃ *, 10, 2, 3;
 1998 FK₁₄₃ *, 13, 3, 20; 1998 FL₁₄₃ *, 10, 2, 3; 1998 FM₁₄₃ *, 8, 2, 3; 1998 FN₁₄₃ *, 9, 2, 3;
 1998 FO₁₄₃ *, 8, 2, 3; 1998 FP₁₄₃ *, 8, 2, 3; 1998 FQ₁₄₃ *, 8, 2, 3; 1998 FR₁₄₃ *, 7, 2, 3;
 1998 FS₁₄₃ *, 9, 2, 3; 1998 FT₁₄₃ *, 10, 2, 3; 1998 FU₁₄₃ *, 9, 2, 3; 1998 FV₁₄₃ *, 9, 2, 3;
 1998 FW₁₄₃ *, 8, 2, 3; 1998 FX₁₄₃ *, 8, 2, 3; 1998 FY₁₄₃ *, 8, 2, 3; 1998 FZ₁₄₃ *, 8, 2, 3;
 1998 FA₁₄₄ *, 20, 4, 26; 1998 FB₁₄₄ *, 9, 2, 3; 1998 FC₁₄₄ *, 10, 2, 3; 1998 FD₁₄₄ *, 8, 2, 3;
 1998 FE₁₄₄ *, 6, 2, 3; 1998 FG₁₄₄ *, 7, 2, 3; 1998 FH₁₄₄ *, 4, 1, 0; 1998 FI₁₄₄ *, 7, 2, 3;
 1998 FJ₁₄₄ *, 7, 2, 3; 1998 FJ₁₄₄ *, 12, 3, 9; 1998 FK₁₄₄ *, 8, 2, 12; 1998 FL₁₄₄ *, 9, 2, 7;
 1998 FM₁₄₄ *, 13, 3, 28; 1998 FN₁₄₄ *, 5, 1, 0; 1998 FO₁₄₄ *, 11, 3, 23; 1998 FP₁₄₄ *, 6, 2, 3;
 1998 FQ₁₄₄ *, 17, 4, 65; 1998 FR₁₄₄ *, 8, 2, 19; 1998 GA₁₀ *, 2, 30; 1998 GK₅ *, 1, 0; 1998 GZ₁₀ *,
 2, 29; 1998 GA₁₁ *, 10, 2, 1; 1998 GJ₁ *, 4, 1, 0; 1998 GK₁ *, 5, 1, 0; 1998 GO₁ *, 9, 2, 3; 1998 GM₆ *,
 9, 2, 35; 1998 GT₆ *, 10, 2, 19; 1998 GB₇ *, 14, 3, 35; 1998 GE₇ *, 15, 3, 35; 1998 GN₇ *, 5, 1, 0;
 1998 GR₇ *, 15, 3, 35; 1998 GT₈ *, 5, 1, 0; 1998 GV₈ *, 25, 5, 50; 1998 GD₉ *, 9, 2, 20; 1998 GE₉ *, 10,
 2, 20; 1998 GL₉ *, 10, 2, 20; 1998 GK₁₀ *, 15, 3, 2; 1998 GQ₁₀ *, 15, 3, 12; 1998 GL₁₁ *, 12, 3, 21;
 1998 GM₁₁ *, 9, 2, 17; 1998 GN₁₁ *, 9, 2, 18; 1998 GO₁₁ *, 8, 2, 18; 1998 HA₅ *, 1, 0; 1998 HG₃ *,
 9, 2, 1; 1998 HW₆ *, 5, 1, 0; 1998 HU₇ *, 13, 3, 7; 1998 HV₇ *, 18, 4, 52; 1998 HH₈ *, 14, 3, 22; 1998 HJ₉ *,
 5, 1, 0; 1998 HM₁₁ *, 13, 3, 26; 1998 HQ₁₂ *, 14, 3, 11; 1998 HT₁₃ *, 10, 2, 1; 1998 HW₁₃ *, 20, 4, 12;
 1998 HB₁₄ *, 18, 4, 25; 1998 HJ₁₄ *, 5, 1, 0; 1998 HH₁₅ *, 10, 2, 1; 1998 HG₁₇ *, 15, 3, 12; 1998 HK₁₇ *,
 19, 4, 10; 1998 HN₁₇ *, 15, 3, 4; 1998 HW₁₇ *, 10, 2, 1; 1998 HF₁₈ *, 10, 2, 3; 1998 HV₁₈ *, 10, 2, 1;
 1998 HC₁₉ *, 19, 5, 31; 1998 HF₁₉ *, 29, 4, 7; 1998 HH₁₉ *, 17, 4, 12; 1998 HN₁₉ *, 17, 4, 12; 1998 HO₁₉ *,
 22, 5, 31; 1998 HP₁₉ *, 19, 4, 23; 1998 HR₁₉ *, 25, 5, 29; 1998 HT₁₉ *, 19, 4, 10; 1998 HV₁₉ *, 19, 4, 22;
 1998 HE₂₀ *, 4, 1, 0; 1998 HH₂₀ *, 5, 1, 0; 1998 HJ₂₀ *, 19, 4, 10; 1998 HK₂₀ *, 24, 5, 30; 1998 HZ₂₀ *,
 21, 4, 28; 1998 HE₂₁ *, 19, 4, 30; 1998 HG₂₁ *, 18, 4, 30; 1998 HH₂₁ *, 18, 4, 30; 1998 HK₂₁ *, 27, 6, 30;
 1998 HM₂₁ *, 18, 4, 28; 1998 HN₂₁ *, 13, 3, 4; 1998 HP₂₁ *, 15, 3, 4; 1998 HQ₂₁ *, 13, 3, 22; 1998 HA₂₂ *,
 10, 2, 1; 1998 HB₂₂ *, 14, 3, 48; 1998 HC₂₂ *, 24, 5, 30; 1998 HE₂₂ *, 24, 5, 30; 1998 HF₂₂ *, 19, 4, 22;
 1998 HM₂₂ *, 24, 5, 30; 1998 HG₂₂ *, 5, 1, 0; 1998 HH₂₂ *, 10, 2, 1; 1998 HV₂₂ *, 4, 1, 0; 1998 HT₂₃ *, 5,
 1, 0; 1998 HP₂₄ *, 5, 1, 0; 1998 HQ₂₄ *, 5, 1, 0; 1998 HS₂₄ *, 5, 1, 0; 1998 HF₂₅ *, 13, 3, 21; 1998 HN₂₆ *,
 12, 3, 32; 1998 HO₂₇ *, 19, 4, 27; 1998 HJ₂₈ *, 17, 4, 12; 1998 HF₂₉ *, 19, 4, 28; 1998 HN₂₉ *, 8, 2, 3;
 1998 HP₂₉ *, 21, 5, 30; 1998 HB₃₀ *, 10, 2, 1; 1998 HK₃₀ *, 18, 4, 29; 1998 HQ₃₁ *, 14, 3, 12; 1998 HR₃₁ *,
 5, 1, 0; 1998 HY₃₁ *, 4, 1, 0; 1998 HZ₃₁ *, 13, 3, 78; 1998 HD₃₂ *, 18, 4, 24; 1998 HE₃₂ *, 19, 4, 52;
 1998 HJ₃₂ *, 22, 5, 55; 1998 HO₃₂ *, 5, 1, 0; 1998 HT₃₂ *, 10, 2, 3; 1998 HV₃₂ *, 15, 3, 7; 1998 HX₃₂ *, 10,

2, 1; 1998 HZ₃₂ *, 15, 3, 7; 1998 HA₃₃ *, 14, 3, 7; 1998 HB₃₃ *, 8, 2, 3; 1998 HC₃₃ *, 14, 3, 8; 1998 HG₃₃ *,
 13, 3, 7; 1998 HH₃₃ *, 17, 4, 24; 1998 HJ₃₃ *, 23, 5, 27; 1998 HK₃₃ *, 4, 1, 0; 1998 HN₃₃ *, 19, 4, 10;
 1998 HV₃₃ *, 13, 3, 48; 1998 HX₃₃ *, 13, 3, 7; 1998 HY₃₃ *, 5, 1, 0; 1998 HB₃₄ *, 22, 5, 57; 1998 HH₃₄ *,
 9, 2, 3; 1998 HK₃₄ *, 5, 1, 0; 1998 HS₃₄ *, 5, 1, 0; 1998 HO₃₅ *, 5, 1, 0; 1998 HS₃₅ *, 5, 1, 0; 1998 HK₃₆ *,
 5, 1, 0; 1998 HX₃₆ *, 5, 1, 0; 1998 HC₃₇ *, 10, 2, 3; 1998 HH₃₇ *, 13, 3, 7; 1998 HS₃₇ *, 19, 4, 52;
 1998 HX₃₇ *, 15, 3, 7; 1998 HA₃₈ *, 18, 4, 28; 1998 HB₃₈ *, 9, 2, 3; 1998 HE₃₈ *, 24, 5, 85; 1998 HN₃₈ *,
 19, 4, 52; 1998 HO₃₈ *, 15, 3, 7; 1998 HP₃₈ *, 9, 2, 3; 1998 HR₃₈ *, 23, 5, 52; 1998 HW₃₈ *, 5, 1, 0;
 1998 HZ₃₈ *, 18, 4, 52; 1998 HA₃₉ *, 15, 3, 7; 1998 HH₃₉ *, 14, 3, 7; 1998 HL₃₉ *, 13, 3, 7; 1998 HP₃₉ *, 9,
 2, 3; 1998 HU₃₉ *, 5, 1, 0; 1998 HV₃₉ *, 5, 1, 0; 1998 HD₄₀ *, 5, 1, 0; 1998 HS₄₂ *, 10, 2, 37; 1998 HT₄₂ *,
 14, 3, 31; 1998 HE₄₃ *, 5, 1, 0; 1998 HH₄₃ *, 12, 3, 26; 1998 HK₄₃ *, 10, 2, 80; 1998 HO₄₃ *, 5, 1, 0;
 1998 HJ₄₄ *, 15, 3, 7; 1998 HW₄₄ *, 13, 3, 7; 1998 HY₄₄ *, 15, 3, 7; 1998 HE₄₅ *, 20, 4, 52; 1998 HK₄₅ *,
 19, 4, 27; 1998 HU₄₅ *, 15, 3, 7; 1998 HW₄₅ *, 20, 4, 28; 1998 HX₄₅ *, 16, 4, 52; 1998 HZ₄₅ *, 17, 4, 27;
 1998 HN₄₉ *, 4, 1, 0; 1998 HO₄₉ *, 4, 1, 0; 1998 HT₅₀ *, 5, 1, 0; 1998 HU₅₀ *, 19, 4, 28; 1998 HV₅₀ *, 14, 3,
 22; 1998 HE₅₁ *, 10, 2, 1; 1998 HG₅₁ *, 5, 1, 0; 1998 HL₅₁ *, 7, 2, 48; 1998 HX₅₁ *, 5, 1, 0; 1998 HK₅₂ *, 5,
 1, 0; 1998 HL₅₂ *, 5, 1, 0; 1998 HM₅₂ *, 10, 2, 2; 1998 HQ₅₂ *, 5, 1, 0; 1998 HA₅₃ *, 14, 3, 7; 1998 HG₅₃ *,
 24, 5, 52; 1998 HG₅₄ *, 13, 3, 7; 1998 HJ₅₄ *, 13, 3, 7; 1998 HT₅₄ *, 20, 4, 52; 1998 HH₅₅ *, 19, 4, 52;
 1998 HO₅₆ *, 10, 2, 4; 1998 HU₅₆ *, 4, 1, 0; 1998 HB₅₇ *, 15, 3, 7; 1998 HD₅₇ *, 15, 3, 7; 1998 HT₅₇ *,
 18, 4, 52; 1998 HR₆₀ *, 14, 3, 7; 1998 HS₆₀ *, 15, 3, 48; 1998 HZ₆₀ *, 9, 2, 3; 1998 HA₆₁ *, 8, 2, 3;
 1998 HL₆₇ *, 10, 2, 45; 1998 HC₇₅ *, 4, 1, 0; 1998 HB₈₄ *, 14, 3, 22; 1998 HE₈₄ *, 13, 3, 22; 1998 HL₈₄ *,
 12, 3, 22; 1998 HR₈₄ *, 13, 3, 22; 1998 HX₈₄ *, 9, 2, 21; 1998 HF₈₇ *, 5, 1, 0; 1998 HH₈₈ *, 5, 1, 0;
 1998 HS₈₈ *, 9, 2, 1; 1998 HX₈₈ *, 15, 3, 22; 1998 HA₉₁ *, 10, 2, 1; 1998 HR₉₂ *, 15, 3, 22; 1998 HH₉₃ *,
 15, 3, 22; 1998 HL₉₃ *, 15, 3, 22; 1998 HV₉₃ *, 5, 1, 0; 1998 HZ₉₃ *, 14, 3, 26; 1998 HB₉₄ *, 5, 1, 0;
 1998 HT₉₅ *, 5, 1, 0; 1998 HV₉₇ *, 5, 1, 0; 1998 HC₉₈ *, 4, 1, 0; 1998 HN₉₈ *, 4, 1, 0; 1998 HT₉₈ *, 4, 1, 0;
 1998 HE₁₀₀ *, 5, 1, 0; 1998 HH₁₀₀ *, 15, 2, 22; 1998 HJ₁₀₀ *, 5, 1, 0; 1998 HM₁₀₀ *, 5, 1, 0; 1998 HS₁₀₀ *,
 5, 1, 0; 1998 HF₁₀₁ *, 2, 1, 0; 1998 HR₁₀₁ *, 15, 3, 20; 1998 HV₁₀₁ *, 12, 3, 23; 1998 HX₁₀₁ *, 4, 1, 0;
 1998 HA₁₀₂ *, 5, 1, 0; 1998 HE₁₀₂ *, 4, 1, 0; 1998 HJ₁₀₂ *, 4, 1, 0; 1998 HB₁₀₃ *, 10, 2, 2; 1998 HE₁₀₃ *,
 4, 1, 0; 1998 HO₁₀₄ *, 4, 1, 0; 1998 HS₁₀₆ *, 23, 5, 85; 1998 HU₁₀₆ *, 15, 3, 65; 1998 HY₁₀₆ *, 5, 1, 0;
 1998 HE₁₀₈ *, 5, 1, 0; 1998 HU₁₀₈ *, 5, 1, 0; 1998 HW₁₀₉ *, 19, 4, 65; 1998 HB₁₁₃ *, 4, 1, 0; 1998 HH₁₁₄ *,
 15, 3, 65; 1998 HM₁₁₄ *, 10, 2, 65; 1998 HQ₁₁₄ *, 15, 3, 65; 1998 HX₁₁₄ *, 10, 2, 5; 1998 HY₁₁₄ *, 20,
 4, 85; 1998 HZ₁₁₄ *, 25, 5, 85; 1998 HB₁₁₅ *, 15, 3, 25; 1998 HJ₁₁₅ *, 9, 2, 5; 1998 HN₁₁₅ *, 19, 4, 85;
 1998 HQ₁₁₅ *, 15, 3, 6; 1998 HR₁₁₅ *, 10, 2, 5; 1998 HS₁₁₅ *, 9, 2, 5; 1998 HA₁₁₆ *, 10, 2, 5; 1998 HH₁₁₆ *,
 10, 2, 5; 1998 HO₁₁₆ *, 10, 2, 5; 1998 HK₁₁₇ *, 14, 3, 32; 1998 HL₁₁₇ *, 20, 4, 65; 1998 HM₁₁₇ *, 15,
 3, 37; 1998 HQ₁₁₇ *, 10, 2, 5; 1998 HZ₁₁₇ *, 19, 4, 37; 1998 HA₁₁₈ *, 10, 2, 5; 1998 HB₁₁₈ *, 8, 2, 5;
 1998 HC₁₁₈ *, 10, 2, 5; 1998 HG₁₁₈ *, 8, 2, 5; 1998 HJ₁₁₈ *, 10, 2, 5; 1998 HK₁₁₈ *, 10, 2, 5; 1998 HL₁₁₈ *,
 9, 2, 5; 1998 HS₁₁₈ *, 9, 2, 5; 1998 HW₁₁₈ *, 10, 2, 5; 1998 HZ₁₁₈ *, 10, 2, 5; 1998 HN₁₁₉ *, 10, 2, 5;
 1998 HN₁₁₉ *, 9, 2, 2; 1998 HW₁₁₉ *, 9, 2, 2; 1998 HC₁₂₀ *, 8, 2, 2; 1998 HF₁₂₀ *, 10, 2, 5; 1998 HL₁₂₀ *,
 15, 3, 25; 1998 HQ₁₂₀ *, 9, 2, 2; 1998 HE₁₂₁ *, 5, 1, 0; 1998 HF₁₂₁ *, 14, 3, 24; 1998 HF₁₂₂ *, 9, 2, 2;
 1998 HV₁₂₂ *, 8, 2, 2; 1998 HH₁₂₃ *, 5, 1, 0; 1998 HU₁₂₃ *, 9, 2, 2; 1998 HD₁₂₄ *, 14, 3, 3; 1998 HJ₁₂₄ *,
 5, 1, 0; 1998 HS₁₂₄ *, 14, 3, 3; 1998 HX₁₂₄ *, 5, 1, 0; 1998 HY_{124</}

0; 1998 KM₈, 10, 2, 3; 1998 KN₈, 5, 1, 0; 1998 KS₈, 10, 2, 3; 1998 KT₈, 10, 2, 3; 1998 KU₈, 9, 2, 3; 1998 KX₈, 10, 2, 3; 1998 KD₉, 8, 2, 2; 1998 KH₉, 10, 2, 2; 1998 KK₉, 5, 1, 0; 1998 KN₉, 5, 1, 0; 1998 KE₁₁, 4, 1, 0; 1998 KU₁₄, 14, 3, 31; 1998 KK₁₆, 8, 2, 7; 1998 KK₁₇, 5, 1, 0; 1998 KB₂₁, 8, 2, 2; 1998 KY₂₁, 4, 1, 0; 1998 KD₂₂, 10, 2, 55; 1998 KL₂₂, 9, 2, 9; 1998 KM₂₂, 13, 3, 31; 1998 KL₂₃, 5, 1, 0; 1998 KR₂₃, 7, 2, 7; 1998 KB₂₅, 5, 1, 0; 1998 KK₂₆, 9, 2, 2; 1998 KT₂₆, 8, 2, 3; 1998 KZ₂₆, 8, 2, 2; 1998 KH₂₇, 8, 2, 48; 1998 KF₂₈, 5, 1, 0; 1998 KD₂₉, 4, 1, 0; 1998 KR₂₉, 9, 2, 2; 1998 KH₃₀, 4, 1, 0; 1998 KL₃₀, 10, 2, 2; 1998 KL₃₁, 10, 2, 2; 1998 KT₃₂, 13, 3, 15; 1998 KV₃₂, 8, 2, 2; 1998 KC₃₃, 4, 1, 0; 1998 KH₃₄, 5, 1, 0; 1998 KN₃₄, 8, 2, 2; 1998 KF₃₅, 9, 2, 13; 1998 KM₃₅, 10, 2, 2; 1998 KQ₃₅, 5, 1, 0; 1998 KS₃₅, 4, 1, 0; 1998 KM₃₇, 5, 1, 0; 1998 KX₃₇, 5, 1, 0; 1998 KQ₃₈, 5, 1, 0; 1998 KZ₃₈, 5, 1, 0; 1998 KQ₃₉, 10, 2, 15; 1998 KK₄₂, 9, 2, 2; 1998 KO₄₂, 19, 4, 56; 1998 KR₄₂, 5, 1, 0; 1998 KR₄₃, 10, 2, 2; 1998 KH₄₄, 5, 1, 0; 1998 KR₄₄, 4, 1, 0; 1998 KW₄₄, 4, 1, 0; 1998 KH₄₅, 4, 1, 0; 1998 KN₄₅, 4, 1, 0; 1998 KS₄₅, 9, 2, 2; 1998 KT₄₅, 8, 2, 2; 1998 KD₄₆, 7, 2, 2; 1998 KL₄₆, 14, 3, 23; 1998 KM₄₆, 4, 1, 0; 1998 KO₄₆, 8, 2, 2; 1998 KR₄₆, 9, 2, 2; 1998 KS₄₆, 15, 3, 23; 1998 KU₄₆, 8, 2, 2; 1998 KV₄₆, 8, 2, 2; 1998 KW₄₆, 5, 1, 0; 1998 KX₄₆, 13, 3, 23; 1998 KY₄₆, 13, 3, 23; 1998 KZ₄₆, 8, 2, 2; 1998 KC₄₇, 9, 2, 2; 1998 KE₄₇, 10, 2, 2; 1998 KF₄₇, 10, 2, 2; 1998 KH₄₇, 9, 2, 2; 1998 KJ₄₇, 10, 2, 2; 1998 KK₄₇, 7, 2, 2; 1998 KL₄₇, 8, 2, 2; 1998 KM₄₇, 9, 2, 6; 1998 KQ₄₇, 10, 2, 6; 1998 KR₄₇, 14, 3, 22; 1998 KS₄₇, 6, 2, 2; 1998 KT₄₇, 5, 1, 0; 1998 KU₄₇, 9, 2, 2; 1998 KV₄₇, 4, 1, 0; 1998 KW₄₇, 10, 2, 2; 1998 KX₄₇, 10, 2, 2; 1998 KY₄₇, 10, 2, 2; 1998 KZ₄₇, 10, 2, 2; 1998 KA₄₈, 10, 2, 2; 1998 KB₄₈, 8, 2, 2; 1998 KC₄₈, 8, 2, 2; 1998 KD₄₈, 9, 2, 2; 1998 KE₄₈, 10, 2, 2; 1998 KH₄₈, 8, 2, 2; 1998 KL₄₈, 10, 2, 2; 1998 KM₄₈, 17, 4, 30; 1998 KQ₄₈, 9, 2, 2; 1998 KS₄₈, 10, 2, 2; 1998 KT₄₈, 10, 2, 2; 1998 KV₄₈, 7, 2, 31; 1998 KW₄₈, 5, 1, 0; 1998 KX₄₈, 5, 1, 0; 1998 KF₄₉, 5, 1, 0; 1998 KS₄₉, 5, 1, 0; 1998 KA₅₀, 5, 1, 0; 1998 KT₅₀, 5, 1, 0; 1998 KB₅₁, 5, 1, 0; 1998 KD₅₁, 5, 1, 0; 1998 KE₅₁, 5, 1, 0; 1998 KF₅₁, 4, 1, 0; 1998 KX₅₁, 4, 1, 0; 1998 KN₅₁, 5, 1, 0; 1998 KQ₅₁, 5, 1, 0; 1998 KS₅₁, 5, 1, 0; 1998 KW₅₁, 5, 1, 0; 1998 KJ₅₂, 5, 1, 0; 1998 KL₅₂, 5, 1, 0; 1998 KB₅₃, 5, 1, 0; 1998 KE₅₃, 4, 1, 0; 1998 KF₅₃, 5, 1, 0; 1998 KG₅₃, 5, 1, 0; 1998 KP₅₃, 5, 1, 0; 1998 KS₅₃, 4, 1, 0; 1998 KY₅₃, 4, 1, 0; 1998 KA₅₄, 9, 2, 6; 1998 KE₅₄, 5, 1, 0; 1998 KF₅₄, 4, 1, 0; 1998 KH₅₄, 9, 2, 6; 1998 KK₅₄, 13, 3, 22; 1998 KM₅₄, 4, 1, 0; 1998 KP₅₄, 10, 2, 2; 1998 KR₅₄, 8, 2, 6; 1998 KS₅₄, 9, 2, 6; 1998 KT₅₄, 5, 1, 0; 1998 KU₅₄, 5, 1, 0; 1998 KV₅₄, 8, 2, 6; 1998 KW₅₄, 5, 1, 0; 1998 KX₅₄, 5, 1, 0; 1998 KY₅₄, 9, 2, 6; 1998 KZ₅₄, 5, 1, 0; 1998 KA₅₅, 5, 1, 0; 1998 KB₅₅, 10, 2, 6; 1998 KD₅₅, 18, 4, 23; 1998 KE₅₅, 8, 2, 6; 1998 KF₅₅, 9, 2, 6; 1998 KH₅₅, 5, 1, 0; 1998 KK₅₅, 8, 2, 6; 1998 KL₅₅, 8, 2, 6; 1998 KM₅₅, 10, 2, 6; 1998 KR₅₅, 5, 1, 0; 1998 KT₅₅, 9, 2, 2; 1998 KU₅₅, 19, 4, 23; 1998 KV₅₅, 10, 2, 2; 1998 KX₅₅, 9, 2, 6; 1998 KC₅₆, 5, 1, 0; 1998 KG₅₆, 4, 1, 0; 1998 KH₅₆, 5, 1, 0; 1998 KJ₅₆, 9, 2, 4; 1998 KK₅₆, 4, 1, 0; 1998 KN₅₆, 5, 1, 0; 1998 KE₅₈, 9, 2, 6; 1998 KG₅₈, 33, 6, 27; 1998 KH₅₈, 14, 3, 32; 1998 KM₅₈, 4, 1, 0; 1998 KL₅₈, 8, 2, 1; 1998 KN₅₈, 9, 2, 1; 1998 KO₅₈, 24, 6, 31; 1998 KP₅₈, 10, 2, 1; 1998 KT₅₈, 10, 2, 1; 1998 KQ₅₈, 9, 2, 2; 1998 KR₅₈, 8, 2, 5; 1998 KS₅₈, 9, 2, 5; 1998 KT₅₈, 9, 2, 5; 1998 KU₅₈, 9, 2, 5; 1998 KV₅₈, 9, 2, 5; 1998 KW₅₈, 10, 2, 5; 1998 KX₅₈, 10, 2, 5; 1998 KY₅₈, 9, 2, 2; 1998 KZ₅₈, 9, 2, 2; 1998 KA₅₉, 9, 2, 2; 1998 KB₅₉, 9, 2, 2; 1998 KC₅₉, 9, 2, 2; 1998 KD₅₉, 9, 2, 2; 1998 KE₅₉, 9, 2, 5; 1998 KF₅₉, 9, 2, 5; 1998 KG₅₉, 8, 2, 2; 1998 KH₅₉, 8, 2, 4; 1998 KJ₅₉, 8, 2, 4; 1998 KK₅₉, 9, 2, 4; 1998 KL₅₉, 8, 2, 2; 1998 KM₅₉, 9, 2, 3; 1998 KN₅₉, 9, 2, 3; 1998 KO₅₉, 9, 2, 3; 1998 KP₅₉, 10, 2, 3; 1998 KQ₅₉, 9, 2, 3; 1998 KR₅₉, 10, 2, 3; 1998 KS₅₉, 9, 2, 3; 1998 KT₅₉, 9, 2, 3; 1998 KU₅₉, 14, 3, 11; 1998 KV₅₉, 8, 2, 3; 1998 KW₅₉, 10, 2, 3; 1998 KX₅₉, 8, 2, 3; 1998 KY₅₉, 9, 2, 3; 1998 KZ₅₉, 9, 2, 3; 1998 KA₆₀, 9, 2, 3; 1998 KB₆₀, 10, 2, 3; 1998 KC₆₀, 8, 2, 3; 1998 KD₆₀, 8, 2, 3; 1998 KE₆₀, 9, 2, 3; 1998 KF₆₀, 10, 2, 3; 1998 KG₆₀, 14, 3, 11; 1998 KH₆₀, 10, 2, 3; 1998 KJ₆₀, 10, 2, 3; 1998 KK₆₀, 9, 2, 3; 1998 KL₆₀, 9, 2, 3; 1998 KM₆₀, 8, 2, 3; 1998 KN₆₀, 10, 2, 3; 1998 KO₆₀, 10, 2, 3; 1998 KP₆₀, 10, 2, 3; 1998 KQ₆₀, 8, 2, 3; 1998 KR₆₀, 9, 2, 3; 1998 KS₆₀, 10, 2, 3; 1998 KT₆₀, 9, 2, 3; 1998 KU₆₀, 10, 2, 3; 1998 KV₆₀, 10, 2, 3; 1998 KW₆₀, 10, 2, 3; 1998 KX₆₀, 10, 2, 3; 1998 KY₆₀, 8, 2, 1; 1998 KZ₆₀, 8, 2, 3; 1998 KA₆₁, 9, 2, 3; 1998 KB₆₁, 8, 2, 3; 1998 KC₆₁, 8, 2, 3; 1998 KD₆₁, 8, 2, 3; 1998 KE₆₁, 14, 3, 27; 1998 KF₆₁, 13, 3, 27; 1998 KG₆₁, 9, 2, 3; 1998 KH₆₁, 10, 2, 3; 1998 KJ₆₁, 8, 2, 3; 1998 KK₆₁, 9, 2, 3; 1998 KL₆₁, 8, 2, 3; 1998 KM₆₁, 24, 5, 34; 1998 KN₆₁, 8, 2, 3; 1998 KO₆₁, 8, 2, 3; 1998 KP₆₁, 9, 2, 3; 1998 KQ₆₁, 9, 2, 3; 1998 KR₆₁, 24, 5, 33; 1998 KS₆₁, 14, 4, 33; 1998 KT₆₁, 9, 2, 1; 1998 KU₆₁, 9, 2, 3; 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27; 1998 KD₆₄, 8, 2, 2; 1998 KE₆₄, 8, 2, 2; 1998 KF₆₄, 9, 2, 4; 1998 KG₆₄, 10, 2, 2; 1998 KH₆₄, 8, 2, 2; 1998 KJ₆₄, 9, 2, 2; 1998 KK₆₄, 9, 2, 2; 1998 KL₆₄, 9, 2, 2; 1998 KM₆₄, 9, 2, 2; 1998 KN₆₄, 10, 2, 2; 1998 KO₆₄, 9, 2, 2; 1998 KP₆₄, 9, 2, 2; 1998 KQ₆₄, 10, 2, 2; 1998 KR₆₄, 10, 2, 4; 1998 KS₆₄, 10, 2, 2; 1998 KT₆₄, 9, 2, 2; 1998 KU₆₄, 10, 2, 2; 1998 KV₆₄, 10, 2, 2; 1998 KW₆₄, 9, 2, 2; 1998 KX₆₄, 8, 2, 2; 1998 KY₆₄, 9, 2, 2; 1998 KZ₆₄, 7, 2, 2; 1998 KA₆₅, 18, 4, 27; 1998 KB₆₅, 9, 2, 2; 1998 KC₆₅, 8, 2, 2; 1998 KD₆₅, 7, 2, 2; 1998 KE₆₅, 10, 2, 2; 1998 KF₆₅, 10, 2, 2; 1998 KG₆₅, 9, 2, 2; 1998 KH₆₅, 8, 2, 2; 1998 KJ₆₅, 8, 2, 2; 1998 KK₆₅, 8, 2, 2; 1998 KL₆₅, 15, 4, 35; 1998 KM₆₅, 8, 2, 2; 1998 KN₆₅, 17, 4, 35; 1998 KO₆₅, 8, 2, 2; 1998 KP₆₅, 7, 2, 2; 1998 KQ₆₅, 8, 2, 2; 1998 KT₆₅, 8, 2, 8; 1998 KU₆₅, 9, 2, 8; 1998 KV₆₅, 10, 2, 8; 1998 KW₆₅, 9, 2, 8; 1998 KX₆₅, 8, 2, 8; 1998 KY₆₅, 13, 3, 27; 1998 KZ₆₅, 9, 2, 8; 1998 KA₆₆, 9, 2, 8; 1998 KB₆₆, 10, 2, 7; 1998 KC₆₆, 7, 2, 2; 1998 LA₁₀, 10, 2, 2; 1998 LB₁₀, 5, 1, 0; 1998 LC₁₀, 8, 2, 6; 1998 LF₁₀, 4, 1, 0; 1998 LJ₁₀, 3, 1, 0; 1998 LO₁₀, 5, 1, 0; 1998 LT₁₀, 5, 1, 0; 1998 LU₁₀, 18, 4, 35; 1998 LA₂, 14, 3, 35; 1998 LB₂, 9, 2, 2; 1998 LF₂, 9, 2, 6; 1998 LH₂, 10, 2, 6; 1998 LK₂, 13, 3, 30; 1998 LL₂, 13, 3, 22; 1998 LO₂, 18, 4, 30; 1998 LP₂, 9, 2, 6; 1998 LR₂, 7, 2, 1; 1998 LT₂, 8, 2, 6; 1998 LV₂, 12, 3, 22; 1998 LX₂, 8, 2, 6; 1998 LB₃, 5, 1, 0; 1998 LE₃, 4, 1, 0; 1998 LF₃, 18, 4, 30; 1998 LG₃, 10, 3, 23; 1998 MA₅, 1, 0; 1998 MB₅, 8, 2, 1; 1998 MD₅, 8, 2, 2; 1998 ME₅, 10, 2, 12; 1998 MT₅, 7, 2, 2; 1998 MU₅, 10, 2, 2; 1998 MV₅, 10, 2, 1; 1998 MW₅, 8, 2, 2; 1998 MX₅, 14, 3, 26; 1998 MY₅, 8, 2, 2; 1998 MZ₅, 10, 2, 2; 1998 MA₁, 3, 1, 0; 1998 MY₁, 4, 1, 0; 1998 MA₂, 8, 2, 2; 1998 ME₂, 4, 1, 0; 1998 MQ₂, 4, 1, 0; 1998 MR₂, 4, 1, 0; 1998 MS₂, 5, 1, 0; 1998 ME₃, 20, 4, 27; 1998 MG₃, 9, 2, 2; 1998 MH₃, 9, 2, 25; 1998 MH₄, 5, 1, 0; 1998 ML₄, 10, 2, 8; 1998 MM₄, 8, 2, 6; 1998 MN₄, 9, 2, 6; 1998 MZ₄, 5, 1, 0; 1998 MK₅, 5, 1, 0; 1998 MO₅, 10, 2, 6; 1998 MP₅, 9, 2, 6; 1998 MQ₅, 10, 2, 6; 1998 MR₅, 9, 2, 6; 1998 MS₅, 10, 2, 6; 1998 MT₅, 8, 2, 6; 1998 MU₅, 8, 2, 1; 1998 MV₅, 4, 1, 0; 1998 MW₅, 4, 1, 0; 1998 MX₅, 4, 1, 0; 1998 MY₅, 4, 1, 0; 1998 MP₇, 14, 3, 32; 1998 MQ₇, 5, 1, 0; 1998 MX₇, 5, 1, 0; 1998 MZ₇, 4, 1, 0; 1998 MA₈, 4, 1, 0; 1998 MC₈, 17, 4, 33; 1998 MD₈, 13, 3, 30; 1998 ME₈, 9, 2, 6; 1998 MF₈, 9, 2, 6; 1998 MG₈, 9, 2, 6; 1998 MH₈, 7, 2, 6; 1998 MJ₈, 8, 2, 6; 1998 MK₈, 9, 2, 6; 1998 ML₈, 9, 2, 6; 1998 MM₈, 9, 2, 6; 1998 MN₈, 11, 3, 30; 1998 MO₈, 10, 2, 6; 1998 MP₈, 9, 2, 6; 1998 MQ₈, 17, 4, 34; 1998 MR₈, 9, 2, 6; 1998 MS₈, 9, 2, 6; 1998 MT₈, 9, 2, 6; 1998 MU₈, 10, 2, 6; 1998 MV₈, 9, 2, 6; 1998 MW₈, 7, 2, 6; 1998 MX₈, 8, 2, 6; 1998 MY₈, 8, 2, 6; 1998 MZ₈, 7, 2, 6; 1998 MA₉, 8, 2, 6; 1998 MB₉, 8, 2, 6; 1998 MC₉, 8, 2, 6; 1998 MD₉, 17, 4, 30; 1998 ME₉, 9, 2, 6; 1998 MF₉, 9, 2, 6; 1998 MG₉, 9, 2, 6; 1998 MH₉, 14, 3, 7; 1998 MJ₉, 9, 2, 6; 1998 MK₉, 8, 2, 6; 1998 ML₉, 9, 2, 6; 1998 MM₉, 12, 3, 22; 1998 MN₉, 9, 2, 6; 1998 MO₉, 9, 2, 6; 1998 MP₉, 9, 2, 6; 1998 MQ₉, 8, 2, 6; 1998 MR₉, 15, 3, 22; 1998 MS₉, 17, 4, 30; 1998 MT₉, 9, 2, 6; 1998 MU₉, 9, 2, 6; 1998 MV₉, 9, 2, 6; 1998 MW₉, 8, 2, 6; 1998 MX₉, 10, 2, 6; 1998 MY₉, 9, 2, 6; 1998 MZ₉, 10, 2, 6; 1998 MA₁₀, 13, 3, 22; 1998 MB₁₀, 9, 2, 6; 1998 MC₁₀, 10, 2, 6; 1998 MD₁₀, 9, 2, 6; 1998 ME₁₀, 9, 2, 6; 1998 MF₁₀, 10, 2, 6; 1998 MG₁₀, 10, 2, 6; 1998 MH₁₀, 10, 2, 6; 1998 MI₁₀, 10, 2, 6; 1998 MJ₁₀, 10, 2, 6; 1998 MK₁₀, 10, 2, 6; 1998 ML₁₀, 10, 2, 6; 1998 MM₁₀, 10, 2, 6; 1998 MN₁₀, 9, 2, 6; 1998 MO₁₀, 10, 2, 6; 1998 MP₁₀, 9, 2, 6; 1998 MQ₁₀, 9, 2, 6; 1998 MR₁₀, 9, 2, 6; 1998 MS₁₀, 10, 2, 6; 1998 MT₁₀, 9, 2, 6; 1998 MU₁₀, 10, 2, 6; 1998 MV₁₀, 10, 2, 6; 1998 MW₁₀, 10, 2, 6; 1998 MX₁₀, 9, 2, 6; 1998 MY₁₀, 10, 2, 6; 1998 MZ₁₀, 10, 2, 6; 1998 MA₁₁, 10, 2, 6; 1998 MB₁₁, 8, 2, 6; 1998 MC₁₁, 10, 2, 6; 1998 MD₁₁, 7, 2, 6; 1998 ME₁₁, 10, 2, 6; 1998 MF₁₁, 9, 2, 6; 1998 MG₁₁, 10, 2, 6; 1998 MH₁₁, 10, 2, 6; 1998 MJ₁₁, 10, 2, 6; 1998 MK₁₁, 10, 2, 6; 1998 ML₁₁, 10, 2, 6; 1998 MN₁₁, 9, 2, 6; 1998 MO₁₁, 10, 2, 6; 1998 MP₁₁, 10, 2, 6; 1998 MQ₁₁, 9, 2, 6; 1998 MR₁₁, 9, 2, 6; 1998 MS₁₁, 10, 2, 6; 1998 MT₁₁, 10, 2, 6; 1998 MU₁₁, 10, 2, 6; 1998 MV₁₁, 10, 2, 6; 1998 MW₁₁, 10, 2, 6; 1998 MX₁₁, 9, 2, 6; 1998 MY₁₁, 9, 2, 6; 1998 MZ₁₁, 9, 2, 6; 1998 MA₁₂, 10, 2, 6; 1998 MB₁₂, 10, 2, 6; 1998 MC₁₂, 15, 3, 28; 1998 MD₁₂, 9, 2, 6; 1998 ME₁₂, 8, 2, 6; 1998 MF₁₂, 8, 2, 6; 1998 MG₁₂, 8, 2, 6; 1998 MH₁₂, 8, 2, 6; 1998 MI₁₂, 8, 2, 6;

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2; (5394), 9, 2, 2; (5415), 9, 2, 2; (5417), 10, 2, 2; (5421), 3, 1, 0; (5440), 10, 1, 0; (5444), 4, 1, 0; (5453), 12, 3, 32; (5455), 5, 1, 0; (5463), 9, 2, 2; (5471), 5, 1, 0; (5472), 9, 2, 2; (5473), 10, 2, 2; (5474), 9, 2, 2; (5476), 10, 2, 6; (5480), 18, 4, 32; (5481), 9, 2, 2; (5486), 5, 1, 0; (5498), 5, 1, 0; (5503), 8, 2, 2; (5504), 5, 1, 0; (5512), 5, 1, 0; (5514), 4, 1, 0; (5515), 5, 1, 0; (5518), 5, 1, 0; (5524), 14, 3, 32; (5537), 9, 2, 2; (5544), 4, 1, 0; (5545), 4, 1, 0; (5554), 10, 2, 2; (5563), 4, 1, 0; (5574), 5, 1, 0; (5577), 5, 1, 0; (5584), 5, 1, 0; (5589), 5, 1, 0; (5591), 9, 2, 2; (5593), 10, 2, 2; (5614), 9, 2, 6; (5632), 10, 2, 2; (5638), 4, 1, 0; (5641), 5, 1, 0; (5648), 8, 2, 2; (5657), 10, 2, 6; (5658), 5, 1, 0; (5668), 9, 2, 2; (5672), 10, 2, 6; (5695), 5, 1, 0; (5697), 10, 2, 6; (5709), 10, 2, 2; (5720), 4, 1, 0; (5749), 4, 1, 0; (5770), 5, 1, 0; (5780), 9, 2, 1; (5783), 4, 1, 0; (5794), 5, 1, 0; (5795), 8, 2, 2; (5802), 4, 1, 0; (5806), 2, 1, 0; (5837), 5, 1, 0; (5841), 4, 1, 0; (5857), 9, 2, 2; (5865), 4, 1, 0; (5878), 4, 1, 0; (5887), 7, 2, 2; (5896), 5, 1, 0; (5907), 5, 1, 0; (5911), 4, 1, 0; (5916), 5, 1, 0; (5924), 10, 2, 2; (5930), 9, 2, 2; (5932), 3, 1, 0; (5933), 10, 2, 2; (5934), 3, 1, 0; (5947), 5, 1, 0; (5949), 9, 2, 2; (5953), 10, 2, 6; (5960), 4, 1, 0; (5961), 3, 1, 0; (5965), 7, 2, 2; (5970), 4, 1, 0; (5985), 2, 1, 0; (5987), 13, 3, 32; (5988), 5, 1, 0; (5989), 15, 3, 27; (5991), 9, 2, 2; (6003), 9, 2, 2; (6008), 4, 1, 0; (6009), 9, 2, 4; (6010), 5, 1, 0; (6013), 4, 1, 0; (6015), 7, 2, 2; (6021), 14, 3, 27; (6022), 9, 2, 2; (6023), 5, 1, 0; (6040), 5, 1, 0; (6041), 4, 1, 0; (6043), 12, 3, 32; (6046), 5, 1, 0; (6049), 5, 1, 0; (6056), 5, 1, 0; (6059), 4, 1, 0; (6060), 9, 2, 6; (6061), 9, 2, 2; (6066), 5, 1, 0; (6071), 10, 2, 6; (6073), 5, 1, 0; (6076), 16, 4, 32; (6078), 7, 2, 2; (6082), 5, 1, 0; (6093), 5, 1, 0; (6104), 3, 1, 0; (6105), 5, 1, 0; (6114), 4, 1, 0; (6116), 9, 2, 2; (6136), 9, 2, 6; (6147), 5, 1, 0; (6152), 5, 1, 0; (6156), 7, 2, 2; (6174), 4, 1, 0; (6179), 5, 1, 0; (6191), 9, 2, 2; (6201), 4, 1, 0; (6214), 9, 2, 2; (6220), 9, 2, 6; (6232), 5, 1, 0; (6250), 5, 1, 0; (6252), 4, 1, 0; (6310), 10, 2, 2; (6343), 3, 1, 0; (6346), 5, 1, 0; (6384), 5, 1, 0; (6414), 5, 1, 0; (6430), 4, 1, 0; (6460), 9, 2, 2; (6461), 5, 1, 0; (6475), 5, 1, 0; (6481), 10, 2, 2; (6495), 4, 1, 0; (6507), 3, 1, 0; (6519), 5, 1, 0; (6520), 4, 1, 0; (6526), 5, 1, 0; (6536), 5, 1, 0; (6537), 9, 2, 2; (6540), 10, 2, 2; (6552), 9, 2, 6; (6555), 10, 3, 27; (6556), 4, 1, 0; (6558), 10, 2, 2; (6567), 10, 2, 2; (6573), 4, 1, 0; (6577), 5, 1, 0; (6578), 8, 2, 2; (6581), 4, 1, 0; (6582), 3, 1, 0; (6584), 9, 2, 2; (6587), 3, 1, 0; (6596), 4, 1, 0; (6599), 8, 2, 2; (6600), 9, 2, 2; (6601), 8, 2, 2; (6607), 10, 2, 2; (6617), 7, 2, 2; (6619), 5, 1, 0; (6629), 4, 1, 0; (6630), 5, 1, 0; (6631), 10, 2, 6; (6634), 9, 2, 2; (6636), 5, 1, 0; (6637), 9, 2, 2; (6647), 7, 2, 2; (6652), 4, 1, 0; (6655), 10, 2, 2; (6658), 10, 2, 2; (6661), 8, 2, 2; (6663), 5, 1, 0; (6673), 9, 2, 2; (6682), 7, 2, 2; (6685), 5, 1, 0; (6686), 4, 1, 0; (6690), 5, 1, 0; (6695), 4, 1, 0; (6698), 5, 1, 0; (6702), 5, 1, 0; (6703), 4, 1, 0; (6704), 4, 1, 0; (6705), 4, 1, 0; (6706), 4, 1, 0; (6708), 17, 4, 32; (6712), 8, 2, 2; (6714), 18, 4, 32; (6724), 8, 2, 27; (6725), 2, 1, 0; (6733), 4, 1, 0; (6746), 9, 2, 2; (6748), 8, 2, 2; (6751), 9, 2, 2; (6754), 5, 1, 0; (6756), 8, 2, 2; (6757), 4, 1, 0; (6762), 3, 1, 0; (6763), 3, 1, 0; (6775), 5, 1, 0; (6776), 9, 2, 2; (6782), 7, 2, 2; (6786), 9, 2, 2; (6788), 14, 3, 27; (6792), 5, 1, 0; (6795), 5, 1, 0; (6796), 5, 1, 0; (6810), 4, 1, 0; (6811), 10, 2, 2; (6812), 4, 1, 0; (6813), 10, 2, 2; (6814), 15, 3, 32; (6820), 11, 3, 27; (6822), 4, 1, 0; (6824), 3, 1, 0; (6826), 14, 3, 32; (6836), 5, 1, 0; (6838), 5, 1, 0; (6839), 10, 2, 2; (6840), 4, 1, 0; (6846), 4, 1, 0; (6869), 5, 1, 0; (6890), 10, 2, 30; (6907), 7, 2, 2; (6908), 10, 2, 2; (6930), 4, 1, 0; (6937), 5, 1, 0; (6938), 7, 2, 2; (6941), 9, 2, 6; (6971), 4, 1, 0; (6984), 4, 1, 0; (6997), 3, 1, 0; (7003), 7, 2, 27; (7043), 5, 1, 0; (7046), 5, 1, 0; (7086), 4, 1, 0; (7149), 4, 1, 0; (7155), 8, 2, 2; (7157), 10, 2, 2; (7158), 10, 2, 6; (7179), 5, 1, 0; (7184), 3, 1, 0; (7189), 5, 1, 0; (7192), 4, 1, 0; (7205), 4, 1, 0; (7225), 5, 1, 0; (7287), 4, 1, 0; (7289), 4, 1, 0; (7332), 9, 2, 2; (7352), 4, 1, 0; (7358), 10, 2, 2; (7359), 3, 1, 0; (7376), 4, 1, 0; (7386), 9, 2, 2; (7387), 5, 1, 0; (7405), 9, 2, 2; (7430), 4, 1, 0; (7435), 10, 2, 2; (7436), 5, 1, 0; (7441), 8, 2, 2; (7448), 5, 1, 0; (7470), 8, 2, 2; (7472), 5, 1, 0; (7473), 5, 1, 0; (7479), 5, 1, 0; (7480), 3, 1, 0; (7481), 9, 2, 6; (7483), 3, 1, 0; (7488), 4, 1, 0; (7497), 5, 1, 0; (7524), 9, 2, 2; (7525), 8, 2, 2; (7527), 13, 3, 27; (7534), 10, 2, 2; (7535), 4, 1, 0; (7540), 7, 2, 2; (7545), 4, 1, 0; (7548), 4, 1, 0; (7556), 4, 1, 0; (7557), 4, 1, 0; (7560), 14, 3, 27; (7562), 10, 2, 2; (7564), 5, 1, 0; (7565), 5, 1, 0; (7567), 4, 1, 0; (7570), 8, 2, 2; (7572), 13, 3, 27; (7578), 7, 2, 2; (7583), 15, 3, 32; (7594), 4, 1, 0; (7595), 6, 2, 2; (7611), 4, 1, 0; (7612), 9, 2, 6; (7630), 4, 1, 0; (7632), 13, 3, 32; (7634), 3, 1, 0; (7635), 14, 3, 27; (7648), 7, 2, 2; (7651), 10, 2, 6; (7656), 5, 1, 0; (7659), 5, 1, 0; (7669), 4, 1, 0; (7676), 3, 1, 0; (7677), 3, 1, 0; (7684), 12, 3, 28; (7702), 4, 1, 0; (7708), 5, 1, 0; (7718), 10, 2, 2; (7744), 4, 1, 0; (7746), 14, 3, 27; (7754), 14, 3, 27; (7763), 13, 3, 27; (7765), 5, 1, 0; (7770), 10, 2, 2; (7770), 5, 1, 0; (7772), 3, 1, 0; (7797), 5, 1, 0; (7815), 4, 1, 0; (7844), 4, 1, 0; (7853), 4, 1, 0; (7937), 4, 1, 0; (8205), 4, 1, 0; (8328), 6, 2, 2; (8335), 8, 2, 2; (8359), 5, 1, 0; (8407), 5, 1, 0; (8425), 4, 1, 0; (8485), 4, 1, 0; (8585), 5, 1, 0; (8602), 5, 1, 0; (8652), 4, 1, 0; (8654), 5, 1, 0; (8663), 4, 1, 0; (8670), 5, 1, 0; (8709), 5, 1, 0; (8720), 4, 1, 0; (8748), 4, 1, 0; (8761), 5, 1, 0; (8785), 5, 1, 0; (8795), 3, 1, 0; (8798), 4, 1, 0; (8803), 4, 1, 0; (8804), 9, 2, 2; (8805), 4, 1, 0; (8807), 9, 2, 2; (8810), 5, 1, 0; (8811), 5, 1, 0; (8817), 9, 2, 2; (8827), 4, 1, 0; (8829), 9, 2, 2; (8830), 22, 2, 2; (8833), 10, 2, 2; (8836), 5, 1, 0; (8837), 9, 2, 2; (8838), 10, 2, 2; (8851), 5, 1, 0; (8855), 9, 2, 7; (8862), 4, 1, 0; (8864), 3, 1, 0; (8872), 4, 1, 0; (8879), 5, 1, 0; (8881), 5, 1, 0; (8884), 4, 1, 0; (8886), 9, 2, 2; (8887), 5, 1, 0; (8888), 9, 2, 6; (8896), 5, 1, 0; (8901), 9, 2, 2; (8902), 3, 1, 0; (8908), 10, 2, 2; (8909), 4, 1, 0; (8911), 4, 1, 0; (8914), 4, 1, 0; (8922), 4, 1, 0; (8931), 3, 1, 0; (8936), 10, 2, 2; (8941), 5, 1, 0; (8944), 4, 1, 0; (8953), 5, 1, 0; (8954), 5, 1, 0; (8956), 5, 1, 0; (8960), 4, 1, 0; (8968), 4, 1, 0; (8973), 3, 1, 0; [30742, 3820, 1008*, 19

Observers S. Tremaine, M. Holman, B. Gladman, W. Offutt, B. Gillespie,
C. Hastings, K. Gloria
3.5-m reflector + CCD
1994 EV₃, 2, 2, 1; 1994 JQ₁, 11, 2, 1; 1995 DW₂, 3, 3, 2; 1996 KV₁, 3, 1, 0; [19, 4, 0*,
1998/06/23–1998/06/25]

709 W & B Observatory, Cloudcroft

W. Offutt, P.O. Drawer 1130, Cloudcroft, NM 88317, U.S.A.
[loffutt@galileo.apo.nmsu.edu]
0.60-m $f/7$ Ritchey-Chrétien + CCD
USNO-SA1.0
1995 DW₂, 2, 2, 2; 1998 MN₁₄, 5, 1, 0; (8405), 3, 1, 0; [10, 3, 0*, 1998/06/24–1998/06/27]

710 Florissant

B. D. Warner, Box 818, Florissant, CO 80816, U.S.A.
[71511.515@compuserve.com]
0.25-m $f/6.3$ Schmidt-Cassegrain + focal reducer + CCD
GSC, USNO SA-1.0
(6), 4, 2, 1; (474), 4, 2, 1; (484), 4, 2, 1; (485), 4, 2, 1; (491), 4, 2, 1; (679), 8, 4, 13; (747), 4, 2, 1; (893), 4, 2, 1; (1469), 3, 2, 1; (1516), 4, 2, 1; (1660), 4, 2, 1; (1794), 4, 2, 1; (2433), 4, 2, 1; (2463), 4, 2, 1; (2711), 4, 2, 1; (4002), 4, 2, 1; (4224), 4, 2, 1; (4375), 2, 1, 0; (4564), 3, 2, 1; (4565), 3, 2, 1; (4567), 4, 2, 1; (4569), 7, 4, 13; (4572), 3, 2, 1; (4580), 2, 2, 1; (4732), 4, 2, 1; (4892), 2, 1, 0; (5090), 2, 1, 0; (5095), 4, 2, 1; (5185), 4, 2, 1; (5208), 1, 1, 0; (5263), 4, 2, 1; (5319), 3, 2, 1; (5480), 3, 2, 1; (5515), 4, 2, 1; (5636), 4, 2, 1; (5657), 4, 2, 1; (5687), 4, 2, 1; (5697), 3, 2, 1; (6009), 6, 3, 7; (6010), 4, 2, 1; (6015), 4, 2, 1; (6021), 4, 2, 1; (6048), 4, 2, 1; (6060), 3, 2, 1; (6071), 4, 2, 1; (6461), 3, 2, 1; (6537), 4, 2, 1; (6552), 3, 2, 1; (6584), 4, 2, 1; (6658), 4, 2, 1; (6663), 3, 2, 1; (6667), 4, 2, 1; (6702), 3, 2, 1; (6775), 3, 2, 1; (6795), 4, 2, 1; (6820), 4, 2, 1; (6839), 4, 2, 1; (6869), 3, 2, 1; (7318), 4, 2, 1; (7472), 4, 2, 1; (7481), 3, 2, 1; (7564), 3, 2, 1; (7651), 4, 2, 1; (7718), 4, 2, 1; (7797), 3, 2, 1; [241, 65, 0*, 1998/06/13–1998/06/26]

711 McDonald Observatory

P. J. Shelus, McDonald Observatory, University of Texas, Austin, TX 78712-1013,
U.S.A. [pjs@astro.as.utexas.edu]
0.76-m $f/3.0$ reflector + CCD
GSC
1981 EF₃₅, 2, 1, 0; 1991 QF, 3, 2, 1; 1992 JB, 3, 2, 1; 1998 HK₁, 3, 2, 1; 1998 HL₁, 4, 2, 1; 1998 HM₃, 4, 2, 1; 1998 HJ₄₁, 4, 2, 1; 1998 KV₂, 6, 3, 2; 1998 KF₃, 4, 2, 1; 1998 MW₅, 3, 1, 0; 1998 MX₅, 3, 1, 0; 1998 MY₅, 3, 1, 0; 1998 ML₁₄, 6, 2, 1; 1998 MM₁₄, 6, 2, 1; 1998 MN₁₄, 3, 1, 0; 1998 MR₁₇, 6, 2, 1; (3361), 4, 2, 1; (5370), 3, 2, 1; (7478), 2, 1, 0; (7888), 4, 2, 1; (8405), 4, 2, 1; (8709), 3, 2, 1; [83, 22, 0*, 1998/06/26–1998/06/29]

712 USAF Academy Observatory, Colorado Springs

C. Wetterer, Department of Physics, USAF Academy, CO 80840, U.S.A.
[WettererCJ.dfp@usafa.af.mil]
Observers C. Wetterer, C. Naddy
0.41-m $f/8.0$ reflector + CCD
GSC
1988 RK₉, 22, 3, 2; 1998 KU₂, 20, 5, 8; 1998 KH₁₇, 13, 4, 7; 1998 KK₅₆, 18, 5, 8; (2265), 8, 2, 1; (3353), 15, 4, 7; (5672), 20, 5, 8; (6708), 17, 4, 8; (6748), 14, 4, 8; (6838), 15, 4, 8; [162, 10, 0*, 1998/06/16–1998/06/24]

713 Thornton

R. A. Koff, 1915 W. 101st Ave., Thornton, CO 80221, U.S.A.
[Bob.Koff@worldnet.att.net]
0.20-m $f/10$ Schmidt-Cassegrain + CCD
USNO-SA1.0
1998 ME₃, 8, 3, 3; 1998 MR₁₇, 4, 1, 0; [12, 2, 0*, 1998/06/23–1998/06/30]

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
(25), 4, 1, 0; (597), 7, 1, 0; (653), 3, 1, 0; (1243), 10, 2, 20; [24, 4, 0*, 1998/04/01–1998/04/21]

721 Lime Creek

R. Linderholm, R2 Box 79, Cambridge, NE 69022, U.S.A.
[lindh@csb.cambridge.ne.us]
0.25-m $f/3.3$ Schmidt-Cassegrain + CCD
GSC
1998 JA, 2, 1, 0; 1998 MP₇ *, 6, 3, 25; [8, 2, 1*, 1998/06/24–1998/07/19]

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
1981 EA₂₃, 2, 1, 0; 1998 KV₅₄, 2, 1, 0; [4, 2, 0*, 1998/02/20–1998/06/23]

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
1998 LA, 26, 9, 41; 1998 MA *, 10, 4, 9; (458), 5, 2, 1; (557), 6, 2, 1; (982), 6, 2, 1; (1117), 3, 1, 0; (1251), 6, 2, 1; (2399), 3, 1, 0; (2882), 2, 1, 0; (3086), 6, 2, 1; (3885), 6, 2, 1; (4374), 2, 1, 0; (5943), 3, 1, 0; (6708), 3, 1, 0; (6714), 3, 1, 0; [90, 15, 1*, 1998/06/04–1998/07/31]

732 Oaxaca

J. Roe, Apdo. No. 221, MX-68000 Oaxaca, Mexico [jamesroe@antequera.com]
0.20-m $f/3.3$ reflector + CCD
GSC
(1290), 6, 2, 3; (2478), 3, 1, 0; (3353), 6, 2, 1; (4021), 6, 2, 6; (4295), 5, 2, 6; (5035), 2, 1, 0; (5672), 4, 2, 3; (6708), 6, 2, 3; (6748), 5, 2, 3; (6894), 5, 2, 3; (8709), 5, 2, 3; (8874), 6, 2, 1; (8969), 6, 2, 1; (8972), 5, 2, 1; [70, 14, 0*, 1998/06/13–1998/06/30]

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
1995 BW₂, 6, 2, 2; 1997 BR₁, 6, 2, 2; 1997 BD₂, 6, 2, 2; 1997 CU₁₉, 5, 2, 2; 1998 MQ, 3, 1, 0; 1998 MZ, 3, 1, 0; 1998 MS₂, 3, 1, 0; 1998 MX₅, 3, 1, 0; 1998 MN₁₄, 3, 1, 0; 1998 MR₂₄, 4, 1, 0; 1998 MT₂₄, 3, 1, 0; 1998 MK₃₀, 3, 1, 0; 4195 T-3, 7, 2, 2; [55, 13, 0*, 1998/06/19–1998/07/20]

735 George Observatory, Needville

W. G. Dillon, 4703 Birkenhead Circle, Missouri City, TX 77459, U.S.A.
[bdillon@houston.geoquest.slb.com]
Observers D. Borgman, K. Rivich, W. G. Dillon, M. Eastman, R. Pepper
Measurer K. Rivich, W. G. Dillon
0.46-m reflector + CCD
USNO-A1.0
1998 OL₁, 3, 1, 0; 1998 OV₁ *, 11, 5, 6; [14, 2, 1*, 1998/07/24–1998/07/30]

747 Baton Rouge Observatory

W. R. Cooney, 10330 Dunn Dr., Baton Rouge, LA 70810, U.S.A.
[walt@sprintmail.com]

Observers W. R. Cooney, P. M. Motl, T. G. Guzik

Measurer W. R. Cooney

0.508-m $f/8.4$ Ritchey-Chretien + CCD

USNO-A1.0

(986), 5, 3, 11; (2373), 3, 1, 0; (2621), 5, 2, 6; (3419), 5, 2, 15; (3550), 3, 1, 0; (5648), 7, 2, 11; (6971), 8, 2, 11; (7140), 7, 2, 11; [43, 8, 0*, 1998/05/28–1998/07/01]

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

1981 UW₂₁, 8, 3, 16; 1993 BN₄, 5, 2, 1; 1998 KE₄₇, 7, 2, 1; [20, 3, 0*, 1998/06/21–1998/07/19]

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

1981 RF₂, 4, 2, 2; 1998 MZ₇, 5, 3, 8; (284), 4, 2, 2; (1036), 13, 5, 11; (3687), 4, 2, 1; (3911), 4, 2, 2; (8201), 18, 7, 37; [52, 7, 0*, 1998/06/13–1998/07/31]

752 Puckett Observatory, Mountain Town

T. Puckett, P.O. Box 818, Ellijay, GA 30540, U.S.A.

[tpuckett@mindspring.com]

0.30-m $f/6$ reflector + CCD

GSC

(484), 5, 2, 1; (780), 5, 2, 1; (893), 5, 2, 1; [15, 3, 0*, 1998/06/13–1998/06/14]

757 High Point

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

[dkchesney@aol.com]

0.25-m Schmidt-Cassegrain + CCD

USNO-A1.0

1988 CT₅, 2, 1, 0; (754), 2, 1, 0; (950), 2, 1, 0; (1498), 2, 1, 0; (4569), 2, 1, 0; (4580), 2, 1, 0; (5040), 2, 1, 0; (6009), 2, 1, 0; [16, 8, 0*, 1998/06/08–1998/08/02]

758 BCC Observatory, Cocoa

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

[GRIFFIN.I@a1.brevard.cc.fl.us]

0.30-m $f/5$ Maksutov + CCD

GSC

1973 SQ₃, 4, 1, 0; 1991 PB, 5, 2, 1; 1992 DP₈, 7, 3, 24; 1998 ME₃, 3, 1, 0; 1998 MR₁₃, 5, 2, 1; 1998 ML₁₄, 13, 4, 7; 1998 MR₁₇, 10, 3, 33; 1998 MK₃₀, 4, 1, 0; (3353), 3, 1, 0; [54, 9, 0*, 1998/06/27–1998/08/02]

761 Zephyrhills

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

[bitnik@bitnik.com]

0.178-m $f/9.45$ reflector + CCD

GSC

1998 OL₁, 2, 1, 0; (7), 2, 1, 0; (402), 2, 1, 0; (413), 2, 1, 0; (433), 4, 2, 16; (472), 4, 2, 9; (500), 4, 2, 15; (554), 4, 2, 15; (747), 4, 2, 9; (849), 4, 2, 1; (951), 4, 2, 15; (1021), 4, 2, 9; (1036), 6, 2, 1;

(1811), 2, 1, 0; (4183), 2, 1, 0; (5985), 1, 1, 0; (6634), 4, 2, 16; (6741), 1, 1, 0; (7358), 2, 1, 0; [58, 19, 0*, 1998/06/18–1998/07/25]

784 Alfred University Observatory

D. R. DeGraff, Physics and Astronomy, Alfred University, Alfred, NY 14803,

U.S.A. [david@merlin.alfred.edu]

Observers J. Hilt, S. Thorndike, K. Bean, D. DeGraff

Measurers A. Robbins, D. DeGraff

0.81-m $f/4$ reflector + CCD

USNO-A1.0, GSC

1998 MR₂₄, 7, 1, 0; 1998 MT₂₄, 5, 1, 0; 1998 MK₃₀, 9, 1, 0; [21, 3, 0*, 1998/07/02]

801 Oak Ridge

R. E. McCrosky, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street,

Cambridge, MA 02138, U.S.A.

Observers R. E. McCrosky, C.-Y. Shao

1.5-m reflector + CCD

GSC

1991 PO₁₁, 1, 1, 0; [1, 1, 0*, 1983/05/13]

807 Cerro Tololo

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

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

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

Measurer G. Bernstein

4-m Blanco reflector + CCD

USNO-A1.0

1998 KY₆₁ *, 39, 3, 10; 1998 KG₆₂ *, 38, 3, 10; 1998 KR₆₅ *, 31, 3, 10; 1998 KS₆₅ *, 42, 3, 10; [150, 4, 4*, 1998/05/20–1998/05/30]

808 Carlos U. Cesco Observatory, El Leoncito

J. G. Sanguin, Felix Aguilar Observatory, Benavidez 8175 (Oeste), AR-5413

Chimbass, San Juan, Argentina [leoncito@unsjfa.edu.ar]

Observers J. E. Torres, M. R. Cesco, R. Gil-Hutton, H. S. Lepez, C. E. Lopez,

J. G. Sanguin

0.5-m $f/7.5$ double astrograph

PPM

1993 FU₃₉, 2, 1, 0; [2, 1, 0*, 1993/03/22]

809 European Southern Observatory

H. Debehogne, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180

Brussels, Belgium [henri@astro.oma.be] (3)

E. W. Elst, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels,

Belgium [elst@atmos.oma.be] (4)

7 = 3 + 4

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

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

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

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

1.0-m Schmidt

(4) 1964 VL₁, 6, 2, 3; 1978 VP₁, 6, 2, 1; 1979 MP₁, 6, 2, 1; 1981 EN₃₀, 3, 1, 0; 1982 UU₅, 6, 2, 1; 1982 UR₁₀, 3, 1, 0; 1984 UW, 6, 2, 3; 1986 RW₅, 3, 1, 0; 1987 RB₁, 6, 2, 1; 1987 SE₃, 6, 2, 1; 1989 GJ₄, 6, 2, 1; 1989 SP₃, 3, 1, 0; 1989 WU₂, 6, 2, 1; 1990 RD₅, 6, 2, 1; 1990 UJ₂, 6, 2, 1; 1990 WS₄, 6, 2, 1; 1991 PU₁₆, 6, 2, 3; 1991 RQ₉, 3, 1, 0; 1991 RN₁₁, 6, 2, 1; 1991 UG₃, 6, 2, 3; 1992 AE₁, 3, 1, 0; 1992 ER₄, 6, 2, 1; 1993 FT₅, 3, 1, 0; 1993 FH₃₆, 6, 2, 1; 1993 LF₂, 6, 2, 3; 1993 TK₁₁, 3, 1, 0; 1993 TJ₂₄, 3, 1, 0; 1993 WB, 3, 1, 0; 1994 BN₃, 3, 1, 0; 1994 PN₂₁, 6, 2, 1; 1995 SP₂, 6, 2, 1; 1995 WM₄, 6, 2, 1; 1995 YP, 6, 2, 1; 1996 HP₁₇, 3, 1, 0; 1996 HJ₁₈, 3, 1, 0;

1996 PR₈, 6, 2, 56; 1996 SU₄, 3, 1, 0; 1996 XQ₁₉, 1, 1, 0; 1996 YF, 6, 2, 1; 1997 AF₅, 3, 1, 0; 1997 AM₅, 3, 1, 0; 1997 AW₁₈, 6, 2, 3; 1997 BC₉, 6, 2, 1; 1997 BN₉, 6, 2, 1; 1997 CU₁₉, 6, 2, 1; 1997 CE₂₀, 3, 1, 0; 1997 DG, 6, 2, 1; 1997 GO₁, 9, 3, 5; 1997 GX₂₄, 6, 2, 1; 1997 GH₂₇, 3, 1, 0; 1997 XZ₄, 6, 2, 25; 1998 BX₁₂, 3, 1, 0; 1998 CS₃, 3, 1, 0; 1998 DY₃₃, 6, 2, 49; 1998 DA₃₄, 3, 1, 0; 1998 ED₂₁, 3, 1, 0; 1998 FG₂₉, 3, 1, 0; 1998 FL₃₆, 1, 1, 0; 1998 FT₃₉, 3, 1, 0; 1998 FP₅₃, 3, 1, 0; 1998 FF₆₈, 3, 1, 0; 1998 FO₇₀, 3, 1, 0; 1998 FE₁₁₇, 3, 1, 0; 1998 HU₁₄₄, 3, 1, 0; 1998 HU₁₄₉, 3, 1, 0; 1998 KL, 3, 1, 0; 1998 KX₃, 3, 1, 0; 1998 KY₆, 3, 1, 0; 1998 KK₂₆, 6, 2, 1; 1998 KW₂₆, 6, 2, 1; 1998 KE₃₀, 3, 1, 0; 1998 KH₄₄, 3, 1, 0; 1998 KH₄₅, 6, 2, 1; 1998 KL₄₅, 6, 2, 1; 1998 KN₄₅, 6, 2, 1; 1998 KP₄₅, 6, 2, 1; 1998 KQ₄₅, 6, 2, 1; 1998 KU₄₅, 6, 2, 1; 1998 KW₄₅, 6, 2, 1; 1998 KX₄₅, 3, 1, 0; 1998 KY₄₅, 3, 1, 0; 1998 KW₄₆, 6, 2, 1; 1998 KX₄₆, 6, 2, 1; 1998 KY₄₆, 6, 2, 1; 1998 KC₄₇, 6, 2, 1; 1998 KD₄₇, 6, 2, 1; 1998 LG *, 6, 2, 1; 1998 LH *, 6, 2, 1; 1998 LJ *, 6, 2, 1; 1998 LK *, 6, 2, 1; 1998 LL *, 6, 2, 1; 1998 LM *, 6, 2, 1; 1998 LN *, 6, 2, 1; 1998 LO *, 6, 2, 1; 1998 LP *, 6, 2, 1; 1998 LQ *, 6, 2, 1; 1998 LR *, 6, 2, 1; 1998 LS *, 6, 2, 1; 1998 LT *, 6, 2, 1; 1998 LU *, 6, 2, 1; 1998 LV *, 6, 2, 1; 1998 LW *, 6, 2, 1; 1998 LX *, 6, 2, 1; 1998 LY *, 6, 2, 1; 1998 LZ *, 6, 2, 1; 1998 LA₁ *, 6, 2, 1; 1998 LB₁ *, 6, 2, 1; 1998 LC₁ *, 6, 2, 1; 1998 LD₁ *, 6, 2, 1; 1998 LE₁ *, 6, 2, 1; 1998 LF₁ *, 6, 2, 1; 1998 LG₁ *, 6, 2, 1; 1998 LH₁ *, 6, 2, 1; 1998 LJ₁ *, 6, 2, 1; 1998 LK₁ *, 6, 2, 1; 1998 LL₁ *, 6, 2, 1; 1998 LM₁ *, 6, 2, 1; 1998 LN₁ *, 6, 2, 1; 1998 LO₁ *, 6, 2, 1; 1998 LP₁ *, 6, 2, 1; 1998 LQ₁ *, 6, 2, 1; 1998 LR₁ *, 6, 2, 1; 1998 LS₁ *, 6, 2, 1; 1998 LT₁ *, 6, 2, 1; 1998 LV₁ *, 6, 2, 1; 1998 LW₁ *, 6, 2, 1; 1998 LX₁ *, 6, 2, 1; 1998 LY₁ *, 6, 2, 1; 1998 LZ₁ *, 6, 2, 1; 1998 LA₂ *, 6, 2, 1; 1998 LB₂ *, 6, 2, 1; 1998 LC₂ *, 6, 2, 1; 1998 LD₂ *, 6, 2, 1; 1998 LE₂ *, 6, 2, 1; 1998 LF₂ *, 6, 2, 1; 1998 LG₂ *, 6, 2, 1; 1998 LH₂ *, 6, 2, 1; 1998 LJ₂ *, 6, 2, 1; 1998 LK₂ *, 6, 2, 1; 1998 LL₂ *, 6, 2, 1; 1998 LM₂ *, 6, 2, 1; 1998 LN₂ *, 6, 2, 1; 1998 LO₂ *, 6, 2, 1; 1998 LP₂ *, 6, 2, 1; 1998 LQ₂ *, 6, 2, 1; 1998 LR₂ *, 6, 2, 1; 1998 LS₂ *, 6, 2, 1; 1998 LT₂ *, 6, 2, 1; 1998 LU₂ *, 6, 2, 1; 1998 LV₂ *, 6, 2, 1; 1998 LW₂ *, 6, 2, 1; 1998 LX₂ *, 6, 2, 1; 1998 LY₂ *, 6, 2, 1; 1998 LZ₂ *, 6, 2, 1; 1998 LA₃ *, 6, 2, 1; 1998 LB₃ *, 6, 2, 1; 1998 LZ₂, 12, 2, 1; 1998 MP₂, 3, 1, 0; 1998 MA₁₄, 3, 1, 0; 1998 MC₂₉, 6, 2, 1; 1998 ME₂₉, 6, 2, 1; 1998 MG₂₉, 3, 1, 0; 1998 MK₂₉, 3, 1, 0; 1998 MP₂₉, 6, 2, 3; 1998 MQ₂₉, 9, 3, 2; 1998 MR₂₉, 6, 2, 1; 1998 MS₂₉, 6, 2, 1; 1998 MU₂₉, 6, 2, 1; 1998 MG₃₀, 3, 1, 0; 1998 ME₃₁, 3, 1, 0; 1998 MF₃₁, 6, 2, 1; 1998 MG₃₁, 6, 2, 1; 1998 MH₃₁, 6, 2, 1; 1998 MJ₃₁, 6, 2, 1; 1998 MK₃₁, 6, 2, 1; 1998 ML₃₁, 6, 2, 1; 1998 MM₃₁, 6, 2, 1; 1998 MN₃₁, 6, 2, 1; 1998 MO₃₁, 12, 4, 5; 1998 MP₃₁, 6, 2, 1; 1998 MR₃₁, 6, 2, 3; 1998 MS₃₁, 6, 2, 3; 1998 MT₃₁, 6, 2, 3; 1998 MU₃₁, 6, 2, 3; 1998 MV₃₁, 6, 2, 3; 1998 MA₃₂, 3, 1, 0; 1998 MB₃₂, 6, 2, 3; 1998 MC₃₂, 6, 2, 3; 1998 MD₃₂, 6, 2, 3; 1998 ME₃₂, 6, 2, 3; 1998 MF₃₂, 3, 1, 0; 1998 MG₃₂, 6, 2, 3; 1998 MH₃₂, 6, 2, 3; 1998 MQ₃₂, 6, 2, 1; 1998 MR₃₂, 6, 2, 1; 1998 MV₃₂, 3, 1, 0; 1998 MA₃₃, 3, 1, 0; 1998 MB₃₃, 6, 2, 1; 1998 MC₃₃, 6, 2, 1; 1998 MD₃₃, 6, 2, 1; 1998 ME₃₃, 6, 2, 1; 1998 MF₃₃, 3, 1, 0; 1998 MN₃₄, 6, 2, 1; 1998 MO₃₄, 6, 2, 1; 1998 MV₃₄, 6, 2, 1; 1998 MW₃₄, 6, 2, 1; 1998 MX₃₄, 6, 2, 1; 1998 MY₃₄, 6, 2, 1; 1998 MZ₃₄, 6, 2, 1; 1998 MA₃₅, 6, 2, 1; 1998 MB₃₅, 6, 2, 1; 1998 MD₃₅, 6, 2, 1; 1998 ME₃₅, 6, 2, 3; 1998 MY₃₅, 6, 2, 1; 1998 MC₃₆, 6, 2, 1; 1998 MH₃₈ *, 4, 2, 1; 1998 MJ₃₈ *, 6, 2, 1; 1998 MK₃₈ *, 6, 2, 1; 1998 ML₃₈ *, 6, 2, 1; 1998 MM₃₈ *, 6, 2, 1; 1998 MN₃₈ *, 6, 2, 1; 1998 MO₃₈ *, 6, 2, 1; 1998 MP₃₈ *, 6, 2, 1; 1998 MQ₃₈ *, 6, 2, 1; 1998 MR₃₈ *, 6, 2, 1; 1998 MS₃₈ *, 6, 2, 1; 1998 MT₃₈ *, 6, 2, 1; 1998 MU₃₈ *, 6, 2, 1; 1998 MV₃₈ *, 6, 2, 1; 1998 MW₃₈ *, 6, 2, 1; 1998 MX₃₈ *, 6, 2, 1; 1998 MY₃₈ *, 6, 2, 1; 1998 MZ₃₈ *, 6, 2, 1; 1998 MA₃₉ *, 6, 2, 1; 1998 MB₃₉ *, 6, 2, 1; 1998 MC₃₉ *, 6, 2, 1; 1998 MD₃₉ *, 6, 2, 1; 1998 ME₃₉ *, 6, 2, 1; 1998 MF₃₉ *, 6, 2, 1; 1998 MG₃₉ *, 6, 2, 1; 1998 MH₃₉ *, 6, 2, 1; 1998 MJ₃₉ *, 6, 2, 1; 1998 MK₃₉ *, 6, 2, 1; 1998 ML₃₉ *, 6, 2, 1; 1998 MM₃₉ *, 6, 2, 1; 1998 MN₃₉ *, 6, 2, 1; 1998 MO₃₉ *, 6, 2, 1; 1998 MP₃₉ *, 6, 2, 1; 1998 MQ₃₉ *, 6, 2, 1; 1998 MR₃₉ *, 6, 2, 1; 1998 MS₃₉ *, 6, 2, 1; 1998 MT₃₉ *, 6, 2, 1; 1998 MU₃₉ *, 6, 2, 1; 1998 MV₃₉ *, 6, 2, 1; 1998 MW₃₉ *, 6, 2, 1; 1998 MX₃₉ *, 6, 2, 1; 1998 MY₃₉ *, 6, 2, 1; 1998 MZ₃₉ *, 6, 2, 1; 1998 MA₄₀ *, 6, 2, 1; 1998 MB₄₀ *, 6, 2, 1; 1998 MC₄₀ *, 6, 2, 1; 1998 MD₄₀ *, 6, 2, 1; 1998 ME₄₀ *, 6, 2, 1; 1998 MF₄₀ *, 6, 2, 1; 1998 MG₄₀ *, 6, 2, 1; 1998 MH₄₀ *, 6, 2, 1; 1998 MJ₄₀ *, 6, 2, 1; 1998 MK₄₀ *, 6, 2, 1; 1998 ML₄₀ *, 6, 2, 1; 1998 MM₄₀ *, 6, 2, 1; 1998 MN₄₀ *, 6, 2, 1; 1998 MO₄₀ *, 6, 2, 1; 1998 MP₄₀ *, 6, 2, 1; 1998 MQ₄₀ *, 6, 2, 1; 1998 MR₄₀ *, 6, 2, 3; 1998 MS₄₀ *, 6, 2, 3; 1998 MT₄₀ *, 6, 2, 3; 1998 MU₄₀ *, 6, 2, 3; 1998 MV₄₀ *, 6, 2, 3; 1998 MW₄₀ *, 6, 2, 3; 1998 MX₄₀ *, 6, 2, 3; 1998 MY₄₀ *, 6, 2, 3; 1998 MZ₄₀ *, 6, 2, 3; 1998 MA₄₁ *, 6, 2, 3; 1998 MB₄₁ *, 6, 2, 3; 1998 MC₄₁ *, 6, 2, 3; 1998 MD₄₁ *, 6, 2, 3; 1998 ME₄₁ *, 6, 2, 3; 1998 MF₄₁ *, 6, 2, 3; 1998 MG₄₁ *, 6, 2, 3; 1998 MH₄₁ *, 6, 2, 3; 1998 MJ₄₁ *, 6, 2, 3; 1998 MK₄₁ *, 6, 2, 3; 1998 ML₄₁ *, 6, 2, 3; 1998 MM₄₁ *, 6, 2, 3; 1998 MN₄₁ *, 6, 2, 3; 1998 MO₄₁ *, 6, 2, 3; 1998 MP₄₁ *, 6, 2, 3; 1998 MQ₄₁ *, 6, 2, 3; 1998 MR₄₁ *, 6, 2, 3; 1998 MS₄₁ *, 6, 2, 3; 1998 MT₄₁ *, 6, 2, 3; 1998 MU₄₁ *, 6, 2, 3; 1998 MV₄₁ *, 6, 2, 3; 1998 MW₄₁ *, 6, 2, 3; 1998 MX₄₁ *, 6, 2, 3; 1998 MY₄₁ *, 6, 2, 3; 1998 MZ₄₁ *, 6, 2, 1; 1998 MA₄₂ *, 6, 2, 1; 1998 MB₄₂ *, 6, 2, 1; 1998 MC₄₂ *, 6, 2, 1; 1998 MD₄₂ *, 6, 2, 1; 1998 ME₄₂ *, 6, 2, 1; 1998 MF₄₂ *, 6, 2, 1; 1998 MG₄₂ *, 6, 2, 1; 1998 MH₄₂ *, 6, 2, 1; 1998 MJ₄₂ *, 6, 2, 1; 1998 MK₄₂ *, 6, 2, 1; 1998 ML₄₂ *, 6, 2, 1; 1998 MM₄₂ *, 6, 2, 1; 1998 MN₄₂ *, 6, 2, 1; 1998 MO₄₂ *, 6, 2, 1; 1998 MP₄₂ *, 6, 2, 1; 1998 MQ₄₂ *, 6, 2, 1; 1998 MR₄₂ *, 6, 2, 1; 1998 MS₄₂ *, 6, 2, 1; 1998 MT₄₂ *, 6, 2, 1; 1998 MU₄₂ *, 6, 2, 1; 1998 MV₄₂ *, 6, 2, 1; 1998 MW₄₂ *, 6, 2, 1; 1998 MX₄₂ *, 6, 2, 1; 1998 MY₄₂ *, 6, 2, 1; 1998 MZ₄₂ *, 6, 2, 1; 1998 MA₄₃ *, 6, 2, 1; 1998 MB₄₃ *, 6, 2, 1; 1998 MC₄₃ *, 6, 2, 1; 1998 MD₄₃ *, 6, 2, 1; 1998 ME₄₃ *, 6, 2, 1; 1998 MF₄₃ *, 6, 2,

1; 1998 MG₄₃ *, 6, 2, 1; 1998 MH₄₃ *, 6, 2, 1; 1998 MJ₄₃ *, 6, 2, 1; 1998 MK₄₃ *, 6, 2, 1; 1998 ML₄₃ *, 6, 2, 1; 1998 MM₄₃ *, 6, 2, 1; 1998 MN₄₃ *, 6, 2, 1; 1998 MO₄₃ *, 6, 2, 1; 1998 MP₄₃ *, 6, 2, 1; 1998 MQ₄₃ *, 6, 2, 1; 1998 MR₄₃ *, 6, 2, 1; 1998 MS₄₃ *, 6, 2, 1; 1998 MT₄₃ *, 6, 2, 1; 1998 MU₄₃ *, 6, 2, 1; 1998 MV₄₃ *, 6, 2, 1; 1998 MW₄₃ *, 6, 2, 1; 1998 MX₄₃ *, 6, 2, 1; 1998 MY₄₃ *, 6, 2, 1; 1998 MZ₄₃ *, 6, 2, 1; 1998 MA₄₄ *, 6, 2, 1; 1998 MB₄₄ *, 6, 2, 1; 1998 MC₄₄ *, 6, 2, 1; 1998 MD₄₄ *, 6, 2, 1; 1998 ME₄₄ *, 6, 2, 1; 1998 MF₄₄ *, 6, 2, 1; 1998 MG₄₄ *, 6, 2, 1; 1998 MH₄₄ *, 6, 2, 1; 1998 MJ₄₆, 3, 1, 0; 2120 T-1, 6, 2, 1; 2114 T-2, 6, 2, 1; 3067 T-2, 3, 1, 0; 4180 T-2, 6, 2, 1; (43), 3, 1, 0; (73), 6, 2, 3; (317), 6, 2, 1; (452), 6, 2, 1; (586), 6, 2, 1; (758), 6, 2, 1; (811), 6, 2, 1; (890), 6, 2, 1; (1007), 3, 1, 0; (1084), 6, 2, 1; (1127), 6, 2, 1; (1234), 6, 2, 3; (1247), 6, 2, 1; (1383), 6, 2, 1; (1551), 6, 2, 1; (1636), 3, 1, 0; (1658), 6, 2, 3; (1794), 6, 2, 1; (1852), 6, 2, 3; (2005), 9, 3, 4; (2095), 6, 2, 3; (2109), 6, 2, 1; (2155), 6, 2, 3; (2324), 6, 2, 1; (2357), 6, 2, 1; (2410), 6, 2, 1; (2620), 6, 2, 1; (2674), 3, 1, 0; (2690), 6, 2, 1; (2874), 6, 2, 1; (2961), 6, 2, 1; (3008), 6, 2, 1; (3098), 6, 2, 1; (3134), 6, 2, 1; (3227), 6, 2, 1; (3228), 6, 2, 1; (3427), 6, 2, 1; (3509), 6, 2, 1; (3534), 3, 1, 0; (3570), 6, 2, 1; (3670), 6, 2, 1; (3923), 6, 2, 1; (3999), 6, 2, 1; (4295), 6, 2, 3; (4445), 6, 2, 1; (4473), 3, 1, 0; (4701), 6, 2, 1; (4921), 6, 2, 1; (4936), 6, 2, 1; (5125), 6, 2, 3; (5415), 6, 2, 1; (5474), 6, 2, 1; (5481), 3, 1, 0; (5648), 6, 2, 1; (6252), 3, 1, 0; (6731), 6, 2, 3; (6788), 6, 2, 1; (6840), 6, 2, 1; (6890), 6, 2, 1; (6930), 6, 2, 1; (6971), 6, 2, 1; (7359), 6, 2, 1; (7473), 6, 2, 1; (7572), 3, 1, 0; (7632), 6, 2, 1; (7769), 6, 2, 3; (7937), 6, 2, 1; (8944), 6, 2, 1; [2460, 438, 219*, 1992/05/03–1998/07/01]

(7) 1996 XS₁₈, 6, 2, 1; [6, 1, 0*, 1994/07/11–1994/07/12]

(8) 1981 EB₂₂, 1, 1, 0; 1985 PQ, 2, 2, 3; 1990 QJ₃, 8, 6, 26; 1990 SS₈, 4, 4, 7; 1993 FQ₁₀, 1, 1, 0; 1993 FR₃₄, 3, 3, 3; 1994 PE₃, 1, 1, 0; 1995 QX₁₀ *, 4, 4, 10; 1995 QY₁₀ *, 15, 13, 41; 1995 SV₁₆, 4, 4, 26; 1995 SR₂₆, 1, 1, 0; 1997 AW₂, 1, 1, 0; 1998 BE₂₆, 2, 2, 4; 1998 FA₅₃, 2, 2, 37; 1998 FR₆₀, 16, 13, 33; 1998 FX₆₉, 1, 1, 0; 1998 FO₇₂, 1, 1, 0; 1998 FY₁₁₃, 1, 1, 0; 1998 HV₉₃, 1, 1, 0; 1998 HZ₉₉, 4, 4, 25; 1998 HH₁₄₈, 6, 4, 28; 1998 HU₁₄₉, 4, 4, 4; 1998 JD₂, 1, 1, 0; 1998 JE₃, 2, 2, 1; 1998 KV₇, 1, 1, 0; 1998 KX₄₈, 2, 2, 3; 3193 T-2, 1, 1, 0; [90, 27, 2*, 1992/02/29–1995/09/29]

823 Fitchburg

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[lla@tiac.net]

0.28-m Schmidt-Cassegrain + CCD

GSC

1981 UD₂, 7, 4, 12; (6708), 4, 2, 1; [11, 2, 0*, 1998/07/03–1998/08/02]

825 Granville

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

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

GSC

(5577), 10, 5, 28; (6493), 7, 4, 27; [17, 2, 0*, 1998/05/14–1998/06/11]

827 Saint-Félicien

C. Boivin, 1265 Des Cormiers, Saint-Félicien, Quebec G8K 2H5, Canada

[cboivin@destination.ca]

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

GSC

(4628), 5, 1, 0; (6838), 4, 1, 0; (8201), 20, 3, 6; [29, 3, 0*, 1998/06/29–1998/07/30]

832 Etters

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[jfetter@mindspring.com]

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

GSC, SA-1.0

(1617), 4, 2, 1; (1903), 4, 2, 1; (2120), 4, 2, 1; (2636), 4, 2, 1; [16, 4, 0*, 1998/06/18–1998/06/19]

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]

Observer R. Mackintosh

Measurers R. Mackintosh, J. R. Carozza

0.25-m $f/6.3$ reflector + CCD

USNO-A1.0

(433), 3, 2, 30; (575), 2, 1, 0; (701), 3, 2, 12; (705), 4, 2, 14; (773), 5, 2, 10; (775), 2, 1, 0; (1793), 2, 1, 0; [21, 7, 0*, 1998/04/02–1998/05/19]

839 La Plata

R. B. Orellana, Observatorio Astronómico de La Plata, AR-1900 La Plata, Argentina [rorellan@fcaglp.fcaglp.unlp.edu.ar]

Observer C. Rogatti

Measurers R. P. Di Sisto, R. B. Orellana

0.343-m $f/10$ astrograph

(2), 6, 2, 11; (6), 3, 1, 0; (8), 2, 1, 0; (11), 2, 1, 0; (13), 2, 1, 0; (18), 3, 1, 0; (30), 2, 1, 0; (39), 2, 1, 0; (55), 2, 1, 0; (60), 3, 1, 0; (82), 2, 1, 0; (84), 2, 1, 0; (115), 2, 1, 0; (120), 2, 1, 0; (141), 2, 1, 0; (166), 2, 1, 0; (182), 2, 1, 0; (192), 2, 1, 0; (324), 2, 1, 0; (356), 1, 1, 0; (385), 2, 1, 0; (387), 2, 1, 0; (446), 2, 1, 0; (454), 2, 1, 0; (480), 2, 1, 0; (481), 2, 1, 0; (500), 2, 1, 0; (503), 2, 1, 0; (508), 2, 1, 0; (527), 2, 1, 0; (538), 2, 1, 0; (545), 2, 1, 0; (559), 2, 1, 0; (567), 2, 1, 0; (578), 2, 1, 0; (736), 2, 1, 0; (753), 4, 1, 0; (795), 1, 1, 0; (865), 2, 1, 0; (987), 2, 1, 0; [87, 40, 0*, 1977/01/13–1977/10/05]

844 Los Molinos

N. Sosa, Departamento de Astronomia, Facultad de Ciencias, Montevideo, Uruguay [nsosa@fisica.edu.uy]

Observers O. Mendez, R. Salvo, J. Scheck, J. C. Tulic, E. Acosta

Measurers R. Salvo, T. Gallardo

0.35-m $f/6.4$ reflector + CCD

GSC

1998 ML₁₄, 3, 1, 0; (4954), 3, 1, 0; [6, 2, 0*, 1998/06/28–1998/07/19]

860 Valinhos

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

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

GSC

1994 VR₆, 3, 1, 0; 1998 HU₁₀₈, 8, 3, 19; 1998 KD₃, 2, 1, 0; 1998 KE₃, 4, 2, 10; 1998 KH₉, 3, 1, 0; 1998 KH₁₇, 2, 1, 0; 1998 KK₁₇, 2, 1, 0; 1998 KK₅₆, 3, 1, 0; 1998 MZ, 3, 1, 0; 1998 MS₂, 4, 1, 0; 1998 MX₅, 3, 1, 0; 1998 MY₅, 8, 3, 9; 1998 MR₁₇, 3, 1, 0; 1998 MK₃₀, 1, 1, 0; (4183), 6, 2, 10; [55, 15, 0*, 1998/05/20–1998/07/05]

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

1990 AD, 3, 1, 0; 1992 YY, 3, 1, 0; 1993 BR₃, 2, 1, 0; 1995 QH₂, 3, 1, 0; 1996 AY₃, 3, 1, 0; 1997 AQ₆, 3, 1, 0; 1998 HY₆, 2, 1, 0; 1998 LB₂, 5, 2, 8; [24, 8, 1*, 1998/06/07–1998/06/15]

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

1990 AD, 2, 1, 0; [2, 1, 0*, 1998/06/16]

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, B. Gaillard

Measurers A. Maury, G. Hahn, M. Hoffmann

0.90-m Schmidt + CCD

GSC

1979 MM₃, 3, 1, 0; 1979 MA₄, 9, 2, 6; 1979 MV₈, 3, 1, 0; 1981 EG₃₁, 3, 1, 0; 1989 GM, 6, 2, 4; 1990 WW₁, 12, 4, 32; 1991 TH₆, 12, 4, 9; 1991 VL₆, 6, 2, 4; 1992 EE₁₄, 6, 2, 3; 1993 BD₄, 9, 3, 4; 1993 FQ₂₄, 3, 1, 0; 1994 AY₁₀, 3, 1, 0; 1994 GL₉, 6, 2, 1; 1995 UB₂₁, 3, 1, 0; 1995 WO, 3, 1, 0; 1997 CF₃, 6, 2, 1; 1997 ES₄₀, 6, 2, 6; 1998 FX₄₉, 3, 1, 0; 1998 FN₅₄, 3, 1, 0; 1998 FX₅₅, 3, 1, 0; 1998 FQ₁₂₁, 3, 1, 0; 1998 FX₁₃₃, 3, 1, 0; 1998 FX₁₃₄, 3, 1, 0; 1998 HU₇, 3, 1, 0; 1998 HN₁₇, 3, 1, 0; 1998 HV₁₉, 6, 2, 27; 1998 HE₂₁, 3, 1, 0; 1998 HM₂₁, 3, 1, 0; 1998 HL₃₉, 3, 1, 0; 1998 HX₅₅, 3, 1, 0; 1998 HG₅₆, 3, 1, 0; 1998 HH₅₆, 3, 1, 0; 1998 HJ₅₆, 3, 1, 0; 1998 HK₅₆, 3, 1, 0; 1998 HZ₆₀, 6, 2, 23; 1998 HZ₆₂, 3, 1, 0; 1998 HB₆₃, 3, 1, 0; 1998 HC₆₃, 3, 1, 0; 1998 HD₆₃, 3, 1, 0; 1998 HQ₆₃, 3, 1, 0; 1998 HR₆₃, 3, 1, 0; 1998 HP₆₆, 3, 1, 0; 1998 HQ₆₆, 3, 1, 0; 1998 HV₆₆, 3, 1, 0; 1998 HL₆₇, 6, 1, 0; 1998 HB₇₀, 3, 1, 0; 1998 HT₇₁, 3, 1, 0; 1998 HU₇₁, 3, 1, 0; 1998 HY₇₁, 3, 1, 0; 1998 HC₇₅, 3, 1, 0; 1998 HR₈₄, 3, 1, 0; 1998 HV₁₂₉, 3, 1, 0; 1998 HZ₁₃₉, 3, 1, 0; 1998 HS₁₅₀, 3, 1, 0; 1998 KW, 3, 1, 0; 1998 KL₂₂, 3, 1, 0; 1998 KM₂₂, 3, 1, 0; 1998 KR₂₃, 3, 1, 0; 1998 KW₂₅, 6, 2, 28; 1998 KH₂₇, 6, 2, 18; 1998 KT₂₈, 6, 2, 18; 1998 KG₃₄, 3, 1, 0; 1998 KX₃₄, 3, 1, 0; 1998 KP₃₇, 3, 1, 0; 1998 KN₄₀, 3, 1, 0; 1998 KA₅₅, 6, 2, 1; 1998 KL₅₅, 3, 1, 0; 1998 KN₅₅, 9, 3, 7; 1998 KR₅₅, 6, 2, 1; 1998 KY₅₅, 6, 2, 1; 1998 KS₆₁, 3, 1, 0; 1998 MG₂, 9, 3, 28; 1998 MH₂, 6, 2, 2; 1998 MJ₂, 6, 2, 2; 1998 MK₂, 6, 2, 2; 1998 ML₂, 6, 2, 1; 1998 MM₂, 9, 3, 7; 1998 MN₂, 9, 3, 2; 1998 MO₂, 9, 3, 2; 1998 MP₂, 12, 4, 7; 1998 MQ₂, 9, 3, 6; 1998 MP₇, 3, 1, 0; 1998 MQ₇, 9, 3, 6; 1998 MR₇, 6, 2, 6; 1998 MS₇, 9, 3, 6; 1998 MT₇, 6, 2, 6; 1998 MV₇, 3, 1, 0; 1998 MN₈, 6, 2, 1; 1998 MZ₈, 9, 3, 6; 1998 ML₉, 3, 1, 0; 1998 MS₉, 9, 3, 31; 1998 MT₁₃, 3, 1, 0; 1998 MX₁₃, 6, 2, 7; 1998 MY₁₃, 9, 3, 17; 1998 MZ₁₃, 6, 2, 7; 1998 MA₁₄, 6, 2, 6; 1998 MB₁₄, 6, 2, 6; 1998 MC₁₄, 6, 2, 6; 1998 MD₁₄, 6, 2, 6; 1998 ME₁₄, 6, 2, 6; 1998 MF₁₄, 6, 2, 5; 1998 MG₁₄, 9, 3, 5; 1998 MS₁₈, 6, 2, 1; 1998 MT₁₈, 6, 2, 1; 1998 MU₁₈, 6, 2, 1; 1998 MV₁₈, 6, 2, 1; 1998 MW₁₈, 6, 2, 1; 1998 MX₁₈, 6, 2, 1; 1998 MY₁₈, 6, 2, 1; 1998 MZ₁₈, 6, 2, 1; 1998 MA₁₉, 6, 2, 1; 1998 MB₁₉, 6, 2, 1; 1998 ML₃₀, 6, 2, 1; 1998 MM₃₀, 4, 2, 4; 1998 MN₃₀, 6, 2, 5; 1998 MO₃₀, 6, 2, 4; 1998 MQ₃₂, 6, 2, 6; 1998 MT₃₂, 6, 2, 6; 1998 MW₃₂, 6, 2, 6; 1998 MS₃₄, 3, 1, 0; 1998 MT₃₄, 3, 1, 0; 1998 MU₃₄, 3, 1, 0; 1998 MX₃₄, 6, 2, 10; 1998 MY₃₄, 6, 2, 2; 1998 MC₃₆, 3, 1, 0; 1998 MD₃₇, 6, 2, 9; 1998 ME₃₇, 6, 2, 9; 1998 MF₃₇, 3, 1, 0; 1998 MX₃₈, 3, 1, 0; 1998 MQ₃₉, 3, 1, 0; 1998 MA₄₀, 3, 1, 0; 1998 MK₄₀, 3, 1, 0; 1998 MQ₄₀, 9, 3, 4; 1998 MN₄₆, 3, 1, 0; 1998 OA*, 6, 2, 1; 1998 OB*, 12, 4, 7; 1998 OC*, 6, 2, 2; 1998 OD*, 6, 2, 2; 1998 OE*, 6, 2, 2; 1998 OF*, 6, 2, 2; 1998 OG*, 6, 2, 2; 1998 ON*, 6, 2, 1; 1998 OO*, 15, 5, 11; 1998 OP*, 9, 3, 4; 1998 OQ*, 12, 4, 7; 1998 OR*, 15, 5, 10; 1998 OS*, 18, 6, 11; 1998 OT*, 6, 2, 1; 1998 OU*, 9, 3, 7; 1998 OV*, 6, 2, 1; 1998 OW*, 12, 4, 7; 1998 OX*, 9, 3, 10; 1998 OY*, 15, 5, 11; 1998 OZ*, 9, 3, 4; 1998 OQ₁, 6, 2, 6; 1998 OU₂, 6, 2, 10; 1998 OV₂, 6, 2, 2; 1998 OW₂, 6, 2, 4; 1998 OX₂, 6, 2, 4; 1998 OY₂, 9, 3, 10; 1998 OZ₂, 6, 2, 3; 1998 OA₃, 6, 2, 9; 1998 OB₃, 6, 2, 3; 1998 OC₃, 6, 2, 3; 1998 OD₃, 6, 2, 3; 1998 OE₃, 6, 2, 1; 1998 OF₃, 6, 2, 1; 1998 OG₃, 9, 3, 6; 1998 OH₃, 6, 2, 3; 1998 OJ₃, 6, 2, 3; 1998 OK₃, 6, 2, 3; 1998 OL₃, 6, 2, 3; 1998 OM₃, 6, 2, 3; 1998 ON₃, 6, 2, 3; 1998 OO₃, 15, 5, 10; 1998 OP₃, 6, 2, 3; 1998 OQ₃, 9, 3, 6; 1998 OR₃, 6, 2, 3; 1998 OS₃, 6, 2, 3; 1998 OT₃, 9, 3, 4; 1998 OU₃, 6, 2, 3; 1998 OV₃, 9, 3, 4; 1998 OW₃, 9, 3, 4; 1998 OX₃, 6, 2, 3; 1998 OY₃, 9, 3, 9; 1998 OZ₃, 6, 2, 3; 1998 OA₄, 9, 3, 9; 1998 OB₄, 9, 3, 9; 1998 OC₄, 6, 2, 3; 1998 OD₄, 9, 3, 9; 1998 OE₄, 6, 2, 3; 1998 OG₄, 9, 3, 6; 1998 OH₄, 9, 3, 6; 1998 OA₅, 4, 2, 3; 1998 OB₅, 6, 2, 4; 1998 OC₅, 6, 2, 3; 1998 OD₅, 6, 2, 3; 1998 OE₅, 6, 2, 3; 1998 OF₅, 6, 2, 1; 1998 OG₅, 6, 2, 1; 1998 OH₅, 6, 2, 1; 1998 OJ₅, 6, 2, 1; 1998 OK₅, 6, 2, 1; 1998 OL₅, 6, 2, 1; 1998 OM₅, 6, 2, 1; 1998 ON₅, 6, 2, 1; 1998 OO₅, 6, 2, 1; 1998 OP₅, 6, 2, 1; 1998 OQ₅, 6, 2, 1; 1998 OR₅, 6, 2, 1; 1998 OS₅, 6, 2, 1; 1998 OT₅, 6, 2, 1; 1998 OU₅, 6, 2, 1; 1998 OV₅, 6, 2, 1; 1998 OH₆, 3, 1, 0; 1998 OJ₆, 6, 2, 9; 1998 OK₆, 6, 2, 9; 1998 OL₆, 6, 2, 9; 1998 OM₆, 6, 2, 9; 1998 ON₆, 6, 2, 6; 1998 OO₆, 6, 2, 6; 1998 OP₆, 6, 2, 6; 2614 P-L, 6, 2, 2; (723), 3, 1, 0; (951), 9, 3, 4; (1084), 3, 1, 0; (1127), 3, 1, 0; (1636), 3, 1, 0; (1726), 9, 3, 4; (2227), 3, 1, 0; (2400), 9, 3, 6; (2595), 3, 1, 0; (2845), 6, 2, 1; (3086), 3, 1, 0; (3134), 6, 2, 1; (3315), 3, 1, 0; (3721), 8, 1, 0; (3796), 18, 6, 11; (3950), 3, 1, 0; (4936), 3, 1, 0; (5090), 6, 2, 1; (5453), 3, 1, 0; (6043), 12, 3, 34; (6634), 3, 1, 0; (6703), 6, 2, 2; (6755), 3, 1, 0; (7752), 3, 1, 0; (7950), 6, 1, 0; [1450, 248, 127*, 1996/10/19–1998/08/02]

950 La Palma

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Observers M. E. Fletcher, S. Collander-Brown

2.5-m Isaac Newton Telescope + CCD

GSC

1994 EV₃, 3, 1, 0; 1994 GV₉, 2, 1, 0; 1994 JS, 5, 2, 1; 1994 JR₁, 4, 2, 1; 1995 DC₂, 3, 2, 1; 1995 HM₅, 5, 2, 1; 1996 KV₁, 2, 1, 0; 1998 FH₆₉, 5, 2, 1; 1998 HT₃₂, 5, 2, 1; [34, 9, 0*, 1998/05/23–1998/05/25]

951 Highworth

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[OC34@dial.pipex.com]

0.30-m Newtonian reflector + CCD

GSC

(434), 4, 2, 3; (667), 4, 3, 8; [8, 2, 0*, 1998/06/20–1998/07/21]

952 Marxuquera

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

GSC

1964 YJ, 4, 1, 0; 1985 PQ, 6, 2, 1; 1985 PA₁, 3, 1, 0; 1990 OY₁, 3, 1, 0; 1990 QR, 3, 1, 0; 1995 SX₃, 2, 1, 0; 1996 XW₃₀, 2, 1, 0; 1996 YY, 4, 1, 0; (647), 2, 1, 0; (2207), 2, 1, 0; (2241), 2, 1, 0; (7851), 4, 1, 0; (8778), 4, 1, 0; [41, 13, 0*, 1998/06/18–1998/07/20]

955 Sasseoires

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

GSC, SA-1.0

(1136), 3, 1, 0; [3, 1, 0*, 1998/06/29]

958 Observatoire de Dax

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Observer P. Dupouy

Measurer J.-F. Lahitte

0.254-m *f*/6.7 reflector + CCD

GSC

(2411), 5, 2, 1; (3950), 12, 5, 8; (5415), 6, 2, 6; [23, 3, 0*, 1998/07/14–1998/07/23]

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C/1997 T1 (Utsunomiya)

Epoch 1997 Dec. 18.0 TT = JDT 2450800.5

T 1997 Dec. 10.1450 TT

				Nakano	
<i>q</i>		(2000.0)	P	Q	
<i>z</i>	+0.001085	ω 95.9656	+0.4319069	−0.6403248	
	±0.000001	Ω 53.7032	−0.7211517	−0.6681229	
<i>e</i>	0.998525	<i>i</i> 127.9926	+0.5416609	−0.3789405	

From 575 observations 1997 Oct. 5–1998 June 18, mean residual 0".7.

P/1998 G1 (LINEAR)

Epoch 1998 Nov. 3.0 TT = JDT 2451120.5

T 1998 Nov. 16.6348 TT

				Nakano	
<i>q</i>		(2000.0)	P	Q	
<i>n</i>	0.0234599	ω 236.3268	−0.4358351	+0.8483731	
<i>a</i>	12.085133	Ω 341.3839	+0.7180987	+0.1264935	
<i>e</i>	0.823478	<i>i</i> 109.7129	−0.5425698	−0.5140646	

P 42.0

From 154 observations 1998 Apr. 2–June 17, mean residual 0".6.

C/1998 H1 (Stonehouse)

Epoch 1998 Apr. 17.0 TT = JDT 2450920.5

T 1998 Apr. 14.4248 TT

				Nakano	
<i>q</i>		(2000.0)	P	Q	
<i>z</i>	+0.001403	ω 1.3243	−0.7456043	−0.1528761	
	±0.000118	Ω 222.1089	−0.6199484	−0.1978632	
<i>e</i>	0.997913	<i>i</i> 104.6922	−0.2444138	+0.9682350	

From 343 observations 1998 Apr. 26–July 20, mean residual 0".7.

C/1998 J1 (SOHO)

T 1998 May 8.6168 TT

				Marsden	
<i>q</i>		(2000.0)	P	Q	
		ω 110.5409	−0.2854251	−0.9496766	
		Ω 351.6687	+0.1018247	+0.1038121	
<i>e</i>	1.0	<i>i</i> 62.9296	+0.9529765	−0.2955290	

From 185 observations 1998 May 20–July 19.

C/1998 K1 (Mueller)

Epoch 1998 Aug. 15.0 TT = JDT 2451040.5

<i>T</i> 1998 Sept. 1.0321 TT		Nakano	
<i>q</i>	(2000.0)	P	Q
<i>z</i>	3.416457		
	ω 165.2479	−0.9831897	+0.0044148
	Ω 18.2578	−0.1566627	−0.5338675
	i 35.6356	+0.0937803	−0.8455566
<i>e</i>	0.944800		

From 149 observations 1998 Apr. 22–June 24, mean residual 0″.5.

C/1998 K2 (LINEAR)*T* 1998 Sept. 1.1601 TT

<i>q</i> 2.324072		Marsden	
ω	(2000.0)	P	Q
	221.3873	−0.0059003	+0.5407031
	Ω 68.7824	−0.4989889	+0.7274013
	i 64.4702	−0.8665883	−0.4225253
<i>e</i>	1.0		

From 123 observations 1998 May 24–Aug. 2.

C/1998 K3 (LINEAR)*T* 1998 Mar. 7.2366 TT

<i>q</i> 3.546758		Nakano	
ω	(2000.0)	P	Q
	47.8419	−0.1371321	−0.9538885
	Ω 307.9572	−0.9790003	+0.0894689
	i 160.2062	−0.1508416	+0.2865171
<i>e</i>	1.0		

From 171 observations 1998 May 23–July 26.

C/1998 K5 (LINEAR)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>T</i> 1998 July 17.4465 TT		Marsden	
<i>q</i>	(2000.0)	P	Q
	0.963547		
	ω 99.4588	+0.6428490	+0.7607939
	Ω 211.1191	−0.7528895	+0.6061416
	i 9.9269	−0.1410766	+0.2319160
<i>e</i>	0.986670		

From 379 observations 1998 May 26–July 25, mean residual 0″.5.

C/1998 M1 (LINEAR)

Epoch 1998 Nov. 3.0 TT = JDT 2451120.5

<i>T</i> 1998 Oct. 28.0373 TT		Marsden	
<i>q</i>	(2000.0)	P	Q
	3.119112		
	ω 19.3741	+0.0745823	+0.9381270
	Ω 256.0632	−0.9547368	−0.0307447
	i 20.3908	−0.2879499	+0.3449238
<i>e</i>	0.992339		

From 130 observations 1998 May 22–July 25, mean residual 0″.7.

C/1998 M2 (LINEAR)

Epoch 1998 Aug. 15.0 TT = JDT 2451040.5

<i>T</i> 1998 Aug. 13.2703 TT		Marsden	
<i>q</i>	(2000.0)	P	Q
	2.724634		
	ω 37.2768	+0.1712929	+0.4869263
	Ω 260.8736	−0.9736549	+0.2164751
	i 60.1652	+0.1505155	+0.8461922
<i>e</i>	0.996964		

From 188 observations 1998 May 28–Aug. 4, mean residual 0″.6.

C/1998 M3 (Larsen)*T* 1998 July 17.7545 TT

<i>q</i> 5.766849		Nakano	
ω	(2000.0)	P	Q
	20.8986	−0.3707779	−0.2700465
	Ω 255.5192	−0.9276136	+0.0609615
	i 113.4008	−0.0453511	+0.9609155
<i>e</i>	1.0		

From 84 observations 1998 May 26–July 25.

C/1998 M4 (LINEAR)*T* 1997 Dec. 10.4444 TT

<i>q</i> 2.602030		Nakano	
ω	(2000.0)	P	Q
	106.3744	+0.8797790	−0.2055201
	Ω 92.9140	−0.3817047	−0.8428753
	i 154.5822	+0.2833556	−0.4973155
<i>e</i>	1.0		

From 99 observations 1998 June 25–July 22.

C/1998 M5 (LINEAR)*T* 1999 Jan. 24.2786 TT

<i>q</i> 1.745425		Nakano	
ω	(2000.0)	P	Q
	101.1088	−0.1131870	−0.8890428
	Ω 333.4049	−0.1993322	+0.4577224
	i 82.2683	+0.9733732	−0.0096461
<i>e</i>	1.0		

From 186 observations 1998 June 30–Aug. 3.

C/1998 M6 (Montani)*T* 1998 Oct. 5.7305 TT

<i>q</i> 5.980138		Nakano	
ω	(2000.0)	P	Q
	9.0667	+0.5853976	−0.1155196
	Ω 306.6045	−0.7923296	−0.2912866
	i 91.5581	−0.1718239	+0.9496354
<i>e</i>	1.0		

From 57 observations 1998 June 30–Aug. 3.

93P/Lovas 1

Epoch 1998 Nov. 3.0 TT = JDT 2451120.5

<i>T</i> 1998 Oct. 14.1496 TT		Marsden	
<i>q</i>	(2000.0)	P	Q
	1.691784		
	ω 74.4925	+0.5730525	−0.8163122
	Ω 340.0194	+0.6469308	+0.5048499
	i 12.2367	+0.5030819	+0.2806438
<i>e</i>	0.613122		

P 9.14

From 45 observations 1980–1998, mean residual 0″.7. Nongravitational parameters

$$A_1 = +0.09, A_2 = -0.0046.$$

138P/Shoemaker-Levy 7

Epoch 1998 Aug. 15.0 TT = JDT 2451040.5

<i>T</i> 1998 Aug. 24.5726 TT		Marsden	
<i>q</i>	(2000.0)	P	Q
	1.697219		
	ω 95.5287	+0.6946829	−0.7065077
	Ω 309.5159	+0.5709207	+0.6558357
	i 10.0889	+0.4375675	+0.2659444
<i>e</i>	0.531116		

P 6.89

From 32 observations 1991–1998, mean residual 0″.7.

(8981)* 1964 YJ = 1972 LP = 1995 WA₄

Discovered 1964 Dec. 31 at the Purple Mountain Observatory.

Id. A. Lowe (*MPC* 13480), T. Urata (*MPC* 26394)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18908971	ω	59.07487	−0.98272373	−0.05755329		
<i>a</i>	3.0062432	Ω	117.10789	+0.00072235	−0.95160623		
<i>e</i>	0.0342796	<i>i</i>	11.39723	+0.18507712	−0.30188276		
<i>P</i>	5.21	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1964 12 31	330	1.9−	0.5−	1998 05 23	704	0.7−	0.1+	1998 06 19	704	0.8−	0.5+
1965 01 08	330	1.8+	0.3−	1998 05 23	704	0.1+	0.4+	1998 06 19	704	(0.8+	2.1+)
1972 06 06	095	0.1−	1.9−	1998 05 23	704	0.5+	1.0+	1998 06 19	704	(3.7−	1.9+)
1972 06 10	095	(1.4−	7.3−)	1998 05 26	704	0.4−	0.6+	1998 06 20	610	(2.1+	0.5+)
1995 11 18	905	0.9+	0.4+	1998 05 26	704	1.1−	1.2−	1998 06 20	610	1.8+	0.3+
1995 11 18	905	0.0	0.2+	1998 05 26	704	0.9−	1.0−	1998 06 20	610	1.5+	0.1+
1995 11 21	905	0.6−	0.2−	1998 05 26	704	0.1+	0.9−	1998 06 20	610	1.1+	0.2−
1995 11 21	905	0.3−	0.3−	1998 05 26	704	0.7−	1.0−	1998 06 20	952	0.5+	0.3−
1995 12 01	385	0.3−	0.1+	1998 06 13	610	0.4−	0.4+	1998 06 20	952	0.4+	0.3−
1995 12 01	385	0.3−	0.2+	1998 06 13	610	0.1−	0.6+	1998 06 20	952	0.0	0.2+
1995 12 01	385	0.3−	0.1−	1998 06 13	610	0.3+	0.8+	1998 06 20	952	0.2−	0.5−
1996 02 19	801	0.2+	0.4−	1998 06 13	610	0.7+	1.2+	1998 06 25	704	0.3+	0.5+
1996 02 19	801	0.1−	0.9−	1998 06 13	610	1.0+	1.5+	1998 06 25	704	0.4−	0.2+
1996 03 17	801	0.2+	0.1+	1998 06 15	610	0.4+	0.3−	1998 06 25	704	0.3−	0.3+
1996 03 17	801	0.6+	0.3+	1998 06 15	610	0.6+	0.1−	1998 06 25	704	0.9−	0.3−
1996 03 19	801	0.6+	0.3+	1998 06 15	610	1.0+	0.1+	1998 06 25	704	1.1−	0.1−
1996 03 19	801	0.2+	0.2+	1998 06 15	610	1.2+	0.3+	1998 07 20	566	0.6−	0.4−
1997 01 10	689	0.0	0.3+	1998 06 19	704	0.8−	1.1−	1998 07 20	566	1.5−	0.6−
1998 05 23	704	0.1+	0.1+	1998 06 19	704	0.2−	0.2+	1998 07 20	566	1.1−	0.5−

(8982)* 1973 SQ₃ = 1973 SJ₆ = 1991 RW₉

Discovered 1973 Sept. 25 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. S. Nakano (d, *MPC* 14930), E. Bowell (*MPC* 19288)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27396623	ω	163.25252	+0.99181379	+0.12641957		
<i>a</i>	2.3478554	Ω	189.53888	−0.12602793	+0.94645377		
<i>e</i>	0.1557188	<i>i</i>	6.23094	−0.02055179	+0.29705783		
<i>P</i>	3.60	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	0.7−	1.2−	1991 09 10	675	0.1+	0.0	1998 05 23	699	0.6−	1.9−
1973 09 19	675	1.8−	0.3−	1991 09 17	675	0.0	0.4−	1998 05 23	699	0.0	0.5−
1973 09 20	675	0.8−	0.5−	1991 10 05	691	0.6−	0.9+	1998 05 23	699	1.3−	0.1−
1973 09 24	675	0.3+	0.3−	1991 10 05	691	0.7−	0.7+	1998 05 24	699	1.3−	1.2−
1973 09 24	675	0.4−	1.4−	1991 10 05	691	0.9−	0.8+	1998 05 24	699	0.5−	0.8−
1973 09 25	675	0.3+	1.1+	1991 11 07	675	0.1−	0.8−	1998 05 24	699	0.9−	1.3−
1973 09 25	675	0.8−	0.3−	1991 11 07	675	1.1+	1.3−	1998 06 19	699	0.0	0.4−
1973 09 25	095	1.9+	1.4−	1991 11 09	675	0.0	1.1−	1998 06 19	699	0.2+	0.4−
1973 09 28	095	(2.7+	0.9+)	1991 11 09	675	0.4+	1.2−	1998 06 19	699	0.3+	0.3−
1973 09 29	675	0.3+	0.7+	1997 03 08	809	0.3+	0.5−	1998 06 25	699	0.4+	0.2−
1973 09 29	675	0.9+	0.4+	1997 03 08	809	0.2+	0.9−	1998 06 25	699	0.2+	0.0
1973 09 30	675	0.4+	0.2+	1997 03 08	809	0.4+	0.1−	1998 06 25	699	0.4+	0.4−
1973 09 30	675	0.1+	0.1+	1997 03 09	809	(0.6+	3.2+)	1998 07 22	758	0.2+	0.7+
1973 10 04	675	0.3+	0.7−	1997 03 09	809	(0.1−	2.9+)	1998 07 22	758	0.7+	1.6+
1973 10 04	675	0.0	0.8−	1997 03 09	809	(0.8+	2.6+)	1998 07 22	758	0.8+	1.6+
1973 10 05	675	0.6−	0.1−	1997 04 14	691	0.8−	1.2−	1998 07 22	758	0.5+	1.7+
1973 10 05	675	2.1+	0.6+	1997 04 14	691	0.7−	1.1−				
1991 09 10	675	(1.9+	3.3+)	1997 04 14	691	0.8−	1.3−				

**(8983)* 1977 ED₁ = 1977 GP = 1969 TV = 1975 XX₄ = 1985 VU₂
= 1985 VX₄ = 1990 SU₂₈ = 1998 JD**

Discovered 1977 Mar. 13 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. S. Nakano (d, *MPC* 9751), G. V. Williams (*MPC* 31942)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19003518	ω	270.55810	−0.09512550	−0.99533926		
<i>a</i>	2.9962638	Ω	184.98425	+0.97039135	−0.08916896		
<i>e</i>	0.0798679	<i>i</i>	10.50440	+0.22201750	−0.03672394		
<i>P</i>	5.19	<i>H</i>	12.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1969 10 07	095	0.7+	0.9−	1998 03 29	704	0.2−	0.7+	1998 05 01	691	0.1−	1.4+
1969 10 16	095	0.7+	0.5−	1998 03 29	704	0.5−	0.8+	1998 05 01	691	1.3−	0.2+
1975 12 03	095	(5.3−	1.9−)	1998 03 29	704	0.6+	0.9+	1998 05 02	691	1.0−	0.2+
1977 03 13	095	0.4−	0.0	1998 03 29	704	0.1+	0.3+	1998 05 02	691	1.5−	0.7+
1977 03 25	095	1.1+	0.5−	1998 04 21	704	1.0+	0.2+	1998 05 02	691	(2.2−	0.4+)
1977 03 26	095	(3.3+	0.0)	1998 04 21	704	1.4+	0.8−	1998 05 16	704	0.3−	1.0−
1977 04 10	381	1.6−	0.7−	1998 04 21	704	0.4+	0.2−	1998 05 16	704	0.5−	0.1−
1977 04 10	381	0.5−	0.2−	1998 04 21	704	1.4+	0.8+	1998 05 16	704	0.8−	0.8−
1985 11 09	095	1.3+	0.1+	1998 04 21	704	0.1+	0.3−	1998 05 16	704	0.4−	0.2−
1985 11 11	095	0.7−	1.4−	1998 04 22	704	0.6+	0.1−	1998 05 16	704	0.2+	0.1+
1990 09 24	095	1.7−	1.6+	1998 04 22	704	1.5+	0.1−	1998 05 23	699	0.9−	0.5−
1990 09 24	095	(2.9+	1.4−)	1998 04 22	704	0.9+	0.9+	1998 05 23	699	0.7−	0.9−
1993 04 17	675	0.6−	0.2+	1998 04 22	704	0.9+	0.6−	1998 05 23	699	0.5−	1.1−
1993 04 17	675	1.0−	0.1+	1998 04 22	704	0.8+	0.0	1998 05 24	699	1.0+	0.1−
1998 03 29	704	0.1+	0.1+	1998 05 01	691	0.6−	0.3+	1998 05 24	699	0.5+	1.0−

(8984)* 1977 QD₃ = 1986 TA₇

Discovered 1977 Aug. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. T. Kobayashi (*MPC* 12005)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22824912	ω	316.63490	+0.81256483	+0.58235616		
<i>a</i>	2.6517341	Ω	7.86183	−0.47384473	+0.68445753		
<i>e</i>	0.2403339	<i>i</i>	10.31344	−0.33942535	+0.43861053		
<i>P</i>	4.32	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 08 22	095	2.1−	2.4+	1990 05 29	413	1.5+	0.6+	1998 04 30	566	0.8−	1.3−
1977 08 24	095	(2.0−	4.7+)	1990 10 16	801	0.6+	0.6−	1998 04 30	566	0.4−	1.0−
1977 09 07	095	(3.4+	1.8−)	1990 10 16	801	0.3−	0.5−	1998 04 30	566	0.6−	0.9−
1977 09 07	095	(0.4+	4.7+)	1990 10 17	801	0.1−	1.5−	1998 06 18	704	1.7+	0.9−
1986 10 09	092	0.9+	0.2+	1990 10 17	801	0.0	0.7−	1998 06 18	704	0.5−	0.7+
1986 10 09	092	0.9+	0.8−	1990 10 22	675	(2.3+	0.3−)	1998 06 18	704	1.5−	1.0−
1986 10 11	092	0.7+	0.1−	1990 10 22	675	0.5+	1.1−	1998 06 18	704	(3.7−	1.4+)
1986 10 11	092	0.0	0.1+	1992 02 05	675	1.0−	0.8+	1998 06 20	566	0.5+	0.3+
1986 10 12	092	0.5+	0.3−	1992 02 05	675	1.1−	1.0−	1998 06 20	566	0.2+	0.0
1986 10 12	092	(3.5+	1.1−)	1992 05 14	599	0.5+	0.0	1998 06 20	566	0.2−	0.6+
1990 05 29	413	(3.7+	0.5+)	1996 11 14	599	1.1+	0.1−				

(8985)* 1978 PV₃ = 1995 QQ₂

Discovered 1978 Aug. 9 by N. S. Chernykh and L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. T. Kobayashi (*MPC* 25727)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29102533	ω	23.17436	+0.54238584	+0.83719060		
<i>a</i>	2.2551851	Ω	279.73907	−0.78152578	+0.47212082		
<i>e</i>	0.2004352	<i>i</i>	4.08504	−0.30827757	+0.27606854		
<i>P</i>	3.39	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 08 09	095	0.0	0.2+	1998 04 25	809	(0.1+	2.4−)	1998 05 24	704	0.4−	0.2−
1978 08 31	095	1.2−	1.4+	1998 04 25	809	(0.2+	2.1−)	1998 05 24	704	0.6−	0.4+

1978 09 05	095	0.2+	0.7+	1998 04 25	809	(0.7−	2.7−)	1998 05 24	704	0.3−	0.7−
1995 08 21	400	(4.8+	0.9−)	1998 04 28	809	1.5+	0.7−	1998 06 16	704	0.5+	0.7−
1995 08 21	400	(4.4+	2.5−)	1998 04 28	809	(1.0+	2.5−)	1998 06 16	704	0.5+	0.3+
1995 08 23	400	1.6+	0.0	1998 04 28	809	(1.3+	2.9−)	1998 06 16	704	0.2+	0.2−
1995 08 23	400	(2.9+	0.9+)	1998 05 22	704	0.4−	0.0	1998 06 16	704	0.3−	1.2−
1995 10 24	691	0.3−	0.2−	1998 05 22	704	0.1−	0.5+	1998 06 16	704	0.9−	1.3−
1995 10 24	691	0.8−	0.3−	1998 05 22	704	0.2−	0.9+	1998 06 18	704	0.4+	0.2−
1995 10 24	691	0.7−	0.3−	1998 05 22	704	0.4+	1.4+	1998 06 18	704	0.1−	1.4−
1997 01 15	566	0.1+	0.8+	1998 05 22	704	0.2+	1.8+	1998 06 18	704	0.2+	0.3−
1997 01 15	566	0.3+	0.7+	1998 05 24	704	0.0	0.2+	1998 06 18	704	0.1+	0.6+
1997 01 15	566	0.3+	0.7+	1998 05 24	704	0.7−	0.6+	1998 06 18	704	0.2+	0.8+

(8986)* 1978 VN₂ = 1934 TM = 1983 RB₁ = 1984 YE₆ = 1997 EW₇

Discovered 1978 Nov. 1 by K. Tomita at Caussols.

Id. B. G. Marsden (*MPC* 29296), G. V. Williams (unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	250.90091		(2000.0)		P		Q
<i>n</i>	0.18093246	ω	358.91901		+0.99989218		−0.01466339
<i>a</i>	3.0959342	Ω	1.92169		+0.01364233		+0.90781752
<i>e</i>	0.1912430	<i>i</i>	1.34199		+0.00543310		+0.41910899
<i>P</i>	5.45	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1934 10 07	754	0.2+	2.1−	1997 03 08	540	0.9−	0.5+	1997 03 15	552	0.3+	1.1−
1934 10 07	754	1.7+	2.6−	1997 03 08	552	0.6+	0.4−	1997 03 15	552	1.1−	0.7−
1978 10 30	010	0.7+	0.5+	1997 03 08	552	0.3+	0.2+	1998 04 22	704	0.5+	0.8−
1978 11 01	010	0.7+	0.2−	1997 03 08	552	0.0	0.0	1998 04 22	704	0.2+	0.3+
1978 11 01	010	(5.4+	1.1−)	1997 03 08	540	0.2−	0.5+	1998 04 22	704	0.4−	2.2−
1978 11 30	675	0.3−	0.8−	1997 03 09	540	0.5+	0.8+	1998 04 22	704	1.8−	1.4−
1978 12 01	675	0.3+	0.7−	1997 03 09	540	0.0	0.6+	1998 04 22	704	(5.8−	1.0−)
1983 09 08	046	(3.8+	2.1−)	1997 03 09	540	0.3+	0.6+	1998 05 01	704	0.9+	0.3+
1983 09 08	046	(2.4+	3.3−)	1997 03 10	552	0.4−	0.2+	1998 05 01	704	0.2+	0.7−
1984 12 23	010	(16.7−	11.6−)	1997 03 10	552	0.5−	0.3−	1998 05 01	704	0.3+	0.1+
1984 12 23	010	(5.9−	22.8−)	1997 03 11	552	0.3+	0.2−	1998 05 01	704	1.3−	0.2−
1994 09 30	691	1.0−	0.5+	1997 03 11	540	0.1−	0.4−	1998 05 24	704	1.1+	1.1+
1994 09 30	691	0.2−	0.6+	1997 03 11	540	0.3+	0.4−	1998 05 24	704	(0.5+	2.4−)
1994 09 30	691	0.3−	0.5+	1997 03 11	552	1.7−	0.8−	1998 05 24	704	1.3+	0.2+
1997 03 07	552	0.3−	0.1+	1997 03 11	552	0.1+	0.4−	1998 05 24	704	0.5−	0.4−
1997 03 07	552	0.2−	0.2+	1997 03 15	552	0.7+	0.0				

(8987)* 1978 VD₄ = 1997 EO₃₃ = 1998 KN₃₃

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

Id. G. V. Williams (*MPC* 31943)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	318.28411		(2000.0)		P		Q
<i>n</i>	0.22911646	ω	251.91763		+0.52002411		+0.85294491
<i>a</i>	2.6450377	Ω	49.50272		−0.75936948		+0.48599365
<i>e</i>	0.0887551	<i>i</i>	3.42169		−0.39106638		+0.19051286
<i>P</i>	4.30	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 11 05	675	0.4−	0.1−	1997 02 08	566	0.8−	0.7−	1998 05 22	704	1.1+	0.2+
1978 11 06	675	1.1−	0.5+	1997 02 08	566	0.5−	0.6−	1998 05 24	704	0.1+	0.8−
1978 11 07	675	1.3+	1.1+	1997 02 08	566	1.2−	1.0−	1998 05 24	704	0.2+	0.1+
1978 11 08	675	0.1+	0.1+	1997 03 04	704	0.9+	1.3+	1998 05 24	704	0.3+	0.9+
1978 11 29	675	0.4+	0.4+	1997 03 04	704	1.9+	0.2+	1998 05 24	704	1.4+	0.0
1978 11 30	675	0.2+	0.4−	1997 03 05	704	1.0+	0.8+	1998 06 16	704	1.3−	0.8−
1993 02 16	691	0.7−	0.2+	1997 03 05	704	0.0	1.0+	1998 06 16	704	0.3−	0.4−
1993 02 16	691	1.0−	0.2+	1997 03 06	704	(7.1+	1.0+)	1998 06 16	704	(0.1−	3.2−)
1993 02 16	691	1.2−	0.0	1997 03 06	704	1.4+	0.8−	1998 06 16	704	1.1+	0.2+
1995 10 15	327	0.4−	0.2−	1998 05 22	704	0.2+	0.6−	1998 06 18	704	0.6−	0.3−
1995 10 15	327	0.4+	0.0	1998 05 22	704	0.6−	0.2−	1998 06 18	704	1.3−	1.2+
1995 10 15	327	0.5−	0.3−	1998 05 22	704	0.1−	0.3+	1998 06 18	704	0.2+	0.4+
1995 10 15	327	0.4−	0.6−	1998 05 22	704	0.3+	0.4+				

(8988)* 1979 MA₄ = 1942 VA = 1986 TJ₇

Discovered 1979 June 25 by E. F. Helin and S. J. Bus at Siding Spring.

Id. C. M. Bardwell (*MPC* 11629, *MPC* 21927)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Bardwell

<i>M</i>	330.57230		(2000.0)		P		Q
<i>n</i>	0.15529979	ω	146.11244		+0.90617232		+0.42276216
<i>a</i>	3.4278526	Ω	188.89950		−0.40221811		+0.85340882
<i>e</i>	0.1915518	<i>i</i>	4.12571		−0.13066105		+0.30490251
<i>P</i>	6.35	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1942 11 02	053	(40.6−	25.7+)	X	1979 07 27	675	1.3−	0.2+	1998 06 24	704	0.5+	0.3+
1942 11 03	053	(44.1−	3.3+)	X	1979 07 28	413	1.6−	1.4−	1998 06 24	704	(2.6−	1.6+)
1955 11 19	675	(3.9+	0.1−)		1979 07 30	095	0.9−	0.6+	1998 06 24	704	1.6−	0.5+
1955 11 19	675	0.8+	1.4−		1979 07 31	095	1.5+	0.3−	1998 06 24	704	1.2−	1.2+
1971 03 24	675	0.0	0.7−		1979 08 23	675	0.0	1.0−	1998 06 26	704	0.5−	0.6+
1971 03 25	675	1.0+	2.2−		1986 09 07	095	(4.4+	1.0−)	1998 06 26	704	1.3−	0.8−
1971 03 26	675	0.4−	0.8−		1986 10 02	049	1.2+	0.9−	1998 06 26	704	(0.4−	2.1+)
1971 03 26	675	0.4−	2.2−		1986 10 02	049	(1.0+	3.0+)	1998 06 26	704	(2.0−	2.8+)
1971 03 27	675	0.4−	1.8−		1986 10 02	049	(3.2+	3.0−)	1998 06 26	704	1.1−	1.6+
1971 04 02	675	1.9−	0.2−		1986 10 02	049	(2.0+	4.3−)	1998 07 17	910	1.1+	0.1−
1971 04 16	675	0.5−	0.1−		1986 10 11	049	0.6+	0.8−	1998 07 17	910	0.9+	0.1−
1971 04 16	675	0.3+	1.1−		1986 10 11	049	1.0+	0.8−	1998 07 17	910	0.9+	0.0
1971 05 13	675	0.2+	0.8+		1992 08 03	675	(0.1−	2.3−)	1998 07 17	910	1.1+	0.1−
1971 05 13	675	0.0	0.6+		1992 08 03	675	(1.3−	2.1−)	1998 07 17	910	1.2+	0.1+
1971 05 14	675	0.4+	0.5+		1992 08 06	675	0.2−	1.9−	1998 07 17	910	1.1+	0.2−
1971 05 14	675	0.0	0.2+		1992 08 06	675	0.3−	1.5−	1998 07 23	910	0.9+	0.5+
1971 05 16	675	0.6−	0.7−		1992 08 30	095	1.8−	1.3+	1998 07 23	910	0.6+	0.1−
1979 06 23	413	0.2+	0.6+		1992 08 30	095	1.8−	1.7+	1998 07 23	910	0.7+	0.0
1979 06 24	413	0.2−	0.0		1996 03 15	608	0.3−	0.5+	1998 07 26	704	0.4+	1.8−
1979 06 25	413	0.0	0.7+		1996 03 15	608	0.1−	0.4+	1998 07 26	704	0.2−	1.0−
1979 06 29	413	0.6+	0.5+		1996 03 16	608	0.1+	0.0	1998 07 26	704	0.7+	1.2−
1979 07 21	095	0.1−	1.3+		1996 03 17	608	0.2−	1.0+	1998 07 26	704	(1.2−	2.8−)
1979 07 24	413	0.8−	0.4−		1996 03 17	608	0.3−	0.7+	1998 07 26	704	0.5−	1.7−
1979 07 26	675	0.6+	0.6+		1996 03 19	608	0.5+	0.9+				
1979 07 26	675	0.6+	0.7+		1996 03 19	608	0.3+	0.7+				

(8989)* 1979 XJ = 1992 WG₁

Discovered 1979 Dec. 15 by H. Debehogne and E. R. Netto at the European

Southern Observatory.

Id. S. Nakano (*MPC* 21252)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	303.61265		(2000.0)		P		Q
<i>n</i>	0.30374952	ω	246.42936		+0.98867779		+0.11092761
<i>a</i>	2.1917565	Ω	107.07836		−0.06658133		+0.92780953
<i>e</i>	0.2387982	<i>i</i>	6.06821		−0.13447359		+0.35618050
<i>P</i>	3.24	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 12 15	809	0.4−	0.8+		1979 12 22	809	0.6−	0.2−	1992 11 17	400	0.7+	1.7−
1979 12 15	809	0.3−	0.1−		1979 12 22	809	0.1−	0.3−	1992 11 17	400	(2.9+	0.1+)
1979 12 15	809	0.6−	0.5+		1979 12 23	809	0.1+	0.9+	1992 11 27	675	0.8+	1.1−
1979 12 16	809	0.4−	0.7+		1979 12 23	809	0.3−	0.7+	1992 11 27	675	0.7+	1.8−
1979 12 16	809	0.8+	0.1+		1979 12 23	809	0.0	0.5+	1998 05 24	426	0.5−	0.2+
1979 12 16	809	(2.2+	1.1−)		1979 12 23	809	0.6+	0.4−	1998 05 24	426	0.3+	0.9+
1979 12 16	809	0.3+	0.1−		1979 12 23	809	0.1−	0.7+	1998 05 25	426	0.2−	0.7+

1979 12 20	809	0.9+	0.6−	1979 12 24	809	0.0	0.0	1998 06 24	704	(2.2+	1.3+)
1979 12 20	809	0.2+	0.5+	1979 12 25	809	0.0	0.2−	1998 06 24	704	0.8+	1.1−
1979 12 20	809	0.1+	0.5+	1979 12 25	809	0.7−	0.2−	1998 06 26	704	0.3+	0.2−
1979 12 20	809	0.2+	0.5+	1991 04 19	675	1.4+	1.1−	1998 06 26	704	(2.3+	0.0)
1979 12 20	809	0.3−	0.1−	1991 04 19	675	1.5−	0.8+	1998 06 26	704	0.7+	0.1+
1979 12 21	809	0.1−	0.1+	1992 10 26	675	0.2+	1.0−	1998 06 26	704	0.2−	0.5+
1979 12 21	809	0.3−	0.2+	1992 10 26	675	0.2+	0.8−	1998 06 26	704	0.8+	0.7+
1979 12 21	809	0.3−	0.1−	1992 11 16	400	(1.2−	2.3−)				
1979 12 22	809	0.7−	0.2+	1992 11 16	400	0.5−	0.3−				

(8990)* 1980 DN = 1989 WZ₆ = 1991 BN₄ = 1997 CB₃

Discovered 1980 Feb. 19 by Z. Vávrová at Klet.

Id. S. Nakano (*MPC* 29092)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	61.09859		(2000.0)		P		Q
<i>n</i>	0.17661408	ω	61.25973		−0.97433474		+0.19769652
<i>a</i>	3.1461964	Ω	129.92923		−0.22188065		−0.92408893
<i>e</i>	0.1077858	<i>i</i>	8.06971		+0.03795765		−0.32707145
<i>P</i>	5.58	<i>H</i>	12.8		<i>G</i> 0.15		<i>U</i> 1

Residuals in seconds of arc

1980 02 14	046	1.6−	0.1−	1997 02 04	411	0.2+	0.5+	1998 06 16	046	0.2+	0.1+
1980 02 14	046	0.3+	0.5−	1997 02 04	411	0.4+	0.4+	1998 06 16	046	0.1+	0.0
1980 02 15	046	0.9−	0.1+	1997 02 11	411	0.3−	0.7+	1998 06 16	046	0.0	0.2+
1980 02 15	046	0.9+	1.2−	1997 02 11	411	0.2+	0.8+	1998 06 17	046	0.1−	0.0
1980 02 19	046	0.6−	0.2−	1998 05 01	046	0.0	0.7−	1998 06 17	046	0.0	0.1−
1980 02 19	046	0.1+	0.3+	1998 05 01	046	0.2−	0.6−	1998 06 17	046	0.1−	0.0
1980 02 20	046	0.7−	1.0−	1998 05 22	704	0.1−	0.2−	1998 06 24	704	0.9−	1.0−
1980 02 20	046	0.0	0.3+	1998 05 22	704	0.4−	0.5−	1998 06 24	704	0.6−	0.7+
1980 02 21	046	0.8+	1.4−	1998 05 22	704	0.8−	0.8+	1998 06 24	704	0.9−	0.4−
1980 02 22	046	1.5+	0.4−	1998 05 22	704	0.5+	0.6−	1998 06 24	704	0.1−	0.1−
1989 11 28	511	1.5−	0.0	1998 05 24	704	0.0	0.3−	1998 06 24	704	1.3−	1.0+
1989 11 28	511	0.7+	0.0	1998 05 24	704	0.1+	0.1−	1998 06 26	704	0.3−	0.3+
1989 11 28	511	1.1−	0.2+	1998 05 24	704	1.0+	0.6+	1998 06 26	704	0.4−	0.1+
1989 11 28	511	2.1+	0.3+	1998 05 24	704	0.9+	0.4+	1998 06 26	704	1.1+	0.9−
1991 01 20	511	(3.5−	0.4−)	1998 05 24	704	0.3+	0.4+	1998 06 26	704	(1.0+	3.6−)
1991 01 20	511	1.1−	1.5−	1998 05 28	046	0.8+	0.1+	1998 06 26	704	0.7−	1.4−
1997 02 03	411	1.0+	1.9+	1998 05 28	046	0.9+	0.1+				
1997 02 03	411	0.4+	0.0	1998 05 28	046	0.6+	0.1+				

(8991)* 1980 PV₁ = 1975 QB = 1979 HC₁ = 1985 SD₃ = 1988 FR₃ = 1988 GW₂

Discovered 1980 Aug. 6 by R. M. West at the European Southern

Observatory.

Id. H. Kaneda (*MPC* 16423)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	29.27611		(2000.0)		P		Q
<i>n</i>	0.21177911	ω	310.73866		−0.52461482		+0.84388816
<i>a</i>	2.7874941	Ω	287.27993		−0.74131563		−0.51773078
<i>e</i>	0.1812590	<i>i</i>	6.75967		−0.41860533		−0.14073953
<i>P</i>	4.65	<i>H</i>	12.9		<i>G</i> 0.15		<i>U</i> 1

Residuals in seconds of arc

1975 08 16	805	(2.3+	3.2+)	1989 08 01	675	0.2−	1.1−	1998 05 29	704	1.7−	0.8+
1979 04 26	805	0.4−	0.6−	1990 10 22	675	0.8−	1.1−	1998 06 24	704	0.5+	0.5−
1979 04 26	805	0.9−	0.5−	1990 10 22	675	0.2−	1.0−	1998 06 24	704	1.1+	0.1−
1980 08 06	809	0.6+	1.5−	1990 11 13	675	(2.3+	0.9−)	1998 06 24	704	0.3+	0.6+
1980 08 07	809	1.2+	0.4−	1990 11 13	675	0.1+	0.2+	1998 06 24	704	0.8+	0.1−
1980 08 09	809	0.0	0.8−	1992 01 12	372	0.5−	1.5+	1998 06 24	704	0.1+	0.4−
1980 08 10	809	0.1+	0.0	1992 01 12	372	0.5−	1.0+	1998 06 26	704	0.5−	0.3+
1985 09 19	095	1.7+	2.1+	1997 02 26	689	0.1−	1.4−	1998 06 26	704	0.7−	0.8+
1988 03 20	808	(3.7−	0.7−)	1998 05 28	689	0.4−	0.5−	1998 06 26	704	0.9−	1.1+
1988 03 20	808	(2.7−	0.8+)	1998 05 29	704	0.3+	0.4+	1998 06 26	704	0.6+	0.2+
1988 04 09	808	0.6−	1.5−	1998 05 29	704	1.0+	0.5+	1998 06 26	704	0.7−	0.2−

1988 04 09	808	0.9+	1.5−	1998 05 29	704	(1.5+	2.8+)
1989 08 01	675	0.1+	1.1−	1998 05 29	704	0.5−	0.3+

(8992)* 1980 TE₇ = 1980 TJ₁₁ = 1954 RE = 1991 TV

Discovered 1980 Oct. 14 at the Purple Mountain Observatory.

Id. F. N. Bowman (d, *MPC* 7935), S. Nakano (*MPC* 19292)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	332.23312		(2000.0)		P		Q
<i>n</i>	0.26696197	ω	133.04578		+0.78586020		+0.61804166
<i>a</i>	2.3887450	Ω	188.85371		−0.59981583		+0.75346046
<i>e</i>	0.2116913	<i>i</i>	7.90658		−0.15048163		+0.22432530
<i>P</i>	3.69	<i>H</i>	13.9		<i>G</i> 0.15		<i>U</i> 1

Residuals in seconds of arc

1954 09 05	760	0.0	0.3+	1991 09 16	095	1.5−	1.8+	1998 06 25	704	0.9−	0.7+
1954 09 05	760	0.1+	0.3+	1991 09 16	095	0.7−	1.3−	1998 06 25	704	0.6−	0.0
1980 10 08	095	(1.3+	2.6+)	1991 10 02	403	0.6+	0.6+	Y 1998 06 25	704	0.0	0.7−
1980 10 14	330	0.9−	1.3−	1991 10 02	403	(2.5+	1.1−)	Y 1998 06 25	704	0.7−	0.6−
1980 11 04	330	(3.3−	2.5−)	1991 10 03	403	0.4+	0.7−	Y 1998 06 25	704	0.3+	0.1−
1990 04 22	675	0.3+	0.3−	1991 10 03	403	(2.5+	0.7+)	Y 1998 07 15	610	0.0	0.7−
1991 09 10	675	0.6+	0.4+	1991 10 07	691	0.8−	0.6+	1998 07 15	610	0.2−	0.6−
1991 09 10	675	(37.5−	78.5+)	1991 10 07	691	0.6−	0.9+	1998 07 15	610	0.5−	0.6−
1991 09 12	095	(4.5−	9.4+)	1991 10 07	691	0.7−	0.2+	1998 07 15	610	0.6−	0.5−
1991 09 12	095	0.5+	1.3−	1998 06 19	704	1.5+	0.5+	1998 07 16	610	0.2+	0.9+
1991 09 14	095	0.5+	0.2−	1998 06 19	704	0.2−	0.6+	1998 07 16	610	0.6+	0.6+
1991 09 14	095	1.2+	0.7+	1998 06 19	704	0.8−	0.8−	1998 07 16	610	0.8+	0.3+
1991 09 16	675	0.9+	0.6−	1998 06 19	704	0.4−	0.1−	1998 07 16	610	1.1+	0.1+
1991 09 16	675	0.7+	0.5−	1998 06 19	704	0.1+	0.8+				

(8993)* 1980 UL = 1991 PL₁

Discovered 1980 Oct. 30 by R. M. West at the European Southern

Observatory.

Id. H. Kaneda (*MPC* 19015), G. V. Williams (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	297.77962		(2000.0)		P		Q
<i>n</i>	0.26784221	ω	208.87207		+0.98137872		−0.03372230
<i>a</i>	2.3835085	Ω	151.12512		+0.04418688		+0.99770024
<i>e</i>	0.2073043	<i>i</i>	23.05363		−0.18693133		+0.05879654
<i>P</i>	3.68	<i>H</i>	13.5		<i>G</i> 0.15		<i>U</i> 2

Residuals in seconds of arc

1980 10 30	809	0.2−	0.6−	1997 03 13	620	0.4−	0.2−	1998 06 23	704	0.5−	0.1−
1980 11 01	809	0.2−	0.5+	1997 03 13	620	0.1−	0.3−	1998 06 23	704	0.8−	0.2−
1980 11 02	809	0.4+	0.7+	1997 03 13	620	0.1+	0.3−	1998 06 23	704	0.5+	1.3+
1991 08 07	675	0.5−	0.9−	1997 03 13	620	0.3+	0.3−	1998 06 23	704	0.9−	1.0+
1991 08 07	675	0.2−	0.6−	1997 03 26	620	0.5+	0.3+	1998 06 23	704	0.9−	0.1−
1991 08 08	675	0.4+	0.0	1997 03 27	620	0.6+	0.2+	1998 06 24	127	0.7−	0.5−
1991 08 08	675	0.1+	0.1+	1997 03 27	620	0.7+	0.2+	1998 06 24	127	1.1−	0.4−
1991 08 10	675	0.4+	0.6−	1997 03 27	620	0.6+	0.1+	1998 06 25	610	1.8+	1.3+
1991 08 15	675	(2.6+	0.2+)	1997 03 27	620	0.6+	0.1+	1998 06 25	610	(2.2+	1.1+)
1991 08 15	675	(1.7+	2.8−)	1998 05 20	127	(1.4+	2.1−)	1998 06 25	610	(2.5+	0.9+)
1991 08 16	675	0.4−	1.3−	1998 05 20	127	1.8+	1.9−	1998 06 25	610	(2.9+	0.7+)
1991 09 04	675	0.7−	0.7−	1998 05 28	704	1.8+	1.6−	1998 06 27	704	0.8−	0.4−
1991 09 04	675	0.9+	0.6−	1998 05 28	704	0.1+	0.9−	1998 06 27	704	1.7−	0.9+
1991 09 15	675	0.1+	0.7+	1998 05 28	704	1.2+	0.2−	1998 06 27	704	1.1−	0.5+
1991 09 15	675	0.4+	0.7+	1998 05 28	704	0.6−	0.9−	1998 06 27	704	0.8−	0.9+
1993 01 24	675	0.2+	1.1−	1998 05 28	704	0.3−	0.8−	1998 06 27	704	0.8−	0.6+
1993 01 24	675	0.9−	0.2−	1998 06 04	704	(3.9−	1.0+)	1998 07 02	610	0.8+	0.4+
1997 03 10	620	0.3−	0.3−	1998 06 04	704	0.1+	0.2−	1998 07 02	610	1.1+	0.6+
1997 03 10	620	0.9−	0.4−	1998 06 04	704	0.6−	0.6−	1998 07 02	610	1.3+	0.9+
1997 03 10	620	0.8−	0.2−	1998 06 04	704	1.0−	0.0	1998 07 02	610	1.6+	1.1+

(8994)* 1980 VG = 1975 QG = 1982 BH₁₄ = 1996 CX₁

Discovered 1980 Nov. 6 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Id. S. J. Bus (*MPC* 20010), G. V. Williams (*MPC* 28838)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	307.65214	(2000.0)	P	Q	
<i>n</i>	0.21249393	ω	37.62511	+0.99529037	+0.03252342
<i>a</i>	2.7812393	Ω	320.21372	-0.07365813	+0.86615590
<i>e</i>	0.2345601	<i>i</i>	8.20434	+0.06302038	+0.49871453
<i>P</i>	4.64	<i>H</i>	12.7	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1975 08 30	095	2.0-	0.2+	1994 10 01	675	0.9-	0.8+	1998 06 24	704	(0.5-	2.2-)
1980 11 06	688	1.0+	0.7+	1994 10 01	675	0.8-	0.6+	1998 06 24	704	0.6-	0.0
1980 11 06	688	0.5+	0.8+	1996 02 15	566	0.1+	0.4-	1998 06 24	704	1.1+	0.8+
1980 11 29	688	0.5+	1.5-	1996 02 15	566	0.5+	0.8-	1998 06 26	704	0.2-	0.1-
1980 11 29	688	1.3+	1.3-	1996 02 15	566	0.2+	0.9-	1998 06 26	704	1.4+	0.5-
1980 12 04	688	1.9+	2.1-	1996 02 16	566	0.2+	0.3-	1998 06 26	704	1.1+	0.9-
1980 12 04	688	(1.5+	3.3-)	1996 02 16	566	0.6+	0.1-	1998 06 26	704	0.2+	0.5+
1982 01 30	675	0.8-	1.3-	1996 02 16	566	0.2+	0.2-	1998 06 26	704	1.3-	1.0+
1982 01 31	675	0.5+	0.7-	1998 05 29	704	(2.4+	0.8-)	1998 07 13	689	1.2+	0.0
1991 01 11	675	0.8-	0.1+	1998 05 29	704	(0.9+	2.9-)	1998 07 21	704	1.5-	0.2-
1991 01 11	675	0.1-	1.4+	1998 05 29	704	(0.4-	2.2-)	1998 07 21	704	1.9+	0.0
1991 01 14	675	0.8-	0.9+	1998 05 29	704	1.0-	2.0-	1998 07 21	704	(3.0+	1.0-)
1991 01 14	675	1.4-	0.9+	1998 06 24	704	1.1-	1.7-	1998 07 21	704	(0.7+	2.0+)

(8995)* 1981 EB₉ = 1978 TG₁

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

Id. K. Hurukawa (*JAM* 1901), L. D. Schmadel (*MPC* 11837)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	304.11616	(2000.0)	P	Q	
<i>n</i>	0.23409299	ω	307.31565	+0.34875386	+0.93495996
<i>a</i>	2.6074167	Ω	342.74569	-0.77560433	+0.24900827
<i>e</i>	0.1655266	<i>i</i>	12.65186	-0.52612609	+0.25267518
<i>P</i>	4.21	<i>H</i>	13.0	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1955 02 13	675	1.3+	0.3+	1981 04 10	413	1.6-	0.1-	1998 03 03	704	0.3+	1.5+
1955 02 13	675	0.3+	2.0+	1981 04 10	413	1.1+	1.2-	1998 03 03	704	1.2+	0.5+
1978 10 02	095	0.8-	1.7+	1981 04 12	413	2.1-	0.6+	1998 03 03	704	0.7+	0.2-
1981 02 09	413	0.3-	0.6-	1981 04 12	413	2.0+	1.1-	1998 03 03	704	(2.1-	1.2+)
1981 02 13	413	0.1+	0.0	1981 04 29	413	1.2+	0.3-	1998 03 31	704	0.3+	0.2+
1981 03 01	413	1.4-	1.2+	1985 02 22	675	0.1+	0.1+	1998 03 31	704	0.5+	0.2-
1981 03 01	413	0.1+	0.2+	1985 02 23	675	0.7-	0.1+	1998 03 31	704	0.0	0.1+
1981 03 07	413	0.6+	0.2-	1989 02 02	675	0.5-	0.0	1998 03 31	704	0.3+	0.8+
1981 03 11	413	0.9-	0.9+	1989 02 02	675	0.5+	0.1+	1998 03 31	704	0.4-	0.6+
1981 03 11	413	1.3+	0.2-	1990 06 13	413	0.1-	0.1-	1998 04 01	704	0.9+	0.4-
1981 03 15	413	1.3-	0.1-	1990 06 13	413	0.2-	0.2-	1998 04 01	704	0.5+	0.3+
1981 03 15	413	0.1+	0.4-	1996 01 12	046	0.1-	0.0	1998 04 01	704	0.3+	0.4+
1981 04 05	413	1.5-	0.6-	1996 01 12	046	1.0-	0.7-	1998 04 01	704	1.1+	0.6+
1981 04 05	413	1.2+	1.5-	1996 01 12	046	0.7+	0.0	1998 04 01	704	0.4+	0.7+
1981 04 06	413	2.1-	0.3+	1998 02 19	699	0.9+	0.3-	1998 06 18	704	0.9+	1.6+
1981 04 06	413	0.1-	0.7-	1998 02 19	699	1.7-	0.6-	1998 06 18	704	(3.1+	1.9+)
1981 04 07	413	1.4-	0.3-	1998 02 19	699	0.9-	0.3+	1998 06 18	704	0.7+	1.0+
1981 04 07	413	0.2-	1.2-	1998 03 03	704	0.6+	0.2-	1998 06 18	704	(2.8+	2.9+)

(8996)* 1981 EC₁₀

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

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	17.01198	(2000.0)	P	Q	
<i>n</i>	0.18166975	ω	32.85326	-0.44257380	+0.89455868
<i>a</i>	3.0875522	Ω	211.00990	-0.84665916	-0.43977393
<i>e</i>	0.1328685	<i>i</i>	6.95632	-0.29546015	-0.07977255
<i>P</i>	5.43	<i>H</i>	14.1	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1978 10 28	675	0.3+	0.7-	1981 04 10	413	1.2+	1.7-	1998 06 03	704	0.6+	0.3-
1978 10 29	675	0.6-	0.2-	1981 04 12	413	0.3+	0.5-	1998 06 03	704	0.3+	1.3+
1981 02 02	413	0.1-	0.5+	1981 04 12	413	1.0-	0.1-	1998 06 03	704	1.2+	0.5-
1981 02 14	413	2.2+	0.3+	1981 05 02	413	0.7-	0.4+	1998 06 03	704	1.3+	0.4+
1981 03 01	413	1.0+	0.5+	1981 05 03	413	0.9-	0.9-	1998 06 24	704	0.4+	1.1+
1981 03 07	413	0.3-	1.0+	1994 10 10	691	0.2-	0.3+	1998 06 24	704	1.0-	0.3-
1981 03 11	413	0.1+	0.9+	1994 10 10	691	0.1+	0.4+	1998 06 24	704	(2.2-	1.6-)
1981 03 11	413	1.1+	0.2-	1994 10 10	691	0.1-	0.5+	1998 06 24	704	0.9-	1.9-
1981 03 15	413	0.4-	0.1+	1994 10 12	691	0.3+	0.0	1998 06 26	704	0.2+	0.8-
1981 03 15	413	0.6+	0.7+	1994 10 12	691	0.3+	0.1-	1998 06 26	704	(1.7-	2.4+)
1981 04 05	413	1.8-	0.5+	1994 10 12	691	0.2-	0.1-	1998 06 26	704	1.3-	0.9+
1981 04 06	413	0.4-	0.5-	1997 03 04	691	0.2-	0.7-	1998 06 26	704	0.8-	0.3-
1981 04 06	413	0.5+	0.4-	1997 03 04	691	0.3-	0.6-				
1981 04 10	413	0.5-	1.2+	1997 03 04	691	0.3-	0.7-				

(8997)* 1981 ES₁₄

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

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	356.30802	(2000.0)	P	Q	
<i>n</i>	0.23725170	ω	318.53793	-0.20334186	+0.97699534
<i>a</i>	2.5842220	Ω	299.63738	-0.87771075	-0.21098591
<i>e</i>	0.1318554	<i>i</i>	4.24134	-0.43390773	-0.03106524
<i>P</i>	4.15	<i>H</i>	14.7	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1978 09 01	675	0.1+	0.2-	1981 05 01	413	0.9-	1.1-	1998 05 23	704	0.2-	0.0
1978 09 02	675	0.0	0.3-	1981 05 03	413	1.2-	0.6+	1998 05 23	704	0.6-	0.5+
1981 02 12	413	0.3+	1.1-	1981 05 03	413	0.9-	0.5-	1998 05 23	704	0.2-	1.6+
1981 02 12	413	1.0+	1.3-	1993 01 22	809	1.4+	0.0	1998 05 24	704	0.3-	0.5+
1981 03 01	413	1.0+	0.5+	1993 01 22	809	1.5+	0.5+	1998 05 24	704	0.9-	0.3+
1981 03 01	413	2.0+	0.2-	1993 01 22	809	0.3+	0.3+	1998 05 24	704	0.9+	0.2-
1981 03 06	413	0.9-	0.4+	1995 10 23	292	2.0-	1.6+	1998 05 24	704	0.4-	0.8-
1981 03 06	413	1.4-	0.4+	1995 10 23	292	1.5+	1.2+	1998 05 24	704	0.8-	0.5-
1981 03 08	413	0.6-	0.3+	1995 10 27	292	0.3+	1.0-	1998 06 16	704	1.3+	1.8-
1981 03 08	413	1.8+	0.1-	1997 02 03	566	1.2-	0.3+	1998 06 16	704	0.5-	2.3+
1981 03 12	413	0.5-	0.8+	1997 02 03	566	0.9-	0.2+	1998 06 16	704	2.0+	1.7+
1981 03 12	413	1.0+	0.0	1997 02 03	566	0.6-	0.0	1998 06 16	704	0.9+	0.8+
1981 04 06	413	0.5+	0.3+	1998 05 22	704	0.7+	0.6-	1998 06 27	699	0.0	0.1-
1981 04 06	413	(3.1+	1.6-)	1998 05 22	704	(1.1-	4.1-)	1998 06 27	699	0.0	0.1-
1981 04 08	413	1.2-	0.3-	1998 05 22	704	1.8-	0.2+	1998 06 27	699	0.1+	0.1+
1981 04 08	413	1.6-	0.5-	1998 05 22	704	0.6+	0.3-	1998 07 13	699	0.1+	0.8-
1981 04 09	413	0.8-	0.3+	1998 05 23	704	0.4-	0.3-	1998 07 13	699	0.1-	0.6-
1981 04 09	413	0.9+	0.1-	1998 05 23	704	0.5+	0.4+				

(8998)* 1981 EG₂₃

Discovered 1981 Mar. 3 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	56.14907	(2000.0)	P	Q	
<i>n</i>	0.17151573	ω	101.76044	-0.26042833	-0.96549274
<i>a</i>	3.2082392	Ω	3.33547	+0.87951394	-0.23763188
<i>e</i>	0.1770498	<i>i</i>	0.91128	+0.39828673	-0.10655918
<i>P</i>	5.75	<i>H</i>	13.7	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1981 02 02	413	0.2+	1.4-	1993 04 26	691	0.1+	1.5+	1998 02 26	699	0.3-	0.3+
1981 02 13	413	0.1-	0.4-	1993 04 26	691	0.1-	0.3+	1998 03 03	809	0.3+	1.8+
1981 03 03	413	1.3-	0.1-	1993 04 26	691	1.2+	1.4+	1998 03 03	809	0.3-	0.2+
1981 03 07	413	0.6-	0.0	1996 10 08	691	0.0	0.6+	1998 03 03	809	0.4-	1.6+
1981 03 07	413	0.3+	0.7-	1996 10 08	691	0.2-	0.4+	1998 03 03	704	0.1-	0.3+
1981 03 11	413	0.2-	0.1+	1996 10 08	691	0.2-	0.2+	1998 03 03	704	0.7-	0.9+
1981 03 11	413	1.2+	0.7-	1998 02 06	809	(2.6+	0.4-)	1998 03 03	704	0.2-	0.0
1981 03 16	413	(2.6+	0.6-)	1998 02 06	809	1.8+	0.3+	1998 03 03	704	0.1+	0.4+
1981 03 29	413	0.6+	0.2-	1998 02 06	809	(2.4+	0.3-)	1998 03 03	704	0.1-	0.1+
1981 04 07	413	1.1-	0.5-	1998 02 07	809	0.3+	1.2-	1998 03 04	809	(5.9+	5.2+)
1981 04 07	413	0.5+	0.7-	1998 02 07	809	0.8+	1.6-	1998 03 04	809	(4.1+	4.5+)
1981 04 08	413	0.5-	1.1+	1998 02 07	809	0.4+	1.7-	1998 03 04	809	(4.5+	4.3+)
1981 04 08	413	1.8+	0.9-	1998 02 26	699	0.3+	0.3-	1998 03 04	704	0.2+	0.3+
1981 04 11	413	1.3-	0.2-	1998 02 26	699	0.0	0.6+	1998 03 04	704	0.1-	0.3+
1981 04 11	413	(2.8+	0.9-)	1998 02 26	699	0.1-	0.8+	1998 03 04	704	0.9-	0.0
1981 04 30	413	1.9-	0.3-	1998 02 26	699	0.0	0.2-	1998 03 04	704	0.2-	0.0
1981 05 02	413	0.2-	0.4-	1998 02 26	699	0.2+	0.1+	1998 03 04	704	0.2+	0.5+

(8999)* 1981 EJ₂₈ = 1982 PM = 1982 QK₁ = 1982 RL₃

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

Id. A. Gnädig (*MPC* 31224)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>	268.78331	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.29756117	ω	186.64541	+0.99721910	+0.07426930		
<i>a</i>	2.2220400	Ω	169.08960	-0.06678614	+0.92735643		
<i>e</i>	0.1839625	<i>i</i>	1.86979	-0.03307082	+0.36673440		
<i>P</i>	3.31	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 02 12	413	2.2-	1.0+	1982 09 10	808	0.2-	0.3-	1998 05 22	704	0.5+	0.5-
1981 02 13	413	0.7-	0.0	1982 09 10	808	0.1+	0.3-	1998 05 22	704	0.7-	1.3+
1981 03 02	413	1.1-	0.1+	1996 12 17	691	0.5-	0.4+	1998 05 22	704	0.7-	0.3-
1981 03 06	413	0.1-	1.6-	1996 12 17	691	0.6-	0.4+	1998 05 24	704	(0.0	2.2-)
1981 03 11	413	1.9-	1.0-	1996 12 17	691	0.5-	0.5+	1998 05 24	704	0.5-	0.8-
1981 03 15	413	0.3-	1.0-	1997 01 14	566	0.7+	0.3+	1998 05 24	704	0.6+	0.8+
1981 03 15	413	1.4+	1.1-	1997 01 14	566	0.6+	0.7+	1998 05 24	704	0.7+	0.6+
1981 04 05	413	(3.7+	2.6-)	1997 01 14	566	0.9+	0.4+	1998 05 24	704	0.2+	0.0
1981 04 05	413	(3.2+	1.5-)	1998 05 01	704	0.7-	0.5-	1998 05 28	699	0.4-	0.3+
1981 04 06	413	(4.3-	0.8+)	1998 05 01	704	0.2-	0.0	1998 05 28	699	0.3-	0.2-
1981 04 06	413	0.3+	1.4-	1998 05 01	704	0.3+	0.0	1998 05 28	699	0.2-	0.1+
1981 04 10	413	(2.7-	1.6+)	1998 05 01	704	0.1+	0.3+	1998 06 16	704	1.5+	0.3+
1981 04 26	413	1.4+	1.2-	1998 05 18	699	0.3+	0.7+	1998 06 16	704	(2.1+	0.5+)
1981 05 01	413	1.0+	1.1+	1998 05 18	699	0.5-	0.1+	1998 06 16	704	1.2+	0.0
1982 08 14	095	(2.2-	4.6+)	1998 05 18	699	(3.4+	0.5-)	1998 06 16	704	0.4+	0.8+
1982 08 19	675	1.5+	0.0	1998 05 22	704	0.1-	0.3-				
1982 08 19	675	0.9-	0.8-	1998 05 22	704	0.2-	0.8+				

(9000)* 1981 JO = 1981 JJ₃ = 1975 VH₃ = 1995 US₃

Discovered 1981 May 3 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. S. Nakano (d, *MPC* 10752), T. Kobayashi (*MPC* 26166)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano							
<i>M</i>	357.75808	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.29597106	ω	79.65547	+0.59104377	+0.80270604		
<i>a</i>	2.2299916	Ω	226.88014	-0.77616255	+0.53908278		
<i>e</i>	0.2088252	<i>i</i>	6.25776	-0.21963367	+0.25505444		
<i>P</i>	3.33	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 11 02	095	(0.2-	3.3+)	1991 05 15	675	0.6-	0.1-	1995 10 25	411	0.4+	1.0-
1975 11 07	095	(5.5-	8.5-)	1991 05 15	675	0.1-	0.8+	1995 10 25	411	0.8+	0.2-
1981 05 03	688	0.5+	1.2-	1994 03 12	675	0.3+	0.6-	1995 10 27	411	0.0	0.0

1981 05 03	688	(5.3-	2.5+)	1994 03 12	675	0.3+	0.2+	1995 10 27	411	0.3+	0.0
1981 05 05	675	0.7-	1.5-	1994 04 05	675	0.2+	0.4-	1995 11 01	411	0.0	0.3+
1981 05 05	675	1.2-	1.1+	1994 04 05	675	0.1-	0.4-	1995 11 01	411	0.5+	0.3+
1981 05 06	675	0.5+	0.9+	1995 10 20	411	0.3+	0.1-	1998 06 30	704	0.0	1.2-
1981 05 08	675	0.6-	0.3-	1995 10 20	411	0.2-	0.1-	1998 06 30	704	1.5-	1.4+
1981 05 09	675	0.4+	0.4-	1995 10 21	411	0.4-	0.9+	1998 06 30	704	0.4+	1.1+
1988 08 15	675	0.5+	0.2+	1995 10 21	411	0.2+	0.1+	1998 06 30	704	1.1+	0.2-
1988 08 15	675	0.6+	0.4-	1995 10 23	691	0.9-	0.3-	1998 06 30	704	(0.9-	3.2+)
1991 05 13	675	0.2-	0.4+	1995 10 23	691	0.8-	0.2-	1998 07 12	689	0.1-	0.4-
1991 05 13	675	0.8+	0.0	1995 10 23	691	0.6-	0.4-	1998 07 27	689	0.3-	0.5-

(9001)* 1981 QE₂ = 1981 RS = 1988 OL

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

Lowell Observatory.

Id. E. Bowell (d, *MPC* 6630), S. Nakano (*MPC* 13855)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano							
<i>M</i>	309.76211	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.28289883	ω	174.03798	+0.83237714	+0.55081212		
<i>a</i>	2.2981689	Ω	152.26225	-0.51376186	+0.80835897		
<i>e</i>	0.2263385	<i>i</i>	7.56484	-0.20783900	+0.20775414		
<i>P</i>	3.48	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 08 30	688	0.2-	0.7+	1988 07 24	033	1.4-	0.2+	1998 05 23	704	0.4-	0.3+
1981 08 30	688	1.0-	1.1-	1988 07 24	033	0.3-	0.6+	1998 05 23	704	0.1-	0.3+
1981 09 02	704	0.8-	0.7-	1988 09 14	675	0.3+	0.0	1998 05 23	704	0.2-	0.1+
1981 09 02	704	0.8-	1.0+	1988 09 14	675	0.3+	0.3+	1998 05 23	704	0.4-	0.4-
1981 09 03	704	(3.2-	3.0+)	1997 02 04	566	0.4-	0.1-	1998 05 23	704	0.8+	0.0
1981 09 03	704	(2.0-	2.6+)	1997 02 04	566	0.1-	0.6-	1998 06 03	704	0.6+	0.9-
1981 09 05	095	0.8-	2.2+	1997 02 04	566	0.2-	0.2-	1998 06 03	704	0.1+	0.3+
1981 09 26	688	0.0	1.6-	1998 04 18	688	0.7-	0.0	1998 06 03	704	1.0+	1.3-
1981 09 26	688	1.5+	0.9-	1998 04 18	688	0.7-	0.1-	1998 06 03	704	0.8+	1.1-
1981 10 04	688	1.9+	0.1+	1998 04 18	688	0.5-	0.2-	1998 06 03	704	1.3+	1.4-
1981 10 04	688	1.2+	1.8-	1998 05 05	699	0.2-	0.3+	1998 06 28	699	0.4-	0.6+
1988 07 23	033	0.8-	0.0	1998 05 05	699	0.2+	0.1+	1998 06 28	699	0.7-	0.2+
1988 07 23	033	1.1+	0.5-	1998 05 05	699	0.2-	0.3+	1998 06 28	699	0.8-	1.1+

(9002)* 1981 QV₂ = 1990 VK₃

Discovered 1981 Aug. 23 by H. Debehogne at the European Southern

Observatory.

Id. S. Nakano (*MPC* 17431)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano							
<i>M</i>	330.05698	(2000.0)	<i>P</i>	<i>Q</i>			
<i>n</i>	0.23115453	ω	229.45169	+0.98948963	-0.09178508		
<i>a</i>	2.6294673	Ω	135.47953	+0.12068213	+0.94986105		
<i>e</i>	0.1228552	<i>i</i>	9.16994	-0.07966242	+0.29889712		
<i>P</i>	4.26	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 01 09	675	0.1+	1.3-	1981 09 02	809	0.0	0.3+	1990 11 16	402	1.4-	0.2-
1953 01 09	675	0.4-	0.2+	1981 09 02	809	0.3+	0.3-	1990 11 16	402	0.9-	0.2+
1981 08 23	809	0.5-	0.2+	1981 09 02	809	0.3+	0.3+	1992 03 09	809	0.8+	0.0
1981 08 23	809	0.6-	0.2+	1981 09 03	809	0.1+	0.1-	1992 04 04	809	0.3-	0.7+
1981 08 23	809	0.6-	0.7+	1981 09 03	809	0.2+	0.7+	1996 01 25	689	0.1+	0.5-
1981 08 24	809	0.1-	0.4+	1981 09 03	809	0.2+	1.2-	1996 02 16	010	(2.4-	0.1-)
1981 08 24	809	0.1+	0.1+	1981 09 04	809	0.7-	0.5-	1996 02 16	010	(2.2-	0.2+)
1981 08 24	809	0.4+	0.1+	1981 09 04	809	0.8+	0.1-	1996 02 16	010	(2.2-	0.0)
1981 08 25	809	0.3+	0.4+	1981 09 04	809	1.1+	0.2-	1996 02 17	010	(3.1+	1.4+)
1981 08 25	809	0.6-	0.9-	1981 09 05	809	1.0+	0.4+	1996 02 17	010	(2.2+	1.7+)
1981 08 25	809	0.4+	0.1+	1981 09 05	809	0.8+	0.3+	1996 02 17	010	(2.2+	2.0+)
1981 08 27	809	1.0-	1.6-	1981 09 05	809	1.4+	0.3-	1998 06 29	704	1.8-	1.5+
1981 08 27	809	(2.7-	2.3-)	1981 09 06	809	2.0+	1.4+	1998 06 29	704	(0.9-	3.2+)
1981 08 27	809	(2.2-	2.4-)	1981 09 06	809	1.4+	0.1+	1998 06 29	704	1.1-	1.1+
1981 08 28	809	0.7-	0.6-	1981 09 06	809	(2.9+	0.5+)	1998 06 29	704	0.3+	0.1+
1981 08 28	809	0.9-	0.5-	1981 09 09	809	0.6-	0.2-	1998 06 29	704	1.0-	0.5+

1981 08 28	809	0.9−	1.2−	1981 09 09	809	0.4−	0.4−	1998 07 26	699	0.4+	0.4+
1981 08 31	809	0.9+	0.5+	1981 09 09	809	0.2−	0.3−	1998 07 26	699	1.0+	0.4−
1981 08 31	809	0.7−	1.0−	1990 11 15	402	0.8+	1.6+	1998 07 26	699	0.2+	0.8+
1981 08 31	809	1.8−	0.6−	1990 11 15	402	0.6+	1.0+				

(9003)* 1981 UW₂₁ = 1981 UW₁₉ = 1955 AA = 1983 CO₂ = 1990 ST₂₈
= 1992 AF₆ = 1995 US₇

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

Id. G. V. Williams (d, *MPC* 20484), K. Kinoshita (*MPC* 26395)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	215.33119		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21260981	ω	274.61551	+0.76463576	−0.63996718
a	2.7802286	Ω	125.19511	+0.62200406	+0.70198548
e	0.0767554	i	5.33544	+0.16865084	+0.31250343
P	4.64	H	12.7	G 0.15	U 2

Residuals in seconds of arc

1955 01 14	754	1.3+	0.6+	1992 02 04	675	1.1+	0.8+	1998 05 24	704	0.2−	0.5+
1955 01 14	754	0.4−	0.8+	1995 10 27	399	0.5−	0.2+	1998 05 24	704	0.9−	0.4+
1955 01 16	754	0.4−	1.1+	1995 10 27	399	0.7−	0.2+	1998 07 01	699	0.6+	0.2−
1955 01 16	754	(0.6+	2.9+)	1995 10 28	399	0.3−	0.9+	1998 07 01	699	1.3+	0.8+
1981 10 24	675	0.9−	1.4+	1995 10 28	399	0.2+	1.5+	1998 07 01	699	0.7+	1.1+
1981 10 25	675	0.0	1.0+	1996 02 18	801	0.5+	1.1−	1998 07 03	749	0.8+	0.6+
1981 10 26	675	1.4−	1.1+	1996 02 19	801	0.2+	1.3−	1998 07 03	749	0.4−	0.7+
1981 10 27	095	2.0+	0.9−	1997 04 26	689	(0.1+	2.4−)	1998 07 03	749	0.1+	0.5+
1983 02 15	688	(0.5−	4.8−)	1998 05 22	704	0.3−	0.4−	1998 07 18	749	(2.2+	2.0−)
1983 02 15	688	(1.8−	4.8−)	1998 05 22	704	0.5−	0.1+	1998 07 18	749	(3.4+	1.4−)
1988 03 18	675	1.2−	0.4−	1998 05 22	704	0.7+	0.6+	1998 07 18	749	1.2+	0.4+
1990 09 24	095	0.3−	0.4−	1998 05 22	704	0.2−	0.3−	1998 07 19	749	0.4−	0.2−
1990 09 24	095	(2.5−	0.5+)	1998 05 22	704	0.8−	0.8+	1998 07 19	749	0.0	0.6−
1992 01 04	399	(3.3−	3.0−)	1998 05 24	704	0.3+	0.7+				
1992 01 04	399	(3.0−	4.0−)	1998 05 24	704	0.4+	0.2−				

(9004)* 1982 UZ₂ = 1992 MF = 1993 SA₉

Discovered 1982 Oct. 22 by G. Aldering at Kitt Peak.

Id. G. V. Williams (*MPC* 23121)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	3.99722	(2000.0)	P	Q	
n	0.17119446	ω	100.83645	+0.32435100	+0.94426877
a	3.2122518	Ω	188.73156	−0.94583167	+0.32285811
e	0.1393627	i	21.70868	−0.01410230	+0.06418050
P	5.76	H	12.5	G 0.15	U 1

Residuals in seconds of arc

1982 10 18	807	(3.6+	2.3+)	1992 06 27	675	(3.1−	0.4−)	1993 10 12	675	0.0	1.1+
1982 10 19	695	1.8−	1.7−	1992 06 29	675	0.1−	0.1+	1993 10 12	675	0.6+	1.1+
1982 10 21	807	(7.3+	2.1+)	1992 06 29	675	0.2+	0.6+	1998 06 19	596	0.5−	0.5+
1982 10 22	695	1.2+	0.6+	1992 06 30	675	0.3+	0.3+	1998 06 19	596	0.7−	1.1−
1982 10 25	807	1.5−	0.5−	1992 06 30	675	0.8+	0.8+	1998 06 19	596	0.0	1.0−
1982 10 26	695	1.9+	0.8+	1993 09 17	809	(2.9−	0.8−)	1998 07 18	127	0.2+	0.0
1991 04 15	675	0.1−	1.3+	1993 09 17	809	(2.4−	0.5−)	1998 07 18	127	0.3+	0.2−
1991 04 15	675	0.0	0.5+	1993 09 17	809	(2.7−	0.6−)	1998 07 22	127	0.2+	0.1−
1991 04 17	675	0.8−	0.4+	1993 09 18	809	0.7+	0.3+	1998 07 22	127	0.4+	0.0
1991 04 17	675	1.0+	0.7+	1993 09 18	809	0.5−	0.8+				
1992 06 27	675	1.4−	0.2−	1993 09 18	809	0.7−	0.6+				

(9005)* 1982 UU₅ = 1982 VD₆ = 1986 RP₁₀

Discovered 1982 Oct. 20 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Id. S. Nakano (d, *MPC* 9019; *MPC* 14784)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

M	358.87083		(2000.0)	P	Q
n	0.23586620	ω	21.50444	+0.37767214	+0.92311487
a	2.5943322	Ω	270.74445	−0.85972359	+0.32061008
e	0.1228530	i	4.14463	−0.34385912	+0.21229253
P	4.18	H	13.5	G 0.15	U 2

Residuals in seconds of arc

1982 10 20	095	(3.3+	1.8+)	1990 09 26	095	(2.6−	1.3+)	1997 04 29	704	1.2+	0.6+
1982 10 21	095	1.6+	1.3+	1990 09 26	095	1.7+	2.0−	1997 04 29	704	1.2+	0.5−
1982 10 22	095	0.3+	0.2−	1990 10 09	413	0.2−	0.5−	1998 06 24	704	0.8−	0.8+
1982 11 08	095	1.3−	0.2+	1990 10 09	413	0.0	2.0+	1998 06 24	704	(3.0−	0.7+)
1982 11 09	095	(1.9+	2.5+)	1990 10 11	413	0.4−	0.8+	1998 06 24	704	0.2+	2.1+
1986 09 09	095	(2.3−	0.4−)	1990 10 27	413	0.3−	0.8−	1998 06 24	704	1.5−	1.1+
1986 09 11	095	(5.1+	1.6+)	1993 04 24	801	0.9−	0.8−	1998 06 26	809	1.3+	1.2−
1990 08 16	801	0.3−	0.0	1993 04 24	801	1.0−	2.0−	1998 06 26	809	1.4+	0.6−
1990 08 16	801	0.5−	0.9+	1994 08 08	801	0.1−	0.0	1998 06 26	809	1.6+	0.6−
1990 08 17	801	0.9−	1.1+	1994 08 08	801	0.3−	1.7−	1998 06 26	704	0.8−	0.3−
1990 08 17	801	0.4+	0.8+	1994 09 03	801	0.4−	0.1+	1998 06 26	704	0.9−	1.0+
1990 08 22	511	0.2−	1.0+	1994 09 03	801	1.3−	0.3+	1998 06 26	704	1.3−	0.8+
1990 08 22	511	0.6−	0.1+	1994 09 09	801	0.8+	0.0	1998 06 26	704	0.8−	0.5+
1990 08 24	511	(0.2+	2.5+)	1994 09 09	801	0.2−	0.3+	1998 06 26	704	0.8−	2.2+
1990 09 16	675	0.1−	0.8−	1995 11 27	411	0.1+	0.2−	1998 06 27	809	1.9+	1.4−
1990 09 16	675	1.4+	0.8−	1995 11 27	411	0.0	0.1+	1998 06 27	809	2.0+	1.1−
1990 09 18	095	1.0+	0.6−	1997 04 28	704	1.7−	0.0	1998 06 27	809	1.9+	1.4−
1990 09 18	095	(1.8−	2.3−)	1997 04 28	704	0.5−	0.5+	1998 07 26	704	0.4+	1.3−
1990 09 19	675	1.0+	1.4−	1997 04 28	704	0.7−	0.6−	1998 07 26	704	0.3−	0.0
1990 09 19	675	1.4+	1.8−	1997 04 28	704	0.8−	0.4+	1998 07 26	704	(4.0−	0.4−)
1990 09 22	095	2.0−	2.0−	1997 04 29	704	0.6+	0.7−	1998 07 26	704	1.4−	0.7+
1990 09 22	095	(0.2+	2.4−)	1997 04 29	704	0.7+	0.2−	1998 07 26	704	0.9−	0.7+

(9006)* 1982 UA₇ = 1982 XR₂ = 1961 TV₁ = 1986 XD

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

Observatory.

Id. T. Kobayashi (d, *MPC* 10936), E. Bowell (*MPC* 11431), B. G. Marsden (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

M	296.77519		(2000.0)	P	Q
n	0.23660220	ω	308.21508	+0.93960418	−0.25841856
a	2.5889492	Ω	67.77681	+0.33666643	+0.81591844
e	0.1901948	i	14.02983	−0.06164177	+0.51720108
P	4.17	H	12.8	G 0.15	U 1

Residuals in seconds of arc

1961 10 15	760	0.3+	0.3+	1982 12 14	381	0.9−	0.3−	1998 07 16	423	0.3+	0.0
1961 10 15	760	0.4−	0.3−	1982 12 14	381	0.5+	0.1−	1998 07 16	423	0.5+	0.1+
1982 10 21	095	(1.3+	5.4+)	1986 12 02	688	0.0	1.2−	1998 07 16	423	0.5+	0.3+
1982 10 22	095	0.9+	1.0+	1986 12 02	688	0.3−	0.5+	1998 07 21	423	0.4−	0.2+
1982 10 23	095	(2.2+	3.4+)	1993 05 26	675	0.3+	0.3−	1998 07 21	423	0.3+	0.3−
1982 10 25	095	0.7+	1.4−	1993 05 26	675	1.2−	0.8−	1998 07 21	423	0.1−	0.2−
1982 11 11	095	(3.7+	2.1−)	1998 06 28	423	0.4−	1.0+	1998 07 21	423	0.1+	0.3−
1982 11 12	095	0.9−	0.9+	1998 06 28	423	0.5−	0.5+				
1982 12 13	381	0.6+	0.7−	1998 07 12	689	0.4−	1.4−				

(9007)* 1983 TE₁ = 1979 SD₁₂

Discovered 1983 Oct. 5 by A. Mrkos at Kleť.

Id. T. Kobayashi (*MPC* 11144)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	280.59239		(2000.0)	P	Q
n	0.25345530	ω	174.33727	+0.90931622	−0.41293666
a	2.4728729	Ω	210.21612	+0.37766063	+0.87073144
e	0.1523764	i	5.84572	+0.17468961	+0.26703946
P	3.89	H	13.9	G 0.15	U 1

Residuals in seconds of arc

1979 09 18	675	0.8+	0.7-	1995 09 30	046	0.6+	0.5-	1997 04 06	566	0.1-	0.6-
1979 09 18	675	2.2+	0.9+	1995 09 30	046	0.1+	0.8-	1997 04 06	566	0.7+	0.4-
1979 09 19	675	1.7-	0.2-	1995 09 30	046	0.1+	0.4-	1997 05 03	046	0.1-	0.5-
1979 09 19	675	0.2-	1.2+	1995 09 30	046	0.4+	0.3-	1997 05 03	046	0.1-	0.8-
1983 10 05	046	0.2-	1.3-	1995 10 10	046	0.5-	0.2+	1997 05 03	046	0.2+	0.5-
1983 10 05	046	1.4+	1.0-	1995 10 10	046	0.7-	0.2+	1997 05 04	046	0.5-	0.6-
1983 10 07	046	(2.5+	3.1-)	1995 10 10	046	0.3-	0.6+	1997 05 04	046	0.1+	0.5-
1983 10 07	046	(0.2-	6.2-)	1995 10 11	046	0.5-	0.5+	1997 05 04	046	0.2-	0.8-
1983 10 13	046	(1.3-	3.7-)	1995 10 11	046	0.2-	0.4+	1997 05 05	691	1.9-	0.4-
1983 10 13	046	(3.5-	4.4-)	1995 10 11	046	0.2-	0.0	1997 05 05	691	1.7-	0.6-
1983 10 14	046	0.7+	2.3-	1995 10 22	801	0.9+	0.6-	1997 05 05	691	(2.1-	0.7-)
1983 10 14	046	(0.1+	4.4-)	1995 10 22	801	0.1-	0.1-	1998 06 18	046	0.3+	0.3+
1983 11 09	675	0.3+	0.4-	1995 10 24	801	0.1+	0.2+	1998 06 18	046	0.0	0.6+
1987 10 20	688	0.9-	1.6-	1995 10 24	801	0.9+	0.2+	1998 06 18	046	0.3+	0.0
1987 10 20	688	(3.4+	1.0+)	1995 11 27	046	1.2+	0.1-	1998 06 21	046	0.2+	0.5+
1987 11 19	688	(0.5+	3.7+)	1995 11 27	046	0.1-	0.2+	1998 06 21	046	0.3+	0.5+
1987 11 19	688	1.1+	1.1+	1995 11 27	046	0.2-	0.4+	1998 06 21	046	0.5+	0.8+
1987 11 23	046	2.0-	0.2+	1995 11 28	046	0.5+	0.3-	1998 06 24	704	1.1+	0.0
1987 11 23	046	1.6-	0.6-	1995 11 28	046	0.2-	0.3+	1998 06 24	704	0.8+	0.1+
1987 11 24	688	(0.6+	3.8+)	1995 11 28	046	0.4-	0.3+	1998 06 24	704	0.8+	0.1-
1987 11 24	688	1.6+	1.1+	1995 12 10	046	0.3+	0.2+	1998 06 24	704	(0.5+	2.5+)
1987 11 25	046	1.8-	2.1-	1995 12 10	046	0.4+	0.3+	1998 07 14	046	0.3-	0.5-
1987 11 25	046	(2.7-	1.0-)	1995 12 10	046	0.4+	0.4+	1998 07 14	046	0.1-	0.7+
1989 03 07	675	0.9-	1.3-	1995 12 17	046	0.2+	0.3+	1998 07 14	046	0.4+	0.3-
1991 10 09	801	0.1+	0.3+	1995 12 17	046	0.2+	0.4+	1998 07 19	046	0.6-	0.1+
1991 10 09	801	0.0	0.1+	1995 12 17	046	0.3+	0.7+	1998 07 19	046	0.7-	0.3+
1991 11 03	801	0.2-	0.5+	1997 03 11	809	(1.0+	2.5+)	1998 07 19	046	0.7-	0.1+
1991 11 03	801	0.1-	0.5+	1997 03 11	809	(1.1+	2.4+)	1998 07 21	704	0.7-	0.7-
1991 11 06	801	0.0	0.1+	1997 03 11	809	0.5+	1.5+	1998 07 21	704	0.5-	0.0
1991 11 06	801	0.1+	0.3+	1997 03 12	809	0.5+	0.7+	1998 07 21	704	0.3-	0.6+
1995 09 22	046	0.2-	0.3+	1997 03 12	809	0.4+	0.0	1998 07 21	704	1.3-	0.1-
1995 09 22	046	0.4-	0.0	1997 03 12	809	0.5+	1.2+				
1995 09 22	046	0.6-	0.5-	1997 04 06	566	0.4+	0.6-				

(9008)* 1984 BS = 1991 HE

Discovered 1984 Jan. 27 by A. Mrkos at Kleť.

Id. R. Nagata (*MPC* 18424)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		P		Q	
232.03372		(2000.0)			
<i>n</i>	0.30698296	ω	310.57795	+0.48005245	-0.87103019
<i>a</i>	2.1763390	Ω	110.44456	+0.83470781	+0.41700989
<i>e</i>	0.1069791	<i>i</i>	6.38430	+0.26983795	+0.25963273
<i>P</i>	3.21	<i>H</i>	13.7	<i>G</i>	0.15

Residuals in seconds of arc

1984 01 27	046	(7.4-	1.4-)	1997 03 03	046	0.0	0.1+	1998 06 24	704	0.2+	0.3-
1984 01 27	046	(5.4-	2.4-)	1997 03 05	046	0.3-	0.4+	1998 06 24	704	0.2+	0.4+
1984 01 29	046	(2.0-	2.5-)	1997 03 05	046	0.1-	0.3+	1998 06 24	704	0.0	0.5+
1984 01 29	046	(1.5-	3.3-)	1997 03 05	046	0.1-	0.4+	1998 06 24	704	0.1+	1.2+
1984 02 01	046	0.3+	1.9-	1997 03 05	046	0.1+	0.5+	1998 06 26	704	0.1+	1.1-
1984 02 01	046	0.4-	0.2-	1997 03 05	046	0.1+	0.4+	1998 06 26	704	0.1-	0.2-
1988 05 10	675	0.6-	0.9-	1997 03 05	046	0.1+	0.5+	1998 06 26	704	0.1+	1.9-
1988 05 10	675	0.3-	0.6+	1997 03 27	689	0.1+	0.2+	1998 06 26	704	1.9+	1.7-
1991 04 16	675	1.3+	0.1+	1997 04 08	689	0.2+	0.7+	1998 06 26	704	(0.1+	2.9-)
1991 04 16	675	0.8-	0.3+	1998 06 05	046	0.1+	0.2-	1998 07 14	046	0.2+	0.1+
1991 04 16	399	1.5+	1.8-	1998 06 05	046	0.2-	0.1-	1998 07 14	046	0.5-	0.3+
1991 04 16	399	0.4-	0.5-	1998 06 05	046	0.0	0.1-	1998 07 14	046	0.0	0.5+
1991 04 16	399	(2.8+	1.5-)	1998 06 10	046	0.3+	0.0	1998 07 17	046	0.4-	0.7+
1991 04 18	399	0.3-	0.6-	1998 06 10	046	0.4+	0.4-	1998 07 17	046	0.3-	0.6+
1991 04 18	399	1.6-	0.1-	1998 06 10	046	0.0	0.4-	1998 07 17	046	0.3-	0.5+
1997 01 28	327	0.5+	0.6+	1998 06 18	046	0.4-	0.4+	1998 07 21	704	1.9-	1.7+
1997 01 28	327	0.4+	0.7+	1998 06 18	046	0.1-	0.7+	1998 07 21	704	0.2-	1.0+
1997 01 28	327	0.5+	0.4+	1998 06 22	046	0.3+	0.2+	1998 07 21	704	0.3+	0.3+
1997 03 03	046	0.2-	0.1+	1998 06 22	046	0.3+	0.1+				
1997 03 03	046	0.1-	0.1+	1998 06 22	046	0.4+	0.0				

(9009)* 1984 HJ₁ = 1997 AO₂₃

Discovered 1984 Apr. 23 by W. Ferreri and V. Zappalà at the European Southern Observatory.

Id. G. V. Williams (*MPC* 29094)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		P		Q	
27.54751		(2000.0)			
<i>n</i>	0.28929792	ω	177.74339	-0.18363535	+0.98163724
<i>a</i>	2.2641534	Ω	81.67193	-0.90269517	-0.14760706
<i>e</i>	0.1425103	<i>i</i>	2.99147	-0.38912656	-0.12083245
<i>P</i>	3.41	<i>H</i>	14.3	<i>G</i>	0.15

Residuals in seconds of arc

1984 04 23	809	1.3-	0.3+	1995 09 30	691	0.4-	0.4+	1998 06 24	699	0.1+	0.1-
1984 04 23	809	0.2-	0.2+	1995 12 27	327	1.0+	0.3-	1998 06 24	699	0.2-	1.0+
1984 04 24	809	0.2-	0.2+	1995 12 27	327	0.9+	0.3-	1998 06 24	699	0.1+	0.6+
1984 04 24	809	0.8-	0.6+	1995 12 27	327	0.6+	0.4+	1998 06 24	699	0.4-	1.1+
1984 04 25	809	0.2+	0.2+	1997 01 15	966	0.4-	0.8+	1998 06 29	704	1.0+	1.3-
1984 04 25	809	1.1+	0.3-	1997 01 15	966	0.4+	0.7+	1998 06 29	704	0.0	0.3+
1984 04 27	809	0.3+	0.2-	1997 01 15	966	0.6-	0.7+	1998 06 29	704	0.3+	0.8-
1984 04 27	809	0.2-	0.0	1997 01 28	966	1.1-	1.5+	1998 06 29	704	(2.8-	0.2+)
1984 04 30	809	0.4+	0.1+	1997 01 28	966	0.5-	0.1+	1998 07 02	699	0.2-	0.1+
1984 04 30	809	1.3+	0.0	1997 02 02	966	1.1+	1.4+	1998 07 02	699	0.6-	0.5+
1992 11 26	691	0.4-	0.5+	1997 02 02	966	1.0+	0.9-	1998 07 02	699	0.4-	0.3+
1992 11 26	691	0.3-	0.5+	1997 02 26	966	1.0+	0.4-	1998 07 16	699	0.2-	0.4+
1992 11 26	691	0.5-	0.4+	1997 02 27	966	(0.2+	3.9+)	1998 07 16	699	0.3-	0.5+
1995 09 30	691	0.4-	0.4+	1998 06 24	699	0.2+	0.2-	1998 07 16	699	0.2+	0.6+
1995 09 30	691	0.4-	0.2+	1998 06 24	699	0.5-	0.2+				

(9010)* 1984 HM₁ = 1991 JO₆ = 1994 CJ

Discovered 1984 Apr. 27 by W. Ferreri and V. Zappalà at the European Southern Observatory.

Id. S. Nakano (*MPC* 23122)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		P		Q	
61.22966		(2000.0)			
<i>n</i>	0.28629925	ω	159.70960	-0.99651325	+0.08132749
<i>a</i>	2.2799356	Ω	24.97745	-0.08133825	-0.89719066
<i>e</i>	0.1109308	<i>i</i>	2.52909	-0.01858598	-0.43409072
<i>P</i>	3.44	<i>H</i>	13.8	<i>G</i>	0.15

Residuals in seconds of arc

1984 03 29	095	(6.4+ 3.8-)	1994 02 01	896	0.2+ 0.8+	1998 05 22	704	0.0 0.6-
1984 04 04	095	(5.2+ 3.2-)	1994 02 02	896	1.4+ 0.2-	1998 05 22	704	0.5+ 1.2+
1984 04 27	809	0.0 0.6-	1994 02 02	896	0.1- 0.6+	1998 05 24	704	0.2- 0.3+
1984 04 27	809	0.6- 0.7-	1995 08 22	372	(3.9- 1.7+)	1998 05 24	704	0.4+ 0.1+
1984 04 28	809	1.2- 0.2-	1995 08 22	372	(2.5- 0.1+)	1998 05 24	704	0.5+ 0.7+
1984 04 28	809	0.5- 0.1-	1995 10 18	327	0.1+ 0.4+	1998 05 24	704	0.0 0.2-
1984 05 01	809	0.6- 0.5-	1995 10 18	327	0.5+ 0.7+	1998 05 24	704	1.4- 0.1+
1984 05 01	809	0.2+ 0.4-	1995 10 18	327	0.8+ 0.3+	1998 06 03	704	0.2- 0.2-
1984 05 05	809	0.1+ 0.7-	1998 05 16	426	0.2+ 0.7+	1998 06 03	704	0.5+ 0.3-
1989 11 04	675	0.1+ 1.1-	1998 05 16	426	0.0 0.9+	1998 06 03	704	0.7- 0.2+
1989 11 05	675	1.3- 1.2+	1998 05 16	426	0.1+ 0.8+	1998 06 03	704	0.0 0.8-
1989 11 05	675	0.0 0.4+	1998 05 17	426	0.1- 0.4+	1998 06 03	704	0.0 1.2-
1991 05 13	675	0.4+ 0.1-	1998 05 17	426	0.1+ 0.5+	1998 06 18	704	0.4+ 0.1+
1991 05 13	675	1.2+ 0.1+	1998 05 17	426	0.1+ 0.6+	1998 06 18	704	1.0+ 0.6-
1991 05 15	675	0.1+ 0.2+	1998 05 22	704	0.1- 0.3+	1998 06 18	704	0.1- 1.0+
1991 05 15	675	0.7+ 0.5+	1998 05 22	704	0.4- 0.4+	1998 06 18	704	0.5- 1.6-
1994 02 01	896	0.0 1.0+	1998 05 22	704	0.6- 0.9+	1998 06 18	704	0.7- 0.2-

1998 AUG. 8

M.P.C. 32177

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	288.13154	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27398250	ω 69.04079	+0.94458829	-0.32706435
<i>a</i>	2.3477625	Ω 310.03882	+0.28597376	+0.86174296
<i>e</i>	0.2394487	<i>i</i> 2.09305	+0.16115819	+0.38785047
<i>P</i>	3.60	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1982 01 30	675	0.2+	0.6-	1995 11 16	399	(0.7-	2.7+)	1997 03 08	809	(2.8+	1.0+)
1982 01 31	675	0.8-	0.5-	1995 11 16	399	1.2-	1.2+	1998 06 05	046	0.5-	0.4+
1984 09 20	046	0.0	2.3-	1995 11 18	399	0.5+	1.3+	1998 06 05	046	0.4-	0.6+
1984 09 20	046	1.5+	0.4+	1995 11 18	399	1.4-	0.9+	1998 06 05	046	0.6-	0.7+
1984 09 26	675	0.8-	1.2+	1995 12 25	801	0.1+	0.0	1998 06 09	046	0.6-	0.7+
1984 09 27	675	0.0	0.9+	1995 12 25	801	0.3+	0.1-	1998 06 09	046	0.2+	0.9+
1984 09 27	046	0.6+	1.7-	1996 01 15	046	0.4+	0.4+	1998 06 09	046	0.5+	0.7+
1984 09 27	046	1.7+	0.7+	1996 01 15	046	0.1+	0.5+	1998 06 22	046	0.2+	0.5+
1984 09 29	046	0.9-	1.6-	1996 01 15	046	0.4+	0.8+	1998 06 22	046	0.0	0.7+
1984 09 29	046	0.3-	1.7-	1996 01 16	046	0.0	0.5+	1998 06 22	046	0.0	0.4+
1984 09 30	046	0.5+	0.3-	1996 01 16	046	0.0	0.5+	1998 06 23	046	0.1-	0.5+
1984 09 30	046	0.2+	1.2-	1996 01 16	046	0.1+	0.7+	1998 06 23	046	0.3+	0.2+
1984 10 23	675	0.3-	1.9+	1997 03 08	809	(1.6+	2.6+)	1998 06 23	046	0.3+	0.2-
1984 10 23	675	0.9-	1.5+	1997 03 08	809	(0.7+	2.2+)				

(9012)* 1984 UW = 1974 SM₂

Discovered 1984 Oct. 26 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. K. Hurukawa (*MPC* 9418), W. Landgraf (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	307.99732	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.20276755	ω 77.69630	+0.95472603	-0.28722755
<i>a</i>	2.8694836	Ω 298.95197	+0.22675217	+0.87114855
<i>e</i>	0.3142248	<i>i</i> 5.07801	+0.19256600	+0.39824682
<i>P</i>	4.86	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1974 09 20	095	1.0+	0.6-	1989 11 29	888	0.0	0.1-	1998 06 28	809	(1.0+	2.5+)
1974 09 22	095	0.3-	0.9-	1989 11 29	888	0.1+	0.4-	1998 07 01	809	0.7+	1.0+
1984 10 26	688	(4.2-	1.8-)	1989 12 21	888	0.8-	0.8+	1998 07 01	809	0.2+	1.6+
1984 10 26	688	(0.0	3.7-)	1989 12 21	888	0.6-	1.4+	1998 07 01	809	1.0+	1.5+
1984 11 20	675	0.2-	1.8+	1989 12 29	801	0.5+	0.2-	1998 07 21	704	(0.2-	2.0-)
1984 11 20	688	(0.9-	3.1-)	1989 12 29	801	0.6-	0.3-	1998 07 21	704	0.3-	1.0-
1984 11 20	688	(1.5+	3.2-)	1998 06 24	704	0.1-	0.3+	1998 07 21	704	1.1-	0.4+
1984 11 21	675	0.9+	0.6+	1998 06 24	704	0.5-	0.9-	1998 07 21	704	0.9-	0.5-
1984 11 22	330	(5.6+	12.6+)	1998 06 24	704	(2.2-	0.8+)	1998 07 26	704	0.0	0.7+
1984 11 27	688	0.6-	1.8-	1998 06 24	704	0.5-	1.3-	1998 07 26	704	0.6+	0.6+
1984 11 27	688	(2.2+	4.8-)	1998 06 24	704	0.1+	0.9-	1998 07 26	704	0.1+	1.0+
1989 11 20	888	1.6+	0.7+	1998 06 28	809	(1.3+	2.5+)	1998 07 26	704	(2.3-	0.7+)
1989 11 20	888	0.5-	0.0	1998 06 28	809	(0.8+	2.4+)				

(9013)* 1985 PA₁ = 1993 FJ₁₁

Discovered 1985 Aug. 14 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. M. E. Sansaturio (*MPC* 25424)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	355.49050	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.22348967	ω 126.67449	+0.39827435	+0.91613681
<i>a</i>	2.6892494	Ω 166.57050	-0.89164379	+0.39831651
<i>e</i>	0.2731734	<i>i</i> 11.29969	-0.21528794	+0.04513655
<i>P</i>	4.41	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1985 08 14	688	0.3+	1.0-	1994 11 04	675	0.5-	0.9+	1998 06 25	704	0.7+	0.1+
1985 08 14	688	0.9+	0.2-	1994 11 04	675	0.6-	0.4-	1998 07 02	610	0.4+	0.9+
1985 08 20	688	0.6+	0.4-	1997 03 10	704	0.0	0.0	1998 07 02	610	0.2-	0.6+

1985 08 20	688	0.3+	0.2+	1997 03 10	704	0.1-	0.8+	1998 07 02	610	0.7-	0.2+
1985 09 12	688	0.2+	0.4-	1997 03 11	704	1.2+	0.0	1998 07 02	610	1.3-	0.2-
1985 09 12	688	1.8-	0.6+	1997 03 11	704	0.4+	0.1-	1998 07 04	610	1.2-	1.5-
1993 03 17	809	0.6-	0.8-	1997 03 12	704	0.6+	1.1+	1998 07 04	610	0.5-	1.1-
1993 03 18	809	0.6-	0.7-	1997 03 12	704	0.2+	0.2+	1998 07 18	952	1.9+	0.6+
1993 03 23	809	0.0	0.4+	1998 06 25	704	0.4-	0.2-	1998 07 18	952	1.4+	0.1+
1993 04 16	413	0.6-	0.2+	1998 06 25	704	0.3+	1.0+	1998 07 18	952	1.2+	0.4+
1994 09 11	675	0.1-	0.8+	1998 06 25	704	(2.7+	0.9+)				
1994 09 11	675	0.2-	0.1+	1998 06 25	704	1.4-	0.8+				

(9014)* 1985 UG₅ = 1978 WT₇

Discovered 1985 Oct. 22 by L. V. Zhuravleva at the Crimean Astrophysical

Observatory.

Id. S. Nakano (*MPC* 12321)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	204.15607	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27890197	ω 341.12339	+0.57263284	-0.80460013
<i>a</i>	2.3200730	Ω 73.64894	+0.77167186	+0.46426708
<i>e</i>	0.1660881	<i>i</i> 9.42874	+0.27679267	+0.37023602
<i>P</i>	3.53	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1978 11 29	675	0.6-	0.1-	1991 06 08	809	0.5+	1.0-	1998 05 26	704	0.7+	0.4+
1978 11 30	675	0.5-	0.4+	1991 06 08	809	0.4-	1.6-	1998 05 26	704	0.6-	0.5+
1985 10 22	095	(0.6-	4.7-)	1991 06 08	809	0.4+	1.7-	1998 06 18	704	0.3-	0.1+
1985 11 09	095	0.9+	1.1-	1998 05 24	704	0.8-	1.3+	1998 06 18	704	1.1-	0.2-
1985 11 11	095	0.5-	1.9+	1998 05 24	704	0.1+	0.3-	1998 06 18	704	1.8-	0.4+
1985 11 20	095	(2.9+	4.3-)	1998 05 24	704	0.7-	2.1+	1998 06 18	704	1.2+	0.3+
1990 01 26	675	0.4+	0.6-	1998 05 24	704	0.1+	0.6+	1998 06 29	699	1.3+	0.6-
1990 01 26	675	0.1-	0.2-	1998 05 24	704	0.4+	0.8+	1998 06 29	699	0.5-	0.3+
1991 06 06	809	0.7+	1.7-	1998 05 26	704	0.4+	1.3+	1998 06 29	699	0.2+	0.5+
1991 06 06	809	0.2-	0.2-	1998 05 26	704	1.1+	1.1+				
1991 06 06	809	0.6-	0.2-	1998 05 26	704	0.4+	0.9-				

(9015)* 1985 VK = 1952 TD = 1996 BC₁₈

Discovered 1985 Nov. 14 by P. Jensen at Brorfelde.

Id. S. Nakano (*MPC* 28295)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	259.21753	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21088481	ω 312.19050	+0.74366944	-0.65697706
<i>a</i>	2.7953692	Ω 89.27336	+0.64407649	+0.65438995
<i>e</i>	0.1258134	<i>i</i> 7.11448	+0.17922401	+0.37437273
<i>P</i>	4.67	<i>H</i> 12.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1952 10 12	760	0.2+	0.2+	1992 04 03	033	0.3-	0.3-	1998 06 24	704	0.7+	0.5-
1952 10 12	760	(2.2-	12.4-)	1992 04 30	033	0.3+	0.2-	1998 06 24	704	0.6+	1.3-
1985 10 22	095	0.6-	0.7-	1992 04 30	033	0.2-	0.3-	1998 06 26	704	0.2+	0.6+
1985 11 09	095	1.5+	0.3-	1992 05 04	033	0.4-	0.0	1998 06 26	704	0.7+	0.7+
1985 11 11	095	1.3+	1.3-	1994 09 10	675	0.8-	0.1-	1998 06 26	704	0.1-	1.0+
1985 11 14	054	0.2-	0.5+	1994 09 10	675	1.0-	1.7-	1998 06 26	704	0.0	0.3+
1985 11 15	054	0.4+	1.4+	1996 01 24	372	1.1+	0.7+	1998 06 26	704	0.6-	1.5-
1985 11 15	054	0.0	1.2+	1996 01 24	372	0.1+	0.1-	1998 07 21	704	(1.2-	2.4+)
1985 11 20	095	1.3-	1.9-	1996 01 26	372	0.3-	0.8+	1998 07 21	704	0.0	0.5+
1988 05 10	675	1.3-	0.2-	1996 01 26	372	(2.9-	2.4+)	1998 07 21	704	(1.3-	3.2+)
1988 05 10	675	1.1-	0.1-	1998 06 24	704	1.6+	0.3-	1998 07 21	704	0.6+	1.5+
1992 03 30	033	0.3+	0.2-	1998 06 24	704	(2.3+	1.9+)				
1992 03 31	033	0.7-	0.6-	1998 06 24	704	0.2-	0.4+				

(9016)* 1986 AE

Discovered 1986 Jan. 10 by C. S. Shoemaker at Palomar.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	317.31856	(2000.0)	P		Q	
<i>n</i>	0.21848950	ω	109.65620	+0.64756651	-0.61340537	
<i>a</i>	2.7301237	Ω	291.09010	+0.37840009	+0.77383357	
<i>e</i>	0.3776365	<i>i</i>	28.98327	+0.66141590	+0.15784634	
<i>P</i>	4.51	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1986 01 10	675	0.8+	0.3-	1989 07 31	675	0.4+	1.1-	1995 03 04	801	0.2+	0.1-
1986 01 11	675	(3.2+	6.8-)	1989 08 01	675	0.3+	0.1-	1995 03 04	801	0.7+	0.0
1986 01 16	675	0.1+	0.6-	1989 08 06	801	0.9-	0.5+	1998 06 23	699	0.3+	0.5+
1986 02 03	054	1.3-	0.1-	1989 08 29	675	0.8+	1.0-	1998 06 23	699	0.3+	0.3-
1986 02 04	675	1.5+	0.7+	1989 09 01	675	0.2-	0.2-	1998 06 23	699	0.0	1.1-
1986 02 07	675	0.4-	0.9+	1989 09 25	801	2.2-	0.8-	1998 06 30	704	1.0+	0.5-
1986 02 07	675	0.9+	1.5+	1989 11 29	688	0.1+	0.3+	1998 06 30	704	0.4+	0.9+
1986 03 04	675	0.4-	0.4-	1989 11 29	688	0.2+	0.2+	1998 06 30	704	0.2+	0.4-
1986 03 04	675	0.0	0.5-	1990 01 25	688	1.0+	1.2+	1998 06 30	704	0.8-	0.1+
1986 03 04	675	0.3-	0.4-	1991 01 17	413	(5.4-	6.3-)	1998 06 30	704	0.7-	0.1-
1986 04 05	675	0.0	0.2-	1994 12 29	691	1.1-	0.6-	1998 07 19	127	1.0+	0.3-
1986 04 05	675	0.2-	0.0	1994 12 29	691	1.0-	0.4-	1998 07 19	127	0.8+	0.5-
1986 04 08	675	0.2-	0.3-	1994 12 29	691	0.9-	0.4-	1998 07 21	127	0.2-	0.3-
1986 04 08	675	0.1-	0.4-	1995 01 26	801	1.0+	0.4-	1998 07 21	127	0.1-	0.3-
1989 06 15	675	0.5+	1.4+	1995 01 26	801	1.2+	0.3-	1998 07 22	127	0.2+	0.3+
1989 06 15	675	0.7+	1.3+	1995 01 28	801	0.3-	1.0+	1998 07 22	127	0.0	0.0
1989 06 15	675	0.5+	1.2+	1995 02 27	801	0.8-	0.5+				
1989 07 31	801	1.7-	0.1+	1995 02 27	801	1.1-	0.2-				

(9017)* 1986 TW₉ = 1986 WP₃ = 1982 UM₁₁ = 1990 SB₁₅

Discovered 1986 Oct. 2 by L. V. Zhuravleva at the Crimean Astrophysical

Observatory.

Id. H. Oishi (d, *MPC* 17178), E. Bowell (*MPC* 17958), G. V. Williams (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	308.68026	(2000.0)	P		Q	
<i>n</i>	0.23878048	ω	70.76451	+0.97642426	-0.19740361	
<i>a</i>	2.5731800	Ω	300.53520	+0.13942216	+0.88561780	
<i>e</i>	0.2318223	<i>i</i>	5.81965	+0.16479419	+0.42037237	
<i>P</i>	4.13	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1953 10 12	675	0.7+	0.2-	1990 09 19	675	0.0	0.3-	1995 12 25	691	0.2-	0.5-
1953 10 12	675	0.6-	0.1+	1990 09 19	675	0.3-	0.3-	1995 12 25	691	0.2-	0.3-
1982 10 16	095	2.0-	0.7-	1990 09 22	095	0.7-	1.5+	1998 06 26	704	0.8+	0.0
1986 10 02	095	2.1+	0.5-	1990 09 22	095	0.5+	0.6+	1998 06 26	704	0.8+	0.3+
1986 10 08	095	0.9+	0.7-	1994 07 13	801	0.4-	0.3+	1998 06 26	704	0.6-	1.0-
1986 11 25	010	(3.8-	1.5-)	1994 07 13	801	0.2+	0.2+	1998 06 26	704	(0.4-	2.2-)
1986 11 25	010	(2.8-	1.5-)	1994 08 07	801	0.3-	0.1+	1998 07 02	699	0.5+	0.6-
1986 11 27	010	0.5+	0.9+	1994 08 07	801	0.6-	0.5-	1998 07 02	699	0.3+	0.1-
1990 09 17	675	0.4-	0.6-	1994 10 08	801	0.6-	1.1+	1998 07 02	699	0.2+	0.0
1990 09 17	675	1.1-	0.4-	1995 12 25	691	0.1-	0.6-	1998 07 12	689	0.0	0.8-

(9018)* 1987 JG = 1991 OQ

Discovered 1987 May 5 by A. C. Gilmore and P. M. Kilmartin at the Mount

John Observatory.

Id. B. A. Skiff (*MPC* 18812)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	38.08786	(2000.0)	P		Q	
<i>n</i>	0.28001200	ω	14.23656	-0.16909091	+0.98122025	
<i>a</i>	2.3139375	Ω	246.09600	-0.91391217	-0.19135440	
<i>e</i>	0.0817663	<i>i</i>	5.82704	-0.36901601	+0.02429621	
<i>P</i>	3.52	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1987 05 05	474	1.5+	1.3+	1994 04 14	474	0.2-	0.8-	1994 06 10	801	1.6+	0.1+
1987 05 05	474	0.5-	0.1-	1994 04 14	474	0.3-	0.6-	1997 02 14	732	0.6-	1.1-

1987 05 07	474	0.7+	0.5+	1994 04 14	474	0.1-	0.6-	1997 02 14	732	0.2-	1.4-
1987 05 07	474	0.1-	0.2-	1994 04 15	474	0.3-	0.1+	1997 02 14	732	0.2+	0.2-
1987 05 30	413	0.5+	0.5-	1994 04 15	474	0.1-	0.0	1997 03 01	732	1.0-	0.0
1987 05 30	413	0.1-	0.7-	1994 05 03	474	(2.0+	2.3+)	1997 03 01	732	0.1-	0.4+
1987 06 01	474	1.2+	0.8-	1994 05 03	474	0.9-	0.3+	1997 03 01	732	0.8+	0.2-
1987 06 01	474	1.2-	0.4+	1994 05 04	474	0.6-	0.6+	1998 06 18	699	0.2-	0.7-
1987 06 05	474	1.2-	0.2+	1994 05 04	474	0.0	0.5+	1998 06 18	699	0.2-	0.0
1987 06 05	474	1.2-	0.9+	1994 05 10	675	0.4-	0.7-	1998 06 18	699	1.0-	0.3+
1987 06 20	474	(3.1-	0.4+)	1994 05 10	675	1.1-	1.2+	1998 06 27	699	0.6-	0.0
1987 06 20	474	(3.8-	1.2+)	1994 05 22	292	(1.6+	2.8-)	1998 06 27	699	0.7-	0.1+
1987 06 21	474	(2.9-	1.0+)	1994 05 22	292	1.7+	1.0-	1998 06 27	699	0.3-	0.2-
1987 06 21	474	(3.2-	0.9+)	1994 06 08	801	0.4+	0.8-	1998 07 15	699	0.7+	0.0
1991 07 16	675	0.0	0.9-	1994 06 08	801	1.6+	0.6+	1998 07 15	699	0.9+	0.1+
1991 07 16	675	1.1+	0.5-	1994 06 08	675	0.8+	1.2+	1998 07 15	699	0.5+	0.2-
1991 07 18	675	0.3+	0.9-	1994 06 08	675	0.6-	0.6+				
1991 07 18	675	(4.3+	0.8-)	1994 06 10	801	0.6-	1.2-				

(9019)* 1987 QF₃ = 1991 RV₅

Discovered 1987 Aug. 28 by E. W. Elst at the European Southern

Observatory.

Id. E. Bowell (*MPC* 19020)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	330.09309	(2000.0)	P		Q	
<i>n</i>	0.25807769	ω	169.56348	+0.57239996	+0.81728359	
<i>a</i>	2.4432566	Ω	135.31454	-0.75894972	+0.55870573	
<i>e</i>	0.0996495	<i>i</i>	5.41621	-0.31040878	+0.14105121	
<i>P</i>	3.82	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1987 08 21	809	(3.3+	0.2+)	1991 10 07	675	0.3+	0.8-	1997 03 04	704	1.0+	0.2-
1987 08 21	809	(3.7+	0.3+)	1991 10 08	675	0.5+	0.4-	1997 03 04	704	0.7+	0.3+
1987 08 28	809	(6.3+	5.2+)	1997 02 04	566	0.9-	1.6+	1997 03 05	704	0.7+	0.5-
1987 08 28	809	0.1-	1.1+	1997 02 04	566	0.7-	1.7+	1997 03 05	704	0.6+	0.4+
1987 08 28	809	0.2+	2.1+	1997 02 04	566	0.6-	1.5+	1997 03 06	704	0.9+	0.6-
1987 08 31	809	1.0-	0.4-	1997 02 06	327	0.1+	0.3+	1997 03 06	704	1.8-	0.9-
1987 08 31	809	0.1+	0.9+	1997 02 06	327	0.1-	0.3+	1998 06 03	704	1.7-	0.4+
1987 08 31	809	0.3-	0.5-	1997 02 06	327	1.3-	0.1+	1998 06 03	704	(4.5-	1.5-)
1991 09 13	675	0.5-	0.4-	1997 02 08	610	0.2+	0.4-	1998 06 24	704	0.1+	1.1+
1991 09 13	675	0.1-	1.3+	1997 02 08	610	0.4+	0.1+	1998 06 24	704	(2.8+	1.3-)
1991 09 16	675	0.1-	1.3-	1997 02 08	610	0.6+	0.6+	1998 06 24	704	(2.9-	0.6-)
1991 09 16	675	0.8+	1.5-	1997 02 08	610	0.8+	1.2+	1998 06 24	704	(1.7-	3.0+)
1991 10 01	691	1.0-	0.3+	1997 02 09	610	0.7-	0.5-	1998 06 24	704	1.2+	0.1+
1991 10 01	691	1.3-	0.5+	1997 02 09	610	0.3-	0.3-	1998 06 26	704	0.2+	0.2+
1991 10 01	691	1.1-	0.4+	1997 02 09	610	0.1-	0.2-	1998 06 26	704	0.4+	0.7-
1991 10 02	675	1.8+	0.8+	1997 02 17	327	0.3+	0.7-	1998 06 26	704	0.2-	0.7-
1991 10 02	675	0.3+	1.1+	1997 02 17	327	0.2-	0.3-				
1991 10 07	675	0.9+	1.1-	1997 02 17	327	1.0+	0.7-				

(9020)* 1987 SG₂ = 1975 VX₄ = 1989 EK₈

Discovered 1987 Sept. 19 by E. W. Elst at Smolyan.

Id. T. Kobayashi (*MPC* 15887)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	162.06514	(2000.0)	P		Q	
<i>n</i>	0.23988218	ω	277.11631	+0.09756641	-0.99488124	
<i>a</i>	2.5652955	Ω	167.19512	+0.95354012	+0.08587621	
<i>e</i>	0.1696081	<i>i</i>	6.81714	+0.28502989	+0.05325961	
<i>P</i>	4.11	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1975 11 02	095	0.1+	0.2-	1991 09 13	675	0.4+	0.7-	1993 02 25	511	0.8-	1.0-
1987 09 04	095	0.3+	1.8-	1991 09 13	675	0.4+	1.6-	1993 03 22	801	0.5+	0.4+
1987 09 19	071	(4.6-	0.0)	1991 09 16	675	(0.6-	2.2-)	1993 03 27	801	0.1+	0.7+
1987 09 19	071	(1.7-	3.0+)	1991 09 16	675	0.4+	1.2-	1993 03 27	801	0.4+	0.5+
1987 09 19	071	0.3-	0.2-	1991 09 17	675	(0.1-	2.4-)	1998 05 22	704	1.0-	0.4+
1987 09 20	071	(4.6-	1.6-)	1991 10 04	808	(1.0-	3.2-)	1998 05 22	704	0.9+	0.0

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1987 09 21	071	(3.7− 0.2−)	1991 10 04	808	(2.4− 1.8−)	1998 05 22	704	0.3− 0.5−
1987 09 21	071	1.7− 2.0+	1993 02 16	596	(2.3+ 0.6−)	1998 05 22	704	0.0 0.9−
1987 09 22	071	0.1− 0.6+	1993 02 16	596	1.1+ 1.8+	1998 05 24	704	0.2− 0.8−
1987 09 22	071	1.5− 0.5−	1993 02 16	596	0.5+ 1.4+	1998 05 24	704	0.5− 0.2+
1987 09 22	071	0.2− 0.3−	1993 02 19	511	1.9− 0.4+	1998 05 24	704	0.5− 1.0+
1987 09 24	095	1.1+ 1.3+	1993 02 19	511	1.8− 0.8−	1998 05 24	704	0.1− 0.4−
1987 09 27	095	(1.1+ 4.2+)	1993 02 19	511	(2.3− 1.1+)	1998 05 24	704	0.4− 0.4−
1989 03 10	881	0.2− 1.2+	1993 02 19	511	1.4+ 0.6−	1998 06 03	704	1.0+ 0.4+
1989 03 10	881	1.9+ 0.5+	1993 02 20	511	1.3− 1.7−	1998 06 03	704	0.4− 1.0−
1991 08 07	675	(0.9+ 2.4−)	1993 02 20	511	(3.6− 2.6−)	1998 06 03	704	1.2− 0.4−
1991 08 08	675	(0.7+ 3.2−)	1993 02 21	511	(4.5+ 1.4+)	1998 06 03	704	(2.0+ 1.6−)
1991 09 08	808	1.6+ 0.7+	1993 02 22	511	0.7+ 1.5−	1998 06 03	704	0.6+ 0.9+
1991 09 08	808	(3.0+ 1.4+)	1993 02 22	511	0.6− 0.2−	1998 06 26	699	0.6+ 0.6+
1991 09 09	801	0.2+ 0.3−	1993 02 22	511	(0.6+ 2.7+)	1998 06 26	699	0.2+ 0.5−
1991 09 09	801	0.0 0.1−	1993 02 24	511	0.5+ 1.6−	1998 06 26	699	0.1+ 0.1−
1991 09 12	801	0.1+ 0.6−	1993 02 25	511	0.7− 1.9−			
1991 09 12	801	0.5+ 0.7−	1993 02 25	511	0.1+ 0.9−			

(9021)* 1988 CT₅ = 1973 QK₁ = 1980 FB₁₀

Discovered 1988 Feb. 14 by E. W. Elst at the European Southern

Observatory.

Id. H. Kaneda (*MPC* 16429)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	3.80364	(2000.0)	P	Q	
<i>n</i>	0.23784057	ω 1.32306	+0.77740599	+0.61119835	
<i>a</i>	2.5799547	Ω 319.73705	−0.57918638	+0.60345165	
<i>e</i>	0.1743365	<i>i</i> 13.29101	−0.24532237	+0.51213542	
<i>P</i>	4.14	<i>H</i> 12.3	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1973 08 29	095	(3.4− 7.4+)	1988 02 17	809	0.6+ 1.2−	1994 10 09	816	0.3− 0.3+
1973 09 02	095	1.4− 1.7+	1988 02 18	399	0.2− 0.6+	1994 10 09	816	0.3− 0.4+
1980 03 16	095	(3.6+ 1.9−)	1988 02 18	399	1.0+ 0.2−	1994 10 09	816	0.1− 0.0
1988 02 07	399	(2.8− 1.8−)	1988 02 18	399	1.2+ 0.2+	1994 10 15	816	0.2− 0.1−
1988 02 07	399	1.1− 0.9+	1988 02 19	399	1.5− 1.1+	1994 10 15	816	0.3− 0.1+
1988 02 08	399	1.8+ 1.2−	1988 02 19	399	0.9+ 0.9+	1994 10 15	816	0.3− 0.1−
1988 02 08	399	0.4+ 0.7+	1988 02 19	399	2.2+ 2.0+	1994 10 16	816	0.2− 0.4−
1988 02 08	399	0.2+ 0.1+	1990 11 20	801	0.1+ 0.1+	1994 10 16	816	0.2+ 0.6−
1988 02 12	809	1.8− 1.1+	1990 11 20	801	0.0 0.3+	1994 10 16	816	0.3+ 0.4−
1988 02 12	809	0.9− 0.0	1990 12 20	801	0.3− 0.3+	1996 02 15	560	0.0 0.6−
1988 02 13	809	(10.0− 0.8−)	1990 12 20	801	0.4− 0.4+	1996 02 15	560	0.2− 0.4−
1988 02 13	809	(10.0− 0.5−)	1992 02 01	691	1.7− 0.0	1996 02 15	560	0.4− 0.1−
1988 02 14	809	(2.9− 0.4−)	1992 02 01	691	1.2− 0.3+	1997 02 12	689	(3.3− 1.7+)
1988 02 14	809	(3.3− 1.1−)	1992 02 01	691	1.3− 0.2+	1998 06 29	704	0.7− 0.2+
1988 02 14	809	0.0 0.0	1994 10 03	816	0.8+ 0.0	1998 06 29	704	0.2+ 0.2+
1988 02 14	809	1.3+ 1.0−	1994 10 03	816	0.7+ 0.1+	1998 06 29	704	0.6− 0.3+
1988 02 14	809	0.5+ 1.1−	1994 10 03	816	0.9+ 0.1−	1998 06 29	704	0.1− 1.0−
1988 02 16	809	0.6+ 0.8+	1994 10 08	816	0.2− 0.4+	1998 06 29	704	0.5− 1.0+
1988 02 16	809	1.2+ 0.7+	1994 10 08	816	0.1− 0.4+	1998 08 02	757	0.6− 0.2+
1988 02 17	809	0.6− 1.8−	1994 10 08	816	0.4− 0.1−	1998 08 02	757	1.8+ 1.0−

(9022)* 1988 PC₁

Discovered 1988 Aug. 14 by C. S. Shoemaker at Palomar.

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	247.10104	(2000.0)	P	Q	
<i>n</i>	0.17642112	ω 128.82532	+0.93833710	−0.18431983	
<i>a</i>	3.1484901	Ω 243.59634	+0.11358324	+0.96341963	
<i>e</i>	0.2176812	<i>i</i> 19.05974	+0.32653076	+0.19454770	
<i>P</i>	5.59	<i>H</i> 12.9	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1955 10 25	675	0.3− 0.2−	1994 10 03	675	0.1− 0.8+	1998 05 22	704	0.8− 0.9−
1955 11 19	675	0.3− 0.1+	1994 10 03	675	0.5+ 0.8+	1998 05 24	704	0.6− 0.0
1955 11 19	675	0.3+ 0.7+	1994 11 04	675	0.1− 0.6−	1998 05 24	704	1.6− 0.2−
1955 12 11	675	0.2+ 0.7−	1994 11 04	675	0.1+ 0.9−	1998 05 24	704	(2.7− 2.3+)

1988 08 13	675	1.2+ 0.3+	1994 11 06	675	0.0 0.9−	1998 05 24	704	0.7+ 0.0
1988 08 14	675	0.7+ 0.3+	1994 11 06	675	0.3− 1.2−	1998 05 24	704	0.4− 0.0
1988 09 11	675	0.7− 0.5−	1998 05 22	704	1.9+ 1.0−	1998 06 18	691	0.6− 0.6+
1988 09 13	675	0.8− 0.9−	1998 05 22	704	1.5+ 0.0	1998 06 18	691	0.6− 0.9+
1994 09 30	675	0.4− 0.9+	1998 05 22	704	0.9+ 1.3−	1998 06 18	691	0.6− 0.9+
1994 09 30	675	0.4+ 1.4+	1998 05 22	704	0.1+ 0.8+			

(9023)* 1988 RG₁

Discovered 1988 Sept. 10 by C. S. Shoemaker at Palomar.

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	321.60796	(2000.0)	P	Q	
<i>n</i>	0.08145492	ω 158.10491	+0.75423771	+0.64173367	
<i>a</i>	5.2705729	Ω 159.90779	−0.64630482	+0.76292566	
<i>e</i>	0.0649014	<i>i</i> 23.85577	−0.11582556	−0.07824531	
<i>P</i>	12.10	<i>H</i> 10.4	<i>G</i> 0.15	<i>U</i> 0	

Residuals in seconds of arc

1950 07 19	675	0.2+ 0.2+	1990 10 21	675	0.8+ 1.2+	1996 04 11	327	0.0 0.1−
1950 07 19	675	0.0 0.1+	1990 10 24	675	1.6+ 1.3−	1996 04 11	327	0.2− 0.5−
1988 08 15	675	1.2− 0.1+	1990 10 24	675	(2.3+ 1.7−)	1996 04 13	327	0.1+ 1.4−
1988 08 15	675	0.5+ 2.1−	1990 10 26	675	0.6+ 0.4+	1996 04 13	327	0.1− 1.0−
1988 09 10	675	0.1+ 0.6−	1990 11 13	675	0.3− 0.8−	1996 04 13	327	0.1+ 0.7−
1988 09 10	675	0.1− 0.5−	1990 11 14	675	0.0 0.6+	1996 04 13	327	0.6− 0.7−
1988 09 12	675	0.5+ 0.2−	1991 12 24	950	0.2− 0.9+	1998 05 28	704	1.7+ 1.4−
1988 09 12	675	0.6+ 0.6−	1991 12 24	950	1.2− 0.6+	1998 05 28	704	0.4+ 0.1+
1988 10 08	675	0.7− 1.0−	1992 01 15	413	0.0 0.3+	1998 05 28	704	1.0+ 0.7+
1988 10 10	675	0.5− 0.3−	1992 01 15	413	0.2− 0.7+	1998 05 28	704	1.7− 0.5−
1988 11 06	675	0.3− 0.4−	1992 01 15	413	0.2− 0.4+	1998 06 19	704	0.5− 0.1+
1988 11 08	675	1.0+ 0.2−	1993 01 23	675	0.5− 1.0−	1998 06 19	704	1.2− 0.7+
1989 09 21	413	0.1+ 0.7−	1993 01 23	675	0.3− 0.4−	1998 06 19	704	0.8− 0.4+
1989 09 21	413	0.1+ 0.4+	1993 01 27	675	0.9− 1.3−	1998 06 19	704	(1.2− 3.5+)
1989 09 28	675	0.0 2.3−	1994 03 12	675	0.6+ 0.8−	1998 06 25	704	0.8+ 0.4+
1989 09 28	675	(0.2+ 3.0−)	1994 03 12	675	1.2+ 1.5−	1998 06 25	704	0.5+ 1.4−
1989 11 02	675	(0.3− 4.7−)	1994 03 14	675	0.3+ 1.5−	1998 06 25	704	0.2+ 0.9−
1989 11 02	675	0.8− 0.5−	1994 03 14	675	0.5+ 1.7−			
1989 11 03	675	0.0 2.0−	1996 04 11	327	0.5− 0.6−			

(9024)* 1988 RF₉ = 1977 DL

Discovered 1988 Sept. 5 by H. Debehogne at the European Southern

Observatory.

Id. T. Kobayashi (*MPC* 15068)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	40.27165	(2000.0)	P	Q	
<i>n</i>	0.29196805	ω 148.24536	−0.40529747	+0.91314623	
<i>a</i>	2.2503280	Ω 97.81326	−0.84768496	−0.35754518	
<i>e</i>	0.1662845	<i>i</i> 2.52030	−0.34229253	−0.19576877	
<i>P</i>	3.38	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1950 03 21	675	0.5− 1.0+	1988 09 10	809	(2.9+ 0.9+)	1992 11 28	675	1.3− 0.7+
1950 03 21	675	0.5− 1.4+	1988 09 10	809	(2.8+ 0.9+)	1992 11 28	675	0.2− 1.1+
1977 02 18	381	0.7+ 0.1−	1988 09 10	675	0.8+ 0.7+	1994 02 10	675	0.0 0.4−
1977 02 18	381	1.6+ 2.0−	1988 09 11	809	0.9+ 0.1+	1994 02 10	675	(2.9− 1.0−)
1977 02 19	381	1.7+ 0.2−	1988 09 11	809	1.0+ 0.1+	1995 09 19	691	0.9− 0.0
1977 02 19	381	1.4− 0.4+	1988 09 11	809	1.3+ 0.0	1995 09 19	691	1.1− 0.1+
1988 08 16	675	1.3+ 0.3−	1988 09 12	675	0.9+ 0.1−	1995 09 19	691	1.1− 0.3−
1988 08 16	675	0.6+ 0.2−	1988 09 12	675	0.1+ 0.2+	1995 09 30	691	0.0 0.1−
1988 09 02	809	1.2− 1.0+	1991 05 18	809	0.1− 0.1+	1995 09 30	691	0.6− 0.2−
1988 09 02	809	1.3− 1.2+	1991 05 18	809	0.4− 0.2−	1998 05 27	699	0.1+ 0.7−
1988 09 02	809	1.1− 1.1+	1991 05 18	809	0.4− 0.1+	1998 05 27	699	0.9+ 0.9−
1988 09 05	809	1.4− 0.8−	1991 06 06	809	0.1+ 0.0	1998 06 02	699	0.0 0.3−
1988 09 05	809	0.1− 0.4−	1991 06 06	809	0.8− 0.5+	1998 06 02	699	0.4− 0.8−
1988 09 05	809	1.5+ 0.1+	1991 06 06	809	0.2− 0.6+	1998 06 02	699	0.5− 0.5+
1988 09 07	809	(5.5+ 2.5+)	1991 06 08	809	0.6+ 0.6+	1998 07 02	699	0.6+ 0.4−

M.P.C. 32180

1988 09 07 809 (5.4+ 2.7+) 1991 06 08 809 0.2- 1.5+ 1998 07 02 699 0.3+ 0.9-
 1988 09 10 809 (3.1+ 0.9+) 1991 06 08 809 0.0 1.3+ 1998 07 02 699 0.9+ 0.6-

(9025)* 1988 SM₂ = 1998 HJ₃₄

Discovered 1988 Sept. 16 by S. J. Bus at Cerro Tololo.

Id. G. V. Williams (*MPC* 31714)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.16920337	ω	164.97108	+0.57932994	+0.81480441		
<i>a</i>	3.2374026	Ω	140.42561	-0.75130173	+0.54412241		
<i>e</i>	0.1405850	<i>i</i>	1.95138	-0.31610527	+0.20006145		
<i>P</i>	5.82	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 09 15	675	(0.1+ 2.7-)	1997 01 02	691	0.6- 0.2-	1998 03 28	704	0.7+ 1.0-
1988 09 15	675	1.1+ 1.4-	1997 01 02	691	0.9- 0.4-	1998 04 20	704	0.3+ 0.1+
1988 09 16	807	1.8+ 0.4+	1997 02 03	566	0.6+ 0.5-	1998 04 20	704	(0.5- 2.9-)
1988 09 18	807	1.1+ 0.7-	1997 02 03	566	0.4+ 0.2-	1998 04 20	704	1.0- 1.0+
1988 10 04	807	0.8- 0.8-	1997 02 03	566	0.6+ 0.0	1998 04 20	704	(2.7+ 0.4+)
1988 10 05	807	0.9- 0.9-	1998 03 22	704	1.2- 0.3+	1998 04 20	704	(2.7- 0.0)
1988 10 08	807	0.0 0.9-	1998 03 22	704	1.0+ 0.3-	1998 04 22	704	(1.6+ 2.4-)
1988 11 05	807	0.4- 0.1-	1998 03 22	704	1.0- 0.1+	1998 04 22	704	0.7+ 1.6-
1988 11 07	807	0.3- 0.0	1998 03 22	704	0.4- 1.2-	1998 04 22	704	1.1- 1.9+
1994 10 11	691	0.0 0.7+	1998 03 28	704	1.0+ 0.3-	1998 04 22	704	1.0+ 0.9+
1994 10 11	691	0.4- 0.6+	1998 03 28	704	1.1- 0.0	1998 04 22	704	0.5- 1.8-
1994 10 11	691	0.3- 0.5+	1998 03 28	704	(1.6- 3.2-)			
1997 01 02	691	0.6- 0.3-	1998 03 28	704	0.8+ 0.1-			

(9026)* 1988 ST₂ = 1981 JH₅

Discovered 1988 Sept. 16 by S. J. Bus at Cerro Tololo.

Id. E. Bowell (*MPC* 19864)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17341605	ω	228.58993	+0.63356867	+0.77271954		
<i>a</i>	3.1847586	Ω	80.76607	-0.69764390	+0.59219160		
<i>e</i>	0.1317399	<i>i</i>	2.24521	-0.33449024	+0.22850301		
<i>P</i>	5.68	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 05 08	675	1.0- 0.4-	1998 04 21	704	0.1+ 0.1+	1998 05 05	699	0.3- 0.8+
1981 05 09	675	0.6+ 0.6-	1998 04 21	704	1.4+ 0.2+	1998 05 05	699	0.2+ 0.2-
1988 09 10	675	0.1+ 0.0	1998 04 21	704	1.0+ 0.8-	1998 05 05	699	0.9+ 0.3-
1988 09 10	675	0.4+ 0.7-	1998 04 21	704	0.6+ 1.1-	1998 05 22	704	0.2- 1.0+
1988 09 12	675	0.0 0.7+	1998 04 21	704	0.1+ 0.7-	1998 05 22	704	0.5- 0.5-
1988 09 12	675	1.8- 1.0-	1998 04 22	704	0.0 0.0	1998 05 22	704	0.0 0.9+
1988 09 15	675	1.0- 0.1-	1998 04 22	704	0.2+ 0.2+	1998 05 22	704	0.4- 1.0-
1988 09 15	675	0.9- 0.5+	1998 04 22	704	0.3- 1.2-	1998 05 22	704	(2.2- 0.0)
1988 09 16	807	1.0+ 0.8+	1998 04 22	704	0.7+ 0.1-	1998 05 22	699	0.3- 0.5+
1988 09 18	807	1.1+ 0.5+	1998 04 22	704	0.7- 0.7+	1998 05 22	699	0.2+ 0.7+
1988 10 04	807	0.5- 0.1-	1998 04 29	566	0.8+ 0.1+	1998 05 24	704	0.3- 1.8+
1988 10 05	807	0.9+ 0.1-	1998 04 29	566	0.6+ 0.3-	1998 05 24	704	1.2- 0.0
1988 10 08	807	0.8+ 1.4-	1998 04 29	566	0.4+ 0.3-	1998 05 24	704	1.2- 0.9+
1988 11 05	807	0.4+ 0.1+	1998 05 01	704	0.3+ 0.4+	1998 05 24	704	0.0 0.5-
1988 11 07	807	0.2- 0.3+	1998 05 01	704	0.1- 0.6+	1998 05 24	704	1.6- 0.2+
1994 10 08	691	0.3+ 0.1+	1998 05 01	704	0.8+ 0.1-			
1994 10 08	691	0.9- 1.1+	1998 05 01	704	0.5- 0.2-			

(9027)* 1988 VP₅ = 1981 UT₁₁ = 1995 WJ₆

Discovered 1988 Nov. 4 by A. Mrkos at Kleť.

Id. G. V. Williams (*MPC* 26559)

1998 AUG. 8

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28258784	ω	286.19952	+0.98778626	+0.13245706		
<i>a</i>	2.2998547	Ω	66.24831	-0.08490942	+0.89915949		
<i>e</i>	0.2029540	<i>i</i>	5.14353	-0.13064720	+0.41709393		
<i>P</i>	3.49	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 10 22	095	0.6+ 1.3+	1995 11 25	399	(2.2- 0.8-)	1998 06 18	046	1.0- 0.5+
1988 11 04	046	0.8- 1.0+	1995 11 25	399	(2.3- 0.1-)	1998 06 21	046	0.4- 0.3-
1988 11 04	046	1.3- 0.3-	1995 11 30	327	1.7+ 0.4+	1998 06 21	046	0.1- 0.1+
1988 11 05	046	0.4- 0.8+	1995 11 30	327	1.5+ 0.1-	1998 06 21	046	0.2- 0.2-
1988 11 05	046	0.5- 0.6+	1995 11 30	327	1.4+ 1.1+	1998 06 24	704	0.6- 0.8-
1988 11 10	046	(2.2- 2.6-)	1995 12 27	566	0.7+ 0.2-	1998 06 24	704	1.0+ 0.4-
1988 11 10	046	(1.9- 3.3-)	1995 12 27	566	0.9+ 0.2-	1998 06 24	704	1.2+ 1.1+
1993 01 23	691	1.2- 0.6+	1995 12 27	566	0.4+ 0.2-	1998 06 24	704	0.7+ 0.2+
1993 01 23	691	0.9- 0.1+	1997 03 12	046	0.2+ 0.2+	1998 06 24	704	0.9- 0.7+
1995 10 17	691	0.7- 0.7-	1997 03 12	046	0.0 0.6+	1998 06 26	704	0.2+ 0.3+
1995 10 17	691	0.7- 0.7-	1997 03 12	046	0.3+ 0.3+	1998 06 26	704	0.9+ 0.2+
1995 10 17	691	0.5- 0.6-	1997 04 09	046	0.6+ 0.5-	1998 06 26	704	0.9+ 1.1-
1995 11 11	327	0.2+ 0.5-	1997 04 09	046	0.5+ 0.5-	1998 06 26	704	0.1+ 0.2-
1995 11 11	327	0.1- 0.3-	1997 04 09	046	0.5+ 0.2-	1998 07 21	704	(0.0 2.1+)
1995 11 21	399	0.3- 0.3-	1998 06 18	046	0.6- 0.5+	1998 07 21	704	0.6- 1.1-
1995 11 21	399	0.9- 0.7-	1998 06 18	046	0.4- 0.2-	1998 07 21	704	1.1- 0.9+

(9028)* 1989 BE₁ = 1980 VP₂ = 1991 RN₃₇ = 1993 CV

Discovered 1989 Jan. 26 by A. Mrkos at Kleť.

Id. S. Nakano (*MPC* 21789, *MPC* 29611)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25698962	ω	332.54693	+0.16032215	-0.98477870		
<i>a</i>	2.4501481	Ω	108.16391	+0.91807889	+0.12378969		
<i>e</i>	0.1577098	<i>i</i>	4.05193	+0.36252994	+0.12201237		
<i>P</i>	3.84	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 11 11	330	1.2+ 0.1+	1993 02 13	372	1.3- 1.3+	1998 05 29	046	0.4+ 0.4+
1989 01 26	046	(2.7+ 2.1-)	1993 02 13	372	(2.3+ 1.7-)	1998 05 29	046	0.7+ 0.1-
1989 01 26	046	0.3- 1.5-	1995 08 28	809	0.8+ 0.2+	1998 05 29	046	0.5+ 0.0
1989 01 27	046	(0.7- 2.9-)	1995 08 29	809	1.0+ 0.2+	1998 05 29	046	0.7- 0.1-
1989 01 27	046	(0.0 3.0-)	1995 08 31	809	0.1+ 0.0	1998 06 02	046	0.1- 0.4-
1989 02 05	071	0.2+ 0.9-	1995 09 01	809	0.8- 0.8-	1998 06 02	046	0.0 0.2-
1989 02 05	071	(9.0+ 0.2+)	1997 03 01	411	0.0 1.1-	1998 06 02	046	0.4- 0.2-
1989 02 06	071	0.6+ 0.4+	1997 03 01	411	0.4+ 0.9-	1998 06 16	046	0.1+ 0.3+
1989 02 06	071	1.2- 0.6+	1997 03 12	563	0.8+ 0.7-	1998 06 16	046	0.6- 0.3+
1991 09 15	675	0.1- 0.8-	1997 03 12	563	0.9+ 0.6+	1998 06 16	046	0.3+ 0.3-
1991 09 15	675	1.1- 1.3-	1997 03 12	563	0.3+ 0.1-	1998 06 17	046	0.3- 0.8-
1993 02 12	372	1.7- 1.0-	1997 03 12	563	(2.3+ 0.9+)	1998 06 17	046	0.1- 0.4-

(9029)* 1989 GM

Discovered 1989 Apr. 6 by E. F. Helin at Palomar.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22700890	ω	140.51187	-0.20762259	+0.93859428		
<i>a</i>	2.6613835	Ω	115.88939	-0.95699688	-0.13654878		
<i>e</i>	0.1598498	<i>i</i>	17.83648	-0.20260757	-0.31685204		
<i>P</i>	4.34	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 04 06	675	0.5+ 0.1-	1995 10 24	801	0.9+ 0.1-	1998 05 26	610	0.4+ 0.5-
1989 04 06	675	0.6- 0.2-	1995 10 24	801	0.1+ 0.5-	1998 06 03	704	0.8+ 0.1+
1989 04 08	675	(0.2- 5.2-)	1995 10 29	801	0.5+ 0.1-	1998 06 03	704	0.4- 0.6+
1989 04 08	675	0.3- 0.2+	1995 10 29	801	0.3+ 0.3-	1998 06 03	704	0.1+ 0.2+
1989 04 30	675	0.0 1.8-	1995 11 01	608	0.3+ 0.3+	1998 06 03	704	0.4- 2.3-

1998 AUG. 8

M.P.C. 32181

1989 04 30	675	0.3−	2.1−	1995 11 01	608	0.5+	0.5+	1998 06 03	704	0.3−	0.3+
1989 05 02	675	0.0	0.0	1995 11 06	608	0.5−	0.1+	1998 06 19	704	0.5−	0.3+
1989 05 02	675	0.5+	1.2−	1995 11 06	608	0.1+	0.1+	1998 06 19	704	0.0	0.4+
1990 09 22	675	(3.7+	0.4+)	1995 11 11	608	0.1−	0.4−	1998 06 19	704	0.1−	0.2+
1990 09 22	675	0.5+	0.5−	1995 11 11	608	0.0	0.6−	1998 06 19	704	0.6−	1.0+
1990 09 24	675	0.4+	1.4+	1998 05 20	610	0.4−	0.8−	1998 06 19	704	0.4−	0.9+
1993 01 26	801	0.7−	1.2+	1998 05 21	610	0.6−	0.8−	1998 06 25	704	2.2+	0.4−
1993 01 26	801	0.6−	1.0−	1998 05 21	610	1.0−	0.9−	1998 06 25	704	0.6+	0.4+
1993 02 20	801	0.2+	0.9+	1998 05 21	610	1.3−	0.9−	1998 06 25	704	0.2−	0.5+
1993 02 20	801	0.4−	0.0	1998 05 26	704	0.4+	0.5+	1998 06 25	704	0.2+	0.2+
1993 02 24	801	0.2+	0.6+	1998 05 26	704	0.3+	1.1+	1998 06 25	704	0.6+	0.5−
1993 02 24	801	1.5−	0.3+	1998 05 26	704	0.7−	0.5+	1998 07 22	910	0.7+	1.1+
1994 07 05	675	0.4−	0.3−	1998 05 26	704	0.8+	0.3+	1998 07 22	910	0.7+	1.0+
1994 07 05	675	0.7−	1.4−	1998 05 26	704	1.2−	0.1−	1998 07 22	910	0.7+	1.1+
1994 07 06	675	1.5−	1.9−	1998 05 26	610	0.6+	0.3−	1998 07 26	910	0.7+	1.2+
1994 07 06	675	0.7−	1.9−	1998 05 26	610	0.6+	0.3−	1998 07 26	910	0.6+	1.2+
1994 07 13	801	0.8+	0.8−	1998 05 26	610	0.5+	0.4−	1998 07 26	910	0.6+	1.2+

(9030)* 1989 UX₅

Discovered 1989 Oct. 30 by S. J. Bus at Cerro Tololo.

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	228.03869		(2000.0)		P		Q
<i>n</i>	0.08539001	ω	0.23598	+0.21894299	−0.97304534		
<i>a</i>	5.1073780	Ω	77.11771	+0.89510002	+0.17074422		
<i>e</i>	0.0241172	<i>i</i>	4.26127	+0.38840691	+0.15501348		
<i>P</i>	11.54	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	0

Residuals in seconds of arc

1954 09 04	675	0.7+	0.3+	1989 11 28	688	0.4−	0.5+	1994 02 21	413	0.3+	0.3+
1954 09 04	675	1.2−	0.4+	1990 01 28	688	0.4−	1.1+	1996 06 13	566	0.6−	0.7−
1988 09 14	675	0.2+	0.5−	1990 01 28	688	0.3−	1.0+	1996 06 13	566	0.4−	0.4−
1988 09 14	675	0.1+	1.6−	1990 11 13	675	0.2+	0.7−	1996 06 13	566	0.5−	0.4−
1989 10 04	807	0.6+	0.1−	1990 11 13	675	0.9−	1.0−	1998 07 02	699	0.6+	0.1−
1989 10 30	807	0.6+	0.4+	1990 11 14	675	0.7−	0.8−	1998 07 02	699	1.5−	0.9+
1989 11 01	807	0.9+	0.3+	1990 11 14	675	1.0−	0.3+	1998 07 02	699	1.5+	0.8+
1989 11 01	807	0.9+	0.6+	1994 02 15	675	0.2+	1.7−	1998 07 24	566	0.2−	0.1−
1989 11 04	675	1.7+	0.8−	1994 02 20	413	0.5+	0.4+	1998 07 24	566	0.7−	0.2+
1989 11 04	675	0.8−	0.9−	1994 02 20	413	0.0	0.5+	1998 07 24	566	0.2−	0.0
1989 11 28	688	0.5−	0.4+	1994 02 21	413	0.4+	0.4+				

(9031)* 1989 WG₄ = 1994 EM₃

Discovered 1989 Nov. 29 by A. Mrkos at Kleť.

Id. S. Nakano (*MPC* 23514)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	223.65686		(2000.0)		P		Q
<i>n</i>	0.30325888	ω	321.11205	+0.42210410	−0.90110357		
<i>a</i>	2.1941200	Ω	103.71880	+0.85515870	+0.35946712		
<i>e</i>	0.0905181	<i>i</i>	5.86082	+0.30088492	+0.24247834		
<i>P</i>	3.25	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 11 23	046	(4.0−	2.5−)	1995 07 22	046	0.4+	0.3−	1998 06 05	046	0.6+	0.0
1989 11 23	046	(6.7−	1.8−)	1995 07 22	046	0.0	0.6−	1998 06 05	046	0.7+	0.1+
1989 11 29	046	1.1−	1.0+	1995 07 22	046	0.1+	0.5−	1998 06 09	046	0.8+	0.3+
1989 11 29	046	0.2+	0.8−	1995 07 24	046	0.2+	0.7−	1998 06 10	046	0.7+	0.1+
1989 11 30	046	1.0+	1.5+	1995 07 24	046	0.5+	0.3−	1998 06 10	046	0.2+	0.3−
1989 11 30	046	0.9−	1.2+	1995 07 24	046	1.3+	0.7−	1998 06 23	046	0.2−	0.1+
1989 12 01	046	0.5−	1.0−	1995 08 22	046	0.4+	0.2+	1998 06 23	046	0.4+	0.4+
1989 12 01	046	(3.6−	2.0−)	1995 08 22	046	0.1+	0.0	1998 06 23	046	0.6−	0.1+
1994 03 12	400	(2.4+	3.2−)	1995 08 22	046	0.5+	0.0	1998 06 24	704	0.7+	0.4+
1994 03 12	400	0.5−	0.4−	1997 01 14	587	0.6+	0.6−	1998 06 24	704	1.4+	0.8+
1994 03 18	400	0.6−	0.9−	1997 01 15	587	0.1+	0.6+	1998 06 24	704	1.7−	1.0+
1994 03 18	400	(4.0+	1.9−)	1997 01 16	046	0.4−	0.3−	1998 06 24	704	0.2+	1.6+
1994 04 05	400	1.0+	0.2−	1997 01 16	046	0.4−	0.4−	1998 06 24	704	0.7−	0.6+
1994 04 05	400	(0.5+	3.5−)	1997 01 16	046	0.2−	0.4−	1998 06 24	046	0.3−	0.3+

1995 07 08	046	0.4+	1.0−	1997 01 16	587	0.0	0.1−	1998 06 25	046	0.3−	0.4+
1995 07 08	046	0.3−	0.8−	1997 01 16	587	0.2+	0.1+	1998 06 25	046	0.4−	0.3+
1995 07 08	046	0.1+	0.7−	1997 01 17	046	0.0	0.1+	1998 06 26	704	1.5−	0.0
1995 07 09	046	0.2−	0.7−	1997 01 17	046	0.1+	0.0	1998 06 26	704	0.0	0.3−
1995 07 09	046	0.1+	0.2−	1997 01 17	046	0.0	0.1+	1998 06 26	704	0.7−	0.6+
1995 07 09	046	0.2−	0.4−	1998 06 05	046	1.4+	0.3+	1998 06 26	704	1.8−	0.3+

(9032)* 1989 WK₄ = 1973 AX = 1980 BO₄

Discovered 1989 Nov. 23 by T. Seki at Geisei.

Id. T. Kobayashi (*MPC* 15897)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Asher

<i>M</i>	97.71123		(2000.0)		P		Q
<i>n</i>	0.28507482	ω	45.04072	−0.88789662	−0.45208349		
<i>a</i>	2.2864593	Ω	107.90821	+0.39285438	−0.84147851		
<i>e</i>	0.1015959	<i>i</i>	5.13742	+0.23938470	−0.29586219		
<i>P</i>	3.46	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 01 01	095	1.8+	0.5+	1991 05 17	809	(3.0−	0.3−)	1998 05 22	704	0.2+	0.1+
1980 01 22	095	(1.6−	3.3+)	1991 05 17	809	(3.3−	0.4+)	1998 05 22	704	0.9+	0.5+
1980 01 23	095	0.0	1.4−	1991 05 17	809	2.1−	0.9−	1998 05 22	704	(3.3−	0.1+)
1989 11 23	372	1.0−	0.6+	1991 06 04	372	0.4−	0.2+	1998 05 22	704	1.9−	0.2+
1989 11 23	372	0.3−	1.6−	1991 06 04	372	1.6+	0.1+	1998 05 24	704	0.8−	0.0
1989 11 24	372	(3.5+	2.5−)	1994 02 07	809	0.1+	0.1−	1998 05 24	704	1.8+	0.5+
1989 11 24	372	(6.1+	2.1−)	1994 02 07	809	0.1+	0.2+	1998 05 24	704	1.2+	1.2−
1989 11 26	372	1.6−	0.8−	1994 02 07	809	1.0−	0.0	1998 05 24	704	0.9−	1.3−
1989 11 26	372	(2.8+	1.2−)	1994 02 09	809	(4.2−	0.8−)	1998 06 24	704	0.5−	1.2−
1989 11 30	372	1.8+	1.5−	1994 02 09	809	(4.3−	1.2−)	1998 06 24	704	0.3+	1.0−
1989 11 30	372	0.4−	1.7−	1994 02 09	809	(4.2−	0.3−)	1998 06 24	704	0.2+	0.5+
1989 12 04	372	1.2−	2.0−	1994 02 13	372	1.0−	0.1+	1998 06 24	704	0.9+	0.1−
1989 12 04	372	(2.9+	0.4+)	1994 02 13	372	0.1−	0.0	1998 06 24	704	0.2+	0.2+
1991 05 12	809	1.0−	1.8+	1995 07 25	372	(4.7+	0.3+)	1998 06 26	704	1.1−	1.2−
1991 05 12	809	0.9−	1.1+	1996 12 04	610	1.0+	0.4+	1998 06 26	704	1.0+	1.3−
1991 05 12	809	(2.4−	1.0+)	1996 12 04	610	1.0+	0.7+	1998 06 26	704	0.2+	0.8+
1991 05 16	372	1.9−	0.6−	1996 12 04	610	1.0+	1.0+	1998 06 26	704	0.0	0.5−
1991 05 16	372	2.0+	0.8−	1998 05 22	704	0.7+	0.0	1998 06 26	704	0.0	0.6−

(9033)* 1990 AD = 1997 FL₁

Discovered 1990 Jan. 4 by M. Akiyama and T. Furuta at Mishima.

Id. S. Nakano (*MPC* 29611)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	234.33106		(2000.0)		P		Q
<i>n</i>	0.17686760	ω	303.13388	+0.68586108	−0.67535307		
<i>a</i>	3.1431892	Ω	100.99060	+0.72506110	+0.60226926		
<i>e</i>	0.2162767	<i>i</i>	16.03120	+0.06229756	+0.42564065		
<i>P</i>	5.57	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 01 02	400	(4.0−	1.4−)	1997 03 30	886	0.7+	0.8+	1998 05 24	704	1.0+	1.3+
1990 01 02	400	(2.6−	1.7−)	1997 03 30	886	0.0	0.2+	1998 05 24	704	0.7−	0.6−
1990 01 02	400	0.3+	0.7+	1997 03 31	886	0.9−	1.1−	1998 06 15	888	1.1+	0.7+
1990 01 04	886	0.7+	0.6+	1997 03 31	886	(0.7+	2.9−)	1998 06 15	888	0.7+	0.0
1990 01 04	886	0.1+	0.1−	1997 04 10	886	0.5+	0.4−	1998 06 15	888	0.2+	0.7+
1990 01 14	886	1.1−	0.2−	1997 04 10	886	0.2+	0.8−	1998 06 16	905	(2.2+	1.1−)
1990 01 18	886	0.4−	0.2−	1997 04 29	886	0.3+	0.2−	1998 06 16	905	0.7−	0.4+
1990 01 18	886	1.1+	0.4+	1997 04 29	886	(3.4+	0.4+)	1998 06 24	704	0.3−	0.2−

1997 03 06 691 0.6− 0.2+ 1998 05 24 704 1.5− 1.9− 1998 06 26 704 1.7− 0.5−
 1997 03 06 691 0.5− 0.5+ 1998 05 24 704 0.6− 0.9− 1998 07 26 689 0.6+ 0.3+

**(9034)* 1990 QZ₁₇ = 1990 QE₁₈ = 1990 RE₁₁ = 1956 TG = 1993 FM₈₄
 = 1998 KB₅₆ = 3328 T-2**

Discovered 1990 Aug. 26 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. S. Nakano (d, *MPC* 20912), G. V. Williams (*MPC* 31952)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	329.43134		(2000.0)	P	Q
n	0.22941820	ω	130.31069	+0.46509196	+0.88453196
a	2.6427179	Ω	167.25996	−0.85361583	+0.45885792
e	0.0814303	i	9.38315	−0.23458363	+0.08397993
P	4.30	H	13.1	G 0.15	U 2

Residuals in seconds of arc

1956 10 09	760	1.1−	0.3+	1993 03 22	675	0.3+	0.5+	1998 06 19	704	0.3+	0.8+
1956 10 09	760	0.5−	2.0+	1998 05 23	704	1.6−	0.9+	1998 06 19	704	0.9+	1.4+
1973 09 19	675	0.4+	0.8+	1998 05 23	704	0.8−	0.8−	1998 06 21	566	0.5+	0.4−
1973 09 19	675	0.5+	0.7+	1998 05 23	704	1.5−	0.2+	1998 06 21	566	0.8+	0.8−
1973 09 20	675	0.9+	0.5+	1998 05 23	704	0.2+	0.1+	1998 06 21	566	1.2+	1.3−
1973 09 24	675	0.6−	0.2−	1998 05 26	704	0.3+	0.1−	1998 06 25	704	0.4+	0.2+
1973 09 24	675	0.2−	0.4+	1998 05 26	704	0.1+	0.4−	1998 06 25	704	0.7+	0.3+
1973 09 25	675	1.2+	2.4−	1998 05 26	704	0.8−	0.3+	1998 06 25	704	0.6+	0.5−
1973 09 25	675	0.3+	1.7−	1998 05 26	704	0.1+	0.1−	1998 06 25	704	0.6+	0.6+
1990 08 26	095	0.1−	1.6−	1998 05 26	704	0.4−	0.1+	1998 06 25	566	0.1+	0.0
1990 08 26	095	0.0	0.8+	1998 06 03	704	0.0	0.5−	1998 06 25	566	0.3−	0.0
1990 08 28	095	0.2−	0.8+	1998 06 03	704	0.8+	0.2+	1998 06 25	566	0.1−	0.1−
1990 08 28	095 (12.3+	2.5+)		1998 06 03	704	1.0−	0.6+	1998 07 21	566	0.4+	0.8−
1990 09 14	675	0.2−	0.2+	1998 06 03	704	1.1−	0.0	1998 07 21	566	0.5+	0.7−
1990 09 14	675	0.8−	0.5+	1998 06 19	704	0.6+	0.1−	1998 07 21	566	1.5−	0.6−
1993 03 21	675	(0.1−	4.6−)	1998 06 19	704	0.0	0.7+				
1993 03 21	675	(5.6−	0.2−)	1998 06 19	704	0.2+	0.9+				

(9035)* 1990 SH₁ = A904 SD = 1963 VD = 1981 UV

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

Id. B. G. Marsden (*MPC* 17449)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

M	250.32726		(2000.0)	P	Q
n	0.21827864	ω	176.95217	+0.91284489	−0.40197139
a	2.7318817	Ω	207.10400	+0.37120947	+0.89011197
e	0.2880491	i	9.04759	+0.17005217	+0.21475492
P	4.52	H	13.4	G 0.15	U 2

Residuals in seconds of arc

1904 09 19	024	0.0	2.0−	1990 09 20	657	(0.3−	2.4−)	1998 05 20	910	0.5+	0.4+
1963 11 11	760	0.6+	0.7+	1990 09 21	657	0.1+	0.4+	1998 05 22	704	0.6−	0.1−
1963 11 11	760	0.4+	0.0	1990 09 21	657	0.2−	1.0−	1998 05 22	704	1.6−	1.2−
1981 10 23	330	2.2+	1.3+	1990 09 27	657	(2.7−	1.7−)	1998 05 22	704	0.4−	1.6−
1981 10 26	704	(0.8+	4.2+)	1990 09 27	657	(2.9−	2.2−)	1998 05 22	704	(2.1+	0.1−)
1981 10 26	704	(0.5+	5.9+)	1990 10 11	033	0.3+	0.3−	1998 05 24	704	0.8+	0.7−
1981 10 27	704	(0.5−	3.8+)	1990 10 12	033	0.8−	0.3+	1998 05 24	704	0.8−	0.5−
1981 10 28	330	0.2−	0.4−	1990 10 12	033	0.3−	0.2−	1998 05 24	704	0.1+	1.1+
1981 10 30	704	0.3−	0.4+	1990 10 13	033	0.7+	0.6+	1998 05 24	704	1.9+	2.0−
1981 10 31	704	(0.9+	3.3−)	1990 10 14	033	0.5−	0.9+	1998 05 24	704	0.4−	0.2−
1990 09 16	675	0.3+	0.6+	1990 10 23	095	(4.3−	6.8+)	1998 06 24	691	0.2+	0.8+
1990 09 16	675	0.6−	0.3−	1992 02 26	675	0.4+	1.0−	1998 06 24	691	0.2−	0.5+
1990 09 17	675	0.1−	0.3−	1992 02 26	675	1.3−	0.3−	1998 06 24	691	0.0	0.7+
1990 09 17	675	0.2+	0.9−	1992 04 07	809	1.7−	0.3−	1998 06 30	691	0.5−	0.3+
1990 09 18	657	(0.2+	2.1−)	1993 05 21	675	0.9+	1.8+	1998 06 30	691	0.5−	0.5+
1990 09 18	675	0.4−	0.1−	1994 07 06	689	0.2+	0.1+	1998 06 30	691	0.5−	0.4+
1990 09 18	675	0.1+	0.8−	1998 05 20	910	1.4+	0.7+				
1990 09 20	657	1.4−	0.3+	1998 05 20	910	1.4+	0.5+				

(9036)* 1990 SJ₁₆ = 1990 RA₁₇ = 1952 QH = 1974 SC₃

Discovered 1990 Sept. 17 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 19306; d, unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	134.77673		(2000.0)	P	Q
n	0.18045438	ω	72.04194	+0.98155902	−0.17355361
a	3.1013999	Ω	297.88727	+0.12221608	+0.89207595
e	0.2153805	i	5.20156	+0.14698679	+0.41722853
P	5.46	H	12.6	G 0.15	U 2

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

1952 08 28	024 (0.04−	0.02−)	X	1990 09 17	675	0.2−	0.2−	1998 02 06	688	0.2−	0.6−
1974 09 20	095	0.4−	1.0+	1990 09 19	675	1.9+	0.9−	1998 04 19	688	0.1+	0.2+
1974 09 22	095	0.1−	0.3+	1990 09 19	675	0.8+	0.1+	1998 04 19	688	0.3−	0.2−
1990 08 26	095	1.0+	0.4+	1990 09 20	675	0.8−	0.2−	1998 04 19	688	0.4−	0.2−
1990 08 26	095	1.5+	0.6−	1990 09 20	675	1.4−	0.5−	1998 05 22	688	0.1−	0.2−
1990 08 30	095	0.3−	0.7−	1996 12 01	689	(4.6+	0.7+)	1998 05 22	688	0.4−	0.7−
1990 08 30	095	0.3−	0.1−	1997 01 10	689	0.2+	0.1−	1998 05 22	688	0.2−	0.6−
1990 09 15	095	(6.3−	7.4+)	1998 02 06	688	0.2−	0.6−				
1990 09 17	675	0.6−	0.9−	1998 02 06	688	0.1−	0.7−				

(9037)* 1990 UJ₂ = 1981 QB₂

Discovered 1990 Oct. 20 by A. Sugie at the Dync Astronomical Observatory.

Id. S. Nakano (*MPC* 17457)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

M	314.14818		(2000.0)	P	Q
n	0.22848746	ω	224.24986	+0.99735509	+0.03983285
a	2.6498897	Ω	133.36268	−0.01654820	+0.93893193
e	0.2196309	i	4.79687	−0.07077412	+0.34178968
P	4.31	H	13.6	G 0.15	U 1

Residuals in seconds of arc

1981 08 30	688	(0.0	2.8−)	1990 11 20	809	(1.8+	2.6−)	1998 06 24	704	0.1−	0.3+	
1981 08 30	688	(0.7+	3.7−)	1992 02 27	675	1.1+	1.7−	1998 06 24	704	0.5−	0.9+	
1981 09 26	688	0.5+	1.0−	1992 02 27	675	1.5−	1.2+	1998 06 24	704	0.4−	0.2−	
1981 09 26	688	0.4+	1.6−	1992 02 28	675	1.3−	0.5+	1998 06 24	704	0.8−	0.3+	
1990 10 20	402	1.4+	0.8+	1992 03 01	809	0.2+	0.7+	1998 06 26	809	(2.5+	1.2+)	
1990 10 20	402	(2.1+	2.5+)	1992 04 04	809	1.1−	0.3+	1998 06 26	809	1.6+	1.0+	
1990 10 21	402	2.0+	0.2+	1993 04 17	675	0.3−	0.1+	1998 06 26	809	1.9+	1.7+	
1990 10 21	402	(2.3+	1.3+)	1993 04 17	675	0.0	0.6−	1998 06 27	809	0.6+	0.8−	
1990 11 11	809	0.3+	0.2+	1994 08 03	675	0.1−	0.1+	1998 06 27	809	0.2+	1.1−	
1990 11 11	809	0.4+	0.0	1994 08 03	675	0.5+	0.7+	1998 06 27	809	0.6+	0.4−	
1990 11 11	809	0.4+	0.0	1994 09 06	691	1.8−	0.2+	1998 07 21	704	0.6+	1.3−	
1990 11 12	403	0.4−	0.9−	1994 09 06	691	1.9−	0.1−	1998 07 21	704	0.4−	0.7+	
1990 11 14	403	0.3+	0.8−	1994 09 06	691	1.8−	0.2−	1998 07 21	704	0.0	0.7−	
1990 11 14	403	(0.7−	3.0−)	Y	1994 09 12	675	0.2+	0.2−	1998 07 21	704	0.2+	1.1−
1990 11 18	809	(3.2+	2.9−)	1994 09 12	675	0.7+	0.1−	1998 07 26	704	0.4+	0.1−	
1990 11 18	809	(3.5+	1.6−)	1994 10 08	801	0.4−	0.6+	1998 07 26	704	0.2−	0.0	
1990 11 18	809	(3.1+	2.3−)	1994 10 08	801	1.0−	0.7+	1998 07 26	704	0.4−	0.1+	
1990 11 20	809	(2.4+	2.9−)	1994 10 31	801	0.1+	0.8+	1998 07 26	704	0.3−	0.7−	
1990 11 20	809	(2.7+	3.1−)	1998 06 24	704	0.2−	0.5+	1998 07 26	704	0.1+	0.4+	

(9038)* 1990 VE₁

Discovered 1990 Nov. 12 by D. I. Steel at Siding Spring.

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	323.91350		(2000.0)	P	Q
n	0.23246932	ω	220.72588	+0.98638321	−0.00288683
a	2.6195436	Ω	138.53876	+0.03862444	+0.97594773
e	0.1702206	i	14.38008	−0.15986342	+0.21798555
P	4.24	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1950 04 20	675	1.0-	0.5-	1990 11 13	413	0.7+	1.7-	1992 03 01	809	1.0+	0.4+
1950 04 20	675	0.7+	0.4-	1990 11 19	413	1.2+	0.1-	1997 05 08	801	1.9+	1.6+
1977 11 04	413	0.1+	0.8+	1990 11 26	413	0.6+	0.1+	1997 05 08	801	1.3+	1.3-
1984 04 26	413(10.5-	2.7+)		1990 12 17	413	0.2-	0.0	1998 06 26	699	0.4-	0.2-
1985 07 20	413	0.3-	0.1+	1992 02 05	372	0.5-	0.7+	1998 06 26	699	0.5-	0.3+
1990 09 28	413	0.0	0.2+	1992 02 05	372	0.5-	1.1+	1998 06 26	699	0.3-	0.0
1990 09 28	413	0.9-	1.7+	1992 02 26	691	1.0-	0.2-	1998 07 15	699	0.1-	0.1+
1990 11 12	413	1.2-	0.1-	1992 02 26	691	0.2-	0.1-	1998 07 15	699	0.2+	0.1+
1990 11 12	413	0.8+	0.6+	1992 02 26	691	1.1-	0.1-	1998 07 15	699	0.4-	0.2-

(9039)* 1990 WB₄ = 1995 UH₃

Discovered 1990 Nov. 16 by Y. Mizuno and T. Furuta at Kani.

Id. T. Urata (*MPC* 26169)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	118.73069	(2000.0)	P		Q	
<i>n</i>	0.18883342	ω	205.17415	-0.42878221	-0.88788961	
<i>a</i>	3.0089628	Ω	270.59437	+0.85451444	-0.33871804	
<i>e</i>	0.0804232	<i>i</i>	9.59809	+0.29317382	-0.31132320	
<i>P</i>	5.22	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1990 11 16	403	0.5-	0.4+	1995 11 03	385	0.3+	0.2+	1998 05 24	704	0.3+	0.7-
1990 11 16	403	1.6-	1.6+	1995 11 03	385	0.7+	0.5+	1998 05 24	704	0.7+	0.6-
1990 11 17	399	1.5+	0.6+	1995 11 03	385	0.2+	0.2+	1998 05 24	704	0.5-	0.6-
1990 11 17	399	1.6-	0.5+	1995 11 17	887	0.9+	0.6-	1998 05 24	704	0.2-	0.1-
1990 11 17	399	0.7-	0.9-	1995 11 17	887	0.3+	0.0	1998 05 24	704	0.8+	0.2-
1990 11 19	399	1.5+	0.8+	1995 11 17	887	0.4-	0.7-	1998 06 16	704	0.5-	0.4-
1990 11 19	399	1.2+	0.6-	1997 01 31	385	0.1-	0.6-	1998 06 16	704	0.7+	0.0
1995 10 17	905	0.1-	1.0-	1997 01 31	385	0.3-	0.6-	1998 06 16	704	0.2-	2.0+
1995 10 17	905	1.3-	0.3-	1998 05 22	704	0.2+	0.3+	1998 06 16	704	1.2-	0.9+
1995 10 20	905	0.1-	0.3-	1998 05 22	704	0.4+	0.2+	1998 06 16	704	(3.5- 1.5+)	
1995 10 20	905	0.7-	1.0-	1998 05 22	704	0.0	1.3-	1998 07 13	699	0.5-	0.5+
1995 10 25	905	0.4+	1.4-	1998 05 22	704	0.3+	0.8-	1998 07 13	699	0.1+	0.7-
1995 10 25	905	0.7+	0.3-	1998 05 22	704	0.1+	0.8-	1998 07 13	699	1.2-	0.2+

(9040)* 1991 BH₁ = 1992 GP₃ = 1994 TR₁₆ = 1997 EE₁₈

Discovered 1991 Jan. 18 by E. W. Elst at Haute Provence.

Id. G. V. Williams (*MPC* 29613), G. Forti (unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	46.44026	(2000.0)	P		Q	
<i>n</i>	0.18345920	ω	102.00458	-0.69873235	+0.71533379	
<i>a</i>	3.0674422	Ω	123.66671	-0.66021883	-0.64028218	
<i>e</i>	0.1266244	<i>i</i>	0.57877	-0.27547086	-0.27988623	
<i>P</i>	5.37	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1991 01 16	675	1.2+	0.1+	1994 10 12	691	1.1-	1.1+	1997 04 12	610	0.6+	0.1+
1991 01 16	675	0.3+	0.8+	1994 10 12	691	1.5-	0.5+	1997 04 12	610	0.7+	0.1+
1991 01 18	511	1.1+	0.7-	1994 10 12	691	1.3-	0.6+	1997 04 12	610	0.8+	0.0
1991 01 18	511	0.1+	0.6+	1997 03 10	610	0.4+	0.5+	1997 04 14	610	0.2+	1.0+
1991 01 19	511	(2.5- 0.0)		1997 03 10	610	0.2+	0.3+	1997 04 14	610	0.2-	0.6+
1991 01 19	511	(4.7- 1.5+)		1997 03 10	610	0.6-	0.1-	1997 04 14	610	0.6-	0.2+
1991 01 20	511	(3.3- 1.7+)		1997 03 10	610	0.0	0.3+	1998 06 24	704	0.7+	0.6-
1991 01 20	511	(3.1- 1.2+)		1997 03 10	610	0.2-	0.3+	1998 06 24	704	0.5+	0.1+
1992 04 04	809	0.0	0.7+	1997 03 10	610	0.2-	0.3+	1998 06 24	704	0.1-	1.0+
1992 04 04	809	0.7-	0.2+	1997 03 11	610	0.3+	0.1-	1998 06 24	704	(0.2- 2.8-)	
1992 04 04	809	1.1-	0.2+	1997 03 11	610	0.6+	0.3+	1998 06 24	704	0.2+	1.7-
1992 04 06	809	(3.0- 0.1-)		1997 03 11	610	1.0+	0.8+	1998 06 26	704	0.2-	0.4-
1992 04 06	809	(3.3- 0.2+)		1997 03 12	610	0.5+	0.1+	1998 06 26	704	1.0+	1.4+
1992 04 06	809	(2.5- 0.5-)		1997 03 12	610	0.4+	0.2+	1998 06 26	704	0.3+	0.3-
1992 04 25	809	0.1-	0.7-	1997 03 12	610	0.4+	0.1+	1998 06 26	704	0.1-	0.2+
1992 04 25	809	0.1-	0.9-	1997 03 15	610	0.2-	0.8+	1998 06 26	704	0.1-	0.7+
1992 04 25	809	0.1+	1.1-	1997 03 15	610	0.3-	0.6+	1998 07 21	704	0.4-	0.7+
1994 10 05	033	1.2+	0.2-	1997 03 15	610	0.4-	0.3+	1998 07 21	704	1.1-	1.8+

1994 10 06	033	0.5-	0.0	1997 03 17	610	0.1-	0.1-	1998 07 21	704	(1.4-	2.6+)
1994 10 07	033	0.1+	0.5+	1997 03 17	610	0.8-	0.5-	1998 07 21	704	0.7+	1.5+
1994 10 10	033	0.0	0.0	1997 03 17	610	1.3-	0.7-				

(9041)* 1991 CX = 1992 OR₅

Discovered 1991 Feb. 9 by S. Otomo and O. Muramatsu at Kiyosato.

Id. B. G. Marsden (*MPC* 21576)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	74.49869	(2000.0)	P		Q	
<i>n</i>	0.30121964	ω	303.94772	-0.99002867	-0.13614098	
<i>a</i>	2.2040115	Ω	228.25602	+0.13986107	-0.91937107	
<i>e</i>	0.0662851	<i>i</i>	2.77925	+0.01679634	-0.36908327	
<i>P</i>	3.27	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1955 03 24	675	0.1-	0.5-	1992 07 30	809	0.7-	0.5-	1998 05 22	704	0.3-	0.5+
1955 03 24	675	0.5-	0.1+	1992 07 30	809	0.7-	1.2-	1998 05 22	704	1.2+	0.4-
1989 09 02	675	0.5+	0.2+	1992 07 31	809	0.5+	0.8-	1998 05 24	704	0.6-	0.2+
1989 09 27	675	0.7+	0.6-	1992 07 31	809	0.9-	0.5-	1998 05 24	704	0.7-	0.1+
1989 09 27	675	1.4+	0.0	1992 07 31	809	1.1-	1.1-	1998 05 24	704	0.1-	0.0
1989 09 30	675	0.9+	1.7+	1994 01 01	104	1.5-	0.6-	1998 05 24	704	0.6+	1.5-
1991 01 17	675	0.3-	0.6-	1994 01 01	104	0.2-	0.6-	1998 05 24	704	0.3-	0.1-
1991 01 17	675	0.5-	0.7+	1994 01 01	104	0.5-	0.2-	1998 05 25	699	0.1-	0.2+
1991 02 08	675	0.1+	0.5-	1994 01 01	104	1.7-	0.1+	1998 05 25	699	0.1+	0.2+
1991 02 08	675	1.4-	1.2-	1994 01 01	104	1.3-	1.7+	1998 05 25	699	0.1+	0.8+
1991 02 09	894	0.4-	0.4+	1994 01 08	104	1.3+	0.2+	1998 06 03	704	1.1+	1.6+
1991 02 09	894	0.2-	1.2+	1994 01 08	104	0.3+	0.3-	1998 06 03	704	1.0-	0.7-
1991 02 10	675	0.9+	1.4-	1994 01 08	104	1.1-	0.6-	1998 06 03	704	1.0-	0.2-
1991 02 10	675	1.2+	1.0-	1996 11 03	367	0.1-	0.2+	1998 06 03	704	0.2+	0.9+
1991 02 11	894	1.2+	0.3-	1996 11 03	367	0.7+	0.0	1998 06 16	704	0.7-	1.9-
1991 02 11	894	0.1-	1.6-	1996 11 11	801	0.3+	0.4-	1998 06 16	704	0.2-	0.8-
1991 02 20	894	(2.9- 0.9-)		1996 11 11	801	0.3-	0.5-	1998 06 16	704	0.3-	0.4+
1991 02 23	894	0.7+	0.8-	1996 11 14	801	(0.9+ 2.1-)		1998 06 16	704	0.8+	0.1+
1991 03 03	894	0.8+	0.5+	1996 11 14	801	0.9+	0.7-	1998 06 21	691	(2.6- 0.5-)	
1992 07 26	809	(2.4+ 1.9-)		1998 05 22	704	0.2+	0.2+	1998 06 21	691	(2.4- 0.5-)	
1992 07 26	809	1.3+	1.1-	1998 05 22	704	0.0	0.7-	1998 06 21	691	(2.5- 0.4-)	
1992 07 30	809	0.3+	0.5-	1998 05 22	704	0.4+	0.1-				

(9042)* 1991 EN₂ = 1994 VF₇

Discovered 1991 Mar. 11 by H. Debehogne at the European Southern

Observatory.

Id. S. Nakano (*MPC* 24390)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	289.76115	(2000.0)	P		Q	
<i>n</i>	0.19660440	ω	181.29022	+0.87925500	-0.47621739	
<i>a</i>	2.9291429	Ω	207.15753	+0.43726525	+0.81629099	
<i>e</i>	0.0947202	<i>i</i>	1.41832	+0.18897023	+0.32693426	
<i>P</i>	5.01	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1991 02 13	675	1.1-	1.3-	1991 03 18	809	0.9+	0.9-	1997 06 07	809	(0.5-	2.7+)
1991 02 13	675	(0.4+	2.4+)	1991 03 18	809	1.1+	0.8-	1997 06 08	809	0.3+	1.4+
1991 03 11	809	0.7-	0.4+	1994 11 11	408	0.4+	0.2-	1997 06 08	809	0.0	1.4+
1991 03 11	809	0.3-	0.2+	1994 11 11	408	1.0+	0.4+	1997 06 08	809	0.2-	0.9+
1991 03 11	809	0.2+	0.1+	1994 11 12	408	1.1-	0.4-	1998 05 27	699	0.1+	0.0
1991 03 13	809	0.3-	0.2+	1994 11 12	408	0.3+	1.1+	1998 05 27	699	1.3-	0.3+
1991 03 13	809	0.2+	0.1-	1994 12 01	046	1.4-	0.8+	1998 05 27	699	0.7-	0.4-
1991 03 13	809	0.7+	0.1+	1994 12 01	046	0.8-	0.7+	1998 07 03	699	0.2+	0.6-
1991 03 14	809	1.0-	0.4+	1994 12 03	046	0.3+	0.1+	1998 07 03	699	0.1+	1.1-
1991 03 14	809	0.6-	0.1+	1994 12 03	046	0.3+	0.1-	1998 07 03	699	0.2-	0.4-
1991 03 14	809	0.4-	0.2+	1994 12 03	046	0.3+	0.1+	1998 07 14	699	0.1+	0.4-
1991 03 15	809	1.0-	0.3+	1996 03 18	801	0.7+	0.2-	1998 07 14	699	1.1+	0.0
1991 03 15	809	0.7-	0.4+	1996 03 18	801	0.6+	0.4-	1998 07 14	699	0.5-	0.5+
1991 03 15	809	0.4-	0.6+	1996 03 25	566	0.5-	0.3+	1998 07 24	566	0.7+	0.5+
1991 03 17	809	0.3+	0.8-	1996 03 25	566	0.2-	0.6+	1998 07 24	566	0.4+	0.1+

M.P.C. 32184

1998 AUG. 8

1991 03 17 809 0.7+ 0.6- 1996 03 25 566 0.2+ 0.4+ 1998 07 24 566 0.5+ 0.3+
 1991 03 17 809 0.8+ 0.3- 1997 06 07 809 (0.6+ 2.3+)
 1991 03 18 809 0.9+ 0.9- 1997 06 07 809 (0.5+ 2.6+)

(9043)* 1991 EJ₄ = 1982 QD₁ = 1982 SX₇ = 1986 GK = 1996 AK₂

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

Observatory.

Id. S. Nakano (*MPC* 26740)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	19.46902		(2000.0)		P		Q
<i>n</i>	0.18301311	ω	327.68000		+0.21178116		+0.97597189
<i>a</i>	3.0724247	Ω	314.48896		-0.88069647		+0.16784223
<i>e</i>	0.1170757	<i>i</i>	4.12054		-0.42370091		+0.13895272
<i>P</i>	5.39	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1954 04 02	675	0.3-	0.9+	1991 03 14	809	1.3-	0.1+	1996 01 27	411	1.1+	0.2-
1954 04 02	675	0.9+	0.7+	1991 03 14	809	1.0-	0.2+	1996 01 27	411	0.3-	0.9+
1982 08 19	675	1.4+	0.6-	1991 03 14	809	0.9-	0.4+	1996 01 30	411	0.5+	0.0
1982 08 19	675	(0.1+	3.0-)	1991 03 17	809	0.9-	1.1-	1996 01 30	411	0.2-	0.3-
1982 09 19	095	(4.0-	0.9-)	1991 03 17	809	0.1-	0.6-	1997 04 08	801	(3.0+	1.0-)
1986 04 09	688	(3.7+	0.1+)	1991 03 17	809	0.7+	0.1-	1997 04 08	801	1.6+	1.5-
1986 04 09	688	1.3-	0.1-	1996 01 13	411	0.2-	0.3-	1998 07 03	699	0.4-	0.3+
1991 03 12	809	0.4+	0.1-	1996 01 13	411	0.0	0.3+	1998 07 03	699	0.7-	0.6+
1991 03 12	809	0.4+	0.1+	1996 01 16	411	0.2-	0.5-	1998 07 03	699	0.8-	0.6+
1991 03 12	809	0.7+	0.4+	1996 01 16	411	0.7+	0.0	1998 07 24	566	0.0	0.5-
1991 03 13	675	0.7+	0.4-	1996 01 18	411	0.3-	1.2+	1998 07 24	566	0.0	0.3-
1991 03 13	675	0.6-	0.1-	1996 01 18	411	0.1+	0.0	1998 07 24	566	0.2+	0.3-

(9044)* 1991 KA = 1984 DF₃ = 1987 DG₁

Discovered 1991 May 18 by S. Otomo and O. Muramatsu at Kiyosato.

Id. S. Nakano (*MPC* 18640)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	46.21403		(2000.0)		P		Q
<i>n</i>	0.29434949	ω	133.11393		-0.50015629		+0.86243261
<i>a</i>	2.2381741	Ω	106.72270		-0.81620499		-0.43951477
<i>e</i>	0.1008802	<i>i</i>	4.65992		-0.28922845		-0.25107125
<i>P</i>	3.35	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1984 02 27	095	0.1+	2.0+	1991 05 19	894	(3.0+	0.5+)	Y	1996 12 08	327	0.6-	0.3-
1987 02 25	801	1.0+	0.6+	1991 06 04	894	0.5-	0.2-		1998 06 23	699	0.0	0.4+
1991 05 12	809	0.6-	0.8+	1991 06 04	894	0.5+	0.7-		1998 06 23	699	0.2-	0.2-
1991 05 12	809	1.0-	0.6+	1991 06 04	372	0.6+	1.0+		1998 06 23	699	0.2+	0.4-
1991 05 12	809	1.5-	0.4+	1991 06 04	372	0.5-	0.4+		1998 06 29	704	0.3-	0.2+
1991 05 16	372	(4.2-	0.5-)	1991 06 06	894	0.5+	0.2-		1998 06 29	704	0.9-	0.5+
1991 05 16	372	(3.0-	2.2+)	1991 06 06	894	0.7-	0.3+		1998 06 29	704	1.1-	0.1-
1991 05 17	809	0.9-	1.0-	1991 06 17	894	1.1+	0.1+		1998 06 29	704	0.3-	0.0
1991 05 17	809	2.0-	0.9-	1991 06 17	894	1.5+	0.5-		1998 06 29	704	0.1+	0.4-
1991 05 17	809	(2.8-	0.8-)	1994 02 15	675	0.6+	1.5-		1998 07 16	699	1.1+	0.0
1991 05 18	894	1.7+	0.7-	1994 02 15	675	0.7-	0.4-		1998 07 16	699	0.7+	0.2+
1991 05 18	894	0.8+	0.9-	1996 12 08	327	0.0	0.3+		1998 07 16	699	0.5+	0.3+
1991 05 19	894	1.0+	0.9+	1996 12 08	327	0.5-	0.0					

(9045)* 1991 PG₁₅ = 1995 UL₁

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

Id. B. G. Marsden (*MPC* 25958)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	282.68483		(2000.0)		P		Q
<i>n</i>	0.26015301	ω	247.13056		+0.98358107		+0.17821605
<i>a</i>	2.4302455	Ω	102.59421		-0.15306516		+0.90723545
<i>e</i>	0.2037485	<i>i</i>	1.66834		-0.09559988		+0.38100246
<i>P</i>	3.79	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 03 27	675	0.4+	0.6+	1995 10 23	046	1.0-	0.4+	1998 05 22	704	1.9-	0.1+
1990 03 27	675	1.2+	0.2-	1995 10 23	046	0.4-	0.3+	1998 05 22	699	0.0	0.0
1991 08 07	675	0.3+	0.5-	1995 10 23	046	0.1-	0.2+	1998 05 22	704	1.9-	1.2+
1991 08 07	675	0.8+	0.6-	1997 01 31	691	0.6-	0.2+	1998 05 22	699	0.9+	1.2+
1991 08 10	675	0.1-	0.2-	1997 01 31	691	0.3-	0.0	1998 05 22	699	0.7+	0.5-
1991 09 10	675	0.2-	1.0+	1997 01 31	691	0.4-	0.0	1998 05 23	699	1.0+	0.0
1991 09 10	675	0.4-	1.2-	1998 04 18	688	0.0	0.3-	1998 05 23	699	0.1+	0.3-
1991 09 14	675	0.3-	1.3-	1998 04 18	688	0.1-	0.1+	1998 05 23	699	0.6+	0.4-
1991 09 14	675	0.6-	0.8-	1998 04 18	688	0.2-	0.0	1998 05 24	704	0.5+	0.2-
1991 09 16	675	0.5-	0.7+	1998 05 22	704	0.8+	1.2+	1998 05 24	704	0.7-	0.8-
1991 09 16	675	0.4-	0.6+	1998 05 22	688	0.1-	0.3-	1998 05 24	699	0.6-	1.4+
1991 09 16	095	(0.2+	2.5+)	1998 05 22	688	0.4-	0.6+	1998 05 24	704	0.7+	0.4+
1991 09 16	095	1.4+	0.6+	1998 05 22	704	0.9-	0.0	1998 05 24	699	0.6+	0.4-
1995 10 22	046	0.6-	1.9+	1998 05 22	688	0.0	0.0	1998 05 24	699	0.4+	0.5-
1995 10 22	046	1.4+	1.1+	1998 05 22	704	1.2+	0.8-	1998 05 24	704	0.0	1.4+

(9046)* 1991 PG₁₇ = 1994 FW

Discovered 1991 Aug. 9 by H. E. Holt at Palomar.

Id. B. G. Marsden (*MPC* 23673)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	25.56089		(2000.0)		P		Q
<i>n</i>	0.27678060	ω	311.55050		-0.16749956		+0.97185890
<i>a</i>	2.3319127	Ω	308.04007		-0.83031457		-0.22964482
<i>e</i>	0.1785475	<i>i</i>	12.14028		-0.53152762		+0.05247423
<i>P</i>	3.56	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 08 09	675	0.3+	0.7-	1994 03 21	413	0.4-	0.2-	1998 06 29	704	0.5+	0.7+
1991 08 09	675	0.7+	1.0-	1994 03 23	413	0.3+	0.5-	1998 06 29	704	(1.4-	2.2+)
1991 08 10	675	0.0	0.1-	1994 03 23	413	0.2+	0.5-	1998 06 29	704	1.3-	1.4+
1991 08 10	675	0.7+	0.3-	1994 05 04	413	0.2+	0.1-	1998 07 02	699	0.2+	0.1+
1991 09 04	095	1.2+	0.1+	1994 05 04	413	0.1-	0.3-	1998 07 02	699	0.1+	0.0
1991 09 12	675	0.3-	0.2+	1997 02 01	691	0.1-	0.4-	1998 07 02	699	0.1+	0.3-
1991 09 12	675	1.5-	0.2-	1997 02 01	691	0.0	0.1-	1998 07 16	699	0.2-	0.0
1994 03 12	413	0.2+	1.2+	1997 02 01	691	0.0	0.1-	1998 07 16	699	0.3-	0.1+
1994 03 12	413	0.8-	0.7+	1998 06 29	704	1.0+	0.5-	1998 07 16	699	0.3-	0.3+
1994 03 21	413	0.3-	1.1-	1998 06 29	704	0.5-	0.5-				

(9047)* 1991 QF

Discovered 1991 Aug. 30 by R. H. McNaught at Siding Spring.

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	230.32615		(2000.0)		P		Q
<i>n</i>	0.24544807	ω	316.59157		+0.97980344		+0.04138996
<i>a</i>	2.5263662	Ω	42.24777		+0.08114751		+0.81186134
<i>e</i>	0.3162878	<i>i</i>	16.91625		-0.18275748		+0.58238135
<i>P</i>	4.02	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 08 30	413	0.1+	0.3+	1994 03 20	413	0.4+	0.3-	1998 04 20	704	1.0-	1.1-
1991 08 30	413	1.3-	0.4+	1994 03 22	413	0.4-	0.2+	1998 04 20	704	1.1+	1.2-
1991 09 01	413	0.8+	0.0	1994 03 22	413	0.3-	0.1+	1998 04 24	704	0.3+	0.0
1991 09 09	413	0.1+	0.5-	1994 03 22	413	0.2+	0.2+	1998 04 24	704	1.7-	1.7+
1991 09 13	413	0.6-	0.4-	1997 02 10	711	0.1-	0.2+	1998 04 24	704	1.0+	0.3+
1991 09 27	413	0.0	0.2-	1997 02 10	711	0.2-	0.1+	1998 04 24	704	(3.9-	0.1+)
1991 09 29	413	0.0	0.1-	1997 02 11	711	0.2-	0.1+	1998 06 28	711	0.0	0.5-
1991 11 26	413	0.2+	0.9+	1997 02 11	711	0.0	0.1-	1998 06 29	711	0.2-	0.6-
1991 11 26	413	0.3+	1.0+	1998 04 20	704	0.9+	1.6+	1998 06 29	711	0.1+	0.5-
1994 03 20	413	0.5+	0.3-	1998 04 20	704	0.1+	0.3+				

(9048)* 1991 RD₂₄ = 1979 HU₄ = 1982 BW₁₀ = 1987 OA₁

Discovered 1991 Sept. 12 by H. E. Holt at Palomar.

Id. K. Ichikawa (*MPC* 20152)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.26204520	ω	138.41992	-0.17342932	+0.98130696		
a	2.4185324	Ω	121.43494	-0.92742586	-0.13423095		
e	0.1052835	i	5.61074	-0.33136619	-0.13790830		
P		H		G		U	
	3.76		14.3		0.15		1

Residuals in seconds of arc

1979 04 25	095	1.2+	1.7+	1995 10 27	801	0.1+	0.0	1998 06 03	704	0.9-	0.2+
1979 04 30	095	0.8+	2.4+	1995 10 27	801	0.9+	1.8-	1998 06 03	704	0.5-	0.8-
1982 01 19	095	(6.8+	0.8-)	1997 02 01	732	(3.8+	0.6-)	1998 06 03	704	0.7+	0.9+
1987 07 28	010	1.6+	0.0	1997 02 01	732	1.1-	0.4+	1998 06 23	426	0.3-	0.4+
1987 07 28	010	0.1+	0.1+	1997 02 01	732	0.3+	0.1+	1998 06 23	426	0.2-	0.1+
1987 07 28	010	1.5-	0.1+	1997 02 02	732	0.5+	0.3+	1998 06 23	426	0.0	0.2+
1991 08 07	675	0.5+	0.6+	1997 02 02	732	0.4+	0.7-	1998 06 24	704	0.2+	0.3+
1991 08 07	675	0.2+	0.4+	1997 02 02	732	0.5+	0.3-	1998 06 24	704	0.3-	1.0+
1991 09 12	675	0.2-	0.1-	1997 02 04	566	0.2+	0.2-	1998 06 24	704	0.5-	0.5+
1991 09 12	675	0.7-	1.1-	1997 02 04	566	0.4+	0.3-	1998 06 24	704	0.2-	1.0+
1991 09 14	675	1.0-	1.3-	1997 02 04	566	0.8+	0.2-	1998 06 24	704	0.8-	1.7+
1991 09 14	675	0.9-	0.2-	1997 02 07	327	0.3-	0.0	1998 06 25	426	0.0	0.2-
1991 09 16	675	1.5+	0.4-	1997 02 07	327	0.4-	0.1+	1998 06 25	426	0.1-	0.4-
1991 09 16	675	0.4-	0.9+	1997 02 07	327	0.9-	0.2-	1998 06 25	426	0.1-	0.3-
1994 04 14	801	0.7-	0.9-	1998 05 22	704	0.0	0.1+	1998 06 26	682	0.5-	0.1-
1994 04 14	801	1.0-	0.9-	1998 05 22	704	0.2+	0.4+	1998 06 26	682	0.1-	0.2-
1994 04 15	801	0.5-	0.6-	1998 05 22	704	1.0+	0.3-	1998 06 26	704	0.1+	0.3-
1994 04 15	801	0.5-	0.3-	1998 05 22	704	(0.6-	2.5-)	1998 06 26	682	0.3-	0.4-
1994 05 10	801	0.8-	1.2-	1998 05 22	704	(1.1-	2.4-)	1998 06 26	704	0.1+	0.1-
1994 05 10	801	0.2-	0.6-	1998 05 24	704	0.0	0.1-	1998 06 26	704	0.7+	0.5-
1994 05 13	801	0.1-	0.7-	1998 05 24	704	0.8+	0.2-	1998 06 26	704	0.3+	1.1-
1994 05 13	801	0.4-	0.6-	1998 05 24	704	1.8+	0.1+	1998 06 26	704	0.2+	1.4-
1995 10 24	801	0.1-	0.2-	1998 05 24	704	0.1-	0.3+	1998 06 30	682	0.3-	0.1+
1995 10 24	801	0.5+	0.3+	1998 05 24	704	0.1+	1.5-	1998 06 30	682	0.4+	0.3+

(9049)* 1991 RQ₂₇ = 1995 WP₃₇

Discovered 1991 Sept. 12 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 26399)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.26008399	ω	212.70314	+0.80606178	+0.58705116		
a	2.4306754	Ω	111.16838	-0.52422570	+0.76708804		
e	0.2232775	i	4.61735	-0.27468495	+0.25874093		
P		H		G		U	
	3.79		14.5		0.15		2

Residuals in seconds of arc

1991 09 12	675	0.5+	1.3-	1995 11 30	691	0.0	0.1-	1998 06 03	704	0.1+	0.0
1991 09 12	675	0.2-	1.4-	1995 11 30	691	0.2-	0.4-	1998 06 03	704	0.5-	0.8+
1991 09 14	675	0.4+	0.2+	1997 02 16	552	1.0+	0.7+	1998 06 03	704	0.8+	0.7+
1991 09 14	675	0.7-	1.4-	1997 02 16	552	1.5-	1.5-	1998 06 03	704	0.6+	0.1+
1991 11 01	808	1.0+	0.0	1998 05 22	704	1.4-	1.1-	1998 06 24	704	0.4-	0.7+
1991 11 01	808	0.3-	1.7+	1998 05 22	704	0.0	0.0	1998 06 24	704	0.3-	0.2-
1991 11 09	808	(7.2-	0.4+)	1998 05 22	704	0.3+	0.9-	1998 06 24	704	0.6+	0.9+
1991 11 09	808	0.6-	0.3-	1998 05 22	704	0.7-	1.0-	1998 06 24	704	0.3-	0.6+
1991 11 12	808	0.5-	0.3+	1998 05 22	704	0.2+	0.2-	1998 06 24	704	0.9-	1.2-
1991 11 12	808	1.0+	0.8+	1998 05 24	704	0.8+	0.4-	1998 07 16	699	0.0	1.0+
1995 11 22	691	0.3+	0.0	1998 05 24	704	0.0	0.1-	1998 07 16	699	0.2+	0.6+
1995 11 22	691	0.2+	0.3+	1998 05 24	704	0.3+	0.2+	1998 07 16	699	0.6+	0.8+
1995 11 22	691	0.1+	0.1+	1998 05 24	704	0.1-	0.7-				
1995 11 30	691	0.3-	0.1-	1998 05 24	704	0.3+	0.8-				

(9050)* 1991 RF₂₉ = 1971 BG₃ = 1984 WZ₂ = 1994 NH₉ = 1995 WV₈

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

Id. S. Nakano (*MPC* 26399), G. V. Williams (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.26784713	ω	10.91402	+0.30737467	+0.93567086		
a	2.3834793	Ω	277.16107	-0.88569410	+0.21470502		
e	0.0413803	i	10.06036	-0.34794650	+0.28003891		
P		H		G		U	
	3.68		13.4		0.15		2

Residuals in seconds of arc

1951 12 27	675	0.3+	0.0	1994 07 08	809	(5.6+	0.2+)	1998 06 29	704	(2.7-	0.6+)
1951 12 27	675	0.8+	0.7+	1994 07 09	809	(2.7+	3.7-)	1998 06 29	704	0.1-	0.8-
1971 01 27	805	0.6-	0.0	1994 07 09	809	(1.5+	3.1-)	1998 06 29	704	0.9+	1.3+
1984 11 27	010	0.1+	0.9+	1994 07 09	809	(2.0+	4.1-)	1998 07 20	566	0.1+	0.8+
1984 11 28	010	1.4-	1.8-	1995 11 25	408	0.7+	1.1-	1998 07 20	566	0.3-	0.9+
1991 09 13	675	1.1-	1.0-	1995 11 25	408	0.2+	0.1-	1998 07 20	566	0.4-	1.1+
1991 09 13	675	0.2-	0.3-	1995 11 25	408	0.2+	0.2+	1998 07 24	566	(0.0	2.5+)
1991 09 14	675	0.6-	0.6-	1995 12 01	409	0.3+	0.9+	1998 07 24	566	(0.3-	2.6+)
1991 09 15	675	1.1-	0.6-	1995 12 01	409	0.6+	0.2+	1998 07 24	566	(0.1-	2.9+)
1991 09 16	675	0.3-	0.3-	1995 12 02	409	0.0	1.4+	1998 07 27	689	0.8+	0.5-
1994 07 08	809	(5.9+	0.9+)	1995 12 02	409	0.8+	1.0+				
1994 07 08	809	(5.6+	0.7+)	1997 05 13	689	0.0	1.2+				

(9051)* 1991 UG₃ = 1950 TY₃ = 1989 CY₅

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

Id. H. Kaneda (*MPC* 19515), G. V. Williams (unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.26482682	ω	45.03369	+0.99754399	-0.06071778		
a	2.4015672	Ω	318.41004	+0.03963432	+0.90036629		
e	0.2155855	i	3.01545	+0.05775042	+0.43087572		
P		H		G		U	
	3.72		13.8		0.15		1

Residuals in seconds of arc

1950 10 12	711	(10.5+	11.9-)	1996 01 15	118	0.1-	0.9-	1998 06 26	704	1.1-	0.2-
1971 04 16	675	0.8+	0.3+	1996 01 15	118	0.0	0.9-	1998 06 26	704	1.0-	0.3+
1971 05 14	675	0.5+	1.7+	1996 01 16	118	0.2-	0.5-	1998 06 26	704	1.1-	0.3-
1971 05 14	675	0.5-	0.0	1996 01 16	118	0.2-	0.4-	1998 06 26	704	0.2-	0.4-
1989 02 02	033	0.2+	0.8+	1996 02 28	118	0.5+	0.1-	1998 06 28	809	1.7+	1.3+
1989 02 04	033	0.5+	0.7+	1996 02 28	118	0.1+	0.1+	1998 06 28	809	1.5+	1.2+
1991 10 31	399	0.1-	1.3+	1997 03 06	809	(1.0-	3.6+)	1998 06 28	809	1.4+	1.5+
1991 10 31	399	0.9-	0.8+	1997 03 06	809	(2.0-	3.7+)	1998 07 01	809	(0.6+	2.7+)
1991 11 04	399	1.5+	0.7+	1997 03 06	809	(1.8-	3.5+)	1998 07 01	809	(0.7+	2.9+)
1991 11 04	399	0.1+	0.6-	1998 06 24	704	(2.4-	0.1-)	1998 07 01	809	(0.8+	2.9+)
1991 11 05	399	0.6-	0.5+	1998 06 24	704	0.5-	1.0-	1998 07 26	704	0.3+	1.1-
1991 11 05	399	0.4-	1.2+	1998 06 24	704	1.6-	0.6-	1998 07 26	704	0.3-	0.1+
1991 11 09	399	0.1+	1.3-	1998 06 24	704	1.2-	1.0-	1998 07 26	704	1.1+	0.0
1991 11 09	399	0.6-	0.1+	1998 06 24	704	(2.4-	0.1-)	1998 07 26	704	0.7+	0.2+

(9052)* 1991 UJ₄ = 1960 WH₁ = 1975 RE₂ = 1979 QF₉ = 1979 SW₄
= 1983 VV

Discovered 1991 Oct. 30 by F. Börngen at Tautenburg.

Id. G. V. Williams (*MPC* 20028)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	306.88995		(2000.0)		P		Q
n	0.25494322	ω	33.40200		+0.99904137		+0.03751448
a	2.4632420	Ω	324.42713		-0.04355576		+0.90347616
e	0.1866941	i	2.22263		+0.00438665		+0.42699355
P	3.87	H	13.9	G	0.15	U	1

1979 08 28	095	(4.7– 2.6–)	1991 12 11	033	0.7+ 0.8+	1998 06 26	704	1.1+ 0.5–
1979 09 23	095	2.1– 0.8+	1997 03 05	809	(2.0+ 0.4+)	1998 06 26	704	0.4+ 0.2+
1983 10 12	688	0.6+ 0.8–	1997 03 05	809	0.8– 1.7+	1998 06 26	704	0.5+ 1.4+
1983 10 12	688	1.6+ 1.8–	1997 03 05	809	0.5– 1.0+	1998 07 21	704	0.2+ 1.4+
1983 11 04	688	0.2+ 0.1–	1997 03 06	809	(0.7– 3.5+)	1998 07 21	704	0.3+ 0.8–
1983 11 04	688	(0.3– 3.7–)	1997 03 06	809	(0.4– 2.7+)	1998 07 21	704	0.1+ 0.9–
1991 10 30	033	1.8– 0.7–	1997 03 06	809	(0.0 2.4+)	1998 07 21	704	0.6– 0.3+
1991 10 31	033	0.6– 0.4+	1998 06 24	704	(3.0+ 0.1+)	1998 07 21	704	0.5– 0.3+

(9053)* 1991 VW₅ = 1994 LD

Discovered 1991 Nov. 2 by E. W. Elst at the European Southern Observatory.

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

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams							
<i>M</i>	335.10391	(2000.0)	<i>P</i>	<i>Q</i>					
<i>n</i>	0.24034489	ω	181.44195	+0.25461373	+0.95444935				
<i>a</i>	2.5620019	Ω	103.32740	–0.88563659	+0.29474318				
<i>e</i>	0.1849494	<i>i</i>	9.19896	–0.38835509	–0.04639936				
<i>P</i>	4.10	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1989 02 02	675	0.3– 1.3+	1994 06 02	402	0.5– 0.2+	1998 05 23	704	0.7– 0.0
1989 02 02	675	0.4– 1.3–	1994 06 02	402	0.7+ 0.7+	1998 05 23	704	0.3– 0.2–
1991 11 02	809	1.0+ 0.8–	1994 06 02	894	0.1+ 0.1–	1998 05 25	704	0.1– 0.1–
1991 11 02	809	0.2+ 0.9–	1994 06 02	894	1.0+ 1.1–	1998 05 25	704	0.2+ 0.1+
1991 11 02	809	0.9– 1.0–	1994 06 10	900	0.5– 0.7–	1998 05 25	704	0.3+ 0.6–
1991 11 06	809	1.7+ 1.8–	1994 06 10	900	1.8– 0.5+	1998 05 25	704	(0.8– 2.2–)
1991 11 06	809	1.0+ 1.6–	1998 04 24	704	0.5+ 0.9–	1998 05 26	704	0.0 0.5–
1991 11 06	809	1.3+ 1.8–	1998 04 24	704	0.9– 0.3+	1998 05 26	704	0.6+ 0.5–
1991 11 09	809	0.6+ 0.1+	1998 04 24	704	1.5– 0.4–	1998 05 26	704	0.7– 0.4–
1991 11 09	809	0.6+ 0.9–	1998 05 01	699	0.6+ 0.5–	1998 05 26	704	0.4– 0.2–
1991 11 09	809	0.8– 0.5–	1998 05 01	699	0.4+ 0.4–	1998 05 26	704	0.7– 0.1+
1991 11 12	809	0.9+ 0.6+	1998 05 01	699	0.6+ 0.4–	1998 06 16	704	0.5+ 0.7+
1991 11 12	809	1.1– 0.3–	1998 05 05	699	0.8+ 0.4–	1998 06 16	704	0.0 0.2–
1991 11 12	809	1.1– 0.5+	1998 05 05	699	0.6+ 0.6–	1998 06 16	704	1.1– 0.3–
1994 06 01	402	0.8+ 0.1+	1998 05 05	699	0.5+ 0.6–	1998 06 16	704	0.3– 0.9–
1994 06 01	402	0.6+ 0.9+	1998 05 23	704	0.1– 0.0	1998 06 16	704	1.1– 0.6–
1994 06 01	894	0.6– 0.5+	1998 05 23	704	0.1– 0.3–			
1994 06 01	894	0.7+ 0.9–	1998 05 23	704	0.9– 0.5+			

(9054)* 1991 YO = 1990 MA₂ = 1995 WY₄₂

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

Id. S. Nakano (*MPC* 26563)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Nakano							
<i>M</i>	270.10690	(2000.0)	<i>P</i>	<i>Q</i>					
<i>n</i>	0.23200728	ω	258.04401	+0.97000561	–0.03900548				
<i>a</i>	2.6230203	Ω	103.83378	+0.11956716	+0.93594204				
<i>e</i>	0.1893880	<i>i</i>	14.30598	–0.21164313	+0.34998726				
<i>P</i>	4.25	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1990 06 28	808	0.2– 0.0	1998 05 23	704	0.1+ 0.7+	1998 06 03	704	0.3– 0.0
1990 06 28	808	0.1– 1.2+	1998 05 23	704	0.5+ 0.3+	1998 06 03	704	1.1+ 0.7–
1991 12 30	511	1.7+ 0.5–	1998 05 23	704	0.9+ 0.5–	1998 06 19	704	0.3+ 0.5–
1991 12 30	511	(5.5+ 0.7–)	1998 05 23	704	0.6+ 0.4+	1998 06 19	704	0.1– 0.1–
1991 12 31	511	0.9+ 0.4+	1998 05 25	699	0.6– 0.2+	1998 06 19	704	0.2+ 0.2–
1991 12 31	511	0.2+ 0.8+	1998 05 25	699	0.2– 0.4+	1998 06 19	704	0.1+ 0.2–
1992 01 05	511	0.9– 0.6+	1998 05 25	699	0.1– 0.9+	1998 06 19	704	0.1– 0.2+
1992 01 05	511	1.4– 1.7–	1998 05 26	704	0.1– 0.4+	1998 07 01	699	0.2– 0.6+
1995 11 25	399	0.3– 1.1+	1998 05 26	704	0.8– 0.9+	1998 07 01	699	0.2+ 1.0+
1995 11 25	399	0.0 1.6+	1998 05 26	704	0.3– 0.7+	1998 07 01	699	0.2– 0.5+
1995 12 17	399	1.8– 1.3+	1998 05 26	704	0.9+ 0.2+	1998 07 15	699	0.7– 1.8+
1995 12 17	399	0.7– 1.8+	1998 05 26	704	0.5– 0.5+	1998 07 15	699	0.7+ 0.4–
1995 12 19	399	0.3– 0.7+	1998 06 03	704	0.3+ 0.6+	1998 07 15	699	0.5+ 1.4+
1995 12 19	399	0.3– 1.5+	1998 06 03	704	0.2+ 0.0			
1998 05 23	704	0.2– 0.3–	1998 06 03	704	0.9+ 0.8–			

(9055)* 1992 DP₈ = 1980 WK₄ = 1984 SW₄ = 1989 UE₁₀

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* 23861)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams							
<i>M</i>	353.60115	(2000.0)	<i>P</i>	<i>Q</i>					
<i>n</i>	0.21001380	ω	113.42956	+0.64755148	+0.76097258				
<i>a</i>	2.8030929	Ω	197.11610	–0.73929984	+0.61466373				
<i>e</i>	0.2781116	<i>i</i>	7.80599	–0.18469661	+0.20762762				
<i>P</i>	4.69	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1980 11 29	675	0.1– 0.2–	1992 03 03	809	0.8+ 0.1–	1998 06 27	758	0.3+ 0.7–
1980 12 01	675	1.0+ 0.8+	1992 03 05	809	0.2– 0.1–	1998 06 29	758	0.1+ 1.8+
1984 09 23	071	0.4– 1.3+	1992 03 08	809	0.9– 0.1+	1998 06 29	758	(2.8+ 0.5–)
1984 09 23	071	0.2– 0.2+	1992 04 04	691	0.3– 0.5–	1998 07 21	758	0.3+ 0.8–
1989 10 21	400	1.5– 1.9–	1992 04 04	691	0.2– 1.1–	1998 07 21	758	0.1– 0.7–
1989 10 21	400	1.7+ 0.9–	1992 04 04	691	0.0 0.8–	1998 07 21	758	0.1– 1.0–
1992 02 29	809	0.5– 0.0	1998 06 27	758	0.3+ 0.6–			

(9056)* 1992 EQ₁₄ = 1985 UE₆ = 1997 GY₃₄

Discovered 1992 Mar. 1 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 29916)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams							
<i>M</i>	169.96649	(2000.0)	<i>P</i>	<i>Q</i>					
<i>n</i>	0.21111262	ω	259.29658	–0.49931831	–0.86586026				
<i>a</i>	2.7933579	Ω	220.70656	+0.81239882	–0.45540848				
<i>e</i>	0.0462135	<i>i</i>	2.73328	+0.30114678	–0.20709691				
<i>P</i>	4.67	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1985 10 18	095	(0.8+ 3.4+)	1997 03 13	809	0.7+ 0.3–	1998 06 26	704	1.5+ 0.4+
1992 03 01	809	0.1– 0.2+	1997 03 13	809	1.2– 0.4+	1998 06 26	704	0.5+ 0.6+
1992 03 03	809	0.3– 0.5–	1997 04 03	704	0.0 0.2+	1998 07 21	704	0.5– 0.1–
1992 03 06	809	1.1+ 0.1–	1997 04 03	704	0.2– 0.5+	1998 07 21	704	0.1– 0.4+
1992 04 07	809	0.9– 0.1–	1997 04 11	704	0.7+ 1.2–	1998 07 21	704	(1.2– 2.4–)
1994 10 08	691	0.2+ 0.4–	1997 04 11	704	0.2+ 0.0	1998 07 21	704	0.8– 0.8–
1994 10 08	691	0.1+ 0.1+	1998 06 24	704	0.3+ 0.3–	1998 07 26	704	1.2– 0.6–
1994 10 08	691	0.2– 0.1–	1998 06 24	704	0.8+ 0.3+	1998 07 26	704	0.0 0.4–
1997 03 12	809	(1.7– 4.0–)	1998 06 24	704	0.1+ 1.4+	1998 07 26	704	0.0 1.1–
1997 03 12	809	(1.8– 4.3–)	1998 06 24	704	0.2– 1.8–	1998 07 26	704	1.0– 0.2–
1997 03 12	809	(2.5– 4.1–)	1998 06 26	704	0.2+ 0.4+			
1997 03 13	809	0.2– 0.2+	1998 06 26	704	0.6+ 1.9+			

(9057)* 1992 HA₅ = 1977 XP₁ = 1982 SH₈ = 1994 UM

Discovered 1992 Apr. 24 by H. Debehogne at the European Southern Observatory.

Id. K. Kinoshita (*MPC* 24393)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams							
<i>M</i>	303.38794	(2000.0)	<i>P</i>	<i>Q</i>					
<i>n</i>	0.17292877	ω	236.76913	+0.81988364	+0.57132200				
<i>a</i>	3.1907385	Ω	88.36195	–0.51213590	+0.76087622				
<i>e</i>	0.1668466	<i>i</i>	2.13134	–0.25594461	+0.30766631				
<i>P</i>	5.70	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1953 09 17	675	0.7– 1.4–	1992 05 01	809	0.5+ 1.5–	1998 05 24	426	0.0 0.3–
1953 09 17	675	1.1+ 0.0	1994 10 31	411	1.0+ 0.6–	1998 05 25	426	0.0 0.1–
1977 12 07	675	1.0– 0.3–	1994 10 31	411	0.7+ 0.2+	1998 05 25	426	0.1– 0.0
1977 12 08	675	0.2+ 0.4–	1994 11 01	411	0.2– 0.5+	1998 05 25	426	0.0 0.1+
1982 09 19	095	0.5– 1.0+	1994 11 01	411	1.1– 0.4–	1998 06 03	704	0.6+ 0.4+

1998 AUG. 8

M.P.C. 32187

1982 09 27	095	0.2+	0.5+	1994 11 08	411	0.2+	0.5-	1998 06 03	704	0.0	0.1+
1988 10 07	675	0.2-	0.0	1994 11 08	411	0.9+	0.2+	1998 06 03	704	0.9-	0.7+
1988 10 07	675	0.6+	0.3-	1994 11 09	411	0.4+	0.3-	1998 06 03	704	0.3+	1.2+
1991 02 10	675	0.5-	0.7+	1994 11 09	411	0.1-	0.3-	1998 06 18	704	0.3+	0.2+
1991 02 10	675	0.5-	0.2-	1994 11 28	675	0.1+	0.9-	1998 06 18	704	1.5-	0.2+
1992 04 24	809	0.3+	1.0+	1994 11 28	675	0.8-	1.9+	1998 06 18	704	0.1+	0.0
1992 04 24	809	0.7+	1.1+	1998 05 24	704	0.1+	0.1-	1998 06 18	704	0.1-	1.6+
1992 04 24	809	0.5+	1.2+	1998 05 24	704	0.9+	0.2+	1998 06 18	704	1.3-	0.1-
1992 04 25	809	0.5+	0.3-	1998 05 24	704	0.1+	0.8-	1998 07 01	691	0.7-	0.5+
1992 04 25	809	1.1+	0.8-	1998 05 24	704	0.7+	1.8-	1998 07 01	691	0.7-	0.6+
1992 05 01	809	0.2-	1.6-	1998 05 24	704	0.8-	1.4-	1998 07 01	691	0.5-	0.3+
1992 05 01	809	0.2+	1.5-	1998 05 24	426	0.0	0.3-				

(9058)* 1992 JB

Discovered 1992 May 1 by J. Alu and K. J. Lawrence at Palomar.

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams				Williams		Q	
<i>M</i>	92.80825	(2000.0)		<i>P</i>		<i>Q</i>			
<i>n</i>	0.50761051	ω	306.75379	-0.94758099	-0.26909650				
<i>a</i>	1.5563800	Ω	218.49935	+0.29927367	-0.93634953				
<i>e</i>	0.3599952	<i>i</i>	16.06563	-0.11191758	-0.22546981				
<i>P</i>	1.94	<i>H</i>	17.8	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1992 01 09	413	0.7-	1.6-	1992 05 22	776	0.1-	0.2-	1994 01 23	413	0.4-	1.6-
1992 01 09	413	(0.5+	2.3+)	1992 05 23	776	0.6-	0.2-	1994 04 09	711	(2.7-	1.1-)
1992 03 25	413	1.0+	1.3-	1992 05 23	776	0.2-	0.0	1994 05 01	413	0.7-	0.5+
1992 03 25	413	0.3+	1.0+	1992 05 23	776	0.2-	0.3-	1994 05 01	413	0.1+	0.2-
1992 04 26	675	0.2+	0.1-	1992 05 23	776	0.4-	0.1-	1994 05 04	413	0.9-	0.4-
1992 04 26	675	0.5-	0.7-	1992 05 23	776	0.2-	0.2-	1994 07 25	413	0.9-	1.3-
1992 05 01	675	(1.2+	3.1-)	1992 05 23	776	0.1-	0.1-	1994 07 25	413	0.0	0.7-
1992 05 01	675	(0.1+	2.5-)	1992 05 23	776	0.1-	0.1-	1995 10 31	413	(2.9+	0.3-)
1992 05 02	675	(0.4-	2.3-)	1992 05 23	776	0.2-	0.3-	1995 10 31	413	0.7-	0.5-
1992 05 02	675	0.8+	0.6-	1992 05 23	776	0.2-	0.6-	1995 10 31	413	0.6-	0.4-
1992 05 03	675	1.4+	1.4+	1992 05 23	776	0.4+	0.8-	1995 12 08	413	0.6-	0.2+
1992 05 03	413	0.6-	0.1+	1992 05 23	776	0.3-	0.1-	1995 12 08	413	0.4-	0.3-
1992 05 04	402	0.5-	0.0	1992 05 23	776	0.2+	0.1-	1996 01 04	413	0.3+	0.9-
1992 05 04	402	1.2-	1.8+	1992 05 23	776	0.4-	0.3-	1996 01 04	413	0.3+	0.7-
1992 05 04	402	1.0-	0.5-	1992 05 23	688	0.2+	0.0	1996 01 10	413	0.3+	0.2-
1992 05 04	413	0.6+	0.1+	1992 05 23	776	0.2-	0.0	1996 01 10	413	0.3+	0.2-
1992 05 05	894	(0.3-	3.3-)	1992 05 23	776	0.3-	0.2-	1996 01 26	413	0.4-	0.4-
1992 05 07	801	0.4+	1.6-	1992 05 23	776	0.0	0.4-	1996 01 27	413	0.3-	0.5-
1992 05 07	801	0.5+	1.3-	1992 05 23	776	0.3-	0.1+	1996 01 27	413	0.0	0.6-
1992 05 08	589	0.1+	1.4+	1992 05 23	776	0.3-	0.2-	1996 04 24	381	0.1+	0.3-
1992 05 08	596	0.4+	0.8+	1992 05 23	776	0.7-	0.4-	1996 04 24	381	0.2-	0.2+
1992 05 08	589	0.2+	0.8+	1992 05 23	776	0.3-	0.1-	1996 04 25	381	0.4-	0.2-
1992 05 08	596	0.4+	0.0	1992 05 24	413	0.3-	0.2-	1996 06 07	413	0.0	0.3+
1992 05 08	589	0.5+	0.8+	1992 05 24	413	0.3-	0.2-	1996 06 07	413	0.7+	0.0
1992 05 08	596	1.4+	1.3+	1992 05 27	675	1.5+	0.7-	1996 06 08	413	0.0	0.6+
1992 05 08	596	0.4+	0.7+	1992 05 27	675	(2.3+	0.3+)	1996 06 08	413	0.0	0.2+
1992 05 09	589	0.3-	0.6+	1992 05 29	801	0.1+	0.2-	1996 06 09	413	1.1+	1.4+
1992 05 09	589	0.4+	0.4+	1992 05 29	801	0.0	0.2-	1996 06 09	413	0.2-	0.6+
1992 05 09	589	0.5-	0.5+	1992 05 29	776	0.6-	0.2-	1996 06 12	658	0.2-	0.2+
1992 05 09	589	0.2-	0.3-	1992 05 29	776	0.8-	0.2-	1996 06 12	658	0.6-	0.0
1992 05 09	589	1.0-	0.3+	1992 05 29	776	0.3-	0.1+	1996 06 12	658	0.9-	1.1-
1992 05 12	657	1.4+	0.5+	1992 05 29	776	0.4+	0.3-	1996 06 21	413	0.5+	0.6-
1992 05 12	657	0.3-	0.4+	1992 05 29	776	1.1-	0.1-	1996 06 25	658	0.2+	0.2+
1992 05 12	657	0.1+	0.2+	1992 05 30	675	0.8+	0.4-	1996 06 25	658	0.5-	0.2+
1992 05 20	776	0.2+	0.4-	1992 05 30	675	0.7+	1.4-	1996 06 25	658	0.3-	0.3+
1992 05 20	776	0.1+	0.3-	1992 06 02	675	2.0+	0.7+	1996 06 28	608	0.1-	0.0
1992 05 20	776	0.3-	0.3-	1992 06 03	801	0.6+	0.3-	1996 06 28	608	1.6-	1.3-
1992 05 20	776	0.6+	0.1-	1992 06 03	801	0.3+	0.2-	1996 07 08	608	1.2+	0.3+
1992 05 21	776	0.3+	0.7-	1992 06 29	801	0.1-	0.1+	1996 07 08	608	1.3+	0.4+
1992 05 21	776	0.4+	0.3-	1992 06 29	801	0.1+	0.4+	1996 07 18	413	0.7+	0.4+
1992 05 21	776	0.4-	0.2+	1992 07 03	801	0.1+	0.2+	1996 07 18	413	0.1+	0.2-
1992 05 22	776	0.6-	0.3-	1992 07 03	801	0.3-	0.0	1996 07 22	711	0.5+	0.5+
1992 05 22	776	0.2-	0.2+	1992 08 21	413	0.1-	0.4-	1996 07 22	711	0.0	0.1-
1992 05 22	776	0.2-	0.2-	1992 08 21	413	0.8+	0.8-	1998 06 26	711	1.9+	0.4-

1992 05 22	776	0.3-	0.0	1993 11 20	413	0.4+	0.1-	1998 06 27	711	0.6+	0.1-
1992 05 22	776	0.5-	0.4-	1993 11 20	413	0.5-	0.6-	1998 06 27	711	1.0+	0.6+
1992 05 22	776	0.8+	0.3-	1993 11 23	658	0.4-	0.4+	1998 07 19	046	0.4+	0.4+
1992 05 22	776	0.3-	0.4-	1993 11 23	658	0.2+	0.1-	1998 07 19	046	0.2+	0.8+
1992 05 22	776	0.2-	0.4-	1993 11 23	658	0.2-	1.1+	1998 07 19	046	0.2-	0.3+
1992 05 22	776	0.3-	0.0	1994 01 12	474	0.6+	0.7+				
1992 05 22	776	0.0	0.3-	1994 01 12	474	(3.4+	1.2-)				

(9059)* 1992 PJ = 1979 MO

Discovered 1992 Aug. 8 by E. W. Elst at Caussols.

Id. G. V. Williams (*MPC* 21584)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		(2000.0)		Williams		Williams	
<i>M</i>	9.67200			<i>P</i>		<i>Q</i>	
<i>n</i>	0.30919251	ω	336.31095	-0.39403825	+0.91770996		
<i>a</i>	2.1659582	Ω	270.45118	-0.83498909	-0.38036727		
<i>e</i>	0.0786267	<i>i</i>	2.89023	-0.38409253	-0.11458258		
<i>P</i>	3.19	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 06 22	805	0.7-	1.2+	1992 08 09	010	0.5+	1.0-	1998 05 24	704	0.1-	0.1-
1979 06 22	805	0.2+	0.1+	1992 08 09	010	0.0	0.1-	1998 05 24	704	0.3-	0.7+
1979 06 25	805	0.5+	0.3+	1992 08 09	010	0.9-	0.0	1998 05 24	704	0.9-	0.8-
1992 06 28	675	1.3+	0.9-	1996 12 04	098	0.1+	0.3-	1998 05 24	704	0.0	1.2-
1992 06 28	675	0.2+	0.2-	1996 12 04	098	0.5+	0.1-	1998 05 24	704	0.6+	0.2-
1992 07 24	809	(3.5+	0.5+)	1996 12 06	098	0.1-	0.8-	1998 06 18	704	0.0	0.9-
1992 07 24	809	(3.3+	0.5+)	1996 12 06	098	0.9-	1.9-	1998 06 18	704	0.5+	1.1-
1992 07 24	809	0.7+	0.4-	1996 12 08	098	0.1+	0.5+	1998 06 18	704	1.6+	0.2-
1992 07 26	809	(6.1+	0.6-)	1996 12 08	098	0.5+	0.8-	1998 06 18	704	1.0-	1.8+
1992 07 26	809	(5.7+	0.3-)	1998 05 20	046	0.2+	0.8-	1998 06 27	699	1.0-	0.6-
1992 07 26	809	(5.9+	0.0)	1998 05 20	046	0.1-	0.8-	1998 06 27	699	0.5-	0.4-
1992 07 30	809	(5.4+	2.5-)	1998 05 20	046	0.1+	1.0-	1998 06 27	699	0.2-	0.2+
1992 07 30	809	(4.5+	1.7-)	1998 05 22	704	0.3-	0.2-	1998 07 13	699	1.0+	0.0
1992 07 30	809	(4.5+	1.9-)	1998 05 22	704	0.5-	0.2+	1998 07 13	699	0.9+	0.2-
1992 08 08	010	0.3+	0.3+	1998 05 22	704	0.4-	0.1+	1998 07 13	699	1.0+	1.5+
1992 08 08	010	0.6-	0.2-	1998 05 22	704	0.1+	0.2+				
1992 08 08	010	0.8-	0.5+	1998 05 22	704	0.5-	0.7+				

(9060)* 1992 RM = 1979 SE₁

Discovered 1992 Sept. 4 by S. Otomo at Kiyosato.

Id. S. Nakano (*MPC* 21114)

Epoch 1998 July 6.0 TT = JDT 2451000.5

		(2000.0)		Nakano		Nakano	
<i>M</i>	277.05877			<i>P</i>		<i>Q</i>	
<i>n</i>	0.30196983	ω	353.75729	+0.99988952	+0.01426369		
<i>a</i>	2.2003597	Ω	5.43070	-0.01099345	+0.89902542		
<i>e</i>	0.1942354	<i>i</i>	2.53326	-0.01000476	+0.43766407		
<i>P</i>	3.26	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 09 23	095	0.4+	0.0	1992 10 06	894	0.1+
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(9061)* 1992 WC₃ = 1983 CB₆ = 1985 UY₃

Discovered 1992 Nov. 18 by A. Sugie at the Dynic Astronomical Observatory.

Id. S. Nakano (*MPC* 21595)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	283.20437	ω	271.26122	+0.98629702	+0.13236176		
<i>a</i>	2.2708876	Ω	81.13895	-0.08099942	+0.90853469		
<i>e</i>	0.1869918	<i>i</i>	5.72022	-0.14372643	+0.39628914		
<i>P</i>	3.42	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1951 11 08	675	0.3-	0.0	1992 12 04	894	0.3-	0.5+	1998 05 24	704	0.1-	1.2-
1954 09 28	675	0.1-	0.2-	1992 12 04	894	0.6-	0.4-	1998 06 14	689	0.9+	1.3+
1954 09 28	675	0.8+	0.2-	1992 12 14	894	0.3-	1.1+	1998 06 18	704	0.5+	0.0
1983 02 02	095	(0.2-	3.1-)	1992 12 14	894	1.5-	1.6+	1998 06 18	704	1.1+	2.2-
1985 10 21	095	1.8-	0.8+	1995 11 22	801	0.2+	0.5+	1998 06 18	704	2.0-	0.3+
1992 11 18	402	1.4+	0.1+	1995 11 22	801	0.1+	0.5+	1998 06 18	704	0.7-	0.4-
1992 11 18	402	1.4+	0.2+	1998 05 22	704	0.6+	0.0	1998 06 18	704	0.6+	0.2-
1992 11 21	894	0.9-	0.3-	1998 05 22	704	0.4+	0.4+	1998 06 21	691	0.7-	0.0
1992 11 21	894	0.5+	0.4-	1998 05 22	704	0.9+	0.6+	1998 06 21	691	2.0-	0.9-
1992 11 21	402	0.2+	1.2-	1998 05 22	704	0.3-	0.9+	1998 06 21	691	0.7-	0.6-
1992 11 22	894	1.5-	0.6+	1998 05 22	699	0.8+	0.3-	1998 06 27	699	0.1+	0.8+
1992 11 22	894	0.1+	1.8-	1998 05 22	699	0.9+	0.4-	1998 06 27	699	0.5+	0.7+
1992 11 23	877	0.5+	0.4-	1998 05 22	699	0.8+	0.4-	1998 06 27	699	0.1-	0.2-
1992 11 23	877	1.1+	0.3-	1998 05 24	704	1.1+	0.2+	1998 06 29	699	0.7+	1.3+
1992 11 25	675	0.5+	0.9-	1998 05 24	704	1.8-	0.5+	1998 06 29	699	0.4+	0.6+
1992 11 25	675	0.4-	0.6-	1998 05 24	699	0.1-	0.1+	1998 06 29	699	0.4+	0.3-
1992 11 25	877	1.7+	0.4+	1998 05 24	704	0.9+	0.4-	1998 07 02	691	1.7-	0.3-
1992 11 25	877	(2.7+	0.5+)	1998 05 24	699	0.1+	0.3+	1998 07 02	691	1.8-	0.4-
1992 11 28	675	0.1-	0.7-	1998 05 24	699	0.2+	0.1+	1998 07 02	691	1.8-	0.3-
1992 11 28	675	0.1-	0.6-	1998 05 24	704	0.1+	1.2-				

(9062)* 1992 WO₅ = 1995 QL₂

Discovered 1992 Nov. 27 by T. Seki at Geisei.

Id. T. Urata (*MPC* 25641)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	245.03546	ω	285.30128	+0.91432830	-0.39867110		
<i>a</i>	2.3320853	Ω	98.23610	+0.39365642	+0.83368850		
<i>e</i>	0.0351376	<i>i</i>	4.12377	+0.09507040	+0.38213198		
<i>P</i>	3.56	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 09 10	675	0.6+	0.2-	1992 12 21	372	0.6-	0.1+	1998 06 17	104	0.1-	0.2-
1988 09 10	675	0.7+	0.3-	1992 12 21	372	(2.6-	3.1+)	1998 06 17	104	0.1+	0.1-
1992 11 25	675	0.9+	0.6-	1995 08 25	905	0.8+	0.6-	1998 06 17	104	0.1+	0.1-
1992 11 25	675	1.3+	0.2+	1995 08 25	905	0.3+	0.4-	1998 06 17	104	0.3-	0.0
1992 11 27	372	0.4-	0.3-	1995 08 26	905	0.4+	0.2-	1998 06 24	704	1.0-	1.1-
1992 11 27	372	0.7-	1.5-	1995 08 26	905	0.4+	1.4+	1998 06 24	704	0.4+	0.1+
1992 11 28	675	0.5+	0.5-	1997 01 10	411	1.1+	0.8-	1998 06 24	704	1.0-	1.3+
1992 11 28	675	0.3+	0.9-	1997 01 10	411	0.8-	0.2-	1998 06 24	704	(3.3+	0.0)
1992 12 01	372	1.2-	0.8+	1997 01 11	411	0.4+	0.3-	1998 06 24	704	1.5-	0.3+
1992 12 01	372	1.5-	0.1+	1997 01 11	411	0.1-	0.1-	1998 06 26	704	0.2+	0.4-
1992 12 03	372	(0.2-	2.3+)	1997 01 13	905	0.1-	1.2-	1998 06 26	704	1.1+	0.6-
1992 12 03	372	(2.5-	0.1+)	1997 01 13	905	0.0	0.0	1998 06 26	704	1.1+	1.2-
1992 12 16	372	0.7-	0.8-	1997 01 16	905	1.3+	0.3+	1998 06 26	704	0.3+	0.5-
1992 12 16	372	(2.4-	1.2+)	1997 01 16	905	0.1-	0.6-	1998 06 26	704	(1.2+	2.1-)
1992 12 17	372	0.5-	1.7+	1998 06 06	689	0.1+	0.0	1998 07 12	689	0.7-	0.0
1992 12 17	372	(1.5-	2.5+)	1998 06 14	689	0.8-	0.0				

(9063)* 1992 YS = 1983 CC₃ = 1995 QX₁

Discovered 1992 Dec. 17 by T. Seki at Geisei.

Id. T. Urata (*MPC* 25641)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	265.78267	ω	249.15418	+0.99265061	-0.09482502		
<i>a</i>	2.3072136	Ω	116.22243	+0.11579287	+0.92480146		
<i>e</i>	0.1615006	<i>i</i>	4.80770	-0.03516771	+0.36844331		
<i>P</i>	3.50	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1983 02 14	801	0.6+	0.6+	1997 01 29	411	0.0	0.1+	1998 05 24	699	0.1-	0.1-
1992 12 17	372	(1.8-	2.9-)	1997 01 29	411	0.9-	0.2+	1998 05 24	699	0.4-	0.3+
1992 12 17	372	(5.0-	0.3+)	1997 03 04	704	0.1+	0.3-	1998 05 24	704	0.5-	0.1+
1992 12 21	372	(3.0-	4.0-)	1997 03 04	704	1.6+	0.2+	1998 05 24	704	1.2-	0.5+
1992 12 21	372	1.8-	0.9-	1997 03 05	704	1.4+	0.5+	1998 05 25	699	0.3+	0.0
1992 12 23	372	(2.3-	3.1-)	1997 03 05	704	0.4+	0.1+	1998 05 25	699	0.9-	0.1+
1992 12 23	372	(6.5+	2.7-)	1997 03 06	704	0.7+	0.1+	1998 05 25	699	0.3+	0.0
1992 12 25	372	(3.2-	2.8-)	1997 03 06	704	0.2-	0.0	1998 06 18	704	0.1-	0.9-
1992 12 25	372	0.2-	0.3-	1998 05 24	292	0.9-	1.4-	1998 06 18	704	0.9+	1.9-
1995 08 20	905	0.4+	0.0	1998 05 24	292	2.0-	0.7+	1998 06 18	704	1.9+	0.7+
1995 08 20	905	1.4+	0.9-	1998 05 24	292	(2.7-	0.8+)	1998 06 18	704	0.7-	1.5+
1995 08 24	905	0.0	0.6+	1998 05 24	704	0.1+	0.4+	1998 06 26	699	0.1+	0.1+
1995 08 24	905	1.0-	0.5+	1998 05 24	704	0.8+	0.4-	1998 06 26	699	0.4+	0.4-
1995 09 01	905	0.2-	1.3+	1998 05 24	699	0.4-	0.1-	1998 06 26	699	0.8-	0.0
1995 09 01	905	0.7+	0.5+	1998 05 24	704	0.8+	0.8+				

(9064)* 1993 BH₈ = 1997 AV₂₂

Discovered 1993 Jan. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 29102)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	63.68432	ω	107.45164	-0.65974715	+0.74154327		
<i>a</i>	2.4354596	Ω	120.63398	-0.73198154	-0.59741530		
<i>e</i>	0.1245459	<i>i</i>	8.14119	-0.17010797	-0.30530075		
<i>P</i>	3.80	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 10 07	691	0.1-	0.6+	1997 01 12	327	0.3+	0.0	1997 03 08	327	1.2+	0.4+
1991 10 07	691	0.2-	0.8+	1997 01 18	327	0.2+	0.6+	1997 03 08	327	0.1-	0.3+
1991 10 07	691	0.2-	0.3+	1997 01 18	327	0.3+	0.7+	1997 03 08	327	0.6+	0.3+
1993 01 21	691	0.4-	0.3-	1997 01 18	327	0.4+	0.5+	1998 07 03	699	1.1-	0.5+
1993 01 21	691	0.3-	0.6-	1997 02 01	327	0.3+	0.4+	1998 07 03	699	0.4-	0.7+
1993 01 21	691	0.0	0.6-	1997 02 01	327	0.7-	0.3+	1998 07 03	699	0.8-	0.3+
1993 01 26	691	0.8-	0.7-	1997 02 01	327	0.0	0.1+	1998 07 15	699	0.2+	0.3+
1993 01 26	691	0.6-	0.0	1997 02 02	327	0.9-	0.4+	1998 07 15	699	0.4-	0.3+
1993 01 26	691	0.7-	0.0	1997 02 02	327	1.0-	0.2+	1998 07 15	699	0.0	0.7+
1993 02 10	399	1.3+	1.4+	1997 02 02	327	0.4+	0.3+	1998 07 24	566	0.7+	0.2+
1993 02 10	399	1.1+	0.9+	1997 02 04	327	0.2-	0.2+	1998 07 24	566	0.7+	0.2+
1997 01 12	327	0.1+	1.1-	1997 02 04	327	0.1+	0.1+	1998 07 24	566	0.2+	0.1+
1997 01 12	327	0.2+	0.2-	1997 02 04	327	0.2+	0.5+				

(9065)* 1993 FN₁ = 1952 SH = 1977 QP₁ = 1990 SU₁₉

Discovered 1993 Mar. 25 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 24108)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	6.08950	ω	142.41651	+0.34286470	+0.93571100		
<i>a</i>	0.23459177	Ω	147.39595	-0.89491805	+0.35221925		
<i>e</i>	2.6037195	<i>i</i>	8.86079	-0.28559670	+0.01966026		
<i>P</i>	4.20	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1952 09 20	760	0.7+	0.6+	1993 04 15	399	(1.0-	2.8-)	1998 06 04	699	0.4-	0.4+
1952 09 20	760	0.6-	0.8-	1994 08 12	809	0.1+	1.3+	1998 06 04	699	0.6-	0.1+
1977 08 19	095	0.1+	1.1+	1994 08 12	809	0.2+	0.7+	1998 06 04	699	0.7-	0.4+
1990 09 18	675	0.4+	0.8-	1994 08 12	809	0.0	1.3+	1998 06 27	699	0.2+	1.6-

1990 09 18	675	0.2−	0.1−	1994 08 13	809	0.3−	0.9+	1998 06 27	699	0.3+	0.0
1993 03 15	400	0.7−	0.8−	1994 08 13	809	0.6−	0.0	1998 06 27	699	0.7+	0.0
1993 03 15	400	1.0+	0.2−	1994 08 13	809	0.6−	0.1+	1998 07 15	423	0.1+	0.1+
1993 03 22	399	1.9−	0.1+	1994 09 01	399	0.6−	0.8−	1998 07 15	423	0.1+	0.2+
1993 03 23	675	0.1−	0.5+	1994 09 01	399	0.2−	1.8+	1998 07 15	423	0.0	0.2+
1993 03 23	675	0.3−	0.5+	1994 09 11	675	0.1−	0.4+	1998 07 15	423	0.3−	0.0
1993 03 25	399	1.3−	1.6+	1994 10 01	675	0.1+	0.1−	1998 07 15	423	0.2−	0.1+
1993 03 25	399	0.3+	0.3+	1994 10 01	675	0.8+	0.4+	1998 07 15	423	0.1−	0.3−
1993 03 26	399	0.0	0.1−	1994 10 01	399	0.6−	0.9−	1998 07 15	423	0.1−	0.2+
1993 03 26	399	0.0	1.6+	1994 10 01	399	0.1−	0.3+	1998 07 20	566	0.6+	0.9−
1993 03 29	399	1.8+	0.1−	1997 03 27	689	0.6+	0.2+	1998 07 20	566	0.4+	0.8−
1993 03 29	399	(2.8+	0.9−)	1997 04 08	689	0.9+	0.1−	1998 07 20	566	0.9+	1.2−
1993 04 15	399	(0.7−	2.3−)	1997 04 09	689	0.6+	0.5−	1998 07 27	689	0.4−	0.3−

**(9066)* 1993 FR₃₄ = 1972 YL = 1976 SK₄ = 1978 EL₁ = 1981 UW₁₆
= 1998 HY₆₃**

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

Id. G. V. Williams (*MPC* 31961), K. Ichikawa (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20520602	ω	283.65281	+0.14504915	−0.98908418		
<i>a</i>	2.8467062	Ω	157.95653	+0.93240701	+0.12786985		
<i>e</i>	0.1247963	<i>i</i>	3.96423	+0.33102554	+0.07322418		
<i>P</i>	4.80	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1972 12 29	095	0.2+	0.4−	1995 08 20	809	0.3+	0.3+	1998 04 21	704	0.2+	0.2−
1976 09 24	095	0.4+	0.1−	1995 08 22	809	0.1+	0.2−	1998 04 21	704	0.2+	0.3+
1976 09 29	095	(3.3+	2.9−)	1997 04 09	691	0.3−	0.6+	1998 04 21	704	0.0	0.1−
1978 03 05	095	1.0+	0.6−	1997 04 09	691	0.2+	0.2+	1998 04 21	704	0.3−	0.0
1981 10 24	095	1.5−	0.9−	1997 04 09	691	0.5+	0.3+	1998 04 21	704	0.3+	0.4−
1993 03 19	809	0.1+	0.1−	1998 03 29	704	0.6−	0.3−	1998 04 22	704	0.1+	0.0
1993 03 20	809	0.8−	0.3−	1998 03 29	704	1.1−	0.4+	1998 04 22	704	0.2+	0.6+
1993 03 24	809	1.2−	0.4+	1998 03 29	704	0.0	0.2−	1998 04 22	704	0.2+	0.5+
1993 04 21	413	(9.7−	5.0+)	1998 03 29	704	0.2+	0.7−	1998 04 22	704	0.9+	0.7−
1995 08 19	809	0.7+	0.1−	1998 03 29	704	0.2−	0.5−	1998 04 22	704	0.7+	0.6+

**(9067)* 1993 HR = 1971 UX₂ = 1983 EK₄ = 1985 SJ₆ = 1985 VM₁
= 1988 GJ₂**

Discovered 1993 Apr. 16 by K. Endate and K. Watanabe at Kitami.

Id. T. B. Spahr (*MPC* 30451)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21007140	ω	296.81643	+0.71731256	+0.69536125		
<i>a</i>	2.8025805	Ω	19.23359	−0.58242527	+0.63307154		
<i>e</i>	0.1484736	<i>i</i>	7.67469	−0.38241797	+0.34013698		
<i>P</i>	4.69	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 10 27	095	0.2+	0.4−	1993 04 27	809	1.4+	1.3−	1998 05 22	704	1.1−	0.5−
1983 03 09	688	(1.2+	3.8+)	1993 04 27	809	1.8+	1.2−	1998 05 22	704	1.1−	0.6−
1983 03 09	688	0.7+	1.5−	1993 04 27	809	(2.5+	1.2−)	1998 05 22	704	0.8−	0.3+
1985 09 21	095	2.4+	0.5+	1993 04 29	400	(0.7−	3.2+)	1998 05 22	704	0.7−	0.0
1985 11 07	688	1.6−	1.0−	1993 04 29	400	0.9−	0.1−	1998 05 24	704	0.3−	0.8−
1985 11 07	688	0.3−	0.7−	1993 05 01	809	0.9−	0.3+	1998 05 24	704	0.0	0.1−
1988 04 13	054	0.8−	0.0	1993 05 01	809	0.7−	0.1+	1998 05 24	704	0.5−	1.4+
1993 03 24	675	0.4−	0.8+	1993 05 01	809	0.3−	0.1+	1998 05 24	704	0.7+	0.7+
1993 03 24	675	0.0	1.0−	1993 05 13	361	(2.9−	0.7+)	1998 05 24	704	1.0−	0.7+
1993 04 16	400	(0.6−	4.4+)	1993 05 13	361	(0.8−	2.7+)	1998 06 25	566	1.6+	1.1−
1993 04 16	400	(1.5−	2.9+)	1993 05 14	361	0.9−	0.8+	1998 06 25	566	1.5+	0.8−
1993 04 20	400	0.4−	1.3+	1993 05 14	361	(2.5−	0.7−)	1998 06 25	566	1.7+	1.3−
1993 04 20	400	0.6+	1.1+	1998 05 22	704	0.5+	0.3+				

(9068)* 1993 OD = 1992 AY₂

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

Id. G. V. Williams (*MPC* 22490)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.40124813	ω	104.62831	+0.63428659	−0.71510632		
<i>a</i>	1.8205141	Ω	302.12298	+0.50546446	+0.67112463		
<i>e</i>	0.1501123	<i>i</i>	20.29652	+0.58496683	+0.19548579		
<i>P</i>	2.46	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 01 01	675	0.7−	0.5−	1993 08 21	675	0.1−	1.2−	1997 02 15	423	0.1−	1.2−
1992 01 01	675	1.2−	0.7−	1993 08 21	675	1.6+	0.3+	1997 02 20	608	1.5−	1.0−
1992 01 10	675	0.1+	0.9−	1993 09 12	801	0.3−	0.4−	1997 02 20	608	1.6−	1.1−
1992 01 10	675	0.7+	1.3−	1993 09 12	801	0.2−	0.2−	1997 02 22	608	(2.2−	0.7−)
1993 07 16	675	0.0	0.2+	1993 09 15	801	0.4−	0.2−	1997 02 22	608	0.5−	0.7−
1993 07 16	675	0.8+	0.4+	1993 09 15	801	0.2−	0.9−	1998 06 29	704	1.2+	0.2+
1993 07 20	675	0.4+	0.8−	1993 10 13	801	0.6+	0.6+	1998 06 29	704	1.2+	0.4−
1993 07 20	675	1.3−	0.0	1993 10 14	801	1.1+	0.1+	1998 06 29	704	1.2+	1.1−
1993 07 23	675	0.3−	1.0−	1993 10 18	801	0.3+	0.5−	1998 06 29	704	1.5+	1.0−
1993 07 23	675	0.6+	0.6−	1993 10 18	801	0.9+	1.4−	1998 06 29	704	0.4+	1.2−
1993 07 24	675	1.3−	1.1+	1993 10 20	657	0.7−	0.4−	1998 07 23	127	0.2−	0.0
1993 07 26	675	0.1−	0.6−	1993 10 20	657	0.2+	0.6−	1998 07 23	127	0.2−	0.2+
1993 07 26	675	1.9+	1.9−	1993 10 20	657	0.2−	0.2+	1998 07 23	127	0.4−	0.1−
1993 07 26	675	0.3−	0.2−	1997 02 15	423	1.0−	0.7−	1998 07 30	127	0.1+	0.3+
1993 07 26	675	0.5+	0.9−	1997 02 15	423	1.1−	1.0−	1998 07 30	127	0.2+	0.2+
1993 08 19	675	0.6+	0.4+	1997 02 15	423	0.5−	0.9−				
1993 08 19	675	0.7+	0.4−	1997 02 15	423	0.2−	0.3−				

(9069)* 1993 OV = 1991 XF₅

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

Id. G. V. Williams (*MPC* 28074)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.37253104	ω	170.98671	+0.50629818	−0.80446537		
<i>a</i>	1.9129094	Ω	248.03649	+0.76885911	+0.58423299		
<i>e</i>	0.1183878	<i>i</i>	19.56954	+0.39053531	−0.10727201		
<i>P</i>	2.65	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 12 01	809	0.4+	0.9−	1996 10 16	693	0.1−	0.6−	1998 06 16	704	0.3+	0.5+
1991 12 01	809	0.4−	0.5−	1996 12 09	801	0.1+	1.2+	1998 06 16	704	1.1−	0.2−
1991 12 01	809	0.8−	0.9−	1996 12 09	801	1.1+	0.6−	1998 06 16	704	0.9−	1.2+
1993 07 16	675	1.4−	0.8−	1998 05 22	704	1.5+	1.2−	1998 06 18	704	0.1−	0.6+
1993 07 16	675	0.7+	1.2+	1998 05 22	704	0.2−	0.0	1998 06 18	704	0.8−	0.8+
1993 07 20	675	0.3−	0.4+	1998 05 22	704	0.2−	1.4−	1998 06 18	704	0.3−	0.8+
1993 07 20	675	(2.3+	0.5+)	1998 05 22	704	0.2−	0.9−	1998 06 18	704	1.3+	1.0+
1993 08 19	675	(0.6−	2.3−)	1998 05 22	704	0.7−	0.2+	1998 06 18	704	1.7+	1.1+
1993 08 19	675	(1.6+	3.1−)	1998 05 24	704	0.7+	0.1−	1998 06 20	691	1.3−	0.2−
1993 08 21	675	0.7+	1.1−	1998 05 24	704	0.7+	0.8−	1998 06 20	691	1.3−	0.2−
1993 08 21	675	(0.8−	2.9−)	1998 05 24	704	0.8+	0.0	1998 06 20	691	1.2−	0.1−
1993 11 12	801	1.2+	0.5−	1998 05 24	704	1.4+	0.9−	1998 06 30	699	0.5−	0.5−
1993 11 12	801	0.3+	0.1+	1998 05 24	704	(2.2+	1.4−)	1998 06 30	699	0.1−	1.0−
1996 10 14	693	0.0	1.0−	1998 06 16	704	0.5+	0.5−	1998 06 30	699	0.4−	1.1−
1996 10 16	693	0.6−	0.2+	1998 06 16	704	0.6+	0.1−				

(9070)* 1993 OZ₂

Discovered 1993 July 23 by C. S. Shoemaker at Palomar.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 327.43733		(2000.0)		P		Q	
<i>n</i>	0.19044714	ω	247.59372	+0.93761400	−0.11327170		
<i>a</i>	2.9919413	Ω	117.52348	+0.19022154	+0.95851359		
<i>e</i>	0.4351900	<i>i</i>	21.75630	−0.29102534	+0.26157449		
<i>P</i>	5.18	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1993 07 23	675	1.2+	1.1−	1994 03 22	413	0.0	0.0
1993 07 23	675	0.6−	0.4−	1994 03 22	413	1.2−	0.9+
1993 08 13	675	(1.0−	4.8−)	1995 02 01	413	0.1−	0.4+
1993 08 13	675	(2.5−	3.3−)	1995 02 01	413	0.0	0.3+
1993 08 14	675	(2.0−	3.2−)	1995 02 01	104	0.4+	0.2−
1993 08 14	675	(1.7−	3.1−)	1995 02 01	104	1.1+	0.6−
1993 09 01	413	1.0+	0.1+	1995 02 01	104	0.2−	0.6−
1993 09 01	413	1.0+	0.1+	1995 02 01	104	1.2−	1.1+
1993 09 01	413	0.9+	0.2−	1995 02 01	104	0.0	1.3+
1993 09 23	413	0.4−	0.5+	1995 02 01	104	0.6−	1.0+
1993 09 23	413	0.3−	0.3+	1995 02 01	104	0.5+	0.1−
1993 10 26	413	0.3−	0.7−	1995 02 07	658	1.2−	0.8−
1993 10 26	413	0.3−	0.8−	1995 02 07	658	1.4−	1.7−
1993 10 27	413	0.7−	1.0−	1995 02 07	658	(0.9+	4.2−)
1993 10 27	413	0.6−	1.0−	1995 02 21	413	0.5+	0.3+
1993 11 20	413	(2.2−	0.8−)	1995 02 21	413	0.1−	0.3−
1993 11 20	413	2.0−	0.3−	1995 03 01	104	0.1+	0.6+
1994 01 21	413	0.1−	0.4+	1995 03 01	104	0.2+	0.0
1994 01 21	413	0.6−	0.5+	1995 03 01	104	0.3−	0.1+
1994 01 23	413	0.7−	0.1+	1995 04 03	711	1.1+	0.6−
1994 03 20	413	1.0+	1.4+	1995 04 03	711	1.0+	0.7−
1994 03 20	413	0.5+	1.5+	1996 04 19	608	0.1+	0.3+
1994 03 20	413	0.1+	1.0+	1996 04 19	608	0.0	1.5+
						1998 07 26	704
							0.2+
							0.0

(9071)* 1993 OB₁₃ = 1994 TB₁₂

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

Id. G. V. Williams (*MPC* 24232)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 357.71132		(2000.0)		P		Q	
<i>n</i>	0.19510398	ω	112.64410	+0.30251165	+0.95313990		
<i>a</i>	2.9441412	Ω	174.96094	−0.88778543	+0.28303349		
<i>e</i>	0.0912249	<i>i</i>	2.16636	−0.34687710	+0.10684741		
<i>P</i>	5.05	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1992 04 09	691	0.0	0.0	1993 07 23	809	0.3+	0.2+
1992 04 09	691	0.0	0.0	1993 07 26	809	1.5+	1.8+
1992 04 09	691	0.4−	0.2−	1993 07 26	809	0.1−	1.2+
1993 07 12	809	1.9−	1.1−	1993 07 26	809	0.3−	0.9+
1993 07 12	809	1.0−	1.2−	1994 10 10	691	0.6+	0.9−
1993 07 12	809	1.4−	0.4−	1994 10 10	691	0.2+	0.6−
1993 07 12	809	0.7+	0.3+	1994 10 10	691	0.3+	0.4−
1993 07 12	809	1.4+	1.1+	1994 10 13	691	0.1−	0.4−
1993 07 12	809	0.5+	0.7+	1994 10 13	691	0.0	0.2−
1993 07 19	809	(3.5−	4.0−)	1994 10 13	691	0.2−	0.2−
1993 07 19	809	(3.7−	3.0−)	1997 03 05	809	0.7+	0.4+
1993 07 19	809	(3.6−	3.7−)	1997 03 05	809	0.2+	0.6−
1993 07 19	809	(2.8+	3.1+)	1997 03 05	809	0.2−	0.2−
1993 07 19	809	(2.8+	3.4+)	1997 03 06	809	(3.2+	2.8+)
1993 07 19	809	(2.7+	3.0+)	1997 03 06	809	(2.9+	2.3+)
1993 07 23	809	(3.7−	4.3−)	1997 03 06	809	(2.5+	2.7+)
1993 07 23	809	(3.2−	4.1−)	1997 03 13	691	0.6−	0.5−
1993 07 23	809	(3.3−	3.6−)	1997 03 13	691	0.3+	0.1−
1993 07 23	809	0.1+	0.3+	1997 03 13	691	0.1+	0.3−
1993 07 23	809	0.1+	0.1−	1997 04 07	691	0.1−	0.2−
						1998 07 21	704
							0.0
							1.3−

(9072)* 1993 RX₃ = 1991 CQ₂

Discovered 1993 Sept. 12 at Palomar in the course of the Planet-Crossing Asteroid Survey.

Id. G. V. Williams (*MPC* 22960)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 331.34203		(2000.0)		P		Q	
<i>n</i>	0.17115752	ω	10.11293	+0.50845894	+0.82583009		
<i>a</i>	3.2127139	Ω	290.82732	−0.80713636	+0.35841658		
<i>e</i>	0.0606475	<i>i</i>	15.12484	−0.30000067	+0.43536447		
<i>P</i>	5.76	<i>H</i>	11.4	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1991 02 11	413	0.1+	0.4+	1994 10 08	801	0.6+	0.1−
1991 02 12	413	0.1+	0.2−	1994 10 08	801	1.0−	0.1+
1993 08 20	675	(2.4−	2.5+)	1994 11 20	104	0.0	0.4+
1993 08 20	675	0.1−	1.6+	1994 11 20	104	0.2−	0.3+
1993 08 21	675	1.1−	0.7+	1994 11 20	104	0.6+	0.6+
1993 09 12	675	0.5+	0.1−	1996 01 09	608	0.2−	0.1−
1993 09 12	675	0.6+	0.4+	1996 01 12	608	0.2+	0.1−
1993 09 14	675	0.2+	0.8−	1996 01 12	608	0.3+	0.0
1993 09 14	675	0.7−	1.3−	1996 01 29	608	0.4−	0.3+
1994 09 02	801	(2.6+	2.1−)	1996 01 29	608	0.2−	0.2+
1994 09 02	801	1.1+	1.2−	1998 06 06	689	0.5+	0.7+
1994 09 08	801	(0.8+	2.2−)	1998 06 18	423	1.3+	0.2−
1994 09 08	801	0.9−	0.4−	1998 06 19	423	0.3−	0.8+

(9073)* 1994 ER = 1980 BG₄ = 1987 DE₅ = 1989 WC₆ = 1991 JB₇

Discovered 1994 Mar. 4 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 23344)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 167.99230		(2000.0)		P		Q	
<i>n</i>	0.28823114	ω	335.11677	−0.00405787	−0.99474252		
<i>a</i>	2.2697366	Ω	114.97605	+0.93533260	−0.03997402		
<i>e</i>	0.1242582	<i>i</i>	6.48157	+0.35374632	+0.09428357		
<i>P</i>	3.42	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1980 01 22	095	0.2+	0.7+	1994 03 06	411	0.0	0.3+
1980 01 23	095	(1.9+	3.9−)	1994 03 06	411	0.2+	0.2−
1987 02 23	010	(4.8+	3.9−)	1994 03 10	411	0.5−	0.2−
1987 02 23	010	0.6−	1.0+	1994 03 10	411	1.0−	0.9−
1987 02 23	010	0.4+	1.2−	1994 03 10	411	0.6−	0.5−
1989 11 24	095	1.6−	1.4+	1996 12 01	689	1.7+	0.4+
1991 05 13	809	0.6+	1.1−	1996 12 31	886	0.0	0.7−
1991 05 13	809	1.7+	1.1−	1996 12 31	886	0.3+	0.8−
1991 05 13	809	0.9+	0.5−	1997 01 03	886	0.4+	0.4+
1994 03 04	411	0.8+	1.4+	1997 01 03	886	0.2−	0.3+
1994 03 04	411	0.7−	1.0+	1998 05 24	704	0.8−	1.7+
1994 03 06	411	0.1+	0.3+	1998 05 24	704	1.2−	1.5+

(9074)* 1994 FZ = 1990 DE₁ = 1991 RD₃₀

Discovered 1994 Mar. 31 by K. Endate and K. Watanabe at Kitami.

Id. S. Nakano (*MPC* 23531)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 36.20444		(2000.0)		P		Q	
<i>n</i>	0.26989524	ω	131.96350	−0.60454238	+0.79059033		
<i>a</i>	2.3714059	Ω	100.58118	−0.75702603	−0.53214848		
<i>e</i>	0.1884649	<i>i</i>	5.68909	−0.24787114	−0.30296028		
<i>P</i>	3.65	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1954 05 28	675	0.1+	0.4−	1994 04 08	400	1.5+	0.0
1954 05 28	675	0.3+	0.4+	1994 04 15	400	1.4−	0.3+
						1998 06 26	704
							0.2+
							0.6−
						1998 06 26	704
							0.4−
							0.1+

1990 02 17	046	0.2−	1.6−	1994 04 15	400	(3.3−	0.2−)	1998 06 26	704	0.1+	0.4+
1990 02 17	046	(0.0	2.7−)	1994 05 06	400	0.6−	0.9+	1998 06 26	704	(0.6+	2.6+)
1990 02 20	046	0.6−	0.3+	1994 05 06	400	0.4−	0.5−	1998 06 26	704	1.0+	1.4+
1990 02 20	046	2.0−	1.0−	1995 09 20	400	0.4+	0.7−	1998 06 28	423	0.4−	1.1−
1990 02 21	046	0.5+	1.5−	1995 09 20	400	0.8−	1.1−	1998 06 28	423	0.1−	0.3−
1990 02 21	046	2.1+	1.8−	1995 09 21	400	0.0	1.4−	1998 06 28	423	0.3−	1.1−
1991 09 14	675	0.1−	1.5−	1995 09 21	400	0.1+	0.8−	1998 06 30	470	0.0	0.6−
1991 09 14	675	1.4−	0.3−	1996 12 22	327	0.1−	0.3+	1998 06 30	470	1.0+	0.9+
1991 09 15	675	0.0	1.2−	1996 12 22	327	1.3+	0.3+	1998 07 21	704	0.3+	0.4+
1991 09 15	675	(0.4+	2.7−)	1996 12 22	327	0.9+	0.4+	1998 07 21	704	1.3−	0.9+
1994 03 31	400	1.1−	0.2−	1998 06 24	704	0.1−	0.4−	1998 07 21	704	1.0+	0.6−
1994 03 31	400	0.9−	1.3−	1998 06 24	704	1.7+	0.1+	1998 07 21	704	0.6−	0.5−
1994 04 05	400	1.2−	1.1+	1998 06 24	704	0.1−	0.2+	1998 07 21	704	0.6+	0.5−
1994 04 05	400	(2.1+	3.0−)	1998 06 24	704	0.1−	0.1−				
1994 04 08	400	0.7+	0.5−	1998 06 24	704	0.9+	0.0				

(9075)* 1994 GD₉ = 1989 YQ

Discovered 1994 Apr. 14 by E. F. Helin at Palomar.

Id. B. G. Marsden (*MPC* 23678)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	77.13583		(2000.0)	P	Q
<i>n</i>	0.25769645	ω	303.04391	−0.76324350	−0.63444749
<i>a</i>	2.4456657	Ω	198.55654	+0.64202960	−0.76595808
<i>e</i>	0.3172852	<i>i</i>	22.58315	−0.07250755	−0.10384893
<i>P</i>	3.82	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1988 09 11	675	0.5+	0.4−	1995 08 21	658	0.4+	1.0+	1998 05 23	704	0.8+	0.0
1989 12 27	413	0.6+	0.1−	1995 08 21	658	0.8+	0.9+	1998 05 23	704	0.0	0.3+
1989 12 27	413	1.7+	1.3−	1995 08 31	608	0.0	0.6−	1998 05 23	704	1.2+	0.6−
1989 12 29	413	0.3−	0.1+	1995 08 31	608	0.3+	0.6−	1998 05 26	704	0.8−	1.1−
1989 12 29	413	0.8−	1.4+	1995 08 31	608	1.2−	0.4+	1998 05 26	704	0.3−	0.7−
1994 04 14	675	0.1−	0.7+	1995 09 01	608	0.3−	0.3+	1998 05 26	704	0.1+	0.5+
1994 04 14	675	0.9−	1.4+	1995 09 01	608	0.0	0.1−	1998 05 26	704	(1.6+	2.8−)
1994 04 15	675	0.2+	0.8−	1996 10 05	816	0.1−	0.5+	1998 05 26	704	0.8−	1.5−
1994 04 15	675	0.7−	1.5+	1996 10 05	816	0.2−	0.6+	1998 06 19	704	0.2+	0.8+
1994 05 05	675	1.1−	0.6+	1996 10 05	816	0.5−	0.6+	1998 06 19	704	1.6+	1.1+
1994 05 05	675	(0.4−	2.7−)	1996 10 31	689	(6.9+	0.4+)	1998 06 19	704	0.7+	0.0
1995 08 21	658	0.4−	0.9+	1998 05 23	704	0.3+	0.1−	1998 06 19	704	0.1−	1.6−

(9076)* 1994 JT

Discovered 1994 May 8 by A. Nakamura at Kuma Kogen.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	182.93447		(2000.0)	P	Q
<i>n</i>	0.28629283	ω	306.31972	−0.43098923	−0.90203700
<i>a</i>	2.2799697	Ω	169.13199	+0.86336739	−0.41996448
<i>e</i>	0.0520940	<i>i</i>	7.32271	+0.26238337	−0.09979518
<i>P</i>	3.44	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1994 05 08	360	0.3+	0.8−	1995 09 24	360	0.3+	0.1+	1997 04 28	704	1.2−	0.3+
1994 05 08	360	0.1−	0.9−	1995 09 24	360	0.6+	0.0	1997 04 28	704	0.6−	0.5−
1994 05 12	360	0.3+	0.2−	1995 10 12	360	0.3+	1.0−	1997 04 28	704	0.4−	0.1+
1994 05 12	360	0.2+	0.4−	1995 10 12	360	0.2+	0.2−	1997 04 28	704	(4.2−	0.2−)
1994 05 16	360	0.5−	0.1+	1995 10 12	360	0.2−	1.0−	1998 06 17	360	0.2−	0.4+
1994 05 16	360	0.5−	0.0	1995 10 17	360	0.3−	0.5−	1998 06 17	360	0.0	0.1+
1994 06 02	360	0.0	0.4−	1995 10 17	360	0.4−	0.3−	1998 06 17	360	0.7−	0.2+
1994 06 02	360	0.1−	0.2+	1997 03 01	360	0.1+	0.1−	1998 07 02	360	0.3−	0.5+
1994 06 03	360	0.2+	0.4−	1997 03 01	360	0.2+	0.3−	1998 07 02	360	0.2−	0.5+
1994 06 03	360	0.2−	0.2−	1997 03 05	360	0.2+	0.1+	1998 07 23	360	0.2+	0.1+
1995 09 05	360	0.4−	0.4+	1997 03 05	360	0.2+	0.2+	1998 07 23	360	0.3+	0.1+
1995 09 05	360	0.5−	0.5+	1997 03 05	360	0.1+	0.2+	1998 08 02	360	0.5+	0.2+
1995 09 05	360	0.1+	0.3+	1997 04 07	360	0.5+	0.4+	1998 08 02	360	0.1+	0.3+
1995 09 18	360	0.2+	0.3−	1997 04 07	360	0.3+	0.1+				
1995 09 18	360	0.5+	0.2−	1997 04 28	704	0.2+	0.5+				

(9077)* 1994 NC = 1981 QA₄

Discovered 1994 July 3 at Farra d'Isonzo.

Id. G. V. Williams (*MPC* 23865)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	243.30307		(2000.0)	P	Q
<i>n</i>	0.22376904	ω	236.71920	+0.73049248	−0.68106894
<i>a</i>	2.6870106	Ω	165.98211	+0.67501682	+0.70891599
<i>e</i>	0.1781966	<i>i</i>	11.97495	+0.10360035	+0.18325726
<i>P</i>	4.40	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1981 08 30	675	0.0	0.3−	1994 09 11	595	1.5+	1.0+	1997 03 11	595	0.8−	1.2−
1981 08 31	675	0.7−	0.5−	1995 10 23	801	0.2−	0.2−	1998 05 26	595	1.0−	0.1−
1988 03 18	675	0.9+	0.0	1995 10 23	801	0.2−	0.4−	1998 05 26	595	0.8−	1.1−
1988 03 18	675	0.5+	0.3+	1995 10 29	801	0.1+	0.1+	1998 05 26	595	0.2+	1.7−
1994 07 03	595	0.1−	0.0	1995 10 29	801	0.0	0.1+	1998 05 26	595	1.0+	1.0−
1994 07 03	595	0.0	0.5+	1995 11 19	595	0.0	0.3−	1998 06 03	704	1.3+	1.3−
1994 07 05	595	1.1+	0.3−	1995 11 19	595	0.2+	0.2−	1998 06 03	704	(2.2−	0.6+)
1994 07 05	595	0.0	0.1−	1995 11 20	595	0.0	0.2−	1998 06 03	704	1.1−	0.4−
1994 07 06	595	0.1+	0.9−	1995 11 20	595	0.2+	0.2−	1998 06 03	704	(1.6−	2.2−)
1994 07 06	595	0.1+	0.7−	1995 11 23	801	0.1−	0.6−	1998 06 18	595	0.1−	0.0
1994 07 09	595	0.1−	1.0−	1995 11 23	801	0.5+	0.4−	1998 06 18	595	0.2−	0.8+
1994 07 10	595	0.4+	0.8−	1995 11 25	801	0.1+	0.9−	1998 06 19	704	0.1−	1.2+
1994 08 05	595	0.1−	0.3−	1996 01 13	595	0.3−	0.9−	1998 06 19	704	0.0	1.3+
1994 08 05	595	0.2−	0.6−	1996 01 14	595	0.2+	0.9−	1998 06 19	704	0.9+	1.4+
1994 08 07	595	0.1−	0.3−	1996 01 14	595	(2.3−	1.2−)	1998 06 19	704	0.2−	0.2+
1994 08 07	595	0.6−	1.8−	1996 01 14	595	0.4−	0.4−	1998 06 19	704	0.6−	0.6−
1994 08 26	595	0.3−	0.3−	1996 02 14	595	0.1−	0.5+	1998 06 23	595	0.9−	0.5−
1994 08 26	595	0.1−	0.3+	1996 02 14	595	0.1−	0.5+	1998 06 23	595	0.5−	0.2+
1994 08 27	595	0.3−	0.0	1996 02 19	689	0.2−	0.3−	1998 06 25	704	0.1−	0.1+
1994 08 27	595	0.6−	0.4−	1996 02 22	595	0.1−	0.1+	1998 06 25	704	0.2+	0.9+
1994 09 03	801	0.3−	1.1+	1996 02 22	595	0.7+	0.2−	1998 06 25	704	0.5−	0.7−
1994 09 10	595	0.5+	0.7+	1997 03 09	595	0.0	1.3−	1998 06 25	704	0.2+	0.6−
1994 09 10	595	1.6+	0.9+	1997 03 09	595	0.4−	0.2+	1998 06 25	704	0.8+	0.1+
1994 09 11	595	0.7+	1.0+	1997 03 11	595	0.8−	0.7+				

(9078)* 1994 PB₂ = 1975 TP₁ = 1975 VK

Discovered 1994 Aug. 9 at Palomar in the course of Planet-Crossing Asteroid

Survey.

Id. S. Nakano (*MPC* 26174)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	281.18574		(2000.0)	P	Q
<i>n</i>	0.20420523	ω	6.90967	+0.94970650	+0.31297353
<i>a</i>	2.8559996	Ω	334.84440	−0.28844360	+0.86158746
<i>e</i>	0.0714827	<i>i</i>	1.38215	−0.12189278	+0.39964312
<i>P</i>	4.83	<i>H</i>	12.9	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 10 03	095	0.4−	0.3−	1994 09 04	809	1.0−	0.2−	1998 05 22	704	1.4+	0.7+
1975 11 01	095	1.3+	1.6−	1994 09 09	691	(2.8−	0.9+)	1998 05 22	704	(1.7−	2.5+)
1994 08 09	675	(2.8−	2.7−)	1994 09 09	691	(3.2−	0.9+)	1998 05 22	704	0.3−	0.8+
1994 08 09	675	(2.6−	1.3−)	1994 09 09	691	(3.0−	0.8+)	1998 05 22	704	1.5−	0.3+
1994 08 10	809	0.4+	0.7+	1995 11 24	411	0.1+	0.3−	1998 05 24	704	0.7−	0.1−
1994 08 10	809	0.3+	1.1+	1995 11 24	411	1.1−	0.7+	1998 05 24	704	0.1−	0.3+
1994 08 10	809	0.6−	1.0+	1995 11 26	411	0.5−	1.0+	1998 05 24	704	0.9+	1.0+
1994 08 11	809	1.3+	0.3−	1995 11 26	411	0.3−	0.3+	1998 05 24	704	0.2+	1.2+
1994 08 11	809	0.9+	0.2−	1995 12 14	817	0.2−	0.2−	1998 05 24	704	0.7−	0.3+
1994 08 11	809	0.6+	0.1+	1995 12 14	817	0.0	0.1+	1998 06 03	704	0.4+	0.1−
1994 08 11	675	(2.9−	0.9+)	1995 12 14	817	0.2−	0.3−	1998 06 03	704	0.4+	0.0
1994 08 11	675	2.1−	0.4−	1995 12 14	817	0.2+	0.1+	1998 06 03	704	0.1−	0.8−
1994 09 03	809	0.5+	0.3+	1996 01 09	608	0.5+	0.6+	1998 06 03	704	0.8−	0.3−
1994 09 03	809	0.2+	0.0	1996 01 09	608	0.4+	0.5+	1998 06 03	704	0.5−	0.4+
1994 09 03	809	0.2−	0.1+	1996 01 10	608	0.3+	0.9+	1998 07 02	699	0.3−	1.0−
1994 09 04	809	0.8−	0.0	1996 01 10	608	0.6+	0.3+	1998 07 02	699	1.3+	0.9−
1994 09 04	809	0.6−	0.4+	1998 05 22	704	0.1−	0.1+	1998 07 02	699	1.0+	0.4−

(9079)* 1994 PC₃₄ = 1993 JM

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

Id. A. Gnädig (*MPC* 30276)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		301.42343		(2000.0)		P		Q	
<i>n</i>		0.19029189	ω	135.72536		+0.37308141		+0.92485114	
<i>a</i>		2.9935685	Ω	155.89017		−0.89355038		+0.37960847	
<i>e</i>		0.0670881	<i>i</i>	10.42230		−0.24975586		+0.02340474	
<i>P</i>		5.18	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1	

Residuals in seconds of arc

1993 05 14	399	(0.8+ 2.2−)	1997 03 05	691	0.2+ 0.7+	1998 04 24	704	0.3+ 0.4−
1993 05 14	399	(1.3− 2.3−)	1997 03 12	691	0.0 1.6+	1998 04 24	704	0.9+ 0.7+
1993 05 16	399	0.7− 0.9−	1997 03 12	691	0.0 1.4+	1998 04 24	704	0.2+ 0.2+
1993 05 16	399	(2.2− 1.8+)	1997 03 12	691	0.1+ 1.7+	1998 04 24	704	0.1+ 0.2+
1993 06 14	691	0.0 0.5−	1998 03 24	704	0.0 0.3+	1998 04 30	721	0.4+ 0.2−
1993 06 14	691	0.0 1.0−	1998 03 24	704	0.3− 0.4+	1998 04 30	721	0.6+ 0.3+
1993 06 14	691	0.0 1.2−	1998 03 24	704	0.1− 0.8+	1998 05 01	721	0.4− 0.1+
1994 08 10	809	0.4+ 1.2+	1998 03 24	704	1.5− 0.5+	1998 05 01	721	0.2− 0.2+
1994 08 10	809	0.0 0.3+	1998 03 24	704	(2.2− 1.0+)	1998 05 16	704	0.6− 0.7+
1994 08 10	809	0.6− 0.2+	1998 04 21	704	0.3+ 0.4−	1998 05 16	704	0.6− 0.9+
1994 08 11	809	(1.6− 2.4−)	1998 04 21	704	0.4+ 0.4−	1998 05 16	704	0.4+ 1.3+
1994 08 11	809	(1.4− 2.3−)	1998 04 21	704	0.5+ 0.5−	1998 05 16	704	0.5− 0.1+
1994 08 11	809	(1.4− 2.1−)	1998 04 21	704	0.2− 0.6−	1998 05 16	704	1.7− 1.0−
1994 09 03	809	0.4− 0.7+	1998 04 21	704	0.1+ 0.1−	1998 05 23	699	1.0+ 1.4+
1994 09 03	809	0.6− 0.2+	1998 04 23	704	0.5+ 0.0	1998 05 23	699	0.2− 0.2−
1994 09 03	809	0.1− 0.1+	1998 04 23	704	0.2+ 0.2+	1998 05 23	699	0.2+ 0.3+
1994 09 04	809	0.1+ 2.0+	1998 04 23	704	0.4+ 0.7+	1998 05 28	704	0.4− 0.3+
1994 09 04	809	0.2+ 0.8+	1998 04 23	704	0.4+ 0.3−	1998 05 28	704	0.5+ 1.7+
1994 09 04	809	0.2− 1.4+	1998 04 23	704	0.8+ 0.2+	1998 05 28	704	1.2− 1.8−
1997 03 05	691	0.3+ 0.7+	1998 04 24	704	0.5+ 0.0	1998 05 28	704	(2.0− 2.4+)

(9080)* 1994 TP = 1977 RK₂₀ = 1997 HL₁

Discovered 1994 Oct. 2 by K. Endate and K. Watanabe at Kitami.

Id. G. V. Williams (*MPC* 29921)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		227.60409		(2000.0)		P		Q	
<i>n</i>		0.17730540	ω	194.93417		+0.79836987		−0.60026995	
<i>a</i>		3.1380130	Ω	202.16549		+0.56464443		+0.77382509	
<i>e</i>		0.1191160	<i>i</i>	7.27336		+0.20924200		+0.20216507	
<i>P</i>		5.56	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1	

Residuals in seconds of arc

1977 09 09	095	0.6+ 2.2−	1994 10 29	114	1.3+ 1.0+	1998 05 22	704	0.3+ 1.0+
1992 05 07	691	0.1+ 0.1+	1994 10 29	114	1.3+ 0.1−	1998 05 22	704	0.3− 1.0−
1992 05 07	691	0.0 0.1+	1994 11 01	114	(3.2+ 0.2−)	1998 05 22	704	0.8− 0.7−
1992 05 07	691	0.0 0.0	1994 11 01	114	1.4+ 0.2−	1998 05 24	704	0.6− 0.6+
1994 10 02	400	0.5+ 0.2+	1997 04 28	691	0.0 0.5−	1998 05 24	704	0.8+ 0.5+
1994 10 02	400	(1.2− 2.8−)	1997 04 28	691	0.1− 0.1−	1998 05 24	704	0.1+ 0.1+
1994 10 03	400	0.3− 0.0	1997 04 28	691	0.2− 0.1−	1998 05 24	704	1.7− 0.1−
1994 10 03	400	0.0 0.3−	1997 04 30	691	0.1− 0.9−	1998 05 24	704	0.6− 0.9+
1994 10 08	691	1.4− 0.7−	1997 04 30	691	0.0 0.0	1998 06 24	704	1.2+ 1.0−
1994 10 08	691	1.5− 1.0−	1997 04 30	691	0.1+ 0.3−	1998 06 24	704	0.3+ 1.8+
1994 10 08	691	0.8− 0.6−	1997 05 03	691	0.2− 0.5−	1998 06 24	704	0.1+ 1.3−
1994 10 11	397	0.9+ 0.5+	1997 05 03	691	0.2− 0.2−	1998 06 26	704	1.4− 0.1+
1994 10 11	397	0.8+ 0.3−	1997 05 03	691	0.0 0.2−	1998 06 26	704	0.7+ 0.4+
1994 10 25	400	1.8− 0.3+	1998 05 22	704	1.2+ 0.8−	1998 06 26	704	0.6− 0.6−
1994 10 25	400	0.4− 1.6+	1998 05 22	704	0.8+ 0.3+	1998 06 26	704	0.5+ 1.1+

(9081)* 1994 VY

Discovered 1994 Nov. 3 by A. Nakamura at Kuma Kogen.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		92.29896		(2000.0)		P		Q	
<i>n</i>		0.19274985	ω	291.91520		−0.97937160		+0.13671878	
<i>a</i>		2.9680646	Ω	256.19043		−0.07521901		−0.93009893	
<i>e</i>		0.0296304	<i>i</i>	8.81367		−0.18754563		−0.34091634	
<i>P</i>		5.11	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1	

Residuals in seconds of arc

1994 11 03	360	0.2+ 0.0	1995 11 21	360	0.2− 0.1+	1997 04 12	360	0.1+ 0.7+
1994 11 03	360	0.2+ 0.4−	1995 11 21	360	0.4− 0.1−	1997 04 12	360	0.4− 0.6+
1994 11 03	360	0.3+ 0.5+	1995 11 21	360	0.6− 0.1−	1997 04 29	360	0.3+ 0.1−
1994 11 06	360	0.3− 0.5−	1995 12 17	360	0.0 0.5−	1997 04 29	360	0.1+ 0.2−
1994 11 06	360	0.3− 0.5−	1995 12 17	360	0.4− 0.5−	1998 05 31	360	0.1+ 0.5−
1994 11 23	360	0.4− 0.1+	1995 12 27	360	0.3− 0.3−	1998 05 31	360	0.7+ 0.7−
1994 11 23	360	0.3+ 0.1+	1995 12 27	360	0.4− 0.1−	1998 05 31	360	0.2+ 0.8−
1994 12 04	360	0.6+ 0.6−	1996 01 11	360	0.1+ 0.3−	1998 06 03	360	0.2− 0.0
1994 12 04	360	0.3+ 0.1−	1996 01 11	360	0.1+ 0.5−	1998 06 03	360	0.4− 0.1−
1994 12 22	360	0.2− 0.3−	1997 03 11	360	0.2+ 1.1−	1998 06 17	360	0.4− 0.4−
1994 12 22	360	0.0 0.1−	1997 03 11	360	0.1− 1.3−	1998 06 17	360	0.7− 0.5−
1995 11 18	360	0.9+ 0.3−	1997 04 01	360	0.3− 0.1−	1998 07 02	360	0.9+ 0.1+
1995 11 18	360	0.9+ 0.0	1997 04 01	360	0.4− 0.0	1998 07 02	360	0.5+ 0.1−

(9082)* 1994 VR₆

Discovered 1994 Nov. 4 by C. S. Shoemaker at Palomar.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		320.03198		(2000.0)		P		Q	
<i>n</i>		0.21770164	ω	280.98948		+0.78358200		+0.47787644	
<i>a</i>		2.7367067	Ω	51.79430		−0.14598162		+0.76276900	
<i>e</i>		0.4262360	<i>i</i>	30.34859		−0.60389454		+0.43568058	
<i>P</i>		4.53	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2	

Residuals in seconds of arc

1994 10 31	675	1.3+	1.9-	1994 12 24	897	0.4+	0.7-	1997 03 27	658	0.6+	0.6-
1994 10 31	675	0.6+	0.2-	1994 12 24	897	1.2+	0.6+	1997 03 30	696	(2.1+	1.3-)
1994 11 04	675	0.4+	1.5-	1994 12 31	658	0.5-	0.4-	1997 03 30	696	(2.5+	1.4-)
1994 11 04	675	0.3+	1.2-	1994 12 31	658	0.6-	0.4-	1998 04 04	561	0.6-	0.1+
1994 11 06	675	0.6+	1.0-	1994 12 31	658	0.4-	0.5-	1998 04 04	561	0.1-	0.3+
1994 11 06	675	0.2-	1.4-	1994 12 31	658	0.5-	0.6-	1998 04 04	561	0.4-	0.1+
1994 11 09	675	0.8-	0.8-	1994 12 31	658	0.4-	0.4-	1998 04 18	688	0.4-	0.2-
1994 11 24	670	1.2+	1.3+	1995 01 01	897	0.5-	0.5+	1998 04 18	688	0.7-	0.2-
1994 11 24	670	0.7+	0.9+	1995 01 01	897	0.1+	0.0	1998 04 18	688	0.3-	0.2-
1994 11 24	670	1.0+	0.6+	1995 01 01	897	0.6+	0.4+	1998 04 22	704	0.6-	0.5-
1994 11 24	670	0.9+	1.5+	1995 01 01	897	0.4+	0.2-	1998 04 22	704	0.1-	0.5-
1994 11 24	360	1.0+	1.0+	1995 01 22	658	0.0	0.1+	1998 04 22	704	0.2-	0.8-
1994 11 24	360	1.0+	0.9+	1995 01 22	658	0.2+	0.4+	1998 04 22	704	0.2-	0.6-
1994 11 25	411	0.9+	0.6+	1995 01 23	658	0.8-	0.7-	1998 04 22	704	1.0-	1.1-
1994 11 25	411	1.3+	0.3+	1995 01 23	658	0.0	0.4-	1998 04 30	566	0.3-	0.5-
1994 11 25	411	1.4+	0.2+	1995 01 23	658	0.1-	0.2+	1998 04 30	566	0.1-	0.9-
1994 11 25	587	0.0	1.1-	1995 01 27	540	1.1+	0.4+	1998 04 30	566	0.4-	0.8-
1994 11 25	587	0.9+	0.6+	1995 01 27	540	0.0	0.6+	1998 05 05	699	0.7-	0.5+
1994 11 27	104	0.8-	0.3-	1995 01 27	540	0.8-	0.9-	1998 05 05	699	0.5+	0.1+
1994 11 27	104	0.1-	0.6-	1995 01 31	540	0.2-	0.3-	1998 05 05	699	0.1-	0.2-
1994 11 28	675	0.3+	1.5-	1995 01 31	540	1.9+	1.4+	1998 05 15	426	0.3-	0.6-
1994 11 28	675	(1.7+	2.5-)	1995 02 20	587	0.5-	0.5-	1998 05 15	426	0.1-	0.6-
1994 11 28	104	0.7-	0.1+	1995 02 20	587	0.4+	0.4+	1998 05 15	426	0.3-	0.6-
1994 11 28	104	0.3-	0.1-	1995 02 20	587	0.5-	0.6+	1998 05 16	426	0.8-	0.6-
1994 11 28	104	0.4-	0.0	1995 02 24	360	0.2-	0.3+	1998 05 16	426	0.3-	0.1-
1994 11 28	587	1.8-	1.7+	1995 02 24	360	0.9-	0.1-	1998 05 20	860	0.2+	0.1-
1994 11 28	587	0.5-	0.2+	1995 02 27	587	0.8+	0.4+	1998 05 20	860	0.2-	0.7-
1994 11 28	587	0.4-	0.2+	1995 02 27	587	1.4+	0.4-	1998 05 20	860	(0.0	2.4-)
1994 11 30	675	0.3+	1.0-	1995 02 27	587	0.5+	0.0	1998 05 21	360	0.6+	0.3-
1994 11 30	104	0.3-	0.1-	1995 03 22	587	0.1-	0.4-	1998 05 21	360	0.5+	0.1-
1994 11 30	104	0.5-	0.0	1995 03 22	587	0.7-	0.9-	1998 05 22	704	0.3+	0.3-
1994 11 30	104	0.2-	0.0	1995 10 27	104	0.5+	0.0	1998 05 22	704	0.5-	0.3+
1994 12 01	540	0.2+	0.1+	1995 10 27	104	0.1+	0.4-	1998 05 22	704	0.0	0.3-
1994 12 01	540	0.0	0.4+	1995 10 27	104	0.5+	0.2-	1998 05 22	704	0.1+	1.0-

1998 AUG. 8

M.P.C. 32193

1994 12 01	540	0.2−	0.5+	1995 10 27	104	0.7+	0.0	1998 05 22	704	0.0	1.2−
1994 12 03	691	1.1−	0.0	1995 10 27	104	0.1−	0.2+	1998 05 22	699	0.1−	1.2+
1994 12 03	691	1.2−	0.2−	1995 10 28	658	0.8−	0.2−	1998 05 22	699	0.1+	0.3+
1994 12 03	675	1.9+	0.0	1995 10 28	658	0.5−	0.4−	1998 05 22	699	1.5+	1.2+
1994 12 04	410	0.3−	0.4−	1995 10 29	658	0.3−	0.4−	1998 05 23	704	0.3+	1.8−
1994 12 04	410	0.4−	0.6−	1995 10 29	658	0.9−	0.4+	1998 05 23	704	1.3−	1.4+
1994 12 04	410	0.7−	1.0−	1995 10 29	658	0.3−	0.3−	1998 05 23	704	0.2−	0.3+
1994 12 06	587	0.1+	0.1−	1995 10 29	658	0.4−	0.1+	1998 05 23	704	0.0	1.2+
1994 12 06	587	0.1−	0.3−	1995 11 20	658	0.0	1.2−	1998 05 23	704	0.1−	0.5+
1994 12 09	657	0.6−	0.8+	1995 11 20	658	0.5+	0.3+	1998 05 24	704	0.1−	0.2+
1994 12 09	657	2.0−	0.6+	1995 11 20	658	0.0	0.0	1998 05 24	704	0.2−	0.0
1994 12 09	657	0.1−	1.3+	1995 12 23	658	0.5+	0.9+	1998 05 24	704	0.6+	1.0−
1994 12 18	413	0.2−	0.3+	1995 12 23	658	0.4+	0.5+	1998 05 24	704	0.7−	0.2+
1994 12 18	413	0.1−	0.1+	1995 12 23	658	0.1+	0.1−	1998 05 24	704	0.2+	0.6+
1994 12 18	540	0.3+	1.4+	1996 01 12	658	1.3−	0.0	1998 05 29	422	0.8−	0.4+
1994 12 18	540	0.3+	0.0	1996 01 12	658	0.9−	0.3−	1998 05 29	422	0.9−	0.3+
1994 12 18	540	0.4+	0.8−	1996 01 12	658	0.5−	0.6−	1998 05 29	422	0.5−	0.1+
1994 12 20	608	0.6+	0.2+	1996 05 02	709	0.4+	0.0	1998 06 16	704	0.5+	0.2+
1994 12 20	608	0.7+	0.4+	1996 05 02	709	0.4+	0.2−	1998 06 16	704	0.1+	0.4+
1994 12 20	608	0.5+	0.3+	1996 05 02	709	0.4+	0.8−	1998 06 16	704	0.3−	0.9−
1994 12 20	413	0.0	0.0	1996 05 02	709	0.0	0.2−	1998 06 16	704	(0.3+ 2.2−)	
1994 12 20	413	0.1+	0.1+	1997 02 24	658	(0.4+ 2.1+)		1998 06 18	704	0.0	0.4−
1994 12 21	413	0.2−	0.3+	1997 02 24	658	0.8+	1.7+	1998 06 18	704	(2.3+ 0.2+)	
1994 12 21	413	0.1−	0.1+	1997 02 24	658	0.8+	1.5+	1998 06 18	704	1.1+	0.1−
1994 12 21	587	1.4−	1.1−	1997 02 24	658	0.5+	1.6+	1998 06 18	704	1.5+	0.3−
1994 12 21	587	0.9−	1.5−	1997 03 27	658	1.5−	0.8−	1998 06 18	704	1.9+	1.1+
1994 12 24	897	0.0	0.1+	1997 03 27	658	0.2−	0.9−				

(9083)* 1994 WC₄ = 1957 SC = 1971 BQ₂ = 1986 TH₁₇ = 1989 KO

Discovered 1994 Nov. 28 by C. S. Shoemaker at Palomar.

Id. G. V. Williams (*MPC* 24402)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	312.12166	(2000.0)	
<i>n</i>	0.23884842	ω	115.60245
<i>a</i>	2.5726920	Ω	269.52214
<i>e</i>	0.1599841	<i>i</i>	14.14252
<i>P</i>	4.13	<i>H</i>	11.9
		<i>G</i>	0.15
		<i>U</i>	2

Residuals in seconds of arc

1957 09 24	760	0.2−	0.7+	1994 11 28	675	0.4+	0.5−	1998 06 23	699	0.1−	0.1−
1971 01 27	805	1.0−	0.5−	1994 11 28	675	1.0+	0.9−	1998 06 23	699	1.4−	0.2+
1986 10 10	095	1.1+	2.1+	1994 11 29	675	0.6+	0.8−	1998 06 30	704	0.2−	0.5+
1986 10 11	095	0.5−	0.0	1994 11 29	675	0.1+	0.5+	1998 06 30	704	0.6+	0.2−
1989 05 31	808	0.2+	1.0−	1994 11 30	675	0.1+	0.5−	1998 06 30	704	0.2−	0.2−
1989 05 31	808	0.9+	2.0−	1994 11 30	675	0.6+	0.3−	1998 06 30	704	0.8+	1.0−
1994 11 04	675	0.1−	0.2−	1994 12 01	675	0.4+	0.6−	1998 06 30	704	0.7+	0.2+
1994 11 04	675	0.1+	0.4−	1994 12 01	675	0.5+	1.3−	1998 07 31	611	1.6−	0.4+
1994 11 06	675	0.0	0.1+	1994 12 02	675	0.3+	1.6−	1998 07 31	611	0.4−	1.5+
1994 11 06	675	0.1+	0.2−	1998 06 23	699	0.5−	0.2+				

(9084)* 1995 CS₁ = 1980 GV₁

Discovered 1995 Feb. 3 by D. J. Asher at Siding Spring.

Id. G. V. Williams (*MPC* 24908)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Asher			
<i>M</i>	5.98235	(2000.0)	
<i>n</i>	0.38864439	ω	71.95286
<i>a</i>	1.8596638	Ω	197.65138
<i>e</i>	0.0775659	<i>i</i>	23.09441
<i>P</i>	2.54	<i>H</i>	15.7
		<i>G</i>	0.15
		<i>U</i>	2

Residuals in seconds of arc

1980 04 08	675	0.1+	0.7+	1996 12 08	381	0.0	0.1−	1998 06 04	704	(1.0− 2.3+)
1980 04 09	675	0.1−	0.6−	1996 12 08	381	0.1+	0.0	1998 06 04	704	(0.8− 2.4+)
1995 02 03	413	0.8−	0.7−	1996 12 08	381	0.1−	0.0	1998 06 04	704	0.1+
1995 02 03	413	1.3+	0.2−	1997 01 09	411	0.4−	0.3−	1998 06 23	704	0.2+

1995 02 09	413	0.7+	0.6+	1997 01 09	411	0.0	0.4−	1998 06 23	704	0.7−	0.2+
1995 02 09	413	0.7+	0.6+	1997 01 09	411	0.7−	0.1+	1998 06 23	704	0.9+	0.2−
1995 02 21	413	0.4−	0.1−	1997 01 12	360	0.6−	0.3+	1998 06 23	704	0.0	0.6−
1995 02 21	413	0.7−	0.2−	1997 01 12	360	0.2+	0.1−	1998 06 27	704	0.3+	0.7−
1995 04 17	413	0.7−	0.8−	1997 01 12	360	0.4+	0.4−	1998 06 27	704	(1.0+ 2.6+)	
1995 04 17	413	0.3−	0.7+	1998 05 27	704	0.1+	0.1−	1998 06 27	704	0.6+	0.5+
1995 06 02	413	0.6+	0.1+	1998 05 27	704	0.3+	0.5+	1998 06 27	704	1.6+	0.6−
1995 06 02	413	0.4−	0.3−	1998 05 27	704	1.2+	1.9−	1998 06 30	699	0.0	0.0
1996 12 06	381	0.5+	0.5+	1998 05 27	704	0.5+	0.2+	1998 06 30	699	0.2+	0.8+
1996 12 06	381	0.1+	0.1+	1998 05 27	704	0.9−	1.8−	1998 06 30	699	0.5+	0.1+
1996 12 06	381	0.1+	0.1+	1998 06 04	704	1.8−	1.2+	1998 07 31	611	1.3−	0.8−
1996 12 06	381	0.1+	0.1+	1998 06 04	704	1.7−	1.9+	1998 07 31	611	0.2−	0.1−

(9085)* 1995 QH₂

Discovered 1995 Aug. 24 by Y. Shimizu and T. Urata at Nachi-Katsuura

Observatory.

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	307.74600	(2000.0)	
<i>n</i>	0.28727769	ω	276.04759
<i>a</i>	2.2747558	Ω	45.62120
<i>e</i>	0.1372086	<i>i</i>	6.89039
<i>P</i>	3.43	<i>H</i>	14.7
		<i>G</i>	0.15
		<i>U</i>	1

Residuals in seconds of arc

1964 08 08	675	0.3+	1.3−	1997 02 04	385	1.5+	0.3−	1998 05 24	704	0.2+	0.7−
1995 08 24	905	1.3−	0.2+	1997 03 04	385	0.6−	0.1−	1998 05 24	704	(0.2+ 2.1−)	
1995 08 24	905	0.5−	0.4−	1997 03 04	385	0.3−	0.8−	1998 05 24	704	0.2−	1.1−
1995 08 26	905	0.1+	0.5−	1998 05 20	888	0.4−	0.5−	1998 06 15	888	0.6+	0.3−
1995 08 26	905	1.7+	0.7−	1998 05 20	888	0.0	0.4−	1998 06 15	888	0.1−	0.3−
1995 09 01	905	0.2+	0.3+	1998 05 20	888	0.2+	0.1+	1998 06 15	888	0.3+	0.7−
1995 09 01	905	0.8+	0.5+	1998 05 22	704	0.3−	0.2+	1998 06 16	704	0.2+	0.1+
1995 09 17	905	1.0−	0.6+	1998 05 22	704	0.6+	0.8+	1998 06 16	704	1.7−	0.6+
1995 09 17	905	0.1+	0.5−	1998 05 22	704	0.1+	0.5−	1998 06 16	704	0.5−	1.7+
1997 01 31	385	0.3−	0.5−	1998 05 22	704	1.6+	0.4−	1998 06 16	704	0.3+	1.0+
1997 01 31	385	1.3−	0.2−	1998 05 24	704	0.3−	0.3+	1998 06 16	704	(2.7− 1.7+)	
1997 02 04	385	0.5+	0.2−	1998 05 24	704	0.4−	0.0				

(9086)* 1995 SA₃ = 1958 XN = 1975 VP₈ = 1978 RD₁ = 1985 TU₃

Discovered 1995 Sept. 20 by S. Ueda and H. Kaneda at Kushiro.

Id. T. Kobayashi (*MPC* 25965)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Asher			
<i>M</i>	285.22414	(2000.0)	
<i>n</i>	0.29039289	ω	106.97340
<i>a</i>	2.2584582	Ω	253.45509
<i>e</i>	0.2261231	<i>i</i>	6.51851
<i>P</i>	3.39	<i>H</i>	14.2
		<i>G</i>	0.15
		<i>U</i>	1

Residuals in seconds of arc

1958 12 04	330	0.2+	0.1+	1995 09 28	399	1.0+	0.4+	1998 05 24	426	0.0	0.4+
1975 11 07	095	0.0	1.0+	1995 11 22	801	0.4+	0.1+	1998 05 24	426	0.1+	0.6+
1978 09 03	095	1.5−	0.7+	1995 11 22	801	0.3+	0.1−	1998 05 25	426	0.0	0.7+
1978 09 07	095	0.4−	1.6+	1995 11 24	801	0.5−	1.1−	1998 05 25	426	0.2+	0.1+
1985 10 11	675	0.2−	0.9+	1995 11 24	801	1.2+	0.1+	1998 05 25	426	0.1+	0.2+
1985 10 13	675	0.9+	1.0+	1998 05 22	704	0.7+	0.4+	1998 06 03	704	0.9−	1.4+
1992 12 17	399	1.5−	0.5+	1998 05 22	704	0.2−	0.3−	1998 06 03	704	(1.8− 2.6+)	
1992 12 17	399	0.4+	1.1+	1998 05 22	704	0.1+	0.4−	1998 06 03	704	1.5+	0.1−
1995 09 20	691	0.8−	0.1+	1998 05 22	704	0.1−	1.3−	1998 06 03	704	0.2+	1.3+
1995 09 20	691	0.9−	0.0	1998 05 24	704	0.1+	0.7+	1998 06 29	699	0.2−	0.1+
1995 09 20	691	0.6−	0.0	1998 05 24	704	1.2−	1.0+	1998 06 29	699	0.7+	0.6−
1995 09 20	399	0.5+	1.0−	1998 05 24	704	0.7−	1.0+	1998 06 29	699	0.5+	0.8−
1995 09 20	399	0.6−	0.1−	1998 05 24	704	0.7−	0.5−	1998 07 02	699	1.0+	1.0−
1995 09 21	399	0.7+	1.3−	1998 05 24	704	0.6−	0.5−	1998 07 02	699	0.2−	0.5+
1995 09 28	399	1.3+	0.7−	1998 05 24	426	0.3+	0.2+	1998 07 02	699	0.4+	0.7−

(9087)* 1995 SN₃

Discovered 1995 Sept. 29 at Kleť.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28573433	ω	315.01002	+0.37510371	+0.92642420		
<i>a</i>	2.2829396	Ω	336.96280	−0.82569208	+0.31813717		
<i>e</i>	0.1706695	<i>i</i>	4.71658	−0.42134285	+0.20131304		
<i>P</i>	3.45	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1994 03 14	675	1.0+	0.1+	1995 10 12	046	0.2+	0.3−	1997 01 15	566	0.8−	0.5−
1994 04 03	675	0.0	0.6+	1995 10 12	046	0.3+	0.0	1997 01 15	566	0.3−	0.3−
1994 04 03	675	0.8−	1.4−	1995 10 12	046	0.8+	0.1+	1997 01 15	566	0.5−	0.5−
1994 04 04	675	(0.2+	2.7+)	1995 10 12	046	0.0	0.1−	1997 03 03	046	0.2+	0.6+
1994 04 04	675	0.1−	1.0+	1995 10 12	046	0.3+	0.0	1997 03 03	046	0.3+	0.1+
1995 09 29	046	0.2−	0.1+	1995 10 12	046	0.4+	0.0	1997 03 03	046	0.2−	0.3+
1995 09 29	046	0.5−	0.9+	1995 10 21	046	0.4−	0.8+	1997 03 07	046	0.8+	0.6+
1995 09 29	046	0.4−	0.2+	1995 10 22	046	0.1+	0.5+	1997 03 07	046	0.1+	0.7+
1995 09 29	046	0.5−	0.3+	1995 10 22	046	0.4+	0.6+	1997 03 07	046	0.4+	0.3+
1995 09 29	046	0.4−	0.4+	1995 11 10	046	0.5+	0.7−	1998 06 24	704	0.2+	0.5−
1995 09 29	046	0.1+	0.4−	1995 11 10	046	0.6+	0.6−	1998 06 24	704	0.4−	0.1+
1995 09 29	046	0.5−	0.2+	1995 11 10	046	0.3+	0.2−	1998 06 24	704	0.7+	0.2+
1995 09 29	046	0.3−	0.1+	1995 11 26	046	1.2+	0.4+	1998 06 24	704	0.1−	1.1−
1995 09 29	046	0.5−	0.0	1995 11 26	046	1.1+	0.8+	1998 06 24	704	0.0	0.9−
1995 09 29	046	0.7+	0.9−	1995 11 26	046	0.4+	0.2−	1998 06 26	704	0.2+	0.3+
1995 10 03	046	(2.1−	0.0)	1995 12 17	046	0.8−	0.4+	1998 06 26	704	0.3+	0.6−
1995 10 03	046	(2.3−	0.6−)	1995 12 17	046	0.2−	0.2−	1998 06 26	704	0.6+	0.3+
1995 10 03	046	1.4−	0.8−	1995 12 17	046	0.2−	0.0	1998 06 26	704	0.1−	0.1+
1995 10 05	046	0.1+	0.1−	1997 01 08	046	0.1+	0.4+	1998 07 14	046	(0.9+	2.9+)
1995 10 05	046	0.2+	0.1−	1997 01 08	046	0.0	0.1+	1998 07 14	046	(0.9+	3.3+)
1995 10 05	046	0.3+	0.1−	1997 01 08	046	0.1−	0.0	1998 07 14	046	(0.9+	2.9+)
1995 10 05	046	0.6−	0.2−	1997 01 13	046	0.1−	0.1−	1998 07 19	046	0.4−	0.8+
1995 10 05	046	0.7−	0.2−	1997 01 13	046	0.0	0.5−	1998 07 19	046	0.5−	0.8+
1995 10 05	046	0.5−	0.2−	1997 01 13	046	0.1+	0.2−	1998 07 19	046	0.3−	0.6+

(9088)* 1995 SX₃ = 1982 SR₈ = 1988 JS

Discovered 1995 Sept. 20 by K. Endate and K. Watanabe at Kitami.

Id. K. Kinoshita (*MPC* 26177)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30260900	ω	80.11275	+0.53790700	+0.84124197		
<i>a</i>	2.1972602	Ω	222.57575	−0.80156395	+0.49038257		
<i>e</i>	0.2035615	<i>i</i>	4.61867	−0.26105803	+0.22767715		
<i>P</i>	3.26	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 09 19	095	1.5+	1.2+	1992 10 25	675	1.2+	0.1−	1995 09 30	400	1.1−	0.8−
1988 05 12	033	1.0−	1.6−	1992 11 28	675	0.7+	0.1+	1998 06 26	704	(1.2−	2.6−)
1988 05 12	033	1.6−	1.7−	1995 09 20	400	0.8−	1.6−	1998 06 26	704	0.1+	0.8+
1988 05 13	033	1.2−	1.7−	1995 09 20	400	0.2+	1.5+	1998 06 26	704	0.0	0.7+
1991 04 14	675	1.0+	0.6+	1995 09 21	400	0.3−	0.7−	1998 06 26	704	1.8+	1.2+
1991 04 14	675	1.4+	1.1+	1995 09 21	400	1.0+	1.9−	1998 07 19	952	0.5−	0.1+
1992 10 25	675	1.2−	0.0	1995 09 30	400	1.0−	0.8−	1998 07 20	952	0.1+	1.1+

(9089)* 1995 UC₇ = 1991 RF₂₅

Discovered 1995 Oct. 26 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Id. T. Urata (*MPC* 26181)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26298718	ω	175.47714	+0.08108415	+0.98845878		
<i>a</i>	2.4127538	Ω	99.13599	−0.91847840	+0.12396019		
<i>e</i>	0.1205930	<i>i</i>	7.44691	−0.38706948	−0.08708105		
<i>P</i>	3.75	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 09 11	675	0.3+	0.5−	1995 11 03	385	0.1+	0.0	1997 02 11	385	0.1+	0.3−
1991 09 11	675	0.4+	1.3−	1995 11 03	385	0.1−	0.6−	1997 02 11	385	0.4−	0.3+
1991 09 13	675	0.7+	1.2−	1995 11 03	385	0.2+	0.1−	1998 06 29	704	1.2+	1.3+
1995 10 26	905	(1.5+	2.6+)	1995 11 16	905	0.4−	0.4+	1998 06 29	704	0.1+	0.6+
1995 10 26	905	0.4−	0.2+	1995 11 16	905	0.4−	0.5−	1998 07 02	699	0.4+	1.1+
1995 10 27	905	0.3−	1.3+	1995 11 17	905	0.7−	0.2−	1998 07 02	699	0.2+	0.8+
1995 10 27	905	0.2+	1.3+	1995 11 17	905	(2.4+	0.8+)	1998 07 02	699	0.0	1.2+
1995 10 27	399	0.9−	0.5+	1995 12 17	905	1.6+	0.6−	1998 07 24	566	1.2−	1.2−
1995 10 27	399	(0.4−	2.4+)	1995 12 17	905	(2.4+	0.1−)	1998 07 24	566	0.7−	1.2−
1995 10 28	399	0.1−	2.0+	1997 02 03	385	0.2+	0.1+	1998 07 24	566	0.1−	0.4−
1995 10 28	399	(0.6−	3.2+)	1997 02 03	385	0.3+	0.3+				

(9090)* 1995 UW₈ = 1986 XG₁ = 1988 FT₃ = 1994 NZ₁₂

Discovered 1995 Oct. 28 by K. Endate and K. Watanabe at Kitami.

Id. E. Bowell (*MPC* 28860), G. V. Williams (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21663629	ω	12.61871	+0.19786304	−0.95573352		
<i>a</i>	2.7456715	Ω	66.30455	+0.87741274	+0.07363289		
<i>e</i>	0.0977183	<i>i</i>	13.75786	+0.43703216	+0.28487126		
<i>P</i>	4.55	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1986 12 04	688	0.8+	1.6−	1995 11 15	400	0.1−	0.1−	1996 01 26	327	1.3+	0.1−
1986 12 04	688	0.2+	1.5−	1995 11 15	400	0.2−	0.1+	1996 01 26	327	1.1+	0.3+
1988 03 18	675	0.1+	1.5−	1995 11 16	399	1.8−	1.5+	1996 01 26	327	1.0+	0.0
1988 03 18	675	0.0	1.0+	1995 11 16	399	1.2−	0.0	1996 02 18	801	0.2−	0.1−
1994 07 12	675	0.0	0.2+	1995 11 17	399	0.5−	0.8+	1996 02 18	801	0.1−	0.7−
1994 07 12	675	0.9+	1.5+	1995 11 17	399	1.7−	0.2−	1997 03 27	689	0.6+	0.3+
1995 10 27	399	0.5−	0.4+	1995 11 21	399	(3.6−	2.9+)	1997 04 09	689	0.1−	1.2+
1995 10 27	399	1.6−	0.5−	1995 11 21	399	(2.6−	1.0+)	1998 05 24	704	1.2+	0.9−
1995 10 28	399	0.4+	0.5+	1995 11 25	399	(2.0−	0.1+)	1998 05 24	704	0.3+	0.6+
1995 10 28	399	(1.2−	2.4+)	1995 11 25	399	1.5−	0.5−	1998 05 24	704	0.6−	1.5−
1995 10 28	400	1.3−	1.4−	1995 12 14	399	(2.3−	0.9−)	1998 05 24	704	(0.7+	3.0−)
1995 10 28	400	1.1+	0.9−	1995 12 14	399	0.8−	1.6+	1998 05 24	704	(2.5−	0.6+)
1995 10 30	400	(2.4+	0.6+)	1996 01 22	327	1.4+	0.3−	1998 06 24	704	0.2−	0.9−
1995 10 30	400	0.2−	1.2−	1996 01 22	327	1.8+	0.8+	1998 06 24	704	0.0	1.1+
1995 11 02	400	1.0+	0.3−	1996 01 22	327	1.9+	0.3−	1998 06 24	704	1.5−	0.0
1995 11 02	400	0.1−	0.8−	1996 01 23	327	0.8+	0.2+	1998 06 24	704	0.4+	0.2+
1995 11 12	400	1.5+	1.0+	1996 01 23	327	0.2+	0.6+	1998 06 24	704	1.9−	2.3−
1995 11 12	400	0.5+	0.4+	1996 01 23	327	0.7+	0.5+				

(9091)* 1995 VK = 1987 SK₂₃ = 1991 TB₁₂

Discovered 1995 Nov. 2 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 26183)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25838700	ω	141.64740	+0.78918218	+0.61415908		
<i>a</i>	2.4413063	Ω	180.46216	−0.57331744	+0.73650391		
<i>e</i>	0.2076007	<i>i</i>	2.40159	−0.22022400	+0.28349710		
<i>P</i>	3.81	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 09 23	095	1.7+	1.0−	1995 11 04	411	0.3−	0.3−	1998 05 24	704	0.7−	0.0
1990 03 27	675	0.8+	0.3−	1995 11 04	411	0.1−	0.3−	1998 05 24	704	0.6+	0.0
1991 10 11	691	0.7−	0.4+	1995 11 05	327	0.2+	0.0	1998 05 24	704	0.0	0.3−

1998 AUG. 8

M.P.C. 32195

1991 10 11	691	1.1-	0.2+	1995 11 05	327	0.8-	0.0	1998 05 24	704	0.0	0.3+
1991 10 11	691	1.1-	0.3+	1995 11 05	327	0.3-	0.4+	1998 06 03	704	0.1+	0.3+
1991 10 13	691	0.2-	0.5+	1995 11 11	411	1.3+	0.1-	1998 06 03	704	0.9+	0.1-
1991 10 13	691	0.1+	0.4+	1995 11 11	411	0.7-	0.2-	1998 06 03	704	0.1+	0.2-
1991 10 13	691	0.6-	0.6+	1996 01 16	327	0.1+	0.7-	1998 06 03	704	0.4+	1.0-
1994 04 15	691	0.2-	0.6+	1996 01 16	327	0.9+	0.3-	1998 06 24	704	0.5+	0.7+
1994 04 15	691	0.3-	0.3+	1996 01 16	327	0.2+	0.4+	1998 06 24	704	0.4+	0.5-
1994 04 15	691	1.2-	0.4+	1996 01 17	327	0.4+	0.0	1998 06 24	704	0.4+	0.7+
1995 10 18	327	0.1-	0.4-	1996 01 17	327	0.6+	0.6-	1998 06 24	704	0.9-	0.5-
1995 10 18	327	0.3-	0.4+	1996 01 17	327	0.6+	0.4-	1998 06 24	704	0.4+	0.3-
1995 10 18	327	0.6+	0.1-	1998 05 22	704	0.1-	0.1-	1998 06 29	699	(0.1+ 2.3-)	
1995 10 28	327	0.6+	0.1-	1998 05 22	704	0.3+	0.3-	1998 06 29	699	0.1-	0.6-
1995 10 28	327	0.9+	0.1-	1998 05 22	704	0.6-	0.6-	1998 06 29	699	0.6+	0.4+
1995 10 28	327	0.1-	0.1-	1998 05 22	704	0.5-	0.8+	1998 07 02	699	0.1+	0.2-
1995 11 02	411	0.2+	0.5-	1998 05 22	704	0.5-	0.5+	1998 07 02	699	0.2+	0.1+
1995 11 02	411	0.6-	0.1+	1998 05 24	704	1.1-	0.0	1998 07 02	699	0.2+	0.7-

(9092)* 1995 VU₁₈ = 1992 LR₁ = 1992 MP

Discovered 1995 Nov. 4 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 26570)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	42.32431		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.18739054	ω	144.56929	-0.13208481	+0.97708923
a	3.0243888	Ω	117.31042	-0.94725110	-0.07482485
e	0.0454181	i	10.82556	-0.29200850	-0.19924325
P	5.26	H	11.9	G 0.15	U 1

Residuals in seconds of arc

1992 06 02	402	0.8+	0.5+	1996 04 11	327	0.2+	0.0	1997 05 21	327	0.3-	0.0
1992 06 02	402	0.0	0.7-	1996 04 11	327	0.2+	0.8+	1997 05 22	327	0.1-	0.5-
1992 06 23	413	0.8-	0.4-	1996 04 11	327	0.4-	0.2+	1997 05 22	327	0.2-	0.4-
1992 06 23	413	0.1+	1.0+	1996 04 13	327	0.9+	0.3+	1997 05 22	327	0.3-	0.0
1995 11 04	327	0.3-	0.1+	1996 04 13	327	0.4-	0.2+	1998 05 26	327	1.4+	0.1-
1995 11 04	327	0.5+	0.6-	1996 04 13	327	0.3+	0.2+	1998 05 26	327	1.0+	0.0
1995 11 04	327	0.1-	0.6-	1996 04 24	327	0.3+	0.1+	1998 05 26	327	1.3+	0.4+
1995 11 05	327	0.6+	0.2-	1996 04 24	327	0.7+	0.2-	1998 05 30	327	0.8-	0.4-
1995 11 05	327	0.0	0.5-	1996 04 24	327	0.8+	0.1-	1998 05 30	327	1.0-	0.2+
1995 11 05	327	0.4-	0.1+	1996 04 25	327	0.6+	0.2-	1998 05 30	327	0.6-	0.2+
1996 01 13	399	0.5-	0.4-	1996 04 25	327	0.2-	0.2+	1998 07 03	699	0.2-	0.3+
1996 01 13	399	1.5-	0.9+	1996 04 25	327	1.6+	0.5+	1998 07 03	699	0.3-	0.2+
1996 01 18	399	1.1-	0.0	1997 02 05	327	0.4+	0.0	1998 07 03	699	0.4-	0.5+
1996 01 18	399	0.6-	0.1+	1997 02 05	327	1.0+	0.0	1998 07 24	566	0.4-	0.0
1996 02 02	327	0.3+	0.0	1997 02 05	327	0.4-	0.0	1998 07 24	566	0.2+	0.0
1996 02 02	327	0.1-	0.4+	1997 05 21	327	0.4-	0.0	1998 07 24	566	0.0	0.2+
1996 02 02	327	0.2+	0.4+	1997 05 21	327	0.2-	0.1-				

(9093)* 1995 WA = 1982 VO₇ = 1986 WB₈

Discovered 1995 Nov. 16 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 26184)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	320.95183		(2000.0)	P	Q
n	0.23032803	ω	78.30228	+0.59492436	+0.78088117
a	2.6357539	Ω	229.90604	-0.79969698	+0.55117410
e	0.1087313	i	14.41958	-0.08093046	+0.29399273
P	4.28	H	13.3	G 0.15	U 2

Residuals in seconds of arc

1982 11 09	095	1.1-	0.4-	1995 11 28	411	0.5+	0.8+	1998 05 24	704	0.0	0.1+
1982 11 14	095	1.0+	0.9+	1995 11 28	411	0.9+	0.1+	1998 05 24	704	0.2-	0.8+
1986 11 25	010	0.4+	1.4-	1995 12 14	691	1.1-	0.6-	1998 06 03	704	0.0	0.5+
1986 11 25	010	0.5-	1.0+	1995 12 14	691	1.3-	0.3-	1998 06 03	704	0.2+	0.3+
1986 11 25	010	0.2+	0.4+	1995 12 14	691	1.0-	0.1-	1998 06 03	704	0.5-	0.0
1995 11 16	411	0.3-	0.7-	1998 05 22	704	0.5-	0.1+	1998 06 03	704	0.4-	1.3+
1995 11 16	411	0.5-	0.3+	1998 05 22	704	0.2-	0.5+	1998 06 24	566	0.4+	0.1-

1995 11 17	411	1.0+	0.3-	1998 05 22	704	0.2+	0.0	1998 06 24	566	0.4+	0.3-
1995 11 17	411	1.1+	0.8+	1998 05 22	704	0.2-	0.2-	1998 06 24	566	0.1-	0.0
1995 11 24	411	0.0	0.6+	1998 05 22	704	0.6-	0.6-	1998 06 25	704	1.0+	0.7-
1995 11 24	411	0.6+	0.3+	1998 05 24	704	0.2+	0.5+	1998 06 25	704	0.7+	0.5-
1995 11 25	411	0.0	0.0	1998 05 24	704	0.2+	0.7+	1998 06 25	704	0.1-	0.6-
1995 11 25	411	0.2+	0.2+	1998 05 24	704	0.7-	0.4+	1998 06 25	704	0.3+	1.1-

(9094)* 1995 WH = 1983 HX

Discovered 1995 Nov. 16 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 29111)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	264.66327		(2000.0)	P	Q
n	0.20312648	ω	243.65597	+0.96593030	+0.25200681
a	2.8661023	Ω	101.70112	-0.21078844	+0.89815337
e	0.0488603	i	3.44943	-0.15015623	+0.36029584
P	4.85	H	13.7	G 0.15	U 1

Residuals in seconds of arc

1983 04 18	801	0.6-	0.7-	1995 12 25	801	0.6+	0.1-	1998 05 22	699	0.3+	0.1-
1992 01 27	691	0.8+	0.0	1997 02 11	411	0.2-	0.8+	1998 05 22	699	0.7+	0.4+
1992 01 27	691	0.3+	0.1+	1997 02 11	411	0.3-	0.7+	1998 05 22	699	0.2-	0.2-
1995 11 16	411	0.3+	1.6-	1998 05 01	566	0.4-	0.0	1998 05 22	566	0.3+	1.1-
1995 11 16	411	1.6+	0.7-	1998 05 01	566	0.4-	0.4-	1998 05 22	566	0.2+	0.7-
1995 11 17	411	1.1+	0.6-	1998 05 01	566	0.5-	0.2+	1998 05 22	566	0.4-	0.6-
1995 11 17	411	0.1-	0.6-	1998 05 05	699	0.0	0.2-	1998 05 24	704	0.2+	0.6-
1995 11 18	399	0.4+	1.0-	1998 05 05	699	0.4-	0.0	1998 05 24	704	0.0	0.5+
1995 11 18	399	0.4-	0.4-	1998 05 05	699	0.6+	0.5+	1998 05 24	704	0.3+	0.1+
1995 11 24	411	0.3+	0.0	1998 05 05	426	0.1-	0.7-	1998 05 24	699	0.0	0.2+
1995 11 24	411	0.7+	0.0	1998 05 05	426	0.4-	0.9-	1998 05 24	699	0.1-	0.4-
1995 11 25	399	0.7-	0.6+	1998 05 05	426	0.7-	0.7-	1998 05 24	704	0.1-	1.2-
1995 11 25	399	1.7-	0.6-	1998 05 15	426	0.1-	0.7-	1998 05 24	699	0.2+	0.3-
1995 11 27	411	0.1-	0.1+	1998 05 15	426	0.0	0.6-	1998 05 24	704	0.9-	1.0-
1995 11 27	411	0.1+	0.0	1998 05 15	426	0.1+	0.9-	1998 06 16	704	0.8-	0.7-
1995 12 01	411	0.5-	0.3-	1998 05 22	704	0.3-	0.2-	1998 06 16	704	1.0+	0.2-
1995 12 01	411	0.0	0.6-	1998 05 22	704	0.9-	0.7-	1998 06 16	704	0.6+	1.0+
1995 12 08	411	0.0	0.4-	1998 05 22	704	0.0	0.1-	1998 06 16	704	0.2+	2.4+
1995 12 08	411	0.3-	1.8-	1998 05 22	704	0.2+	0.1-				
1995 12 25	801	0.6+	0.6+	1998 05 22	704	0.1-	0.9+				

(9095)* 1995 WT₂ = 1961 TU = 1978 TO₅ = 1981 NK₁ = 1981 OE = 1988 ST₄

Discovered 1995 Nov. 16 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 26408)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	334.69326		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29186054	ω	67.65070	+0.97365200	+0.22316792
a	2.2508806	Ω	279.42922	-0.22278227	+0.88700129
e	0.1813010	i	2.72392	-0.04868107	+0.40425833
P	3.38	H	14.0	G 0.15	U 2

Residuals in seconds of arc

1961 10 07	760	1.7-	0.7-	1995 11 18	399	0.9-	2.0-	1998 06 29	704	0.4-	0.5+
1961 10 07	760	2.0+	0.5-	1995 11 18	399	0.6-	1.0+	1998 06 29	704	0.3-	0.4+
1961 10 17	760	2.0-	0.5+	1995 11 25	399	0.2-	0.1+	1998 06 29	704	1.4+	0.7-
1961 10 17	760	0.3+	1.9+	1995 11 25	399	0.4+	0.6-	1998 06 29	704	0.5+	1.2+
1978 10 08	095	1.2+	0.8-	1995 12 14	399	1.0+	0.3-	1998 06 30	699	0.1+	0.2-
1981 07 02	805	0.8+	1.3+	1995 12 14	399	0.4-	0.5-	1998 06 30	699	0.3+	0.6-
1981 07 02	805	0.1-	0.8-	1995 12 17	399	0.9-	0.6+	1998 06 30	699	0.0	0.8-
1981 07 26	688	(0.4+	2.7-)	1995 12 17	399	0.2+	0.7+	1998 07 26	699	1.3+	0.6-
1981 07 26	688	(0.3+	3.1-)	1998 06 24	691	1.9-	0.8-	1998 07 26	699	1.2+	0.3-
1988 09 17	095	0.6-	1.9+	1998 06 24	691	1.9-	0.6-	1998 07 26	699	1.3+	0.3-
1995 11 16	399	0.6+	1.1-	1998 06 24	691	1.8-	0.5-				
1995 11 16	399	0.5+	0.2+	1998 06 29	704	0.5-	0.2+				

(9096)* 1995 XE₁

Discovered 1995 Dec. 15 by T. Kobayashi at Oizumi.

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	179.71787		(2000.0)		P		Q
<i>n</i>	0.17493993	ω	356.46500	+0.39218170			-0.91296073
<i>a</i>	3.1662370	Ω	70.41871	+0.84688660			+0.31051827
<i>e</i>	0.0154057	<i>i</i>	6.86867	+0.35913312			+0.26472838
<i>P</i>	5.63	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 11 04	675	0.1+	0.8-	1998 04 28	809	(1.7+	2.4+)	1998 06 16	704	0.0	0.4-
1989 11 04	675	0.3+	0.1-	1998 05 03	566	0.4+	0.0	1998 06 16	704	0.0	0.8-
1995 12 15	411	0.0	0.1-	1998 05 03	566	0.3+	0.4-	1998 06 16	704	0.5-	0.0
1995 12 15	411	0.1-	0.3-	1998 05 03	566	0.4+	0.2-	1998 06 18	704	1.5+	0.1-
1995 12 16	411	0.1+	0.7-	1998 05 22	704	0.4-	0.8+	1998 06 18	704	(2.3+	3.2-)
1995 12 16	411	0.5-	0.4-	1998 05 22	704	0.4-	1.2+	1998 06 18	704	0.7-	0.6+
1995 12 22	411	0.4+	0.4+	1998 05 22	704	0.3-	0.9+	1998 06 18	704	0.5-	0.5+
1995 12 22	411	0.2-	0.7-	1998 05 22	704	0.1-	0.1+	1998 06 18	704	0.1+	1.9-
1995 12 30	411	0.2+	1.2+	1998 05 22	704	0.6+	0.4+	1998 06 20	691	1.4-	0.1+
1995 12 30	411	0.7+	1.6+	1998 05 23	426	0.2+	0.0	1998 06 20	691	1.1-	0.1+
1996 01 09	411	0.2+	0.3-	1998 05 23	426	0.3+	0.0	1998 06 20	691	1.4-	0.1-
1996 01 09	411	1.0-	1.2-	1998 05 23	426	0.0	0.2+	1998 06 27	699	0.3+	0.2-
1997 02 14	411	0.9-	0.3+	1998 05 24	704	0.4+	0.1+	1998 06 27	699	0.2+	0.5-
1997 02 14	411	0.8-	0.4-	1998 05 24	704	0.1-	1.1+	1998 06 27	699	0.6+	0.1+
1997 02 16	411	0.7+	0.9-	1998 05 24	704	0.4-	0.7-	1998 06 29	699	0.2+	0.6-
1997 02 16	411	0.8+	0.5+	1998 05 24	426	0.1-	0.0	1998 06 29	699	0.1-	0.6-
1998 04 25	809	1.0+	0.7-	1998 05 24	426	0.0	0.0	1998 06 29	699	0.3+	0.3-
1998 04 25	809	0.5+	0.3-	1998 05 26	367	(6.2+	0.0)	1998 07 02	691	0.9-	0.2-
1998 04 25	809	0.6+	0.0	1998 05 26	367	(4.9+	0.1+)	1998 07 02	691	1.0-	0.1-
1998 04 28	809	1.1+	0.2+	1998 06 16	704	0.8+	0.6-	1998 07 02	691	0.9-	0.1-
1998 04 28	809	0.6+	0.9+	1998 06 16	704	0.9-	0.3+				

(9097)* 1996 AU₁ = 1993 QN₈

Discovered 1996 Jan. 14 at Linz.

Id. B. G. Marsden (*MPC* 26749)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	58.30809		(2000.0)		P		Q
<i>n</i>	0.17593308	ω	103.19704	-0.66079807			+0.74997433
<i>a</i>	3.1543100	Ω	125.40185	-0.70198668			-0.60352265
<i>e</i>	0.1058952	<i>i</i>	2.09089	-0.26563248			-0.27073773
<i>P</i>	5.60	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 08 15	809	0.3+	0.3+	1996 02 06	540	1.1-	0.5+	1997 05 03	540	0.1+	0.4+
1993 08 15	809	0.8-	0.7+	1996 02 06	540	0.3-	0.8+	1997 05 04	540	0.8-	0.1-
1993 08 15	809	0.6-	1.0+	1996 02 09	540	0.5+	0.3+	1997 05 04	540	0.4-	1.0+
1993 08 20	809	0.6+	1.4+	1996 02 09	540	0.8-	0.8+	1997 05 04	540	0.5-	0.0
1993 08 20	809	0.4+	1.0+	1996 02 09	540	0.3-	0.6+	1998 06 20	540	0.9-	0.1-
1993 08 20	809	0.1+	0.7+	1997 03 07	540	0.1+	0.5+	1998 06 20	540	0.1-	1.9-
1993 08 24	809	0.9-	0.5-	1997 03 08	540	0.0	1.2+	1998 06 20	540	1.1+	0.4+
1993 08 24	809	0.2-	0.3-	1997 04 02	540	0.5+	0.1+	1998 06 21	611	1.0-	0.9+
1993 08 24	809	0.6-	0.1+	1997 04 02	540	0.0	0.2+	1998 06 21	611	0.8-	0.8-
1996 01 14	540	0.2+	0.1-	1997 04 02	540	0.1+	0.5+	1998 06 23	699	1.1+	0.9+
1996 01 14	540	0.3+	0.3-	1997 04 07	540	0.0	0.5-	1998 06 23	699	0.3+	0.5+
1996 01 15	540	0.0	0.4-	1997 04 07	540	0.3-	0.2-	1998 06 23	699	0.9+	1.1+
1996 01 15	540	0.7+	0.1+	1997 04 07	540	0.5+	0.7-	1998 07 02	699	1.8+	0.6+
1996 01 15	540	0.3+	0.3+	1997 04 08	540	0.2+	0.8-	1998 07 02	699	0.4-	0.5+
1996 01 16	540	0.4+	0.0	1997 04 08	540	0.2+	0.7-	1998 07 02	699	0.2-	0.8+
1996 01 16	540	0.0	0.5+	1997 04 13	540	0.9+	0.5-	1998 07 16	699	0.4-	0.4-
1996 01 16	540	0.4+	0.4+	1997 04 13	540	0.6-	0.4-	1998 07 16	699	0.5-	0.9-
1996 01 17	540	0.4-	0.4-	1997 05 02	540	0.2+	0.7+	1998 07 16	699	0.6+	0.0
1996 01 17	540	0.3+	0.4-	1997 05 02	540	0.3+	0.7+	1998 07 26	540	0.5-	0.0
1996 01 21	540	0.3+	0.3-	1997 05 02	540	0.3+	0.3+	1998 07 26	540	0.1-	0.4-
1996 01 21	540	0.4-	0.5-	1997 05 03	540	0.3+	0.8+	1998 07 26	540	0.3-	0.4-
1996 02 06	540	(2.2-	1.0+)	1997 05 03	540	0.1-	0.4+	1998 07 26	540	0.4-	1.6-

(9098)* 1996 BQ₃ = 1989 TT₁₅ = 1991 BU₂

Discovered 1996 Jan. 27 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 26753)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Asher

<i>M</i>	228.05003		(2000.0)		P		Q
<i>n</i>	0.19878814	ω	31.51820	+0.23397525			-0.97136638
<i>a</i>	2.9076518	Ω	44.98771	+0.87943732			+0.19335290
<i>e</i>	0.1567684	<i>i</i>	3.34640	+0.41454262			+0.13806526
<i>P</i>	4.96	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 10 03	809	0.8-	0.7-	1996 01 27	411	0.7-	0.3-	1998 06 24	704	1.0+	1.3+
1989 10 03	809	0.5-	0.7-	1996 01 27	411	0.0	0.2+	1998 06 24	704	1.2-	0.1+
1989 10 03	809	0.2-	0.6-	1996 01 30	411	0.7+	0.1+	1998 06 24	704	0.8-	0.4-
1989 10 04	809	0.9+	0.7-	1996 01 30	411	0.1-	0.1-	1998 06 26	704	1.1-	0.2-
1989 10 04	809	1.1+	0.6-	1996 01 30	411	0.3+	0.5+	1998 06 26	704	0.4+	0.6-
1989 10 04	809	1.2+	0.6-	1996 02 12	411	0.0	0.7-	1998 06 26	704	1.3+	0.7+
1991 01 17	033	0.2+	0.5-	1996 02 12	411	0.4-	0.4+	1998 06 26	704	0.2+	0.5-
1991 01 17	033	0.4-	0.8-	1997 05 13	689	(4.7-	0.7+)	1998 07 03	699	0.1+	0.4+
1991 01 18	033	0.5-	0.9-	1998 06 16	426	1.3+	0.3-	1998 07 03	699	0.4-	0.9+
1994 10 09	691	0.4-	1.0+	1998 06 16	426	0.2+	0.7-	1998 07 03	699	0.7+	0.0
1994 10 09	691	0.5-	1.0+	1998 06 22	426	0.7-	0.4-	1998 07 24	566	0.4-	0.6-
1994 10 09	691	0.3-	0.9+	1998 06 22	426	0.2-	0.0	1998 07 24	566	0.2-	0.1+
1994 10 29	114	(2.9+	3.1+)	1998 06 22	426	0.3-	0.0	1998 07 24	566	0.5+	0.8-
1994 10 29	114	(0.5-	3.4+)	1998 06 24	704	0.0	0.7-				

(9099)* 1996 VN₃ = 1984 SH₇ = 1998 DP₂₇

Discovered 1996 Nov. 6 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 31391), G. V. Williams (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	91.97643		(2000.0)		P		Q
<i>n</i>	0.17262049	ω	5.65837	+0.20007617			-0.97914055
<i>a</i>	3.1945362	Ω	72.80400	+0.89747122			+0.16865223
<i>e</i>	0.2218291	<i>i</i>	2.12379	+0.39308389			+0.11331466
<i>P</i>	5.71	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1984 09 23	071	1.8+	0.3-	1998 02 21	691	0.3-	0.4-	1998 03 25	566	0.4+	0.0
1984 09 24	071	0.8-	2.0-	1998 03 01	809	(0.5+ 4.2+)		1998 03 25	566	0.4+	0.2+
1992 03 11	691	0.1+	0.2+	1998 03 01	809	(1.0- 4.8+)		1998 03 26	566	0.6+	0.5-
1992 03 11	691	0.2+	0.6-	1998 03 01	809	(1.0- 4.3+)		1998 03 26	566	0.2+	0.7-
1992 03 11	691	0.4-	0.1+	1998 03 02	809	0.1-	0.6+	1998 03 26	566	0.2+	0.5-
1996 11 06	411	1.5+	0.3-	1998 03 02	809	0.2+	0.3+	1998 03 28	704	0.7+	0.1+
1996 11 06	411	0.5+	0.2-	1998 03 02	809	0.5-	0.4-	1998 03 28	704	0.5+	0.3-
1996 11 13	411	1.0+	0.5+	1998 03 03	691	0.5-	0.5-	1998 03 28	704	0.7+	0.0
1996 11 13	411	0.2-	0.3-	1998 03 03	691	0.4-	0.4-	1998 03 28	704	1.2+	0.0
1996 11 13	411	0.7-	0.7-	1998 03 03	691	0.5-	0.3-	1998 03 28	704	0.4+	0.0
1996 11 15	411	0.1-	0.1+	1998 03 20	704	0.2-	1.5-	1998 03 29	704	0.5+	0.9+
1996 11 15	411	0.1-	0.6-	1998 03 20	704	0.8-	0.4+	1998 03 29	704	1.6+	0.1-
1996 11 30	411	0.3+	0.1+	1998 03 20	704	0.4-	0.4+	1998 03 29	704	1.2-	0.7-
1996 11 30	411	0.6+	0.2+	1998 03 20	704	0.2+	0.5-	1998 03 29	704	0.8+	0.3+
1996 12 08	411	1.1-	0.4+	1998 03 20	704	0.5-	0.1+	1998 03 29	704	0.2+	0.3-
1996 12 08	411	0.1-	0.3+	1998 03 22	704	0.4-	0.4-	1998 04 19	704	1.1+	0.6-
1997 01 16	691	0.7-	0.0	1998 03 22	704	0.9-	0.6+	1998 04 19	704	0.4-	1.9+
1997 01 16	691	1.0-	0.4+	1998 03 22	704	0.4-	0.4-	1998 04 19	704	1.9-	0.0
1997 01 16	691	0.7-	0.4+	1998 03 22	704	1.6-	0.3+	1998 04 19	704	1.2+	0.0
1998 02 21	691	0.0	0.2-	1998 03 22	704	0.5-	0.6+	1998 04 19	704	0.7-	0.4+
1998 02 21	691	0.2-	0.4-	1998 03 25	566	0.3+	0.2-				

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	63.85875		(2000.0)	P		Q	
<i>n</i>	0.26271684	ω	107.54007	-0.92242785	+0.36079259		
<i>a</i>	2.4144086	Ω	93.78562	-0.38544084	-0.83829413		
<i>e</i>	0.1597440	<i>i</i>	7.93099	-0.02371106	-0.40876847		
<i>P</i>	3.75	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1977 12 07	675	0.4+	0.6+	1996 12 03	411	0.2-	0.0
1977 12 08	675	0.4+	0.4+	1996 12 08	411	0.0	0.4-
1991 09 15	675	1.4-	0.5-	1996 12 08	411	0.3-	0.4-
1991 09 15	675	0.4-	0.1-	1996 12 19	411	0.5-	0.1+
1994 06 09	675	0.1+	0.8+	1996 12 19	411	0.7+	0.2-
1994 06 09	675	0.6-	0.2-	1996 12 28	411	0.1-	0.1+
1994 06 12	675	1.1+	0.4+	1996 12 28	411	0.2-	0.1+
1994 06 12	675	1.4-	0.1+	1998 05 28	689	0.9-	0.0
1996 12 02	411	0.1-	0.4+	1998 06 24	704	0.4+	0.2+
1996 12 02	411	0.2-	0.4+	1998 06 24	704	0.4+	0.2-
1996 12 03	411	0.5+	0.3+	1998 06 24	704	0.2+	0.4-
				1998 07 21	704	1.1+	0.7+

(9101)* 1996 XG₂ = 1977 DJ₆ = 1992 SY₂₆ = 1994 BN₅

Discovered 1996 Dec. 3 at Farra d'Isonzo.

Id. G. V. Williams (*MPC* 28870)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	88.64537		(2000.0)	P		Q	
<i>n</i>	0.28922935	ω	55.62967	-0.92557374	-0.37722737		
<i>a</i>	2.2645112	Ω	102.19018	+0.33576285	-0.85684299		
<i>e</i>	0.0489016	<i>i</i>	1.86576	+0.17486152	-0.35145354		
<i>P</i>	3.41	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1977 02 19	381	1.3+	0.1+	1997 01 07	595	1.1+	0.6-
1977 02 19	381	0.1+	0.5+	1997 01 07	595	1.4+	0.4-
1992 09 29	691	1.0-	0.3-	1997 01 08	595	1.0+	1.2-
1992 09 29	691	0.7-	0.2-	1997 01 08	595	0.7+	0.9-
1992 09 29	691	0.6-	0.1-	1998 04 28	809	0.1-	0.4-
1994 01 18	691	1.4-	0.9+	1998 04 28	809	0.6-	0.4-
1994 01 18	691	1.2-	0.5+	1998 04 28	809	0.6+	1.0+
1994 01 18	691	1.3-	0.6+	1998 05 17	595	0.7+	0.3-
1996 12 03	595	0.6+	0.3+	1998 05 17	595	0.3-	0.1-
1996 12 03	595	0.5+	0.9-	1998 05 22	704	0.4-	0.2+
1996 12 04	595	0.3+	0.0	1998 05 22	704	0.2-	0.6+
1996 12 05	595	0.7+	1.0-	1998 05 22	704	0.3+	0.1-
1996 12 14	595	0.4-	0.7-	1998 05 22	704	1.8-	0.2-
1996 12 14	595	0.8-	0.7-	1998 05 22	704	(4.9-	0.9+)

(9102)* 1996 XS₁₈

Discovered 1996 Dec. 12 at Kletř.

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	96.68631		(2000.0)	P		Q	
<i>n</i>	0.18264651	ω	21.56402	-0.20702968	-0.97716420		
<i>a</i>	3.0765346	Ω	80.40931	+0.89036177	-0.20845437		
<i>e</i>	0.0902087	<i>i</i>	2.78109	+0.40545607	-0.04119357		
<i>P</i>	5.40	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1993 04 25	691	0.1+	0.1+	1997 01 14	046	0.0	0.4+
1993 04 25	691	0.3+	0.4+	1997 01 14	046	0.4-	0.3+
1993 04 25	691	0.3-	0.1+	1997 01 14	046	0.0	0.8+
1994 07 11	809	0.1+	0.4+	1997 03 04	046	0.6+	0.1-
1994 07 11	809	0.8-	0.6+	1997 03 04	046	0.6+	0.2-
1994 07 11	809	0.4-	0.4+	1997 03 05	046	0.2-	0.7-
1994 07 12	809	(2.8+	1.9+)	1997 03 05	046	0.8+	1.0-
1994 07 12	809	0.9+	1.6+	1997 03 05	046	1.1+	1.0-
				1998 03 29	704	0.7-	0.2+

1994 07 12	809	(2.4-	0.1-)	1997 03 12	046	0.5+	0.0	1998 03 29	704	0.4-	1.2+
1996 12 12	046	0.0	0.1-	1997 03 12	046	0.2+	0.9+	1998 03 29	704	0.3-	0.5-
1996 12 12	046	0.2-	0.2-	1997 03 12	046	0.4+	0.7+	1998 03 31	704	0.4+	0.3-
1996 12 12	046	0.2+	0.1-	1998 02 27	046	0.1-	1.5+	1998 03 31	704	(0.3-	3.5-)
1996 12 12	046	0.1+	0.0	1998 02 27	046	0.6-	0.1+	1998 03 31	704	0.6-	1.5+
1996 12 12	046	0.1+	0.4-	1998 02 27	046	0.3-	1.1+	1998 03 31	704	0.3+	0.6+
1996 12 12	046	0.3+	0.1+	1998 03 20	704	0.3+	0.1-	1998 04 17	691	0.1-	0.3-
1996 12 12	046	0.2+	0.0	1998 03 20	704	1.2+	0.1-	1998 04 17	691	0.2-	0.0
1996 12 12	046	0.4+	0.1-	1998 03 20	704	0.1+	0.8-	1998 04 17	691	0.0	0.1-
1996 12 16	046	0.1-	0.7+	1998 03 20	704	0.4-	1.6-	1998 04 19	704	0.2+	1.2-
1996 12 16	046	0.1+	0.3-	1998 03 22	704	0.6+	0.1-	1998 04 19	704	0.8+	0.2-
1996 12 16	046	0.1+	0.2+	1998 03 22	704	1.6+	1.6+	1998 04 19	704	0.4-	0.9-
1996 12 22	046	0.4-	0.1+	1998 03 22	704	0.5+	0.5-	1998 04 19	704	1.2-	0.9+
1996 12 22	046	0.4-	0.1+	1998 03 22	704	0.5+	0.1-	1998 04 20	704	0.0	0.5+
1996 12 28	046	0.7-	1.1+	1998 03 22	704	0.1+	0.9-	1998 04 20	704	0.1+	1.3-
1996 12 28	046	0.3-	0.3+	1998 03 24	046	0.1+	0.1+	1998 04 20	704	0.4+	0.9-
1996 12 28	046	0.8-	0.0	1998 03 24	046	0.4+	0.1+	1998 04 20	704	0.3+	0.1-
1997 01 12	046	0.8-	0.2+	1998 03 24	046	0.1-	0.2+	1998 04 24	691	1.7-	0.4-
1997 01 12	046	0.6-	0.1+	1998 03 28	704	1.3-	0.1-	1998 04 24	691	1.2-	0.2-
1997 01 12	046	0.1+	0.3+	1998 03 28	704	(2.6-	1.6+)	1998 04 24	691	1.4-	0.2-

(9103)* 1996 XW₃₀ = 1989 SB₈ = 1991 CR₅

Discovered 1996 Dec. 14 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 28874)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	338.54785		(2000.0)	P		Q	
<i>n</i>	0.30914211	ω	32.60698	+0.40754278	+0.91082922		
<i>a</i>	2.1661936	Ω	261.51717	-0.85140037	+0.35302636		
<i>e</i>	0.1181346	<i>i</i>	3.80104	-0.33019129	+0.21392175		
<i>P</i>	3.19	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1989 09 27	675	0.1-	1.0-	1996 12 29	411	0.4+	0.1-
1989 09 28	675	0.7+	1.1-	1997 01 13	411	0.3-	0.4-
1989 09 28	675	0.5+	0.0	1997 01 13	411	0.3-	0.4-
1989 09 29	675	0.1+	0.6-	1998 05 22	704	1.7+	0.2-
1989 09 29	675	0.1+	0.9-	1998 05 22	704	0.2+	0.2-
1991 02 08	675	0.5-	1.2-	1998 05 22	704	0.3-	1.2-
1991 02 08	675	0.5-	1.1-	1998 05 22	704	0.1-	1.7-
1992 08 25	675	0.3-	0.8+	1998 05 24	704	0.6+	0.4+
1992 08 25	675	0.1+	0.7-	1998 05 24	704	(3.7+	0.1+)
1996 12 14	411	0.9-	0.1+	1998 05 24	704	(2.4-	1.6+)
1996 12 14	411	0.6+	0.2+	1998 05 24	704	0.5+	0.5-
1996 12 16	411	0.1+	0.2+	1998 05 24	704	0.2+	1.8-
1996 12 16	411	0.1+	0.3+	1998 06 03	704	2.1+	0.3+
1996 12 29	411	0.4+	0.5+	1998 06 03	704	1.8-	1.6+

(9104)* 1996 YB = 1986 VM₂ = 1998 KZ₄₄

Discovered 1996 Dec. 20 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 31980), G. V. Williams (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	83.12716		(2000.0)	P		Q	
<i>n</i>	0.21232148	ω	56.73632	-0.89008695	-0.43144194		
<i>a</i>	2.7827451	Ω	97.32249	+0.35314262	-0.85666310		
<i>e</i>	0.1640679	<i>i</i>	8.52196	+0.28815885	-0.28281830		
<i>P</i>	4.64	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1986 11 03	010	(3.4-	0.1-)	1996 12 29	411	0.3-	0.4-
1986 11 03	010	1.0-	1.3-	1996 12 29	411	0.3-	0.2+
1986 11 03	010	1.0+	0.9-	1996 12 29	369	0.2+	0.0
1991 12 03	691	0.1+	0.7+	1996 12 29	369	0.0	0.6-
1991 12 03	691	0.2+	0.5+	1996 12 30	411	0.2-	0.1-
1991 12 03	691	0.7+	0.6+	1996 12 30	411	0.0	0.1-
1994 07 09	675	0.1-	1.8-	1996 12 30	369	0.2-	0.0

1994 07 09	675	0.2+	0.7−	1996 12 30	369	0.1−	0.2−	1998 05 24	704	0.5+	1.3−
1996 12 20	411	0.6−	1.1−	1997 01 06	411	0.5+	0.1+	1998 05 24	704	0.8−	1.8−
1996 12 20	411	0.5−	0.0	1997 01 06	411	0.0	0.2−	1998 06 29	699	0.1+	0.1+
1996 12 21	411	0.4+	0.3−	1997 01 26	411	0.4−	1.2−	1998 06 29	699	0.6−	0.7+
1996 12 21	411	0.3+	0.6+	1997 01 26	411	0.3+	0.6−	1998 06 29	699	0.6+	0.3+

(9105)* 1997 AU = 1993 FA₄₃

Discovered 1997 Jan. 2 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 28878)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20149066	ω	339.70713	+0.99989172	−0.00611910		
<i>a</i>	2.8815939	Ω	20.65712	+0.01128063	+0.90273020		
<i>e</i>	0.0868590	<i>i</i>	2.17413	−0.00944973	+0.43016363		
<i>P</i>	4.89	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 03 19	809	1.2−	1.3+	1998 03 02	910	0.8+	0.3+	1998 03 25	704	0.3+	0.4−
1993 03 20	809	0.3+	0.5+	1998 03 03	910	0.7+	0.0	1998 03 25	704	0.0	0.5+
1993 03 24	809	1.6+	0.3−	1998 03 03	910	0.8+	0.2+	1998 03 25	704	(4.8−	0.8+)
1995 10 22	691	0.1−	0.2+	1998 03 03	910	0.7+	0.2+	1998 03 29	704	0.1+	0.5−
1995 10 22	691	0.0	0.1+	1998 03 20	704	0.6+	0.8+	1998 03 29	704	0.7+	0.5+
1995 10 22	691	0.1−	0.1+	1998 03 20	704	(1.4−	2.7−)	1998 03 29	704	0.0	1.4+
1997 01 02	411	1.0−	0.1+	1998 03 20	704	0.9−	0.7−	1998 03 29	704	0.2+	0.1−
1997 01 02	411	0.5+	0.2−	1998 03 20	704	1.7−	1.2+	1998 04 01	704	0.4−	0.1−
1997 01 03	411	0.2+	0.1−	1998 03 22	704	0.9−	0.8−	1998 04 01	704	0.6+	0.4+
1997 01 03	411	0.3−	0.8+	1998 03 22	704	(1.7−	3.0+)	1998 04 01	704	0.3−	1.1−
1997 01 09	411	0.7+	0.9−	1998 03 22	704	1.2−	1.1+	1998 04 01	704	0.6+	1.5−
1997 01 09	411	0.0	1.0−	1998 03 22	704	0.6+	0.2−	1998 04 01	704	0.5−	0.8−
1997 01 14	411	0.8+	0.1+	1998 03 22	704	(3.1−	0.5+)	1998 04 22	704	(2.2−	0.9−)
1997 01 14	411	0.1−	0.2−	1998 03 22	360	0.0	0.6−	1998 04 22	704	1.2−	0.7−
1997 01 27	411	0.5−	0.5+	1998 03 22	360	0.1−	0.7−	1998 04 22	704	1.6−	0.1+
1997 01 27	411	0.5−	0.1+	1998 03 22	360	0.1+	0.8−	1998 04 22	704	0.9−	0.4−
1998 03 02	910	1.0+	0.3+	1998 03 25	704	0.8+	0.6+	1998 04 22	704	(5.2−	0.7+)
1998 03 02	910	0.9+	0.4+	1998 03 25	704	0.4+	0.9+				

(9106)* 1997 AY₁ = 1954 CL = 1974 FJ₁ = 1991 RA₂₅

Discovered 1997 Jan. 3 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 28878)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25195235	ω	27.16075	+0.12067453	−0.98948579		
<i>a</i>	2.4826973	Ω	56.00942	+0.89242736	+0.07296420		
<i>e</i>	0.0342007	<i>i</i>	5.51757	+0.43475402	+0.12487632		
<i>P</i>	3.91	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1954 02 01	024	0.5+	0.4−	1997 01 14	411	0.4−	0.3−	1998 05 24	704	0.2+	0.2−
1974 03 21	095	0.1+	2.2+	1997 01 14	411	0.2−	0.6−	1998 05 24	704	0.3−	0.6+
1991 09 14	675	0.3−	0.9−	1997 01 26	411	0.0	0.4−	1998 06 03	704	0.5+	0.2−
1991 09 14	675	0.4+	1.2+	1997 01 26	411	0.1−	0.6−	1998 06 03	704	0.3+	0.8−
1991 09 14	675	0.6+	0.8−	1997 03 09	689	0.3+	0.5−	1998 06 03	704	1.0+	0.1−
1991 09 14	675	0.2+	0.1−	1997 03 10	689	0.5−	0.3−	1998 06 03	704	0.3−	0.4−
1991 09 15	675	0.1+	1.1−	1998 05 22	704	0.1+	0.7−	1998 06 03	704	0.0	1.2−
1991 09 15	675	0.2−	1.8−	1998 05 22	704	0.4−	0.1−	1998 06 18	704	1.1−	0.6+
1997 01 03	411	0.2−	0.7−	1998 05 22	704	0.2+	0.5+	1998 06 18	704	0.8+	0.2+
1997 01 03	411	0.0	0.6−	1998 05 22	704	0.1+	1.1−	1998 06 18	704	1.7−	0.1−
1997 01 04	411	0.0	0.2−	1998 05 22	704	0.6−	0.0	1998 06 18	704	0.2+	1.3−
1997 01 04	411	0.2−	0.6−	1998 05 24	704	0.1−	1.1−	1998 06 18	704	0.1−	0.0
1997 01 08	411	0.1+	0.5−	1998 05 24	704	0.4+	0.0				
1997 01 08	411	0.1+	0.8−	1998 05 24	704	0.1−	0.4+				

(9107)* 1997 AE₄ = 1981 WB₈ = 1983 JK = 1990 RA₁₅

Discovered 1997 Jan. 6 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29121)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20319879	ω	11.40069	−0.74045603	−0.66532112		
<i>a</i>	2.8654223	Ω	126.46506	+0.60695726	−0.72280193		
<i>e</i>	0.2032123	<i>i</i>	6.80199	+0.28866546	−0.18682926		
<i>P</i>	4.85	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 11 25	095	1.0+	0.9+	1997 01 27	411	0.3+	0.4−	1998 05 22	704	0.6+	0.7+
1983 05 07	688	(9.3−	0.9+)	1997 01 27	411	0.4+	0.4−	1998 05 22	704	0.3+	0.3+
1983 05 07	688	1.4−	1.4−	1997 02 01	905	0.9+	0.2−	1998 05 22	704	0.1+	0.9+
1990 09 14	809	0.8−	0.8−	1997 02 01	905	0.5+	0.9−	1998 05 24	704	0.2−	0.3−
1990 09 14	809	0.5+	0.8−	1997 02 06	385	0.5+	0.0	1998 05 24	704	0.7−	0.4+
1990 09 14	809	0.3−	1.1−	1997 02 06	385	0.5+	0.0	1998 05 24	704	0.1+	0.1+
1997 01 06	411	0.6+	0.5−	1997 02 07	691	0.5−	0.3−	1998 05 24	704	0.3+	1.7−
1997 01 06	411	0.3+	0.1+	1997 02 07	691	0.3−	0.4−	1998 05 24	704	(2.8−	0.2−)
1997 01 07	411	0.4+	0.0	1997 02 07	691	0.4−	0.5−	1998 06 24	704	0.1−	0.6+
1997 01 07	411	0.4+	0.4+	1997 02 14	691	1.3−	0.0	1998 06 24	704	0.7+	0.5−
1997 01 11	411	0.1−	0.6+	1997 02 14	691	1.2−	0.1+	1998 06 24	704	1.3+	0.4+
1997 01 11	411	0.0	0.9+	1997 02 14	691	1.6−	0.3+	1998 06 24	704	1.0+	0.3−
1997 01 16	411	0.0	0.0	1998 05 22	704	0.2+	1.3+	1998 06 24	704	1.3−	1.6−
1997 01 16	411	0.1+	0.2+	1998 05 22	704	0.5−	0.6+				

(9108)* 1997 AZ₆ = 1998 KQ₅₆

Discovered 1997 Jan. 9 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 31983)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24422636	ω	233.51873	+0.85045548	−0.52556596		
<i>a</i>	2.5347844	Ω	158.16038	+0.49991094	+0.79415265		
<i>e</i>	0.1347863	<i>i</i>	3.46630	+0.16375146	+0.30512619		
<i>P</i>	4.04	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 09 07	691	0.1+	0.2+	1997 01 10	411	0.8+	0.1−	1998 05 01	704	(3.0−	0.3−)
1991 09 07	691	0.1−	0.3+	1997 01 10	411	1.0+	0.3+	1998 05 01	704	0.5+	0.5+
1991 09 07	691	0.1−	0.1+	1997 01 13	411	0.1−	0.3−	1998 05 01	704	1.2−	0.1+
1994 06 11	691	0.1+	0.4+	1997 01 13	411	0.2−	0.3−	1998 05 22	704	1.3+	0.0
1994 06 11	691	0.2−	0.4+	1997 01 27	411	1.2+	1.0+	1998 05 22	704	0.1−	1.4−
1996 11 05	691	0.7−	0.2−	1997 01 27	411	0.8+	0.1−	1998 05 22	704	0.3+	0.4−
1996 11 05	691	0.7−	0.1−	1997 02 16	411	1.0+	0.2−	1998 05 22	704	0.7−	0.6−
1996 11 05	691	1.0−	0.1−	1997 02 16	411	1.0+	0.0	1998 05 24	704	1.0−	1.1−
1997 01 02	691	0.8−	0.3−	1997 02 16	411	0.3−	0.9+	1998 05 24	704	1.1−	0.1−
1997 01 02	691	1.0−	0.1−	1998 04 22	704	0.8−	0.1−	1998 05 24	704	1.7+	0.8+
1997 01 02	691	1.2−	0.2−	1998 04 22	704	0.1+	0.5−	1998 05 24	704	0.8+	1.9+
1997 01 09	411	0.3+	0.3−	1998 05 01	704	0.4+	0.2+				
1997 01 09	411	0.9−	0.4+	1998 05 01	704	0.5−	0.3−				

(9109)* 1997 AH₇ = 1990 EV₅

Discovered 1997 Jan. 9 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29122)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27739153	ω	265.92715	+0.53462556	−0.84299075		
<i>a</i>	2.3284875	Ω	151.50196	+0.81639675	+0.49699648		
<i>e</i>	0.0945060	<i>i</i>	7.16557	+0.21833885	+0.20581812		
<i>P</i>	3.55	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 03 01	809	0.7−	0.8+	1997 01 09	411	0.1−	0.6+	1998 05 26	704	0.9−	1.0+
1990 03 01	809	0.0	0.8+	1997 01 10	411	0.0	0.8+	1998 05 26	704	1.1−	0.2−
1990 03 01	809	0.1+	0.5+	1997 01 10	411	0.0	0.2+	1998 05 26	704	(2.3−	2.2−)
1990 03 02	809	0.3−	1.2−	1997 01 13	411	0.2−	0.7+	1998 05 26	704	0.7−	0.2+
1990 03 02	809	0.3+	1.4−	1997 01 13	411	0.3−	0.7+	1998 06 19	704	0.8+	1.2+

1990 03 02	809	0.7+	1.6-	1997 01 27	411	0.4+	0.4+	1998 06 19	704	0.8-	1.8+
1990 03 04	809	0.5-	0.6-	1997 01 27	411	0.3-	0.4-	1998 06 19	704	1.2+	0.8-
1990 03 04	809	0.2-	0.3-	1997 02 14	411	0.1+	0.3+	1998 06 19	704	1.6+	1.4-
1990 03 04	809	0.0	0.0	1997 02 14	411	0.4+	0.6+	1998 06 19	704	0.2+	0.8-
1992 10 26	675	0.8+	0.9+	1998 05 23	704	0.3+	0.6+	1998 06 25	704	0.3-	0.3-
1992 10 26	675	1.1-	1.6+	1998 05 23	704	0.3-	1.0+	1998 06 25	704	0.7+	0.9+
1992 11 27	675	0.2-	0.3-	1998 05 23	704	0.3-	0.3-	1998 06 25	704	0.6-	0.5-
1992 11 27	675	0.1-	0.8-	1998 05 23	704	0.9-	0.6+	1998 06 25	704	0.9+	1.0+
1997 01 09	411	0.9+	0.9+	1998 05 26	704	0.5+	0.3-				

(9110)* 1997 AM₁₉ = 1985 UX₄ = 1985 VT₄

Discovered 1997 Jan. 13 by T. Okuni at Nanyou.

Id. G. V. Williams (*MPC* 29635)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	321.95582						
<i>n</i>	0.28159889	ω	158.28551	+0.56569436	+0.82403227		
<i>a</i>	2.3052362	Ω	146.14283	-0.76452149	+0.53818501		
<i>e</i>	0.0322944	<i>i</i>	3.18927	-0.30902555	+0.17699637		
<i>P</i>	3.50	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1985 10 22	095	(3.5-	5.4+)	1997 02 08	358	0.0	0.3-	1998 06 03	704	0.1+	1.0+
1985 11 11	095	0.7+	1.3+	1997 02 08	358	1.0-	1.9-	1998 06 03	704	1.3-	0.9-
1992 11 17	691	0.6-	0.3+	1997 02 14	327	0.4+	0.2-	1998 06 03	704	(2.8-	0.7+)
1992 11 17	691	0.7-	0.3+	1997 02 14	327	0.5+	0.2+	1998 06 24	704	0.0	1.2-
1992 11 17	691	0.6-	0.2+	1997 02 14	327	1.2-	0.2-	1998 06 24	704	0.5+	0.4-
1994 03 14	675	0.3-	0.6+	1998 05 22	704	0.7+	1.1+	1998 06 24	704	1.1+	0.9-
1994 03 14	675	1.3+	1.5+	1998 05 22	704	0.8-	0.7+	1998 06 24	704	0.1-	1.1-
1994 04 04	675	0.1-	0.3+	1998 05 22	704	0.3-	1.4+	1998 06 24	704	0.9+	0.7-
1994 04 04	675	1.1-	0.3+	1998 05 22	704	1.0+	0.1+	1998 06 26	704	(0.4-	2.4+)
1997 01 13	358	(1.2+	3.8+)	1998 05 22	704	0.3+	0.3-	1998 06 26	704	1.2-	1.7+
1997 01 13	358	0.2+	0.9+	1998 05 24	704	0.7+	1.3-	1998 06 26	704	1.0-	0.3+
1997 01 16	358	0.4-	0.5-	1998 05 24	704	0.7+	0.2+	1998 06 26	704	0.9-	0.3-
1997 01 16	358	1.6+	0.3-	1998 05 24	704	0.8+	1.3+	1998 06 26	704	0.7-	0.1+
1997 01 18	358	0.5+	0.4+	1998 05 24	704	0.1-	0.4+				
1997 01 18	358	0.2+	1.0-	1998 06 03	704	0.0	1.4-				

(9111)* 1997 BD₂ = 1983 AR₁ = 1990 DO₅ = 1995 OK₁₀

Discovered 1997 Jan. 28 by P. Sicoli and F. Manca at Sormano.

Id. G. V. Williams (*MPC* 29309)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	232.61719						
<i>n</i>	0.28421841	ω	267.97164	+0.78840205	-0.59993603		
<i>a</i>	2.2910501	Ω	128.86334	+0.61063542	+0.73646702		
<i>e</i>	0.1413986	<i>i</i>	10.05983	+0.07447537	+0.31255894		
<i>P</i>	3.47	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1983 01 12	046	1.6+	0.1-	1997 02 27	587	0.8-	0.4-	1998 06 19	704	0.3-	0.3-
1983 01 13	046	0.7-	0.7-	1997 02 27	587	0.7-	0.2+	1998 06 19	704	0.4-	0.5+
1990 02 23	033	0.4-	0.1+	1997 03 04	704	1.3+	0.0	1998 06 19	704	0.1+	0.6+
1990 02 23	033	1.5-	0.8+	1997 03 05	704	0.6+	0.6+	1998 06 19	734	0.8+	0.3-
1995 07 21	033	0.5+	0.3-	1997 03 05	704	0.2-	0.3-	1998 06 19	734	0.2+	0.1+
1995 07 22	033	0.4-	0.5-	1997 03 06	704	0.7+	0.1-	1998 06 19	704	0.2-	1.0+
1995 07 23	033	0.2+	1.1-	1997 03 06	704	0.2+	0.3+	1998 06 19	734	0.5+	0.3+
1995 07 26	033	0.2-	0.4-	1997 03 09	587	1.3-	0.1+	1998 06 19	587	0.8+	0.3-
1997 01 28	587	0.9+	0.7-	1997 03 09	587	(2.0-	0.1-)	1998 06 19	587	0.1-	1.0+
1997 01 29	587	0.8+	0.3+	1998 05 22	587	0.3+	0.3+	1998 06 19	587	0.4-	0.6-
1997 01 29	587	1.1+	0.4+	1998 05 22	587	0.3+	0.2+	1998 06 21	734	0.4-	0.1-
1997 01 29	587	0.2-	0.5+	1998 05 23	704	0.4-	0.0	1998 06 21	734	0.4-	0.2-
1997 01 29	587	0.2-	0.3-	1998 05 23	704	0.1+	0.5+	1998 06 21	734	0.3-	0.2-
1997 01 30	587	0.0	0.8-	1998 05 23	704	0.2-	0.3+	1998 06 25	704	1.8+	0.6-
1997 01 30	587	0.5-	0.4-	1998 05 23	704	0.5-	0.4+	1998 06 25	704	0.2+	1.2-
1997 01 30	587	0.1-	0.6-	1998 05 23	704	0.4+	1.0+	1998 06 25	704	0.7-	0.5-
1997 01 30	587	1.0-	1.1-	1998 05 26	704	0.7-	1.2-	1998 06 25	704	0.4-	0.8-

1997 01 31	587	0.0	0.1-	1998 05 26	704	1.7+	1.6+	1998 06 30	587	0.6-	0.1+
1997 01 31	587	0.1+	0.1-	1998 05 26	704	1.2-	0.2+	1998 06 30	587	0.0	1.5-
1997 02 10	587	0.4-	0.2-	1998 05 26	704	0.2+	0.2+				
1997 02 10	587	0.2+	0.1-	1998 05 26	704	0.1-	0.5-				

(9112)* 1997 BU₃ = 1976 MC = 1978 WW₄ = 1981 GH

Discovered 1997 Jan. 31 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29638)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano				Nakano			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	359.69345						
<i>n</i>	0.17900789	ω	163.15532	-0.10696948	+0.99311010		
<i>a</i>	3.1180849	Ω	100.68456	-0.91773909	-0.08010634		
<i>e</i>	0.1277914	<i>i</i>	2.79122	-0.38250817	-0.08552956		
<i>P</i>	5.51	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 06 20	095	0.0	1.4+	1997 02 12	411	0.7+	0.1+	1998 05 24	704	0.1+	1.0+
1978 11 29	675	0.6-	0.4+	1997 02 12	411	0.3-	0.2+	1998 06 24	704	0.9+	0.0
1978 11 30	675	0.5+	0.2+	1997 03 01	411	0.2+	0.2-	1998 06 24	704	0.0	0.2+
1981 04 05	688	1.6+	1.9-	1997 03 01	411	0.7+	0.2+	1998 06 24	704	0.2-	0.2+
1981 04 05	688	0.4+	0.0	1998 05 22	704	0.0	0.4-	1998 06 24	704	0.4-	0.2+
1981 04 10	688	1.4-	0.6-	1998 05 22	704	(0.7-	3.8+)	1998 06 24	704	0.5-	0.3+
1981 04 10	688	2.0-	1.5-	1998 05 22	704	0.4-	1.7+	1998 06 26	704	0.9+	0.2-
1997 01 31	411	0.2-	1.6+	1998 05 22	704	0.1+	0.7-	1998 06 26	704	0.7+	0.9+
1997 01 31	411	0.7-	0.3+	1998 05 22	704	1.5-	1.0-	1998 06 26	704	0.3-	1.2-
1997 02 01	411	0.1-	0.6+	1998 05 24	704	0.2+	0.2-	1998 06 26	704	0.0	0.4-
1997 02 01	411	0.2+	0.8+	1998 05 24	704	0.4+	1.0+	1998 06 26	704	1.3+	0.3-
1997 02 12	411	0.6+	0.0	1998 05 24	704	0.8-	0.8+				

(9113)* 1997 CN₅ = 1976 UV₇

Discovered 1997 Feb. 3 by Y. Shimizu and T. Urata at the Nachi-Katsuura

Observatory.

Id. S. Nakano (*MPC* 29310)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano				Nakano			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	58.28783						
<i>n</i>	0.20908555	ω	337.68143	-0.99003328	+0.13298030		
<i>a</i>	2.8113832	Ω	210.07542	-0.11114765	-0.93998579		
<i>e</i>	0.0623120	<i>i</i>	5.30934	-0.08648878	-0.31423390		
<i>P</i>	4.71	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 10 22	381	0.1-	0.4+	1998 05 21	888	0.1+	0.2+	1998 05 24	704	0.4-	1.0+
1976 10 22	381	0.6+	0.6+	1998 05 21	888	0.1+	0.0	1998 05 24	704	0.3+	0.5+
1976 10 24	381	0.7-	0.1-	1998 05 21	888	0.1-	0.4+	1998 06 03	704	0.3+	0.1+
1993 03 24	675	0.4+	0.8+	1998 05 22	704	0.1+	0.4+	1998 06 03	704	0.5+	0.5-
1993 03 24	675	0.0	1.3+	1998 05 22	704	0.1+	0.0	1998 06 03	704	0.4+	1.1+
1997 02 03	905	0.6+	0.1+	1998 05 22	704	0.2-	0.1-	1998 06 03	704	0.4-	1.6-
1997 02 03	905	0.4+	0.2-	1998 05 22	704	1.1+	0.6-	1998 06 03	704	0.0	0.1+
1997 02 06	385	0.2-	0.2+	1998 05 22	704	0.3+	0.2-	1998 06 18	704	0.9-	1.3-
1997 02 06	385	0.3-	0.3+	1998 05 24	704	0.9-	0.4+	1998 06 18	704	0.3-	1.2-
1997 02 09	385	0.3-	0.0	1998 05 24	704	0.5-	0.6+	1998 06 18	704	1.0+	0.2+
1997 02 09	385	0.4-	0.3+	1998 05 24	699	0.2+	0.4+	1998 06 29	699	0.7-	0.6+

M.P.C. 32200

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	174.96254		(2000.0)		P		Q
n	0.27619770	ω	1.26487		-0.40009633		-0.91395475
a	2.3351924	Ω	112.32277		+0.84020185		-0.39537967
e	0.1128143	i	4.20898		+0.36603794		-0.09144191
P	3.57	H	14.2	G	0.15	U	2

Residuals in seconds of arc

1981 10 24	095(10.3+	1.6+)	1997 02 13	411	0.2-	0.6-	1998 06 26	809	1.3+	0.5-	
1985 12 14	675	1.6-	0.3-	1997 02 16	411	0.6+	0.1-	1998 06 26	704	0.8-	0.4+
1985 12 14	675	1.2+	0.4-	1997 02 16	411	0.2-	0.3+	1998 06 26	704	1.3-	0.3+
1991 08 05	809	1.6+	0.4-	1997 03 01	411	0.4-	0.4-	1998 06 26	704	1.1-	0.0
1991 08 05	809	1.3+	1.4-	1997 03 01	411	0.6-	0.0	1998 06 26	704	0.8-	0.1-
1991 08 05	809	1.5-	1.5-	1997 03 09	411	0.3-	0.2+	1998 06 27	809	0.6-	0.4+
1995 08 28	809	0.1+	0.5+	1997 03 09	411	0.3-	0.6-	1998 06 27	809	1.6-	0.3+
1995 08 29	809	0.6+	0.8+	1998 06 24	704	0.8-	1.2+	1998 06 27	809	0.5-	1.2+
1995 08 31	809	0.5+	0.6-	1998 06 24	704	1.4-	0.8+	1998 07 18	734	0.9+	0.3-
1995 09 01	809	0.7-	1.7-	1998 06 24	704	0.3-	1.1-	1998 07 20	734	0.5+	1.4+
1997 02 12	411	1.3+	1.3-	1998 06 24	704 (2.4-	0.0)	1998 07 20	734	0.9+	1.1-	
1997 02 12	411	0.6-	0.3-	1998 06 26	809	1.1+	0.5-	1998 07 20	734	1.5+	0.3-
1997 02 13	411	0.0	0.0	1998 06 26	809	0.3+	1.1-	1998 07 20	734	1.5+	0.0

(9115)* 1997 DG = 1980 RC₈ = 1991 RM₂₁

Discovered 1997 Feb. 27 by P. Sicoli and F. Manca at Sormano.

Id. G. V. Williams (*MPC* 29313)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	30.58323		(2000.0)		P		Q
n	0.26582401	ω	344.48152		-0.30572530		+0.94787314
a	2.3955574	Ω	267.65153		-0.86370634		-0.31580067
e	0.0878002	i	5.15789		-0.40067867		-0.04250229
P	3.71	H	13.7	G	0.15	U	2

Residuals in seconds of arc

1980 09 13	675	0.4-	0.1+	1997 03 12	587	0.3-	0.1-	1998 06 26	704	0.9+	1.0-
1980 09 14	675	0.0	0.4+	1997 03 12	587	0.4-	0.2-	1998 06 27	809	0.9+	0.4+
1991 09 15	675	0.1-	0.9-	1997 03 16	587	0.2-	0.5-	1998 06 27	809	0.5+	0.6+
1991 09 15	675	1.3+	0.2-	1997 03 16	587	0.0	0.2-	1998 06 27	809	0.9+	0.3+
1991 09 17	675	(2.6+	0.3+)	1998 06 24	704	0.2+	0.0	1998 07 17	587	0.7-	0.1-
1991 09 17	675	0.3+	1.2-	1998 06 24	704	0.2-	0.5-	1998 07 17	587	0.8-	0.2-
1997 02 27	587	0.4-	0.3+	1998 06 24	704	0.0	0.6-	1998 07 21	704	0.1-	0.3+
1997 02 27	587	0.5+	0.1+	1998 06 24	704	0.1-	0.7-	1998 07 21	704	0.3-	0.4+
1997 02 28	587	0.7-	0.4-	1998 06 24	704	0.6-	0.2-	1998 07 21	704	0.2-	0.2+
1997 02 28	587	0.4+	0.2+	1998 06 26	809	(2.4+	2.0+)	1998 07 21	704	0.5-	0.3+
1997 03 02	587	0.1+	0.6-	1998 06 26	809	1.6+	1.6+	1998 07 25	587	0.5+	0.2-
1997 03 02	587	0.1+	0.8-	1998 06 26	809	(2.2+	1.4+)	1998 07 25	587	0.3-	0.2+
1997 03 06	587	0.3-	0.4-	1998 06 26	704	0.3-	0.2-	1998 07 26	704	(2.4+	1.4-)
1997 03 06	587	0.0	0.0	1998 06 26	704	0.2+	0.8+	1998 07 26	704	(2.9-	1.8+)
1997 03 10	587	0.0	0.5-	1998 06 26	704	0.5+	0.5+	1998 07 26	704	0.8-	1.7-
1997 03 10	587	0.2+	0.1-	1998 06 26	704	1.0-	1.6-	1998 07 26	704	(1.7-	2.5+)

(9116)* 1997 ES₄₀ = 1988 VP₆ = 1992 YX

Discovered 1997 Mar. 7 by M. W. Buie at the Anderson Mesa Station of the Lowell Observatory.

Id. G. V. Williams (*MPC* 29645)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	241.47596		(2000.0)		P		Q
n	0.27955081	ω	224.36690		+0.48396703		-0.87486003
a	2.3164817	Ω	196.71982		+0.82088463		+0.46175066
e	0.1207366	i	3.96553		+0.30319026		+0.14630877
P	3.53	H	15.2	G	0.15	U	1

Residuals in seconds of arc

1988 10 13	675	0.5+	0.6+	1997 03 08	688	0.0	0.1-	1997 03 11	688	0.0	0.1+
1988 10 13	675	1.1+	0.1-	1997 03 08	688	0.1-	0.3-	1997 03 12	688	0.8+	0.1-

1998 AUG. 8

1988 11 03	033	0.8-	0.4-	1997 03 08	688	0.3+	0.2-	1997 03 12	688	0.6+	0.2-
1988 11 03	033	0.3-	0.7-	1997 03 08	688	0.1+	0.1-	1997 03 12	688	0.3+	0.3-
1988 11 04	033	0.2-	0.4-	1997 03 08	688	0.1+	0.2-	1997 03 12	688	0.4+	0.3-
1992 12 21	372	(1.0+	4.2-)	1997 03 08	688	0.1-	0.1+	1997 03 12	688	0.3+	0.0
1992 12 21	372	(1.4-	2.2-)	1997 03 08	688	0.2-	0.1+	1997 03 13	688	0.4-	0.4-
1992 12 23	372	(1.2+	3.0-)	1997 03 08	688	0.1-	0.1+	1997 03 13	688	0.0	0.5+
1992 12 23	372	0.2-	0.8-	1997 03 08	688	0.2-	0.1-	1997 03 13	688	0.6+	0.3-
1997 03 05	809	1.3+	1.6+	1997 03 08	688	0.2-	0.0	1997 03 13	688	0.2+	0.0
1997 03 05	809	0.8+	1.2+	1997 03 08	688	0.4-	0.1+	1997 04 15	691	1.6-	1.3-
1997 03 05	809	0.4+	0.8+	1997 03 09	688	0.2-	0.2+	1997 04 15	691	1.6-	1.1-
1997 03 06	809	0.0	0.0	1997 03 09	688	0.3+	0.1+	1997 04 15	691	1.8-	0.8-
1997 03 06	809	1.2-	0.6+	1997 03 10	688	0.2-	0.2-	1998 06 26	704	0.3-	0.6+
1997 03 06	809	0.0	0.2-	1997 03 10	688	0.4+	0.0	1998 06 26	704	(0.5-	2.7-)
1997 03 07	688	0.4-	0.1+	1997 03 10	688	0.3+	0.0	1998 06 26	704	0.4-	1.5-
1997 03 07	688	0.2+	0.4-	1997 03 10	688	0.0	0.1-	1998 06 26	704	1.0-	0.3-
1997 03 07	688	0.4-	0.4+	1997 03 10	688	0.2+	0.2-	1998 07 17	910	1.2+	0.1+
1997 03 07	688	0.3-	0.2+	1997 03 10	688	0.2+	0.3-	1998 07 17	910	0.1+	0.4+
1997 03 07	688	0.2+	0.2-	1997 03 10	688	0.6+	0.5-	1998 07 17	910	0.1-	0.3+
1997 03 07	688	0.6-	0.2+	1997 03 10	688	0.6+	0.2-	1998 07 23	910	0.2+	0.0
1997 03 07	688	0.7-	0.7+	1997 03 11	688	0.1+	0.2+	1998 07 23	910	0.2+	0.1-
1997 03 07	688	0.1-	0.0	1997 03 11	688	0.2+	0.2+	1998 07 23	910	0.1+	0.2-
1997 03 07	688	0.6+	0.2-	1997 03 11	688	0.1-	0.1-				

(9117)* 1997 FR₁ = 1952 HA₁ = 1969 VR₂ = 1973 YJ₃ = 1989 AL₈

Discovered 1997 Mar. 27 by D. Morata and S. Morata at Martigues.

Id. G. V. Williams (*MPC* 29647)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	156.01812		(2000.0)		P		Q
n	0.26176213	ω	43.63905		-0.69422352		-0.69766160
a	2.4202757	Ω	91.20017		+0.60219144		-0.69767395
e	0.1677161	i	10.19618		+0.39423237		-0.16284763
P	3.77	H	12.4	G	0.15	U	1

Residuals in seconds of arc

1952 04 19	760	(4.2- 24.8-)	1997 04 03	618	0.0	0.1+	1997 05 01	618	0.4+	0.6-
1952 04 19	760	0.3+ 1.4+	1997 04 03	618	0.6+	0.4-	1997 05 01	618	0.2+	0.2+
1969 11 15	095	1.6+ 1.1-	1997 04 03	618	0.5+	0.5-	1997 05 01	618	0.4-	0.3-
1973 12 25	095	(5.7+ 0.7+)	1997 04 05	124	1.1-	0.2-	1997 05 01	618	0.4-	0.2-
1989 01 10	054	0.6- 0.6+	1997 04 05	124	1.0-	0.2-	1997 05 01	618	0.2-	0.4+
1989 01 10	054	0.9- 0.9-	1997 04 05	124	0.9-	0.7-	1997 05 02	133	0.2+	0.0
1997 03 27	618	0.5- 0.8+	1997 04 06	133	0.3-	0.1-	1997 05 02	618	1.1+	0.2+
1997 03 27	618	0.9- 0.1+	1997 04 06	133	0.4-	0.1+	1997 05 02	618	1.1+	0.1-
1997 03 27	618	0.7- 0.1-	1997 04 06	618	0.6-	0.6-	1997 05 02	618	0.7+	0.6-
1997 03 30	133	0.1- 0.4+	1997 04 06	618	1.6-	0.4-	1997 05 02	133	0.6+	0.7+
1997 03 30	133	1.1+ 0.2-	1997 04 06	618	1.9-	0.2-	1997 05 09	124	0.9-	1.0+
1997 03 30	618	0.9+ 0.3+	1997 04 06	618	0.8-	0.2-	1997 05 09	124	1.1-	1.1+
1997 03 31	958	0.1+ 0.8+	1997 04 06	618	0.7-	0.0	1997 05 09	124	0.4-	1.4+
1997 03 31	958	0.2+ 0.7+	1997 04 10	133	1.4+ 1.0-		1997 05 26	133	0.4-	0.7+
1997 03 31	958	0.0 0.7+	1997 04 10	133	0.4+ 0.3-		1997 05 26	133	0.2-	0.5+
1997 03 31	133	0.3+ 0.4-	1997 04 10	618	0.2- 0.3-		1997 05 28	627	0.6+	0.2+
1997 03 31	133	1.0+ 0.8-	1997 04 10	618	0.4- 0.2-		1998 07 05	148	1.6+	1.6+
1997 03 31	627	0.0 0.3-	1997 04 10	618	0.1- 0.5-		1998 07 05	148	0.5-	0.6-
1997 03 31	627	0.2- 0.0	1997 04 10	618	0.5+ 0.1-		1998 07 23	627	(2.6+ 0.4+)	
1997 03 31	627	0.4- 0.1-	1997 04 10	618	0.5+ 0.1+		1998 07 23	627	0.5-	0.1-
1997 04 01	618	1.0+ 0.7-	1997 04 13	618	0.3- 0.3-		1998 07 25	132	(2.2- 2.3+)	
1997 04 01	618	0.9+ 0.5-	1997 04 13	618	0.2- 0.3-		1998 07 25	132	0.7+	1.4-
1997 04 01	618	1.0+ 0.5-	1997 04 13	618	0.0 0.0		1998 07 26	132	(0.7- 2.4-)	
1997 04 01	618	0.2+ 0.0	1997 04 13	618	0.2- 0.2-		1998 07 29	627	1.4-	1.6-
1997 04 01	618	0.6+ 0.2-	1997 04 13	618	0.5- 0.1+		1998 07 29	627	(0.7+ 2.8-)	
1997 04 03	618	0.5+ 0.7-	1997 04 30	133	0.8+ 0.1+		1998 07 30	627	0.3+	0.9-
1997 04 03	618	0.1- 0.1+	1997 04 30	133	0.2+ 0.4-					

1998 AUG. 8

M.P.C. 32201

Id. K. Ichikawa (*MPC* 30767), S. Nakano (d, *MPC* 19982; *MPC* 30767)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	291.43214		(2000.0)		P		Q				
<i>n</i>	0.18761468	ω	264.87987		+0.99955916		-0.02406006				
<i>a</i>	3.0219795	Ω	96.49802		+0.02898270		+0.91783685				
<i>e</i>	0.2796069	<i>i</i>	1.00316		-0.00644058		+0.39622800				
<i>P</i>	5.25	<i>H</i>	13.0	<i>G</i>	0.15		<i>U</i>	1			
Residuals in seconds of arc											
1967 09 08	095	0.1-	0.3-	1994 12 25	399	1.1+	1.1+	1997 04 10	327	0.6+	0.8-
1978 11 28	330	(4.5+	3.4-)	1996 02 15	566	1.7-	1.3+	1997 04 10	327	0.2+	0.9-
1978 11 30	675	0.3-	0.1-	1996 02 15	566	1.7-	1.5+	1997 04 10	327	0.3+	0.5-
1978 12 01	675	0.2+	0.6-	1996 02 15	566	1.7-	1.7+	1998 06 03	704	0.5+	0.0
1988 08 09	095	0.2+	0.1+	1997 04 03	704	1.4+	0.9-	1998 06 03	704	1.2+	1.1+
1988 08 09	095	1.9+	0.6-	1997 04 03	704	0.9+	0.9-	1998 06 03	704	(0.9-	2.8-
1992 04 04	809	0.8-	0.7+	1997 04 03	704	1.3+	1.4-	1998 06 03	704	0.2-	0.4-
1992 04 04	809	0.9-	1.2-	1997 04 03	704	(2.7+	0.0)	1998 06 24	704	0.2-	0.4-
1992 04 04	809	0.6+	1.2-	1997 04 05	704	1.8+	0.8-	1998 06 24	704	1.5-	1.2+
1992 04 06	809	0.4-	1.8+	1997 04 05	704	0.8+	0.5-	1998 06 24	704	1.1-	1.8+
1992 04 06	809	0.3+	1.4+	1997 04 06	327	0.3-	0.9-	1998 06 24	704	0.1+	1.9+
1992 04 06	809	1.4+	1.2+	1997 04 06	327	0.1-	0.8-	1998 06 24	704	0.7-	1.8+
1992 05 02	691	1.4-	0.6+	1997 04 06	327	0.4-	0.6-	1998 06 26	704	0.8-	0.2+
1992 05 02	691	0.5-	0.5-	1997 04 07	704	1.3+	0.3-	1998 06 26	704	0.2+	1.0-
1992 05 02	691	1.0-	0.3+	1997 04 07	704	1.6+	0.9-	1998 06 26	704	0.4-	0.3+
1994 12 25	399	0.6-	1.8+	1997 04 10	327	0.1+	0.8-	1998 06 26	704	1.6-	0.3-

(9119)* 1998 DT = 1995 SZ

Discovered 1998 Feb. 18 by E. Meyer at Linz.

Id. G. V. Williams (*MPC* 31557)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	196.11140		(2000.0)		P		Q				
<i>n</i>	0.18496643	ω	77.94552	+0.95860331			+0.28434044				
<i>a</i>	3.0507557	Ω	265.53361	-0.26681143			+0.87834242				
<i>e</i>	0.0899975	<i>i</i>	0.87200	-0.09945528			+0.38427218				
<i>P</i>	5.33	<i>H</i>	13.9	<i>G</i>	0.15		<i>U</i>	1			
Residuals in seconds of arc											
1991 12 31	691	0.8-	0.5+	1995 09 26	560	0.8-	1.4-	1998 03 03	809	(0.1+	3.6+
1991 12 31	691	0.5-	0.3-	1995 09 26	560	0.9+	0.5-	1998 03 03	704	0.1-	0.7+
1991 12 31	691	0.3+	0.2+	1995 09 26	560	1.4+	0.2-	1998 03 03	809	(1.5-	3.5+
1993 03 25	691	0.0	1.1-	1996 11 30	327	0.2+	0.2-	1998 03 03	809	(2.1-	3.1+
1993 03 25	691	0.0	1.2-	1996 11 30	327	0.9+	0.3-	1998 03 03	704	0.3+	1.1+
1993 03 25	691	0.1-	1.2-	1996 12 17	566	0.3+	0.3-	1998 03 03	704	0.6-	1.3+
1995 08 19	809	(3.0-	0.2-)	1996 12 17	566	0.5+	0.3-	1998 03 03	704	(2.6-	0.3+
1995 08 20	809	(2.7-	0.6-)	1996 12 17	566	0.5-	0.3-	1998 03 04	809	(1.3+	5.3+
1995 08 22	809	1.8-	0.2+	1998 02 18	540	0.0	0.4-	1998 03 04	809	(0.2+	5.4+
1995 08 24	809	0.0	0.1-	1998 02 18	540	0.1+	0.4+	1998 03 04	809	(0.1-	4.8+
1995 08 25	809	0.6-	0.3+	1998 02 18	540	0.4+	0.1+	1998 03 04	704	(2.4-	1.0-
1995 09 16	560	0.2-	0.1+	1998 02 18	540	0.2-	0.1-	1998 03 04	704	1.9-	1.6-
1995 09 16	560	0.7-	0.1-	1998 02 19	540	0.8-	0.7-	1998 03 04	704	(2.5-	1.1-
1995 09 16	560	0.1-	0.3+	1998 02 19	540	1.0-	0.8-	1998 03 04	704	(5.2-	1.0+
1995 09 17	809	0.2+	0.3+	1998 02 20	540	0.1-	0.4-	1998 03 23	540	0.5-	0.0
1995 09 17	560(19.5+	7.8+)		1998 02 20	540	0.1-	0.6+	1998 03 23	540	0.1-	0.1+
1995 09 17	560(20.2+	7.1+)		1998 02 20	540	0.2+	0.2+	1998 03 23	540	0.1+	0.5+
1995 09 17	560(19.5+	6.6+)		1998 02 21	540	0.3+	0.1-	1998 03 23	540	1.0-	0.3-
1995 09 18	809	0.7+	0.5+	1998 02 21	540	0.8+	0.9+	1998 03 25	540	1.1+	1.7+
1995 09 18	809	0.3+	0.4-	1998 02 21	540	1.1+	0.2-	1998 03 26	540	0.6+	1.0+
1995 09 19	809	0.8+	0.0	1998 02 21	540	0.8+	0.4-	1998 03 26	540	0.1-	0.2-
1995 09 23	691	1.2-	0.6+	1998 02 21	540	0.6+	0.1+	1998 04 22	540	0.0	0.4-
1995 09 23	691	1.2-	0.6+	1998 02 26	540	0.1+	0.5+	1998 04 22	540	0.1+	0.6+
1995 09 23	691	1.1-	0.4+	1998 02 26	540	0.1-	0.2+	1998 04 23	540	(0.6-	2.6+
1995 09 25	560	0.8+	0.5+	1998 02 26	540	0.4+	0.0	1998 04 23	540	0.9+	1.2+
1995 09 25	560	1.2+	0.5+	1998 02 26	540	0.2+	0.5+				
1995 09 25	560	0.4+	0.3-	1998 03 03	704	0.8-	0.9-				

(9120)* 1998 DR₈ = 1966 PE = 1966 RC = 1973 UW₂ = 1990 SQ₁₅

Discovered 1998 Feb. 22 by the Beijing Schmidt CCD Asteroid Program at

Xinglong.

Id. G. V. Williams (*MPC* 31408)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	97.97971		(2000.0)		P		Q				
<i>n</i>	0.28861954	ω	114.81364		+0.99605818		-0.01982630				
<i>a</i>	2.2676998	Ω	246.42069		-0.01281026		+0.93232998				
<i>e</i>	0.2010408	<i>i</i>	5.41302		+0.08777245		+0.36106471				
<i>P</i>	3.41	<i>H</i>	13.7	<i>G</i>	0.15		<i>U</i>	2			
Residuals in seconds of arc											
1966 08 13	095	(0.0	7.4+)	1997 10 27	127	1.1-	1.1-	1997 11 06	704	1.1+	0.1-
1966 09 13	095	1.5+	1.0-	1997 10 27	127	0.7-	1.1-	1997 11 06	704	1.0+	0.6+
1966 09 14	095	(3.6-	5.9+)	1997 10 29	704	1.2+	1.8-	1997 11 08	910	0.4+	0.6+
1973 10 27	095	0.8-	0.7-	1997 10 29	704	0.5-	0.8-	1997 11 08	910	0.2+	0.6+
1990 09 17	675	1.0-	0.5-	1997 10 29	704	0.8-	0.7-	1997 11 08	910	0.3+	0.5+
1990 09 17	675	0.9-	0.8-	1997 10 29	704	0.2+	0.0	1997 12 29	566	0.4-	0.3-
1990 09 18	675	0.6+	0.3+	1997 10 29	704	0.5-	0.3-	1997 12 29	566	0.2-	0.5-
1990 09 18	675	1.9+	0.2+	1997 10 29	566	0.3-	0.1+	1997 12 29	566	0.3-	0.5-
1990 09 19	675	0.2+	0.8-	1997 10 29	566	0.2-	0.0	1998 02 22	327	0.4+	0.6+
1990 09 19	675	0.7-	0.7-	1997 10 29	566	0.4-	0.2+	1998 02 22	327	0.1+	0.3+
1992 01 28	691	1.1-	1.2-	1997 10 30	704	(3.1+	2.5+)	1998 02 22	327	0.0	0.5+
1992 01 28	691	0.9-	1.7-	1997 10 30	704	0.4+	0.0	1998 02 22	327	0.4+	0.2+
1992 01 28	691	1.4-	1.2-	1997 10 30	704	(3.6+	2.0+)	1998 02 23	327	0.2+	0.6+
1992 04 07	809	1.1+	0.4+	1997 10 30	704	0.6+	0.8+	1998 02 23	327	0.3+	0.2+
1994 12 02	691	0.1+	0.4-	1997 10 30	704	(2.9+	2.2+)	1998 02 23	327	0.4+	0.1+
1994 12 02	691	0.1-	0.3-	1997 10 30	704	0.2+	0.9+	1998 03 01	327	0.6+	0.3-
1994 12 02	691	0.4-	0.4-	1997 10 30	704	(3.2+	0.9+)	1998 03 01	327	0.2+	0.1+
1997 10 22	704	1.1-	1.0+	1997 10 30	704	0.4+	1.1+	1998 03 01	327	0.2+	0.3+
1997 10 22	704	1.3-	1.3+	1997 10 30	704	(3.4+	1.0+)	1998 03 11	327	0.3-	0.2-
1997 10 22	704	1.4-	1.3+	1997 10 30	704	0.3+	0.4+	1998 03 11	327	1.1+	0.4+
1997 10 22	704	(2.5-	2.1+)	1997 11 06	704	0.9+	0.4-	1998 03 11	327	0.5-	0.8+
1997 10 22	704	(3.3-	0.9+)	1997 11 06	704	1.4+	0.3+				
1997 10 27	127	1.1-	1.0-	1997 11 06	704	1.0+	0.7-				

(9121)* 1998 DJ₁₁ = 1976 JO₉ = 1978 PB₂ = 1978 SA₄ = 1986 TU₈

Discovered 1998 Feb. 24 by V. S. Casulli at Colleverde di Guidonia.

Id. G. V. Williams (*MPC* 31560)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	220.29477		(2000.0)		P		Q				
<i>n</i>	0.12819787	ω	356.84681		+0.81748193		+0.57437130				
<i>a</i>	3.8953711	Ω	327.97729		−0.52665130		+0.71545657				
<i>e</i>	0.0526890	<i>i</i>	4.61585		−0.23315597		+0.39776815				
<i>P</i>	7.69	<i>H</i>	11.4		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1976 05 02	809	0.0	0.4−	1998 03 01	596	0.3+	0.3+	1998 03 22	704	0.5+	0.8+
1978 08 08	095	1.6−	0.6+	1998 03 01	596	0.4+	0.2+	1998 03 22	704	0.3+	0.5+
1978 09 28	095	0.1+	1.9+	1998 03 03	704	0.3+	0.2−	1998 03 22	704	0.3+	0.0
1986 10 02	095	0.8−	2.2+	1998 03 03	704	0.4+	0.7−	1998 03 22	704	0.1−	0.6+
1996 12 04	691	0.0	0.0	1998 03 03	704	0.2+	0.1+	1998 03 22	704	1.0−	0.6+
1996 12 04	691	0.3−	0.0	1998 03 03	704	0.2+	0.7−	1998 03 26	704	0.6+	0.3−
1996 12 04	691	0.4−	0.2−	1998 03 03	704	0.9−	0.7+	1998 03 26	704	0.0	0.0
1996 12 11	691	0.3+	0.1−	1998 03 04	704	1.9−	0.1+	1998 03 26	704	0.4−	1.1+
1996 12 11	691	0.1+	0.0	1998 03 04	704	(2.2−	0.1+)	1998 03 26	596	0.1+	0.1+
1996 12 11	691	0.2+	0.6+	1998 03 04	704	(2.1−	0.7+)	1998 03 26	596	0.2+	0.2+
1998 02 24	566	0.4+	0.0	1998 03 04	704	(2.3−	0.2−)	1998 03 26	596	0.3+	0.2+
1998 02 24	566	0.3+	0.0	1998 03 04	704	(2.6−	0.7+)	1998 03 29	704	0.7+	0.1+
1998 02 24	566	0.4+	0.1−	1998 03 09	596	0.7+	0.3+	1998 03 29	704	1.0+	0.1+
1998 02 24	596	0.3−	0.9−	1998 03 09	596	1.2+	0.1+	1998 03 29	704	0.2−	0.3−
1998 02 24	596	0.5−	0.6−	1998 03 09	596	0.6+	0.1+	1998 03 29	704	0.2−	0.3−
1998 02 24	596	0.1−	0.7−	1998 03 17	596	0.3−	1.1+	1998 03 29	704	0.1−	0.4−
1998 02 26	596	0.1−	0.2−	1998 03 17	596	0.5−	0.7+	1998 04 04	699	1.0+	0.6−
1998 02 26	596	0.4−	0.9−	1998 03 17	596	0.7−	0.8+	1998 04 04	699	0.9−	0.8−

1998 02 26	596	0.1−	0.3+	1998 03 20	704	0.5+	0.7+	1998 04 04	699	0.7−	1.0+
1998 02 27	596	0.1−	0.7−	1998 03 20	704	0.2+	0.8+	1998 04 18	704	1.6+	0.2−
1998 02 27	596	0.2+	0.4−	1998 03 20	704	0.7−	0.6+	1998 04 18	704	1.4−	1.4+
1998 02 27	596	0.1−	0.5−	1998 03 20	704	1.0+	0.1+	1998 04 18	704	0.5−	0.5+
1998 03 01	596	0.6+	0.3+	1998 03 20	704	0.1−	0.2+	1998 04 18	704	(1.3−	3.4+)

(9122)* 1998 FZ_s = 1994 NT₁₀ = 6800 P-L

Discovered 1998 Mar. 22 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 31746)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		108.79857		(2000.0)		P		Q	
<i>n</i>		0.19784864		ω		341.80772		−0.27989782	−0.95900322
<i>a</i>		2.9168494		Ω		124.42412		+0.88735762	−0.27607886
<i>e</i>		0.0479760		<i>i</i>		3.08447		+0.36640642	−0.06397876
<i>P</i>		4.98		<i>H</i>		13.9		<i>G</i>	0.15
								<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.3+	1.5−	1995 09 23	327	0.4−	0.5−	1998 04 20	704	1.6+	0.3+
1960 09 26	675	0.4−	0.8−	1998 03 22	691	0.8−	0.2+	1998 04 20	704	0.3+	0.7−
1960 09 27	675	0.9+	0.2+	1998 03 22	691	1.0−	0.5+	1998 04 20	704	0.1−	1.1−
1960 09 28	675	0.0	0.5−	1998 03 22	691	0.9−	0.2+	1998 04 20	704	1.5+	1.5−
1991 12 08	691	0.3+	0.3+	1998 03 25	704	0.2+	0.7+	1998 04 21	704	0.6−	0.1−
1991 12 08	691	0.3+	0.7+	1998 03 25	704	1.0+	0.8+	1998 04 21	704	0.9+	0.4−
1991 12 08	691	0.5+	0.6+	1998 03 25	704	0.2−	0.3+	1998 04 21	704	0.7+	0.5−
1994 07 08	809	0.2−	0.2+	1998 03 25	704	1.1−	0.6+	1998 04 21	704	1.3+	0.7−
1994 07 08	809	0.7−	0.9−	1998 03 25	704	1.0+	0.2−	1998 04 21	704	(0.7+	3.0+)
1994 07 08	809	1.1−	0.9−	1998 03 25	691	1.4−	0.1+	1998 04 22	704	0.0	0.4−
1994 07 09	809	1.6+	1.8+	1998 03 25	691	1.7−	0.1+	1998 04 22	704	0.3+	0.1−
1994 07 09	809	0.5+	1.3+	1998 03 25	691	1.7−	0.3+	1998 04 22	704	0.6−	0.4−
1994 07 09	809	1.0+	1.7+	1998 03 29	704	1.0+	0.4+	1998 04 22	704	0.8−	0.6−
1995 09 23	327	0.3+	0.3−	1998 03 29	704	0.0	0.6+	1998 04 22	704	0.2−	1.0−
1995 09 23	327	0.3−	0.2−	1998 03 29	704	(2.2+	0.5+)				
1995 09 23	327	0.3−	0.3+	1998 03 29	704	0.9−	0.4+				

(9123)* 1998 FQ₁₁ = 1952 DB₁ = 1973 GD₁ = 1977 CU₂ = 1977 EC = 1981 AA₄

Discovered 1998 Mar. 24 by T. Kagawa at the Gekko Observatory.

Id. T. Urata (*MPC* 31569)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		20.71736		(2000.0)		P		Q	
<i>n</i>		0.23659971		ω		212.45378		−0.98932324	+0.11346411
<i>a</i>		2.5889674		Ω		333.59878		−0.04340375	−0.82849724
<i>e</i>		0.2092884		<i>i</i>		11.87012		−0.13912452	−0.54837780
<i>P</i>		4.17		<i>H</i>		14.0		<i>G</i>	0.15
								<i>U</i>	2

Residuals in seconds of arc

1952 02 17	711	(3.1−	7.3−)Y	1998 01 26	566	0.5+	0.9+	1998 03 25	888	0.1+	0.2−
1973 04 05	095	0.1−	1.6+	1998 01 26	566	0.4+	0.9+	1998 03 25	888	0.0	0.2−
1977 02 11	675	0.4−	0.1+	1998 02 25	566	0.9+	1.0+	1998 03 29	888	0.0	0.0
1977 02 12	675	0.5+	0.5+	1998 02 25	566	0.9+	0.9+	1998 03 29	888	0.0	0.2−
1977 03 09	095	2.0+	0.4−	1998 02 25	566	0.8+	0.9+	1998 03 29	888	0.1−	0.0
1977 03 13	095	(3.4+	0.1−)	1998 03 03	704	0.0	0.1+	1998 03 30	886	0.2+	0.6+
1981 01 08	381	0.3−	0.5−	1998 03 03	704	(2.1+	0.5+)	1998 03 30	886	0.4+	0.3+
1981 01 08	381	(3.5+	2.8+)	1998 03 03	704	0.6−	0.0	1998 04 01	704	0.7−	0.5−
1991 09 12	691	0.4−	0.1+	1998 03 03	704	0.3−	0.1+	1998 04 01	704	0.4−	0.4−
1991 09 12	691	0.3−	0.5+	1998 03 03	704	0.6−	0.7−	1998 04 01	704	0.1−	1.4−
1991 09 12	691	1.3−	1.0−	1998 03 04	704	1.2−	0.5+	1998 04 01	704	0.4+	1.5−
1995 07 27	691	0.4−	0.6+	1998 03 04	704	1.6−	0.9+	1998 04 01	704	0.9+	1.4−
1995 07 27	691	0.2−	0.7+	1998 03 04	704	1.1−	0.4+	1998 04 19	888	0.2+	0.1−
1995 07 27	691	0.1+	0.6+	1998 03 04	704	0.9−	0.6+	1998 04 19	888	0.7+	0.0
1995 08 03	691	0.1+	0.5+	1998 03 04	704	(2.2−	0.2+)	1998 04 19	888	0.6+	0.1+
1995 08 03	691	0.2+	0.4+	1998 03 24	888	0.3−	0.1−	1998 05 20	888	0.8+	0.3−
1995 08 03	691	0.2+	0.5+	1998 03 24	888	0.3−	0.2−	1998 05 20	888	0.6+	0.0
1998 01 26	566	0.6+	0.9+	1998 03 25	888	0.0	0.3−	1998 05 20	888	0.3+	0.4−

(9124)* 1998 FR₆₀ = 1981 UU₆ = 1986 WE₂ = 1990 QS₇

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 31996)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		156.21216		(2000.0)		P		Q	
<i>n</i>		0.20272782		ω		41.36221		+0.66445144	−0.74732558
<i>a</i>		2.8698585		Ω		6.99935		+0.67911841	+0.60214497
<i>e</i>		0.0591151		<i>i</i>		1.39222		+0.31193344	+0.28093757
<i>P</i>		4.86		<i>H</i>		13.8		<i>G</i>	0.15
								<i>U</i>	1

Residuals in seconds of arc

1981 10 30	381	0.5+	2.2−	1995 09 18	809	1.1+	0.4−	1998 03 28	704	0.2−	0.5+
1981 10 30	381	0.6+	2.0−	1995 09 18	809	0.4+	0.5−	1998 03 28	704	0.2−	0.5+
1986 11 30	046	(2.3+	3.1−)	1995 09 19	809	1.1+	0.1−	1998 03 29	704	0.6−	0.0
1986 11 30	046	0.2+	1.3−	1995 09 20	809	0.6+	0.3+	1998 03 29	704	0.2−	0.6+
1990 08 16	809	(2.2+	0.6+)	1995 09 21	691	1.5−	0.1−	1998 03 29	704	0.9−	0.9+
1990 08 16	809	0.9+	0.4−	1995 09 21	691	1.7−	0.0	1998 03 29	704	0.1+	1.6+
1990 08 16	809	(2.5+	1.0−)	1995 09 21	691	1.6−	0.1+	1998 03 29	704	0.8−	1.2+
1990 08 18	809	1.5+	1.0+	1995 09 22	809	0.4+	0.6+	1998 04 01	704	0.0	0.1−
1990 08 18	809	0.6−	0.2+	1995 09 22	809	1.1+	0.5−	1998 04 01	704	0.5−	0.0
1990 08 18	809	0.9−	0.5−	1995 09 23	809	0.6+	0.1+	1998 04 01	704	0.6+	0.2+
1990 08 24	809	0.6+	0.1−	1995 09 24	809	0.1+	0.3−	1998 04 01	704	0.3+	1.3−
1990 08 24	809	0.3+	1.1−	1998 03 20	704	0.1+	0.0	1998 04 01	704	0.2−	1.0−
1990 08 24	809	0.1−	0.8−	1998 03 20	704	0.8−	0.7+	1998 04 19	704	1.0+	0.8−
1990 08 26	809	0.2+	0.8−	1998 03 20	704	0.8−	0.4−	1998 04 19	704	0.5+	1.0−
1990 08 26	809	0.1+	0.9−	1998 03 20	704	0.4+	0.2+	1998 04 19	704	0.1+	1.7−
1990 08 26	809	0.2−	0.9−	1998 03 20	704	1.6−	1.5−	1998 04 19	704	0.5+	0.8−
1995 08 22	809	0.9−	0.3−	1998 03 22	704	0.5+	0.2+	1998 04 19	704	0.2+	1.3−
1995 08 24	809	0.4+	0.0	1998 03 22	704	0.7+	0.2−	1998 04 20	704	(0.2+	2.1−)
1995 08 25	809	0.3−	0.3−	1998 03 22	704	0.2+	0.2+	1998 04 20	704	0.8−	1.5−
1995 08 26	809	(0.3−	3.2−)	1998 03 22	704	1.4−	1.4−	1998 04 20	704	1.4+	1.8−
1995 08 27	809	(1.8−	2.4−)	1998 03 22	704	(0.6+	2.8−)	1998 04 20	704	0.0	1.8−
1995 08 27	809	0.3+	0.3−	1998 03 28	704	0.6+	0.2−	1998 04 20	704	1.9−	1.6−
1995 09 01	809	0.3+	0.2−	1998 03 28	704	1.0−	0.3+				
1995 09 17	809	0.6+	0.4−	1998 03 28	704	0.6+	1.0+				

(9125)* 1998 FT₆₂ = 1961 TS₁ = 1976 JZ₆ = 1993 VQ₂ = 1996 TE₅₄

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 31997)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		183.73655		(2000.0)		P		Q	
<i>n</i>		0.30959604		ω		69.30901		+0.86252657	−0.50571596
<i>a</i>		2.1640757		Ω		321.06430		+0.45341127	+0.78759253
<i>e</i>		0.1707831		<i>i</i>		1.57745		+0.22464671	+0.35206445
<i>P</i>		3.18		<i>H</i>		14.7		<i>G</i>	0.15
								<i>U</i>	2

Residuals in seconds of arc

1961 10 13	760	2.4+	0.1+	1997 02 03	566	0.6+	0.1−	1998 03 29	704	0.3+	0.2−
1961 10 17	760	1.2−	0.1−	1998 03 20	704	1.3+	1.2+	1998 03 29	704	0.4−	0.4−
1961 10 17	760	1.1−	0.6−	1998 03 20	704	0.8−	0.7−	1998 04 01	704	0.0	0.4−
1976 05 02	809	0.6+	0.5−	1998 03 20	704	0.1+	0.6−	1998 04 01	704	0.9+	1.0−
1993 11 15	365	(3.9−	1.2+)	1998 03 20	704	1.1−	1.0+	1998 04 01	704	0.1+	0.7+
1993 11 15	365	1.1−	0.7−	1998 03 20	704	1.2−	1.8+	1998 04 01	704	0.4+	1.4−
1993 11 16	365	(2.4+	1.5−)	1998 03 22	704	0.1+	0.5−	1998 04 01	704	0.3−	0.8+
1993 11 16	365	0.9+	1.7+	1998 03 22	704	0.3−	0.1−	1998 04 19	704	0.3+	0.0
1993 11 22	365	0.2−	0.9−	1998 03 22	704	0.7+	1.1−	1998 04 19	704	1.5−	0.1−
1993 11 22	365	0.1−	0.6+	1998 03 22	704	0.1+	0.5+	1998 04 19	704	0.2−	0.8+
1996 10 04	372	0.3−	0.6−	1998 03 22	704	0.1−	1.2−	1998 04 19	704	0.4−	0.7−
1996 10 04	372	0.8−	0.7−	1998 03 28	704	1.1+	0.6+	1998 04 19	704	(2.2−	0.2+)
1996 10 10	372	0.7+	0.6+	1998 03 28	704	0.1−	1.0+	1998 04 20	704	0.2+	0.7−
1996 10 10	372	0.1−	0.3+	1998 03 28	704	(3.3+	0.1+)	1998 04 20	704	0.3+	0.4+
1997 02 03	566	0.5+	0.1+	1998 03 28	704	1.3+	0.9+	1998 04 20	704	0.5−	0.0

1998 AUG. 8

1997 02 03	566	0.6+	0.0	1998 03 28	704	1.6-	0.3-	1998 04 20	704	0.6-	0.3+
1997 02 03	566	0.2+	0.3-	1998 03 29	704	0.3+	0.1-	1998 04 20	704	(2.9-	0.9+)
1997 02 03	566	0.0	0.3-	1998 03 29	704	0.3+	0.2-				
1997 02 03	566	1.0+	0.2-	1998 03 29	704	0.4+	0.3-				

(9126)* 1998 FR₆₄ = 1979 OK₁ = 1996 VV₃₀

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 31756)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	124.03812	(2000.0)	P	Q
<i>n</i>	0.24393177	ω	254.95507	+0.26873866
<i>a</i>	2.5368248	Ω	179.45542	+0.89576515
<i>e</i>	0.1545867	<i>i</i>	1.86551	+0.35409650
<i>P</i>	4.04	<i>H</i>	14.7	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1979 07 24	675	0.5-	0.2+	1998 03 20	704	0.2-	0.2+	1998 03 29	704	0.0	0.4+
1979 07 24	413	2.0+	0.5+	1998 03 20	704	1.1-	1.5+	1998 03 29	704	0.2+	1.0+
1979 07 25	675	1.7-	0.4+	1998 03 20	704	0.2+	0.1-	1998 03 29	704	(0.7+	2.6+)
1992 11 20	691	0.2-	0.3+	1998 03 20	704	1.7-	0.6+	1998 04 19	704	1.0+	0.6-
1992 11 20	691	0.1-	0.2+	1998 03 20	704	(2.2-	0.1+)	1998 04 19	704	1.8-	1.2+
1992 11 20	691	0.0	0.2+	1998 03 22	704	0.1-	0.7+	1998 04 19	704	1.6-	0.0
1996 10 05	327	1.5-	0.1+	1998 03 22	704	0.2-	1.9+	1998 04 19	704	0.6-	0.0
1996 10 05	327	0.7-	0.1-	1998 03 22	704	0.0	1.0-	1998 04 20	704	0.6-	1.5-
1996 10 05	327	0.4+	0.6-	1998 03 22	704	1.1+	0.6-	1998 04 20	704	1.1+	0.6-
1996 11 12	399	(0.4-	2.4+)	1998 03 22	704	1.5+	0.3-	1998 04 20	704	(3.0+	0.3+)
1996 11 12	399	1.0+	0.9+	1998 03 28	704	0.5+	1.9-	1998 04 20	704	(3.0+	1.2-)
1996 11 15	399	0.8+	1.1+	1998 03 28	704	0.2+	0.1-	1998 04 22	704	0.4-	1.3-
1996 11 15	399	0.5-	0.8-	1998 03 28	704	0.8+	0.7-	1998 04 22	704	1.4+	0.7+
1998 03 02	910	0.7-	0.1-	1998 03 28	704	0.7+	1.6+	1998 04 22	704	0.2+	0.2+
1998 03 03	910	0.5-	0.5-	1998 03 28	704	0.3+	0.5-	1998 04 22	704	0.2-	0.3-
1998 03 03	910	0.6-	0.3-	1998 03 29	704	0.6+	0.9+	1998 04 22	704	0.9+	0.6+

(9127)* 1998 HX₅₁ = 1994 SD₁₃ = 5560 P-L

Discovered 1998 Apr. 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 32014)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	307.39351	(2000.0)	P	Q
<i>n</i>	0.17394356	ω	202.06389	+0.34961016
<i>a</i>	3.1783165	Ω	88.42937	-0.85179704
<i>e</i>	0.1079219	<i>i</i>	2.91872	-0.39014682
<i>P</i>	5.67	<i>H</i>	13.6	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1960 10 17	675	0.3+	1.4-	1994 10 06	691	0.0	0.1+	1998 04 30	699	1.1+	0.6+
1960 10 22	675	0.5+	0.1-	1994 10 06	691	0.0	0.3+	1998 05 01	704	0.4-	0.3+
1960 10 26	675	0.6+	1.7-	1998 04 21	704	0.6+	0.2+	1998 05 01	699	0.5+	0.7+
1992 03 26	691	0.3-	0.8-	1998 04 21	704	0.9-	0.2-	1998 05 01	704	0.7+	0.2-
1992 03 26	691	0.1-	0.4-	1998 04 21	704	0.2+	1.2-	1998 05 01	699	0.6-	0.0
1992 03 26	691	0.2+	0.4-	1998 04 21	704	0.1+	1.1-	1998 05 01	704	0.2+	0.1+
1992 04 26	691	0.1-	0.0	1998 04 21	704	0.4-	0.8-	1998 05 01	699	0.2-	0.7+
1992 04 26	691	0.1-	0.0	1998 04 22	704	0.3-	0.5-	1998 05 01	704	0.8-	0.5+
1992 04 26	691	0.6-	0.3-	1998 04 22	704	0.1-	0.4-	1998 05 01	704	0.6+	0.8+
1994 09 30	691	0.4-	0.2+	1998 04 22	704	1.5-	0.6-	1998 05 16	704	0.7-	0.2+
1994 09 30	691	0.3-	0.0	1998 04 22	704	0.1+	0.0	1998 05 16	704	0.7-	0.5-
1994 09 30	691	0.0	0.2+	1998 04 30	699	1.0+	0.9+	1998 05 16	704	0.9+	0.9-
1994 10 06	691	0.2+	0.1+	1998 04 30	699	0.5+	0.9+				

(9128)* 1998 HQ₅₂ = 1979 WO₁ = 1982 QB₃ = 1984 BG₂ = 1997 CK₂₈

Discovered 1998 Apr. 30 by T. Okuni at Nanyou.

Id. G. V. Williams (*MPC* 32015)

M.P.C. 32203

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	303.89622	(2000.0)	P	Q
<i>n</i>	0.30031596	ω	201.96112	+0.75701615
<i>a</i>	2.2084307	Ω	117.28335	-0.59115187
<i>e</i>	0.1863088	<i>i</i>	3.09835	-0.27832717
<i>P</i>	3.28	<i>H</i>	14.5	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1979 11 16	095	1.1+	1.3-	1998 04 25	699	0.2+	0.2+	1998 05 22	704	0.6+	0.3-
1982 08 17	095	0.1-	1.0-	1998 04 25	699	1.0+	0.6-	1998 05 22	704	0.1+	0.1+
1984 01 25	675	0.4-	0.5-	1998 04 30	566	0.7-	0.3-	1998 05 22	704	1.9+	0.0
1984 01 26	675	0.1-	0.9-	1998 04 30	566	0.6-	0.3-	1998 05 22	704	0.3+	0.2-
1997 01 13	566	0.2-	0.2-	1998 04 30	566	0.9-	0.3-	1998 05 22	704	0.4+	0.2+
1997 01 13	566	0.3+	0.1-	1998 04 30	358	1.0-	1.3+	1998 05 23	704	0.6+	0.3-
1997 01 13	566	0.0	0.1-	1998 04 30	358	(1.3-	2.3-)	1998 05 23	704	0.2-	0.2-
1997 02 11	327	0.6-	0.1-	1998 04 30	358	1.4+	0.1+	1998 05 23	704	0.1-	0.1-
1997 02 11	327	0.5-	0.2+	1998 05 01	704	0.2-	0.7-	1998 05 23	704	0.3-	0.5-
1997 02 11	327	0.5-	0.4+	1998 05 01	704	1.0-	0.1+	1998 05 23	704	0.3-	0.3+
1997 02 13	327	0.7-	0.1+	1998 05 01	704	0.6-	0.3+	1998 05 24	704	0.8+	0.1+
1997 02 13	327	0.8+	0.2+	1998 05 01	704	0.4+	0.6+	1998 05 24	704	0.4+	0.3+
1997 02 13	327	1.0+	0.1-	1998 05 01	704	1.3-	0.2+	1998 05 24	704	0.8+	0.3+
1998 04 22	704	0.8-	0.5+	1998 05 01	358	(2.2-	1.2+)	1998 05 24	704	0.1-	0.0
1998 04 22	704	0.0	0.0	1998 05 01	358	0.2-	2.0-	1998 05 24	704	0.3+	0.4-
1998 04 22	704	0.1+	1.3+	1998 05 01	358	1.4-	0.4-	1998 05 28	699	1.0+	0.4+
1998 04 22	704	0.4+	0.1-	1998 05 04	358	(0.0	3.6-)	1998 05 28	699	0.9+	0.2-
1998 04 22	704	0.5-	0.1-	1998 05 04	358	0.2+	1.5-	1998 05 28	699	0.9+	0.1-
1998 04 25	699	0.5-	0.3-	1998 05 04	358	1.8-	0.5+				

(9129)* 1998 HU₁₄₄ = 1978 SV₄ = 1997 CG₂₂

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32024)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	283.03009	(2000.0)	P	Q
<i>n</i>	0.18496343	ω	158.25588	+0.87730598
<i>a</i>	3.0507888	Ω	173.06206	-0.44331463
<i>e</i>	0.2044683	<i>i</i>	1.18286	-0.18386504
<i>P</i>	5.33	<i>H</i>	13.6	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1978 09 27	095	0.1-	0.6+	1997 03 11	691	1.7-	0.7+	1998 05 22	704	(2.3-	3.9-)
1978 10 03	095	0.2+	0.1+	1998 04 21	704	0.9+	0.3+	1998 05 22	704	0.1+	0.9-
1978 10 07	095	0.2+	0.9+	1998 04 21	704	0.0	0.4+	1998 05 22	704	(2.5+	0.2-)
1993 05 14	809	1.2-	1.4+	1998 04 21	704	0.2+	0.3+	1998 05 22	704	0.6+	0.5+
1993 05 14	809	1.5-	1.0+	1998 04 21	704	0.7+	0.1+	1998 05 22	704	1.5-	1.2+
1993 05 14	809	0.7-	1.2+	1998 04 21	704	1.5-	0.6-	1998 05 23	704	0.2-	0.8-
1994 10 09	691	0.2-	0.2+	1998 04 22	704	1.8-	1.6-	1998 05 23	704	(2.2+	0.0)
1994 10 09	691	0.2-	0.5+	1998 04 22	704	1.2+	0.8-	1998 05 23	704	(2.0-	0.1-)
1994 10 09	691	0.1-	0.2+	1998 04 22	704	1.3+	0.8-	1998 05 23	704	0.1-	0.9+
1997 02 13	684	1.9+	0.8+	1998 04 22	704	1.1+	1.2+	1998 05 24	704	0.3+	0.0
1997 02 13	684	1.2+	0.2-	1998 04 22	704	0.7+	0.2+	1998 05 24	704	1.9+	0.6+
1997 02 14	684	0.1-	0.5+	1998 05 01	704	0.1+	0.4-	1998 05 24	704	0.1-	1.9+
1997 02 14	684	0.4+	0.2+	1998 05 01	704	1.7+	0.5-	1998 05 24	704	1.3+	1.6-
1997 02 14	684	0.0	0.4+	1998 05 01	704	0.9-	0.6-	1998 05 24	704	1.3-	0.8-
1997 03 11	691	1.6-	0.9+	1998 05 01	704	0.1-	0.6-				
1997 03 11	691	1.6-	0.6+	1998 05 01	704	0.3+	0.8-				

(9130)* 1998 HQ₁₄₈ = 1995 WY₂₆ = 1191 T-2

Discovered 1998 Apr. 25 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 32026)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	332.94977	(2000.0)	P	Q
<i>n</i>	0.27088562	ω 67.35417	+0.48174700	+0.87602842
<i>a</i>	2.3656223	Ω 231.46446	−0.81407041	+0.43799855
<i>e</i>	0.2257340	<i>i</i> 1.62829	−0.32435967	+0.20182042
<i>P</i>	3.64	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1973 09 19	675	0.4+	0.7+	1995 11 28	691	0.4−	0.4+	1998 05 23	699	0.6+	0.4+
1973 09 19	675	0.2−	0.9+	1996 12 17	691	0.4−	0.3−	1998 05 24	704	0.8+	1.0+
1973 09 20	675	1.2−	0.3−	1996 12 17	691	0.3−	0.2−	1998 05 24	704	0.8+	0.6+
1973 09 24	675	2.0−	0.5−	1996 12 17	691	0.4−	0.1−	1998 05 24	704	0.5+	0.5+
1973 09 24	675	1.8−	0.1−	1997 02 06	566	0.2−	1.3−	1998 05 24	704	0.6−	0.7+
1973 09 25	675	1.4−	1.7−	1997 02 06	566	0.2−	1.2−	1998 05 24	704	1.5−	1.2−
1973 09 25	675	0.6−	0.9−	1997 02 06	566	0.0	1.1−	1998 06 16	704	0.0	0.4−
1973 09 29	675	0.3+	0.5+	1998 04 25	809	(3.9+	0.8−)	1998 06 16	704	0.4+	0.1−
1973 09 29	675	0.4−	0.5+	1998 04 25	809	(3.1+	1.0−)	1998 06 16	704	0.4+	0.5−
1973 09 30	675	1.1+	0.6+	1998 04 25	809	(3.6+	0.9−)	1998 06 16	704	1.1−	0.7−
1973 09 30	675	1.4+	1.0+	1998 04 28	809	(4.0+	0.1−)	1998 06 16	704	1.4−	0.4−
1973 10 04	675	2.3+	1.5−	1998 04 28	809	(3.9+	0.4+)	1998 06 18	704	0.2+	0.5−
1973 10 04	675	1.8+	1.3−	1998 04 28	809	(3.9+	1.4+)	1998 06 18	704	(1.1−	2.1−)
1973 10 05	675	1.2+	0.7−	1998 05 22	704	0.4+	0.2+	1998 06 18	704	0.9−	0.1−
1973 10 05	675	0.9+	1.5−	1998 05 22	704	1.0+	1.1+	1998 06 18	704	(0.9−	2.5−)
1995 11 18	691	0.0	0.7+	1998 05 22	704	0.3+	0.8−	1998 06 18	704	(1.6−	2.4−)
1995 11 18	691	0.4−	0.8+	1998 05 22	704	0.1−	0.2−	1998 06 21	691	1.0−	1.3−
1995 11 18	691	0.2−	0.6+	1998 05 22	704	0.6+	0.6−	1998 06 21	691	1.0−	0.0
1995 11 28	691	0.2−	0.4+	1998 05 23	699	0.9+	0.9+	1998 06 21	691	1.0−	0.1−
1995 11 28	691	0.2−	1.3+	1998 05 23	699	1.1+	0.6+				

(9131)* 1998 JV = 1976 JS₅ = 1977 XQ₁ = 1984 SO₁

Discovered 1998 May 1 at Haleakala by the JPL Near-Earth Asteroid Tracking program.

Id. G. V. Williams (*MPC* 32027)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	295.79066	(2000.0)	P	Q
<i>n</i>	0.26781069	ω 90.42186	+0.80694091	+0.59024551
<i>a</i>	2.3836955	Ω 233.40386	−0.55193063	+0.74069127
<i>e</i>	0.2207678	<i>i</i> 1.52512	−0.21028300	+0.32091538
<i>P</i>	3.68	<i>H</i> 14.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1976 05 03	809	0.1+	0.7+	1998 04 21	704	0.2−	0.5+	1998 05 01	566	0.3+	0.5−
1977 12 07	675	0.0	0.3+	1998 04 21	704	0.7−	1.1+	1998 05 01	566	0.1+	0.6−
1977 12 08	675	0.2+	0.4−	1998 04 21	704	1.1−	1.5+	1998 05 01	566	0.2−	0.5−
1984 09 27	046	(3.0+	1.1−)	1998 04 22	704	0.2+	0.3+	1998 05 02	566	0.1+	0.8−
1984 09 27	046	(5.7+	1.0+)	1998 04 22	704	0.5+	0.1+	1998 05 02	566	0.0	0.9−
1984 09 29	046	0.4+	0.1+	1998 04 22	704	0.2+	0.6+	1998 05 02	566	0.7+	1.1−
1984 09 29	046	0.9+	0.8+	1998 04 22	704	0.5+	0.1+	1998 05 16	704	0.8+	0.1−
1984 09 30	046	1.7−	0.2+	1998 04 22	704	0.2+	0.7+	1998 05 16	704	0.7+	0.5+
1984 09 30	046	0.2−	0.4+	1998 04 25	120	0.9−	0.3−	1998 05 16	704	0.1−	0.1+
1997 01 15	566	0.1+	0.5+	1998 04 25	120	0.1−	1.1+	1998 05 16	704	0.1−	0.7−
1997 01 15	566	0.6+	0.4+	1998 04 29	120	0.8+	0.2−	1998 05 25	699	0.7−	0.4−
1997 01 15	566	0.3+	0.5+	1998 04 29	120	0.8+	0.3−	1998 05 25	699	0.7+	0.4+
1997 02 07	566	0.6+	0.1−	1998 05 01	704	0.6+	0.2−	1998 05 25	699	0.3−	0.7+
1997 02 07	566	0.6−	0.1−	1998 05 01	704	1.3+	0.4−	1998 06 02	691	0.7−	0.7+
1997 02 07	566	0.8−	0.1+	1998 05 01	704	0.9−	0.4−	1998 06 02	691	0.4−	0.6+
1998 04 21	704	1.0−	0.2+	1998 05 01	704	0.6+	0.6−	1998 06 02	691	0.7−	0.8+
1998 04 21	704	0.5−	0.2+	1998 05 01	704	0.2−	0.7−				

(9132)* 2821 P-L = 1954 PR

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* 27925)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	18.29543	(2000.0)	P	Q
<i>n</i>	0.17841276	ω 159.06602	+0.10081305	+0.99409085
<i>a</i>	3.1250150	Ω 116.70130	−0.91909170	+0.10854469
<i>e</i>	0.1510270	<i>i</i> 2.58234	−0.38092935	+0.00119395
<i>P</i>	5.52	<i>H</i> 12.9	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1954 08 04	675	0.9−	0.2−	1993 09 21	675	0.1−	0.7−	1998 05 27	699	1.8−	0.4−
1954 08 04	675	0.7+	0.1−	1993 09 23	675	0.2−	0.5+	1998 05 27	699	0.4−	0.0
1960 09 24	675	0.4+	0.5+	1993 09 23	675	0.5−	1.2+	1998 05 27	699	0.0	0.1+
1960 09 26	675	0.0	0.2+	1993 10 15	675	0.1+	1.0+	1998 06 02	699	0.2+	0.3+
1960 10 17	675	0.7−	0.4+	1993 10 15	675	0.7−	0.3−	1998 06 02	699	0.5+	0.2+
1960 10 22	675	0.1+	1.5−	1997 04 03	704	0.1+	0.4+	1998 06 02	699	0.3+	0.2−
1960 10 25	675	0.7+	0.6+	1997 04 03	704	0.7+	1.5+	1998 06 24	699	0.1+	0.6−
1960 10 26	675	0.3+	0.1−	1997 04 05	704	0.4−	0.8+	1998 06 24	699	0.9+	0.4−
1993 09 19	675	0.2+	1.0+	1997 04 05	704	0.7+	0.0	1998 06 24	699	0.7+	0.0
1993 09 19	675	0.5−	0.8+	1997 04 07	704	0.7+	0.2−				
1993 09 21	675	0.5−	0.3+	1997 04 07	704	0.6−	0.8+				

(9133)* 3107 P-L = 1990 UJ₃ = 1990 VN₉

Discovered 1960 Sept. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 26414), S. Nakano (d, *MPC* 20913)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	321.32590	(2000.0)	P	Q
<i>n</i>	0.23174783	ω 145.43042	+0.99188440	+0.00473209
<i>a</i>	2.6249776	Ω 214.97121	−0.03298735	+0.97466524
<i>e</i>	0.1747692	<i>i</i> 12.80729	+0.12278912	+0.22361860
<i>P</i>	4.25	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1960 09 25	675	0.8−	0.6−	1990 11 11	400	(2.9+	2.3+)	1997 04 05	566	1.6−	0.5−
1960 09 26	675	0.2−	0.3−	1990 11 11	400	0.4+	0.0	1998 06 19	699	0.4−	0.1+
1960 09 28	675	0.2−	1.0+	1993 05 21	691	0.2+	0.3+	1998 06 19	699	0.0	0.5+
1960 09 29	675	0.3−	0.4−	1993 05 21	691	0.1+	0.0	1998 06 19	699	0.9+	0.1+
1960 10 25	675	1.2+	0.1−	1993 05 21	691	0.2+	0.0	1998 06 26	699	0.2−	1.0−
1960 10 26	675	0.5+	0.3−	1993 05 21	691	0.0	0.2−	1998 06 26	699	0.2+	0.3−
1990 10 24	400	0.7+	0.1+	1993 05 21	691	0.2+	0.1−	1998 06 26	699	0.2+	0.5−
1990 10 24	400	0.7−	1.4−	1993 05 21	691	0.2+	0.3−	1998 07 17	699	0.3−	0.0
1990 11 10	046	(1.3+	3.2+)	1997 04 05	566	0.5+	0.0	1998 07 17	699	0.3−	0.9+
1990 11 10	046	0.2−	0.9+	1997 04 05	566	0.3+	0.2−	1998 07 17	699	0.1−	0.3+

(9134)* 4822 P-L = 1992 AX₂

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* 20515)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	263.17024	(2000.0)	P	Q
<i>n</i>	0.19880261	ω 186.14256	+0.78896776	+0.61353485
<i>a</i>	2.9075107	Ω 135.95452	−0.56167820	+0.74210080
<i>e</i>	0.0286240	<i>i</i> 2.74040	−0.24909329	+0.26992850
<i>P</i>	4.96	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1960 09 24	675	0.3−	0.8−	1992 02 01	691	0.0	0.1+	1998 03 29	704	(2.4−	1.2+)
1960 09 26	675	0.4−	0.5−	1992 02 01	691	0.2−	0.4−	1998 04 21	704	1.5+	0.8+
1960 09 27	675	0.8+	0.4+	1992 02 01	691	0.3+	0.6−	1998 04 21	704	0.4+	0.6−
1960 09 28	675	0.5−	0.1−	1995 11 15	691	0.4−	0.4+	1998 04 21	704	0.7+	0.2+
1960 10 22	675	0.6+	0.4+	1995 11 15	691	0.2−	0.4+	1998 04 21	704	1.4−	0.3+
1960 10 25	675	0.2+	0.1−	1995 11 15	691	0.2+	0.4+	1998 04 22	704	0.1+	0.1−
1960 10 26	675	0.3+	0.1−	1998 03 29	704	0.1+	1.2+	1998 04 22	704	0.2−	0.3−
1992 01 02	691	0.2+	0.1+	1998 03 29	704	0.1−	0.5+	1998 04 22	704	0.6+	0.1+

1992 01 02 691 0.6+ 0.3+ 1998 03 29 704 0.9+ 0.9+ 1998 04 22 704 0.7- 1.6-
 1992 01 02 691 0.9- 0.2- 1998 03 29 704 1.7- 1.0- 1998 04 22 704 (1.2- 2.4-)

(9135)* 7609 P-L = 1994 EK₆

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld
 on Palomar Schmidt plates taken by T. Gehrels.

Id. E. Bowell (*MPC* 23986), T. Kobayashi (*ibid.*)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	347.69028	ω	229.05850	+0.08449942	+0.99313279		
<i>a</i>	2.3097315	Ω	45.98711	-0.87706368	+0.11266996		
<i>e</i>	0.1313445	<i>i</i>	6.45994	-0.47288387	-0.03150792		
<i>P</i>	3.51	<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-	2.0+	1994 02 13	809	0.5+	0.0	1998 05 24	704	0.8-	1.1-
1960 10 22	675	0.6-	1.2+	1994 02 13	809	0.4-	0.7-	1998 05 24	704	0.2-	1.1+
1960 10 25	675	0.3-	0.7-	1994 03 09	010	0.0	0.6-	1998 05 24	704	0.0	0.5+
1960 10 26	675	0.0	0.3+	1994 03 09	010	0.7-	0.2+	1998 05 24	704	0.1+	1.0+
1992 11 24	691	0.7+	0.3+	1994 03 09	010	0.4+	0.3+	1998 06 16	704	0.3+	1.9+
1992 11 24	691	0.1-	0.5+	1994 03 10	010	(3.2- 1.1-)		1998 06 16	704	0.4+	0.3+
1992 11 24	691	1.2-	0.8+	1994 03 10	010	(4.9- 1.6-)		1998 06 16	704	1.1-	0.4-
1994 02 08	809	0.3+	2.0+	1994 03 10	010	(3.9- 1.6-)		1998 06 16	704	0.0	0.1+
1994 02 08	809	1.4+	1.6+	1998 05 22	704	0.0	0.3-	1998 06 16	704	1.7-	0.6+
1994 02 08	809	0.1+	0.4+	1998 05 22	704	0.2+	0.9+	1998 06 18	704	0.6+	0.0
1994 02 10	809	(0.9- 2.4+)		1998 05 22	704	0.5-	0.8+	1998 06 18	704	0.8-	1.5-
1994 02 10	809	(0.9- 2.7+)		1998 05 22	704	0.7+	0.3-	1998 06 18	704	1.4+	1.1-
1994 02 10	809	(0.5- 2.3+)		1998 05 22	704	(0.4+ 3.2+)		1998 06 18	704	1.4+	0.7-
1994 02 13	809	0.2-	0.7-	1998 05 24	704	0.9+	1.0+				

(9136)* 4886 T-1 = 1976 UW₁ = 1991 RG₂₁

Discovered 1971 May 13 by C. J. van Houten and I. van Houten-Groeneveld
 on Palomar Schmidt plates taken by T. Gehrels.

Id. K. Kinoshita (*MPC* 24403)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	309.67788	ω	289.50586	+0.76448177	+0.64190690		
<i>a</i>	2.4348142	Ω	30.64644	-0.53915376	+0.68713824		
<i>e</i>	0.1487973	<i>i</i>	6.68693	-0.35338484	+0.34028895		
<i>P</i>	3.80	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1971 05 13	675	0.3-	0.2+	1995 10 23	046	0.3-	0.6+	1998 05 24	704	0.5-	0.5+
1971 05 14	675	0.5+	0.9+	1995 10 23	046	0.1-	0.5+	1998 05 24	704	0.1-	0.3+
1971 05 14	675	1.0-	0.7-	1995 11 18	691	0.8-	0.5+	1998 05 24	704	0.5-	0.9+
1971 05 14	675	0.3-	0.5+	1995 11 18	691	0.7-	0.4+	1998 05 24	704	1.9+	1.4+
1971 05 16	675	1.5+	0.3+	1995 11 18	691	0.7-	0.5+	1998 05 24	704	0.9-	1.2+
1976 10 22	381	0.4-	0.3-	1995 11 24	691	0.8-	0.5+	1998 05 29	689	0.4-	0.7-
1976 10 22	381	0.8+	0.1-	1995 11 24	691	0.9-	0.4+	1998 06 16	704	0.8+	0.2-
1976 10 24	381	0.1-	1.3-	1995 11 24	691	0.8-	0.3+	1998 06 16	704	0.4+	0.5-
1976 10 26	095	1.6+	1.1-	1995 11 30	691	1.1-	0.2+	1998 06 16	704	1.4+	0.8-
1990 04 01	675	1.3-	1.8+	1995 11 30	691	1.3-	0.2+	1998 06 16	704	1.0+	0.8-
1991 09 14	675	0.9+	0.0	1995 11 30	691	1.1-	0.3+	1998 06 16	704	1.0+	2.0+
1991 09 14	675	0.4+	0.3+	1997 02 07	566	1.2+	0.5-	1998 06 18	704	0.2+	0.6+
1991 09 16	675	0.3+	0.3-	1997 02 07	566	0.8+	0.2+	1998 06 18	704	1.3-	1.2+
1991 09 16	675	0.1+	0.3+	1997 02 07	566	0.2+	0.8-	1998 06 18	704	0.3+	1.4-
1995 10 22	046	0.6+	0.6-	1998 05 22	704	1.1-	0.6-	1998 06 18	704	1.6-	0.9-
1995 10 22	046	1.2+	0.9+	1998 05 22	704	0.9+	0.4+	1998 06 18	704	1.1-	1.1-
1995 10 23	046	0.3-	0.6+	1998 05 22	704	0.4-	1.1+				
1995 10 23	046	0.2-	0.6+	1998 05 22	704	1.3+	0.2-				

(9137)* 2114 T-2 = 1938 DS₁ = 1975 EA₅ = 1982 BC₉ = 1986 ED₂

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* 15727)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	158.56850	ω	305.63798	-0.62517771	-0.78047573		
<i>a</i>	2.3825471	Ω	183.06311	+0.73422962	-0.58671748		
<i>e</i>	0.1578199	<i>i</i>	3.47163	+0.26468792	-0.21591719		
<i>P</i>	3.68	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

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

1938 02 23	024	(0.03- 0.01-)	X	1982 01 19	095	1.5+	1.3-	1997 03 08	886	1.3-	1.1-
1973 09 19	675	0.3-	1.1-	1986 03 06	688	0.4-	0.4+	1997 03 08	886	1.1-	0.9-
1973 09 19	675	0.6-	0.5+	1986 03 06	688	0.2+	2.1-	1997 03 09	886	0.6-	0.4-
1973 09 20	675	(2.7- 1.5-)		1988 11 04	327	(0.2- 3.1+)		1997 03 09	886	1.0-	0.9-
1973 09 24	675	0.8-	0.2+	1988 11 04	327	(0.9- 4.6+)		1998 06 26	809	(1.4+ 3.0+)	
1973 09 24	675	1.0-	0.0	1991 08 06	675	(2.1- 2.8-)		1998 06 26	809	(1.6+ 2.7+)	
1973 09 25	675	0.7-	1.7-	1991 08 06	675	0.9+	1.2-	1998 06 26	809	(1.4+ 3.0+)	
1973 09 25	675	0.1-	0.3-	1991 08 10	675	1.1-	1.6-	1998 06 26	704	0.4+	0.1+
1973 09 29	675	0.3-	0.3-	1991 08 10	675	1.6-	1.8-	1998 06 26	704	0.8+	0.7+
1973 09 29	675	0.1+	0.0	1992 12 21	801	0.4+	0.4+	1998 06 26	704	1.2+	0.4-
1973 09 30	675	0.4+	1.1-	1992 12 21	801	0.3+	1.4+	1998 06 26	704	0.9+	1.4+
1973 09 30	675	0.4-	0.5-	1992 12 26	801	0.3+	0.9+	1998 06 27	809	(0.2+ 2.2+)	
1973 10 04	675	0.9+	1.0+	1992 12 26	801	0.4+	0.8+	1998 06 27	809	0.4-	1.6+
1973 10 04	675	1.7+	0.6+	1993 01 19	801	1.7+	0.5-	1998 06 27	809	0.6+	1.5+
1973 10 05	675	0.4+	1.4-	1993 01 21	801	0.6-	0.1+	1998 07 26	704	(1.0+ 2.0-)	
1973 10 05	675	(2.8- 2.2+)		1993 01 21	801	0.9-	0.2-	1998 07 26	704	0.1-	0.6-
1973 10 05	675	0.6+	1.0-	1993 02 25	801	0.2+	1.3+	1998 07 26	704	0.2+	0.1+
1973 10 05	675	(2.7- 2.6+)		1993 02 25	801	0.1+	0.0	1998 07 26	704	0.4+	0.1-
1975 03 15	095	(6.7- 1.8+)		1993 02 26	801	0.7-	0.3-				

(9138)* 2280 T-2 = 1991 CE₃

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* 17977)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	104.04829	ω	337.20807	-0.90102509	-0.43375809		
<i>a</i>	2.1816931	Ω	177.08120	+0.40589743	-0.84537254		
<i>e</i>	0.0519261	<i>i</i>	3.12317	+0.15297404	-0.31176783		
<i>P</i>	3.22	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1973 09 25	675	1.1+	1.8-	1991 03 20	801	0.0	0.7-	1998 05 22	704	0.4-	0.1+
1973 09 25	675	2.4+	1.2-	1992 07 26	809	1.7+	0.2+	1998 05 22	704	0.2+	1.8+
1973 09 29	675	1.5+	0.8-	1992 07 26	809	0.3+	0.5+	1998 05 22	704	1.0+	0.3+
1973 09 29	675	1.6+	0.4-	1992 07 30	809	(2.4-	2.8-)	1998 05 22	704	1.9+	0.3-
1973 09 30	675	2.0+	0.1+	1992 07 30	809	(2.2-	1.9-)	1998 05 22	704	0.8+	0.4-
1973 09 30	675	0.4-	1.2-	1992 07 30	809	(2.6-	2.1-)	1998 05 24	704	1.5+	1.2+
1973 10 04	675	0.8-	1.2+	1992 07 30	809	0.7-	0.5+	1998 05 24	704	0.7+	0.3-
1973 10 04	675	1.1-	0.2+	1992 07 30	809	0.2-	1.3+	1998 05 24	704	0.3-	0.1-
1973 10 05	675	2.3-	0.0	1992 07 30	809	0.1-	1.8+	1998 05 24	704	1.3-	0.3-
1973 10 05	675	0.4-	0.8-	1992 07 31	809	0.3-	1.0-	1998 06 24	704	0.6-	0.4+
1985 05 24	675	1.8-	0.9+	1992 07 31	809	0.5-	1.0-	1998 06 24	704	0.3+	0.2-
1985 05 24	675	0.1+	0.0	1992 07 31	809	1.4-	0.8-	1998 06 24	704	0.5-	0.6-
1989 09 29	675	0.0	0.6+	1992 08 08	010	(6.3-	1.5-)	1998 06 24	704	0.2-	1.1-
1989 09 29	675	0.3+	1.1+	1992 08 08	010	(5.3-	0.1+)	1998 06 26	704	0.8-	0.7-
1991 02 12	372	1.5+	1.6+	1992 08 08	010	(5.3-	2.0-)	1998 06 26	704	1.4-	0.9-
1991 02 12	372	0.6-	1.1-	1992 08 09	010	1.1+	0.5+	1998 06 26	704	0.5+	0.2+
1991 02 19	372	1.5-	1.1-	1992 08 09	010	1.8-	1.0-	1998 06 26	704	0.8+	0.4-
1991 02 19	372	(2.6+	0.4-)	1992 08 09	010	1.7-	1.8-	1998 06 26	704	0.3+	1.9-
1991 03 17	801	0.2-	0.5-	1994 01 10	691	0.2-	0.4-	1998 07 02	699	0.3+	0.3-
1991 03 17	801	0.2-	0.8-	1994 01 10	691	0.0	0.5-	1998 07 02	699	0.5-	0.1+
1991 03 20	801	0.0	0.7-	1994 01 10	691	0.6-	0.4-	1998 07 02	699	0.6+	0.8-

(9139)* 4180 T-2 = 1991 NQ₅ = 1993 BU₄

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.

Id. B. G. Marsden (*MPC* 21808)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Marsden					
<i>M</i>	278.35271		(2000.0)	P		Q			
<i>n</i>	0.26975949	ω	264.03498	+0.99027328		-0.13575734			
<i>a</i>	2.3722014	Ω	103.76457	+0.13681591		+0.91028025			
<i>e</i>	0.2342811	<i>i</i>	1.79807	+0.02530304		+0.39110077			
<i>P</i>	3.65	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1973 09 19	675	0.7+	1.3-	1991 07 10	809	0.5-	1.1-	1995 11 25	801	0.2+	0.6+
1973 09 19	675	0.9+	0.5-	1991 07 10	809	0.0	1.2-	1995 11 25	801	0.0	0.3+
1973 09 20	675	0.8-	1.0-	1991 07 11	809	0.6-	0.4-	1998 05 24	704	0.6-	0.3-
1973 09 24	675	1.0-	0.7+	1991 07 11	809	0.1-	0.3-	1998 05 24	704	1.2-	1.6-
1973 09 24	675	0.7-	0.6+	1991 07 11	809	0.5+	0.2-	1998 05 24	704	0.5+	1.2+
1973 09 25	675	0.7-	0.5-	1993 01 27	010	1.8-	0.2-	1998 05 24	704	0.0	1.8-
1973 09 25	675	0.9+	1.4-	1993 01 27	010	0.9-	0.3+	1998 06 01	809	1.7+	0.6+
1973 09 29	675	0.3+	0.3-	1993 01 27	010	1.0-	1.3-	1998 06 01	809	1.6+	0.1-
1973 09 29	675	0.8+	0.4+	1993 01 28	010	0.3+	0.9-	1998 06 01	809	1.4+	0.9-
1973 09 30	675	0.5+	0.7-	1993 01 28	010	0.5-	1.0-	1998 06 02	809	0.4+	0.3+
1973 09 30	675	0.3+	0.2+	1993 01 28	010	(0.3+	2.6-)	1998 06 02	809	0.8+	0.7+
1973 10 04	675	0.8+	0.9+	1993 01 29	691	0.2+	1.2-	1998 06 02	809	0.2-	0.9+
1973 10 04	675	0.6+	0.4-	1993 01 29	691	0.1-	1.5-	1998 06 24	704	0.6-	0.7-
1973 10 05	675	0.4+	0.0	1993 01 29	691	0.5+	1.0-	1998 06 24	704	0.2+	0.7+
1973 10 05	675	0.5+	1.0+	1995 11 23	801	0.3+	0.2-	1998 06 24	704	1.5-	0.4-
1991 07 10	809	1.2-	1.1-	1995 11 23	801	0.0	0.3-				

(9140)* 4195 T-3 = 1994 GG = 1995 SJ

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* 25733)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams					
<i>M</i>	0.33766		(2000.0)	P		Q			
<i>n</i>	0.27172141	ω	81.64838	-0.07126038		+0.99728888			
<i>a</i>	2.3607689	Ω	184.39207	-0.98323535		-0.07332857			
<i>e</i>	0.1055274	<i>i</i>	13.86648	-0.16783985		+0.00614905			
<i>P</i>	3.63	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1977 10 07	675	1.0+	0.9-	1995 09 12	557	0.4+	1.0+	1998 05 26	704	0.7+	0.1+
1977 10 11	675	0.3+	1.7-	1995 09 12	557	0.8+	1.3+	1998 05 26	704	0.8+	0.2-
1977 10 11	675	1.5+	1.9-	1995 09 17	557	0.5-	0.1-	1998 05 26	704	0.3+	0.0
1977 10 12	675	0.2+	1.6-	1995 09 17	557	0.4-	0.3+	1998 06 19	704	0.1-	0.4+
1977 10 12	675	0.5+	1.9-	1995 09 17	557	0.3-	0.2-	1998 06 19	704	0.1-	0.1-
1977 10 16	675	0.2+	0.6-	1995 09 17	557	0.4-	0.5+	1998 06 19	704	1.6+	0.4-
1977 10 16	675	1.3-	1.1+	1995 09 17	557	0.4-	0.3+	1998 06 19	704	(0.1-	2.7-)
1977 10 17	675	0.1+	0.8-	1995 09 17	557	0.2-	0.2+	1998 06 19	704	0.8-	1.4-
1977 10 17	675	0.2+	1.6-	1995 09 19	557	0.5-	0.5+	1998 06 19	734	0.5-	0.3-
1977 10 21	675	0.7-	0.1+	1995 09 19	557	0.3-	0.2+	1998 06 19	734	0.7-	0.3-
1977 10 21	675	0.1+	0.8+	1995 09 19	557	0.1-	0.3+	1998 06 19	734	0.6-	0.4-
1977 10 22	675	0.8+	1.2-	1995 09 28	557	0.7+	1.2+	1998 06 21	734	0.5-	0.7-
1977 10 22	675	0.9-	0.0	1995 09 28	557	0.7+	1.5+	1998 06 21	734	0.5-	0.6-
1988 10 07	675	0.1-	2.1-	1998 05 15	689	0.8-	0.5+	1998 06 21	734	0.5-	0.6-
1988 10 07	675	0.9-	0.5+	1998 05 23	704	0.6-	0.4+	1998 06 21	734	0.9-	0.6-
1994 04 02	894	(3.1-	0.3+)	1998 05 23	704	1.6+	0.0	1998 06 25	704	0.1-	1.7+
1994 04 02	894	1.1+	1.5-	1998 05 23	704	0.9+	0.4-	1998 06 25	704	0.5+	0.0
1994 04 03	675	0.7-	1.0-	1998 05 23	704	0.4-	0.9+	1998 06 25	704	0.6+	0.1+
1994 04 03	675	0.7+	0.9-	1998 05 23	704	0.9-	0.7-	1998 06 25	704	(0.5+	2.9+)
1994 04 03	894	1.8-	0.5+	1998 05 26	704	0.2+	0.5-	1998 06 25	704	(2.4-	1.9+)
1994 04 03	894	(2.6+	4.3-)	1998 05 26	704	0.8+	0.1+				

(9141)* 5174 T-3 = 1970 KE = 1989 WL₄

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* 15910)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams					
<i>M</i>	2.38805		(2000.0)	P		Q			
<i>n</i>	0.17487469	ω	163.51600	-0.37984254		+0.89773073			
<i>a</i>	3.1670244	Ω	83.71341	-0.87204276		-0.26701179			
<i>e</i>	0.1874724	<i>i</i>	12.97391	-0.30864392		-0.35040581			
<i>P</i>	5.64	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1954 08 27	675	0.5-	0.1-	1992 04 01	801	0.1-	0.2+	1998 05 24	704	(0.0	3.9+)
1954 08 27	675	1.2+	0.0	1992 04 01	801	0.1-	0.1+	1998 05 28	689	0.4-	0.3-
1970 05 31	095	0.5-	1.3-	1995 12 25	566	0.4+	0.0	1998 06 03	704	0.6+	0.4-
1977 10 12	675	1.9-	0.4-	1995 12 25	566	0.3+	0.2-	1998 06 03	704	0.0	1.0+
1977 10 12	675	2.3-	0.2+	1995 12 25	566	0.3+	0.2-	1998 06 03	704	1.1-	0.9+
1977 10 16	675	0.3+	0.1+	1998 05 22	704	0.8+	0.6+	1998 06 03	704	0.8-	0.6+
1977 10 16	675	0.3+	0.4-	1998 05 22	704	0.6+	0.3-	1998 06 03	704	0.5-	0.9+
1977 10 17	675	0.1-	0.6+	1998 05 22	704	0.4-	0.1+	1998 06 16	704	0.1+	0.4-
1977 10 17	675	1.2+	1.2+	1998 05 22	704	0.3+	0.6-	1998 06 16	704	0.0	0.0
1977 10 21	675	0.2-	0.9-	1998 05 22	704	0.5-	0.1-	1998 06 16	704	0.4-	0.0
1977 10 21	675	1.0-	0.8+	1998 05 22	699	0.4+	0.1-	1998 06 16	704	0.1-	0.5+
1977 10 22	675	1.7+	0.3-	1998 05 22	699	0.9+	0.1+	1998 06 16	704	0.3-	1.1+
1989 11 24	372	(0.2+	3.2-)	1998 05 22	699	0.7+	0.1-	1998 06 18	704	0.4+	0.1-
1989 11 24	372	(1.3-	0.4+)	1998 05 24	699	0.1+	0.1-	1998 06 18	704	0.3-	1.1-
1989 11 26	372	(5.0-	2.5-)	1998 05 24	704	0.4-	0.2-	1998 06 18	704	0.8+	1.3-
1989 11 26	372	0.1-	1.3-	1998 05 24	699	0.2+	0.0	1998 06 18	704	0.3+	1.0-
1989 11 30	372	0.5-	0.6-	1998 05 24	699	0.3-	0.6+	1998 06 18	704	0.6-	1.9-
1989 11 30	372	2.2+	0.7-	1998 05 24	704	1.9+	0.4+	1998 06 26	699	0.3-	0.3-
1992 03 02	801	0.2-	0.0	1998 05 24	704	1.2-	0.6+	1998 06 26	699	0.2-	0.4-
1992 03 02	801	0.1-	0.1+	1998 05 24	704	0.0	0.4+	1998 06 26	699	0.4-	0.2-

(9142)* 5191 T-3 = 1988 RX

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.

Id. C. M. Bardwell (*MPC* 14029)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Bardwell					
<i>M</i>	319.67325		(2000.0)	P		Q			
<i>n</i>	0.08276042	ω	172.29525	+0.69059124		+0.70988527			
<i>a</i>	5.2149996	Ω	141.21754	-0.67478903		+0.70127142			
<i>e</i>	0.1300918	<i>i</i>	12.76259	-0.26027582		+0.06543169			
<i>P</i>	11.91	<i>H</i>	10.6	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1954 12 22	675	0.2-	0.5-	1988 09 16	675	0.4+	1.2-	1998 06 03	704	0.8+	1.0+
1954 12 22	675	0.6+	0.7+	1988 10 08	675	0.3+	0.2+	1998 06 03	704	1.0+	0.9-
1977 10 16	675	1.5+	1.7-	1988 10 10	675	1.0-	0.7-	1998 06 03	704	0.3-	1.2+
1977 10 16	675	1.0+	1.8-	1989 11 02	675	0.4-	1.3-	1998 06 03	704	1.5+	0.5+
1977 10 17	675	1.7-	1.0+	1989 11 02	675	0.4-	0.6+	1998 06 03	704	1.4-	0.4+
1977 10 17	675	1.1-	0.9+	1989 11 03	675	0.7+	0.4+	1998 06 25	704	0.3-	0.7-
1977 10 22	675	2.0-	2.4+	1989 11 03	675	0.4+	0.6+	1998 06 25	704	0.6+	0.3-
1977 10 22	675	0.8+	1.6+	1998 05 26	704	0.8+	0.5+	1998 06 25	704	0.4+	0.5+
1988 09 13	675	0.5+	0.9-	1998 05 26	704	0.2+	0.1+	1998 06 25	704	1.8-	0.3+
1988 09 13	675	0.4+	0.3+	1998 05 26	704	1.0-	0.8-				
1988 09 16	675	0.1-	0.0	1998 05 26	704	(1.9-	2.9-)				

1931 UB = 1984 UF₁ = 1998 HT₅₇

Id. T. Kobayashi (*MPC* 11855), G. V. Williams

1998 AUG. 8

M.P.C. 32207

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 253.13274		(2000.0)		P		Q	
<i>n</i>	0.26086761	ω	116.75730	+0.98921512	+0.14516985		
<i>a</i>	2.4258053	Ω	234.90163	−0.14141474	+0.91197181		
<i>e</i>	0.2178412	<i>i</i>	1.36373	−0.03814850	+0.38370971		
<i>P</i>	3.78	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1931 10 17	024	0.0	4.2−	1998 03 25	704	0.3−	0.1−	1998 04 21	704	0.6−	0.3+
1931 10 20	024	(8.5−	7.5−)	1998 03 29	704	1.2+	1.1−	1998 04 21	704	1.9+	0.8+
1931 11 02	024	0.3+	3.6+	1998 03 29	704	0.5+	1.4−	1998 04 22	704	0.5−	0.5+
1984 10 28	046	1.7+	1.3−	1998 03 29	704	0.2−	1.6−	1998 04 22	704	0.1−	0.4+
1984 10 28	046	1.5+	2.5−	1998 03 29	704	1.9+	0.3+	1998 04 22	704	0.7−	0.1+
1984 10 29	046	0.7+	0.9−	1998 03 29	704	0.1+	0.4+	1998 04 22	704	1.3−	0.1+
1984 10 29	046	1.2+	1.1+	1998 04 01	704	0.0	2.0−	1998 04 22	704	0.3−	0.1+
1984 10 30	046	2.3−	0.8+	1998 04 01	704	(1.4−	3.0−)	1998 05 16	704	0.9+	0.4+
1984 10 30	046	2.4−	1.3+	1998 04 01	704	1.0−	0.3−	1998 05 16	704	0.9−	0.1+
1998 03 25	704	0.2+	0.5+	1998 04 01	704	0.1−	1.3−	1998 05 16	704	0.0	0.3+
1998 03 25	704	0.1−	0.5−	1998 04 21	704	0.3−	0.7+	1998 05 16	704	0.6−	1.0−
1998 03 25	704	0.5+	0.5−	1998 04 21	704	1.5−	0.3+				
1998 03 25	704	1.0+	0.7+	1998 04 21	704	0.5−	0.9+				

1936 UD = 1952 SN = 1979 VW = 1998 EV₁₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 189.05999		(2000.0)		P		Q	
<i>n</i>	0.18171088	ω	180.95139	+0.95922504	+0.28235062		
<i>a</i>	3.0870862	Ω	162.63150	−0.25903487	+0.89640040		
<i>e</i>	0.3158719	<i>i</i>	2.46960	−0.11308517	+0.34167888		
<i>P</i>	5.42	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1936 10 16	020	0.7+	0.6−	1936 11 10	020	(33.9+	3.4−)	1998 03 03	809	0.8−	0.5−
1936 10 16	020	(8.3+	4.5+)	1952 09 24	760	0.5−	0.1+	1998 03 04	809	1.4+	0.9+
1936 10 23	020	(7.6−	0.4−)	1952 09 24	760	0.3+	0.2+	1998 03 04	809	1.4+	2.0+
1936 10 24	020	3.2+	2.4+	1979 11 11	095	0.9−	2.6+	1998 03 04	809	(0.2+	2.6+)
1936 11 08	020	(3.9+	23.6+)	1998 03 03	809	0.6−	0.7−				
1936 11 10	020	3.1−	4.5−	1998 03 03	809	1.1−	0.9−				

1966 PL = 1994 CL₁₀ = 1998 HU₁₃₉

Id. T. Kobayashi

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 307.71178		(2000.0)		P		Q	
<i>n</i>	0.27194116	ω	168.31950	+0.37412407	+0.92129048		
<i>a</i>	2.3594970	Ω	123.56589	−0.86077787	+0.38754601		
<i>e</i>	0.1227291	<i>i</i>	7.31478	−0.34509802	+0.03212394		
<i>P</i>	3.62	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1966 08 07	074	0.4−	2.2+	1994 02 07	809	0.6+	0.7+	1998 04 21	704	0.5−	0.4+
1966 08 07	074	0.9−	1.2+	1994 02 09	809	0.4−	0.8−	1998 04 23	704	0.5+	0.5+
1966 08 08	074	0.8+	0.3−	1994 02 09	809	0.6−	0.9−	1998 04 23	704	1.1+	0.1+
1966 08 08	074	2.0−	0.0	1994 02 09	809	0.2−	0.8−	1998 04 23	704	1.3+	0.4−
1966 08 09	074	0.9+	0.3+	1994 02 12	809	0.6+	0.3+	1998 04 23	704	0.6+	0.6+
1966 08 10	074	0.2+	0.4−	1994 02 12	809	0.5−	1.0+	1998 04 23	704	0.3+	0.8+
1966 08 12	074	1.2+	0.3−	1994 02 12	809	0.3−	0.2+	1998 06 17	704	1.9−	0.4+
1966 08 12	074	0.2−	0.7−	1998 04 21	704	0.1+	0.2+	1998 06 17	704	1.4−	1.8−
1966 08 16	074	(8.7−	6.7−)	1998 04 21	704	0.7−	0.4+	1998 06 17	704	1.1−	0.9−
1994 02 07	809	0.6+	1.2+	1998 04 21	704	0.1+	0.4−	1998 06 17	704	0.3+	0.4+
1994 02 07	809	0.6+	0.9+	1998 04 21	704	0.7+	0.2−	1998 06 17	704	0.6−	1.1−

1973 UK₅ = 1998 KC₃₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 152.59549		(2000.0)		P		Q	
<i>n</i>	0.26203862	ω	44.47699	−0.02310509	−0.99899457		
<i>a</i>	2.4185729	Ω	46.88757	+0.90194621	−0.03740591		
<i>e</i>	0.1575538	<i>i</i>	3.01673	+0.43122985	+0.02471134		
<i>P</i>	3.76	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1973 10 27	033	0.6−	0.4+	1998 05 22	704	0.3−	0.8−	1998 05 24	704	0.0	1.1−
1973 10 27	033	0.5−	0.3−	1998 05 22	704	0.4−	1.5+	1998 05 24	704	1.4+	1.0+
1973 10 28	033	1.6+	0.4+	1998 05 22	704	0.2+	0.3−	1998 05 24	704	0.2+	0.8−
1973 10 31	033	1.0−	0.2−	1998 05 22	704	1.3−	2.0−	1998 05 24	704	0.1+	1.6+
1973 11 02	033	0.2+	0.6−	1998 05 22	704	(3.9−	0.0)				
1973 11 03	033	0.3+	0.2+	1998 05 24	704	0.1−	0.8+				

1974 SE = 1992 AU

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 52.01940		(2000.0)		P		Q	
<i>n</i>	0.29746035	ω	90.68819	+0.96897250	−0.24229861		
<i>a</i>	2.2225421	Ω	283.33493	+0.20209425	+0.89038223		
<i>e</i>	0.1557754	<i>i</i>	2.87607	+0.14230325	+0.38537108		
<i>P</i>	3.31	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1974 09 19	095	1.6−	0.4+	1974 10 10	095	0.1−	0.1−	1992 01 10	675	0.1+	1.1−
1974 09 20	095	0.3−	1.0+	1992 01 09	675	0.0	1.4+				
1974 09 22	095	2.0+	1.2−	1992 01 09	675	0.1−	0.3−				

1975 SB₂ = 1977 EO₆ = 1998 OQ₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 263.75260		(2000.0)		P		Q	
<i>n</i>	0.29155038	ω	184.24970	+0.96796238	−0.24989860		
<i>a</i>	2.2524767	Ω	190.32104	+0.23421632	+0.93374033		
<i>e</i>	0.1270227	<i>i</i>	7.85483	+0.09050716	+0.25628049		
<i>P</i>	3.38	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1975 09 30	675	0.6+	0.7+	1998 05 26	704	0.2−	0.4−	1998 06 19	704	1.5+	0.3+
1975 10 01	675	0.4+	0.5+	1998 05 26	704	0.9+	0.6−	1998 07 16	910	0.9+	0.0
1975 10 02	675	1.1+	0.3+	1998 05 26	704	0.8−	2.0+	1998 07 16	910	0.0	0.3−
1975 10 15	675	1.4−	0.1+	1998 05 26	704	1.1−	1.2−	1998 07 16	910	0.3+	0.2−
1975 10 16	675	0.9−	0.9−	1998 06 19	704	1.6+	0.5+	1998 07 22	910	0.7−	0.1+
1977 03 12	381	0.1−	1.0+	1998 06 19	704	0.1+	0.9−	1998 07 22	910	0.5−	0.5+
1977 03 12	381	0.3+	0.1−	1998 06 19	704	1.4−	0.2+	1998 07 22	910	0.8−	0.2+

1978 QF₁ = 1998 HH₇₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i> 204.86331		(2000.0)		P		Q	
<i>n</i>	0.28059839	ω	200.09418	+0.88899681	−0.45778513		
<i>a</i>	2.3107126	Ω	187.17859	+0.43108892	+0.84466639		
<i>e</i>	0.2148647	<i>i</i>	4.97518	+0.15442479	+0.27743729		
<i>P</i>	3.51	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1978 08 31	095	1.5+	0.4+	1998 04 21	704	1.3−	1.0−	1998 04 22	704	0.2−	0.5−
1978 09 05	095	1.7−	0.1−	1998 04 21	704	0.6+	0.1+	1998 04 22	704	0.5+	0.5+
1978 09 27	095	0.2+	0.4−	1998 04 21	704	0.2−	1.2+	1998 04 22	704	0.2−	0.6−
1998 04 21	704	0.6−	1.9−	1998 04 22	704	0.8+	1.4+	1998 04 22	704	0.6+	0.7+

1978 TQ₅ = 1978 WO = 1955 SR = 1989 PN₁ = 1998 FD₇₂

Id. C. M. Bardwell (d, MPC 11826), A. Gnädig, L. D. Schmadel

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	175.13557		(2000.0)	P		Q	
<i>n</i>	0.17497708	ω	59.21514	+0.92403100	−0.37893281		
<i>a</i>	3.1657888	Ω	322.98454	+0.31560325	+0.83097075		
<i>e</i>	0.3219135	<i>i</i>	4.83667	+0.21578066	+0.40730522		
<i>P</i>	5.63	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1955 09 17	760	1.1+	1.1−	1998 03 20	704	0.6+	1.4−
1955 09 17	760	0.2−	0.8−	1998 03 20	704	1.3−	0.9+
1978 10 08	095	1.0−	0.2−	1998 03 20	704	(3.1+ 0.3−)	1998 04 19 704 1.1+ 1.4+
1978 10 26	675	0.3+	0.1−	1998 03 20	704	(4.7− 0.0)	1998 04 19 704 0.6+ 1.4−
1978 10 27	675	0.0	0.7+	1998 03 22	704	0.1+ 1.0−	1998 04 19 704 1.7− 0.1+
1978 11 24	033	0.6+	0.1+	1998 03 22	704	0.9+ 0.6−	1998 04 22 691 1.0− 0.2+
1978 11 24	033	0.1+ 0.0	0.0	1998 03 22	704	0.4− 1.1+	1998 04 22 691 0.7− 0.4+
1989 08 05	033	0.6− 0.5+	0.0	1998 03 22	704	1.8+ 0.0	1998 04 22 691 0.9− 0.1+
1989 08 06	033	0.2+ 0.4+	0.0	1998 04 19	704	0.8+ 0.9−	

1978 VD₃ = 1994 RP₁₆

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	165.80065		(2000.0)	P		Q	
<i>n</i>	0.23440795	ω	194.14321	−0.78427020	−0.62012096		
<i>a</i>	2.6050805	Ω	307.51529	+0.57155551	−0.71008979		
<i>e</i>	0.0105971	<i>i</i>	1.39004	+0.24133907	−0.33350035		
<i>P</i>	4.20	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1978 11 05	675	0.4−	0.6−	1978 11 29	675	(3.6+ 0.6+)	1994 09 04 809 0.4− 0.4−
1978 11 06	675	0.3−	0.2−	1978 11 30	675	0.2+ 0.2+	1994 09 04 809 0.4− 1.2−
1978 11 07	675	1.9+	0.5+	1994 09 03	809	0.2+ 0.3+	1994 09 04 809 0.8− 1.2−
1978 11 08	675	1.1−	0.1−	1994 09 03	809	0.7+ 1.1+	
1978 11 29	675	0.3−	0.1+	1994 09 03	809	0.7+ 1.4+	

1978 VL₃ = 1998 MX₂₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	333.42639		(2000.0)	P		Q	
<i>n</i>	0.28571540	ω	273.80814	+0.78302884	+0.62032096		
<i>a</i>	2.2830405	Ω	47.85905	−0.54355234	+0.71799546		
<i>e</i>	0.1552671	<i>i</i>	3.51588	−0.30235194	+0.31572840		
<i>P</i>	3.45	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1978 11 05	675	0.1−	0.1−	1998 06 24	704	0.7+ 0.2−	1998 06 26 704 0.3− 1.3+
1978 11 06	675	(8.3− 0.7+)		1998 06 24	704	0.6+ 0.9−	1998 06 26 704 0.5− 1.0+
1978 11 07	675	0.5+ 0.2+		1998 06 24	704	0.4+ 0.4−	1998 06 26 704 0.5− 1.0−
1978 11 29	675	0.2−	0.2−	1998 06 24	704	0.1− 0.8−	
1978 11 30	675	0.1−	0.1−	1998 06 26	704	0.2− 0.9+	

1978 VG₄ = 1998 FC₃₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	4.09163		(2000.0)	P		Q	
<i>n</i>	0.21957903	ω	139.62504	−0.95242602	+0.30059121		
<i>a</i>	2.7210852	Ω	57.93645	−0.29267980	−0.85608296		
<i>e</i>	0.0106466	<i>i</i>	3.40240	−0.08498950	−0.42043655		
<i>P</i>	4.49	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1978 11 05	675	0.7−	0.1−	1998 03 20	704	0.4+ 0.4+	1998 03 22 704 1.5+ 0.3+
1978 11 06	675	1.9+	0.1−	1998 03 20	704	0.0 0.3+	1998 03 22 704 0.4+ 1.1−
1978 11 07	675	0.6−	0.6+	1998 03 20	704	0.5− 0.8−	1998 03 22 704 0.5− 1.2+
1978 11 08	675	0.7−	0.4−	1998 03 20	704	0.1+ 0.5−	1998 03 22 704 1.2− 0.2+
1978 11 29	675	0.1+ 0.2−		1998 03 20	704	0.4+ 0.2+	
1978 11 30	675	0.0 0.2+		1998 03 22	704	0.7− 0.2−	

1978 VE₇ = 1998 FS₄₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	228.88173		(2000.0)	P		Q	
<i>n</i>	0.27551965	ω	172.05356	+0.97997969	+0.19909583		
<i>a</i>	2.3390221	Ω	176.46204	−0.18338589	+0.90422932		
<i>e</i>	0.2202584	<i>i</i>	0.75557	−0.07752050	+0.37779650		
<i>P</i>	3.58	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	7
Residuals in seconds of arc							
1978 11 05	675	0.2−	0.2−	1998 03 20	704	0.9+ 0.9−	1998 03 22 704 0.7+ 1.3+
1978 11 06	675	0.4+ 0.1+		1998 03 20	704	1.1+ 0.6−	1998 03 22 704 0.1− 1.3−
1978 11 08	675	0.3−	0.2+	1998 03 20	704	0.6− 0.5+	1998 03 22 704 (4.9+ 0.2+)
1978 11 29	675	0.4+ 0.3+		1998 03 20	704	0.9− 0.5−	1998 03 22 704 0.3− 0.1−
1978 11 30	675	0.4−	0.3−	1998 03 20	704	0.8− 1.6+	

1979 MO₂ = 1998 HF₁₅₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	323.65218		(2000.0)	P		Q	
<i>n</i>	0.30617747	ω	66.58819	+0.38960646	+0.91956481		
<i>a</i>	2.1801543	Ω	226.44469	−0.6861863	+0.34846153		
<i>e</i>	0.1823524	<i>i</i>	4.04036	−0.30611842	+0.18159056		
<i>P</i>	3.22	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1979 06 23	413	0.3+	0.6+	1998 04 21	704	0.4− 0.4−	1998 05 01 704 0.1+ 0.1−
1979 06 24	413	0.1−	0.1−	1998 04 21	704	0.2− 1.1+	1998 05 01 704 0.0 0.3+
1979 06 25	413	0.1+ 0.7+		1998 04 21	704	0.2+ 1.6+	1998 05 16 704 0.5+ 0.9−
1979 07 24	413	0.1+ 0.0		1998 04 25	699	0.9+ 0.9−	1998 05 16 704 0.1+ 1.4−
1979 07 26	675	0.0 0.4+		1998 04 25	699	0.1+ 0.2+	1998 05 16 704 0.3− 0.1+
1979 07 28	413	1.3−	0.5−	1998 04 25	699	0.2+ 0.0	1998 05 16 704 1.0− 0.3−
1979 08 22	675	1.0+ 0.8−		1998 05 01	704	0.5+ 0.8−	1998 05 16 704 (6.1− 1.9−)
1998 04 21	704	1.0− 0.2+		1998 05 01	704	0.5+ 0.1+	
1998 04 21	704	0.7+ 0.3−		1998 05 01	704	1.2− 0.8+	

1979 MQ₈ = 1989 EP₉ = 1998 MC₂₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	252.17732		(2000.0)	P		Q	
<i>n</i>	0.26016184	ω	288.50636	+0.48170095	−0.87501337		
<i>a</i>	2.4301905	Ω	132.59941	+0.82666779	+0.43548956		
<i>e</i>	0.1259394	<i>i</i>	3.74838	+0.29083426	+0.21142481		
<i>P</i>	3.79	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1979 06 24	413	1.3+ 0.4+		1979 08 23	675	0.6− 0.8−	1998 07 01 691 0.6− 0.1−
1979 06 25	413	0.1+ 0.1+		1989 03 05	033	0.0 0.0	1998 07 01 691 0.2− 0.3+
1979 06 29	413	(4.1− 1.3−)		1989 03 05	033	0.1− 0.2−	1998 07 01 691 0.5− 0.2−
1979 07 24	675	(4.1− 0.7+)		1998 06 25	691	0.2+ 0.1+	1998 07 16 691 0.3+ 0.2−
1979 07 24	413	2.1− 0.9−		1998 06 25	691	0.0 0.4+	1998 07 16 691 0.3+ 0.2+
1979 07 25	675	1.4+ 0.5+		1998 06 25	691	0.3+ 0.2+	1998 07 16 691 0.0 0.0

1979 SH = 1998 EN₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	154.28157		(2000.0)	P		Q	
<i>n</i>	0.23413181	ω	50.56128	+0.92384227	−0.38035603		
<i>a</i>	2.6071285	Ω	331.71771	+0.31741627	+0.82397200		
<i>e</i>	0.2758828	<i>i</i>	5.20091	+0.21392143	+0.41999932		
<i>P</i>	4.21	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1979 09 17	046	0.6−	0.9+	1979 09 26	046	0.4− 0.3−	1998 03 02 910 0.2− 0.1−
1979 09 17	046	(4.1− 1.1+)		1979 09 26	046	0.4− 0.1+	1998 03 02 910 0.0 0.1−
1979 09 18	046	(0.8− 3.5+)		1979 09 27	046	1.0+ 0.8−	1998 03 02 910 0.1+ 0.1+
1979 09 18	046	(6.2− 3.2+)		1979 09 27	046	(3.8− 0.8−)	1998 03 02 910 0.1+ 0.2+
1979 09 19	046	(0.9− 3.4+)		1979 10 11	046	1.4+ 0.5+	1998 03 02 910 0.0 0.0

1998 AUG. 8

M.P.C. 32209

1979 09 19	046	0.6−	0.1−	1979 10 11	046	0.2−	0.5+	1998 03 02	910	0.2+	0.1+
1979 09 25	046	0.8−	0.3+	1979 10 15	046	0.7−	0.6+				
1979 09 25	046	1.7+	0.3−	1979 10 15	046	0.6−	1.2−				

1980 FK₄ = 1998 FP₆₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	52.81588		(2000.0)	P	Q
<i>n</i>	0.22048504	ω	330.54785	−0.85111034	−0.52495253
<i>a</i>	2.7136258	Ω	177.75991	+0.50669561	−0.82439491
<i>e</i>	0.1904140	<i>i</i>	8.83468	+0.13737084	−0.21165509
<i>P</i>	4.47	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1980 03 16	809	0.0	0.4+	1980 03 17	809	0.3−	0.2+	1998 03 20	704	0.8+	0.4−
1980 03 16	809	0.2+	0.1+	1980 03 17	809	0.6+	0.6−	1998 03 22	704	1.5−	1.0−
1980 03 16	809	0.3+	0.3+	1980 03 23	809	0.3+	0.5−	1998 03 22	704	0.7+	1.7+
1980 03 16	809	1.0−	0.1−	1998 03 20	704	(1.2−	3.2−)	1998 03 22	704	0.6−	0.8+
1980 03 17	809	0.0	0.3+	1998 03 20	704	0.3−	0.8−	1998 03 22	704	0.9+	0.2−
1980 03 17	809	0.1−	0.1−	1998 03 20	704	(2.8+	1.7+)				

1981 DL₂ = 1998 GM₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	329.32767		(2000.0)	P	Q
<i>n</i>	0.28934594	ω	293.31156	−0.24986838	+0.96414321
<i>a</i>	2.2639029	Ω	321.86485	−0.82707269	−0.26053225
<i>e</i>	0.1174319	<i>i</i>	8.32482	−0.50350428	−0.05050560
<i>P</i>	3.41	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 02 09	413	0.8+	3.0−	1981 04 09	413	0.9−	1.0+	1998 04 01	704	0.2+	0.2+
1981 02 12	413	1.1−	1.0+	1981 04 09	413	0.7+	1.3+	1998 04 01	704	1.2+	1.3−
1981 02 28	413	(3.4−	0.3−)	1981 05 01	413	0.9+	1.0−	1998 04 18	704	0.5+	0.0
1981 03 06	413	0.8+	0.0	1981 05 02	413	0.6−	2.2−	1998 04 18	704	0.7−	0.5+
1981 03 08	413	2.2−	1.1+	1981 05 03	413	2.0+	1.2−	1998 04 18	704	2.9−	0.9+
1981 03 08	413	(2.0+	1.2+)	1998 04 01	704	1.9+	0.4−	1998 04 18	704	0.9−	1.6+
1981 03 12	413	2.1−	0.1+	1998 04 01	704	0.9+	0.3+				
1981 03 12	413	1.2+	0.7+	1998 04 01	704	0.2+	0.5−				

1981 DN₃ = 1998 GO₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	272.15332		(2000.0)	P	Q
<i>n</i>	0.29100936	ω	72.86775	+0.83936620	+0.53644385
<i>a</i>	2.2552676	Ω	254.61039	−0.52687264	+0.76324641
<i>e</i>	0.2191495	<i>i</i>	5.21929	−0.13367722	+0.36011513
<i>P</i>	3.39	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 02 28	413	(1.2−	2.5−)	1981 04 09	413	1.6+	1.3−	1998 04 01	704	0.1+	2.7−
1981 02 28	413	0.9−	1.7+	1981 05 01	413	0.3−	1.0+	1998 04 19	704	0.5+	1.5+
1981 03 08	413	1.6−	0.4+	1981 05 03	413	0.5−	1.2−	1998 04 19	704	1.0−	1.2+
1981 03 08	413	1.1+	0.8−	1998 04 01	704	1.1+	0.5+	1998 04 19	704	0.9+	0.5−
1981 03 12	413	(5.5+	3.1−)	1998 04 01	704	0.8−	1.2+	1998 04 19	704	0.4−	0.5−
1981 04 09	413	0.3+	0.4−	1998 04 01	704	0.1−	0.1−				

1981 EP₂ = 1998 MY₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	301.93299		(2000.0)	P	Q
<i>n</i>	0.18711742	ω	125.77540	+0.92762365	+0.34163880
<i>a</i>	3.0273310	Ω	214.96781	−0.36606013	+0.91188513
<i>e</i>	0.1167031	<i>i</i>	15.27490	+0.07425863	+0.22748283
<i>P</i>	5.27	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1981 02 02	413	1.2+	0.1−	1981 03 12	413	2.7+	1.8−	1998 06 19	704	0.8+	0.1+
1981 03 02	413	2.5−	1.2+	1981 04 07	413	2.5−	2.3+	1998 06 19	704	0.2−	0.3−
1981 03 02	413	1.4+	2.3−	1981 04 07	413	1.5−	0.6−	1998 06 19	704	0.9+	0.9−
1981 03 07	413	0.4−	0.6+	1981 04 08	413	0.9−	1.5+	1998 06 25	704	0.4+	1.1−
1981 03 07	413	1.6+	1.4−	1981 04 08	413	1.9−	0.3+	1998 06 25	704	1.2−	1.0+
1981 03 10	413	0.3−	1.0+	1981 04 09	413	0.7+	0.2−	1998 06 25	704	0.1−	0.4+
1981 03 10	413	2.1+	0.0	1981 04 29	413	0.9+	1.7−	1998 06 25	704	0.2−	0.4+
1981 03 12	413	0.5−	1.1+	1998 06 19	704	0.5−	0.3+				

1981 EK₃ = 1998 GN₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	350.84590		(2000.0)	P	Q
<i>n</i>	0.23210108	ω	340.60984	−0.74461370	+0.66140422
<i>a</i>	2.6223135	Ω	241.13200	−0.59804736	−0.72091930
<i>e</i>	0.1186834	<i>i</i>	5.89689	−0.29646211	−0.20692950
<i>P</i>	4.25	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 02 02	413	0.5−	0.5−	1981 03 10	413	0.8−	0.9+	1981 04 29	413	1.1+	0.9−
1981 02 14	413	0.3+	0.4+	1981 03 11	413	1.2−	0.4+	1998 04 01	704	0.1+	1.2+
1981 03 01	413	1.6+	0.8−	1981 03 11	413	1.2+	1.0−	1998 04 01	704	2.0+	1.8−
1981 03 01	413	1.4+	1.2−	1981 03 12	413	0.9−	1.1+	1998 04 01	704	1.8−	1.4−
1981 03 02	413	0.4−	0.8+	1981 03 12	413	0.7−	0.6+	1998 04 01	704	0.6+	1.1−
1981 03 02	413	(3.4+	0.1+)	1981 03 15	413	2.4−	1.3+	1998 04 19	704	0.6+	0.5+
1981 03 07	413	0.1−	0.7+	1981 04 06	413	0.1+	0.1−	1998 04 19	704	2.0−	0.0
1981 03 07	413	1.7+	0.8−	1981 04 06	413	1.1+	1.1−	1998 04 19	704	0.2−	1.7+
1981 03 07	413	1.2−	0.1−	1981 04 12	413	0.3−	1.0+	1998 04 19	704	1.5+	0.9−
1981 03 07	413	1.1+	0.0	1981 04 12	413	0.4−	0.6+	1998 04 19	704	1.5−	0.8+

1981 EQ₃ = 1997 BU₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	262.79476		(2000.0)	P	Q
<i>n</i>	0.17535268	ω	10.42735	+0.78958435	+0.59102260
<i>a</i>	3.1612665	Ω	312.03436	−0.57779494	+0.62545914
<i>e</i>	0.1979394	<i>i</i>	12.84103	−0.20666292	+0.50940470
<i>P</i>	5.62	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 02 02	413	2.4−	0.9−	1981 03 10	413	2.0+	0.4−	1997 01 17	691	0.2+	0.0
1981 02 14	413	(2.7+	0.1+)	1981 03 12	413	1.5−	1.0+	1997 01 17	691	0.2+	0.2+
1981 03 02	413	(4.3−	0.2−)	1981 03 12	413	1.6+	0.0	1997 01 31	691	0.4−	0.1+
1981 03 02	413	0.9+	0.1−	1981 04 09	413	0.2+	0.0	1997 01 31	691	0.0	0.3−
1981 03 07	413	1.1−	1.5+	1981 04 30	413	0.3+	1.3−	1997 01 31	691	0.1−	0.2−
1981 03 07	413	1.1+	0.3+	1981 05 02	413	1.2−	0.9−				
1981 03 10	413	0.4−	0.7+	1997 01 17	691	0.1+	0.1+				

1981 EA₆ = 1997 ER₅₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	253.95619		(2000.0)	P	Q
<i>n</i>	0.18169518	ω	93.81230	+0.98631985	+0.12620113
<i>a</i>	3.0872641	Ω	258.95964	−0.15729470	+0.91298024
<i>e</i>	0.0471354	<i>i</i>	6.20286	+0.04931058	+0.38799530
<i>P</i>	5.42	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 02 02	413	1.6−	0.1+	1981 03 12	413	0.7−	1.3+	1997 03 08	691	0.4−	0.0
1981 02 14	413	1.4+	0.2+	1981 03 12	413	1.1+	0.7−	1997 03 08	691	0.2−	0.2−
1981 03 07	413	0.3+	0.7+	1981 03 15	413	0.8−	0.5−	1997 03 13	691	0.0	0.2−
1981 03 07	413	2.1+	0.6−	1981 03 15	413	1.0−	0.7+	1997 03 13	691	0.0	0.2−
1981 03 10	413	0.2−	1.3+	1981 04 09	413	1.1−	0.9−	1997 03 13	691	0.2+	0.1−
1981 03 10	413	0.8+	0.3+	1981 04 09	413	0.9+	0.9−				
1981 03 11	413	0.5−	0.0	1981 04 29	413	0.5−	0.5−				

1981 EO₆ = 1998 FR₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23167163	ω	179.58074	+0.35653952	−0.92558756		
<i>a</i>	2.6255531	Ω	249.52754	+0.85678983	+0.37819354		
<i>e</i>	0.1716121	<i>i</i>	7.80041	+0.37254631	+0.01604140		
<i>P</i>	4.25	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	1.2−	0.6+	1981 03 12	413	0.8+	0.3+	1998 03 31	704	0.3−	2.7−
1981 03 06	413	0.4−	0.4−	1981 04 09	413	1.3−	1.5+	1998 03 31	704	0.7+	0.4−
1981 03 06	413	0.5+	0.9−	1981 05 01	413	0.3−	0.6+	1998 04 19	704	1.1+	0.2+
1981 03 08	413	0.2−	1.0+	1981 05 03	413	(1.0+	4.7−)	1998 04 19	704	1.3−	0.0
1981 03 08	413	0.7+	0.1+	1998 03 31	704	1.0+	1.2+	1998 04 19	704	0.1+	0.7+
1981 03 12	413	2.1+	0.1−	1998 03 31	704	0.3−	0.6−	1998 04 19	704	1.9−	0.9−

1981 EN₇ = 1998 MY₃₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19112611	ω	28.13094	+0.99565456	+0.04220840		
<i>a</i>	2.9848513	Ω	329.10833	−0.07939717	+0.85056712		
<i>e</i>	0.0983752	<i>i</i>	9.30437	+0.04866292	+0.52416985		
<i>P</i>	5.16	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.1+	0.1−	1981 03 15	413	1.8+	0.5−	1998 06 24	704	0.8+	0.7−
1981 03 01	413	2.1−	1.6+	1981 04 05	413	0.6−	1.4−	1998 06 24	704	1.3−	1.2+
1981 03 01	413	1.4−	0.6−	1981 04 05	413	2.1+	1.6−	1998 06 24	704	0.4+	0.3−
1981 03 07	413	0.0	0.5+	1981 04 12	413	2.4−	1.2+	1998 06 26	704	0.4+	0.5+
1981 03 07	413	1.3+	0.5+	1981 04 12	413	3.1+	1.4−	1998 06 26	704	0.1−	0.1−
1981 03 11	413	1.7−	1.4+	1981 04 29	413	1.3+	0.4−	1998 06 26	704	0.7−	0.7−
1981 03 11	413	0.9−	0.3+	1981 04 30	413	0.3+	0.2+	1998 06 26	704	0.6+	0.8+
1981 03 15	413	0.7−	0.3+	1998 06 24	704	0.0	0.7−				

1981 EA₁₀ = 1997 BV₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17813743	ω	143.73589	−0.65520726	−0.75267529		
<i>a</i>	3.1282342	Ω	346.78186	+0.60934396	−0.47594064		
<i>e</i>	0.0488105	<i>i</i>	16.43106	+0.44654606	−0.45492902		
<i>P</i>	5.53	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.1+	0.8−	1981 03 15	413	0.7−	0.1−	1981 04 29	413	0.8+	1.1−
1981 02 09	413	1.1+	0.4−	1981 03 15	413	0.6+	0.2+	1997 01 28	327	0.1+	0.2+
1981 02 13	413	1.0−	0.2−	1981 04 05	413	1.8−	0.8+	1997 01 28	327	1.2−	0.0
1981 03 01	413	0.8−	0.4+	1981 04 05	413	1.4+	0.6+	1997 01 28	327	0.9−	0.1+
1981 03 01	413	(3.7+	0.2−)	1981 04 06	413	1.6−	0.4+	1997 02 06	566	0.8+	0.1+
1981 03 07	413	0.2+	0.0	1981 04 06	413	1.1+	0.0	1997 02 06	566	0.9+	0.2−
1981 03 07	413	1.0+	0.5+	1981 04 07	413	1.7−	0.6+	1997 02 06	566	0.4+	0.2−
1981 03 11	413	(2.1−	0.7−)	1981 04 12	413	1.0−	0.4−				
1981 03 11	413	1.8+	0.5−	1981 04 12	413	0.5+	0.0				

1981 EM₁₄ = 1998 HE₁₅₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23675628	ω	77.11915	+0.45961506	+0.88423082		
<i>a</i>	2.5878258	Ω	220.57806	−0.85628137	+0.41639931		
<i>e</i>	0.0055577	<i>i</i>	7.33123	−0.23566124	+0.21153597		
<i>P</i>	4.16	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.7−	0.5+	1981 04 08	413	1.4−	0.9+	1998 05 01	704	0.3−	0.2−
1981 02 12	413	0.1+	0.2−	1981 04 09	413	0.6−	0.5+	1998 05 01	704	0.7+	1.5−

1981 03 01	413	1.1+	0.4−	1981 04 09	413	0.7+	0.3−	1998 05 01	704	0.6−	1.1−
1981 03 06	413	0.6−	1.2+	1981 05 01	413	0.5+	1.7−	1998 05 01	704	0.3−	0.1−
1981 03 08	413	1.3−	0.5+	1981 05 03	413	0.2+	2.4−	1998 05 22	704	1.7+	1.5−
1981 03 08	413	1.4+	0.1−	1998 04 21	704	0.4−	0.1+	1998 05 22	704	0.3+	0.2+
1981 03 12	413	0.5−	0.7+	1998 04 21	704	1.3−	1.0+	1998 05 22	704	1.1+	0.1+
1981 03 12	413	1.2+	1.3−	1998 04 21	704	1.2−	0.8+	1998 05 22	704	0.4+	1.8+
1981 04 06	413	0.2+	0.9+	1998 04 21	704	0.2+	0.5+				
1981 04 08	413	0.7−	0.2+	1998 04 21	704	0.0	0.8+				

1981 EG₁₇ = 1998 FQ₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17748894	ω	304.23110	−0.58829417	−0.80855041		
<i>a</i>	3.1358494	Ω	181.94480	+0.80843232	−0.58771163		
<i>e</i>	0.2004631	<i>i</i>	21.60931	+0.01863211	−0.02900473		
<i>P</i>	5.55	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 02	413	0.4−	0.3−	1981 04 08	413	0.7−	1.9+	1998 04 24	704	0.6+	1.5+
1981 02 14	413	0.5+	0.1+	1981 04 26	413	(1.3+	4.8−)	1998 04 24	704	0.1−	0.0
1981 03 01	413	1.0−	2.2+	1981 05 02	413	0.8+	0.1+	1998 04 24	704	(3.1+	0.2−)
1981 03 01	413	0.8+	1.4−	1998 03 24	704	0.0	0.5+	1998 04 25	566	0.2+	0.3+
1981 03 07	413	0.5+	0.9−	1998 03 24	704	0.6−	1.3−	1998 04 25	566	0.3+	0.3+
1981 03 11	413	0.2−	1.3+	1998 03 24	704	0.4+	1.0+	1998 04 25	566	0.0+	0.5+
1981 03 15	413	1.0−	1.2+	1998 03 24	704	1.4−	0.7−	1998 05 28	704	0.6+	0.8−
1981 03 15	413	0.1−	0.3−	1998 04 23	704	0.2−	0.6+	1998 05 28	704	0.0	1.3−
1981 03 16	413	0.0	0.6−	1998 04 23	704	0.1+	0.1−	1998 05 28	704	0.6−	1.3+
1981 03 16	413	0.4−	0.7−	1998 04 23	704	1.0+	0.0	1998 05 28	704	1.4−	2.1−
1981 04 07	413	0.4+	2.7−	1998 04 23	704	(2.7−	0.6−)	1998 05 28	704	0.8+	0.4+
1981 04 07	413	1.0+	0.3−	1998 04 24	704	0.3+	0.5+				

1981 EH₁₇ = 1998 MC₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18258131	ω	92.53595	+0.20332992	+0.97879239		
<i>a</i>	3.0772669	Ω	189.30897	−0.94841239	+0.19056068		
<i>e</i>	0.1021602	<i>i</i>	8.87213	−0.24325065	+0.07518032		
<i>P</i>	5.40	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	2.2+	1.0−	1981 04 26	413	(1.3+	3.4−)	1998 05 26	704	(4.8−	1.8−)
1981 02 12	413	(6.1−	2.2+)	1981 05 02	413	0.4−	1.2−	1998 06 19	704	0.9+	1.2−
1981 02 13	413	0.6+	0.3+	1998 05 23	704	0.2−	1.0+	1998 06 19	704	0.6+	1.1+
1981 03 01	413	1.0−	0.1+	1998 05 23	704	0.6−	1.0+	1998 06 19	704	0.2+	0.1+
1981 03 01	413	(5.6+	3.1−)	1998 05 23	704	0.5−	0.3+	1998 06 19	704	1.8−	1.8−
1981 03 11	413	0.9+	0.7−	1998 05 23	704	0.1+	1.2+	1998 06 25	704	1.7+	0.1+
1981 03 15	413	0.0	0.0	1998 05 26	704	0.5−	0.2−	1998 06 25	704	0.1+	1.0−
1981 04 05	413	1.4−	1.2+	1998 05 26	704	0.3−	0.6+	1998 06 25	704	1.5+	0.2+
1981 04 05	413	(4.5+	5.6−)	1998 05 26	704	0.1−	0.9−	1998 06 25	704	0.5+	0.1−
1981 04 06	413	0.7−	0.7+	1998 05 26	704	1.4−	0.5−				

1981 EJ₁₈ = 1998 FN₁₄₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17556898	ω	110.31545	−0.03897300	−0.99893002		
<i>a</i>	3.1586695	Ω	341.86447	+0.88435901	−0.02288193		
<i>e</i>	0.1293074	<i>i</i>	4.58800	+0.46517765	−0.04018994		
<i>P</i>	5.61	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 02	413	1.4+	0.4+	1981 04 11	413	0.6−	0.2+	1998 03 29	704	0.2+	1.1+
1981 02 09	413	0.8−	1.7−	1981 04 11	413	1.3+	0.4−	1998 03 29	704	1.3+	1.2+
1981 02 13	413	(0.3−	3.1+)	1981 04 30	413	0.5−	0.5−	1998 03 29	704	0.2−	0.5−
1981 03 02	413	1.5−	1.2+	1981 05 02	413	0.5−	1.6−	1998 03 29	704	0.7−	0.9−
1981 03 02	413	1.4+	0.0	1998 03 20	704	0.8+	1.5+	1998 04 01	704	0.3+	0.6+

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1981 03 03	413	1.3-	0.4+	1998 03 20	704	(0.5-	2.2-)	1998 04 01	704	0.9+	0.7+
1981 03 03	413	0.2+	0.4-	1998 03 20	704	(2.3+	1.7-)	1998 04 01	704	0.3-	0.7+
1981 03 07	413	0.1-	0.5+	1998 03 20	704	0.9+	0.1-	1998 04 01	704	1.5+	1.7-
1981 03 07	413	2.2+	1.4-	1998 03 20	704	0.7-	0.6-	1998 04 01	704	1.6-	0.3-
1981 03 11	413	1.3-	0.5+	1998 03 24	691	0.9-	0.5+	1998 04 20	704	1.0+	0.5+
1981 03 29	413	0.7+	0.4+	1998 03 24	691	0.9-	0.3+	1998 04 20	704	0.4-	1.5-
1981 04 08	413	1.4-	1.0+	1998 03 24	691	0.9-	0.5+	1998 04 20	704	1.4+	1.3-
1981 04 08	413	0.1+	0.0	1998 03 29	704	1.0-	0.5+	1998 04 20	704	(3.4-	1.2-)

1981 EJ₂₀ = 1997 YQ₂₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	53.49300	(2000.0)	
<i>n</i>	0.22633015	ω	102.91843
<i>a</i>	2.6667017	Ω	359.36490
<i>e</i>	0.0960702	<i>i</i>	8.94641
<i>P</i>	4.35	<i>H</i>	15.0
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	5

1981 02 02	413	0.6-	0.8-	1981 03 11	413	0.9-	0.5+	1981 04 30	413	0.4-	0.5+
1981 02 13	413	0.9+	0.9-	1981 03 11	413	0.7+	0.1-	1981 05 02	413	0.1-	0.5-
1981 03 02	413	(2.5-	0.9+)	1981 03 16	413	(3.0-	0.7+)	1997 12 28	566	0.1-	0.1+
1981 03 02	413	1.7+	0.4+	1981 03 16	413	(3.8+	0.8-)	1997 12 28	566	0.1-	0.1-
1981 03 03	413	(3.7+	1.0-)	1981 03 29	413	1.8-	0.2-	1997 12 28	566	0.0	0.1+
1981 03 03	413	0.2-	0.9+	1981 03 29	413	1.6+	0.1-	1998 01 24	566	0.2+	0.1-
1981 03 07	413	0.9-	0.7+	1981 04 08	413	0.4-	0.1-	1998 01 24	566	0.1+	0.1-
1981 03 07	413	2.3+	0.0	1981 04 11	413	2.0-	0.3-	1998 01 24	566	0.2-	0.2-

1981 EA₂₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	300.57297	(2000.0)	
<i>n</i>	0.22636741	ω	240.11723
<i>a</i>	2.6664091	Ω	352.68851
<i>e</i>	0.0488974	<i>i</i>	8.55095
<i>P</i>	4.35	<i>H</i>	14.0
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	4

1981 02 09	413	0.5+	0.5+	1981 03 16	413	0.8-	0.9-	1981 05 03	413	0.1+	0.0
1981 02 13	413	0.8+	0.9-	1981 03 16	413	0.4+	1.1+	1998 02 05	046	0.0	0.4-
1981 03 02	413	1.1+	0.8-	1981 03 29	413	(0.8-	2.9+)	1998 02 05	046	0.3-	0.4-
1981 03 02	413	0.5-	0.5+	1981 04 06	413	1.8-	0.5-	1998 02 05	046	0.0	0.5-
1981 03 02	413	0.2+	0.1+	1981 04 06	413	0.7+	0.3+	1998 02 20	725	0.5-	0.1-
1981 03 03	413	(3.5-	0.9-)	1981 04 12	413	0.2-	0.2-	1998 02 20	725	0.6+	1.3+
1981 03 07	413	1.4-	0.2+	1981 04 12	413	0.1+	0.0				
1981 03 11	413	0.6+	0.7+	1981 05 02	413	0.4+	0.0				

1981 EZ₂₄ = 1991 RE₃₄ = 1994 FD₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	307.92716	(2000.0)	
<i>n</i>	0.22744732	ω	58.64916
<i>a</i>	2.6579624	Ω	181.17523
<i>e</i>	0.1206644	<i>i</i>	12.83725
<i>P</i>	4.33	<i>H</i>	14.0
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	4

1981 02 12	413	0.9+	2.1-	1981 03 15	413	2.0+	1.6-	1981 04 26	413	0.7+	2.2-
1981 02 13	413	1.1+	0.3-	1981 04 05	413	2.1+	1.5-	1981 05 01	413	0.6-	1.0+
1981 03 02	413	2.2-	2.4+	1981 04 06	413	0.9-	2.2+	1991 09 11	675	1.7+	0.1+
1981 03 02	413	0.0	1.1-	1981 04 06	413	0.0	0.9+	1991 09 11	675	1.6-	0.6-
1981 03 06	413	1.8-	2.4+	1981 04 07	413	0.8-	1.6+	1994 03 16	691	0.1+	0.3-
1981 03 11	413	1.8-	1.4+	1981 04 07	413	0.9+	1.4-	1994 03 16	691	0.0	0.4-
1981 03 11	413	0.2-	0.4-	1981 04 10	413	(0.2+	3.4+)	1994 03 16	691	0.2-	0.3+
1981 03 15	413	0.3+	0.7-	1981 04 10	413	0.4+	0.9-				

1981 EZ₂₆ = 1998 MP₄₆

Id. S. J. Bus (1978 observations), G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	123.44044	(2000.0)	
<i>n</i>	0.24603519	ω	269.15410
<i>a</i>	2.5223454	Ω	261.12023
<i>e</i>	0.0783712	<i>i</i>	1.44156
<i>P</i>	4.01	<i>H</i>	15.5
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	4

1978 07 09	675	1.6-	0.1-	1981 03 06	413	1.8+	0.2+	1981 05 01	413	0.6+	1.0-
1978 07 09	675	1.7+	0.3-	1981 03 11	413	1.0+	0.6-	1981 05 03	413	1.5-	1.0-
1981 02 12	413	0.9-	0.3+	1981 03 15	413	1.6-	0.4+	1981 06 25	691	0.1-	0.4+
1981 02 12	413	0.7-	0.2-	1981 04 05	413	1.4+	0.7-	1981 06 25	691	0.1-	0.5+
1981 02 13	413	1.1+	1.2+	1981 04 05	413	0.0	0.0	1981 06 25	691	0.2-	0.5+
1981 03 02	413	0.9+	1.3+	1981 04 06	413	1.8-	0.1+				
1981 03 06	413	0.9-	0.4+	1981 04 06	413	0.5+	0.1-				

1981 EH₂₇ = 1995 QA₁₁ = 1997 CA₃₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	97.88431	(2000.0)	
<i>n</i>	0.24127601	ω	164.96132
<i>a</i>	2.5554063	Ω	358.35544
<i>e</i>	0.1026050	<i>i</i>	13.88879
<i>P</i>	4.08	<i>H</i>	15.0
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	4

1981 02 09	413	1.1+	0.7+	1981 03 15	413	0.6-	0.1-	1995 08 28	691	0.2-	0.2+
1981 02 12	413	1.4+	0.7-	1981 03 15	413	1.9+	0.7+	1995 08 28	691	0.2-	0.4+
1981 02 13	413	0.0	0.7+	1981 04 05	413	1.4-	1.2+	1997 02 06	566	0.1+	0.0
1981 03 02	413	1.1-	0.8-	1981 04 05	413	(5.5+	0.7+)	1997 02 06	566	0.0	0.1-
1981 03 02	413	0.9+	0.8-	1981 04 06	413	2.5-	1.2+	1997 02 06	566	0.2+	0.0
1981 03 06	413	1.8-	1.4-	1981 04 06	413	2.2+	0.6+	1997 02 06	566	0.2+	0.0
1981 03 06	413	1.1+	0.4+	1981 04 10	413	(2.7-	1.5+)	1997 02 06	566	0.2-	0.1+
1981 03 11	413	0.5-	0.2-	1981 04 10	413	0.2+	0.6+	1997 02 06	566	0.5-	0.5-
1981 03 11	413	1.1+	0.6+	1981 05 03	413	1.3-	2.1-				

1981 EK₂₇ = 1998 HD₁₅₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	177.65384	(2000.0)	
<i>n</i>	0.29674606	ω	74.09158
<i>a</i>	2.2261072	Ω	354.25991
<i>e</i>	0.0842109	<i>i</i>	5.39954
<i>P</i>	3.32	<i>H</i>	15.0
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	5

1981 02 09	413	1.7-	0.2+	1981 04 05	413	(3.7+	0.7-)	1998 04 22	704	1.8+	2.1-
1981 02 12	413	0.7+	0.5+	1981 04 06	413	2.2-	1.0+	1998 04 22	704	1.6-	0.2-
1981 02 13	413	0.4-	0.3+	1981 04 06	413	2.2+	0.5-	1998 05 05	699	1.7+	0.7-
1981 03 02	413	2.4-	0.3-	1981 04 07	413	(2.3-	0.9+)	1998 05 05	699	0.8+	0.6-
1981 03 02	413	2.2+	0.9-	1981 04 07	413	2.4+	0.9-	1998 05 05	699	0.7+	0.1+
1981 03 06	413	(3.2-	0.1+)	1981 04 10	413	(3.3-	1.2+)	1998 05 22	704	0.9-	0.1-
1981 03 06	413	2.1+	0.2-	1981 04 10	413	1.3+	1.3-	1998 05 22	704	1.2-	0.3+
1981 03 11	413	1.2-	0.3-	1981 05 01	413	1.5-	0.1+	1998 05 22	704	2.0-	0.7+
1981 03 11	413	0.1+	0.7+	1981 05 03	413	0.1+	0.9+	1998 05 22	704	0.5-	0.9+
1981 03 15	413	0.6-	0.3+	1998 04 22	704	0.5-	0.3-	1998 05 22	704	0.5+	0.7+
1981 03 15	413	0.7+	0.7+	1998 04 22	704	0.5+	1.4+				
1981 04 05	413	2.1-	0.3+	1998 04 22	704	0.9+	0.1-				

1981 EJ₂₉ = 1992 HK₇ = 1994 TN₁₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	167.49650	(2000.0)	
<i>n</i>	0.18831903	ω	278.47496
<i>a</i>	3.0144395	Ω	197.92702
<i>e</i>	0.0489529	<i>i</i>	9.68352
<i>P</i>	5.23	<i>H</i>	14.5
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 02 02	413	1.4-	0.7+	1981 03 15	413	1.9+	0.4-	1981 05 03	413	0.3-	0.9-
1981 02 12	413	0.1+	0.2-	1981 04 05	413	(5.5+	4.4-)	1992 04 30	691	0.2+	0.2+
1981 02 14	413	0.7-	0.3+	1981 04 06	413	(2.1-	3.0+)	1992 04 30	691	0.2+	0.1+
1981 03 01	413	1.5-	0.9+	1981 04 10	413	1.3+	0.5+	1992 04 30	691	0.2-	0.6+
1981 03 07	413	0.7-	0.6+	1981 04 10	413	0.4+	0.0	1994 10 08	691	0.1-	0.1+
1981 03 07	413	0.0	0.9+	1981 05 01	413	0.3-	1.3-	1994 10 08	691	0.1-	0.3+
1981 03 11	413	1.4+	1.1-	1981 05 02	413	0.4-	0.2-	1994 10 08	691	0.1+	0.1+

1981 EH₃₀ = 1998 FP₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	22.36237	(2000.0)	
<i>n</i>	0.17269672	ω	348.60261
<i>a</i>	3.1935961	Ω	175.86930
<i>e</i>	0.1433929	<i>i</i>	8.48912
<i>P</i>	5.71	<i>H</i>	15.0
Williams			
<i>P</i>	5.71	<i>H</i>	15.0
<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 09	413	0.1+	0.2-	1981 03 07	413	0.3-	1.1+	1998 03 26	704	0.3+	0.1-
1981 02 13	413	0.6-	0.3+	1981 03 11	413	0.4-	0.7+	1998 03 26	704	0.9+	0.6+
1981 03 02	413	0.4-	1.1+	1981 03 11	413	1.5+	1.2-	1998 03 29	704	0.4+	2.0-
1981 03 03	413	0.5-	0.8+	1981 04 26	413	1.1+	1.7-	1998 03 29	704	0.5-	1.1+
1981 03 03	413	0.4+	0.5-	1981 05 01	413	0.0	1.1+	1998 03 29	704	0.3-	0.2+
1981 03 07	413	0.6-	0.3-	1998 03 26	704	1.1-	0.9-				

1981 EK₃₀ = 1998 AR₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	277.25411	(2000.0)	
<i>n</i>	0.28356434	ω	4.10559
<i>a</i>	2.2945717	Ω	262.40045
<i>e</i>	0.1004013	<i>i</i>	6.11388
<i>P</i>	3.48	<i>H</i>	16.0
Williams			
<i>P</i>	3.48	<i>H</i>	16.0
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 14	413	0.2+	0.5+	1981 03 10	413	(4.1-	1.3+)	1998 01 01	691	0.1-	0.1-
1981 03 02	413	1.7-	0.6+	1981 03 10	413	0.0	0.6+	1998 01 01	691	0.4-	0.3-
1981 03 02	413	1.2+	0.5-	1981 04 09	413	1.3-	0.2+	1998 01 26	691	0.1-	0.3-
1981 03 07	413	0.8+	1.0+	1981 04 09	413	1.0+	1.5-	1998 01 26	691	0.0	0.1-
1981 03 07	413	(3.7+	0.5-)	1981 05 03	413	0.0	0.6-	1998 01 26	691	0.4+	0.1+

1981 EZ₃₀ = 1997 SL₃₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	348.66415	(2000.0)	
<i>n</i>	0.21129256	ω	105.58446
<i>a</i>	2.7917718	Ω	332.91015
<i>e</i>	0.0661683	<i>i</i>	2.71951
<i>P</i>	4.66	<i>H</i>	15.0
Williams			
<i>P</i>	4.66	<i>H</i>	15.0
<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 12	413	1.0-	0.7+	1981 03 15	413	(3.5+	0.1+)	1997 09 28	691	0.0	0.7+
1981 02 12	413	0.7-	0.4-	1981 04 06	413	1.8+	0.2+	1997 11 02	327	0.1-	0.1-
1981 02 13	413	0.9+	0.1+	1981 05 01	413	0.1+	0.2-	1997 11 02	327	0.1-	0.3+
1981 03 02	413	1.1+	0.1+	1981 05 03	413	0.2+	0.1+	1997 11 02	327	0.7-	0.3-
1981 03 11	413	0.5-	0.9+	1997 09 28	691	0.0	0.7+				
1981 03 15	413	0.9-	0.4+	1997 09 28	691	0.1-	0.4+				

1981 EX₃₂ = 1998 GL₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	316.88578	(2000.0)	
<i>n</i>	0.23616843	ω	68.58950
<i>a</i>	2.5921183	Ω	223.57219
<i>e</i>	0.1884496	<i>i</i>	6.78334
<i>P</i>	4.17	<i>H</i>	14.5
Williams			
<i>P</i>	4.17	<i>H</i>	14.5
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 02	413	0.9-	1.3+	1981 03 15	413	0.4+	0.2-	1998 04 21	704	0.4-	0.7+
1981 02 14	413	1.5+	1.8+	1981 04 30	413	0.0	1.8-	1998 04 21	704	0.9-	1.5+
1981 03 01	413	0.6-	0.5+	1981 05 02	413	0.2+	0.1+	1998 04 21	704	0.1-	1.1+
1981 03 01	413	1.6+	1.7-	1998 04 01	704	0.6+	1.0+	1998 04 22	704	1.2+	0.7-
1981 03 07	413	1.3+	1.0-	1998 04 01	704	0.3-	0.6-	1998 04 22	704	0.8+	0.1-
1981 03 11	413	1.5-	1.9+	1998 04 01	704	1.9+	0.5-	1998 04 22	704	0.9-	0.1+
1981 03 11	413	0.3+	1.6-	1998 04 01	704	1.0-	2.1-	1998 04 22	704	0.1+	0.5-
1981 03 15	413	2.6-	0.4+	1998 04 21	704	0.9-	0.7+				

1981 EH₃₃ = 1998 KQ₆₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	324.59360	(2000.0)	
<i>n</i>	0.18255568	ω	98.42522
<i>a</i>	3.0775550	Ω	191.78741
<i>e</i>	0.0439533	<i>i</i>	9.76438
<i>P</i>	5.40	<i>H</i>	14.5
Williams			
<i>P</i>	5.40	<i>H</i>	14.5
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.2+	0.2+	1981 03 15	413	1.9-	0.8+	1998 05 23	704	1.1-	0.8-
1981 02 13	413	0.5-	0.2+	1981 03 15	413	1.9+	1.0-	1998 05 23	704	1.7+	0.3-
1981 03 01	413	0.5-	1.1+	1981 04 30	413	0.3-	0.7-	1998 05 26	704	1.9-	1.6+
1981 03 01	413	1.6+	1.1-	1981 05 02	413	0.7+	0.4+	1998 05 26	704	1.6+	0.5+
1981 03 07	413	0.9+	0.6-	1998 05 23	704	0.2+	0.2-	1998 05 26	704	0.1-	0.1-
1981 03 11	413	2.0-	0.8+	1998 05 23	704	0.7+	0.4-	1998 05 26	704	1.0-	0.3-

1981 EV₃₃ = 1998 FO₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	87.16957	(2000.0)	
<i>n</i>	0.23052448	ω	279.85464
<i>a</i>	2.6342562	Ω	181.31350
<i>e</i>	0.0587486	<i>i</i>	21.94279
<i>P</i>	4.28	<i>H</i>	14.5
Williams			
<i>P</i>	4.28	<i>H</i>	14.5
<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 02	413	0.8-	0.1+	1981 03 29	413	0.5-	1.3+	1998 04 15	704	0.5+	0.5+
1981 02 14	413	0.9+	0.9-	1981 04 08	413	(5.5+	6.2-)	1998 04 15	704	1.6+	1.4+
1981 03 01	413	1.6-	1.6+	1981 04 11	413	0.1-	1.3+	1998 04 15	704	2.2-	2.0+
1981 03 01	413	1.5+	1.4-	1981 04 26	413	0.3+	1.9-	1998 04 18	704	1.6-	0.7+
1981 03 07	413	0.7-	0.9+	1998 03 26	704	1.4-	0.1-	1998 04 18	704	0.6-	0.3-
1981 03 11	413	0.6+	1.0-	1998 03 26	704	0.6+	1.2+	1998 04 18	704	1.3+	0.1+
1981 03 16	413	0.3+	0.1+	1998 03 26	704	2.2+	1.9-	1998 04 18	704	2.4-	1.9-
1981 03 16	413	0.1+	0.6-	1998 04 15	704	1.9+	1.4-				

1981 EQ₃₄ = 1995 SK₅₅ = 1998 FN₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams			
<i>M</i>	286.13662	(2000.0)	
<i>n</i>	0.23128470	ω	123.35641
<i>a</i>	2.6284806	Ω	168.78987
<i>e</i>	0.2036073	<i>i</i>	6.05530
<i>P</i>	4.26	<i>H</i>	15.0
Williams			
<i>P</i>	4.26	<i>H</i>	15.0
<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 13	413	0.8-	1.1+	1981 05 02	413	2.1-	0.9+	1998 03 29	704	0.9+	0.2-
1981 03 02	413	0.2-	0.8-	1981 05 03	413	0.9-	1.3+	1998 03 29	704	0.3-	0.7+
1981 03 07	413	0.3+	2.1-	1995 09 19	691	0.2-	0.3+	1998 03 29	704	0.6+	2.1+
1981 03 11	413	0.9+	1.0-	1995 09 19	691	0.2-	0.2+	1998 03 29	704	0.3-	0.6-
1981 03 16	413	(4.5-	1.2+)	1995 09 19	691	0.0	0.3+				
1981 03 16	413	1.4+	1.7-	1998 03 29	704	0.3+	1.6+				

1998 AUG. 8

M.P.C. 32213

1981 EZ₃₅ = 1996 XH₃₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	18.53254		(2000.0)	P		Q	
<i>n</i>	0.17154558	ω	67.62074	−0.93119967		−0.36441149	
<i>a</i>	3.2078670	Ω	91.00706	+0.33124485		−0.85566928	
<i>e</i>	0.1377528	<i>i</i>	0.48433	+0.15213158		−0.36747021	
<i>P</i>	5.75	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 02	413	0.4+	1.3−	1981 03 29	413	0.5−	1.2+	1996 12 14	691	0.3+	0.2+
1981 02 13	413	0.8−	0.8−	1981 03 29	413	1.7+	0.0	1996 12 14	691	0.2+	0.1−
1981 03 03	413	0.5−	0.4+	1981 04 26	413	0.2−	1.6−	1996 12 17	691	0.2−	0.2+
1981 03 03	413	1.8−	0.5+	1981 05 02	413	(3.1−	1.5+)	1996 12 17	691	0.2−	0.2+
1981 03 11	413	0.5−	0.3+	1981 05 02	413	0.4+	0.7+	1996 12 17	691	0.2−	0.0
1981 03 16	413	1.9+	0.3+	1996 12 14	691	0.0	0.1−				

1981 ET₃₇ = 1998 FM₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	317.69162		(2000.0)	P		Q	
<i>n</i>	0.28972140	ω	60.38467	+0.16801257		+0.98498383	
<i>a</i>	2.2619465	Ω	219.35059	−0.92472732		+0.14351378	
<i>e</i>	0.2439694	<i>i</i>	3.59265	−0.34154231		+0.09597215	
<i>P</i>	3.40	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 03 01	413	(5.0+	2.9−)	1981 04 12	413	(4.3+	3.7−)	1998 03 29	704	0.5−	1.3+
1981 03 01	413	2.8+	0.6−	1981 04 30	413	0.7+	0.1−	1998 03 29	704	1.0+	0.5−
1981 03 07	413	1.7−	2.0+	1981 05 02	413	0.1−	0.5−	1998 03 29	704	1.1−	0.5+
1981 03 07	413	(6.0−	3.5+)	1998 03 22	704	2.0+	1.5−	1998 03 29	704	0.8−	1.9−
1981 03 11	413	0.6+	1.0+	1998 03 22	704	1.4−	1.7−	1998 04 19	704	1.1−	0.5+
1981 03 15	413	0.6−	0.4+	1998 03 22	704	0.6−	2.1−	1998 04 19	704	2.5+	1.4+
1981 03 15	413	1.7−	1.4+	1998 03 22	704	1.0+	0.0	1998 04 19	704	2.2−	0.1+
1981 04 12	413	1.6+	0.3−	1998 03 29	704	0.2+	0.3+	1998 04 19	704	0.6−	0.6+

1981 EJ₃₈ = 1998 BR₄₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	343.58664		(2000.0)	P		Q	
<i>n</i>	0.22948033	ω	15.83891	−0.85580693		+0.51561153	
<i>a</i>	2.6422409	Ω	195.41149	−0.49001701		−0.83387334	
<i>e</i>	0.0877514	<i>i</i>	9.02880	−0.16576438		−0.19697718	
<i>P</i>	4.29	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 12	413	0.5+	0.5+	1981 03 12	413	0.3+	0.4−	1981 05 01	413	0.1+	0.2−
1981 02 14	413	0.4−	0.5+	1981 04 05	413	0.8−	1.2+	1981 05 03	413	0.3+	0.1−
1981 03 01	413	0.1+	0.4+	1981 04 05	413	(3.4+	2.2−)	1998 01 28	566	0.6+	0.2−
1981 03 01	413	0.4−	0.4−	1981 04 06	413	1.5−	0.9+	1998 01 28	566	0.1+	0.1+
1981 03 06	413	0.6−	1.6+	1981 04 06	413	1.4+	2.0−	1998 01 28	566	0.1−	0.1+
1981 03 06	413	1.0+	0.9−	1981 04 07	413	0.1−	0.5+	1998 02 24	566	0.3−	0.2−
1981 03 08	413	0.9−	0.0	1981 04 07	413	(2.2+	3.0−)	1998 02 24	566	0.4−	0.1+
1981 03 08	413	0.3+	1.7−	1981 04 10	413	0.3−	1.2+	1998 02 24	566	0.0	0.2−
1981 03 12	413	0.3+	0.4+	1981 04 10	413	0.7+	1.1−				

1981 EO₃₈ = 1998 MD₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	309.35783		(2000.0)	P		Q	
<i>n</i>	0.24102024	ω	132.03630	+0.77978722		+0.62506087	
<i>a</i>	2.5572138	Ω	189.46291	−0.61871680		+0.76089988	
<i>e</i>	0.0928569	<i>i</i>	12.32086	−0.09550605		+0.17415591	
<i>P</i>	4.09	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 12	413	1.2+	0.9−	1981 04 05	413	0.5+	0.6+	1998 06 19	704	0.5−	0.6+
1981 02 12	413	0.2+	1.6−	1981 04 10	413	0.6−	1.5−	1998 06 19	704	0.8+	1.2−

1981 03 01	413	1.4−	0.7+	1981 04 26	413	(3.1+	2.1−)	1998 06 19	704	0.3+	1.7−
1981 03 01	413	0.4+	1.0−	1981 05 01	413	1.3+	0.1−	1998 06 19	704	0.2+	1.0+
1981 03 06	413	(1.8−	3.1+)	1998 05 26	704	0.1+	1.2−	1998 06 25	704	0.2−	0.1+
1981 03 06	413	0.3+	1.1+	1998 05 26	704	1.3−	0.5+	1998 06 25	704	0.5+	0.2+
1981 03 08	413	1.7−	1.9+	1998 05 26	704	0.1−	0.8−	1998 06 25	704	0.1+	0.5+
1981 03 08	413	0.3+	0.6+	1998 05 26	704	(2.7−	0.7+)	1998 06 25	704	0.9+	1.0+
1981 03 12	413	(3.6+	2.7−)	1998 06 19	704	0.8−	0.9+				

1981 ET₃₉ = 1998 FL₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	82.33694		(2000.0)	P		Q	
<i>n</i>	0.17336373	ω	118.32016	−0.04895472		−0.99829071	
<i>a</i>	3.1853993	Ω	334.42617	+0.88853780		−0.02893026	
<i>e</i>	0.1562453	<i>i</i>	4.24101	+0.45618420		−0.05078084	
<i>P</i>	5.69	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.0	0.9−	1981 03 11	413	1.7−	0.5+	1998 03 22	704	1.3+	0.5−
1981 02 13	413	0.3−	0.5−	1981 03 11	413	0.7+	0.7−	1998 03 22	704	0.7−	1.4+
1981 03 02	413	2.1−	1.0+	1981 04 30	413	0.9−	1.4−	1998 03 29	704	1.2−	1.1+
1981 03 02	413	0.9+	0.7+	1981 05 02	413	1.1+	0.4+	1998 03 29	704	0.1+	0.7+
1981 03 03	413	1.8+	0.4+	1981 05 03	413	0.1−	0.3+	1998 03 29	704	1.5+	0.2−
1981 03 07	413	0.5−	0.3+	1998 03 22	704	1.4+	0.5−	1998 03 29	704	0.2+	0.4−
1981 03 07	413	1.0+	0.7−	1998 03 22	704	2.1−	1.3−	1998 03 29	704	0.4−	0.1+

1981 EU₃₉ = 1998 FA₁₃₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	143.41801		(2000.0)	P		Q	
<i>n</i>	0.23283237	ω	55.08922	+0.53269720		−0.84626653	
<i>a</i>	2.6168198	Ω	2.76158	+0.71065989		+0.44205730	
<i>e</i>	0.0550635	<i>i</i>	9.75571	+0.45956090		+0.29735215	
<i>P</i>	4.23	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 02	413	1.1−	0.9−	1981 03 16	413	2.0+	0.1+	1998 03 28	704	0.8+	0.3+
1981 02 13	413	0.6+	0.8−	1981 03 29	413	(5.3−	0.1+)	1998 03 28	704	1.1+	0.3+
1981 03 02	413	2.3+	0.1−	1981 04 08	413	3.2−	0.0	1998 03 28	704	0.3−	0.7−
1981 03 03	413	1.4+	0.3−	1981 04 11	413	0.3−	0.5−	1998 03 29	704	0.1+	0.2+
1981 03 07	413	(4.2+	0.6+)	1981 04 30	413	0.4+	0.3+	1998 03 29	704	1.0−	1.1+
1981 03 07	413	0.0	1.0+	1981 05 02	413	0.3+	0.1+	1998 03 29	704	1.1−	0.5−
1981 03 11	413	2.0−	1.4+	1998 03 28	704	0.2+	0.1+	1998 03 29	704	0.9+	0.3+
1981 03 11	413	0.5−	0.0	1998 03 28	704	0.2+	0.8−	1998 03 29	704	1.0−	0.4−

1981 EK₄₀ = 1992 TA₂ = 1994 CN₂₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	99.95396		(2000.0)	P		Q	
<i>n</i>	0.21835472	ω	187.04957	+0.96809846		−0.25034268	
<i>a</i>	2.7312471	Ω	187.47398	+0.23371345		+0.91751083	
<i>e</i>	0.1236872	<i>i</i>	4.70649	+0.09035148		+0.30903464	
<i>P</i>	4.51	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.6+	0.5−	1981 03 15	413	(3.1−	3.6+)	1981 05 02	413	0.1+	1.2−
1981 02 13	413	1.9−	0.1+	1981 03 16	413	1.5−	0.7−	1992 10 03	691	0.1+	0.3−
1981 03 02	413	1.9+	1.0−	1981 03 16	413	0.0	1.0−	1992 10 03	691	0.1+	0.3−
1981 03 06	413	1.0−	1.0+	1981 04 05	413	0.3+	0.8+	1992 10 03	691	0.0	0.1−
1981 03 11	413	1.4−	0.7+	1981 04 05	413	(3.3+	3.7−)	1994 02 12	691	0.2−	0.2+
1981 03 11	413	0.4−	0.2+	1981 04 06	413	2.3+	1.2−	1994 02 12	691	0.5+	0.1−
1981 03 11	413	1.3−	0.7+	1981 04 10	413	0.7−	1.5+	1994 02 12	691	0.2−	0.2+
1981 03 11	413	2.4+	0.4−	1981 04 26	413	(3.8+	2.5−)				

M.P.C. 32214

1998 AUG. 8

1981 EE₄₂ = 1998 FH₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17149666	ω	273.44177	+0.04472651	−0.99867184		
<i>a</i>	3.2084770	Ω	173.81832	+0.98468446	+0.03975283		
<i>e</i>	0.1258123	<i>i</i>	13.73946	+0.16851129	+0.03277592		
<i>P</i>	5.75	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.6+	0.8−	1981 03 15	413	0.1−	0.5−	1998 03 22	704	1.3−	0.6−
1981 02 12	413	0.6+	0.7+	1981 03 15	413	1.1+	0.5−	1998 03 22	704	1.6+	1.6−
1981 02 13	413	0.7−	1.5+	1981 05 01	413	0.3+	0.5+	1998 03 22	704	0.0	1.7+
1981 03 02	413	(4.6+	3.1−)	1998 03 20	704	0.4+	0.5+	1998 03 22	704	1.6−	0.7+
1981 03 02	413	0.6+	2.1−	1998 03 20	704	0.1−	2.3+				
1981 03 11	413	2.3−	1.3+	1998 03 20	704	1.0+	3.0−				

1981 EU₄₂ = 1995 YB₂₄ = 1998 LF

Id. K. Ichikawa, B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18226423	ω	156.23599	+0.99875316	−0.04954498		
<i>a</i>	3.0808348	Ω	206.60609	+0.04333317	+0.92125597		
<i>e</i>	0.1622100	<i>i</i>	0.78261	+0.02478630	+0.38578846		
<i>P</i>	5.41	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 03 02	413	(10.8−	4.4+)	1995 12 23	566	0.5−	0.2+	1998 05 01	704	(2.4+	1.1−)
1981 03 11	413	(4.3−	0.5+)	1995 12 24	566	0.2+	0.4+	1998 05 01	704	(3.1−	0.1+)
1981 03 15	413	1.6−	1.2−	1995 12 24	566	0.3−	0.2+	1998 06 14	684	0.5−	0.4−
1981 05 01	413	1.4+	0.4+	1995 12 24	566	0.1−	0.3+	1998 06 14	684	0.2+	0.8+
1995 12 23	566	0.4+	0.1−	1998 05 01	704	0.0	0.3+	1998 06 15	684	0.1+	0.0
1995 12 23	566	0.4+	0.1−	1998 05 01	704	(0.9−	2.2+)	1998 06 15	684	0.5+	0.3+

1981 ES₄₃ = 1998 CK₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17081961	ω	171.59631	+0.96489054	−0.26207745		
<i>a</i>	3.2169494	Ω	203.61918	+0.23838864	+0.90159659		
<i>e</i>	0.0319492	<i>i</i>	2.48448	+0.11025921	+0.34414967		
<i>P</i>	5.77	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.0	0.2+	1981 04 06	413	1.6+	1.5+	1998 02 06	327	0.4+	0.6+
1981 02 13	413	0.8+	0.2−	1981 04 06	413	1.2+	0.5−	1998 02 06	327	0.4+	0.2+
1981 03 06	413	1.0−	0.0	1981 04 26	413	1.3−	1.7−	1998 02 25	566	0.2+	0.7−
1981 03 11	413	1.8−	0.5−	1981 05 01	413	2.8+	1.7+	1998 02 25	566	0.1−	0.6−
1981 03 11	413	2.4+	1.7−	1981 05 01	413	0.4−	0.8−	1998 02 25	566	0.2+	0.4−
1981 03 15	413	1.4−	0.7+	1981 05 02	413	1.8−	0.2+	1998 03 20	704	1.0−	0.4−
1981 03 15	413	0.7+	0.1−	1981 05 03	413	0.8−	0.6−	1998 03 20	704	0.6+	0.2+
1981 04 05	413	1.2−	2.0+	1982 02 06	327	0.5−	0.1−	1998 03 20	704	0.2−	1.4+

1981 EA₄₅ = 1995 SV = 1997 BT₉

Id. G. W. Williams, S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29566492	ω	335.61701	+0.11271195	+0.99055242		
<i>a</i>	2.2315306	Ω	300.76997	−0.89605569	+0.06735559		
<i>e</i>	0.1607834	<i>i</i>	5.21612	−0.42939517	+0.11945346		
<i>P</i>	3.33	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 14	413	1.6−	0.3−	1995 09 22	589	1.6+	0.4−	1995 09 23	589	0.3−	0.0
1981 03 07	413	0.7+	0.2+	1995 09 22	589	1.6−	1.0+	1995 09 23	589	0.6+	0.5−
1981 03 11	413	0.7+	0.2+	1995 09 22	589	0.0	0.2−	1997 01 28	369	0.8−	0.3−

1981 03 15	413	(3.9+	1.0−)	1995 09 23	589	0.4−	0.4+	1997 01 28	369	0.8+	0.5+
1995 09 22	589	0.4+	0.3−	1995 09 23	589	0.3−	0.1+				

1981 ET₄₅ = 1998 FK₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17475633	ω	275.83895	−0.33464804	−0.94076917		
<i>a</i>	3.1684542	Ω	194.08568	+0.92865014	−0.31942125		
<i>e</i>	0.2773220	<i>i</i>	12.92663	+0.16006128	−0.11368132		
<i>P</i>	5.64	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.2−	0.2−	1981 03 12	413	0.7−	1.4+	1998 03 20	704	1.1−	0.9+
1981 02 12	413	0.4−	0.3+	1981 05 01	413	0.3+	0.9−	1998 04 01	704	1.5−	0.3−
1981 03 01	413	0.1+	0.9−	1998 03 20	704	1.7+	1.5−	1998 04 01	704	1.0−	0.4−
1981 03 08	413	1.1−	0.9+	1998 03 20	704	0.9+	0.7+	1998 04 01	704	1.1+	0.5+
1981 03 08	413	1.8+	1.4−	1998 03 20	704	0.2−	0.2+	1998 04 01	704	0.1+	0.7+

1981 EZ₄₅ = 1998 FJ₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17324345	ω	191.90499	+0.99356428	+0.10876369		
<i>a</i>	3.1868736	Ω	161.76058	−0.09385491	+0.94684989		
<i>e</i>	0.1099992	<i>i</i>	5.80016	−0.06341352	+0.30273049		
<i>P</i>	5.69	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 02	413	2.3+	0.4+	1981 05 03	413	0.3+	1.8+	1998 03 26	566	0.3+	0.0
1981 03 02	413	0.7−	1.3−	1998 03 20	704	1.0+	1.3+	1998 03 26	566	1.4+	0.5−
1981 03 03	413	2.5−	0.7−	1998 03 20	704	0.2−	0.2+	1998 03 26	566	0.6−	0.1−
1981 03 07	413	0.8+	0.7−	1998 03 20	704	0.1−	1.3+	1998 03 29	704	0.6+	0.9+
1981 03 07	413	0.1+	1.8−	1998 03 22	704	0.0	0.1+	1998 03 29	704	1.3+	0.1−
1981 04 08	413	0.3+	1.7−	1998 03 22	704	1.6+	0.5+	1998 03 29	704	1.2−	0.5+
1981 04 11	413	1.1−	0.0	1998 03 22	704	0.1−	0.5−	1998 03 29	704	0.9+	0.2−
1981 05 02	413	0.8−	0.0	1998 03 22	704	2.2−	0.3−	1998 03 29	704	1.3−	1.1+

1981 EG₄₆ = 1995 WL₄₃ = 1997 CZ₂₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24314729	ω	242.28719	−0.71199054	+0.70169768		
<i>a</i>	2.5422783	Ω	342.23384	−0.61012932	−0.63672773		
<i>e</i>	0.1885081	<i>i</i>	4.93793	−0.34757975	−0.31968448		
<i>P</i>	4.05	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 02	413	1.4+	0.3−	1981 03 11	413	1.0−	1.0+	1995 11 18	691	0.3+	1.0−
1981 02 13	413	(2.7+	2.3+)	1981 03 11	413	0.3+	0.1−	1997 02 04	566	0.3+	0.6+
1981 03 02	413	0.9−	0.6+	1981 04 30	413	0.5+	0.1+	1997 02 04	566	0.6+	0.7+
1981 03 02	413	0.3−	2.3−	1981 05 02	413	1.7+	0.9+	1997 02 04	566	0.0	0.8+
1981 03 03	413	2.1−	1.4−	1995 11 18	691	0.1+	0.2−				
1981 03 07	413	0.1+	0.2−	1995 11 18	691	0.1−	0.3+				

1981 ET₄₆ = 1994 AH₁₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21793488	ω	34.32823	+0.98277209	−0.18424313		
<i>a</i>	2.7347537	Ω	336.27600	+0.16037978	+0.88942590		
<i>e</i>	0.0860187	<i>i</i>	2.08122	+0.09185502	+0.41830136		
<i>P</i>	4.52	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.7+	0.6−	1981 04 30	413	0.3−	1.1−	1994 02 10	691	0.6−	0.3−
1981 02 13	413	1.7−	1.1+	1981 05 02	413	0.9−	0.1−	1994 02 10	691	0.5−	0.1−
1981 03 02	413	(5.8−	1.7+)	1994 01 11	691	0.4+	0.3−	1994 02 10	691	0.7−	0.1+

1998 AUG. 8

M.P.C. 32215

1981 03 07 413 1.5+ 0.2+ 1994 01 11 691 0.8+ 0.0
 1981 03 11 413 0.6+ 0.6+ 1994 01 11 691 0.5+ 0.3+

1981 EK₄₇ = 1997 HH₁₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	73.16757		(2000.0)	P	Q
<i>n</i>	0.12423528	ω	292.75004	-0.98395439	-0.17613406
<i>a</i>	3.9777678	Ω	237.11616	+0.17360087	-0.90827323
<i>e</i>	0.1254684	<i>i</i>	1.94283	+0.04118857	-0.37949510
<i>P</i>	7.93	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 02 12	413	0.2-	0.2+	1981 03 11	413	0.4+	0.2+	1997 04 27	691	0.3-	0.0
1981 02 13	413	1.0+	0.1-	1981 03 11	413	0.5-	1.1+	1997 05 05	691	0.5+	0.5+
1981 03 02	413	1.3-	0.3+	1981 05 01	413	1.0-	0.2+	1997 05 05	691	0.3+	0.1+
1981 03 02	413	1.2+	1.6-	1981 05 03	413	0.4-	0.5-	1997 05 05	691	0.6+	0.4-
1981 03 06	413	0.1+	0.8-	1997 04 27	691	0.4-	0.1+				
1981 03 06	413	0.5+	0.8+	1997 04 27	691	0.5-	0.1+				

1981 EQ₄₇ = 1992 DX₁₃ = 1996 CL₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	325.02900		(2000.0)	P	Q
<i>n</i>	0.26015910	ω	279.62897	+0.68382567	-0.72928448
<i>a</i>	2.4302075	Ω	127.20210	+0.68022780	+0.62581848
<i>e</i>	0.1532055	<i>i</i>	1.65094	+0.26395566	+0.27657798
<i>P</i>	3.79	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 02 09	413	0.1-	0.3+	1981 03 15	413	1.0-	0.5-	1992 02 26	691	0.1-	0.0
1981 02 12	413	0.3+	0.4+	1981 03 15	413	1.3+	0.9-	1992 02 26	691	0.2+	0.2-
1981 02 13	413	0.7+	0.6-	1981 04 05	413	1.5-	0.8+	1992 02 26	691	0.2-	0.2-
1981 03 02	413	(3.6-	0.5+)	1981 04 05	413	1.1-	0.8+	1996 02 14	691	0.1+	0.4+
1981 03 02	413	0.8-	0.4-	1981 04 26	413	(4.6+	1.2-)	1996 02 14	691	0.1+	0.3+
1981 03 11	413	(2.7+	3.7-)	1981 05 01	413	2.5+	0.5-	1996 02 14	691	0.1+	0.3+

1981 EH₄₈

Id. S. J. Bus (1979 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	132.34788		(2000.0)	P	Q
<i>n</i>	0.23862904	ω	235.59541	-0.22166252	-0.97178420
<i>a</i>	2.5742685	Ω	227.42602	+0.92674509	-0.18422256
<i>e</i>	0.1392550	<i>i</i>	6.28600	+0.30333029	-0.14730077
<i>P</i>	4.13	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1979 10 18	675	1.0-	0.3-	1981 03 08	413	0.8+	0.1+	1998 05 22	704	1.0-	1.4+
1979 10 18	675	0.7+	1.6+	1981 03 12	413	0.3-	1.0+	1998 05 22	704	1.3+	1.0+
1981 02 09	413	0.2-	1.1-	1981 04 08	413	0.6-	1.4+	1998 05 22	704	0.1-	0.3+
1981 02 12	413	0.7-	0.3-	1981 04 08	413	0.2-	0.8+	1998 05 22	699	0.3-	0.8-
1981 03 06	413	0.2+	1.2+	1981 04 09	413	0.4-	0.3-	1998 05 22	699	1.2-	1.0-
1981 03 06	413	(4.2+	2.1-)	1981 04 09	413	1.1+	0.9-	1998 05 22	699	1.4+	0.2-
1981 03 08	413	0.8-	0.2+	1981 05 01	413	1.4+	1.7-				

1981 QR₂ = 1998 FN₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	273.39256		(2000.0)	P	Q
<i>n</i>	0.27599245	ω	323.18915	+0.63877899	+0.76924260
<i>a</i>	2.3363501	Ω	346.48996	-0.68963144	+0.56376345
<i>e</i>	0.2376442	<i>i</i>	3.69953	-0.34113029	+0.30072678
<i>P</i>	3.57	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 08 23	809	0.0	0.5-	1981 09 01	809	1.0+	0.3+	1981 09 05	809	0.9-	0.3-
1981 08 23	809	0.2+	0.7-	1981 09 01	809	1.6+	0.9+	1981 09 05	809	0.6-	0.1-

1981 08 23	809	0.6+	0.7-	1981 09 01	809	1.3+	0.3+	1981 09 05	809	0.7-	0.6-
1981 08 24	809	0.2+	0.8-	1981 09 01	809	1.1-	1.1+	1981 09 06	809	0.1-	0.6+
1981 08 24	809	0.2-	0.7-	1981 09 01	809	0.7-	1.1+	1981 09 06	809	0.6+	0.0
1981 08 24	809	0.0	0.6-	1981 09 01	809	0.5-	1.2+	1981 09 06	809	0.2-	0.5-
1981 08 25	809	0.2-	0.3-	1981 09 01	809	0.2-	0.2+	1981 09 07	809	1.6-	0.4-
1981 08 25	809	0.1-	0.3-	1981 09 01	809	0.0	0.2+	1981 09 07	809	1.6-	0.1-
1981 08 25	809	0.3+	0.4-	1981 09 01	809	0.1+	0.6+	1981 09 07	809	0.8-	0.9-
1981 08 26	809	0.2+	0.4-	1981 09 02	809	0.9+	0.8+	1998 03 20	704	(0.7-	2.2+)
1981 08 26	809	1.7+	0.7-	1981 09 02	809	1.2+	0.5+	1998 03 20	704	1.0+	0.5+
1981 08 27	809	0.1+	0.1-	1981 09 02	809	0.1-	0.4+	1998 03 20	704	0.3-	0.7+
1981 08 27	809	0.9-	0.1+	1981 09 02	809	0.7+	0.5+	1998 03 20	704	0.7-	0.9-
1981 08 27	809	0.2-	0.8+	1981 09 02	809	1.4+	0.3+	1998 03 20	704	1.7+	0.1-
1981 08 27	809	0.4+	0.7+	1981 09 02	809	0.5-	0.5+	1998 03 22	704	0.4-	0.5+
1981 08 27	809	0.4-	0.8+	1981 09 02	809	0.4-	0.3+	1998 03 22	704	0.5-	0.5+
1981 08 27	809	0.1-	0.8+	1981 09 02	809	0.5-	0.3+	1998 03 22	704	0.1+	0.1-
1981 08 28	809	0.2-	1.1-	1981 09 03	809	0.2-	0.2+	1998 03 22	704	0.1+	0.7+
1981 08 28	809	0.3+	1.4-	1981 09 03	809	0.2-	0.4+				
1981 08 28	809	0.1+	1.1-	1981 09 03	809	0.2-	0.1+				

1981 QS₂ = 1996 TK₃₈ = 1998 FY₃₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	144.42919		(2000.0)	P	Q
<i>n</i>	0.26517737	ω	270.43610	+0.75567096	-0.65388976
<i>a</i>	2.3994502	Ω	130.39995	+0.61869613	+0.69400932
<i>e</i>	0.1881215	<i>i</i>	2.80572	+0.21488718	+0.30129594
<i>P</i>	3.72	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1981 08 23	809	(4.8-	2.3-)	1981 08 28	809	0.6-	1.3-	1996 10 07	809	0.9-	0.6-
1981 08 23	809	(4.2-	1.5-)	1981 08 28	809	0.1+	1.2-	1996 10 07	809	1.4-	0.5-
1981 08 23	809	(3.9-	0.7-)	1981 08 28	809	0.2-	0.7-	1996 10 08	809	0.3+	0.8+
1981 08 24	809	(3.2-	1.0-)	1981 08 28	809	0.3+	1.6-	1996 10 08	809	0.2-	0.2+
1981 08 24	809	(2.9-	1.3-)	1981 08 28	809	1.0-	2.1-	1996 10 08	809	0.3+	0.8+
1981 08 24	809	(3.5-	0.5-)	1981 08 28	809	0.3-	2.1-	1996 10 10	809	1.3+	0.5+
1981 08 25	809	0.9-	0.8+	1981 09 01	809	0.5+	1.0+	1996 10 10	809	0.9+	0.2+
1981 08 25	809	0.0	1.1+	1981 09 01	809	0.6+	1.2+	1996 10 10	809	0.4+	0.0
1981 08 25	809	0.4+	1.1+	1981 09 01	809	1.2+	1.3+	1998 03 20	704	0.8-	0.9+
1981 08 26	809	0.1+	0.3-	1981 09 01	809	0.3+	0.7-	1998 03 20	704	0.7+	0.5-
1981 08 26	809	0.1+	0.9+	1981 09 01	809	0.1+	0.5-	1998 03 20	704	0.0	0.6-
1981 08 26	809	1.0+	0.6+	1981 09 01	809	0.4-	0.1-	1998 03 20	704	0.2+	0.4-
1981 08 27	809	0.4-	0.6+	1981 09 01	675	1.0-	0.3-	1998 03 20	704	1.1+	0.6-
1981 08 27	809	0.6-	0.4+	1981 09 02	809	0.7+	0.4-	1998 03 22	704	0.9-	0.9+
1981 08 27	809	0.3-	0.2-	1981 09 02	809	1.4+	0.1-	1998 03 22	704	0.3+	0.1-
1981 08 27	809	0.6-	1.4+	1981 09 02	809	1.7+	0.1-	1998 03 22	704	0.3-	0.3-
1981 08 27	809	0.9-	0.6+	1981 09 02	675	0.9-	0.4-	1998 03 22	704	0.5+	1.3+
1981 08 27	809	0.4-	1.2+	1996 10 07	809	1.1-	0.7-	1998 03 22	704	0.4-	0.2+

1981 QN₃ = 1987 SL₁₃ = 1998 MF₄₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	328.03087		(2000.0)	P	Q
<i>n</i>	0.17155711	ω	203.96503	+0.95578714	+0.29318234
<i>a</i>	3.2077234	Ω	138.96491	-0.26390129	+0.88925107
<i>e</i>	0.1913005	<i>i</i>	1.98104	-0.12971916	+0.35110775
<i>P</i>	5.75	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1981 08 26	809	1.2+	0.5-	1981 08 31	809	1.0-	0.8+	1998 06 23	699	0.3+	0.3+
1981 08 26	809	1.6+	0.2-	1981 08 31	809	1.4-	0.4+	1998 06 23	699	0.1+	0.9+
1981 08 26	809	1.4+	0.2+	1981 08 31	809	1.7-	0.2+	1998 06 23	699	0.0	2.0+
1981 08 27	809	0.9-	0.4-	1981 09 05	809	0.2+	0.9-	1998 06 26	704	0.1-	0.3-
1981 08 27	809	0.8-	0.2-	1981 09 05	809	0.4+	0.5-	1998 06 26	704	0.6+	0.2-
1981 08 27	809	0.8-	0.4+	1981 09 05	809	0.1-	0.4+	1998 06 26	704	0.4+	0.5-
1981 08 28	809	0.0	0.2+	1987 09 26	809	0.4+	0.3+	1998 06 26	704	1.3-	1.9-
1981 08 28	809	0.8+	0.1+	1987 09 26	809	0.0	0.2+				
1981 08 28	809	1.1+	0.5-	1987 09 26	809	0.5-	0.1-				

1981 UE₂₈ = 1990 RH₁ = 1998 HP₆₈

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	258.63480		(2000.0)		P		Q				
<i>n</i>	0.21221520	ω	354.40676		+0.91884687		+0.39406744				
<i>a</i>	2.7836741	Ω	342.34125		−0.35934557		+0.81381802				
<i>e</i>	0.0756853	<i>i</i>	3.92558		−0.16306806		+0.42709611				
<i>P</i>	4.64	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1981 10 24	675	0.5+	0.6+	1990 09 20	675	1.2+	0.5+	1998 04 22	704	0.8−	0.6−
1981 10 25	675	0.2−	0.5−	1998 04 21	704	0.0	0.8+	1998 04 22	704	0.7−	0.1−
1981 10 26	675	0.3−	0.3−	1998 04 21	704	0.3+	0.4−	1998 04 22	704	0.3+	0.2+
1990 09 14	675	0.6−	0.8−	1998 04 21	704	0.3−	0.9−	1998 04 22	704	0.0	0.4+
1990 09 14	675	0.7−	0.7−	1998 04 21	704	0.3+	0.1−	1998 04 22	704	0.2+	0.5+
1990 09 20	675	0.2+	1.0+	1998 04 21	704	0.7+	0.2+				

1982 BJ₁₃ = 1991 RP₁₃ = 1998 OF₁

Id. A. Lowe, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	6.44611		(2000.0)		P		Q				
n	0.26540039	ω	342.51628		+0.22990810		+0.97028152				
a	2.3981058	Ω	300.71668		−0.88208565		+0.17498886				
e	0.0849556	i	5.03639		−0.41117778		+0.16713067				
P	3.71	H	14.0		G	0.15	U		4		
Residuals in seconds of arc											
1982 01 30	675	0.5+	0.1+	1991 09 15	675	0.3+	0.1−	1998 07 21	120	0.5+	1.2+
1982 01 31	675	0.4−	0.1−	1998 07 20	120	0.2+	1.4+	1998 07 24	566	0.1−	1.9−
1991 09 13	675	0.1+	0.6−	1998 07 20	120	0.3−	1.2+	1998 07 24	566	0.3+	1.7−
1991 09 13	675	0.4−	0.4−	1998 07 20	120	1.0−	0.5+	1998 07 24	566	0.2+	1.5−
1991 09 15	675	0.1−	1.2+	1998 07 21	120	0.1+	0.8+				

1982 JY₁ = 1998 LR₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	27.25577		(2000.0)		P		Q			
<i>n</i>	0.18710732	ω	136.78298		−0.66854465		+0.73622129			
<i>a</i>	3.0274399	Ω	90.96981		−0.70771400		−0.58646993			
<i>e</i>	0.0725735	<i>i</i>	6.02838		−0.22844901		−0.33768510			
<i>P</i>	5.27	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc										
1982 05 15	675	0.9+	0.2+	1998 06 01	809	0.3−	0.6−	1998 06 02	809	0.3+ 0.4+
1982 05 16	675	0.2−	0.1+	1998 06 01	809	0.5−	0.3−	1998 06 02	809	0.1− 0.0
1982 05 17	675	0.3−	0.2−	1998 06 01	809	0.5−	0.3+			
1982 05 18	675	0.4−	0.0	1998 06 02	809	1.0+	0.2+			

1982 UA₁₁ = 1997 YE₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	91.55039		(2000.0)		P		Q				
n	0.26810880	ω	192.05756		+0.63837292		−0.76944526				
a	2.3819282	Ω	218.27729		+0.70897597		+0.59831237				
e	0.2005366	i	1.92724		+0.29972168		+0.22355380				
P	3.68	H	14.8	G	0.15	U	4				
Residuals in seconds of arc											
1982 10 25	095	0.2−	1.2+	1997 12 26	566	0.3+	0.6+	1998 01 20	704	0.1−	0.5−
1982 11 09	095	1.1+	0.7−	1997 12 26	566	0.7+	0.2+	1998 01 20	704	0.8−	0.1−
1982 11 14	095	0.7−	1.1−	1997 12 26	566	0.0	0.8+	1998 01 20	704	0.0	0.1−
1997 12 25	566	0.0	0.8+	1998 01 20	704	0.1−	0.4−	1998 01 25	566	0.0	0.4−
1997 12 25	566	0.2+	0.9+	1998 01 20	704	0.5+	0.2−	1998 01 25	566	0.2−	0.6−
1997 12 25	566	0.0	0.8+	1998 01 20	704	0.4−	0.6−	1998 01 25	566	0.3+	0.5−

1982 VS₂ = 1998 MD₃₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	330.10638		(2000.0)		P		Q				
n	0.23282271	ω	215.08782		+0.78569015		+0.61773253				
a	2.6168921	Ω	106.72726		−0.55936994		+0.73228908				
e	0.0852538	i	1.98240		−0.26418982		+0.28663429				
P	4.23	H	14.0		G	0.15	U	6			
Residuals in seconds of arc											
1982 11 14	381	0.3+	0.6+	1982 12 14	381	0.3+	0.4+	1998 06 26	704	0.4+	0.3−
1982 11 14	381	0.7−	0.3−	1998 06 24	704	0.6−	0.1+	1998 06 26	704	0.4+	0.3−
1982 12 13	381	0.5+	0.3−	1998 06 24	704	0.3+	0.2−	1998 06 26	704	0.2−	0.8−
1982 12 13	381	0.3+	0.0	1998 06 24	704	0.0	1.4+				
1982 12 14	381	0.6−	0.4−	1998 06 26	704	0.3−	0.1+				

1982 VF₅ = 1998 HG₃₃

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	225.42837		(2000.0)		P		Q				
<i>n</i>	0.22154827	ω	154.42543		+0.99909550		−0.01070085				
<i>a</i>	2.7049369	Ω	206.28675		−0.00301664		+0.94754319				
<i>e</i>	0.1610085	<i>i</i>	5.33204		+0.04241547		+0.31944857				
<i>P</i>	4.45	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1982 11 12	095	1.8−	1.0−	1998 03 29	704	0.9−	0.4−	1998 04 20	704	1.2+	1.5+
1982 11 14	381	0.0	0.6+	1998 03 29	704	0.0	0.1+	1998 04 20	704	0.6−	1.2−
1982 11 14	381	0.8+	0.0	1998 03 29	704	0.7−	0.9−	1998 04 20	704	0.2−	0.2+
1982 12 13	381	1.1−	0.2−	1998 03 29	704	1.3+	0.0	1998 04 22	704	0.0	0.4+
1982 12 14	381	1.1+	0.0	1998 03 29	704	0.2−	0.7−	1998 04 22	704	0.3+	0.3−
1982 12 14	381	1.0+	0.7+	1998 04 01	704	(1.8−	2.6−)	1998 04 22	704	1.2−	0.6+
1998 03 25	704	1.7−	1.7−	1998 04 01	704	0.3−	0.3−	1998 04 22	704	0.9−	0.6+
1998 03 25	704	1.8+	1.0+	1998 04 01	704	0.0	0.2−	1998 04 22	704	0.1−	0.6+
1998 03 25	704	0.9−	0.8+	1998 04 01	704	1.1+	0.1−				
1998 03 25	704	1.7+	0.9+	1998 04 20	704	0.3+	0.9−				

1985 RB₄ = 2297 T-1 = 1998 LO

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	331.85436	(2000.0)		P		Q					
<i>n</i>	0.29636881	ω	148.81358	+0.62178754	+0.78313659						
<i>a</i>	2.2279959	Ω	159.62900	−0.72366255	+0.57878824						
<i>e</i>	0.2226006	<i>i</i>	1.44764	−0.29948752	+0.22737909						
<i>P</i>	3.33	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1971 03 25	675	0.7−	0.1−	1985 09 14	809	0.5−	2.2−	1998 06 01	809	(0.2+	3.4+)
1971 03 25	675	0.5+	1.6−	1985 09 14	809	0.6−	2.3−	1998 06 02	809	(0.4+	3.5+)
1971 03 26	675	0.7−	0.5−	1985 09 16	809	0.2+	0.6+	1998 06 02	809	(0.7+	3.0+)
1971 03 27	675	(5.9−	2.2+)	1985 09 16	809	0.4+	0.7+	1998 06 02	809	(1.3+	3.1+)
1985 08 24	010	(1.3−	3.2+)	1985 09 16	809	0.6+	0.8+	1998 06 24	704	0.4+	1.6−
1985 08 24	010	0.5−	1.2+	1985 09 17	809	0.2−	0.1+	1998 06 24	704	0.2+	1.0−
1985 09 10	809	0.6+	0.0	1985 09 17	809	0.0	0.1+	1998 06 24	704	0.1+	0.9−
1985 09 10	809	0.7+	0.1+	1985 09 17	809	0.3+	0.0	1998 06 24	704	0.1−	1.0+
1985 09 10	809	0.9+	0.1+	1985 09 19	809	0.9−	0.1−	1998 06 24	704	0.2−	0.1+
1985 09 11	809	0.5−	0.4+	1985 09 19	809	0.8−	0.0	1998 06 29	699	0.3−	0.4+
1985 09 11	809	0.1−	0.7+	1985 09 19	809	0.5−	0.2−	1998 06 29	699	0.0	0.8+
1985 09 11	809	0.0	0.8+	1985 09 21	809	0.1+	0.4−	1998 06 29	699	0.1+	1.0+
1985 09 12	809	0.2+	0.3+	1985 09 21	809	0.1+	0.4−	1998 07 02	699	0.8+	0.1−
1985 09 12	809	0.4+	0.3+	1985 09 21	809	0.1+	0.4−	1998 07 02	699	0.6−	0.8+
1985 09 12	809	0.8+	0.3+	1998 06 01	809	(0.3+	4.0+)	1998 07 02	699	0.3−	0.1−
1985 09 14	809	0.5−	2.3−	1998 06 01	809	(0.8+	3.3+)				

1986 PJ₁ = 1982 ST₃ = 1998 HX₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.23620971	ω	150.99304	+0.19081932	+0.97993624		
a	2.5918163	Ω	129.94633	-0.91448555	+0.19877478		
e	0.2882810	i	4.30571	-0.35679710	+0.01461366		
P	4.17	H	14.5	G	0.15	U	4
Residuals in seconds of arc							
1982 09 24	033	0.7-	1.4-	1986 08 30	809	0.2+	1.0-
1982 09 24	033	1.2+	0.1+	1986 09 01	809	2.1-	0.5-
1986 08 01	675	(9.7-	0.5+)	1986 09 01	809	1.8-	0.4-
1986 08 01	675	(3.5+	0.5+)	1986 09 01	809	1.7-	0.4-
1986 08 02	675	0.7+	0.0	1986 09 02	809	0.5+	0.1+
1986 08 02	675	0.8+	1.3+	1986 09 02	809	0.7+	0.3-
1986 08 04	675	(47.7+	3.2+)	1986 09 02	809	0.9+	0.4-
1986 08 04	675	(47.5+	2.6+)	1986 09 04	809	1.2+	0.7+
1986 08 28	809	1.1-	0.6+	1986 09 04	809	1.3+	0.6+
1986 08 28	809	0.8-	0.7+	1986 09 04	809	1.5+	0.5+
1986 08 28	809	0.6-	0.9+	1986 04 20	704	0.0	0.1-
1986 08 30	809	0.1+	0.9-	1986 04 20	704	0.5+	1.5-
1986 08 30	809	0.1+	1.0-	1986 04 20	704	0.5+	0.2-

1986 QF₃ = 1998 ML₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.24101663	ω	259.91623	+0.94558170	-0.31638338		
a	2.5572393	Ω	118.49330	+0.32200126	+0.87626444		
e	0.2507994	i	4.96116	+0.04680218	+0.36340362		
P	4.09	H	14.5	G	0.15	U	5
Residuals in seconds of arc							
1986 08 29	809	1.3-	0.4+	1986 09 02	809	1.2+	0.5-
1986 08 29	809	1.1-	0.6+	1986 09 02	809	1.3+	0.4-
1986 08 29	809	0.6-	0.4+	1986 09 06	809	0.8-	0.9+
1986 08 31	809	1.0-	0.3+	1986 09 06	809	0.7-	0.9+
1986 08 31	809	0.8-	0.2+	1986 09 06	809	0.7-	0.9+
1986 08 31	809	0.7-	0.0	1986 09 07	809	0.3-	0.7+
1986 09 01	809	1.0+	0.0	1986 09 07	809	0.3-	0.2+
1986 09 01	809	0.9+	0.0	1986 09 07	809	0.3-	0.2+
1986 09 01	809	0.9+	0.2-	1986 09 09	809	1.0-	0.5-
1986 09 01	809	0.3+	0.9-	1986 09 09	809	0.9-	0.9-
1986 09 01	809	0.8+	1.1-	1986 09 09	809	0.6-	1.1-
1986 09 01	809	1.5+	1.2-	1986 09 11	809	0.5+	0.7+
1986 09 02	809	1.0+	0.7-	1986 09 11	809	0.7+	0.6+

1986 TZ₃ = 1993 TB₃₁ = 1993 UJ₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.28356253	ω	227.44547	+0.30713984	+0.94993968		
a	2.2945815	Ω	60.52513	-0.85272688	+0.30142755		
e	0.2148973	i	3.77181	-0.42251862	+0.08219508		
P	3.48	H	14.3	G	0.15	U	5
Residuals in seconds of arc							
1986 10 04	046	0.0	0.4-	1986 10 10	046	0.9+	1.7+
1986 10 05	046	1.2+	1.7-	1993 10 09	809	0.4+	0.4-
1986 10 05	046	0.9-	0.8+	1993 10 09	809	0.3-	0.1-
1986 10 05	046	1.1-	0.5-	1993 10 09	809	0.2-	0.1+
1986 10 10	046	(3.8-	0.9-)	1993 10 11	809	0.1+	0.9+
				1993 10 21	809	0.4-	0.3-

1986 VW = 1976 SS₈ = 1998 FH₅₂

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.30099161	ω	323.47060	+0.92168376	+0.38708056		
a	2.2051246	Ω	13.82637	-0.32539666	+0.80763590		
e	0.2021792	i	6.20725	-0.21122516	+0.44485154		
P	3.27	H	14.5	G	0.15	U	5

Residuals in seconds of arc

1976 09 28	095	0.6+	1.1-	1986 11 09	046	1.7-	0.8-	1998 03 22	704	0.3-	1.0-
1986 11 03	046	1.0-	0.5+	1998 03 20	704	0.5+	0.3+	1998 03 22	704	0.9-	1.5-
1986 11 04	046	2.2+	1.0+	1998 03 20	704	0.5+	0.8+	1998 03 22	704	0.8-	1.6-
1986 11 07	046	1.6-	0.4-	1998 03 20	704	0.6+	1.6+	1998 03 22	704	0.8-	1.7-
1986 11 07	046	3.7+	0.2+	1998 03 20	704	0.4+	1.7+	1998 03 22	704	0.9-	2.1-
1986 11 09	046	1.7-	0.6-	1998 03 20	704	0.9+	2.0+				

1987 BA₂ = 1980 VK₂ = 1985 UY₁ = 1998 KB₂₁

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.19348828	ω	265.70229	-0.94215709	-0.26445295		
a	2.9605082	Ω	258.86595	+0.32344692	-0.87844460		
e	0.0922410	i	12.11498	-0.08787551	-0.39799463		
P	5.09	H	12.5	G	0.15	U	2

Residuals in seconds of arc

1980 11 10	330	0.0	0.8-	1987 02 03	809	0.3-	0.1-	1998 05 24	704	0.0	0.8-
1985 10 16	010	0.5-	1.4+	1987 02 04	809	0.6+	0.2-	1998 05 24	704	0.4-	0.0
1985 10 16	010	0.5+	0.8-	1987 02 04	809	0.8+	0.3-	1998 05 24	704	0.1-	0.0
1987 01 28	809	(17.0+	1.6+)	1987 02 06	809	0.2+	0.3+	1998 06 16	704	1.1+	0.5-
1987 01 28	809	(14.9+	2.8+)	1987 02 06	809	0.8+	0.4-	1998 06 16	704	0.5-	0.2+
1987 01 31	809	0.2+	0.6+	1998 05 22	704	0.2+	0.1-	1998 06 16	704	0.8-	1.7+
1987 01 31	809	1.0+	0.2+	1998 05 22	704	0.4-	0.2-	1998 06 16	704	0.2+	0.4+
1987 02 01	809	1.8-	0.9+	1998 05 22	704	0.3+	0.4-	1998 06 16	704	0.1-	1.4+
1987 02 01	809	1.2-	0.9+	1998 05 22	704	0.7+	0.2-	1998 06 18	704	1.0-	1.2-
1987 02 02	809	0.3-	0.9-	1998 05 22	704	0.5+	0.5-	1998 06 18	704	0.3+	1.3+
1987 02 02	809	0.5-	0.7-	1998 05 24	704	0.1+	0.3-	1998 06 18	704	0.2-	0.6-
1987 02 03	809	0.6+	0.2+	1998 05 24	704	0.0	0.4-				

1987 CG = 1987 GY = 1975 XL₁ = 1990 XU₁ = 1994 SD₄ = 1997 FYId. D. W. E. Green (d, *MPC* 11982), S. Nakano (d, *ibid.*), G. V. Williams

(MPC 29610, unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

M		(2000.0)		P		Q	
n	0.20218943	ω	270.23854	+0.09992794	+0.99499126		
a	2.8749508	Ω	5.49853	-0.90172128	+0.09166818		
e	0.0193453	i	1.55971	-0.42061043	+0.03986653		
P	4.87	H	12.5	G	0.15	U	1

Residuals in seconds of arc

1975 12 01	095	3.2+	0.0	1994 09 28	691	1.3-	0.0	1997 03 30	327	0.0	0.9-
1987 02 02	809	2.4-	2.0+	1994 09 28	691	1.3-	0.2+	1997 03 30	327	0.2+	1.2-
1987 02 02	809	(4.5-	1.3+)	1994 09 28	691	1.1-	0.1-	1997 03 30	327	0.1+	1.1-
1987 02 02	809	1.0-	1.4+	1997 03 05	809	1.7+	0.9+	1997 04 14	691	(2.0-	0.0)
1987 02 02	809	(10.0-	2.8+)	1997 03 05	809	1.6+	1.0+	1997 04 14	691	(2.2-	0.1-)
1987 02 02	809	(15.3-	1.0+)	1997 03 05	809	1.3+	0.4+	1997 04 14	691	(2.2-	0.1-)
1987 02 04	809	0.5-	1.3+	1997 03 06	809	0.1+	0.6+	1998 06 24	704	1.0-	0.4-
1987 02 04	809	0.1+	0.8+	1997 03 06	809	0.1-	0.5+	1998 06 24	704	0.4+	0.1+
1987 02 05	809	1.6-	0.9+	1997 03 06	809	0.6-	0.4+	1998 06 24	704	0.6+	0.6+
1987 02 05	809	1.2+	0.2+	1997 03 27	327	0.4-	0.6-	1998 06 24	704	0.1-	0.1+
1987 04 01	675	(5.1+	0.1+)	1997 03 27	327	0.2-	0.7-	1998 06 24	704	1.3+	0.2+
1987 04 01	675	(7.3+	1.1-)	1997 03 27	327	0.0	0.6-	1998 06 26	704	0.7+	0.1-
1987 04 03	675	(3.9+	0.8-)	1997 03 28	327	0.1-	0.7-	1998 06 26	704	0.0	0.0
1987 04 03	675	(3.1+	1.2-)	1997 03 28	327	0.2-	0.7-	1998 06 26	704	0.6+	0.6-
1990 12 14	801	1.3+	0.0	1997 03 28	327	0.3-	0.5-	1998 06 26	704	0.1+	0.8+
1990 12 14	801	(2.8+	4.1-)	1997 03 28	327	0.0	0.5-	1998 06 26	704	1.8-	1.0+

1988 CG₂ = 1998 MS₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21858527	ω	61.69539	-0.96694185	+0.13926195		
<i>a</i>	2.7293263	Ω	125.52766	-0.19082284	-0.95084302		
<i>e</i>	0.1490317	<i>i</i>	15.21693	+0.16914518	-0.27659295		
<i>P</i>	4.51	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 02 11	809	0.3-	0.4+	1998 05 26	704	0.5+	0.5+	1998 06 21	910	1.2+	0.3+
1988 02 15	809	1.6+	2.0-	1998 05 26	704	(2.6-	0.5+)	1998 06 21	910	1.0+	0.4+
1988 02 16	809	0.9+	0.3-	1998 05 26	704	(2.1-	1.4-)	1998 06 22	910	1.3+	0.4+
1988 02 16	809	0.9+	1.1-	1998 06 03	704	0.4-	0.6-	1998 06 25	704	0.3-	0.7+
1988 02 16	809	0.0	0.2+	1998 06 03	704	1.6-	0.0	1998 06 25	704	0.9+	0.2-
1988 02 17	809	0.0	0.0	1998 06 03	704	0.4+	1.0-	1998 06 25	704	0.3-	0.5+
1988 02 17	809	0.0	0.6-	1998 06 03	704	0.3+	1.3-	1998 06 25	704	1.9-	0.8-
1988 02 17	809	1.0-	0.5-	1998 06 03	704	0.5-	0.2-	1998 06 26	910	0.8+	0.5+
1988 02 21	809	0.0	2.1+	1998 06 19	704	1.1+	0.4+	1998 06 26	910	0.9+	0.4+
1988 02 21	809	0.0	1.4+	1998 06 19	704	0.5-	0.4+	1998 06 26	910	0.8+	0.4+
1988 02 21	809	1.0-	1.5+	1998 06 19	704	0.5-	0.7+	1998 07 22	910	0.2-	0.5-
1988 02 23	809	0.1-	0.4-	1998 06 19	704	1.5-	0.0	1998 07 22	910	0.0	0.4-
1988 02 23	809	0.3-	0.4-	1998 06 20	566	(1.0+	2.1-)	1998 07 22	910	0.4-	0.5-
1988 02 23	809	0.8-	0.2-	1998 06 20	566	(0.6-	2.6-)				
1998 05 26	704	0.6-	0.2+	1998 06 20	566	0.5-	0.7-				

1988 DX₁ = 1985 SG₅ = 1998 FS₁₁₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20720631	ω	355.21055	-0.10032271	+0.98485620		
<i>a</i>	2.8283559	Ω	268.98338	-0.90809213	-0.14870868		
<i>e</i>	0.1754448	<i>i</i>	8.13008	-0.40657598	+0.08912907		
<i>P</i>	4.76	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1985 09 21	095	0.0	0.0	1988 02 21	809	0.9-	0.2-	1998 03 31	704	0.1+	1.4+
1988 02 16	809	0.6-	0.0	1988 02 23	809	0.0	0.6-	1998 03 31	704	0.4-	1.6+
1988 02 16	809	0.6-	0.6-	1988 02 23	809	0.3+	0.9+	1998 04 01	704	(2.0+	2.6-)
1988 02 16	809	0.1+	0.4-	1988 02 23	809	1.5+	0.3+	1998 04 01	704	0.8-	1.8-
1988 02 21	809	1.6+	0.5-	1998 03 31	704	0.4-	0.3-	1998 04 01	704	1.2+	1.3-
1998 02 21	809	1.3-	1.1+	1998 03 31	704	0.3+	0.3+	1998 04 01	704	(5.7-	0.0)

1988 FD₃ = 1998 KC₆₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30387936	ω	268.88730	-0.54528039	+0.83734239		
<i>a</i>	2.1911322	Ω	327.97030	-0.73680418	-0.50099714		
<i>e</i>	0.0989565	<i>i</i>	4.22542	-0.39973604	-0.21876834		
<i>P</i>	3.24	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 03 19	809	0.9+	1.1-	1988 03 26	809	0.2+	0.1-	1998 05 24	704	0.2-	0.4-
1988 03 19	809	0.1+	0.2+	1998 05 22	704	1.2+	0.8-	1998 05 24	704	0.6-	0.7+
1988 03 20	809	0.7-	0.1-	1998 05 22	704	1.0-	1.1-	1998 05 24	704	0.5-	1.1+
1988 03 20	809	0.4+	1.0+	1998 05 22	704	0.5+	0.6+	1998 05 24	704	0.2-	0.4+
1988 03 25	809	(6.0-	1.3+)	1998 05 22	704	1.0+	0.3+	1998 06 18	704	0.8-	1.5-
1988 03 25	809	0.8-	0.3+	1998 05 22	704	0.3+	1.1-	1998 06 18	704	0.1-	0.2+
1988 03 26	809	0.1-	0.1-	1998 05 24	704	0.6-	0.3+	1998 06 18	704	1.1+	1.3+

1988 RP₄ = 1998 KF₆₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27086533	ω	96.29611	+0.33670995	-0.94076291		
<i>a</i>	2.3657405	Ω	333.91761	+0.82406071	+0.31491043		
<i>e</i>	0.1211525	<i>i</i>	5.20609	+0.45557695	+0.12568440		
<i>P</i>	3.64	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 09 01	809	0.7-	0.3+	1988 09 09	809	0.7-	0.4+	1998 05 22	704	1.4+	0.2-
1988 09 01	809	0.2-	0.1+	1988 09 09	809	0.4-	0.4+	1998 05 22	704	1.2+	2.2-
1988 09 01	809	0.4+	0.0	1988 09 11	809	1.2+	1.4+	1998 05 22	704	0.6+	1.0-
1988 09 03	809	0.3-	1.4-	1988 09 11	809	1.3+	1.4+	1998 05 22	704	0.9-	0.2-
1988 09 03	809	0.1-	1.1-	1988 09 11	809	1.2+	1.3+	1998 05 23	704	0.7-	0.6+
1988 09 03	809	0.0	1.0-	1988 10 04	807	0.0	0.1-	1998 05 23	704	0.4+	0.8+
1988 09 06	809	0.1-	0.7-	1988 10 05	807	0.1+	0.1-	1998 05 23	704	0.9-	1.0+
1988 09 06	809	0.0	0.6-	1988 10 07	807	0.2-	0.3-	1998 05 23	704	1.1-	1.2+
1988 09 09	809	1.2-	0.3+	1988 10 08	807	0.1-	0.3-				

1988 RQ₄ = 1998 MU₄₂

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29076387	ω	161.31428	+0.99393528	+0.10992709		
<i>a</i>	2.2565368	Ω	192.37572	-0.10256453	+0.91702727		
<i>e</i>	0.2255142	<i>i</i>	0.78825	-0.03966327	+0.38337583		
<i>P</i>	3.39	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 09 01	809	1.0-	0.2+	1988 09 16	807	1.6+	1.8+	1998 06 24	704	(3.8+	0.3+)
1988 09 01	809	0.6-	0.2-	1988 10 04	807	0.7+	0.5+	1998 06 26	809	1.5+	0.9+
1988 09 01	809	0.2-	0.9-	1988 10 05	807	1.4-	0.9+	1998 06 26	809	0.2+	0.8+
1988 09 03	809	0.0	0.5-	1988 10 07	807	0.0	0.1+	1998 06 26	809	1.5+	0.8+
1988 09 03	809	0.4+	1.1-	1988 10 08	807	0.9-	0.1+	1998 06 27	809	1.5-	0.3-
1988 09 03	809	0.7+	1.8-	1998 06 24	704	0.0	0.1-	1998 06 27	809	0.5-	0.6-
1988 09 14	807	0.0	0.1+	1998 06 24	704	(1.4+	2.7-)	1998 06 27	809	1.3-	0.6-
1988 09 15	807	0.8+	0.7+	1998 06 24	704	(1.0-	2.8+)				

1988 RE₅ = 1996 XU₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26453653	ω	179.13485	+0.51167645	+0.85767912		
<i>a</i>	2.4033238	Ω	121.63919	-0.78863807	+0.49227824		
<i>e</i>	0.1890452	<i>i</i>	3.41621	-0.34093578	+0.14848792		
<i>P</i>	3.73	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1988 08 16	675	0.7+	1.8-	1988 09 07	809	1.0-	0.8+	1988 09 14	809	(2.2-	6.3-)
1988 08 16	675	1.4+	1.6-	1988 09 10	809	0.9+	0.2+	1988 09 14	809	(3.1-	6.5-)
1988 09 02	809	1.0-	1.2+	1988 09 10	809	0.9+	0.1+	1996 12 01	691	0.1+	0.3-
1988 09 02	809	0.8-	1.0+	1988 09 10	809	1.0+	0.0	1996 12 01	691	0.0	0.5-
1988 09 02	809	0.7-	1.0+	1988 09 11	675	(2.8-	0.7-)	1996 12 01	691	0.0	0.4-
1988 09 05	809	1.3-	0.6+	1988 09 11	809	1.1+	0.8-	1996 12 08	691	0.0	0.2+
1988 09 05	809	1.4-	0.2+	1988 09 11	809	1.3+	0.8-	1996 12 08	691	0.1+	0.2+
1988 09 05	809	1.6-	0.2-	1988 09 11	809	1.4+	0.6-	1996 12 08	691	0.0	0.3+
1988 09 07	809	0.9-	0.9+	1988 09 14	809	(1.4-	6.2-)				

1988 RJ₈ = 1981 SY₄ = 1981 UY₁₈ = 1998 KE₆₂

Id. G. V. Williams, M. W. Buie

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	267.59065		(2000.0)		P		Q				
n	0.27964602	ω	186.68524		+0.98935652		-0.14547927				
a	2.3159559	Ω	181.68905		+0.13786990		+0.94394765				
e	0.1163000	i	5.98872		+0.04653565		+0.29630832				
P	3.52	H	14.0		G	0.15	U	4			
Residuals in seconds of arc											
1981 09 25	095	0.6-	2.0+	1998 05 22	704	0.0	0.7-	1998 06 21	688	0.2+	0.2-
1981 10 26	095	(11.7-	1.9+)	1998 05 22	704	1.0-	0.4+	1998 06 21	688	0.4+	0.3-
1988 09 11	675	1.1-	0.5-	1998 05 22	704	0.8-	0.4-	1998 06 21	688	0.6+	0.2-
1988 09 11	675	0.5-	0.3-	1998 05 22	704	0.6+	0.2+	1998 06 24	704	0.3+	1.6+
1988 09 11	675	1.3+	1.8+	1998 05 22	704	0.2-	0.0	1998 06 24	704	1.1+	0.7-
1988 09 11	071	0.0	2.1+	1998 05 26	704	0.3-	0.4-	1998 06 24	704	0.1+	0.1+
1988 09 11	071	0.7+	1.7+	1998 05 26	704	0.7-	0.3+	1998 06 24	704	0.3+	0.1+
1988 09 16	675	0.0	0.5-	1998 05 26	704	0.6-	0.0	1998 06 24	704	1.0+	0.4+
1988 09 16	675	0.3+	0.5-	1998 05 26	704	0.4-	0.3-	1998 06 26	704	1.5+	0.3-
1988 09 16	675	0.6-	0.4-	1998 05 26	704	0.5-	0.7+	1998 06 26	704	0.7+	0.1-
1988 09 16	675	0.6+	1.4-	1998 06 03	704	0.1+	0.4-	1998 06 26	704	1.0-	0.4+
1988 10 07	675	0.3-	0.5-	1998 06 03	704	0.1+	0.4+	1998 06 26	704	0.3+	0.2-
1988 10 07	675	0.2+	1.1-	1998 06 03	704	1.1-	0.8-	1998 06 26	704	0.2+	0.3-
1988 10 09	675	0.4+	0.9-	1998 06 03	704	0.1+	0.6-				
1988 10 09	675	0.4-	1.8-	1998 06 03	704	1.0-	0.7+				

1988 RA₁₂ = 1998 FO₁₃₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	172.92489		(2000.0)			P		Q			
<i>n</i>	0.25862745	<i>ω</i>	224.08162			+0.82165577		−0.56989173			
<i>a</i>	2.4397930	<i>Ω</i>	170.64483			+0.53885804		+0.77079530			
<i>e</i>	0.1774579	<i>i</i>	3.61769			+0.18577892		+0.28477714			
<i>P</i>	3.81	<i>H</i>	15.0		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1988 09 14	807	0.2+	0.4+	1988 11 06	807	0.6−	0.6+	1998 03 29	704	1.9+	0.6−
1988 09 15	807	0.1−	0.1−	1998 03 28	704	0.3+	0.4−	1998 03 29	704	1.5+	0.2+
1988 10 06	807	0.2+	0.0	1998 03 28	704	1.1−	0.9+	1998 03 29	704	0.3−	0.1+
1988 10 07	807	0.5−	0.6−	1998 03 28	704	2.3+	1.3+	1998 03 29	704	3.2−	0.8+
1988 11 04	807	0.6+	0.2−	1998 03 28	704	1.3−	2.2−				

1988 SB₂

Id. E. Bowell (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	309.11060		(2000.0)			P		Q			
<i>n</i>	0.28949978	ω	249.07958			+0.99397539		−0.01473102			
<i>a</i>	2.2631007	Ω	111.63421			+0.05267791		+0.93317888			
<i>e</i>	0.1335239	<i>i</i>	6.70974			−0.09611434		+0.35911024			
<i>P</i>	3.40	<i>H</i>	14.0			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1988 09 15	675	0.2−	0.8−	1998 05 27	699	0.4+	1.1+	1998 06 29	704	0.4+	0.1+
1988 09 15	675	0.4−	0.4−	1998 05 27	699	0.5−	0.4+	1998 06 29	704	0.4−	0.8−
1988 09 16	807	0.7−	0.7+	1998 06 24	699	0.7+	0.0	1998 06 29	704	1.5−	0.1−
1988 09 18	807	0.3−	0.1−	1998 06 24	699	0.6+	0.6+	1998 06 29	704	1.9−	0.3−
1988 10 05	807	0.7+	0.2−	1998 06 24	699	0.7+	0.2+	1998 07 02	699	0.8+	0.3−
1988 10 06	807	0.8+	0.1+	1998 06 28	691	0.2+	0.9−	1998 07 02	699	0.0	0.0
1988 10 07	807	0.6+	0.4+	1998 06 28	691	0.1+	0.2−	1998 07 02	699	0.0	0.5+
1988 10 08	807	0.3−	0.7+	1998 06 28	691	0.3+	0.5−				
1998 05 27	699	0.6+	0.1+	1998 06 29	704	0.3−	0.3+				

1988 UP = 1982 RX₁ = 1997 EQ₅₈Id. S. Nakano (*MPC* 13862), G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	306.67858		(2000.0)		P		Q				
n	0.17652785	ω	250.62905		+0.93441417		+0.35368875				
a	3.1472210	Ω	88.63981		-0.30894316		+0.86364236				
e	0.1700573	i	2.41492		-0.17726895		+0.35920209				
P	5.58	H	13.0	G	0.15		U	2			
Residuals in seconds of arc											
1982 09 15	046	(8.4-	5.7-)	1988 10 16	400	2.9+	1.4+	1997 03 11	809	1.9-	0.3-
1982 09 15	046	(6.1-	2.9-)	1988 11 02	400	(4.3-	1.0+)	1997 03 11	809	0.0	0.4+
1982 09 15	046	0.3+	2.3+	1988 11 02	400	0.8-	1.3+	1997 03 11	809	0.1+	0.1-
1982 09 15	046	2.7-	1.8-	1988 11 02	400	2.9-	0.8+	1998 06 24	704	1.0-	3.5+
1982 09 16	046	2.0+	1.0-	1988 11 03	327	0.8+	0.3+	1998 06 24	704	1.0+	0.7-
1982 09 16	046	2.7+	1.0-	1988 11 08	400	0.4+	0.4-	1998 06 24	704	0.7+	0.2-
1982 09 17	046	1.4-	0.1+	1988 11 08	400	1.7-	0.2+	1998 06 24	704	0.3+	0.0
1982 09 17	046	0.1-	0.7-	1997 03 10	809	1.5+	0.0	1998 06 26	704	1.3-	0.2-
1988 10 16	400	(4.8+	1.2+)	1997 03 10	809	0.1+	0.4+	1998 06 26	704	0.6+	0.2+
1988 10 16	400	(5.9+	0.9-)	1997 03 10	809	0.4+	0.2+				

1989 CR = 1994 NT = 1998 MQ₅

Id. G. V. Williams, T. Kobayashi, A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	30.52771		(2000.0)		P		Q				
<i>n</i>	0.24025166	ω	115.46762		-0.60676975		+0.69126842				
<i>a</i>	2.5626647	Ω	111.29594		-0.79168279		-0.56977519				
<i>e</i>	0.2556692	<i>i</i>	24.90777		+0.07119580		-0.44441446				
<i>P</i>	4.10	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1989 02 02	372	1.0+	0.7-	1989 02 26	372	0.4-	0.4-	1998 06 19	704	0.6-	0.7-
1989 02 02	372	1.3+	0.5-	1994 07 04	675	0.8-	1.9-	1998 06 19	704	0.4-	0.3-
1989 02 06	372	0.2-	0.2+	1994 07 04	675	2.2-	3.0-	1998 06 25	704	0.2-	0.3+
1989 02 06	372	1.4-	1.5+	1994 07 08	675	1.0+	1.9+	1998 06 25	704	0.4+	0.1-
1989 02 09	372	2.3-	0.7+	1994 07 08	675	1.5+	1.1+	1998 06 25	704	1.2+	0.4+
1989 02 10	372	0.4+	0.1-	1998 06 19	704	0.7-	0.6-	1998 06 25	704	0.6-	1.3+
1989 02 10	372	3.0+	2.3-	1998 06 19	704	2.2+	0.8-	1998 06 25	704	0.1-	0.4+
1989 02 26	372	1.2-	0.5+	1998 06 19	704	0.8-	1.0+				

1989 CP₂ = 1998 MG₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	18.32975		(2000.0)	P		Q					
n	0.24259479	ω	336.28481	-0.33647532		+0.92929794					
a	2.5461368	Ω	273.76663	-0.83773349		-0.36924860					
e	0.1608683	i	8.77828	-0.43010110		-0.00779795					
P	4.06	H	14.5	G	0.15	U	5				
Residuals in seconds of arc											
1989 02 04	809	2.1-	0.8+	1989 03 02	809	0.1-	0.1-	1998 06 24	704	0.4+	1.1-
1989 02 04	809	2.7-	1.1+	1989 03 03	809	0.2+	0.6+	1998 06 26	704	0.0	0.1-
1989 02 04	809	1.7-	1.2+	1989 03 03	809	0.5-	0.2-	1998 06 26	704	0.2-	0.2+
1989 02 07	809	2.4+	1.3-	1989 03 03	809	0.8-	0.7-	1998 06 26	704	0.0	0.8+
1989 02 07	809	2.6+	0.5-	1998 06 24	704	0.7+	0.5-	1998 06 26	704	0.5-	0.0
1989 02 07	809	2.0+	1.3-	1998 06 24	704	0.1+	0.7+	1998 06 26	704	1.6-	0.3-
1989 03 02	809	0.7+	0.2+	1998 06 24	704	0.9+	0.9+				
1989 03 02	809	0.0	0.2+	1998 06 24	704	0.0	0.7-				

1989 HA

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	44.60617	(2000.0)	P		Q		Williams			
<i>n</i>	0.23747268	ω	125.12799	-0.01513236	+0.98755144					
<i>a</i>	2.5826186	Ω	143.03283	-0.98103438	+0.01559833					
<i>e</i>	0.1628694	<i>i</i>	15.09117	-0.19324222	-0.15652108					
<i>P</i>	4.15	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3			

Residuals in seconds of arc

1989 04 27	054	0.3−	0.3+	1989 06 01	675	(2.6+	0.8−)	1998 06 29	704	0.3+	0.3−
1989 04 28	054	0.0	0.4−	1989 06 02	675	(9.9+	4.5+)	1998 06 29	704	0.2+	0.3+
1989 04 30	054	0.6+	0.9−	1989 07 05	675	(0.2+	4.2−)	1998 06 29	704	1.2+	0.2+
1989 05 03	054	0.9+	1.2+	1989 07 05	675	(0.6−	3.5−)	1998 06 29	704	0.4+	0.3+
1989 05 29	675	0.2−	0.2+	1990 11 08	413	0.5+	0.2−	1998 07 26	699	0.1−	0.3−
1989 05 29	675	1.0−	0.4−	1990 11 08	413	0.4−	0.2+	1998 07 26	699	0.2−	0.2−
1989 05 30	675	(3.6−	0.9−)	1998 06 29	704	1.2−	0.7+	1998 07 26	699	0.4−	0.4−

1989 RG₁ = 1998 FQ₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29326149	ω	263.17964	+0.80171972	+0.59753812		
<i>a</i>	2.2437064	Ω	60.12563	−0.54184535	+0.73643035		
<i>e</i>	0.1957670	<i>i</i>	0.91960	−0.25228773	+0.31720424		
<i>P</i>	3.36	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 09 03	511	0.7+	0.1−	1989 09 25	809	0.1−	0.4+	1998 03 24	691	0.5−	0.1−
1989 09 03	511	0.5+	0.3−	1989 09 25	809	0.1+	0.3+	1998 03 24	691	0.5−	0.1−
1989 09 07	511	0.8−	0.1−	1989 09 25	809	0.3+	0.3+	1998 04 03	691	0.3+	0.2−
1989 09 07	511	(9.3+	2.5+)	1998 03 20	691	0.4+	0.1+	1998 04 03	691	0.0	0.3−
1989 09 24	809	0.1+	0.4−	1998 03 20	691	0.2+	0.1−	1998 04 03	691	0.1+	0.6−
1989 09 24	809	0.2−	0.4−	1998 03 20	691	0.0	0.0				
1989 09 24	809	0.4−	0.4−	1998 03 24	691	0.5−	0.1+				

1989 SC = 1986 TF₈ = 1998 FB₁₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30069704	ω	298.82226	+0.40279105	+0.91523158		
<i>a</i>	2.2065644	Ω	354.89633	−0.79318652	+0.34330145		
<i>e</i>	0.2304332	<i>i</i>	6.78725	−0.45674338	+0.21093903		
<i>P</i>	3.28	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1986 10 09	092	1.5−	0.6+	1989 09 29	403	(3.6−	2.9+)	Y	1998 03 20	704	0.5+	0.1−
1986 10 09	092	1.5+	0.3−	1989 09 29	403	1.2+	0.5+		1998 03 20	704	0.3+	0.2+
1989 09 04	071	0.8+	0.5+	1989 09 30	809	0.1−	0.2−		1998 03 20	704	0.3+	0.0
1989 09 04	071	(3.0+	0.4−)	1989 09 30	809	0.4+	0.1−		1998 03 20	704	0.5−	0.9−
1989 09 23	403	(3.3−	0.8−)	1989 09 30	809	1.1+	0.1−		1998 03 22	704	0.5−	0.0
1989 09 23	403	(2.8−	0.9−)	1989 10 01	809	0.8−	0.4+		1998 03 22	704	0.0	0.1−
1989 09 24	403	(5.1−	1.7−)	1989 10 01	809	0.2−	0.6+		1998 03 22	704	0.3−	0.5+
1989 09 24	403	2.2−	1.8−	1989 10 01	809	0.0	0.4+		1998 03 22	704	0.0	0.7+
1989 09 27	675	0.1+	0.1−	1989 10 04	403	(25.4+	1.7+)		1998 03 22	704	0.0	0.9−
1989 09 27	675	0.0	0.6−	1998 03 20	704	0.0	0.0					

1989 SF₄ = 1998 KJ₃₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18882396	ω	276.28570	+0.64617390	+0.75573784		
<i>a</i>	3.0090632	Ω	34.72036	−0.60531877	+0.59240716		
<i>e</i>	0.0503557	<i>i</i>	10.76586	−0.46481016	+0.27913093		
<i>P</i>	5.22	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 09 26	809	0.6+	0.2+	1989 10 03	809	0.2+	0.3−	1998 05 22	704	0.9+	1.5−
1989 09 26	809	0.3+	0.7+	1989 10 03	809	0.1−	1.2−	1998 05 22	704	0.5+	0.5−
1989 09 26	809	0.8−	0.2+	1989 10 07	809	0.9+	0.6+	1998 05 22	704	0.2+	0.5+
1989 09 28	809	0.8−	0.4+	1989 10 07	809	1.1+	0.2+	1998 05 22	704	(1.2−	3.0−)
1989 09 28	809	0.4−	0.7+	1989 10 07	809	0.6+	0.6+	1998 05 24	704	1.9−	1.5+
1989 09 28	809	0.1+	0.4−	1989 10 08	809	0.8−	0.3−	1998 05 24	704	0.4−	1.7+
1989 09 29	675	1.1+	1.1−	1989 10 08	809	0.7−	0.4+	1998 05 24	704	0.3+	1.3−
1989 10 03	809	0.9−	0.3−	1989 10 08	809	0.5−	0.3−	1998 05 24	704	0.4+	0.5−

1989 WE₄ = 1985 TL₁ = 1998 BX₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26283155	ω	225.24570	+0.95738104	−0.28795455		
<i>a</i>	2.4137061	Ω	151.46762	+0.27649285	+0.89125622		
<i>e</i>	0.2165406	<i>i</i>	2.69317	+0.08350601	+0.35034914		
<i>P</i>	3.75	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1985 10 15	688	0.7−	1.2+	1989 12 03	033	0.1−	0.4+	1998 01 29	566	0.4+	0.7−
1985 10 15	688	0.5+	0.8−	1989 12 03	033	0.4+	0.2−	1998 01 29	566	0.4+	0.3−
1989 11 28	033	(5.3−	0.6+)	1998 01 24	566	0.1−	0.9+	1998 01 29	566	0.5+	0.5−
1989 11 29	033	0.2−	0.6−	1998 01 24	566	0.4−	0.5+				
1989 12 02	033	(4.5−	1.3+)	1998 01 24	566	0.7−	0.6+				

1989 YY = 1998 KW₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26624763	ω	86.66338	−0.95303676	+0.29885614		
<i>a</i>	2.3930157	Ω	110.72104	−0.29450565	−0.87676111		
<i>e</i>	0.1596359	<i>i</i>	3.00613	−0.07062126	−0.37679566		
<i>P</i>	3.70	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 12 30	413	2.4−	1.0+	1998 05 22	704	0.1−	0.2+	1998 05 24	704	0.2−	0.4+
1989 12 30	413	0.5+	0.1+	1998 05 22	704	0.2+	0.1−	1998 06 03	704	1.5−	0.5−
1989 12 31	413	3.4+	2.1−	1998 05 22	704	0.5−	0.4−	1998 06 03	704	1.1+	0.8−
1990 01 24	887	1.5−	2.3+	1998 05 22	699	0.8+	0.1−	1998 06 03	704	1.5−	2.1+
1990 01 24	887	1.1+	1.7−	1998 05 22	699	0.6+	0.8−	1998 06 03	704	1.0+	0.3−
1990 01 25	887	0.8−	2.1+	Y 1998 05 22	699	0.3−	0.4−	1998 06 03	704	2.4−	0.6+
1990 01 25	887	0.4−	2.9−	Y 1998 05 23	699	0.5+	0.2+	1998 06 18	704	0.2+	0.7−
1998 05 05	699	0.6+	0.7+	1998 05 23	699	0.6+	0.1−	1998 06 18	704	0.8+	1.9−
1998 05 05	699	0.6+	0.4+	1998 05 23	699	0.7+	0.1+	1998 06 18	704	1.6+	1.4−
1998 05 05	699	0.5+	0.9+	1998 05 24	704	0.4+	0.3+	1998 06 18	704	1.9−	0.5−
1998 05 22	704	0.3−	0.6+	1998 05 24	704	0.9+	0.4+	1998 06 18	704	1.8−	0.2−
1998 05 22	704	0.2−	0.7+	1998 05 24	704	0.7−	0.2−				

1990 BO = 1998 MB₂₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17365746	ω	90.01589	+0.78647919	−0.57663733		
<i>a</i>	3.1818064	Ω	305.19908	+0.40162514	+0.74961293		
<i>e</i>	0.1049741	<i>i</i>	15.70738	+0.46919903	+0.32491513		
<i>P</i>	5.68	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 01 21	399	0.5−	1.5−	1990 01 30	046	1.0+	0.7+	1990 02 16	402	0.9−	2.2−
1990 01 21	399	0.2−	0.5−	1990 01 30	046	0.3−	3.1+	1990 02 16	402	1.1+	0.3−
1990 01 21	399	0.3−	0.7−	1990 02 01	402	1.0+	2.1+	1998 06 24	704	1.0+	1.0−
1990 01 23	399	0.3−	0.9−	1990 02 01	402	1.9+	0.9+	1998 06 24	704	0.4+	0.5−
1990 01 23	399	0.8+	0.5+	1990 02 01	399	0.9−	0.4−	1998 06 24	704	0.2−	0.2−
1990 01 23	399	0.4+	0.0	1990 02 01	399	0.5−	0.0	1998 06 24	704	0.9−	0.7−
1990 01 28	399	0.6+	0.3+	1990 02 01	399	1.0−	0.1+	1998 06 24	704	1.1−	0.3−
1990 01 29	046	3.3+	2.0+	1990 02 02	402	(4.4−	0.5+)	1998 06 26	704	1.2+	0.6+
1990 01 29	046	(4.5+	1.5+)	1990 02 02	402	1.1−	0.3+	1998 06 26	704	1.0−	0.4+
1990 01 30	399	1.9−	2.8−	1990 02 14	399	1.0+	0.6−	1998 06 26	704	0.5+	0.2+
1990 01 30	399	1.2−	0.4−	1990 02 14	399	1.9−	0.4+	1998 06 26	704	0.2+	1.4+
1990 01 30	399	0.7−	0.7−	1990 02 14	399	0.7+	0.7+				

1998 AUG. 8

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1990 CE = 1998 OP₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	160.52062	(2000.0)	P		Q	
<i>n</i>	0.28660095	ω	334.62465	-0.70659028	-0.70691494	
<i>a</i>	2.2783353	Ω	160.28192	+0.66417187	-0.67796873	
<i>e</i>	0.0962765	<i>i</i>	5.38195	+0.24414319	-0.20156805	
<i>P</i>	3.44	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1990 01 21	402	1.2-	0.5-	1990 02 02	402	(3.7-	0.3-)	1998 07 24	910	0.3+	0.2-
1990 01 21	402	0.6+	0.5-	1990 02 16	402	0.1-	0.8-	1998 07 26	910	0.0	0.1+
1990 02 01	402	0.7+	1.0+	1990 02 16	402	(3.6+	1.5-)	1998 07 27	910	0.3-	0.1+
1990 02 01	402	0.0	0.8+	1998 07 23	910	0.3+	0.1+	1998 07 27	910	0.3-	0.1+
1990 02 02	402	(3.2-	1.0-)	1998 07 24	910	0.1-	0.1-				

1990 EP₂ = 1998 KC₄₇

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	72.21109	(2000.0)	P		Q	
<i>n</i>	0.26231116	ω	296.13124	-0.99574639	-0.03808852	
<i>a</i>	2.4168973	Ω	241.78700	+0.06555912	-0.93268815	
<i>e</i>	0.1052496	<i>i</i>	5.46317	-0.06473888	-0.35866709	
<i>P</i>	3.76	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1990 02 24	809	1.4+	0.1+	1998 05 22	704	(4.8-	0.8+)	1998 06 24	704	1.1-	0.6-
1990 02 24	809	0.1-	0.2-	1998 05 24	704	1.0-	0.6-	1998 06 24	704	0.1+	0.2+
1990 02 24	809	0.6-	0.6-	1998 05 24	704	0.2-	1.0+	1998 06 24	704	0.8-	0.3+
1990 03 02	809	0.5+	0.5+	1998 05 24	704	1.6-	0.3+	1998 06 24	704	0.7+	1.8-
1990 03 02	809	0.4+	0.2+	1998 05 24	704	0.3+	0.3-	1998 06 26	704	0.1-	0.8+
1990 03 02	809	0.2-	0.0	1998 06 01	809	(2.3+	0.2-)	1998 06 26	704	0.6-	0.0
1990 03 04	809	0.7-	0.1-	1998 06 01	809	1.5+	0.7+	1998 06 26	704	1.0-	1.1+
1990 03 04	809	0.3-	0.0	1998 06 01	809	1.8+	0.7+	1998 06 26	704	0.1-	0.7+
1990 03 04	809	0.4-	0.1-	1998 06 02	809	1.6+	0.5+	1998 07 02	699	1.2+	1.8-
1998 05 22	704	1.4-	0.1+	1998 06 02	809	(3.2+	0.3+)	1998 07 02	699	1.1+	0.4-
1998 05 22	704	0.7-	0.1+	1998 06 02	809	1.0+	0.6+	1998 07 02	699	0.7+	0.3+
1998 05 22	704	0.3-	1.1-	1998 06 24	704	1.1-	1.1-				

1990 ES₄ = 1998 MX₂₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	17.45600	(2000.0)	P		Q	
<i>n</i>	0.26039836	ω	344.15449	-0.45448986	+0.89040302	
<i>a</i>	2.4287187	Ω	258.80783	-0.81446411	-0.42673447	
<i>e</i>	0.1588890	<i>i</i>	1.45615	-0.36067601	-0.15836716	
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1990 03 02	809	1.4+	0.2-	1990 04 16	809	0.4-	1.3+	1998 06 24	704	1.6+	0.0
1990 03 02	809	0.3+	0.7+	1990 04 16	809	0.4+	0.9-	1998 06 24	704	0.9-	0.2-
1990 03 02	809	0.7+	0.0	1990 04 16	809	0.5+	1.4-	1998 06 26	704	0.0	0.3-
1990 03 04	809	0.6-	0.3+	1990 04 17	809	1.2+	0.4-	1998 06 26	704	0.2+	0.7+
1990 03 04	809	0.3-	0.6+	1990 04 17	809	0.1-	1.1-	1998 06 26	704	1.0+	0.6+
1990 03 04	809	1.0-	0.1-	1998 06 24	704	0.6+	0.7+	1998 06 26	704	1.6-	0.6-
1990 04 15	809	2.1-	1.1+	1998 06 24	704	0.9-	0.6-				

1990 OB₅ = 1998 FV₁₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	271.44603	(2000.0)	P		Q	
<i>n</i>	0.22374736	ω	66.50453	+0.81212868	+0.54801281	
<i>a</i>	2.6871842	Ω	259.70006	-0.58145296	+0.73153582	
<i>e</i>	0.1886381	<i>i</i>	11.74774	-0.04857421	+0.40563197	
<i>P</i>	4.41	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1990 07 25	675	0.1+	0.2-	1998 03 31	704	0.5+	0.9+	1998 04 01	704	0.6-	0.1+
1990 07 25	675	0.2-	0.2+	1998 03 31	704	0.9-	0.5-	1998 04 01	704	0.1+	0.8+
1990 07 27	675	0.1-	0.1-	1998 03 31	704	0.6-	0.6-	1998 04 01	704	0.9-	0.0
1990 07 27	675	0.4+	0.2+	1998 03 31	704	0.4+	0.6-	1998 04 01	704	1.3+	0.0
1990 07 29	675	0.3-	0.1-	1998 03 31	704	1.6+	0.8+	1998 04 01	704	0.9-	0.9-

1990 QQ₄ = 1998 KB₂₅

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	268.16777	(2000.0)	P		Q	
<i>n</i>	0.22109470	ω	319.27987	+0.96365108	+0.26083467	
<i>a</i>	2.7086351	Ω	25.77410	-0.19734302	+0.84080340	
<i>e</i>	0.0656186	<i>i</i>	7.63998	-0.18008979	+0.47435737	
<i>P</i>	4.46	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1990 08 24	675	0.8+	0.4-	1998 05 01	704	0.2+	0.4-	1998 05 22	704	0.0	0.7+
1990 08 24	675	0.4-	0.7-	1998 05 01	704	0.6+	1.2+	1998 05 22	704	0.8-	0.6+
1990 08 26	675	0.4+	0.1-	1998 05 01	704	1.9-	0.8+	1998 05 24	704	0.4+	1.2-
1990 08 26	675	1.8+	1.5+	1998 05 01	704	(6.6-	4.0+)	1998 05 24	704	0.2-	1.3-
1990 09 16	675	1.2-	0.4+	1998 05 22	704	0.0	1.1-	1998 05 24	704	0.5-	0.5-
1990 09 16	675	1.3-	0.6-	1998 05 22	704	0.5+	1.9+	1998 05 24	704	1.6+	0.1+
1998 05 01	704	0.4-	1.3-	1998 05 22	704	0.2+	0.7+	1998 05 24	704	0.4+	0.2-

1990 SA₆ = 1979 UH₄ = 1979 WC₅ = 1998 HL₆₇

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	81.42436	(2000.0)	P		Q	
<i>n</i>	0.17666079	ω	80.02188	-0.22126852	-0.97215496	
<i>a</i>	3.1456418	Ω	23.20361	+0.80033266	-0.22623456	
<i>e</i>	0.3302863	<i>i</i>	11.29492	+0.55723233	-0.06109549	
<i>P</i>	5.58	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1979 10 16	095	(1.4+	4.2+)	1998 03 06	910	0.9-	0.3+	1998 04 21	704	0.3+	0.5+
1979 11 17	095	1.2+	1.6-	1998 03 25	699	(2.2+	0.2+)	1998 04 22	704	0.4+	0.2+
1990 09 15	809	0.3-	0.4-	1998 03 25	699	1.1-	0.2+	1998 04 22	704	0.2-	0.2-
1990 09 15	809	1.1-	1.0-	1998 03 25	699	0.1+	0.4-	1998 04 22	704	0.6+	0.6+
1990 09 15	809	1.6-	1.6-	1998 04 01	704	0.4+	0.1-	1998 04 22	704	0.9+	0.3+
1990 09 22	809	0.8+	0.6+	1998 04 01	704	0.4+	0.1-	1998 04 22	704	0.3+	1.2+
1990 09 22	809	0.2-	0.1-	1998 04 01	704	0.2+	0.7-	1998 04 25	699	0.0	1.0+
1990 09 22	809	0.2-	0.5-	1998 04 01	704	0.6+	1.4-	1998 04 25	699	0.7-	0.1+
1990 09 25	809	0.4+	0.7+	1998 04 01	704	0.1-	0.6-	1998 04 25	699	0.1-	0.3+
1990 09 25	809	0.8+	0.3+	1998 04 04	699	1.1-	0.3-	1998 05 16	704	0.9-	2.0-
1990 09 25	809	1.6+	1.2+	1998 04 04	699	0.3+	0.1-	1998 05 16	704	0.2-	1.2+
1998 03 06	910	0.1+	0.0	1998 04 04	699	0.1-	0.5-	1998 05 16	704	0.7-	0.1-
1998 03 06	910	0.0	0.1+	1998 04 21	704	0.6+	0.4-	1998 05 16	704	0.3+	1.4-
1998 03 06	910	0.1+	0.7-	1998 04 21	704	0.3+	0.1-	1998 05 16	704	(3.2-	1.7+)
1998 03 06	910	0.9-	0.1+	1998 04 21	704	0.1+	0.2+				
1998 03 06	910	0.8-	0.0	1998 04 21	704	0.1+	0.2+				

1990 SB₁₄ = 1994 LT₄ = 1998 FY₃₈

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	179.82677	(2000.0)	P		Q	
<i>n</i>	0.19402452	ω	51.97344	+0.98418394	-0.17662180	
<i>a</i>	2.9550509	Ω	318.19459	+0.15543190	+0.89796076	
<i>e</i>	0.0963547	<i>i</i>	1.17458	+0.08498768	+0.40307718	
<i>P</i>	5.08	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1990 09 23	809	0.4+	1.3+	1990 09 27	809	(0.4+	2.8-)	1998 03 20	704	0.8+	1.8-
1990 09 23	809	0.8+	1.3+	1990 09 27	809	1.2-	0.6-	1998 03 22	704	0.7+	1.3+

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1990 09 23	809	1.0+	1.4+	1990 09 27	809	(2.8−	2.0+)	1998 03 22	704	1.2−	1.0−
1990 09 24	809	(4.1−	0.5−)	1994 06 03	809	0.8+	0.5−	1998 03 22	704	0.2−	0.4+
1990 09 24	809	(4.0−	0.6−)	1994 06 03	809	1.5−	0.4−	1998 03 22	704	(0.2−	2.7+)
1990 09 24	809	(3.8−	0.8−)	1994 06 03	809	1.3+	1.0−	1998 03 22	704	0.1+	0.6−
1990 09 24	809	0.3+	1.3−	1994 06 04	809	1.3−	0.6+	1998 04 01	704	1.4+	0.8−
1990 09 24	809	0.5+	1.4−	1994 06 04	809	0.5+	0.4+	1998 04 01	704	1.4+	1.4+
1990 09 24	809	0.8+	1.3−	1994 06 04	809	0.2+	0.7+	1998 04 01	704	1.0+	1.1+
1990 09 25	809	1.3−	0.3+	1998 03 20	704	0.8−	0.8+	1998 04 01	704	1.8−	1.3+
1990 09 25	809	0.9−	0.2+	1998 03 20	704	0.3−	1.1−				
1990 09 25	809	0.3−	0.1+	1998 03 20	704	0.9−	0.9−				

1990 VM₂ = 1998 ME₃₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	288.69654	<i>ω</i>	285.41443	+0.87533298	−0.47702800		
<i>a</i>	2.6699863	<i>Ω</i>	103.13264	+0.46888122	+0.79754777		
<i>e</i>	0.1979312	<i>i</i>	4.65134	+0.11807871	+0.36927205		
<i>P</i>	4.36	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 11 11	400	0.3+	0.7−	1990 11 19	809	0.5+	0.3+	1998 06 26	704	0.1−	2.5−
1990 11 11	400	0.8−	2.5+	1990 11 21	400	0.7+	0.9+	1998 06 26	704	0.4+	1.2+
1990 11 13	400	1.2+	0.2+	1990 11 21	400	1.1+	0.4−	1998 07 03	699	0.2+	1.3−
1990 11 13	400	3.7−	0.7+	1998 06 24	704	0.7−	0.8+	1998 07 03	699	0.6+	0.2+
1990 11 18	809	0.4−	0.8−	1998 06 24	704	0.9+	1.0+	1998 07 03	699	0.4−	0.5+
1990 11 18	809	0.8−	0.7−	1998 06 24	704	0.9−	0.8+	1998 07 16	699	0.3−	0.3−
1990 11 18	809	0.3+	1.2−	1998 06 24	704	0.3+	1.0+	1998 07 16	699	0.2−	0.4−
1990 11 19	809	0.6+	0.5−	1998 06 26	704	0.6+	2.1−	1998 07 16	699	0.2−	0.5−
1990 11 19	809	1.2+	0.1−	1998 06 26	704	0.2−	1.6+				

1990 VU₅ = 1984 SX₇ = 1998 FT₄₃

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	209.24465	<i>ω</i>	170.18264	+0.99116649	+0.13246997		
<i>a</i>	3.0727353	<i>Ω</i>	182.23494	−0.13005374	+0.96141191		
<i>e</i>	0.0962514	<i>i</i>	9.41592	−0.02598118	+0.24111998		
<i>P</i>	5.39	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1984 09 21	010	0.1−	0.2+	1990 11 23	809	1.0−	0.7+	1998 03 28	704	1.1−	0.1+
1990 11 15	809	1.6+	0.2+	1990 11 23	809	1.2−	0.7+	1998 03 28	704	0.4−	0.3+
1990 11 15	809	0.5+	0.8−	1990 11 23	809	(2.2−	0.3−)	1998 03 28	704	0.1−	0.4+
1990 11 15	809	0.6+	0.8+	1998 02 26	566	0.0	0.7−	1998 03 28	704	1.0+	0.2−
1990 11 15	809	0.9−	0.7−	1998 02 26	566	0.3+	0.6−	1998 03 28	704	0.9−	1.6−
1990 11 15	809	0.3−	0.5−	1998 02 26	566	0.5−	0.7−	1998 03 29	704	0.0	0.4−
1990 11 15	809	(2.4−	1.5−)	1998 03 20	704	0.8+	1.1−	1998 03 29	704	0.9+	0.2+
1990 11 17	809	0.5+	0.4+	1998 03 20	704	0.2−	0.1+	1998 03 29	704	0.3−	0.4+
1990 11 17	809	0.6+	0.1−	1998 03 20	704	0.4−	0.1+	1998 03 29	704	0.7−	0.5+
1990 11 17	809	0.5−	0.3−	1998 03 20	704	0.2+	0.5+	1998 03 29	704	0.0	0.8+
1990 11 17	809	0.6−	0.6−	1998 03 20	704	0.6+	0.2−	1998 04 19	704	0.4+	0.0
1990 11 17	809	0.1−	1.3−	1998 03 22	704	0.0	0.0	1998 04 19	704	1.3+	0.1−
1990 11 17	809	0.7−	0.9−	1998 03 22	704	0.1+	0.4+	1998 04 19	704	0.1−	0.3−
1990 11 21	809	0.7+	1.0+	1998 03 22	704	0.1−	1.3+	1998 04 19	704	1.0+	0.3−
1990 11 21	809	0.9+	1.5+	1998 03 22	704	0.1+	0.4+	1998 04 19	704	0.1−	0.8−
1990 11 21	809	(0.1−	2.2+)	1998 03 22	704	1.6−	1.3+				

1990 WP₁ = 1998 KU₅₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	269.28072	<i>ω</i>	255.17330	+0.98311640	+0.05782755		
<i>a</i>	2.7977448	<i>Ω</i>	101.28408	+0.00863898	+0.93302265		
<i>e</i>	0.1694462	<i>i</i>	10.19655	−0.18277721	+0.35514040		
<i>P</i>	4.68	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

1998 AUG. 8

Residuals in seconds of arc

1990 11 11	809	1.4+	1.3+	1998 05 23	704	0.3+	0.8−	1998 05 26	704	1.6−	0.1+
1990 11 11	809	0.6+	1.5+	1998 05 23	704	0.6+	1.6+	1998 05 26	704	0.9+	1.7−
1990 11 11	809	0.1−	0.6+	1998 05 23	704	1.1−	0.1+	1998 05 26	704	0.4+	0.3−
1990 11 18	809	1.1+	1.3−	1998 05 23	704	1.5+	0.2+	1998 05 26	704	0.4+	0.5−
1990 11 18	809	0.0	0.2−	1998 05 23	704	0.6−	2.0+	1998 06 03	704	(1.0−	2.8−)
1990 11 18	809	0.4−	1.0−	1998 05 24	699	0.8−	0.6+	1998 06 03	704	0.3−	0.2−
1990 11 20	809	0.9−	1.3−	1998 05 24	699	0.2−	0.1−	1998 06 03	704	1.0+	1.4−
1990 11 20	809	(3.1−	1.1−)	1998 05 24	699	0.6−	0.0	1998 06 03	704	(3.5−	1.5−)
1990 11 20	809	1.5−	0.1−	1998 05 26	704	0.2−	0.2+				

1990 WW₁ = 1992 DU₆

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	288.37219	<i>ω</i>	230.30700	+0.91350172	−0.40311060		
<i>a</i>	2.6847277	<i>Ω</i>	153.33098	+0.40058309	+0.86765465		
<i>e</i>	0.1456405	<i>i</i>	7.02866	+0.07104780	+0.29099357		
<i>P</i>	4.40	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 11	809	0.6+	0.1−	1992 03 07	809	0.4+	0.4−	1998 07 20	910	0.6+	0.3+
1990 11 11	809	0.0	0.3−	1998 06 22	910	1.6+	0.1−	1998 07 20	566	0.6−	0.1−
1990 11 11	809	0.9−	0.1−	1998 06 22	910	1.3+	0.3−	1998 07 20	566	1.0−	0.1−
1990 11 18	809	1.5+	0.5−	1998 06 22	910	1.3+	0.4−	1998 07 20	566	0.0	0.1−
1990 11 18	809	0.1−	0.1−	1998 06 26	704	(1.7−	2.8+)	1998 07 20	910	0.4−	0.4+
1990 11 18	809	0.0	0.2−	1998 06 26	704	1.5−	0.9+	1998 07 21	910	0.5−	0.4+
1990 11 20	809	0.0	0.4+	1998 06 26	704	0.1+	1.0−	1998 07 21	910	0.0	0.5+
1990 11 20	809	0.7−	0.5−	1998 06 26	704	1.0+	1.4−	1998 07 23	910	0.5−	0.1+
1990 11 20	809	0.1−	0.7+	1998 06 26	704	1.2−	0.5−	1998 07 23	910	0.3−	0.1+
1992 02 29	809	0.2−	0.0	1998 07 20	910	0.6+	0.3+	1998 07 24	910	0.6−	0.0
1992 03 03	809	0.5−	0.2−	1998 07 20	910	0.5+	0.2+				

1991 CM = 1998 MX₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	37.78049	<i>ω</i>	114.35820	−0.42928430	+0.87349638		
<i>a</i>	0.17896197	<i>Ω</i>	128.22039	−0.89772429	−0.38480374		
<i>e</i>	3.1186183	<i>i</i>	16.99301	−0.09902569	−0.29821160		
<i>P</i>	5.51	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 01 17	033	0.7+	0.9+	1998 06 24	704	0.5+	0.2−	1998 07 21	610	1.5−	1.0−
1991 01 17	033	0.3+	0.3+	1998 06 24	704	0.5+	0.5−	1998 07 21	610	0.7−	0.3+
1991 01 18	033	0.6−	0.5−	1998 06 24	704	0.2+	0.0	1998 07 21	610	0.1+	1.7+
1991 02 05	875	0.4+	1.0−	1998 06 24	704	0.5+	1.0−	1998 07 24	610	0.8−	0.7+
1991 02 05	875	0.6+	0.5−	1998 06 26	704	0.8+	0.2−	1998 07 24	610	0.4−	0.6+
1991 02 07	875	0.5−	0.9−	1998 06 26	704	0.0	0.9+	1998 07 24	610	0.2+	0.4+
1991 02 07	875	0.3−	0.1−	1998 06 26	704	1.2+	0.3−	1998 07 24	610	0.5+	0.3+
1991 02 12	875	0.5−	0.3+	1998 06 26	704	0.5+	1.9+	1998 07 24	610	0.7+	0.3+
1991 02 12	875	0.5+	1.2−	1998 06 26	704	(2.0+	2.2+)	1998 07 26	704	0.1−	0.3+
1991 02 17	875	0.3−	0.3+	1998 07 21	704	0.6−	1.6−	1998 07 26	704	0.5−	1.1−
1991 02 17	875	0.3−	0.6+	1998 07 21	704	0.0	0.5−	1998 07 26	704	1.4−	1.3+
1991 02 20	875	0.0	1.2+	1998 07 21	704	0.2+	0.7−	1998 07 26	704	0.1−	1.7−
1991 02 20	875	0.0	0.4+	1998 07 21	704	0.2−	0.7−				
1998 06 24	704	0.5+	0.5+	1998 07 21	610	(2.3−	2.4−)				

1998 AUG. 8

M.P.C. 32223

Residuals in seconds of arc

1991 03 10	413	1.1-	0.2+	1998 06 24	704	0.1-	1.6+	1998 06 26	704	1.2+	1.3-
1991 03 12	413	0.6-	0.8+	1998 06 24	704	0.1-	0.1+	1998 06 26	704	0.9-	0.0
1991 03 20	413	1.7+	1.0-	1998 06 24	704	0.2-	1.5-	1998 06 26	704	1.1-	0.9-
1998 06 24	704	0.4+	0.2+	1998 06 26	704	0.9+	1.8+				

1991 EO₂ = 1992 OY₁ = 1997 WT₄₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	331.67541	(2000.0)		P		Q	
<i>n</i>	0.26224433	ω	219.61009	-0.99791353		-0.06121861	
<i>a</i>	2.4173079	Ω	316.86653	+0.06418644		-0.90632039	
<i>e</i>	0.1595968	<i>i</i>	1.71946	+0.00697719		-0.41813352	
<i>P</i>	3.76	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 03 11	809	0.2+	0.0	1991 03 15	809	0.0	0.2+	1992 07 30	809	0.9+	0.6+
1991 03 11	809	0.4+	0.2-	1991 03 17	809	0.8-	0.2+	1992 07 30	809	1.2+	0.5+
1991 03 11	809	0.6+	0.5-	1991 03 17	809	0.0	0.3+	1997 11 29	704	0.0	0.7-
1991 03 13	809	0.1-	0.2+	1991 03 17	809	0.0	0.3+	1997 11 29	704	1.0-	0.5-
1991 03 13	809	0.1-	0.0	1991 03 18	809	0.0	0.8-	1997 11 29	704	0.6-	0.4-
1991 03 13	809	0.1-	0.2+	1991 03 18	809	0.3+	0.7-	1997 11 29	704	0.2-	0.8-
1991 03 14	809	0.7-	0.1-	1991 03 18	809	0.8+	0.8-	1997 11 29	704	0.7-	1.3+
1991 03 14	809	0.3-	0.0	1992 07 26	809	0.3+	0.9-	1997 12 04	704	1.6+	0.0
1991 03 14	809	0.2+	0.2-	1992 07 26	809	0.4+	0.9-	1997 12 04	704	0.4-	0.3-
1991 03 15	809	0.8-	0.4+	1992 07 26	809	1.6-	1.9-	1997 12 04	704	(2.6+	0.1-)
1991 03 15	809	0.0	0.0	1992 07 30	809	0.5+	0.3+	1997 12 04	704	1.2+	0.1+

1991 EK₄ = 1998 OF

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	64.26668	(2000.0)		P		Q	
<i>n</i>	0.31300788	ω	37.11143	-0.73132594		+0.68200922	
<i>a</i>	2.1483211	Ω	185.89727	-0.63701359		-0.68569921	
<i>e</i>	0.0788013	<i>i</i>	2.83331	-0.24367204		-0.25432266	
<i>P</i>	3.15	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 03 06	372	(6.3+	0.1-)	1991 03 17	809	0.1+	0.3-	1998 07 18	910	0.2+	0.1-
1991 03 06	372	(5.5-	4.0+)	1991 03 17	809	0.7+	0.2-	1998 07 18	910	0.1+	0.2+
1991 03 12	809	0.4-	0.5+	1991 03 17	809	1.1+	0.1+	1998 07 18	910	0.1+	0.0
1991 03 12	809	0.0	0.8+	1998 06 29	704	1.0+	0.2-	1998 07 19	910	0.0	0.2-
1991 03 12	809	0.4+	0.8+	1998 06 29	704	1.3-	1.1+	1998 07 19	910	0.1-	0.2-
1991 03 15	809	1.1-	0.4-	1998 06 29	704	1.0+	0.6+	1998 07 19	910	0.0	0.3-
1991 03 15	809	0.6-	0.6-	1998 06 29	704	1.2-	0.9-				
1991 03 15	809	0.1-	0.9-	1998 06 29	704	(3.7-	0.2+)				

1991 GW₁ = 1987 DC₇ = 1991 JO = 1998 MF₁₉Id. G. V. Williams (d, *MPC* 18398; unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	54.32608	(2000.0)		P		Q	
<i>n</i>	0.28784667	ω	334.95030	-0.94354911		+0.19902014	
<i>a</i>	2.2717572	Ω	219.59816	-0.18755592		-0.97988577	
<i>e</i>	0.1936619	<i>i</i>	24.54449	-0.27301621		-0.01465812	
<i>P</i>	3.42	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1987 02 27	413	0.0	0.9+	1991 06 08	675	0.0	1.0-	1998 06 04	704	0.5+	0.8-
1991 04 14	675	1.1-	1.4+	1991 06 08	675	0.3-	0.1+	1998 06 23	704	0.6+	0.7+
1991 04 14	675	(0.6-	2.3+)	1991 06 09	675	0.9+	0.6-	1998 06 23	704	(0.6-	2.6+)
1991 04 17	675	1.3-	0.0	1991 06 14	675	0.7+	1.3-	1998 06 23	704	0.1+	0.4+
1991 05 08	675	0.8+	1.3+	1991 06 14	675	0.7+	0.8-	1998 06 23	704	0.2+	0.0
1991 05 08	675	0.7-	0.4-	1991 06 17	675	0.2+	0.8-	1998 06 27	704	0.6+	0.7+
1991 05 09	675	(1.9+	2.5+)	1991 06 17	675	0.4+	1.3-	1998 06 27	704	0.2-	0.7+
1991 05 10	675	1.2+	0.2+	1998 06 04	704	0.8-	1.0+	1998 06 27	704	1.2-	0.6+
1991 05 10	675	0.5-	0.4-	1998 06 04	704	0.2-	0.6-	1998 06 27	704	1.3-	0.6+

1991 05 13	675	0.6+	0.3-	1998 06 04	704	0.8+	0.7+	1998 06 27	704	0.3-	0.5+
1991 05 15	675	0.6-	0.7+	1998 06 04	704	0.3+	0.7-				

1991 GT₄ = 1998 HC₇₅

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	289.08057	(2000.0)		P		Q	
<i>n</i>	0.28516660	ω	134.99152	+0.82531967		+0.56443713	
<i>a</i>	2.2859687	Ω	190.67951	-0.53939825		+0.77965231	
<i>e</i>	0.1964545	<i>i</i>	4.97409	-0.16702388		+0.27120656	
<i>P</i>	3.46	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 04 08	809	0.1-	0.1-	1998 03 06	910	(0.1+	2.5-)	1998 04 22	704	0.3+	1.0+
1991 04 08	809	0.6+	0.8-	1998 03 06	910	0.0	1.4-	1998 04 29	566	0.7+	0.2+
1991 04 08	809	(0.6+	4.1-)	1998 03 06	910	0.3-	1.6-	1998 04 29	566	0.1-	0.0
1991 04 10	809	0.3+	0.7+	1998 04 21	704	0.1-	0.4+	1998 04 29	566	0.1+	0.4+
1991 04 10	809	0.0	1.8+	1998 04 21	704	0.6-	0.1-	1998 05 16	704	0.1+	0.6-
1991 04 10	809	1.3+	1.0+	1998 04 21	704	0.3-	1.0-	1998 05 16	704	0.0	0.5+
1991 04 19	809	0.2-	0.1-	1998 04 21	704	0.3-	0.1-	1998 05 16	704	0.3+	0.2+
1991 04 19	809	(2.3-	1.8+)	1998 04 21	704	0.2-	0.6+	1998 05 16	704	(0.6-	2.5-)
1991 04 19	809	0.4+	0.0	1998 04 22	704	0.1+	0.5+	1998 05 25	699	0.5+	0.3-
1991 04 19	675	0.5-	2.0-	1998 04 22	704	(3.0+	0.2-)	1998 05 25	699	0.8-	1.1-
1991 04 19	675	(0.8-	2.6-)	1998 04 22	704	0.6+	0.1-	1998 05 25	699	0.7-	0.2-
1991 04 19	675	1.5-	0.8+	1998 04 22	704	0.3+	0.8+				

1991 GS₆ = 1998 KU₁₄

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	171.34664	(2000.0)		P		Q	
<i>n</i>	0.28973875	ω	45.37407	+0.36334976		-0.92914208	
<i>a</i>	2.2618562	Ω	23.57716	+0.79908197		+0.27308578	
<i>e</i>	0.0962699	<i>i</i>	9.83935	+0.47900413		+0.24923715	
<i>P</i>	3.40	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 04 08	809	1.5-	0.5+	1998 04 22	704	1.2-	0.7-	1998 05 22	704	0.0	1.5-
1991 04 08	809	0.8-	0.7+	1998 04 22	704	(2.6-	1.2-)	1998 05 23	704	0.2-	0.1+
1991 04 08	809	(2.3-	0.2-)	1998 04 22	704	1.5-	0.8-	1998 05 23	704	0.0	0.3-
1991 04 10	809	0.7+	0.0	1998 05 01	704	0.4+	0.4+	1998 05 23	704	0.6+	1.0-
1991 04 10	809	0.0	0.7+	1998 05 01	704	1.5-	0.5+	1998 05 23	704	1.0+	1.6+
1991 04 10	809	0.4+	0.2+	1998 05 01	704	0.1+	0.6+	1998 05 23	704	(1.3-	3.5-)
1991 04 19	809	0.7+	0.6-	1998 05 01	704	0.4-	0.0	1998 05 24	704	0.6+	0.8+
1991 04 19	809	0.3-	0.4-	1998 05 01	704	0.2-	0.6+	1998 05 24	704	0.0	0.1+
1991 04 19	809	0.2-	0.3-	1998 05 22	704	0.1-	0.4+	1998 05 24	704	0.2-	0.2+
1991 04 19	675	0.4-	0.4+	1998 05 22	704	0.1+	0.9-	1998 05 24	704	1.3+	0.5+
1991 04 19	675	1.6+	0.7-	1998 05 22	704	1.2+	1.2+	1998 05 24	704	0.4-	1.2-
1998 04 22	704	0.6-	0.7-	1998 05 22	704	0.9+	0.8-				

1991 PA = 1986 TL₁₇ = 1997 WB₅₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	100.07868	(2000.0)		P		Q	
<i>n</i>	0.18428442	ω	16.74641	+0.85022007		+0.52325969	
<i>a</i>	3.0582781	Ω	311.55906	-0.49139035		+0.74956295	
<i>e</i>	0.3183512	<i>i</i>	4.41975	-0.18884215		+0.40540680	
<i>P</i>	5.35	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 10 11	095	0.6+	1.6-	1991 08 04	809	0.3+	0.9+	1991 09 13	675	1.0-	0.2+
1991 07 12	675	0.5+	0.4-	1991 08 05	809	0.1+	0.5+	1991 09 13	675	0.9-	0.2+
1991 07 12	675	0.5-	0.4-	1991 08 05	809	0.2+	0.1+	1991 09 14	675	1.1-	1.3+
1991 07 14	675	0.4-	0.4-	1991 08 05	809	1.2+	0.4+	1991 09 14	675	1.6-	0.0
1991 07 14	675	0.3-	1.4-	1991 08 05	809	0.0	0.2-	1997 11 28	327	0.1+	0.1+
1991 07 17	675	0.1+	1.1-	1991 08 05	675	0.7-	0.3+	1997 11 28	327	0.5+	0.6+
1991 07 17	675	0.1-	0.3-	1991 08 05	809	0.8-	0.5-	1997 11 28	327	0.2+	0.4+

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1991 08 02	809	0.5−	0.5−	1991 08 05	809	0.9+	0.8+	1997 12 15	327	0.7+	0.4−
1991 08 02	809	0.1+	0.3−	1991 08 05	675	0.0	0.0	1997 12 15	327	0.7−	0.1−
1991 08 02	809	0.9+	0.7−	1991 08 07	675	0.3+	1.1−	1997 12 15	327	0.7−	0.1+
1991 08 03	809	0.7−	0.4+	1991 08 07	675	1.2−	2.0−	1998 01 29	327	0.3−	0.3−
1991 08 03	809	0.7−	0.7+	1991 08 08	894	1.0−	0.6−	1998 01 29	327	0.0	0.1−
1991 08 03	809	1.1−	1.2+	1991 08 10	809	2.3+	1.5+	1998 01 29	327	0.0	0.3−
1991 08 03	894	0.8−	0.9−	1991 08 10	809	2.0+	1.3+				
1991 08 03	894	0.1+	0.5−	1991 08 10	809	1.8+	1.7+				

1991 PY₁ = 1998 HW₁₀₉

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.25956613	<i>ω</i>	175.26301	+0.41460993	+0.90301930		
<i>a</i>	2.4339073	<i>Ω</i>	119.19391	−0.83908391	+0.42721064		
<i>e</i>	0.1278482	<i>i</i>	7.40385	−0.35218859	+0.04524618		
<i>P</i>	3.80	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 02	809	(2.0+	1.8−)	1991 09 06	809	(2.8+	3.6+)	1998 04 23	704	0.2−	0.3+
1991 08 02	809	(0.1−	2.1−)	1991 09 06	809	0.3−	1.5+	1998 04 24	704	1.0+	0.1+
1991 08 02	809	0.3+	1.6−	1998 03 24	704	1.1+	0.5−	1998 04 24	704	0.6−	0.3−
1991 08 07	809	0.7+	0.3+	1998 03 24	704	1.8−	0.3−	1998 04 24	704	1.7+	0.9−
1991 08 07	809	0.1+	0.1−	1998 03 24	704	1.9−	1.5−	1998 04 24	704	0.5−	1.5−
1991 08 07	809	0.3+	0.5+	1998 03 24	704	0.6+	1.2−	1998 05 16	704	0.1+	0.0
1991 08 14	809	0.2−	0.3−	1998 03 24	704	0.1−	0.5+	1998 05 16	704	0.3−	0.4−
1991 08 14	809	0.0	0.7−	1998 04 21	704	0.1+	0.6+	1998 05 16	704	1.9+	0.2−
1991 08 14	809	0.8−	0.1−	1998 04 21	704	0.1+	0.6−	1998 05 16	704	1.1+	1.4+
1991 09 04	809	(3.0+	2.5+)	1998 04 21	704	0.2−	0.4−	1998 05 28	704	0.8+	1.0+
1991 09 04	809	(1.7+	3.1+)	1998 04 21	704	0.8+	0.6+	1998 05 28	704	0.3+	0.3+
1991 09 04	809	(0.3+	3.0+)	1998 04 21	704	0.5−	1.2+	1998 05 28	704	0.7−	1.3+
1991 09 05	809	(3.2+	0.2+)	1998 04 23	704	0.6−	0.0	1998 05 28	704	0.6+	0.1+
1991 09 05	809	0.2+	0.3−	1998 04 23	704	0.5−	0.5−	1998 05 28	704	0.6−	1.2+
1991 09 05	809	(2.7−	1.2−)	1998 04 23	704	0.1−	0.3−				
1991 09 06	809	(7.3+	5.4+)	1998 04 23	704	1.5−	0.3+				

1991 PT₉ = 1998 OL₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.28510325	<i>ω</i>	357.60515	+0.25605470	+0.87978032		
<i>a</i>	2.2863073	<i>Ω</i>	287.01329	−0.87978789	+0.04042605		
<i>e</i>	0.2181516	<i>i</i>	24.76253	−0.40051125	+0.47365844		
<i>P</i>	3.46	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 07 18	372	0.4+	0.2−	1998 06 30	704	0.1−	0.1+	1998 07 25	735	0.2−	0.4+
1991 07 18	372	0.5+	1.1+	1998 06 30	704	0.4−	0.3−	1998 07 25	735	0.0	0.2+
1991 08 13	675	0.6−	0.4−	1998 06 30	704	0.8−	0.3+	1998 07 25	735	0.0	0.4+
1991 08 13	675	0.5−	0.7−	1998 06 30	704	1.3−	0.1+	1998 07 25	761	0.2+	0.4−
1991 08 16	675	0.4−	0.3+	1998 07 17	699	0.8+	0.2−	1998 07 25	761	0.8+	0.4−
1991 08 16	675	0.0	0.5+	1998 07 17	699	0.7+	0.3−	1998 07 25	682	0.4−	0.1+
1998 06 25	699	1.0+	0.6−	1998 07 17	699	0.8+	0.0	1998 07 25	682	0.3−	0.0
1998 06 25	699	1.1+	0.2−	1998 07 19	682	0.0	0.3−	1998 07 25	682	0.7−	0.0
1998 06 25	699	0.8+	0.2−	1998 07 19	682	0.3−	0.2−				
1998 06 30	704	1.0−	0.9+	1998 07 19	682	0.2−	0.2+				

1991 PD₁₀ = 1993 BU₂

Id. S. Nakano, A. Gnädig, E. Bowell (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.27035321	<i>ω</i>	117.20038	+0.00690514	−0.99823162		
<i>a</i>	2.3687271	<i>Ω</i>	332.21268	+0.86681443	+0.03541388		
<i>e</i>	0.0407491	<i>i</i>	7.27591	+0.49858305	−0.04774397		
<i>P</i>	3.65	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

1998 AUG. 8

Residuals in seconds of arc

1991 08 07	675	0.0	1.2−	1991 09 16	675	0.6+	0.3−	1993 01 23	400	(4.8+	0.3+)
1991 08 07	675	0.2−	0.3+	1991 09 16	675	0.7+	0.4+	1993 01 24	400	0.1+	0.2+
1991 08 08	675	0.8+	0.5+	1991 09 17	675	1.1+	1.3−	1993 01 24	400	0.1−	0.1−
1991 08 08	675	0.7−	0.2−	1991 09 17	675	1.7+	0.1+	1998 06 24	699	0.3−	0.3+
1991 08 10	675	0.5+	0.1−	1991 09 30	691	1.3−	0.5+	1998 06 24	699	0.0	0.1+
1991 09 10	675	0.7−	0.3+	1991 09 30	691	1.3−	0.3+	1998 06 24	699	0.1+	0.1+
1991 09 10	675	(2.1−	2.8−)	1991 09 30	691	1.2−	0.6+				

1991 PV₁₁ = 1990 FG₅ = 1998 MR₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.26220061	<i>ω</i>	93.54314	−0.47287850	+0.87257393		
<i>a</i>	2.4175767	<i>Ω</i>	147.31818	−0.87133209	−0.44241312		
<i>e</i>	0.1563041	<i>i</i>	13.10997	−0.13102028	−0.20708781		
<i>P</i>	3.76	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 03 17	095	(57.3−	12.2+)	1991 09 16	675	0.1−	0.8−	1998 06 25	704	1.1+	0.1−
1990 03 17	095	(53.8−	5.9+)	1998 06 03	704	0.4−	0.1−	1998 06 25	704	0.6+	0.6−
1991 08 07	675	0.3+	1.1−	1998 06 03	704	1.0−	0.9−	1998 06 25	704	0.1+	0.7+
1991 08 07	675	0.9−	1.7−	1998 06 03	704	0.2−	0.2+	1998 06 25	704	0.5+	0.3−
1991 08 08	675	0.3−	0.9+	1998 06 03	704	0.8+	0.2+	1998 06 25	704	0.6−	0.3−
1991 08 08	675	0.4−	1.0+	1998 06 03	704	0.0	0.0	1998 07 20	595	0.0	0.0
1991 09 12	675	0.0	0.3+	1998 06 19	704	0.5−	0.3−	1998 07 20	595	0.2+	0.1+
1991 09 12	675	0.0	0.8+	1998 06 19	704	0.3−	0.0	1998 07 20	595	0.0	0.5+
1991 09 14	675	0.5+	0.4+	1998 06 19	704	0.8−	0.7+	1998 07 21	595	0.4+	0.4−
1991 09 14	675	0.4+	0.4+	1998 06 19	704	0.3+	0.6+	1998 07 21	595	0.1+	0.1−
1991 09 16	675	0.5+	0.5−	1998 06 19	704	0.3−	0.1−	1998 07 21	595	0.2+	0.3+

1991 PW₁₁ = 1998 HJ₇₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Gnädig			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.25904402	<i>ω</i>	101.18891	+0.32308934	+0.94621573		
<i>a</i>	2.4371766	<i>Ω</i>	187.72508	−0.91013710	+0.30574637		
<i>e</i>	0.1862872	<i>i</i>	7.26650	−0.25935252	+0.10580620		
<i>P</i>	3.80	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 07	675	1.1+	1.6+	1998 04 21	704	0.0	0.3+	1998 04 22	704	0.6−	0.2−
1991 08 07	675	0.7+	1.2+	1998 04 21	704	0.0	0.3−	1998 04 22	704	0.0	0.1−
1991 08 08	675	0.7−	1.3−	1998 04 21	704	0.4−	0.4+	1998 04 22	704	0.6+	0.0
1991 08 08	675	1.2−	1.6−	1998 04 21	704	0.0	0.2−	1998 04 22	704	0.4−	0.1+
1991 09 14	675	0.1+	0.0	1998 04 21	704	0.1−	0.1−				
1991 09 14	675	0.0	0.1+	1998 04 22	704	0.8+	0.2+				

1991 PA₁₅ = 1991 RW₆ = 1998 MB₃₆Id. S. Nakano (d, *MPC* 19822), G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>		(2000.0)		P	Q		
<i>n</i>	0.27553459	<i>ω</i>	151.96607	+0.96097720	+0.27599193		
<i>a</i>	2.3389376	<i>Ω</i>	192.05712	−0.26760870	+0.91035105		
<i>e</i>	0.1678297	<i>i</i>	5.14774	−0.07005994	+0.30836572		
<i>P</i>	3.58	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 08 06	675	0.4+	1.6+	1991 09 04	413	1.0−	0.7+	1998 06 24	704	1.7−	0.4+
1991 08 06	675	0.4−	1.1−	1991 09 14	675	0.8−	0.3+	1998 06 26	704	1.4+	0.3−
1991 08 08	675	0.5+	0.4−	1991 09 14	675	0.5+	1.5−	1998 06 26	704	1.1+	0.5+
1991 08 08	675	0.3−	0.7−	1998 06 24	704	2.3−	0.2−	1998 06 26	704	0.5+	1.0−
1991 09 03	413	0.5+	0.1−	1998 06 24	704	1.0+	0.0	1998 06 26	704	0.4+	0.9−
1991 09 03	413	0.6+	1.2+	1998 06 24	704	0.3−	1.4+				

1998 AUG. 8

M.P.C. 32225

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	272.18393	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27068707	ω 229.82005	+0.76805607	-0.63997519
<i>a</i>	2.3667790	Ω 169.89812	+0.61997920	+0.73418078
<i>e</i>	0.0868658	<i>i</i> 7.48187	+0.16036104	+0.22673849
<i>P</i>	3.64	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 08 07	675	0.3+	1.6-	1991 09 13	675	0.7-	1.4-	1997 03 11	809	1.5-	2.1-
1991 08 08	675	0.6+	0.2-	1991 09 16	675	1.4+	0.0	1997 03 11	809	1.3-	1.6-
1991 09 06	511	0.8-	0.9-	1991 09 16	675	0.8+	0.0	1998 07 16	699	0.1+	0.3+
1991 09 06	511	0.5-	2.0-	1997 03 10	809	0.8+	0.5+	1998 07 16	699	0.3-	0.7+
1991 09 07	511	0.0	2.3+	1997 03 10	809	1.0+	1.0+	1998 07 16	699	0.1-	0.6+
1991 09 07	511	1.0-	0.3+	1997 03 10	809	1.1+	1.0+				
1991 09 13	675	0.9+	0.2-	1997 03 11	809	0.9-	1.8-				

1991 RS = 1954 RZ = 1987 SS₂₇ = 1987 SV₂₉ = 1998 EA₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	253.99573	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23853783	ω 136.11234	+0.64694845	+0.76209690
<i>a</i>	2.5749247	Ω 174.03036	-0.75000311	+0.64206300
<i>e</i>	0.1950771	<i>i</i> 14.36765	-0.13767002	+0.08344708
<i>P</i>	4.13	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1954 09 04	675	0.1-	0.9+	1998 03 02	327	0.4-	0.3-	1998 03 20	704	0.3+	0.4-
1954 09 04	675	(1.0-	3.1-)	1998 03 03	704	0.1-	0.2-	1998 03 20	704	0.2-	0.5+
1987 09 24	095	0.1+	0.5-	1998 03 03	704	0.1-	0.0	1998 03 20	704	0.6+	0.9+
1987 09 27	095	(4.1-	4.7+)	1998 03 03	704	0.3+	0.9-	1998 03 22	704	0.1+	0.3+
1991 09 04	675	0.4-	0.4+	1998 03 03	704	0.8-	0.2-	1998 03 22	704	0.9-	0.5+
1991 09 04	675	0.0	1.8+	1998 03 03	704	(6.0-	0.8+)	1998 03 22	704	0.0	1.3+
1991 09 07	675	(1.3-	58.7-)	1998 03 04	704	(2.7-	0.0)	1998 03 22	704	0.7-	0.3-
1991 09 07	675	0.0	1.9-	1998 03 04	704	(3.3-	0.3-)	1998 03 22	704	1.9-	1.4-
1991 09 14	675	0.6+	1.2-	1998 03 04	704	(3.1-	0.5-)	1998 03 22	327	0.4+	0.4+
1991 09 14	675	0.2+	1.2-	1998 03 04	704	(3.2-	1.4-)	1998 03 22	327	0.2+	0.2+
1998 02 26	566	0.6+	0.8-	1998 03 05	327	0.6-	0.5+	1998 03 22	327	0.0	0.0
1998 02 26	566	0.9+	0.8-	1998 03 05	327	0.0	0.1-	1998 03 27	566	0.2+	0.6-
1998 02 26	566	0.4+	0.9-	1998 03 05	327	0.2-	0.3+	1998 03 27	566	0.1+	0.4+
1998 03 02	327	0.0	0.0	1998 03 20	704	0.7+	0.5-	1998 03 27	566	0.9+	0.5+
1998 03 02	327	0.1-	0.1-	1998 03 20	704	0.2-	0.5-				

1991 RW₁₂ = 1953 PK₁ = 1976 SO₉ = 1998 MG₂₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	351.29426	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26162235	ω 103.86600	+0.37217711	+0.92811756
<i>a</i>	2.4211377	Ω 188.00162	-0.87471990	+0.34746847
<i>e</i>	0.0468373	<i>i</i> 3.72979	-0.31040183	+0.13365426
<i>P</i>	3.77	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1953 08 15	675	0.7-	0.0	1991 09 11	675	1.0-	1.6-	1998 06 24	704	0.4-	1.0+
1953 08 15	675	0.5+	0.8+	1991 09 15	675	0.1+	0.1+	1998 06 26	704	0.4+	0.0
1976 09 29	095	0.1+	0.5-	1991 09 15	675	0.9+	0.8-	1998 06 26	704	0.2+	1.0-
1991 09 10	675	0.9+	0.7+	1998 06 24	704	0.8+	0.2+	1998 06 26	704	1.2-	0.7-
1991 09 10	675	1.9-	0.8+	1998 06 24	704	0.4+	0.3-	1998 06 26	704	0.3-	0.3+
1991 09 11	675	1.0+	0.8+	1998 06 24	704	0.0	0.2-				

1991 RA₁₈ = 1998 FJ₁₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	182.27409	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.22355935	ω 153.76440	+0.98532696	-0.16780658
<i>a</i>	2.6886905	Ω 215.93910	+0.14576545	+0.92236559
<i>e</i>	0.1326743	<i>i</i> 3.04451	+0.08878745	+0.34796935
<i>P</i>	4.41	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1991 09 13	675	0.4-	0.4-	1991 09 16	675	0.5+	0.1+	1998 03 29	704	0.1-	1.1-
1991 09 13	675	0.8-	0.5-	1998 03 29	704	1.4+	1.4-	1998 04 01	704	1.3+	0.4+
1991 09 15	675	1.0-	0.4-	1998 03 29	704	0.2-	0.4+	1998 04 01	704	0.1+	1.3-
1991 09 15	675	0.7+	0.9+	1998 03 29	704	0.6+	0.6+	1998 04 01	704	0.2-	2.1+
1991 09 16	675	1.0+	0.3+	1998 03 29	704	1.3-	0.3+	1998 04 01	704	1.6-	0.1-

1991 TS = 1998 MP₂₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	329.24318	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26262559	ω 193.03005	+0.80397083	+0.58872063
<i>a</i>	2.4149678	Ω 130.58202	-0.53521191	+0.77784193
<i>e</i>	0.1052613	<i>i</i> 6.34234	-0.25918935	+0.21993169
<i>P</i>	3.75	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1991 09 12	675	0.5+	0.8+	1991 10 05	413	0.2+	0.1+	1998 06 24	704	0.7+	0.7+
1991 09 12	675	0.5-	0.1-	1991 10 07	413	0.2-	0.8+	1998 06 24	704	0.4+	1.1-
1991 09 16	675	0.4+	1.1-	1991 10 15	413	0.3+	0.0	1998 06 26	704	0.3+	0.2+
1991 09 16	675	0.3-	0.4+	1998 06 24	704	1.0-	0.6-	1998 06 26	704	0.1+	0.3-
1991 10 01	413	1.1+	0.0	1998 06 24	704	0.4+	1.1+	1998 06 26	704	0.5-	0.2-
1991 10 02	413	1.6-	1.1-	1998 06 24	704	0.3-	1.3-	1998 06 26	704	0.1+	1.5+

1991 VY₁ = 1998 NB

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	319.93188	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27054161	ω 91.54577	+0.92187933	-0.09803924
<i>a</i>	2.3676273	Ω 274.19410	-0.06261976	+0.91704797
<i>e</i>	0.2805151	<i>i</i> 22.07844	+0.38238366	+0.38653762
<i>P</i>	3.64	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1991 11 05	675	0.4+	0.2+	1991 12 07	675	(2.3+	1.5+)	1998 07 06	596	0.7-	0.1-
1991 11 06	675	1.0+	0.1-	1998 06 30	704	0.0	0.5-	1998 07 06	596	0.5+	0.5+
1991 11 06	675	0.6+	0.0	1998 06 30	704	0.2-	0.2+	1998 07 06	596	0.2-	0.2-
1991 11 13	675	0.6+	1.4+	1998 06 30	704	0.3-	0.6+	1998 07 19	127	0.8+	1.0-
1991 11 13	675	0.3-	0.8+	1998 06 30	704	0.6-	0.8+	1998 07 19	127	0.5+	1.3-
1991 12 01	675	0.6-	1.1-	1998 07 05	595	0.3-	0.2-	1998 07 22	127	1.0+	1.0+
1991 12 01	675	0.1-	0.5-	1998 07 05	595	0.4-	0.2-	1998 07 22	127	0.9+	0.8+
1991 12 03	675	1.7-	1.6-	1998 07 05	595	0.5-	0.3-				
1991 12 07	675	0.2+	0.9+	1998 07 06	595	0.6-	0.2-				

1991 VU₂ = 1998 HO₁₀₄

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	206.87769	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.22519062	ω 297.01779	+0.93925035	-0.26938896
<i>a</i>	2.6756904	Ω 79.24084	+0.33720943	+0.83982381
<i>e</i>	0.2016815	<i>i</i> 12.50349	-0.06402015	+0.47130198
<i>P</i>	4.38	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1991 11 04	894	1.3+	0.4+	1998 03 24	704	1.3+	1.1-	1998 04 23	704	0.6-	0.2+
1991 11 04	894	1.9-	0.6-	1998 03 24	704	0.0	1.9+	1998 04 24	704	0.6-	0.2+
1991 11 13	894	0.4+	0.6+	1998 03 24	704	(7.1-	0.9+)	1998 04 24	704	0.0	1.1-
1991 11 13	894	0.2-	0.1-	1998 04 23	704	0.3+	0.5+	1998 04 24	704	1.2+	0.8-
1991 11 17	894	0.5-	0.3-	1998 04 23	704	1.3-	0.2-	1998 04 24	704	1.5+	0.7-
1991 11 17	894	0.8+	0.1-	1998 04 23	704	0.7-	0.4+	1998 04 24	704	0.1+	0.4-
1998 03 24	704	0.3-	0.4-	1998 04 23	704	1.0-	1.5+				

1991 VA₃ = 1998 KT₆₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	243.53524		(2000.0)		P		Q				
<i>n</i>	0.23499209	ω	114.97184		+0.96922989		−0.15502558				
<i>a</i>	2.6007616	Ω	254.41609		+0.08252508		+0.93645820				
<i>e</i>	0.2165639	<i>i</i>	11.44957		+0.23191167		+0.31466349				
<i>P</i>	4.19	<i>H</i>	13.5	<i>G</i>	0.15		<i>U</i>	4			
Residuals in seconds of arc											
1991 11 09	402	0.7+	0.9−	1991 11 30	402	0.3−	0.3−	1998 05 24	704	0.2−	1.0−
1991 11 09	402	1.0+	0.3−	1998 04 30	566	0.3+	0.7+	1998 05 24	704	0.1−	1.0−
1991 11 12	402	0.3+	0.8+	1998 04 30	566	0.4+	1.0+	1998 05 25	704	1.5−	0.5−
1991 11 12	402	0.3+	0.2+	1998 04 30	566	0.3+	1.0+	1998 05 25	704	0.6+	0.1−
1991 11 15	402	0.3−	0.2+	1998 05 24	704	0.8−	0.6−	1998 05 25	704	0.8−	0.2+
1991 11 15	402	1.5−	0.2−	1998 05 24	704	0.3−	0.6−	1998 05 25	704	0.8+	0.6+
1991 11 30	402	0.1−	0.0	1998 05 24	704	1.1+	0.7−				

1992 DS₅ = 1994 PC₂₇ = 1998 HG₇₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	39.94828		(2000.0)		P		Q				
<i>n</i>	0.17720002	ω	80.57709		-0.99790437		-0.05441105				
<i>a</i>	3.1392570	Ω	96.29805		+0.03625043		-0.91840204				
<i>e</i>	0.1250625	<i>i</i>	2.01902		+0.05359820		-0.39188918				
<i>P</i>	5.56	<i>H</i>	13.7		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1992 02 29	809	0.2+	0.2+	1994 08 13	809	(4.0+	2.3+)	1998 04 21	704	0.8+	0.3+
1992 03 03	809	0.3-	0.0	1994 08 13	809	1.8+	1.9+	1998 04 22	704	0.5+	0.5-
1992 03 07	809	0.0	0.2-	1994 08 13	809	(2.0+	3.2+)	1998 04 22	704	1.3+	0.2-
1994 08 12	809	1.1-	1.1-	1998 04 21	704	1.6-	1.4+	1998 04 22	704	0.1-	0.1-
1994 08 12	809	0.5-	1.0-	1998 04 21	704	0.5-	0.4-	1998 04 22	704	0.6-	0.0
1994 08 12	809	0.1-	0.2+	1998 04 21	704	0.2+	0.6-				

1992 DK₆ = 1998 KY₂₁

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	221.24204		(2000.0)		P		Q				
<i>n</i>	0.19573631	ω	329.71111		+0.90087104		-0.43205365				
<i>a</i>	2.9377970	Ω	55.94521		+0.40773832		+0.80905822				
<i>e</i>	0.1199781	<i>i</i>	2.90332		+0.14893229		+0.39844001				
<i>P</i>	5.04	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1992 02 29	809	0.1+	0.2-	1998 05 01	704	1.3-	0.5+	1998 05 24	704	0.7-	0.5+
1992 03 03	809	0.1-	0.2+	1998 05 22	704	0.6+	0.4+	1998 05 24	704	(1.2-	2.1-)
1992 03 07	809	0.1-	0.0	1998 05 22	704	(1.4-	2.4-)	1998 05 24	704	0.7-	0.4-
1998 05 01	704	1.0+	1.3-	1998 05 22	704	0.9+	0.7-	1998 05 24	704	(3.1-	1.3+)
1998 05 01	704	0.9+	0.6+	1998 05 22	704	(3.2-	0.0)				
1998 05 01	704	0.8-	0.4+	1998 05 22	704	(5.3-	0.5+)				

1992 DM₈ = 1998 HY₁₀₆

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	30.96081		(2000.0)		P		Q				
n	0.17784373	ω	13.59599		-0.99401647		+0.10213668				
a	3.1316773	Ω	171.96025		-0.10637369		-0.98569736				
e	0.1167520	i	16.07287		+0.02481743		-0.13404781				
P	5.54	H	14.0		G	0.15	U	4			
Residuals in seconds of arc											
1992 02 28	675	1.0+	0.1+	1998 03 24	704	0.9-	1.9+	1998 04 23	704	0.4+	0.0
1992 02 28	675	0.8+	0.4-	1998 03 24	704	0.5-	0.0	1998 04 23	704	0.9-	0.6-
1992 02 29	809	0.3-	0.5-	1998 03 24	704	0.5+	0.7-	1998 04 24	704	0.5+	0.7+
1992 03 03	809	0.5-	0.2+	1998 03 24	704	0.4+	0.5-	1998 04 24	704	(0.2+	2.0-)

1992 03 05	809	0.5-	0.3+	1998 04 23	704	1.1+	0.1-	1998 04 24	704	0.5-	0.9+
1992 03 08	809	0.5-	0.4+	1998 04 23	704	0.6+	0.8-	1998 04 24	704	0.0	0.8+
1998 03 24	704	0.2+	0.4-	1998 04 23	704	0.9-	1.3-				

1992 EJ₆ = 1998 MF₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	258.62344		(2000.0)		P		Q				
<i>n</i>	0.21381452	ω	275.80349		+0.80242613		-0.58951667				
<i>a</i>	2.7697756	Ω	120.35501		+0.58115371		+0.73671671				
<i>e</i>	0.0268144	<i>i</i>	6.16310		+0.13554584		+0.33123797				
<i>P</i>	4.61	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1992 03 01	809	0.6+	0.2-	1998 06 16	691	0.8+	0.3+	1998 06 26	809	0.7-	0.7-
1992 03 04	809	0.8-	0.1+	1998 06 16	691	0.4+	0.3-	1998 06 27	809	0.5+	0.7+
1992 03 09	809	0.3+	0.1+	1998 06 26	809	0.0	0.4-	1998 06 27	809	0.3+	0.5+
1998 06 16	691	1.2-	0.3+	1998 06 26	809	0.2-	1.1-	1998 06 27	809	0.0	0.6+

1992 EO₉ = 1998 FX₄₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	282.39676		(2000.0)		P		Q				
n	0.17594259	ω	294.00956		+0.36770429		+0.92994222				
a	3.1541963	Ω	357.56386		-0.84429349		+0.33338034				
e	0.1292451	i	1.36843		-0.38982311		+0.15512906				
P	5.60	H	13.0	G	0.15	U	5				
Residuals in seconds of arc											
1992 02 27	675	0.7+	2.2-	1998 03 20	704	0.3+	1.2-	1998 03 29	704	0.5+	0.0
1992 02 27	675	1.7-	0.2-	1998 03 22	704	0.0	0.4+	1998 03 29	704	0.4+	1.1+
1992 02 28	675	1.7+	0.8-	1998 03 22	704	0.1+	0.1+	1998 03 29	704	0.4-	1.1+
1992 02 28	675	0.4+	0.9-	1998 03 22	704	0.2+	0.3-	1998 03 29	704	0.8-	0.4+
1992 03 02	809	0.9-	1.6+	1998 03 22	704	0.4-	0.3+	1998 03 29	704	0.2+	0.0
1992 03 04	809	0.4-	2.0+	1998 03 22	704	0.6+	0.6-	1998 04 19	704	0.4+	1.0+
1992 03 07	809	0.2+	0.8+	1998 03 28	704	0.3-	0.0	1998 04 19	704	1.6+	0.1+
1998 03 20	704	0.5-	0.4-	1998 03 28	704	0.8+	0.6-	1998 04 19	704	1.3-	1.2-
1998 03 20	704	0.9-	0.2+	1998 03 28	704	0.4+	0.2-	1998 04 19	704	0.5+	0.2-
1998 03 20	704	0.2+	0.3+	1998 03 28	704	0.3-	0.2+	1998 04 19	704	0.9-	0.5+
1998 03 20	704	0.3-	0.1-	1998 03 28	704	0.1-	1.2-				

1992 EH₁₀ = 1998 HO₆₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	67.57622	(2000.0)		P			Q				
n	0.18022922	ω	329.71023	−0.83571679			−0.54916038				
a	3.1039824	Ω	176.98016	+0.50600453			−0.77044693				
e	0.0888562	i	0.62391	+0.21339369			−0.32378141				
P	5.47	H	14.5	G	0.15	U	7				
Residuals in seconds of arc											
1992 02 25	675	0.5+	0.3+	1992 03 04	809	1.1−	0.8+	1998 04 21	704	0.6−	0.0
1992 02 25	675	0.6+	1.2−	1992 03 07	809	(7.5−	3.1+)	1998 04 22	704	1.0+	1.0−
1992 02 25	691	0.2−	0.1−	1998 04 21	704	0.8−	0.4+	1998 04 22	704	0.7+	0.3+
1992 02 25	691	0.3−	0.0	1998 04 21	704	0.5−	0.5−	1998 04 22	704	0.3+	0.6+
1992 02 25	691	0.7−	0.4+	1998 04 21	704	0.8−	0.2−	1998 04 22	704	(2.2+	0.8+)
1992 03 02	809	1.3+	0.1−	1998 04 21	704	0.2−	1.0−	1998 04 22	704	0.9+	1.3+

1992 PF = 1998 FB₅₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	279.83130		(2000.0)	P	Q
n	0.29650582	ω	135.71959	+0.73218850	+0.68110136
a	2.2273095	Ω	181.35175	-0.63571403	+0.68288668
e	0.2041614	i	2.34541	-0.24447428	+0.26413391
P	3.32	H	15.2	G 0.15	U 4

1998 AUG. 8

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Residuals in seconds of arc

1992 07 25	010	0.2+	1.0+	1992 08 09	010	0.5-	0.0	1998 03 22	704	0.1-	0.7-
1992 07 25	010	0.7+	0.8+	1992 08 09	010	0.4-	0.3+	1998 03 22	704	0.0	0.9-
1992 07 25	010	0.1-	0.2+	1998 02 26	566	0.2+	0.4+	1998 03 22	704	1.4+	0.2+
1992 07 26	010	0.0	0.4+	1998 02 26	566	0.4-	0.5+	1998 03 22	704	0.1-	0.5+
1992 07 26	010	0.1+	0.3+	1998 02 26	566	0.4+	0.4+	1998 04 19	704	0.5-	0.2-
1992 07 26	010	1.1-	0.7-	1998 03 20	704	0.1+	0.0	1998 04 19	704	0.4-	1.0-
1992 08 04	675	1.0+	0.2-	1998 03 20	704	0.9+	0.7+	1998 04 19	704	0.3+	0.5-
1992 08 05	675	0.4+	0.2-	1998 03 20	704	0.2+	0.2+	1998 04 19	704	0.6+	1.0-
1992 08 05	675	0.9+	0.2+	1998 03 20	704	0.4-	1.3-	1998 04 20	704	0.3+	0.6-
1992 08 07	675	1.5+	0.6+	1998 03 20	704	(2.3-	0.8-)	1998 04 20	704	0.8+	0.7+
1992 08 07	675	0.5+	0.1+	1998 03 22	704	0.1-	0.5+	1998 04 20	704	1.1-	0.6+
1992 08 08	010	0.4-	0.8-	1998 03 22	704	0.5+	0.2+	1998 04 20	704	0.4-	0.0
1992 08 08	010	0.8-	0.5-	1998 03 22	704	0.3-	1.0+	1998 04 20	704	1.6-	0.1-
1992 08 08	010	1.4-	0.0	1998 03 22	704	0.0	1.7+				
1992 08 09	010	0.7-	1.1-	1998 03 22	704	0.4-	1.0-				

1992 RF₂ = 1998 HQ₁₄₃

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>	183.62320	(2000.0)		P		Q	
<i>n</i>	0.27922944	<i>ω</i>	213.24634	+0.68120524		-0.73187219	
<i>a</i>	2.3182587	<i>Ω</i>	193.84471	+0.68698666		+0.64751972	
<i>e</i>	0.1331522	<i>i</i>	4.30406	+0.25299949		+0.21232359	
<i>P</i>	3.53	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 09 02	809	0.2-	0.3-	1992 09 23	809	0.8-	0.7-	1998 04 22	704	0.6-	0.1+
1992 09 02	809	0.5-	0.5-	1992 09 23	809	0.8-	0.3-	1998 04 22	704	(2.6-	1.6+)
1992 09 02	809	0.6-	0.5-	1998 04 21	704	1.3+	1.9+	1998 05 01	704	0.4-	0.8-
1992 09 03	809	0.5+	0.6-	1998 04 21	704	(1.8-	3.1+)	1998 05 01	704	0.0	0.0
1992 09 22	809	0.9+	1.0+	1998 04 21	704	0.3+	0.3-	1998 05 01	704	0.0	0.9-
1992 09 22	809	1.2+	1.4+	1998 04 21	704	0.1-	0.8+	1998 05 01	704	1.9-	1.1+
1992 09 22	809	0.9+	1.0+	1998 04 22	704	0.0	0.5-	1998 05 01	704	0.4+	1.4-
1992 09 23	809	0.7-	0.3-	1998 04 22	704	1.1+	0.3+				

1992 RY₄ = 1996 PR₈

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>	190.63843	(2000.0)		P		Q	
<i>n</i>	0.23888959	<i>ω</i>	314.49511	+0.29106191		+0.95664053	
<i>a</i>	2.5723964	<i>Ω</i>	332.42081	-0.87085484		+0.26014869	
<i>e</i>	0.1747273	<i>i</i>	1.36628	-0.39609949		+0.13100211	
<i>P</i>	4.13	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 09 02	809	1.1+	0.6-	1992 10 04	691	0.4-	0.6+	1996 08 09	809	0.9+	0.4+
1992 09 02	809	0.6+	1.3-	1996 07 14	809	(7.2-	3.0+)	1996 08 15	566	0.0	1.5+
1992 09 02	809	0.4-	0.5-	1996 07 14	809	(7.2-	4.2+)	1996 08 15	566	0.2+	1.3+
1992 09 03	809	1.8+	1.8-	1996 07 14	809	(8.7-	2.4+)	1996 08 15	566	0.2+	1.6+
1992 10 04	691	0.9-	0.4+	1996 08 08	809	1.0-	1.0-	1996 09 08	809	0.2+	0.6+
1992 10 04	691	0.4-	0.7+	1996 08 08	809	1.9-	1.4-	1996 09 08	809	0.0	0.1-
1992 10 04	691	0.2-	0.3+	1996 08 08	809	1.6-	1.6-	1996 09 08	809	0.5-	0.1+
1992 10 04	691	0.2-	0.3+	1996 08 09	809	1.8+	0.1-				
1992 10 04	691	0.3-	0.5+	1996 08 09	809	0.9+	0.5+				

1992 SN₂ = 1998 HX₈₄

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>	158.23115	(2000.0)		P		Q	
<i>n</i>	0.26677328	<i>ω</i>	298.08337	+0.42551013		-0.90399738	
<i>a</i>	2.3898712	<i>Ω</i>	126.67338	+0.84741572		+0.38190806	
<i>e</i>	0.1839894	<i>i</i>	2.97249	+0.31753382		+0.19218471	
<i>P</i>	3.69	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 09 21	033	0.9+	1.7-	1998 04 21	704	0.2+	0.9-	1998 05 01	704	0.3+	1.6+
1992 09 22	033	0.4-	1.5+	1998 04 21	704	0.3+	1.9-	1998 05 01	704	0.6-	0.4+
1992 09 23	033	0.8+	0.2-	1998 04 22	704	0.4-	0.2-	1998 05 01	704	1.2-	0.5+
1992 09 24	033	0.8+	0.4+	1998 04 22	704	(1.1-	2.3-)	1998 05 22	704	0.7+	0.7+
1992 09 26	033	0.4-	0.3+	1998 04 22	704	0.4+	0.5-	1998 05 22	704	1.0-	0.9-
1992 09 27	033	0.6-	0.2-	1998 04 22	704	0.3-	0.3+	1998 05 22	704	1.7+	0.1-
1992 09 28	033	1.1-	0.2-	1998 04 22	704	1.2-	0.7-	1998 05 22	704	0.1-	1.7+
1998 04 21	704	0.4+	0.2+			0.9-	1.0-				
1998 04 21	704	1.7+	0.6+	1998 05 01	704	(2.6-	0.8-)				

1992 SV₁₁ = 1998 FG₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano							
<i>M</i>	249.95963	(2000.0)		P		Q	
<i>n</i>	0.27032548	<i>ω</i>	307.15041	+0.68869941		+0.72495356	
<i>a</i>	2.3688891	<i>Ω</i>	6.41514	-0.62781550		+0.60429523	
<i>e</i>	0.1316890	<i>i</i>	5.97919	-0.36268558		+0.33055954	
<i>P</i>	3.65	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 09 28	691	0.4-	0.2-	1992 10 02	691	0.7+	0.3+	1998 03 20	691	1.0-	0.3-
1992 09 28	691	0.1-	0.2-	1992 10 02	691	0.6+	0.2+	1998 03 20	691	1.0-	0.3-
1992 09 28	691	0.2-	0.0	1998 03 20	704	1.1+	0.2+	1998 03 25	691	0.4-	0.1-
1992 09 29	691	0.1+	0.1+	1998 03 20	704	0.1+	1.6+	1998 03 25	691	0.4-	0.3-
1992 09 29	691	0.5-	0.1+	1998 03 20	704	0.9+	1.1-	1998 03 25	691	0.1-	0.3-
1992 09 29	691	0.7-	0.3-	1998 03 20	704	1.6+	0.8+				
1992 10 02	691	0.5+	0.1-	1998 03 20	691	0.9-	0.3-				

1992 SP₁₆ = 1996 PN₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano							
<i>M</i>	128.83201	(2000.0)		P		Q	
<i>n</i>	0.23344596	<i>ω</i>	19.27276	+0.99086536		-0.13449752	
<i>a</i>	2.6122324	<i>Ω</i>	348.44369	+0.11640515		+0.88976738	
<i>e</i>	0.2079622	<i>i</i>	2.80705	+0.06808580		+0.43614725	
<i>P</i>	4.22	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 09 21	033	0.2+	0.4-	1992 09 26	033	0.1+	0.0	1996 08 12	566	0.7-	0.7+
1992 09 21	033	0.3+	0.4-	1992 09 27	033	0.0	0.0	1996 08 20	566	0.6+	0.5-
1992 09 22	033	0.3+	0.2-	1992 09 28	033	0.1-	0.6+	1996 08 20	566	0.5+	0.8-
1992 09 24	033	0.3-	0.5+	1996 08 12	566	0.4-	0.3+	1996 08 20	566	0.3+	0.5-
1992 09 24	033	0.5-	0.1+	1996 08 12	566	0.3-	0.8+				

1992 SY₁₇ = 1985 QE

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Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>	274.29195	(2000.0)		P		Q	
<i>n</i>	0.28447066	<i>ω</i>	71.46459	+0.65228535		+0.74731931	
<i>a</i>	2.2896955	<i>Ω</i>	239.92068	-0.73886951		+0.58963300	
<i>e</i>	0.2805798	<i>i</i>	8.41536	-0.16910257		+0.30634420	
<i>P</i>	3.46	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1985 08 20	688	0.3-	0.3+	1992 10 20	675	0.5-	0.1-	1998 04 19	688	0.1-	0.3-
1985 08 20	688	0.4+	0.7-	1992 10 25	675	1.7+	0.4-	1998 04 19	688	0.1+	0.3-
1992 09 30	675	1.0-	0.1+	1992 10 25	675	0.3+	0.2-	1998 04 19	688	0.3-	0.2-
1992 09 30	675	0.6-	0.5-	1992 10 26	675	0.4-	1.1+				
1992 10 20	675	0.2+	0.0	1992 10 26	675	0.6+	0.2-				

1992 UE₆ = 1998 MY₂₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	239.41827	ω	354.30692	+0.52218305	−0.84354826		
<i>a</i>	2.2503519	Ω	64.15565	+0.78785909	+0.42080821		
<i>e</i>	0.1406277	<i>i</i>	8.01611	+0.32650103	+0.33368664		
<i>P</i>	3.38	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 10 31	877	0.2+	0.2+	1992 11 21	399	3.3−	1.8+	1992 11 28	675	0.5+	0.1+
1992 10 31	877	1.1+	1.2+	1992 11 21	894	1.0−	2.9−	1992 12 02	877	0.9−	0.8+
1992 11 02	877	0.0	0.9−	1992 11 21	894	1.6+	0.1+	1992 12 02	877	0.9+	0.0
1992 11 02	877	0.2+	0.4+	1992 11 21	877	1.2+	0.7+	1992 12 19	877	0.1−	1.1+
1992 11 03	877	1.6−	1.0−	1992 11 21	877	2.3+	1.8+	1992 12 19	877	0.2+	1.9−
1992 11 03	877	0.5−	0.2−	1992 11 22	894	3.9−	0.9−	1998 06 24	704	1.6+	0.2−
1992 11 17	402	0.9+	0.7−	1992 11 25	675	0.5+	0.8−	1998 06 24	704	0.3−	0.4−
1992 11 17	402	1.6+	0.2−	1992 11 25	675	0.9+	0.1−	1998 06 24	704	0.5−	0.2+
1992 11 18	402	0.1−	0.4−	1992 11 25	877	0.1+	1.1+	1998 06 24	704	2.2+	0.8−
1992 11 18	402	0.9−	1.1−	1992 11 25	877	0.9+	0.1−	1998 06 26	704	1.2−	1.0+
1992 11 21	399	1.2−	1.6+	1992 11 28	675	0.2+	0.2+	1998 06 26	704	1.8−	0.0

1992 WR₁ = 1978 RP₄ = 1998 KV₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	310.09683	ω	227.52995	+0.82158613	+0.55432506		
<i>a</i>	2.2588382	Ω	98.38661	−0.47557408	+0.79519644		
<i>e</i>	0.2052586	<i>i</i>	7.73290	−0.31436527	+0.24573633		
<i>P</i>	3.39	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 09 07	095	0.0	0.1+	1998 05 22	699	0.1+	0.1+	1998 06 18	691	0.3−	0.1+
1992 11 17	402	0.3−	0.4+	1998 05 23	699	1.0+	0.5−	1998 06 18	691	(2.3−	2.0−)
1992 11 17	402	0.1−	1.0+	1998 05 23	699	1.3+	0.1−	1998 06 18	691	(2.0+	2.8−)
1992 11 18	402	0.2+	1.1+	1998 05 23	699	0.8+	0.3−	1998 06 18	704	(2.3−	2.2+)
1992 11 18	402	0.5−	0.7+	1998 05 24	704	(1.0+	3.6−)	1998 06 18	704	0.5+	0.2+
1992 11 18	400	1.4+	0.9−	1998 05 24	704	0.4+	0.5−	1998 06 18	704	0.7−	1.1+
1992 11 18	400	1.8−	0.9−	1998 05 24	704	0.2−	0.1−	1998 06 18	704	0.3+	0.8+
1992 11 21	400	(0.8+	2.7−)	1998 05 24	704	(2.2+	1.6−)	1998 06 26	699	0.3−	0.0
1992 11 21	400	1.4+	0.1+	1998 05 24	704	1.8−	0.3−	1998 06 26	699	0.3+	0.1−
1992 11 28	693	0.5+	0.0	1998 06 03	704	0.5+	0.7−	1998 06 26	699	0.1+	0.1+
1992 11 28	693	1.2−	0.5−	1998 06 03	704	0.6−	0.4−	1998 06 29	691	1.5−	0.4−
1998 05 22	704	1.0+	0.3−	1998 06 03	704	0.5−	1.7+	1998 06 29	691	(2.7−	2.1−)
1998 05 22	704	0.2−	0.1+	1998 06 03	704	0.2+	0.8+	1998 06 29	691	0.2−	0.4+
1998 05 22	704	0.2+	0.4−	1998 06 16	704	0.2−	0.0	1998 06 30	699	0.2−	0.5−
1998 05 22	704	0.4−	0.3+	1998 06 16	704	0.1+	0.3−	1998 06 30	699	0.4−	0.8−
1998 05 22	704	0.1+	0.3+	1998 06 16	704	0.1+	0.0	1998 06 30	699	0.2−	0.2−
1998 05 22	699	0.3+	0.1+	1998 06 16	704	0.5+	0.7+				
1998 05 22	699	0.6+	0.0	1998 06 16	704	0.6−	0.1−				

1992 WY₃ = 1998 DO₁₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	226.40836	ω	223.89667	+0.69895943	+0.69262473		
<i>a</i>	2.5666581	Ω	91.34233	−0.59714497	+0.70227989		
<i>e</i>	0.0961737	<i>i</i>	10.26312	−0.39353984	+0.16454161		
<i>P</i>	4.11	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 11 17	691	0.1−	0.2−	1992 11 27	372	0.1−	0.1+	1998 02 27	566	0.0	0.6+
1992 11 17	691	0.0	0.0	1992 11 27	372	0.3+	0.0	1998 02 27	566	0.1+	0.5+
1992 11 17	691	0.3+	0.2−	1998 02 22	566	0.1−	0.4−	1998 02 27	566	0.3+	0.7+
1992 11 25	372	(3.8−	0.2+)	1998 02 22	566	0.1−	0.5−				
1992 11 25	372	0.5−	0.3+	1998 02 22	566	0.3−	0.8−				

1992 WC₉ = 1997 BK₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	179.15554	ω	32.86236	+0.01530473	−0.99433784		
<i>a</i>	2.3373719	Ω	56.46777	+0.88799323	−0.03482504		
<i>e</i>	0.0907081	<i>i</i>	7.24729	+0.45960176	+0.10039664		
<i>P</i>	3.57	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 11 16	400	0.7−	0.1−	1992 11 27	400	0.5+	0.8−	1997 01 28	327	0.5+	0.0
1992 11 16	400	1.3+	0.5−	1992 11 27	400	0.0	0.6+	1997 01 30	327	0.4−	0.1+
1992 11 18	399	2.3−	0.6+	1997 01 28	327	0.4−	0.2−	1997 01 30	327	0.3+	0.1−
1992 11 18	399	1.3+	0.2+	1997 01 28	327	0.0	0.1+	1997 01 30	327	0.0	0.2+

1993 BZ₁₂ = 1994 EL₆ = 1998 OD₂

Id. A. Lowe, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	52.30067	ω	122.47612	−0.30979350	+0.93234325		
<i>a</i>	5.1965747	Ω	128.33045	−0.93248649	−0.25961968		
<i>e</i>	0.0625681	<i>i</i>	13.74994	−0.18573351	−0.25166185		
<i>P</i>	11.85	<i>H</i>	10.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 01 22	809	0.8+	0.8−	1994 03 09	010	1.5+	0.9+	1998 07 16	691	0.6−	0.2−
1993 01 22	809	0.9+	0.6−	1994 03 09	010	1.1+	1.0+	1998 07 16	691	0.4−	0.4−
1993 01 22	809	1.4+	1.1−	1994 03 09	010	0.3+	0.5+	1998 07 16	691	0.0	0.5−
1993 01 28	809	0.4−	0.7+	1994 03 10	010	0.2−	0.8−	1998 07 25	691	0.1+	0.1+
1993 01 28	809	1.0−	0.2+	1994 03 10	010	1.5−	0.8−	1998 07 25	691	0.2+	0.0
1993 01 28	809	1.7−	0.7+	1994 03 10	010	1.2−	0.8−	1998 07 25	691	0.8+	0.0

1993 DJ₁ = 1993 BF₁₄ = 1989 EY₁₁ = 1998 KG₆₀Id. G. V. Williams (d, *MPC* 25032, unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	344.03737	ω	126.82878	−0.02188665	+0.98745816		
<i>a</i>	2.5813919	Ω	141.01149	−0.97804813	+0.01126890		
<i>e</i>	0.0452959	<i>i</i>	14.38963	−0.20722653	−0.15747826		
<i>P</i>	4.15	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 03 03	808	0.2+	2.0+	1993 02 19	511	(9.1−	1.1−)	1998 05 26	704	0.1+	0.4−
1989 03 03	808	(1.5+	3.7+)	1993 02 19	511	(2.8−	1.0+)	1998 05 26	704	0.2+	0.2+
1993 01 23	809	0.4−	0.7+	1993 02 20	511	(4.5−	3.0−)	1998 05 26	704	0.3+	0.2+
1993 01 28	809	0.1−	0.8+	1993 02 20	010	1.3+	0.9−	1998 05 26	704	0.3+	0.6−
1993 01 28	809	1.4−	0.4+	1993 02 20	010	1.1+	1.0−	1998 05 26	704	0.7+	0.7+
1993 02 17	511	0.8−	1.1+	1993 02 20	010	1.2+	1.4−	1998 06 03	704	0.7−	0.2−
1993 02 18	511	0.3+	0.7−	1993 02 22	010	0.2−	0.5−	1998 06 03	704	0.8−	0.4−
1993 02 18	511	(6.0+	7.2−)	1993 02 23	010	0.1+	0.5+	1998 06 03	704	0.5−	0.5+
1993 02 18	511	1.0−	1.1−	1998 05 23	704	0.4−	0.2−	1998 06 03	704	0.7−	0.6−
1993 02 18	511	(3.4−	1.5+)	1998 05 23	704	1.3+	0.3+	1998 06 03	704	1.0−	0.7−
1993 02 19	511	(3.2−	1.0−)	1998 05 23	704	0.3+	0.3−				
1993 02 19	511	(2.6−	2.6+)	1998 05 23	704	0.7+	1.4+				

1993 FW₁₅ = 1998 FN₈₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	263.22733	ω	263.72955	+0.42278612	+0.90133616		
<i>a</i>	3.0341575	Ω	31.81372	−0.74483331	+0.40472866		
<i>e</i>	0.0918243	<i>i</i>	10.27688	−0.51621239	+0.15423309		
<i>P</i>	5.29	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	6

1998 AUG. 8

M.P.C. 32229

Residuals in seconds of arc

1993 03 17	809	0.3+	0.4+	1998 03 24	704	0.3+	0.4-	1998 03 25	704	1.3-	0.9+
1993 03 18	809	0.3+	0.1+	1998 03 24	704	0.9+	1.3-	1998 03 25	704	0.4+	0.1+
1993 03 23	809	0.6-	0.6-	1998 03 24	704	1.1-	1.1+	1998 03 25	704	(2.0-	2.5+)
1993 04 16	413	0.1+	0.1+	1998 03 25	704	0.8+	0.4-				
1998 03 24	704	0.1-	0.1-	1998 03 25	704	(1.1+	2.2-)				

1993 FJ₂₃ = 1997 AD₂₅ = 1998 HJ₄₄

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	202.23738		(2000.0)	P		Q	
<i>n</i>	0.20179223	ω	178.32561	+0.94259350		-0.32405717	
<i>a</i>	2.8787222	Ω	201.13678	+0.30372791		+0.93231658	
<i>e</i>	0.0867809	<i>i</i>	12.92399	+0.13880510		+0.16053891	
<i>P</i>	4.88	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 21	809	0.3-	0.2-	1998 03 25	704	1.0+	0.4+	1998 04 20	704	1.3-	1.6+
1993 03 22	809	0.2+	0.0	1998 03 25	704	0.9-	0.1-	1998 04 20	704	(2.1+	3.2-)
1993 03 26	809	0.0	0.8-	1998 03 25	704	1.3+	0.3+	1998 04 20	704	1.0-	0.9+
1993 03 27	809	0.3-	1.3-	1998 03 25	704	(0.9+	2.5+)	1998 04 21	704	0.7+	0.8-
1993 04 16	413	0.1-	0.3-	1998 03 29	704	(0.5+	2.2+)	1998 04 21	704	0.2+	0.8+
1997 01 12	910	0.1-	0.1-	1998 03 29	704	0.9-	0.6+	1998 04 21	704	0.3+	0.6+
1997 01 12	910	0.1+	0.1-	1998 03 29	704	0.4+	1.5-	1998 04 21	704	0.3+	0.4+
1997 01 13	910	0.1-	0.1-	1998 03 29	704	0.4-	1.0-	1998 04 21	704	0.6-	0.2-
1997 01 14	910	0.0	0.0	1998 03 29	704	1.0-	0.6-	1998 04 22	704	0.1+	0.9-
1997 01 14	910	0.1-	0.1+	1998 04 01	704	0.7+	0.7+	1998 04 22	704	0.3+	0.7-
1997 01 14	910	0.0	0.1+	1998 04 01	704	1.7-	1.1+	1998 04 22	704	0.8+	1.5-
1997 01 14	910	0.0	0.1+	1998 04 01	704	0.9+	1.9+	1998 04 22	704	0.1+	0.1-
1997 01 14	910	0.0	0.1+	1998 04 01	704	0.7-	0.8+	1998 04 22	704	0.6+	0.0
1997 01 14	910	0.1+	0.2+	1998 04 01	704	0.4-	0.7+				
1998 03 25	704	0.2+	0.4+	1998 04 20	704	1.2+	1.1-				

1993 FO₂₄ = 1998 BS₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	53.99177		(2000.0)	P		Q	
<i>n</i>	0.17474260	ω	105.63903	-0.08357456		-0.99638594	
<i>a</i>	3.1686202	Ω	349.12119	+0.88070358		-0.06672828	
<i>e</i>	0.1602055	<i>i</i>	4.61254	+0.46623653		-0.05255848	
<i>P</i>	5.64	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 21	809	0.2+	0.4+	1998 01 24	566	0.2+	0.2+	1998 01 29	566	0.3-	0.2-
1993 03 22	809	0.2+	0.0	1998 01 24	566	0.3-	0.1-	1998 01 29	566	0.2+	0.2+
1993 03 26	809	0.5-	0.4-	1998 01 24	566	0.1+	0.0				
1993 04 18	413	0.1+	0.1+	1998 01 29	566	0.0	0.0				

1993 FM₂₈ = 1998 MC₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	191.29608		(2000.0)	P		Q	
<i>n</i>	0.25598839	ω	179.67738	-0.39650138		-0.91763840	
<i>a</i>	2.4565326	Ω	293.68212	+0.84221391		-0.35191451	
<i>e</i>	0.1532288	<i>i</i>	1.68650	+0.36532504		-0.18465088	
<i>P</i>	3.85	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 21	809	(4.4-	1.4+)	1998 06 19	691	0.5-	1.0+	1998 06 24	691	0.1-	0.1-
1993 03 22	809	0.8-	0.1+	1998 06 19	691	0.2-	0.5+	1998 06 30	691	0.1+	0.3-
1993 03 26	809	0.8+	0.5-	1998 06 24	691	0.5+	0.3-	1998 06 30	691	0.2-	0.4-
1993 04 17	413	0.0	0.4+	1998 06 24	691	0.1-	0.1+	1998 06 30	691	0.4+	0.5-

1993 FS₃₅ = 1998 FT₁₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	5.48828		(2000.0)	P		Q	
<i>n</i>	0.18412745	ω	137.11077	-0.99896536		+0.01464127	
<i>a</i>	3.0600159	Ω	43.78444	-0.03205356		-0.89829487	
<i>e</i>	0.0526613	<i>i</i>	3.56752	+0.03226109		-0.43914914	
<i>P</i>	5.35	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 19	809	0.5+	0.3-	1998 03 20	704	0.9+	0.7-	1998 03 22	704	0.0	0.1+
1993 03 20	809	0.1+	0.2-	1998 03 20	704	0.2+	0.2-	1998 03 22	704	0.0	1.4+
1993 03 24	809	0.4-	0.4+	1998 03 20	704	0.7-	0.2+	1998 03 22	704	0.1-	0.0
1993 04 18	413	0.2-	0.1+	1998 03 20	704	0.1-	0.6-	1998 03 22	704	0.3-	0.0
1998 03 20	704	0.3+	0.2-	1998 03 22	704	0.2-	0.1+				

1993 FD₃₇ = 1997 EM₅₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	188.09025		(2000.0)	P		Q	
<i>n</i>	0.24549099	ω	290.02909	-0.23571823		-0.97180384	
<i>a</i>	2.5260717	Ω	173.59638	+0.91008050		-0.22284977	
<i>e</i>	0.1070708	<i>i</i>	3.00605	+0.34086714		-0.07704074	
<i>P</i>	4.01	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 03 19	809	0.1+	0.0	1993 04 14	691	0.3+	0.2-	1997 03 10	809	0.6-	0.5-
1993 03 20	809	0.7+	0.2+	1993 04 14	691	0.3-	0.5-	1997 03 11	809	1.0+	0.1+
1993 03 24	809	0.5-	1.3+	1997 03 10	809	0.7-	0.5-	1997 03 11	809	0.4+	0.4+
1993 04 14	691	0.1-	0.0	1997 03 10	809	1.3-	0.6-	1997 03 11	809	0.9+	0.3+

1993 FJ₃₈ = 1998 DW₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	23.19384		(2000.0)	P		Q	
<i>n</i>	0.17486701	ω	324.07640	-0.73983582		-0.67254038	
<i>a</i>	3.1671172	Ω	173.56648	+0.64899792		-0.72055579	
<i>e</i>	0.0525624	<i>i</i>	9.36421	+0.17732643		-0.16878622	
<i>P</i>	5.64	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 19	809	0.1-	0.4+	1998 02 28	691	0.1-	0.1+	1998 03 03	691	0.1-	0.1-
1993 03 20	809	0.1+	0.4+	1998 02 28	691	0.2+	0.3+	1998 03 03	691	0.3+	0.4-
1993 03 24	809	1.1+	1.0-	1998 02 28	691	0.2-	0.0				
1993 04 16	413	1.2-	0.2+	1998 03 03	691	0.1-	0.0				

1993 FK₃₈ = 1990 UT₉ = 1998 EM₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	274.09610		(2000.0)	P		Q	
<i>n</i>	0.17621341	ω	106.59511	-0.18565495		+0.98199165	
<i>a</i>	3.1509638	Ω	152.63103	-0.92806205		-0.16353505	
<i>e</i>	0.0498573	<i>i</i>	4.36570	-0.32285148		-0.09459748	
<i>P</i>	5.59	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 24	809	0.0	1.3+	1993 04 16	413	0.3+	1.6-	1998 03 04	704	(2.3-	0.5+)
1990 10 24	809	0.3-	0.7+	1998 03 03	704	0.5-	0.2+	1998 03 04	704	0.3+	0.0
1990 10 24	809	0.1+	1.4-	1998 03 03	704	0.5+	0.8-	1998 03 04	704	0.0	0.1-
1993 03 19	809	0.3-	1.5+	1998 03 03	704	0.0	0.7-	1998 03 04	704	0.4-	0.1-
1993 03 20	809	0.1+	1.1+	1998 03 03	704	(2.9-	3.5-)				
1993 03 24	809	0.3+	0.1-	1998 03 04	704	0.1-	0.8+				

1993 FU₃₉ = 1976 GX₇ = 1977 LH = 1978 RB₂ = 1983 PR = 1994 NO₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

M	286.74820		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$ <td></td>	
n	0.17537905	ω	179.64606		-0.32929139		+0.94413919	
a	3.1609496	Ω	71.12813		-0.86634627		-0.29663711	
e	0.1170146	i	0.78570		-0.37551475		-0.14355351	
P	5.62	H	12.4		G	0.15	U	1
Residuals in seconds of arc								
1976 04 04	095	(6.7+ 3.2-)	1983 08 13	688	0.1+ 0.3-	1994 07 11	809	0.5+ 0.1+
1977 06 14	675	0.0 2.2+	1993 03 19	809	0.8- 0.4+	1994 07 11	809	0.7+ 0.7+
1977 06 14	675	(10.3- 1.3+)	1993 03 20	809	0.2+ 0.2+	1994 07 11	809	0.3+ 1.1+
1978 09 07	095	0.3- 0.3+	1993 03 22	808	0.3+ 2.3-	1994 07 12	809	0.5+ 0.9-
1978 09 12	095	0.3+ 0.3-	1993 03 22	808	0.1- 0.4+	1994 07 12	809	0.1+ 0.9-
1983 08 13	688	(2.6- 1.6-)	1993 03 24	809	0.0 0.4+	1994 07 12	809	1.8- 2.0-

1993 FP₄₀ = 1997 HW₈

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	210.22159		(2000.0)		P		Q				
<i>n</i>	0.26243927	ω	58.24592		-0.24052420		-0.97007498				
<i>a</i>	2.4161107	Ω	45.71024		+0.87412157		-0.23135189				
<i>e</i>	0.1785361	<i>i</i>	2.65885		+0.42197107		-0.07369422				
<i>P</i>	3.76	<i>H</i>	16.0		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1993 03 19	809	0.3-	0.2-	1997 04 30	704	1.0+	0.2-	1997 05 01	704	0.6+	0.4-
1993 03 20	809	0.0	0.1-	1997 04 30	704	1.4+	0.8+	1997 05 01	704	0.5+	0.5-
1993 03 24	809	0.2+	0.3+	1997 04 30	704	0.3+	0.2+	1997 05 01	704	0.6-	0.4-
1997 04 06	704	0.8+	0.2-	1997 04 30	704	0.1+	1.0+	1997 05 01	704	0.6+	0.1+
1997 04 06	704	0.8-	0.2+	1997 04 30	704	1.9-	0.1-	1997 05 01	704	2.1-	0.5-

1993 FD₄₂ = 1998 BC₁₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	124.64807		(2000.0)		P		Q				
<i>n</i>	0.17368167	ω	350.92761		+0.84309100		-0.53766178				
<i>a</i>	3.1815107	Ω	41.60293		+0.49441294		+0.76703428				
<i>e</i>	0.1514020	<i>i</i>	0.93492		+0.21155000		+0.35011173				
<i>P</i>	5.67	<i>H</i>	13.5		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1993 03 19	809	0.1-	0.0	1998 01 22	691	0.1+	0.2+	1998 01 28	691	0.3+	0.3-
1993 03 20	809	0.2+	0.2+	1998 01 22	691	0.1+	0.1+	1998 01 28	691	0.5-	0.3-
1993 03 24	809	0.1-	0.2-	1998 01 22	691	0.0	0.3+				

1993 FA₄₆ = 1997 EF₄₅

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	225.74361		(2000.0)		P		Q		
<i>n</i>	0.22223091	ω	183.67179		+0.90248754		-0.43039653		
<i>a</i>	2.6993948	Ω	201.84437		+0.39630097		+0.84484374		
<i>e</i>	0.1183825	<i>i</i>	2.55473		+0.16870622		+0.31780164		
<i>P</i>	4.44	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	6	
Residuals in seconds of arc									
1993 03 19	809	0.4-	0.2+	1993 03 28	691	(0.9+	3.4-)	1993 04 17	413 (5.4+ 8.1+
1993 03 20	809	1.3+	0.8+	1993 03 28	691	(1.5+	4.1-)	1997 03 11	704 0.1+ 0.5-
1993 03 24	809	0.4+	0.8+	1993 03 28	691	0.6-	1.4-	1997 03 11	704 0.4+ 0.8+
1993 03 26	691	0.5-	0.2-	1993 04 15	691	0.1+	0.4+	1997 03 12	704 0.6- 0.1-
1993 03 26	691	0.0	0.6-	1993 04 15	691	0.4+	0.3+	1997 03 12	704 0.0 0.2-
1993 03 26	691	0.8-	0.3-	1993 04 15	691	0.2+	0.0		

1993 FX₅₀ = 1998 KK₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	347.26596		(2000.0)		P		Q				
<i>n</i>	0.21477950	ω	69.45621		-0.05149427		+0.99832461				
<i>a</i>	2.7614732	Ω	197.65387		-0.94562050		-0.05723920				
<i>e</i>	0.1256295	<i>i</i>	4.99174		-0.32117008		+0.00846456				
<i>P</i>	4.59	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1993 03 19	809	0.2+	0.9+	1998 05 22	704	0.7-	0.7+	1998 05 24	704	0.8-	0.8+
1993 03 20	809	0.7+	0.8+	1998 05 22	699	0.2-	0.2-	1998 06 16	691	1.1-	0.3+
1993 03 24	809	0.9+	0.5-	1998 05 22	699	0.4+	0.1+	1998 06 16	691	1.2-	0.1+
1993 03 26	691	1.0-	0.7-	1998 05 22	699	1.6+	1.2-	1998 06 16	691	1.3-	0.1+
1993 03 26	691	0.6-	0.5-	1998 05 23	699	0.5+	0.6-	1998 06 16	704	0.5+	0.7+
1993 03 26	691	0.2-	0.5-	1998 05 23	699	0.3+	0.2-	1998 06 16	704	1.3+	1.1-
1993 04 17	413	0.1+	0.1+	1998 05 23	699	0.1-	0.7+	1998 06 16	704	(2.3+	0.5+)
1998 05 05	699	0.1+	0.7+	1998 05 24	699	0.1-	0.2+	1998 06 16	704	(1.7-	2.2+)
1998 05 05	699	0.0	0.2+	1998 05 24	704	0.1+	0.9-	1998 06 22	691	0.1+	0.1-
1998 05 05	699	0.3-	0.3+	1998 05 24	699	0.0	0.4-	1998 06 22	691	0.3+	0.1+
1998 05 22	704	0.7+	0.5+	1998 05 24	699	0.1-	0.1-	1998 06 22	691	0.2+	0.4+
1998 05 22	704	0.7-	0.6+	1998 05 24	704	0.3-	0.9-	1998 07 15	691	0.1+	0.4-
1998 05 22	704	0.6+	0.2-	1998 05 24	704	0.5+	0.9+	1998 07 15	691	0.0	0.2-
1998 05 22	704	0.2+	0.6-	1998 05 24	704	0.4-	0.2+	1998 07 15	691	0.1+	0.4-

1993 KW₁

Id. M. W. Buie (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	314.15442		(2000.0)		P		Q				
<i>n</i>	0.36288503	ω	40.72948		-0.33713864		+0.92383979				
<i>a</i>	1.9466596	Ω	210.87622		-0.92916220		-0.35752332				
<i>e</i>	0.0457440	<i>i</i>	20.68432		-0.15164149		+0.13673743				
<i>P</i>	2.72	<i>H</i>	15.5		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1993 05 23	675	2.1+	0.2-	1993 06 17	675	0.2-	0.7-	1998 03 24	699	0.4+	0.2+
1993 05 24	675	0.4+	0.5+	1993 06 18	691	1.7-	0.6+	1998 04 19	688	0.4+	0.2+
1993 05 24	675	0.7+	1.6-	1993 06 18	691	1.5-	0.8+	1998 04 19	688	0.2+	0.1+
1993 05 25	675	0.2+	0.6-	1993 06 18	691	1.5-	1.0+	1998 04 19	688	0.2+	0.2+
1993 06 14	675	0.5+	0.9-	1998 03 24	699	0.9-	0.2-				
1993 06 14	675	0.5+	1.2+	1998 03 24	699	0.1-	0.1+				

1993 QO₄ = 1998 MS₄₂

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	311.95161		(2000.0)		P		Q				
<i>n</i>	0.18134965	ω	210.43463		+0.99987233		-0.00312855				
<i>a</i>	3.0911844	Ω	149.73258		+0.00874786		+0.92781024				
<i>e</i>	0.2197190	<i>i</i>	1.78153		-0.01337178		+0.37303936				
<i>P</i>	5.43	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1993 08 18	010	1.0+	0.5+	1993 08 24	809	1.3-	0.2+	1998 06 26	704	0.8+	1.8-
1993 08 19	010	1.5+	0.0	1993 09 19	010	1.0+	1.2+	1998 06 26	704	1.1-	0.4+
1993 08 19	010	0.5+	0.9-	1993 09 19	010	1.3+	1.5+	1998 06 26	704	0.6+	1.9-
1993 08 19	010	0.0	0.8-	1993 09 20	010	0.0	0.8-	1998 06 26	704	(2.4+	0.3+)
1993 08 20	809	0.1+	0.4+	1993 09 20	010	0.8-	0.6-	1998 06 26	704	1.1-	1.6-
1993 08 20	809	0.2-	0.2-	1993 09 20	010	0.6-	0.7-	1998 06 27	809	0.2-	0.3+
1993 08 20	809	0.6-	0.5+	1998 06 26	809	1.4+	1.5+	1998 06 27	809	0.7-	0.0
1993 08 24	809	1.0-	0.4-	1998 06 26	809	0.7+	0.8+	1998 06 27	809	1.1-	0.6+
1993 08 24	809	0.9-	0.1-	1998 06 26	809	0.8+	1.8+				

1993 RS₁₄ = 1996 KJ

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27972977	ω	107.64852	+0.25695254	+0.96642285		
<i>a</i>	2.3154936	Ω	177.23947	-0.89808721	+0.23935736		
<i>e</i>	0.2140994	<i>i</i>	1.78852	-0.35695204	+0.09346080		
<i>P</i>	3.52	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 09 15	809	(3.0+ 1.5+)	1993 09 18	809	(2.2+ 0.3+)	1996 05 16	566	0.1+	0.6-
1993 09 15	809	1.0+ 0.7+	1993 09 18	809	0.1+ 1.6-	1996 05 16	566	0.0	0.9-
1993 09 15	809	1.8+ 0.4+	1993 09 18	675	2.0- 0.7-	1996 05 21	566	0.1+	0.7+
1993 09 17	809	1.0- 1.0-	1993 09 18	675	0.6- 1.6+	1996 05 21	566	0.2-	0.7+
1993 09 17	809	2.0- 1.7-	1993 09 22	675	0.0 1.2+	1996 05 21	566	0.0	0.7+
1993 09 17	809	0.4+ 0.9-	1993 09 22	675	0.7+ 1.4+				
1993 09 18	809	1.5+ 0.6+	1996 05 16	566	0.0 0.6-				

1993 SQ₃ = 1976 UM₅ = 1998 NJ

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17204342	ω	322.03892	+0.90577167	-0.42214384		
<i>a</i>	3.2016757	Ω	62.96950	+0.39826427	+0.81813740		
<i>e</i>	0.1969778	<i>i</i>	2.38343	+0.14478690	+0.39044305		
<i>P</i>	5.73	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 10 30	095	0.0 0.1+	1993 10 10	675	0.3- 2.5+	1993 10 20	809	0.7+	0.3+
1993 09 22	303	1.1+ 2.1-	1993 10 10	675	0.3- 0.4+	1993 10 20	809	0.4+	0.7+
1993 09 22	303	0.9+ 0.4-	1993 10 11	809	0.9+ 0.8+	1998 07 02	699	0.3-	0.3+
1993 09 22	303	0.1+ 0.2+	1993 10 11	809	1.0+ 0.1+	1998 07 02	699	0.2-	0.1-
1993 09 23	303	(6.5+ 0.2-)	1993 10 11	809	0.4+ 0.6+	1998 07 02	699	0.3-	0.5-
1993 10 09	809	1.7- 1.4-	1993 10 13	675	0.7- 0.8-	1998 07 16	699	0.7+	0.2+
1993 10 09	809	1.8- 0.7-	1993 10 13	675	0.3+ 0.7-	1998 07 16	699	0.3+	0.4+
1993 10 09	809	2.2- 0.8-	1993 10 20	809	1.2+ 1.2+	1998 07 16	699	0.2-	0.1-

1993 TB = 1994 YT₄

Id. G. V. Williams, E. Bowell (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17915884	ω	266.66534	+0.98932536	-0.13828068		
<i>a</i>	3.1163333	Ω	101.27940	+0.14523227	+0.90974918		
<i>e</i>	0.1879075	<i>i</i>	2.68709	+0.01195457	+0.39145228		
<i>P</i>	5.50	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 09 21	675	0.2+ 0.9-	1993 10 13	675	0.8+ 0.8+	1994 12 31	691	0.6+	0.3+
1993 09 21	675	0.5- 0.5-	1993 10 13	675	0.3+ 0.7+	1994 12 31	691	0.5+	0.1+
1993 09 21	413	0.6- 1.3+	1993 10 15	675	0.7+ 0.2+	1995 01 07	691	0.3-	0.1-
1993 09 21	413	1.4- 0.4+	1993 10 15	675	0.2+ 0.1-	1995 01 07	691	0.7-	0.6+
1993 10 09	376	1.9- 0.4+	1993 10 22	376	1.0+ 0.7-	1998 07 16	699	0.3+	0.1-
1993 10 09	376	1.1- 0.1-	1993 10 22	376	0.5+ 1.3-	1998 07 16	699	0.0	0.4+
1993 10 10	376	2.0+ 1.3+	1993 10 23	376	(3.0- 3.9-)	1998 07 16	699	0.3-	0.2+
1993 10 10	376	(1.6+ 2.8+)	1993 10 23	376	0.3- 1.8-				

**1993 TK₁₁ = 1958 TA = 1974 VW₁ = 1977 SF₂ = 1987 YC₂
= 1998 HG₁₉**

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30987237	ω	208.77895	+0.85594522	-0.51705950		
<i>a</i>	2.1627890	Ω	182.36144	+0.48604091	+0.80635260		
<i>e</i>	0.1428000	<i>i</i>	3.74903	+0.17641434	+0.28713229		
<i>P</i>	3.18	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1958 10 09	024	0.2+ 0.2-	1993 10 14	675	0.5- 2.1-	1998 04 18	704	0.4-	0.3+
1974 11 15	095	(3.6- 0.3-)	1993 10 15	675	0.6- 1.4-	1998 04 18	704	(2.7+ 0.7-)	
1977 09 19	095	0.7- 1.1+	1993 10 15	675	0.6+ 0.9-	1998 04 18	704	0.6-	0.9-
1987 12 20	010	0.3+ 0.5+	1993 10 15	400	(3.0- 2.4-)	1998 04 18	704	(4.6- 2.7+)	
1987 12 20	010	0.4- 0.2+	1993 10 19	400	1.4- 1.3+	1998 04 19	704	0.8+	0.4+
1993 10 11	400	0.8+ 1.9+	1993 10 19	400	0.1- 2.0+	1998 04 19	704	0.2+	0.0
1993 10 11	400	0.6+ 0.5+	1993 10 21	809	(2.8- 4.2-)	1998 04 19	704	0.1-	0.1+
1993 10 13	675	1.3+ 1.7-	1993 10 21	809	(3.1- 3.6-)	1998 04 19	704	0.3-	0.4-
1993 10 13	675	0.1- 1.1-	1993 10 21	809	(2.5- 4.0-)	1998 04 19	704	0.4+	0.2-

1993 TT₁₂ = 1993 TZ₂₃ = 1975 TS₆ = 1986 WJ₄ = 1997 WO₄₅Id. K. Kinoshita (d. *MPC* 23324), S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27430172	ω	239.77872	+0.60883632	+0.79038804		
<i>a</i>	2.3459407	Ω	67.88217	-0.70033680	+0.57570276		
<i>e</i>	0.1756850	<i>i</i>	4.20075	-0.37262139	+0.20941127		
<i>P</i>	3.59	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1975 10 10	033	0.9+ 1.9-	1993 10 11	809	0.4+ 0.7+	1997 11 29	704	0.3-	0.0
1986 11 25	010	0.5+ 0.9-	1993 10 13	675	(1.5- 3.3-)	1997 11 29	704	1.0-	0.2+
1986 11 25	010	1.5+ 0.7-	1993 10 13	675	(1.6- 4.5-)	1997 12 04	704	2.0+	0.1+
1986 11 25	010	1.1- 0.4-	1993 10 15	675	(2.1- 3.5-)	1997 12 04	704	0.1-	0.2-
1993 10 09	809	1.0+ 0.5+	1993 10 20	809	0.7- 1.3-	1997 12 04	704	0.7-	0.2+
1993 10 09	809	1.1+ 0.6+	1993 10 20	809	(3.2- 0.9-)	1997 12 04	704	1.4+	0.1+
1993 10 09	809	0.5+ 0.3+	1993 10 20	809	1.9- 0.7-	1997 12 04	704	0.6-	1.1+
1993 10 11	809	1.3- 1.3+	1997 11 29	704	0.3- 0.1+				
1993 10 11	809	0.4- 1.2+	1997 11 29	704	0.5- 0.1-				

1993 TX₁₅ = 1998 BN₄₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28503634	ω	39.22255	-0.21185844	-0.97658539		
<i>a</i>	2.2866651	Ω	63.03780	+0.88577782	-0.20803693		
<i>e</i>	0.1083888	<i>i</i>	2.40336	+0.41293299	-0.05478701		
<i>P</i>	3.46	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 10 09	809	1.1+ 0.9+	1993 10 20	809	0.9+ 0.0	1998 01 24	958	0.7-	0.7+
1993 10 09	809	0.5+ 0.8+	1993 10 20	809	0.2- 0.4+	1998 01 26	566	0.0	0.7-
1993 10 09	809	0.9- 0.0	1993 10 20	809	0.4- 0.5-	1998 01 26	566	0.3+	0.8-
1993 10 11	809	0.3+ 0.6-	1998 01 23	958	0.0 0.1-	1998 01 26	566	0.4-	0.3-
1993 10 11	809	0.9- 0.5-	1998 01 23	958	1.1- 1.4+				
1993 10 11	809	0.4- 0.6-	1998 01 23	958	1.9+ 0.2-				

1993 TD₂₅ = 1997 RC₁₀ = 1997 SE₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24392946	ω	249.32624	+0.66795592	+0.74213957		
<i>a</i>	2.5368408	Ω	62.70767	-0.65751440	+0.62335394		
<i>e</i>	0.1688196	<i>i</i>	3.57096	-0.34858242	+0.24628991		
<i>P</i>	4.04	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 10 09	809	(0.0 3.2-)	1993 10 20	809	0.5+ 1.3+	1997 09 23	327	0.0	0.0
1993 10 09	809	(1.5- 3.7-)	1993 10 20	809	0.2+ 1.4+	1997 09 23	327	0.2+	0.1+
1993 10 09	809	(1.5- 4.0-)	1997 09 13	327	0.1- 0.9+	1997 09 29	327	0.0	1.2-
1993 10 11	809	0.3- 1.4-	1997 09 13	327	0.0 0.4+	1997 09 29	327	0.5-	0.7-
1993 10 11	809	0.8- 1.5-	1997 09 13	327	0.4+ 0.6+	1997 09 29	327	0.1-	0.4-
1993 10 11	809	0.5- 1.5-	1997 09 13	327	0.0 0.0				
1993 10 20	809	0.9+ 1.7+	1997 09 23	327	0.1+ 0.4+				

1993 TB₂₆ = 1987 NE = 1996 HY₁₄

Id. G. V. Williams, A. Doppler, B. G. Marsden, S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	303.14279		(2000.0)		P		Q
<i>n</i>	0.19081052	ω	346.40129		+0.47629973		-0.87729255
<i>a</i>	2.9881416	Ω	75.12696		+0.81234025		+0.41330462
<i>e</i>	0.1803290	<i>i</i>	3.50752		+0.33651431		+0.24400220
<i>P</i>	5.17	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 07 01	809	0.2+	1.2+	1993 10 09	809	0.6-	0.2+	1993 10 20	809	(5.8+	5.3-)
1987 07 01	809	0.3+	0.7-	1993 10 09	809	1.0-	0.5+	1996 04 17	809	(1.7-	4.7-)
1987 07 01	809	2.0-	0.9-	1993 10 11	809	1.9+	0.0	1996 04 17	809	(2.2-	5.5-)
1987 07 02	809	(7.0+	1.8+)	1993 10 11	809	0.7+	0.5-	1996 04 17	809	(2.5-	4.6-)
1987 07 02	809	0.8+	1.6+	1993 10 11	809	0.2+	0.6-	1996 04 18	809	0.5+	0.4+
1987 07 02	809	0.8+	1.4-	1993 10 20	809	(8.0+	4.5-)	1996 04 18	809	0.4-	0.2+
1993 10 09	809	1.2-	0.5+	1993 10 20	809	(7.0+	4.8-)	1996 04 18	809	0.1-	0.6-

1993 TG₂₇ = 1998 AM₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	54.32421		(2000.0)		P		Q
<i>n</i>	0.24228238	ω	243.68494		+0.88040934		-0.47249296
<i>a</i>	2.5483251	Ω	144.47084		+0.45608600		+0.82036504
<i>e</i>	0.2019142	<i>i</i>	3.98360		+0.12986514		+0.32210498
<i>P</i>	4.07	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 09	809	1.3+	0.4+	1993 10 11	809	0.6-	0.2+	1998 01 11	557	1.0+	1.0-
1993 10 09	809	0.4+	0.3-	1993 10 20	809	0.5+	0.5-	1998 01 11	557	1.0-	0.3+
1993 10 09	809	0.4-	0.2-	1993 10 20	809	0.4+	0.3-	1998 01 11	557	0.6-	0.2-
1993 10 11	809	0.4-	0.0	1993 10 20	809	0.7-	0.2-	1998 01 17	557	0.2-	0.1-
1993 10 11	809	0.5-	0.8+	1998 01 10	557	0.2+	1.9+	1998 01 17	557	0.6+	0.6-

1993 TK₃₃ = 1975 TA₇ = 1996 HP₁₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	28.67221		(2000.0)		P		Q
<i>n</i>	0.22019153	ω	304.41409		+0.96363820		-0.25395593
<i>a</i>	2.7160368	Ω	70.42064		+0.26484135		+0.86639194
<i>e</i>	0.1055788	<i>i</i>	5.06086		+0.03550327		+0.42996673
<i>P</i>	4.48	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1975 10 10	033	0.2+	0.4-	1993 10 21	809	0.1+	0.6+	1996 04 20	809	(5.4-	3.4-)
1993 10 09	809	0.6-	0.2+	1993 10 21	809	0.0	0.6+	1996 04 20	809	(5.8-	2.4-)
1993 10 09	809	0.4-	0.0	1993 10 21	809	0.1-	0.0	1996 05 19	809	0.1+	0.0
1993 10 09	809	0.3+	0.2+	1996 04 18	809	0.0	0.2-	1996 05 19	809	0.5-	1.0+
1993 10 11	809	0.9+	0.1-	1996 04 18	809	1.1+	1.1-	1996 05 19	809	1.1-	0.4+
1993 10 11	809	0.1+	0.5-	1996 04 18	809	0.6+	0.3+				
1993 10 11	809	0.5-	0.4-	1996 04 20	809	(5.7-	2.4-)				

1993 TP₃₈ = 1991 JG₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	129.84070		(2000.0)		P		Q
<i>n</i>	0.17943116	ω	19.61819		-0.86284024		+0.50177275
<i>a</i>	3.1131794	Ω	191.12052		-0.49568426		-0.86359453
<i>e</i>	0.0478321	<i>i</i>	18.46271		-0.09901436		-0.04928078
<i>P</i>	5.49	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 05 08	413	1.1-	0.9+	1993 10 09	809	0.2+	1.4+	1993 10 21	809	0.1+	0.2+
1991 05 08	413	0.6+	1.1-	1993 10 09	809	0.2+	0.5+	1993 10 21	809	0.1+	0.3-
1991 05 18	413	0.7-	0.7+	1993 10 11	809	0.0	0.5-	1993 10 21	809	0.5-	0.3+
1991 05 18	413	1.2+	0.5-	1993 10 11	809	0.6-	0.9-				
1993 10 09	809	0.6+	0.1-	1993 10 11	809	0.3-	0.6-				

1993 XH = 1998 HA₁₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	131.70245		(2000.0)		P		Q
<i>n</i>	0.29861763	ω	306.55771		+0.12641342		-0.98983695
<i>a</i>	2.2167961	Ω	136.03780		+0.93747080		+0.09774369
<i>e</i>	0.1569482	<i>i</i>	5.38389		+0.32429639		+0.10329076
<i>P</i>	3.30	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 12 06	372	0.1+	0.1-	1998 04 21	704	0.4-	1.1+	1998 04 24	704	0.2-	1.1+
1993 12 08	372	(4.6-	1.1-)	1998 04 21	704	0.1-	0.6-	1998 04 24	704	0.3-	0.8-
1993 12 12	372	0.2-	0.1+	1998 04 21	704	0.4+	0.4+	1998 04 24	704	(2.6-	0.3+)
1993 12 14	372	0.1+	0.1-	1998 04 21	704	0.1-	0.0				
1998 04 21	704	0.1+	0.7-	1998 04 24	704	0.6+	0.5-				

1993 XM₁ = 1998 MA

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	307.53156		(2000.0)		P		Q
<i>n</i>	0.08242660	ω	237.84728		+0.86693497		+0.40878921
<i>a</i>	5.2290702	Ω	96.61916		-0.30256252		+0.88627502
<i>e</i>	0.1985487	<i>i</i>	16.68272		-0.39608039		+0.21773372
<i>P</i>	11.96	<i>H</i>	11.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 12 10	691	0.6-	0.4-	1994 01 13	691	0.1+	0.5+	1998 06 16	727	0.0	0.2-
1993 12 10	691	0.2-	0.1-	1994 01 13	691	0.1-	0.1-	1998 06 16	727	0.4-	0.1-
1993 12 10	691	0.1+	0.3-	1994 01 13	691	0.1+	0.4+	1998 06 17	727	0.6-	0.8+
1993 12 17	691	1.0+	0.0	1998 05 24	704	0.1-	1.4+	1998 06 17	727	0.9+	0.2-
1993 12 17	691	0.7-	0.1+	1998 05 24	704	0.1-	1.1-	1998 06 24	727	0.2-	0.1+
1993 12 17	691	0.3+	0.0	1998 05 24	704	0.5+	1.0+	1998 06 25	727	0.2+	0.3-
1993 12 18	691	0.5+	0.0	1998 05 24	704	0.3-	0.4+	1998 06 25	727	0.3-	0.3-
1993 12 18	691	0.3+	0.2-	1998 05 24	704	0.6-	0.2-	1998 06 25	727	0.4+	0.2-
1993 12 18	691	0.2-	0.1-	1998 06 16	727	0.4+	0.4-	1998 06 25	727	0.2+	0.6-

1994 AY = 1982 YS₃ = 1998 FK₁₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	123.98527		(2000.0)		P		Q
<i>n</i>	0.27196418	ω	180.34337		+0.52034856		-0.85364647
<i>a</i>	2.3593638	Ω	238.30112		+0.78355164		+0.48794677
<i>e</i>	0.1918328	<i>i</i>	1.54330		+0.33953529		+0.18219673
<i>P</i>	3.62	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1982 12 23	095	0.0	1.1-	1994 01 14	411	0.4-	0.4+	1998 03 22	704	0.1+	0.3-
1994 01 04	411	1.0+	1.2-	1994 02 01	411	0.9+	0.2-	1998 03 29	704	0.2-	0.4+
1994 01 04	411	0.2+	0.3+	1994 02 01	411	0.1-	1.3+	1998 03 29	704	0.9+	0.9-
1994 01 07	411	0.2+	0.1+	1994 02 01	411	0.1+	1.0-	1998 03 29	704	1.8+	0.3-
1994 01 07	411	0.1+	0.7+	1998 03 20	704	(0.5-	2.3+)	1998 03 29	704	0.4-	0.7-
1994 01 07	411	1.5+	0.2-	1998 03 20	704	1.1-	0.7+	1998 03 29	704	0.9+	1.9-
1994 01 09	411	0.3+	0.0	1998 03 20	704	1.9-	1.0+	1998 04 01	704	0.8+	0.4+
1994 01 09	411	0.3-	0.2-	1998 03 20	704	0.4-	0.2+	1998 04 01	704	1.2+	0.7+
1994 01 13	691	1.3-	0.2+	1998 03 20	704	(7.5-	0.5-)	1998 04 01	704	0.3-	0.3+
1994 01 13	691	0.9-	0.2+	1998 03 22	704	0.4-	0.2-	1998 04 01	704	0.3+	0.5-
1994 01 13	691	1.3-	0.2+	1998 03 22	704	0.1+	0.3-	1998 04 01	704	1.0-	0.4+
1994 01 14	411	0.2-	0.1+	1998 03 22	704	(2.2+	0.2-)				
1994 01 14	411	0.4+	0.6+	1998 03 22	704	0.4-	0.3+				

1998 AUG. 8

M.P.C. 32233

1994 AU₆ = 1996 HJ₁₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q		Nakano	
<i>n</i>	51.63317	ω	207.20307	+0.87102722	+0.48991761				
<i>a</i>	3.1829379	Ω	123.41649	-0.44250527	+0.81429646				
<i>e</i>	0.1851643	<i>i</i>	2.46840	-0.21330885	+0.31129087				
<i>P</i>	5.68	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1994 01 07	691	0.1+	0.4-	1994 01 12	691	0.3-	0.0	1996 04 20	809	0.8+	0.1-
1994 01 07	691	0.0	0.2-	1994 01 12	691	0.6-	0.1+	1996 04 20	809	1.0+	0.2+
1994 01 07	691	0.2-	0.1-	1994 01 12	691	0.2-	0.5+	1996 04 20	809	0.2-	0.8-
1994 01 11	691	0.0	0.1+	1996 04 18	809	0.5-	0.1+	1996 05 19	809	0.4+	0.2+
1994 01 11	691	0.9+	0.0	1996 04 18	809	1.0-	0.8-	1996 05 19	809	1.0+	1.0+
1994 01 11	691	0.4+	0.2+	1996 04 18	809	0.9-	1.0-	1996 05 19	809	0.6-	1.4+

1994 AN₁₀ = 1998 FD₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q		Nakano	
<i>n</i>	323.65245	ω	201.20082	+0.53715627	+0.83516385				
<i>a</i>	2.1822289	Ω	101.46527	-0.75550024	+0.53867998				
<i>e</i>	0.2127555	<i>i</i>	6.92543	-0.37507670	+0.11101900				
<i>P</i>	3.22	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1994 01 08	691	0.5-	0.7+	1994 01 16	691	0.6+	0.1+	1998 03 21	691	0.3+	0.2-
1994 01 08	691	0.2-	0.7+	1994 01 16	691	0.6-	0.7-	1998 03 24	691	0.4-	0.2+
1994 01 11	691	0.5+	0.3-	1994 01 16	691	0.3+	0.9-	1998 03 24	691	0.2-	0.1+
1994 01 11	691	0.4+	0.1+	1998 03 21	691	0.2+	0.0	1998 03 24	691	0.1-	0.1-
1994 01 11	691	0.4-	0.3+	1998 03 21	691	0.3+	0.0				

1994 CK₁ = 1998 MY₅

Id. J. E. Rogers

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q		Marsden	
<i>n</i>	338.68434	ω	26.92273	+0.99648092	+0.07292555				
<i>a</i>	1.9005836	Ω	328.81064	-0.08376390	+0.88440712				
<i>e</i>	0.6329185	<i>i</i>	4.57682	+0.00306403	+0.46098363				
<i>P</i>	2.62	<i>H</i>	17.5	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1994 02 10	691	0.5+	0.1-	1998 06 25	426	0.6-	0.2-	1998 06 29	426	0.0	0.2-
1994 02 10	691	0.1+	0.4-	1998 06 25	426	0.4-	0.2-	1998 06 29	426	0.3-	0.2+
1994 02 10	691	0.4-	0.2-	1998 06 25	426	0.5-	0.3-	1998 06 29	426	0.1-	0.1-
1994 02 11	691	0.0	0.6+	1998 06 25	426	0.3-	0.2-	1998 07 02	422	0.0	0.0
1994 02 11	691	0.9+	0.0	1998 06 25	426	0.5-	0.2-	1998 07 02	422	0.4-	0.1+
1994 02 11	691	0.0	0.0	1998 06 25	860	0.2+	0.5-	1998 07 02	422	0.1-	0.4-
1994 02 12	691	0.0	0.4-	1998 06 25	860	0.0	0.3+	1998 07 02	422	0.2-	0.3+
1994 02 12	691	0.2+	0.0	1998 06 25	860	0.2-	1.9+	1998 07 02	429	0.1+	0.2+
1994 02 12	691	0.0	0.4+	1998 06 26	711	0.1-	0.2-	1998 07 02	429	0.6-	0.2-
1994 02 16	691	0.1-	0.6+	1998 06 26	711	(2.4+	1.3-)	1998 07 02	429	0.1+	0.1-
1994 02 16	691	0.2-	0.4+	1998 06 26	711	(4.4-	0.3+)	1998 07 02	860	1.6+	1.1-
1994 02 16	691	0.3-	0.2+	1998 06 26	426	0.5-	0.2-	1998 07 03	860	0.4+	0.3-
1994 02 19	691	0.6-	0.1-	1998 06 26	426	0.0	0.5-	1998 07 04	860	0.8+	0.8+
1994 02 19	691	0.2+	0.1+	1998 06 26	426	0.4-	0.1-	1998 07 04	860	1.2+	0.5-
1994 02 19	691	0.4-	0.4+	1998 06 26	426	0.4-	0.0	1998 07 04	860	1.4+	0.5-
1994 03 05	691	0.2+	0.5-	1998 06 26	422	0.2-	0.2+	1998 07 10	426	1.0-	0.2+
1994 03 05	691	0.0	0.0	1998 06 26	422	0.1-	0.0	1998 07 10	426	0.4-	0.2+
1994 03 05	691	0.1+	0.6-	1998 06 26	422	0.0	0.2+	1998 07 10	426	0.4-	0.2-
1998 06 24	566	0.6+	0.0	1998 06 27	104	1.0+	0.5+	1998 07 10	426	0.1-	0.1+
1998 06 24	566	0.6+	0.3+	1998 06 27	104	0.5+	0.4-	1998 07 11	422	0.1-	0.6+
1998 06 24	566	0.0	0.3+	1998 06 27	104	0.4-	0.3+	1998 07 11	422	0.0	0.0
1998 06 25	566	0.2+	0.5-	1998 06 27	104	0.6+	0.7+	1998 07 11	422	0.0	0.6+
1998 06 25	566	0.7-	0.7-	1998 06 27	104	(3.2-	1.8+)				
1998 06 25	566	0.2-	0.5-	1998 06 29	426	0.1+	0.2+				

1994 CF₁₀ = 1975 WN = 1998 HT₇₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q		Nakano	
<i>n</i>	190.18082	ω	326.48637	+0.78796558	-0.61387847				
<i>a</i>	0.28269695	Ω	71.45642	+0.57536030	+0.70660035				
<i>e</i>	2.2992629	<i>i</i>	2.87638	+0.21925046	+0.35195052				
<i>P</i>	3.49	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1975 11 28	095	0.2+	0.7-	1994 02 12	809	2.1+	1.7-	1998 04 21	704	0.2+	0.6-
1994 02 07	809	1.1-	1.7+	1994 02 12	809	1.3+	1.1-	1998 04 22	704	1.3-	1.1+
1994 02 07	809	1.8-	1.6+	1994 02 12	809	1.5+	1.9-	1998 04 22	704	0.3-	0.3+
1994 02 07	809	1.8-	0.8+	1998 04 21	704	0.5-	0.9-	1998 04 22	704	0.4+	0.1+
1994 02 09	809	0.9+	0.5+	1998 04 21	704	0.1-	1.1-	1998 04 22	704	0.9+	0.5-
1994 02 09	809	0.9-	0.7+	1998 04 21	704	0.1-	0.1+				
1994 02 09	809	0.1-	0.2-	1998 04 21	704	0.3+	0.5+				

1994 CG₁₂ = 1998 HW₁₃₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q		Nakano	
<i>n</i>	317.15940	ω	215.56287	+0.07639113	+0.99587304				
<i>a</i>	0.26240792	Ω	58.86520	-0.90104647	+0.08999449				
<i>e</i>	2.4163031	<i>i</i>	3.28195	-0.42694222	-0.01174248				
<i>P</i>	0.1520722	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	7		

Residuals in seconds of arc

1994 02 07	809	0.6+	1.0+	1994 02 12	809	0.1+	0.1-	1998 04 19	704	0.1-	0.8+
1994 02 07	809	0.5+	0.5+	1994 02 12	809	0.0	1.1-	1998 04 20	704	0.1-	0.1-
1994 02 07	809	1.4-	0.4+	1994 02 12	809	0.6-	0.9-	1998 04 20	704	0.5+	0.4+
1994 02 09	809	0.7+	0.6-	1998 04 19	704	0.4+	0.1+	1998 04 20	704	0.5-	0.1-
1994 02 09	809	0.5-	1.0+	1998 04 19	704	1.2+	0.4-	1998 04 20	704	0.0	0.3-
1994 02 09	809	0.4+	0.2-	1998 04 19	704	1.1-	0.4-	1998 04 20	704	0.2-	0.1+

1994 EB₂ = 1998 KF₆₂

Id. G. V. Williams, E. Bowell

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	53.16423	ω	47.30593	-0.95689136	+0.04824236				
<i>a</i>	0.26638230	Ω	133.18134	-0.08554996	-0.98917708				
<i>e</i>	2.3922091	<i>i</i>	23.12757	+0.27756104	-0.13856904				
<i>P</i>	0.2300545	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1994 03 06	675	(1.7-	2.5+)	1994 06 03	693	(2.6-	2.0-)	1998 06 22	699	1.1+	0.3+
1994 03 06	675	0.4-	0.5-	1998 05 27	704	1.3+	0.1+	1998 06 22	699	0.9+	0.3-
1994 03 08	675	0.1-	0.2+	1998 05 27	704	1.2-	0.2-	1998 06 27	704	0.5-	0.5-
1994 03 08	675	0.1+	0.3+	1998 05 27	704	0.5+	0.1-	1998 06 27	704	0.2-	0.2-
1994 04 02	693	1.1-	0.3+	1998 05 27	704	0.1+	0.7-	1998 06 27	704	0.1-	0.0
1994 04 02	693	0.5+	1.5-	1998 05 27	704	0.8-	0.2-	1998 06 27	704	0.4-	0.5+
1994 04 03	693	1.5+	0.9+	1998 06 04	704	1.8-	0.9+	1998 06 27	704	1.0-	0.5+
1994 04 03	693	(1.1-	3.3+)	1998 06 04	704	0.4+	0.2+	1998 07 03	699	0.4-	0.2-
1994 05 03	693	1.6-	0.2-	1998 06 04	704	0.4+	0.5+	1998 07 03	699	0.1+	0.8-
1994 05 04	693	(0.7+	2.3+)	1998 06 04	704	0.3+	0.3-	1998 07 03	699	0.1+	0.4+
1994 05 04	693	1.1+	0.7+	1998 06 04	704	0.7-	0.4-				
1994 06 03	693	(4.1-	0.5+)	1998 06 22	699	1.8+	0.2+				

1994 ET₆ = 1982 XP₄ = 1998 ML₂₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	4.50386	ω	163.18060	+0.14036099	+0.98699061				
<i>a</i>	0.29342363	Ω	114.83131	-0.91805418	+0.15939599				
<i>e</i>	2.2428798	<i>i</i>	4.95648	-0.37077663	-0.02103470				
<i>P</i>	0.1156437	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1982 12 14	381	0.3–	0.9+	1994 03 09	010	0.4+	1.2–	1998 06 24	704	0.9–	2.6+
1982 12 14	381	(3.5–	3.3–)	1994 03 09	010	0.8+	1.0–	1998 06 24	704	0.1–	0.9–
1994 02 08	809	0.5–	2.5+	1994 03 09	010	0.0	0.9–	1998 06 24	704	0.7+	0.0
1994 02 08	809	0.3–	2.1+	1994 03 10	010	0.3+	1.9–	1998 06 26	704	0.5–	0.3–
1994 02 08	809	2.1–	2.1+	1994 03 10	010	0.9+	2.2–	1998 06 26	704	0.3+	0.1–
1994 02 10	809	0.3+	2.7+	1994 03 10	010	0.9+	1.4–	1998 06 26	704	1.2–	0.8–
1994 02 10	809	0.4–	0.6+	1998 06 24	704	0.3+	0.1+	1998 06 26	704	1.3–	0.2+
1994 02 10	809	0.1–	0.3+	1998 06 24	704	2.7+	0.9+				

1994 EZ₆ = 1998 KA₁₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	297.86509	(2000.0)	<i>P</i>	Gnädig	<i>Q</i>
<i>n</i>	0.28069780	ω	222.62854	+0.76072714	+0.64084424
<i>a</i>	2.3101670	Ω	97.22150	–0.56403158	+0.73121876
<i>e</i>	0.1512997	<i>i</i>	5.96049	–0.32118935	+0.23374728
<i>P</i>	3.51	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1994 02 08	809	0.3+	0.2+	1994 03 09	010	0.7+	1.9–	1998 05 22	704	0.3+	0.6–
1994 02 08	809	0.2+	0.9+	1994 03 10	010	0.1+	0.8+	1998 05 24	704	0.6+	0.2+
1994 02 08	809	0.5–	0.2+	1994 03 10	010	0.7–	1.3+	1998 05 24	704	0.9–	1.0–
1994 02 10	809	0.3+	0.4–	1994 03 10	010	0.6–	1.3+	1998 05 24	704	0.5–	1.0+
1994 02 10	809	0.7+	1.2–	1998 05 22	704	0.4+	0.1+	1998 05 24	704	0.8–	0.4–
1994 02 10	809	1.1–	0.5–	1998 05 22	704	(2.6+	0.6–)	1998 05 24	704	0.0	0.1–
1994 03 09	010	0.5+	0.6–	1998 05 22	704	0.1–	0.7+				
1994 03 09	010	0.1+	0.3–	1998 05 22	704	1.0+	0.0				

1994 EW₇ = 1998 KZ₆₁

Id. G. V. Williams, E. Bowell

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	57.30056	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.25832543	ω	29.11991	–0.92563365	–0.22816166
<i>a</i>	2.4416942	Ω	134.23510	+0.21023946	–0.97340091
<i>e</i>	0.2337298	<i>i</i>	24.92085	+0.31464537	–0.02080702
<i>P</i>	3.82	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1994 03 10	010	0.8–	0.4+	1994 03 15	381	(1.4–	5.4+)	1998 06 04	704	1.2+	0.2–
1994 03 10	010	1.0–	0.5+	1994 03 15	381	(0.3–	3.4–)	1998 06 04	704	0.0	0.6+
1994 03 12	675	0.0	1.0+	1994 05 14	675	0.1–	1.8–	1998 06 04	704	0.2+	0.5+
1994 03 12	675	0.3–	1.3+	1994 05 14	675	0.0	0.6–	1998 06 04	704	0.5–	0.2+
1994 03 13	675	1.5+	0.0	1994 05 15	675	0.6+	0.3–	1998 06 04	704	0.3+	0.7–
1994 03 14	381	0.7–	0.2–	1994 05 15	675	(0.3+	2.1–)	1998 06 23	699	0.4–	0.5+
1994 03 14	381	(0.9–	2.7–)	1998 05 27	704	0.2+	0.1–	1998 06 23	699	0.3+	0.1–
1994 03 15	010	(2.0–	3.6+)	1998 05 27	704	0.1+	0.2+	1998 06 23	699	0.3–	0.0
1994 03 15	010	(2.3–	3.1+)	1998 05 27	704	0.1+	0.0	1998 07 14	699	0.7–	0.4–
1994 03 15	675	0.3+	1.5–	1998 05 27	704	0.1+	0.6+	1998 07 14	699	0.0	0.2–
1994 03 15	675	0.8+	0.3–	1998 05 27	704	0.0	0.4+	1998 07 14	699	0.3–	0.0

1994 GE₁₀ = 1979 GG = 1997 AJ₁₄ = 1998 HA₄₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	148.04203	(2000.0)	<i>P</i>	Nakano	<i>Q</i>
<i>n</i>	0.26115783	ω	334.25644	+0.26217252	–0.96481638
<i>a</i>	2.4240078	Ω	100.53937	+0.88884517	+0.23340707
<i>e</i>	0.0422486	<i>i</i>	1.15823	+0.37579227	+0.12103921
<i>P</i>	3.77	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1979 04 01	809	0.4+	0.2–	1997 01 11	327	0.1–	0.3–	1998 04 21	704	0.3–	0.6–
1979 04 02	809	0.5–	0.1–	1997 01 11	327	0.3+	0.5–	1998 04 21	704	0.7–	0.1+
1994 04 03	033	0.9+	1.1+	1997 01 11	327	0.1+	0.2–	1998 04 21	704	0.0	0.2+
1994 04 03	033	0.2+	0.3+	1998 04 20	704	0.8–	0.2–	1998 04 21	704	0.3–	0.6+
1994 04 03	033	0.3–	0.2+	1998 04 20	704	1.5+	0.1+	1998 04 22	704	0.4+	0.0
1994 04 04	033	0.0	0.4+	1998 04 20	704	0.2–	0.9+	1998 04 22	704	0.8+	1.8–

1997 01 09	327	0.1–	0.1–	1998 04 20	704	0.4–	0.2–	1998 04 22	704	0.1–	0.3–
1997 01 09	327	0.3–	0.2–	1998 04 20	704	0.6–	1.2+	1998 04 22	704	0.6+	0.8–
1997 01 09	327	0.3+	0.2+	1998 04 21	704	0.3–	0.1+	1998 04 22	704	0.4–	1.2–

1994 JG₄ = 1982 DH₂ = 1998 LJ

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	122.50442	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.25938549	ω	267.36395	–0.55010721	–0.83449086
<i>a</i>	2.4350372	Ω	216.06909	+0.78600708	–0.50456141
<i>e</i>	0.1320066	<i>i</i>	3.08974	+0.28209028	–0.22145604
<i>P</i>	3.80	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1982 02 21	046	0.2+	0.5–	1994 05 11	691	0.0	0.2+	1998 06 01	809	(0.3–	2.4+)
1982 02 21	046	0.2–	0.5+	1994 05 17	691	0.1+	0.1–	1998 06 02	809	0.6+	0.2+
1994 05 03	691	0.4–	0.0	1994 05 17	691	0.5+	0.2+	1998 06 02	809	0.1+	1.1+
1994 05 03	691	0.3–	0.1–	1994 05 17	691	0.3+	0.0	1998 06 02	809	0.3–	0.5–
1994 05 03	691	0.3–	0.0	1994 06 08	675	(3.2+	1.8+)	1998 06 24	704	1.3+	0.7–
1994 05 11	691	0.0	0.1–	1998 06 01	809	(1.6+	2.6+)	1998 06 24	704	(0.9–	2.2–)
1994 05 11	691	0.0	0.0	1998 06 01	809	(1.2+	2.2+)	1998 06 24	704	1.7–	0.1–

1994 JJ₅ = 1998 HU₁₃₂

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	237.10840	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.21902417	ω	291.85238	+0.91929464	+0.38436807
<i>a</i>	2.7256789	Ω	45.65908	–0.30308001	+0.82852140
<i>e</i>	0.1561062	<i>i</i>	6.79407	–0.25107744	+0.40720200
<i>P</i>	4.50	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1994 05 04	691	0.5–	0.4–	1998 03 24	704	0.1–	0.8+	1998 04 19	704	0.2+	0.4+
1994 05 04	691	0.4–	0.0	1998 03 24	704	0.1–	0.5+	1998 04 19	704	0.2–	1.7–
1994 05 04	691	0.5–	0.3+	1998 03 24	704	0.1–	0.6+	1998 04 19	704	0.1+	0.4–
1994 05 11	691	0.1–	0.5–	1998 03 24	704	0.0	0.4+	1998 04 20	704	0.7+	0.5–
1994 05 11	691	0.0	0.3–	1998 03 24	704	0.4–	0.7–	1998 04 20	704	1.0–	1.0+
1994 05 11	691	(2.4+	0.4–)	1998 03 24	566	0.7+	1.0–	1998 04 20	704	0.4–	0.7+
1994 05 17	691	0.9+	0.3+	1998 03 24	566	0.1+	0.6–	1998 04 20	704	0.3+	0.3+
1994 05 17	691	0.1+	0.1+	1998 03 24	566	0.9+	0.9–	1998 04 20	704	1.1–	1.5+
1994 05 17	691	0.4+	0.3+	1998 04 19	704	0.6+	0.3–				

1994 LC = 1998 KE₆₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	16.51423	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.24485944	ω	108.14451	–0.53226177	+0.83603023
<i>a</i>	2.5304134	Ω	128.95455	–0.82698472	–0.47979845
<i>e</i>	0.1779985	<i>i</i>	9.86504	–0.18109026	–0.26617080
<i>P</i>	4.03	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1994 06 01	402	0.0	0.3+	1998 05 23	704	0.8+	0.5–	1998 06 19	704	0.4+	0.2+
1994 06 01	402	0.7–	1.0+	1998 05 23	704	0.4+	0.3+	1998 06 19	704	0.2–	0.4+
1994 06 02	402	0.6+	0.3+	1998 05 23	704	0.2+	0.3+	1998 06 19	704	0.9–	0.4–
1994 06 02	402	1.0–	0.2–	1998 05 26	704	0.4–	0.5–	1998 06 19	704	0.1–	0.4–
1994 06 05	900	0.9–	1.4–	1998 05 26	704	0.0	0.1+	1998 06 26	699	0.5+	0.4+
1994 06 05	900	0.4+	0.5–	1998 05 26	704	0.9–	0.1–	1998 06 26	699	0.0	0.0
1994 06 16	900	0.0	0.2–	1998 05 26	704	0.1–	0.0	1998 06 26	699	0.4–	0.4+
1994 06 16	900	1.6+	0.4+	1998 05 26	704	0.1–	1.2+				
1998 05 23	704	0.5+	0.6–	1998 06 19	704	0.3+	0.5–				

1994 PE = 1997 EA₁₂

Id. S. Nakano

1998 AUG. 8

M.P.C. 32235

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	273.08136	(2000.0)	P	Q
<i>n</i>	0.18108616	ω 13.74213	+0.66316945	+0.73248791
<i>a</i>	3.0941822	Ω 298.04609	-0.70212676	+0.53762283
<i>e</i>	0.0844600	<i>i</i> 10.03867	-0.25927648	+0.41763999
<i>P</i>	5.44	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1994 08 05	104	0.2-	0.1+	1994 08 11	104	1.0-	1.1+	1994 08 14	104	0.1-	0.3-
1994 08 05	104	0.1-	0.2+	1994 08 11	104	0.5+	0.8+	1994 08 14	104	0.1+	1.3-
1994 08 05	104	0.1+	0.2+	1994 08 11	104	0.3-	0.4+	1997 03 02	691	0.2-	0.2-
1994 08 06	104	0.3+	0.7-	1994 08 11	104	0.5-	0.3+	1997 03 02	691	0.5-	0.2-
1994 08 06	104	1.1+	0.1+	1994 08 11	104	0.8-	0.1-	1997 03 02	691	0.5-	0.1-
1994 08 06	104	0.9-	0.3-	1994 08 11	104	0.6-	0.2-	1997 03 10	691	0.5+	0.1+
1994 08 06	104	0.8+	0.4-	1994 08 11	104	0.2-	0.5-	1997 03 10	691	0.4+	0.2+
1994 08 07	104	0.0	0.2+	1994 08 14	104	0.4+	0.6+	1997 03 10	691	0.5+	0.1+
1994 08 07	104	1.2+	0.1+	1994 08 14	104	0.3+	0.2-				

1994 PJ₁ = 1998 MV₇

Id. E. Bowell

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	19.66573	(2000.0)	P	Q
<i>n</i>	0.24191306	ω 136.94206	+0.17081939	+0.97415187
<i>a</i>	2.5509181	Ω 142.17632	-0.95675993	+0.19984090
<i>e</i>	0.1348851	<i>i</i> 13.94791	-0.23543827	-0.10531736
<i>P</i>	4.07	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 14	413	0.2-	1.9-	1994 09 17	413	0.4+	1.0+	1998 07 15	699	0.7-	0.1+
1994 08 16	413	0.1+	0.3-	1994 09 17	413	0.0	0.9+	1998 07 15	699	0.1-	0.1+
1994 08 16	413	0.1+	0.3-	1998 06 19	699	0.4-	0.4-	1998 07 15	699	0.9-	0.1-
1994 08 17	413	0.0	0.1-	1998 06 19	699	0.2-	0.6+	1998 08 01	910	0.5+	0.6+
1994 08 17	413	0.2-	0.0	1998 06 19	699	0.2-	0.2+	1998 08 02	910	0.5+	0.7+
1994 08 26	413	0.0	0.2-	1998 06 26	699	0.5+	0.1+	1998 08 02	910	0.5+	0.6+
1994 08 26	413	0.1-	0.2-	1998 06 26	699	0.4+	0.6-				
1994 08 28	413	0.0	0.2-	1998 06 26	699	0.1-	0.4-				

1994 PN₁ = 1998 MN₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	251.20185	(2000.0)	P	Q
<i>n</i>	0.21132435	ω 307.68363	+0.48069332	-0.78314296
<i>a</i>	2.7914918	Ω 109.02191	+0.87665731	+0.41885437
<i>e</i>	0.1969633	<i>i</i> 24.66260	+0.02014685	+0.45961737
<i>P</i>	4.66	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1994 08 09	413	0.1+	0.6+	1994 08 16	413	0.3-	0.5+	1998 06 24	704	1.1+	0.1-
1994 08 09	413	1.3-	3.6+	1994 08 17	413	0.2+	0.3+	1998 06 24	704	0.8+	0.3-
1994 08 11	413	0.5+	1.1-	1994 08 17	413	0.0	0.4+	1998 06 24	704	1.0-	0.3-
1994 08 11	413	1.5+	3.8-	1994 08 26	413	0.3-	0.5-	1998 06 26	704	0.2-	0.1-
1994 08 15	413	0.3+	0.1-	1994 08 26	413	0.4-	0.3-	1998 06 26	704	1.5-	1.0+
1994 08 15	413	0.1+	0.1-	1998 06 24	704	0.0	0.2+	1998 06 26	704	0.5-	0.3-
1994 08 16	413	0.3-	0.5+	1998 06 24	704	2.0+	0.1+	1998 06 26	704	0.7-	0.3-

1994 PG₅ = 1998 HZ₁₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	286.20604	(2000.0)	P	Q
<i>n</i>	0.18052657	ω 329.24724	+0.41534335	+0.90630492
<i>a</i>	3.1005730	Ω 325.12120	-0.80435423	+0.32579885
<i>e</i>	0.1105447	<i>i</i> 7.85086	-0.42485783	+0.26919603
<i>P</i>	5.46	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 08 10	809	0.1+	0.4+	1994 09 03	809	0.1-	0.6-	1998 04 19	704	0.4+	0.4-
1994 08 10	809	0.8+	0.8+	1994 09 04	809	0.1+	0.5+	1998 04 20	704	1.2-	0.1-
1994 08 10	809	0.1+	0.5+	1994 09 04	809	0.4-	0.7+	1998 04 20	704	1.3+	0.2-
1994 08 11	809	0.4-	0.5-	1994 09 04	809	0.4-	0.2-	1998 04 20	704	0.1-	0.2-
1994 08 11	809	0.1-	1.0-	1998 04 19	704	0.1+	0.2+	1998 04 20	704	0.5-	0.3-
1994 08 11	809	0.5-	0.3-	1998 04 19	704	0.2-	0.1+	1998 04 20	704	1.2+	0.8+
1994 09 03	809	1.2+	0.2-	1998 04 19	704	0.4-	0.4+				
1994 09 03	809	0.4-	0.3-	1998 04 19	704	0.7-	0.2-				

1994 PE₉ = 1997 CL₂₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	69.31758	(2000.0)	P	Q
<i>n</i>	0.26200867	ω 98.28106	-0.42657559	+0.90072861
<i>a</i>	2.4187572	Ω 146.08824	-0.87686546	-0.38964590
<i>e</i>	0.2625172	<i>i</i> 8.44995	-0.22167595	-0.19200011
<i>P</i>	3.76	<i>H</i> 15.4	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1994 08 10	809	0.1-	0.0	1994 08 12	809	1.6+	0.6-	1997 02 10	691	0.8+	0.7-
1994 08 10	809	0.7-	0.4-	1994 08 12	809	(0.3-	2.7-)	1997 02 10	691	0.6+	0.5-
1994 08 10	809	1.7-	1.9-	1994 08 12	809	1.6-	1.8-	1997 02 10	691	0.9+	0.2-
1994 08 11	809	0.3+	1.2+	1994 08 13	809	0.3+	0.5+	1997 02 13	691	0.8-	0.5+
1994 08 11	809	1.2+	0.5+	1994 08 13	809	0.4-	0.4+	1997 02 13	691	0.9-	0.3+
1994 08 11	809	1.1+	1.5+	1994 08 13	809	0.2+	0.7+	1997 02 13	691	0.7-	0.6+

1994 PK₉ = 1992 EV₇ = 1998 HR₁₂₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	281.25130	(2000.0)	P	Q
<i>n</i>	0.19180505	ω 162.11783	+0.78992856	+0.61024059
<i>a</i>	2.9778034	Ω 159.90894	-0.58182241	+0.77687448
<i>e</i>	0.0843862	<i>i</i> 10.08642	-0.19363769	+0.15515307
<i>P</i>	5.14	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 03 02	809	0.8-	0.7+	1994 08 11	809	2.6-	0.7-	1998 04 23	704	0.7+	0.3+
1992 03 04	809	0.7+	0.4-	1994 09 03	809	1.5+	0.5+	1998 04 23	704	0.8-	0.9-
1992 03 07	809	0.1+	0.0	1994 09 03	809	1.7+	0.4-	1998 04 23	704	0.1+	0.6+
1994 08 10	809	0.4-	0.4-	1994 09 03	809	1.6+	0.8+	1998 04 23	704	0.2-	0.0
1994 08 10	809	1.0-	0.9-	1994 09 04	809	1.7+	0.8+	1998 04 24	704	0.7+	0.5-
1994 08 10	809	1.0-	0.5-	1994 09 04	809	1.5+	0.8+	1998 04 24	704	0.4+	0.2+
1994 08 11	809	1.8-	0.0	1994 09 04	809	0.9+	0.3+	1998 04 24	704	0.9-	0.5+
1994 08 11	809	2.4-	0.2-	1998 04 23	704	1.0-	0.9-	1998 04 24	704	1.1+	0.8+

1994 PO₉ = 1994 RP₁₅ = 1975 ES₄ = 1978 TO₂ = 1996 YP₁
= 1998 KQ₁₆Id. S. Nakano (d, *MPC* 27543; unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	67.72636	(2000.0)	P	Q
<i>n</i>	0.17586144	ω 42.17385	-0.90677365	-0.42150952
<i>a</i>	3.1551666	Ω 112.89390	+0.38400454	-0.83502193
<i>e</i>	0.1334122	<i>i</i> 0.59418	+0.17407486	-0.35364967
<i>P</i>	5.60	<i>H</i> 12.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 03 15	095	0.8-	0.9-	1994 09 03	809	1.2-	0.7-	1998 05 22	704	0.5+	0.5-
1978 10 03	095	(3.1-	1.0-)	1994 09 04	809	0.1+	0.6-	1998 05 22	704	0.9+	0.1+
1978 10 07	095	0.7+	1.0+	1994 09 04	809	0.2+	1.0-	1998 05 22	704	1.0+	0.1-
1994 08 10	809	0.3-	1.2-	1994 09 04	809	0.7-	1.0-	1998 05 22	704	0.4-	0.4-
1994 08 10	809	0.2+	1.0-	1996 12 18	327	0.7+	0.7-	1998 05 24	704	0.3-	0.1+
1994 08 10	809	0.6-	1.2-	1996 12 18	327	0.9-	0.5-	1998 05 24	704	0.7-	0.7-
1994 08 11	809	1.5+	0.0	1996 12 18	327	0.1+	0.6-	1998 05 24	704	0.7-	0.3+
1994 08 11	809	1.3+	0.0	1996 12 22	327	0.1+	0.0	1998 05 24	704	0.5-	0.2+
1994 08 11	809	1.4+	0.6+	1996 12 22	327	0.4-	1.0-	1998 05 24	704	0.7-	0.9-

M.P.C. 32236

1994 09 03	809	0.4−	0.3+	1996 12 22	327	0.8−	1.2−
1994 09 03	809	0.7−	0.1+	1998 05 22	704	1.0+	0.0

1994 PR₁₄ = 1998 OG₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	11.50237		(2000.0)		P		Q
<i>n</i>	0.22917473	ω	100.94058	+0.21692681		+0.97618576	
<i>a</i>	2.6445893	Ω	181.59229	−0.92173975		+0.20414237	
<i>e</i>	0.0749958	<i>i</i>	4.18849	−0.32146320		+0.07339790	
<i>P</i>	4.30	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	1.1+	0.6+	1994 09 03	809	1.2−	1.0−	1998 07 21	910	0.4−	0.4−
1994 08 10	809	0.5+	1.2+	1994 09 03	809	0.5−	0.2−	1998 07 23	910	0.2−	0.3+
1994 08 10	809	0.5−	0.3+	1994 09 04	809	1.1+	0.6+	1998 07 23	910	0.0	0.1+
1994 08 11	809	0.3+	1.0−	1994 09 04	809	1.9+	1.0+	1998 07 24	910	0.0	0.3+
1994 08 11	809	0.4−	0.9−	1994 09 04	809	0.1+	0.3+	1998 07 26	910	0.1+	0.1−
1994 08 11	809	1.0−	0.2−	1998 07 20	910	0.3−	0.3−	1998 07 26	910	0.4+	0.1+
1994 09 03	809	1.4−	0.6−	1998 07 21	910	0.1+	0.0	1998 07 27	910	0.3+	0.1−

1994 PJ₂₂ = 1998 HS₈₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	36.65469		(2000.0)		P		Q
<i>n</i>	0.17443100	ω	158.79215	−0.99629812		+0.08464463	
<i>a</i>	3.1723927	Ω	26.07719	−0.08296707		−0.90105884	
<i>e</i>	0.1373739	<i>i</i>	1.95699	−0.02250599		−0.42535662	
<i>P</i>	5.65	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	1.6+	1.8+	1994 09 06	809	0.3−	0.4−	1998 04 22	704	0.4−	0.4−
1994 08 12	809	1.3+	0.6+	1994 09 11	675	0.9−	1.2+	1998 05 22	704	0.5+	1.2+
1994 08 12	809	0.8+	0.7+	1998 04 21	704	0.1+	0.0	1998 05 22	704	0.4+	0.3−
1994 08 13	809	0.0	1.6−	1998 04 21	704	0.5−	0.1+	1998 05 22	704	0.8+	0.6+
1994 08 13	809	0.2−	1.9−	1998 04 21	704	0.5−	0.4+	1998 05 22	704	1.3+	0.7−
1994 08 13	809	1.2−	1.2−	1998 04 21	704	0.2−	0.1+	1998 05 23	704	0.5−	0.1+
1994 09 05	809	0.4+	0.7+	1998 04 21	704	0.4−	1.2−	1998 05 23	704	0.3+	0.1−
1994 09 05	809	0.4−	0.4+	1998 04 22	704	0.0	0.3+	1998 05 23	704	0.5+	1.0+
1994 09 05	809	2.0−	0.8+	1998 04 22	704	0.3−	0.4−	1998 05 23	704	0.9+	0.0
1994 09 06	809	1.1+	0.8−	1998 04 22	704	0.6−	0.2−	1998 05 23	704	0.9−	0.9−
1994 09 06	809	0.1+	0.5−	1998 04 22	704	0.2−	0.3+				

1994 PL₂₅ = 1998 HT₁₀₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	344.35088		(2000.0)		P		Q
<i>n</i>	0.18420201	ω	99.20269	−0.48123740		+0.86843493	
<i>a</i>	3.0591902	Ω	141.28750	−0.86038098		−0.44189423	
<i>e</i>	0.0611898	<i>i</i>	10.99633	−0.16779494		−0.22483384	
<i>P</i>	5.35	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.6−	0.5−	1994 09 05	809	0.1−	1.2−	1998 04 23	704	0.3−	0.2+
1994 08 12	809	0.5−	1.1−	1994 09 06	809	1.0+	1.4+	1998 04 23	704	0.2+	0.2−
1994 08 12	809	1.0−	2.2−	1994 09 06	809	0.3+	0.1−	1998 04 23	704	0.6+	1.7+
1994 08 13	809	1.3+	1.5+	1994 09 06	809	0.9+	0.7+	1998 04 24	704	0.5+	1.2−
1994 08 13	809	0.5+	1.3+	1994 09 09	675	0.8−	0.1−	1998 04 24	704	0.1−	0.4+
1994 08 13	809	0.5+	1.2+	1994 09 09	675	0.2+	0.0	1998 04 24	704	0.5−	0.3−
1994 09 05	809	0.8−	0.0	1998 04 23	704	0.6+	0.3+	1998 04 24	704	0.1−	0.4−
1994 09 05	809	0.7−	0.8−	1998 04 23	704	0.3+	0.6+	1998 04 24	704	1.2−	1.1−

1998 AUG. 8

1994 PU₂₆ = 1998 MK₃₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	348.50768		(2000.0)		P		Q
<i>n</i>	0.23630690	ω	189.23207	+0.64880107		+0.75975072	
<i>a</i>	2.5911056	Ω	121.23218	−0.69492846		+0.61450645	
<i>e</i>	0.1792178	<i>i</i>	2.87237	−0.31005097		+0.21251040	
<i>P</i>	4.17	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 12	809	1.1+	0.3−	1994 09 06	809	0.2−	0.9+	1998 06 26	704	0.2+	0.8+
1994 08 12	809	0.6+	0.4+	1994 09 06	809	0.3−	1.0+	1998 06 26	704	0.5−	0.4−
1994 08 12	809	0.7+	0.2−	1994 09 06	809	0.1−	0.6+	1998 06 26	704	1.2+	1.5−
1994 08 13	809	2.2−	1.3−	1998 06 24	704	0.9+	2.3+	1998 07 16	699	0.1+	0.1−
1994 08 13	809	0.9−	1.5−	1998 06 24	704	1.5−	1.2+	1998 07 16	699	0.2+	0.0
1994 08 13	809	0.1−	1.9−	1998 06 24	704	0.4+	0.2−	1998 07 16	699	0.0	0.0
1994 09 05	809	0.4+	1.4+	1998 06 24	704	0.8−	0.0	1998 07 20	566	0.3−	0.3−
1994 09 05	809	0.4+	0.3+	1998 06 24	704	0.4−	0.3−	1998 07 20	566	0.3−	0.5−
1994 09 05	809	0.6+	0.3+	1998 06 26	704	0.9+	0.4+	1998 07 20	566	0.3−	0.7−

1994 PZ₂₆ = 1998 KX₅₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	160.60334		(2000.0)		P		Q
<i>n</i>	0.17587007	ω	296.60620	+0.19471581		−0.97285230	
<i>a</i>	3.1550634	Ω	141.50185	+0.95615928		+0.15982597	
<i>e</i>	0.1556739	<i>i</i>	11.59133	+0.21873544		+0.16737404	
<i>P</i>	5.60	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.5+	1.0+	1994 09 05	809	0.8+	0.3+	1998 05 23	704	0.2+	0.8−
1994 08 12	809	1.3+	0.7+	1994 09 06	809	0.5+	0.5−	1998 05 23	704	2.2+	0.7+
1994 08 12	809	0.2+	0.4+	1994 09 06	809	0.0	1.0−	1998 05 23	704	1.4+	0.3−
1994 08 13	809	0.9+	0.1−	1994 09 06	809	0.0	1.4−	1998 05 23	704	3.5−	0.3+
1994 08 13	809	0.5−	0.6−	1994 09 09	675	0.1+	0.2+	1998 05 26	704	0.7+	0.2+
1994 08 13	809	0.8−	1.3−	1994 09 09	675	1.5−	0.8+	1998 05 26	704	0.3−	0.2−
1994 09 05	809	1.1+	0.9+	1994 10 01	675	1.9−	0.5+	1998 05 26	704	0.5+	0.7+
1994 09 05	809	0.4−	0.4+	1994 10 01	675	0.7−	0.3−	1998 05 26	704	1.2−	0.6−

1994 PW₂₉ = 1997 GV₂₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	231.38763		(2000.0)		P		Q
<i>n</i>	0.19661320	ω	211.00319	+0.81876300		−0.57398226	
<i>a</i>	2.9290555	Ω	184.09782	+0.55713624		+0.79982830	
<i>e</i>	0.1319113	<i>i</i>	10.56018	+0.13865914		+0.17555358	
<i>P</i>	5.01	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 12	809	0.1+	0.1+	1994 09 05	809	0.1−	1.0+	1997 04 12	816	0.3+	0.6−
1994 08 12	809	0.9−	0.2+	1994 09 06	809	1.3−	1.7−	1997 04 12	816	0.7+	0.2+
1994 08 12	809	1.1−	0.2+	1994 09 06	809	0.9−	1.5−	1997 04 12	816	0.8+	0.3+
1994 08 13	809	1.7+	0.1+	1994 09 06	809	0.6−	0.5−	1997 04 13	691	0.3+	0.6−
1994 08 13	809	0.3+	0.3+	1997 04 07	691	0.9−	0.5+	1997 04 13	691	0.2+	0.5−
1994 08 13	809	0.8+	0.7−	1997 04 07	691	0.7−	0.4+	1997 04 13	691	0.1−	0.6−
1994 09 05	809	1.4+	2.0+	1997 04 07	691	1.1−	0.5+				
1994 09 05	809	0.6+	0.5+	1997 04 12	816	0.4+	0.5+				

1994 PA₃₁ = 1998 HY₁₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	177.64288		(2000.0)		P		Q
<i>n</i>	0.17041228	ω	235.13552	+0.67699474		−0.73525040	
<i>a</i>	3.2220736	Ω	172.00208	+0.72857953		+0.66317464	
<i>e</i>	0.0620237	<i>i</i>	13.69404	+0.10416331		+0.14002232	
<i>P</i>	5.78	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

1998 AUG. 8

M.P.C. 32237

Residuals in seconds of arc

1994 08 12	809	1.0+	0.6+	1994 09 05	809	0.3+	0.2-	1998 04 23	704	1.4-	1.2-
1994 08 12	809	0.2+	0.6+	1994 09 05	809	0.0	1.4-	1998 04 23	704	0.2-	0.4+
1994 08 12	809	0.1-	0.2+	1994 09 06	809	0.1-	0.7+	1998 04 24	704	0.8+	0.1+
1994 08 13	809	0.0	0.3-	1994 09 06	809	0.0	0.2-	1998 04 24	704	1.0+	0.7-
1994 08 13	809	0.3-	0.6-	1994 09 06	809	0.0	1.6+	1998 04 24	704	0.2-	0.1+
1994 08 13	809	0.9-	0.4-	1998 04 23	704	0.4+	0.3-	1998 04 24	704	0.1+	1.0+
1994 09 05	809	0.1-	0.6-	1998 04 23	704	0.5-	0.5+				

1994 PT₃₁ = 1997 GH₁₅

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	56.94393		(2000.0)	P	Q
n	0.24034621	ω	43.31929	-0.27075787	+0.96211646
a	2.5619926	Ω	211.01187	-0.89928179	-0.26464594
e	0.0521774	i	3.55762	-0.34348571	-0.06553208
P	4.10	H	14.5	G 0.15	U 3

Residuals in seconds of arc

1994 08 12	809	0.9+	0.1+	1994 09 06	809	1.6-	0.2+	1997 04 05	704	0.3-	0.6+
1994 08 12	809	0.9+	0.2-	1997 03 11	809	1.0+	0.2+	1997 04 05	704	1.1+	0.2-
1994 08 12	809	0.9-	0.3-	1997 03 11	809	1.1+	0.1-	1997 04 06	704	0.5-	0.3+
1994 08 13	809	1.1+	0.1-	1997 03 11	809	0.9+	0.5-	1997 04 06	704	1.3-	1.3+
1994 08 13	809	0.0	0.2-	1997 03 13	809	(3.0-	0.4-)	1997 04 07	704	0.3-	0.3+
1994 08 13	809	0.1-	0.4-	1997 03 13	809	1.7+	0.8-	1997 04 07	704	0.6-	0.6+
1994 09 05	809	0.9+	0.2+	1997 03 13	809	2.0-	1.2-	1998 07 26	699	0.3-	0.8+
1994 09 05	809	0.6+	0.0	1997 04 03	704	0.2+	0.6-	1998 07 26	699	0.7-	0.4-
1994 09 05	809	0.2-	0.7-	1997 04 03	704	0.0	0.4+	1998 07 26	699	0.7+	0.4+
1994 09 06	809	(2.3-	0.8+)	1997 04 05	704	0.4-	0.4-				
1994 09 06	809	1.0-	0.5+	1997 04 05	704	0.4-	0.5-				

1994 PL₃₄ = 1977 RE₁₆ = 1997 HD₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

M	246.07059		(2000.0)	P	Q		
n	0.22890725	ω	203.82991	+0.49321545	-0.86929706		
a	2.6466490	Ω	216.64161	+0.80663974	+0.47104333		
e	0.1196253	i	3.12889	+0.32568521	+0.14980253		
P	4.31	H	14.9	G	0.15	U	5

Residuals in seconds of arc

1977 09 09	675	0.6-	0.2-	1994 08 11	809	0.4-	0.5-	1997 04 29	691	0.2+	0.1+
1977 09 10	675	0.8+	0.5-	1994 09 03	809	(3.9-	5.8-)	1997 04 29	691	0.8+	0.4+
1994 08 10	809	0.8+	1.1+	1994 09 03	809	(4.0-	6.8-)	1997 04 29	691	0.5+	0.5+
1994 08 10	809	0.7-	0.2-	1994 09 03	809	(4.3-	7.1-)	1997 05 08	691	0.6-	0.6-
1994 08 10	809	0.2+	0.3+	1994 09 04	809	(1.8-	5.4-)	1997 05 08	691	0.7-	0.5-
1994 08 11	809	0.1-	0.2-	1994 09 04	809	(0.1+	4.6-)	1997 05 08	691	0.5-	0.3-
1994 08 11	809	0.0	0.0	1994 09 04	809	(0.2-	4.0-)				

1994 PW₃₈ = 1997 EQ₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

$\dot{M}$	2.95801		(2000.0)	P	Q		
n	0.24597327	ω	120.42530	+0.62971641	+0.77682289		
a	2.5227688	Ω	188.60464	-0.71691516	+0.58022893		
e	0.1629351	i	0.71159	-0.29914864	+0.24470511		
P	4.01	H	16.3	G	0.15	U	5

Residuals in seconds of arc

1994 08 10	809	1.2+	1.3+	1994 09 03	809	0.4-	0.4-	1997 03 02	691	0.2-	0.1-
1994 08 10	809	0.2-	0.2+	1994 09 03	809	0.5-	1.1-	1997 03 02	691	0.8-	0.2-
1994 08 10	809	0.1-	1.3+	1994 09 03	809	0.6+	0.0	1997 03 02	691	0.2-	0.0
1994 08 11	809	0.2-	0.3-	1994 09 04	809	0.8+	0.1+	1997 03 08	691	0.4+	0.3-
1994 08 11	809	1.0-	0.8-	1994 09 04	809	0.2-	0.2-	1997 03 08	691	0.4+	0.1+
1994 08 11	809	0.1-	0.8-	1994 09 04	809	0.2+	0.3+	1997 03 08	691	0.3+	0.0

1994 PE₃₉ = 1997 EL₅₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

M	39.18513		(2000.0)	P	Q
n	0.25445693	ω	118.55940	+0.21817033	+0.97544112
a	2.4663793	Ω	163.95646	-0.92928704	+0.21712018
e	0.1125995	i	6.28829	-0.29803910	+0.03706005
P	3.87	H	14.7	G 0.15	U 5

Residuals in seconds of arc

1994 08 10	809	1.1+	0.6+	1994 09 03	809	0.0	0.9-	1997 03 10	809	0.9-	1.6+
1994 08 10	809	0.6+	0.7+	1994 09 03	809	0.9-	0.8-	1997 03 10	809	0.4-	0.9+
1994 08 10	809	0.1-	0.5+	1994 09 03	809	2.1-	0.8-	1997 03 10	809	1.1-	1.2+
1994 08 11	809	0.1-	0.4-	1994 09 04	809	2.0+	1.1+	1997 03 11	809	0.8+	0.7-
1994 08 11	809	0.7-	0.6-	1994 09 04	809	0.3+	0.5+	1997 03 11	809	0.7+	1.2-
1994 08 11	809	0.8-	0.8-	1994 09 04	809	0.7+	1.0+	1997 03 11	809	0.9+	1.8-

1994 QP = 1998 HM₁₀₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

M	253.67453		(2000.0)	P	Q
n	0.17336832	ω	257.85105	+0.74032162	+0.57022553
a	3.1853431	Ω	66.31856	-0.35755673	+0.78249924
e	0.1714692	i	22.87870	-0.56927769	+0.25007553
P	5.69	H	13.5	G 0.15	U 6

Residuals in seconds of arc

1994 08 27	413	1.1-	0.4-	1994 09 18	413	0.3-	0.2+	1998 04 30	704	1.3+	0.6-
1994 08 27	413	(2.8+	1.4+)	1994 09 18	413	0.1+	0.0	1998 04 30	704	1.2-	1.5+
1994 08 28	413	0.8+	0.4+	1998 04 28	704	1.0-	0.8+	1998 04 30	704	0.5+	1.5-
1994 08 28	413	0.7+	0.3+	1998 04 28	704	0.9+	0.5-	1998 04 30	704	0.1+	0.1+
1994 09 17	413	0.1-	0.4-	1998 04 28	704	1.0+	0.5-				
1994 09 17	413	0.1-	0.4-	1998 04 28	704	1.7-	0.6+				

1994 QT = 1978 TC₃ = 1997 CQ₁₈ = 1998 HV₆₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

M	253.89677		(2000.0)	P	Q		
n	0.18111127	ω	332.94087	+0.96813633	+0.25031889		
a	3.0938962	Ω	12.56911	-0.22331337	+0.87606078		
e	0.1609539	i	1.90815	-0.11332781	+0.41213827		
P	5.44	H	13.3	G	0.15	U	1

Residuals in seconds of arc

1978 10 04	095	0.6+	1.5-	1994 09 03	411	0.8-	0.1+	1998 04 21	704	0.8-	0.3-
1994 08 16	411	0.1-	0.3-	1994 09 03	411	0.1+	0.7+	1998 04 21	704	0.2+	0.1-
1994 08 16	411	1.1+	0.4+	1994 09 03	411	0.2-	0.5+	1998 04 21	704	0.4-	0.0
1994 08 17	411	1.0-	0.5+	1994 09 03	033	0.1+	0.6-	1998 04 21	704	0.4+	0.8-
1994 08 17	411	0.2-	0.2-	1997 02 07	691	0.6+	0.2+	1998 04 21	704	0.1-	0.2+
1994 09 01	411	0.7+	0.1+	1997 02 07	691	0.2+	0.2+	1998 04 22	704	0.3+	0.6-
1994 09 01	411	0.3+	0.4+	1997 02 07	691	0.2+	0.1+	1998 04 22	704	0.1+	0.7-
1994 09 01	411	0.4-	0.6+	1997 02 11	691	0.0	0.1+	1998 04 22	704	0.1-	0.4+
1994 09 01	033	0.6-	0.7-	1997 02 11	691	0.6-	0.0	1998 04 22	704	0.4-	0.1+
1994 09 02	033	0.6+	0.6-	1997 02 11	691	0.1-	0.2+	1998 04 22	704	0.4+	0.5+

1994 RY₁ = 1998 MC₁₂

Id. G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

M	316.43568		(2000.0)	P	Q
n	0.23146752	ω	180.85592	+0.98656280	+0.15548453
a	2.6270964	Ω	169.77882	-0.14816997	+0.98087862
e	0.2894363	i	16.42784	-0.06884408	+0.11705426
P	4.26	H	13.5	G 0.15	U 3

Residuals in seconds of arc

1994 08 05	033	0.2-	0.2+	1994 10 09	026	0.6-	1.1-	1998 06 25	704	0.8+	1.2-
1994 09 01	675	1.7-	1.9-	1994 10 09	026	1.3-	0.6+	1998 06 25	704	0.4+	1.1-

1998 AUG. 8

M	71.10004	(2000.0)	P	Q
n	0.36871376	ω 302.11115	-0.95912040	+0.01047522
a	1.9260896	Ω 239.93643	+0.05594307	-0.97257684
e	0.0536466	i 19.07248	-0.27741382	-0.23234580
P	2.67	H 17.0	G 0.15	U 4

1998 AUG. 8

M.P.C. 32239

Residuals in seconds of arc

1995 02 24	413	0.2−	0.2−	1995 03 07	413	0.9−	0.5+	1998 05 24	704	0.2−	1.1−
1995 02 24	413	1.4+	0.1−	1995 03 21	413	1.2+	0.5−	1998 05 24	704	0.4−	1.1+
1995 02 25	413	1.4−	0.1−	1995 03 21	413	1.1+	0.3−	1998 06 21	688	0.6+	0.3−
1995 02 25	413	3.0−	1.8+	1995 06 02	413	0.4−	0.0	1998 06 21	688	0.2+	0.1+
1995 03 01	413	0.4−	0.3+	1995 06 02	413	0.0	0.2−	1998 06 21	688	0.0	0.0
1995 03 01	413	2.9+	1.7−	1998 05 24	704	0.5−	0.4+				
1995 03 07	413	0.5−	0.3+	1998 05 24	704	0.3+	0.1−				

1995 FO₁₀ = 1980 XT = 1988 ST₃ = 1997 WP₃₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	103.30790		(2000.0)	P	Q
<i>n</i>	0.23268333	ω	313.50948	+0.98773702	−0.12771433
<i>a</i>	2.6179371	Ω	54.02688	+0.15475910	+0.87687637
<i>e</i>	0.0392866	<i>i</i>	6.37096	−0.02062062	+0.46344026
<i>P</i>	4.24	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 12 12	046	0.4−	0.3+	1995 04 01	691	0.2+	0.6−	1997 11 29	704	1.1+	0.4−
1980 12 12	046	0.9+	1.7−	1995 04 04	691	0.3−	0.3−	1997 11 29	704	0.0	0.8+
1988 09 16	095	(1.8−	7.4−)	1995 04 04	691	0.1−	0.2−	1997 11 29	704	1.6+	0.2+
1988 09 16	095	1.1+	1.9−	1995 04 04	691	0.1+	0.2−	1997 12 04	704	0.5+	0.3+
1995 03 26	691	0.0	0.0	1997 11 26	704	2.0−	1.9−	1997 12 04	704	0.7+	0.1+
1995 03 26	691	0.4−	0.1−	1997 11 26	704	0.5−	1.3−	1997 12 04	704	0.3−	0.6+
1995 03 26	691	0.2−	0.1−	1997 11 26	704	1.6−	0.1−	1997 12 04	704	0.4−	1.1+
1995 04 01	691	0.3−	0.6−	1997 11 29	704	0.6+	0.5+	1997 12 04	704	0.4−	0.3+
1995 04 01	691	0.2−	0.3−	1997 11 29	704	0.5+	0.3+				

1995 GV = 1971 HE

Id. M. W. Buie (1998 observations), G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	315.75041		(2000.0)	P	Q
<i>n</i>	0.28728977	ω	52.56823	−0.41738349	+0.90864557
<i>a</i>	2.2746920	Ω	192.77973	−0.85047464	−0.39540464
<i>e</i>	0.1107677	<i>i</i>	3.21866	−0.32013106	−0.13423264
<i>P</i>	3.43	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1971 04 20	095	0.4−	1.7−	1995 04 24	033	0.4+	0.8+	1995 05 08	010	2.8+	0.4+
1995 04 07	411	0.6−	0.4+	1995 04 24	033	0.9−	0.9+	1995 06 18	817	0.3+	0.4+
1995 04 07	411	0.1−	1.3+	1995 04 26	411	1.2−	0.1+	1995 06 18	817	0.3+	0.2+
1995 04 10	411	0.2−	0.0	1995 04 26	411	0.8+	0.5+	1995 07 04	817	0.3−	0.7−
1995 04 10	411	0.6+	0.7−	1995 04 27	399	2.7−	1.1−	1995 07 04	817	0.4−	0.1−
1995 04 10	411	0.1+	0.2+	1995 04 27	399	1.7−	0.6−	1995 07 04	817	0.6−	0.4−
1995 04 12	411	0.3−	0.4−	1995 05 05	010	1.4+	2.1−	1998 04 20	688	0.1−	0.1−
1995 04 12	411	0.5+	0.2+	1995 05 05	010	0.0	0.3−	1998 04 20	688	0.3−	0.2−
1995 04 12	411	0.6+	0.4−	1995 05 05	010	0.3+	0.5−	1998 04 20	688	0.1+	0.2−
1995 04 19	411	0.2+	0.2+	1995 05 08	010	1.2+	0.1−				
1995 04 19	411	1.3−	1.7+	1995 05 08	010	0.7+	2.0+				

1995 OF = 1997 AG₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	283.79746		(2000.0)	P	Q
<i>n</i>	0.28207560	ω	68.78781	+0.88699003	+0.44953088
<i>a</i>	2.3026382	Ω	264.36791	−0.45321349	+0.80351032
<i>e</i>	0.1337446	<i>i</i>	6.09654	−0.08857888	+0.39024756
<i>P</i>	3.49	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 07 02	691	0.8−	0.4−	1995 07 24	104	0.5+	1.2−	1995 08 20	104	0.9+	1.4+
1995 07 02	691	0.9−	0.3+	1995 07 24	104	0.1+	0.8−	1995 09 16	104	1.0−	0.3+
1995 07 02	691	0.9−	0.1+	1995 07 24	104	0.2−	0.6+	1995 09 16	104	0.4−	0.5+
1995 07 19	104	0.6+	0.1−	1995 07 26	104	1.1+	1.4−	1995 09 16	104	0.1+	0.5+
1995 07 19	104	0.4+	0.1−	1995 07 26	104	0.8+	1.7−	1995 09 26	104	1.4−	0.2+
1995 07 19	104	0.7+	0.3−	1995 07 26	104	0.5+	1.8−	1995 09 26	104	0.0	0.4−

1995 07 19	104	0.6+	0.4−	1995 07 30	104	1.0−	0.5+	1995 09 26	104	1.2+	1.1−
1995 07 20	104	0.8+	0.9−	1995 07 30	104	1.3−	0.5+	1995 09 26	104	1.6+	1.0−
1995 07 20	104	0.5+	0.3−	1995 07 30	104	1.1−	1.4+	1997 01 15	599	0.3−	0.4−
1995 07 20	104	0.1+	0.8+	1995 08 02	104	1.2+	0.6+	1997 01 15	599	0.1−	0.7−
1995 07 23	104	0.0	0.7+	1995 08 02	104	0.3+	0.1−	1997 01 16	599	0.0	0.4−
1995 07 23	104	0.2+	0.0	1995 08 20	104	2.0−	0.9+	1997 01 16	599	0.1−	0.4−
1995 07 23	104	0.4+	0.3−	1995 08 20	104	0.8−	1.1+				

1995 OR = 1998 HO₈₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	287.97703		(2000.0)	P	Q
<i>n</i>	0.28497812	ω	268.56246	+0.88132083	+0.46647204
<i>a</i>	2.2869765	Ω	63.62685	−0.39316599	+0.81238282
<i>e</i>	0.2226856	<i>i</i>	4.82439	−0.26209558	+0.34991141
<i>P</i>	3.46	<i>H</i>	14.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 07 24	905	0.2−	0.0	1998 04 21	704	0.1+	0.1−	1998 04 22	704	0.3+	0.5−
1995 07 24	905	0.4+	0.2−	1998 04 21	704	0.3+	1.2−	1998 04 22	704	1.0−	0.1−
1995 07 26	905	0.5−	0.6+	1998 04 21	704	0.4−	0.6+	1998 04 22	704	0.1−	0.9+
1995 07 26	905	0.3+	0.4−	1998 04 21	704	0.7+	0.9−	1998 04 22	704	0.1−	0.8+
1995 08 01	905	0.2−	0.5+	1998 04 21	704	0.1−	0.4+				
1995 08 01	905	0.2+	0.5−	1998 04 22	704	0.4+	0.2+				

1995 QE₂ = 1990 VC₉

Id. T. B. Spahr

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	170.12596		(2000.0)	P	Q
<i>n</i>	0.18532221	ω	147.85201	+0.94327100	−0.18628176
<i>a</i>	3.0468500	Ω	225.61122	+0.15847189	+0.98000253
<i>e</i>	0.2284468	<i>i</i>	22.61931	+0.29176442	+0.06995824
<i>P</i>	5.32	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1990 11 10	046	0.0	0.8−	1995 08 31	657	0.3+	0.1+	1995 12 12	608	0.6−	1.3+
1990 11 10	046	0.0	1.4−	1995 09 03	816	0.3−	0.2+	1995 12 13	608	0.6+	0.7+
1995 08 26	693	1.2−	0.2−	1995 09 03	816	0.2−	0.2+	1995 12 13	608	0.4+	0.9+
1995 08 26	693	0.3−	0.1+	1995 09 03	816	0.0	0.2+	1996 12 16	696	0.3+	0.5+
1995 08 27	693	1.5+	0.2−	1995 09 15	658	0.3+	0.0	1996 12 16	696	0.1+	0.0
1995 08 27	693	0.5−	0.1−	1995 09 15	658	0.4+	0.0	1996 12 16	696	0.1+	0.1+
1995 08 30	657	0.1−	0.0	1995 09 15	658	0.3+	0.0	1997 02 01	696	0.1+	0.1+
1995 08 30	657	0.3+	0.6−	1995 09 16	816	0.3+	0.1−	1997 02 01	696	0.0	0.0
1995 08 30	657	0.9−	0.7−	1995 09 16	816	0.5+	0.1+	1997 02 01	696	0.2−	0.1+
1995 08 31	657	0.6−	0.5+	1995 09 16	816	0.5+	0.1−				
1995 08 31	657	0.1−	0.1−	1995 12 12	608	0.6−	1.2+				

1995 QL₅ = 1998 BO₁₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	338.59861		(2000.0)	P	Q
<i>n</i>	0.19110535	ω	254.27661	−0.98711575	+0.01170858
<i>a</i>	2.9850675	Ω	286.18694	+0.05962362	−0.89857658
<i>e</i>	0.0483018	<i>i</i>	9.56498	−0.14848409	−0.43866051
<i>P</i>	5.16	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 08 22	691	0.1−	0.1+	1995 08 28	691	0.1−	0.3−	1998 01 18	910	0.2+	0.0
1995 08 22	691	0.4−	0.3+	1995 09 03	691	0.4+	0.2−	1998 01 18	910	0.3+	0.0
1995 08 22	691	0.1−	0.2+	1995 09 03	691	0.0	0.1−	1998 01 27	910	0.4−	0.0
1995 08 28	691	0.3−	0.2−	1995 09 03	691	0.3+	0.5+	1998 01 27	910	0.1−	0.0
1995 08 28	691	0.3+	0.2−	1998 01 18	910	0.1−	0.2−	1998 01 27	910	0.0	0.2+

1995 SB₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	245.80526		(2000.0)			P		Q			
<i>n</i>	0.26601337	ω	167.77632			+0.75594046		−0.56895281			
<i>a</i>	2.3944204	Ω	231.80509			+0.56056492		+0.81804688			
<i>e</i>	0.2540734	<i>i</i>	24.33091			+0.33811387		−0.08421404			
<i>P</i>	3.71	<i>H</i>	14.5		<i>G</i>	0.15		<i>U</i>	2		
Residuals in seconds of arc											
1995 09 19	693	0.1+	0.5−	1995 10 05	608	0.5+	0.4+	1995 11 21	801	0.3−	0.5+
1995 09 19	693	0.8−	0.7−	1995 10 05	608	1.1+	0.5+	1997 05 01	608	0.2+	0.9−
1995 09 20	693	0.4−	0.3−	1995 10 31	658	0.3−	0.5+	1997 05 01	608	0.0	1.7+
1995 09 20	693	0.4−	0.1+	1995 10 31	658	0.2−	0.4+	1998 06 03	704	0.3−	1.3+
1995 09 25	693	0.4−	1.1−	1995 10 31	658	0.2−	0.3+	1998 06 03	704	1.7−	1.0−
1995 09 25	693	0.6−	0.3+	1995 11 18	801	1.9+	0.7−	1998 06 03	704	1.1+	0.5−
1995 10 04	608	1.1+	0.4−	1995 11 18	801	0.4−	0.7+	1998 06 03	704	0.8+	0.9+
1995 10 04	608	0.5−	0.6+	1995 11 21	801	0.3−	0.4+				

1995 SQ₃ = A917 SA

Id. S. Nakano, M. W. Buie (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	192.84268		(2000.0)		P		Q				
<i>n</i>	0.27800650	ω	184.92069		-0.19469897		-0.97585732				
<i>a</i>	2.3250524	Ω	276.33120		+0.90328766		-0.13905749				
<i>e</i>	0.0800946	<i>i</i>	5.71475		+0.38231364		-0.16842061				
<i>P</i>	3.55	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1917 09 22	024	0.2-	0.4+ Y	1995 09 30	400	0.9-	1.1-	1998 06 24	704	0.6+	0.3-
1917 09 23	024(30.6+	10.6+)	Y	1995 09 30	400	1.0-	0.8-	1998 06 24	704	0.2+	0.1+
1917 09 24	024(25.1+	10.1+)	Y	1995 10 11	400	0.2+	0.2+	1998 06 24	704	0.9+	1.2+
1917 09 26	024(17.5+	13.7+)	Y	1995 10 11	400	0.5-	0.9+	1998 06 26	704	0.5-	0.4-
1917 09 27	024(19.3+	5.4-)	Y	1998 06 21	688	0.4-	0.3-	1998 06 26	704	0.2-	1.1+
1995 09 20	400	(0.2+ 4.9+)		1998 06 21	688	0.0	0.3-	1998 06 26	704	0.4+	0.1-
1995 09 20	400	1.8+ 0.8+		1998 06 21	688	0.1-	0.5-	1998 06 26	704	0.2-	0.3-
1995 09 21	400	0.4+ 0.1-		1998 06 24	704	0.2-	0.0				
1995 09 21	400	0.3+ 0.4-		1998 06 24	704	0.5-	0.3-				

1995 SX₅₂ = 1998 FD₁₄₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	241.50627		(2000.0)		P		Q		
<i>n</i>	0.20885358	ω	91.97539		+0.86046435		+0.50712716		
<i>a</i>	2.8134645	Ω	237.55525		−0.48758571		+0.79154905		
<i>e</i>	0.1770486	<i>i</i>	3.34398		−0.14785561		+0.34098702		
<i>P</i>	4.72	<i>H</i>	13.0		<i>G</i>	0.15	<i>U</i>	5	
Residuals in seconds of arc									
1995 09 22	400	(2.7+ 0.6+)	1998 03 22	704	0.0	0.2+	1998 04 01	704	1.0− 0.4−
1995 09 22	400	0.6− 0.3+	1998 03 22	704	0.8+	0.1+	1998 04 01	704	(0.5− 2.5−)
1995 09 30	400	0.3− 0.2−	1998 03 29	704	0.1+	0.8−	1998 04 01	704	1.2− 0.3−
1995 09 30	400	0.8+ 0.2−	1998 03 29	704	0.9−	0.8+	1998 04 19	704	0.0 0.7+
1995 10 12	400	0.2− 0.3+	1998 03 29	704	1.1+	0.6+	1998 04 19	704	1.6+ 0.2+
1995 10 12	400	0.2+ 0.1+	1998 03 29	704	0.1+	0.4+	1998 04 19	704	0.9+ 0.3−
1998 03 22	704	0.5+ 0.7−	1998 03 29	704	0.8−	0.5−	1998 04 19	704	0.6+ 0.9−
1998 03 22	704	0.0 0.9+	1998 04 01	704	0.7−	0.9−	1998 04 19	704	0.9− 1.9+
1998 03 22	704	0.8+ 1.0−	1998 04 01	704	0.8−	0.5+			

1995 TA₁ = 1998 NG

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	107.12136		(2000.0)		P		Q				
<i>n</i>	0.26175149	<i>ω</i>	3.29600		−0.99992680		+0.01200980				
<i>a</i>	2.4203413	<i>Ω</i>	177.39077		−0.01170649		−0.92973358				
<i>e</i>	0.0689294	<i>i</i>	1.84597		−0.00305676		−0.36803701				
<i>P</i>	3.77	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1995 10 13	369	0.6+	0.3−	1995 10 20	369	0.4−	0.4+	1998 07 15	684	0.1−	0.1−
1995 10 13	369	0.7−	0.5−	1995 10 20	369	0.1+	0.7+	1998 07 15	684	0.5−	0.2−
1995 10 13	369	0.5+	0.5−	1995 10 20	369	1.0−	0.5+	1998 07 16	684	0.1+	0.4+
1995 10 14	369	1.2−	0.3+	1995 10 27	369	1.7+	0.3−	1998 07 16	684	0.4+	0.1−
1995 10 14	369	0.5+	0.6−	1995 10 27	369	0.0	0.0				
1995 10 14	369	1.1+	0.9+	1995 10 27	369	1.0−	0.6−				

1995 TE₈ = 1998 KY₅₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	301.09910			(2000.0)			P			Q					
n	0.28037414			ω	171.44255			+0.98612666			+0.16597871				
a	2.3119445			Ω	178.99467			−0.15899765			+0.94844715				
e	0.2184750			i	7.52799			−0.04768608			+0.26999829				
P	3.52			H	15.0			G	0.15			U	5		
Residuals in seconds of arc															
1995 10 02	372	0.5+	0.4−	1998 05 23	704	0.1+	0.2+	1998 07 22	910	0.1−	0.2+				
1995 10 02	372	0.5+	0.2−	1998 05 23	704	1.1+	1.9−	1998 07 22	910	0.1−	0.0				
1995 10 16	372	0.5−	0.5−	1998 05 26	704	0.7−	1.3+	1998 07 23	910	0.2−	0.2+				
1995 10 16	372	(5.1+ 1.0−)		1998 05 26	704	0.3−	1.0+	1998 07 23	910	0.2−	0.0				
1995 10 17	372	0.5−	1.1+	1998 05 26	704	0.3+	0.1−	1998 07 23	910	0.1−	0.1+				
1998 05 23	704	0.2+	0.2+	1998 05 26	704	0.2+	1.4−								
1998 05 23	704	0.3−	0.5+	1998 07 22	910	0.1−	0.0								

1995 UP₁₈ = 1998 FJ₁₃₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	116.78035		(2000.0)			P		Q			
n	0.18350819	ω	78.41032			+0.11569899		-0.99319012			
a	3.0668962	Ω	5.00669			+0.83928513		+0.09038585			
e	0.0459877	i	9.01825			+0.53123838		+0.07351049			
P	5.37	H	15.0	G	0.15	U	6				
Residuals in seconds of arc											
1995 10 18	691	0.1-	0.6+	1995 10 28	691	0.7-	0.4-	1998 03 28	704	0.7-	1.3-
1995 10 18	691	0.2-	1.0+	1995 10 28	691	0.3-	0.8-	1998 03 29	704	0.8+	1.0+
1995 10 18	691	0.2-	0.4+	1995 10 28	691	0.2-	0.6-	1998 03 29	704	2.0+	1.4-
1995 10 23	691	0.7+	0.1+	1998 03 28	704	0.7+	0.8-	1998 03 29	704	0.0	0.4-
1995 10 23	691	0.5+	0.1+	1998 03 28	704	1.4-	1.9-	1998 03 29	704	2.1+	1.0+
1995 10 23	691	0.2+	0.1-	1998 03 28	704	2.7-	1.6+	1998 03 29	704	0.5-	2.6+

1995 UQ₁₈ = 1998 FH₁₃₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	333.20937		(2000.0)		P		Q				
n	0.21846772	ω	45.96480		-0.41621059		+0.90664378				
a	2.7303052	Ω	199.76188		-0.88168319		-0.42097820				
e	0.1177768	i	11.78134		-0.22226896		-0.02782818				
P	4.51	H	15.5		G	0.15	U	6			
Residuals in seconds of arc											
1995 10 18	691	0.1-	0.2+	1995 10 27	691	0.0	0.0	1998 03 29	704	0.3+	0.3-
1995 10 18	691	0.1-	0.0	1995 10 27	691	0.2+	0.1-	1998 03 29	704	0.1+	0.7-
1995 10 18	691	0.1-	0.1+	1998 03 28	704	0.9+	1.9-	1998 03 29	704	1.7-	0.7+
1995 10 23	691	0.1-	0.2+	1998 03 28	704	2.2-	1.1+	1998 03 29	704	2.3+	0.3+
1995 10 23	691	0.4+	0.1-	1998 03 28	704	0.4+	1.4+	1998 03 29	704	0.3+	1.6+

1995 10 23 691 0.1+ 0.2- 1998 03 28 704 0.5- 0.3+
 1995 10 27 691 0.4- 0.1+ 1998 03 28 704 0.1+ 2.4-

1995 VF = 1991 PG₂₁

Id. E. Bowell (1998 observations), G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	314.83238		(2000.0)	P		Q	
<i>n</i>	0.28258483	ω	114.39772	+0.98590610		-0.13225556	
<i>a</i>	2.2998711	Ω	253.33345	+0.08605541		+0.92609189	
<i>e</i>	0.1338778	<i>i</i>	6.13958	+0.14346997		+0.35335857	
<i>P</i>	3.49	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 08 09	675	0.3+	0.5-	1995 11 03	411	0.8-	0.0	1998 06 25	699	0.6-	0.3+
1991 08 09	675	0.3+	1.0-	1995 11 03	411	0.3-	0.2+	1998 06 25	699	0.0	0.4+
1995 11 01	411	0.0	0.2-	1995 11 11	411	0.3+	0.1-	1998 06 25	699	0.2+	0.8-
1995 11 01	411	0.1+	0.1+	1995 11 11	411	1.1-	0.0	1998 07 26	699	0.2-	0.8+
1995 11 02	411	0.1+	0.2-	1995 11 26	411	0.2+	0.2+	1998 07 26	699	0.0	0.4+
1995 11 02	411	0.5+	0.4-	1995 11 26	411	0.9+	0.5+	1998 07 26	699	0.1-	0.7+

1995 VO = 1998 KC₃₃

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	101.65501		(2000.0)	P		Q	
<i>n</i>	0.18956674	ω	97.51602	-0.79175842		-0.59555629	
<i>a</i>	3.0011978	Ω	46.05208	+0.45917483		-0.72686710	
<i>e</i>	0.0584106	<i>i</i>	10.86910	+0.40283630		-0.34201890	
<i>P</i>	5.20	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 02	411	1.2-	1.3-	1998 05 22	704	0.4+	0.9-	1998 05 24	704	0.5+	0.4-
1995 11 04	411	0.4+	1.2+	1998 05 22	704	1.8+	1.1+	1998 05 24	704	1.2-	1.0-
1995 11 04	411	0.0	0.0	1998 05 22	704	0.5-	1.1-	1998 06 18	704	0.4+	0.8+
1995 11 11	411	0.0	0.2+	1998 05 22	704	(0.6-	3.9-)	1998 06 18	704	0.2+	0.9-
1995 11 11	411	0.4+	0.4-	1998 05 24	704	1.0+	0.4-	1998 06 18	704	0.2-	1.1+
1995 11 24	411	0.1-	0.1-	1998 05 24	704	1.4-	0.4+	1998 06 18	704	1.3-	0.4+
1995 11 24	411	0.9+	0.2-	1998 05 24	704	0.0	0.3+				

1995 WV₃ = 1998 LB₂

Id. T. Kagawa

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Marsden			
<i>M</i>	114.03369		(2000.0)	P		Q	
<i>n</i>	0.19035280	ω	233.86734	-0.90633204		-0.29914442	
<i>a</i>	2.9929298	Ω	287.02684	+0.41142418		-0.78581632	
<i>e</i>	0.2176594	<i>i</i>	18.18799	-0.09639699		-0.54129967	
<i>P</i>	5.18	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 17	905	0.4-	0.6-	1996 02 10	385	0.1-	0.5+	1998 06 24	704	0.5-	0.1+
1995 11 17	905	0.2+	0.0	1996 02 10	385	1.3+	0.5+	1998 06 26	809	0.7+	0.9-
1995 11 18	905	0.1-	1.1+	1998 06 07	888	0.5-	0.3+	1998 06 26	809	0.7+	1.0-
1995 11 18	905	0.6+	0.1-	1998 06 07	888	0.0	0.0	1998 06 26	809	0.7+	0.4-
1995 11 25	905	0.1+	1.3-	1998 06 07	888	0.2+	0.3-	1998 06 26	704	0.4-	0.5-
1995 11 25	905	0.1+	0.3-	1998 06 15	888	0.8-	0.7-	1998 06 26	704	0.6-	0.1+
1995 12 17	905	0.0	0.8+	1998 06 15	888	0.0	0.3-	1998 06 26	704	1.5-	0.5-
1995 12 30	385	0.6-	0.3-	1998 06 24	704	0.9-	1.3-	1998 06 26	704	0.2-	0.1+
1995 12 30	385	0.6-	0.1+	1998 06 24	704	0.0	0.3+	1998 06 27	809	1.1+	1.3+
1995 12 30	385	0.7-	0.1-	1998 06 24	704	0.0	2.0+	1998 06 27	809	1.6+	1.4+
1996 02 10	385	0.5+	0.3+	1998 06 24	704	0.9-	0.5+	1998 06 27	809	1.1+	0.3+

1995 WB₅ = 1998 KC₆₆

Id. G. V. Williams, E. Bowell

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	279.87945		(2000.0)	P		Q	
<i>n</i>	0.23084530	ω	96.82987	+0.96302070		+0.16562648	
<i>a</i>	2.6318150	Ω	253.80095	-0.23046124		+0.91495618	
<i>e</i>	0.1547500	<i>i</i>	12.78494	+0.13956627		+0.36799873	
<i>P</i>	4.27	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 17	327	0.4+	0.6+	1995 11 28	897	0.8-	0.6-	1995 12 20	411	0.2+	1.0+
1995 11 17	327	0.4+	0.6+	1995 11 28	897	1.8+	1.5-	1995 12 20	411	0.6+	0.2+
1995 11 17	327	0.2+	0.4+	1995 11 28	411	0.2-	0.5-	1998 05 22	704	0.5+	0.1-
1995 11 24	411	0.6+	0.3+	1995 11 28	411	0.2-	0.2-	1998 05 22	704	1.0+	1.9+
1995 11 24	411	1.2-	0.4+	1995 11 30	327	0.0	0.5+	1998 05 22	704	1.3-	0.3-
1995 11 25	411	0.6-	0.5-	1995 11 30	327	0.2+	0.0	1998 05 24	704	0.6+	1.6-
1995 11 25	411	0.2+	0.4-	1995 11 30	327	1.0-	0.4+	1998 05 24	704	0.6-	0.1-
1995 11 28	896	0.3-	0.5+	1995 12 01	411	0.4-	0.5+	1998 05 24	704	0.1+	0.5-
1995 11 28	897	1.2+	0.8+	1995 12 01	411	0.3-	0.5-	1998 05 24	704	0.3-	0.4+
1995 11 28	896	0.4-	1.2-	1995 12 10	411	0.5-	0.2-				
1995 11 28	896	0.1-	0.3-	1995 12 10	411	0.4+	0.4-				

1995 WY₇ = 1998 MV₃₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	304.38152		(2000.0)	P		Q	
<i>n</i>	0.28276995	ω	27.26964	+0.96654122		-0.25596447	
<i>a</i>	2.2988672	Ω	347.52687	+0.21895149		+0.85725646	
<i>e</i>	0.2613599	<i>i</i>	4.44550	+0.13363499		+0.44675894	
<i>P</i>	3.49	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 11 29	411	0.4+	0.4+	1995 12 02	411	0.2+	0.2-	1998 06 24	704	1.2-	0.2+
1995 11 29	411	1.0-	0.0	1995 12 09	411	0.5-	0.4+	1998 06 24	704	0.4-	1.0-
1995 11 30	411	0.4-	0.4+	1995 12 09	411	0.4+	1.4-	1998 06 24	704	0.2+	2.3-
1995 11 30	411	0.0	0.1+	1995 12 24	411	0.6+	0.4-	1998 06 26	704	0.7-	0.6-
1995 12 01	411	0.0	0.4+	1995 12 24	411	0.1+	0.5+	1998 06 26	704	0.9+	2.6+
1995 12 01	411	0.2+	0.2+	1998 06 24	704	1.1+	1.3-	1998 06 26	704	0.2-	0.9+
1995 12 02	411	0.1+	0.5-	1998 06 24	704	0.2-	1.2+	1998 06 26	704	0.5+	0.1+

1995 WL₁₃ = 1998 MF₃₃

Id. G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Marsden			
<i>M</i>	249.81921		(2000.0)	P		Q	
<i>n</i>	0.25455702	ω	275.69561	+0.63241821		-0.77292125	
<i>a</i>	2.4657327	Ω	134.93807	+0.73634040		+0.57924125	
<i>e</i>	0.0785414	<i>i</i>	4.16245	+0.24052033		+0.25898325	
<i>P</i>	3.87	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 11 16	691	0.1-	0.1-	1995 11 28	691	0.1+	0.1+	1998 06 26	809	(3.2+	2.3+)
1995 11 16	691	0.0	0.2-	1995 11 28	691	0.0	0.1+	1998 06 26	809	(2.7+	2.6+)
1995 11 16	691	0.3-	0.4+	1998 06 24	704	0.1-	0.3+	1998 06 26	704	0.2+	1.2+
1995 11 21	691	0.1+	0.1-	1998 06 24	704	1.5-	0.0	1998 06 26	704	0.0	0.1-
1995 11 21	691	0.2+	0.0	1998 06 24	704	0.3+	0.3-	1998 06 26	704	0.3-	0.4-
1995 11 21	691	0.2+	0.1-	1998 06 24	704	0.9+	0.3-	1998 06 26	704	0.6+	0.4-
1995 11 28	691	0.2-	0.0	1998 06 26	809	(2.6+	2.8+)				

1995 WE₂₇ = 1998 MV₄₀

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	352.35214		(2000.0)	P		Q	
<i>n</i>	0.17171431	ω	359.61153	+0.49571951		+0.84211084	
<i>a</i>	3.2057653	Ω	300.09384	-0.79615376		+0.34292638	
<i>e</i>	0.1797714	<i>i</i>	14.21048	-0.34698899		+0.41623410	
<i>P</i>	5.74	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

M.P.C. 32242

1998 AUG. 8

Residuals in seconds of arc

1995 11 18	691	0.3+	0.0	1995 12 26	691	0.3+	0.1−	1998 06 26	704	0.1−	1.7+
1995 11 18	691	0.2+	0.1−	1995 12 26	691	0.1+	0.1−	1998 06 28	809	1.7+	0.7+
1995 11 18	691	0.4−	0.2+	1995 12 26	691	0.2+	0.1−	1998 06 28	809	1.0+	0.6+
1995 11 28	691	0.3−	0.5+	1998 06 24	704	1.8−	1.5−	1998 06 28	809	0.8+	0.2+
1995 11 28	691	0.3−	0.0	1998 06 24	704	1.3−	1.4−	1998 07 01	809	0.3+	0.0
1995 11 28	691	0.4+	0.5+	1998 06 24	704	1.3−	1.1−	1998 07 01	809	1.0+	0.4+
1995 12 20	691	0.3−	0.1−	1998 06 26	704	(1.6−	2.6−)	1998 07 01	809	0.8+	0.1+
1995 12 20	691	0.1−	0.2−	1998 06 26	704	1.1−	0.3+				
1995 12 20	691	0.1−	0.2−	1998 06 26	704	(2.7−	0.2+)				

1995 WZ₄₁ = 1998 MR₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	287.17605		(2000.0)	P	Q
<i>n</i>	0.27537276	ω	149.01825	+0.86213375	−0.38118428
<i>a</i>	2.3398538	Ω	237.11777	+0.34389077	+0.92403798
<i>e</i>	0.2821134	<i>i</i>	23.42097	+0.37210822	+0.02919500
<i>P</i>	3.58	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 11 25	399	1.4−	1.6−	1995 12 17	399	1.8−	0.5+	1998 06 19	704	1.8+	1.6−
1995 11 25	399	0.7−	0.3−	1995 12 19	905	0.2−	0.3−	1998 06 19	704	0.1+	0.6−
1995 11 25	399	0.3−	1.7+	1995 12 19	905	0.7+	0.9+	1998 06 19	704	1.9−	1.3+
1995 12 14	399	1.0−	1.5−	1996 01 12	399	0.7+	0.3+	1998 06 25	704	0.2−	0.5+
1995 12 14	399	1.1−	0.1−	1996 01 12	399	1.1+	0.5−	1998 06 25	704	0.4+	0.9−
1995 12 15	905	1.7+	0.1+	1996 01 13	399	0.9+	0.1+	1998 06 25	704	1.4+	0.7+
1995 12 15	905	1.8+	0.3+	1996 01 13	399	0.6−	0.3−	1998 06 25	704	0.2+	0.3−
1995 12 15	905	1.6+	0.6−	1998 06 19	704	1.4−	1.0+				
1995 12 17	399	0.6−	1.9+	1998 06 19	704	0.8−	0.6+				

1995 XU₁ = 1998 FJ₅₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	279.99097		(2000.0)	P	Q
<i>n</i>	0.26095472	ω	126.61281	+0.68700783	+0.72663837
<i>a</i>	2.4252655	Ω	186.78544	−0.67731091	+0.63829986
<i>e</i>	0.1898971	<i>i</i>	1.99510	−0.26319227	+0.25410622
<i>P</i>	3.78	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 12 14	608	0.0	0.2−	1998 03 22	704	1.0−	0.8−	1998 03 29	704	0.8−	0.2−
1995 12 14	608	0.2+	0.4−	1998 03 22	704	3.0+	0.3+	1998 03 29	704	0.6−	0.2−
1995 12 15	608	1.3−	0.6+	1998 03 22	704	0.5+	1.0+	1998 03 29	704	0.8+	0.7+
1995 12 15	608	0.1+	0.3+	1998 03 22	704	0.0	0.7−	1998 04 01	704	0.2+	0.3+
1995 12 16	608	0.1+	0.5+	1998 03 26	566	0.7−	0.3+	1998 04 01	704	0.2−	0.4+
1995 12 16	608	0.2+	0.7+	1998 03 26	566	0.5−	0.8+	1998 04 01	704	0.7+	0.0
1995 12 19	608	0.3+	0.2+	1998 03 26	566	0.7−	0.0	1998 04 01	704	0.8+	0.9+
1995 12 19	608	0.1−	0.1−	1998 03 28	704	0.5+	0.7−	1998 04 01	704	1.4+	1.2+
1998 03 20	704	0.6−	0.1−	1998 03 28	704	0.8−	0.1+	1998 04 20	704	0.6−	1.0−
1998 03 20	704	0.9+	0.7+	1998 03 28	704	0.3−	0.0	1998 04 20	704	0.5−	0.1+
1998 03 20	704	0.2−	0.2−	1998 03 28	704	0.5+	0.5−	1998 04 20	704	0.3−	0.1−
1998 03 20	704	1.7−	1.1−	1998 03 28	704	0.1+	1.7−	1998 04 20	704	0.2+	0.5+
1998 03 20	704	0.4+	0.9+	1998 03 29	704	0.2−	0.5−	1998 04 20	704	0.2+	0.1−
1998 03 22	704	1.0−	0.5+	1998 03 29	704	0.7+	0.1+				

1995 YQ = 1998 HQ₁₂₀ = 1998 LD₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	302.20630		(2000.0)	P	Q
<i>n</i>	0.19057312	ω	178.97385	+0.45112687	+0.87395627
<i>a</i>	2.9906227	Ω	117.82068	−0.82026520	+0.48585330
<i>e</i>	0.0759650	<i>i</i>	11.79543	−0.35163838	−0.01212439
<i>P</i>	5.17	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 12 18	566	0.6+	0.0	1995 12 22	566	0.2−	0.1+	1998 05 23	704	0.1+	0.3−
1995 12 18	566	0.3+	0.2+	1995 12 22	566	0.3−	0.2+	1998 05 23	704	0.0	0.8−

1995 12 18	566	1.0+	0.1−	1995 12 22	566	0.1−	0.1+	1998 05 23	704	0.2+	0.9−
1995 12 19	566	0.2−	0.1−	1995 12 24	566	0.1+	0.4+	1998 05 23	704	0.3−	0.1+
1995 12 19	566	0.1−	0.2−	1995 12 24	566	0.1+	0.2−	1998 05 23	704	0.9−	0.2+
1995 12 19	566	0.1−	0.1+	1995 12 24	566	0.1+	0.0	1998 05 25	704	0.4−	0.3−
1995 12 19	566	0.1+	0.1−	1998 04 23	704	0.5−	0.8−	1998 05 25	704	0.6+	0.0
1995 12 19	566	0.3−	0.3+	1998 04 23	704	0.4−	0.2+	1998 05 25	704	0.6−	1.3+
1995 12 19	566	0.0	0.1+	1998 04 23	704	0.5+	0.1+	1998 05 25	704	0.2+	0.4+
1995 12 19	566	0.3−	0.0	1998 04 23	704	1.0+	0.1+	1998 05 27	699	0.4+	0.1+
1995 12 19	566	0.4−	0.2+	1998 04 23	704	1.2−	0.1+	1998 05 27	699	0.5+	0.1−
1995 12 19	566	0.2−	0.4−	1998 04 24	704	0.3−	0.4−	1998 05 27	699	0.6+	0.2−
1995 12 21	566	0.4−	0.1−	1998 04 24	704	0.4+	0.2−	1998 06 02	699	0.0	0.7+
1995 12 21	566	0.2+	0.1−	1998 04 24	704	0.2+	0.3−	1998 06 02	699	0.0	0.6+
1995 12 21	566	0.1−	0.1−	1998 04 24	704	0.1+	0.6+	1998 06 02	699	0.1−	0.2+

1995 YU = 1987 UE₉

Id. E. Bowell (1998 observations), G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	313.19012		(2000.0)	P	Q
<i>n</i>	0.26176779	ω	270.89074	+0.99362827	−0.05432973
<i>a</i>	2.4202408	Ω	92.22802	+0.08904636	+0.91551481
<i>e</i>	0.2175010	<i>i</i>	5.67137	−0.06909131	+0.39859869
<i>P</i>	3.77	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1987 10 22	095	0.2+	0.4−	1995 12 25	566	1.8+	1.8−	1998 06 24	699	0.8+	1.6+
1995 12 19	411	0.0	0.1−	1995 12 25	566	1.1+	1.3−	1998 06 26	704	0.2+	0.5+
1995 12 19	411	0.5−	0.7+	1995 12 25	566	1.1+	1.5−	1998 06 26	704	0.4−	0.9+
1995 12 21	411	1.5+	0.5+	1995 12 26	411	1.0−	1.7+	1998 06 26	704	0.9−	0.5−
1995 12 21	411	0.5+	0.7−	1995 12 26	411	0.6+	0.2+	1998 06 26	704	0.7+	1.9−
1995 12 22	566	0.3+	0.8+	1996 01 09	411	(2.8−	0.4+)	1998 07 02	699	0.1+	0.2+
1995 12 22	566	0.1+	1.1+	1996 01 09	411	1.7−	0.0	1998 07 02	699	0.7−	0.2−
1995 12 22	566	0.6−	1.0+	1996 01 10	411	1.6−	0.2+	1998 07 02	699	0.3−	0.1−
1995 12 24	566	0.1+	0.3+	1996 01 10	411	1.7−	1.5+	1998 07 16	699	0.3−	0.2+
1995 12 24	566	0.1−	0.2+	1998 06 24	699	0.5−	1.5+	1998 07 16	699	0.2+	0.4−
1995 12 24	566	0.2−	0.4+	1998 06 24	699	0.5+	1.0+	1998 07 16	699	0.1+	0.4+

1995 YP₁

Id. E. Bowell (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	29.21086		(2000.0)	P	Q
<i>n</i>	0.21106189	ω	8.87693	+0.07629918	+0.99248696
<i>a</i>	2.7938055	Ω	265.53973	−0.92059548	+0.03327527
<i>e</i>	0.0159239	<i>i</i>	5.50520	−0.38299138	+0.11773863
<i>P</i>	4.67	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 12 21	411	0.3−	0.0	1995 12 30	411	0.4−	0.7−	1998 06 02	699	0.7+	0.7−
1995 12 21	411	0.1+	0.4+	1995 12 30	411	1.3+	0.7−	1998 06 02	699	0.1+	0.0
1995 12 22	411	0.8−	0.9−	1996 01 10	411	0.6−	0.5−	1998 06 02	699	0.8−	1.0+
1995 12 22	411	0.2+	0.5+	1996 01 10	411	0.4+	0.9+	1998 06 20	688	0.2+	0.1−
1995 12 27	411	0.5−	0.2+	1996 01 23	411	0.6−	0.0	1998 06 20	688	0.2−	0.2+
1995 12 27	411	1.1+	0.8+	1996 01 23	411	0.2+	0.3+	1998 06 20	688	0.0	0.1−

1995 YY₅ = 1998 MQ₄₆

Id. E. Bowell, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	359.04948		(2000.0)	P	Q
<i>n</i>	0.29501874	ω	227.41323	+0.79162439	+0.60711234
<i>a</i>	2.2347879	Ω	95.08931	−0.53838443	+0.74639666
<i>e</i>	0.1755596	<i>i</i>	3.96573	−0.28891701	+0.27259244
<i>P</i>	3.34	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1995 11 17	327	1.2+	0.3-	1995 12 22	691	0.4-	0.1+	1998 06 29	704	1.2+	0.5+
1995 11 17	327	0.7+	0.1-	1995 12 28	691	0.5-	0.4+	1998 06 29	704	1.5+	0.1-
1995 11 17	327	1.2+	0.6-	1995 12 28	691	0.4-	0.1+	1998 06 29	704	2.5-	0.1+
1995 12 16	691	0.3-	0.1-	1995 12 28	691	0.5-	0.2+	1998 07 26	699	0.2-	0.3+
1995 12 16	691	0.4-	0.3-	1996 01 24	691	0.2-	0.2+	1998 07 26	699	0.3+	0.5+
1995 12 16	691	0.2-	0.1-	1996 01 24	691	0.3+	0.3+	1998 07 26	699	0.5-	0.3-
1995 12 22	691	0.3-	0.0	1996 01 24	691	0.1-	0.3+				
1995 12 22	691	0.5-	0.1-	1998 06 29	704	0.0	0.6-				

1995 YS₂₁ = 1992 EC₂₁ = 1998 MM₃₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	315.56727	(2000.0)		P		Q	
<i>n</i>	0.21819924	ω	240.46209	+0.97526093		+0.20595241	
<i>a</i>	2.7325444	Ω	107.55483	-0.16219476		+0.91352272	
<i>e</i>	0.1021320	<i>i</i>	4.83192	-0.15019644		+0.35079888	
<i>P</i>	4.52	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 03 02	809	0.2+	0.3+	1995 12 21	566	0.4-	0.7-	1998 06 24	704	0.2+	0.3+
1992 03 05	809	0.2-	0.4-	1995 12 21	566	1.0-	0.5-	1998 06 24	704	0.6-	0.9-
1995 11 04	327	0.4-	0.2-	1995 12 21	566	0.1-	0.5-	1998 06 24	704	1.7-	1.5+
1995 11 04	327	0.0	0.2-	1995 12 25	566	0.1-	0.1-	1998 06 26	704	0.2-	0.3-
1995 11 04	327	0.4+	0.3-	1995 12 25	566	0.1-	0.0	1998 06 26	704	1.2+	0.3+
1995 12 20	566	0.3+	0.6+	1995 12 25	566	0.0	0.1-	1998 06 26	704	(2.7+	0.9-)
1995 12 20	566	0.6+	0.5+	1998 06 24	704	0.0	0.2-	1998 06 26	704	0.2+	0.3-
1995 12 20	566	0.6+	0.8+	1998 06 24	704	1.0+	1.0-				

1996 AP = 1998 MM₃₂

Id. G. V. Williams, M. W. Buie

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	273.46767	(2000.0)		P		Q	
<i>n</i>	0.23618013	ω	288.90075	+0.75921762		-0.61256456	
<i>a</i>	2.5920327	Ω	109.48758	+0.64953893		+0.69182016	
<i>e</i>	0.1733132	<i>i</i>	13.48885	+0.04108263		+0.38229507	
<i>P</i>	4.17	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 18	566	0.1-	0.5-	1996 01 29	411	0.7+	0.2+	1998 06 24	704	0.4+	0.0
1995 12 18	566	0.3-	0.6-	1996 01 29	411	0.4+	0.4-	1998 06 24	704	1.0-	0.9-
1995 12 18	566	0.4-	0.5-	1996 02 12	411	0.5+	1.0-	1998 06 26	704	1.5+	0.6-
1996 01 11	411	(0.8+	3.1+)	1996 02 12	411	0.8-	0.5-	1998 06 26	704	0.7-	0.5+
1996 01 11	411	(0.0	3.5+)	1998 06 21	688	0.9-	1.0+	1998 06 26	704	0.5+	0.3+
1996 01 12	411	(0.0	2.8+)	1998 06 21	688	0.9-	0.9+	1998 07 03	699	0.4+	1.4-
1996 01 12	411	(0.2-	3.1+)	1998 06 21	688	0.8-	0.7+	1998 07 03	699	0.0	0.1+
1996 01 18	411	0.1+	1.7+	1998 06 24	704	0.5-	0.1-	1998 07 03	699	0.1+	0.2-
1996 01 18	411	0.1+	1.5+	1998 06 24	704	0.4+	1.5-				
1996 01 29	411	0.1-	0.7-	1998 06 24	704	1.3+	0.6+				

1996 AR₁ = 1998 MY₄₁

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	243.20753	(2000.0)		P		Q	
<i>n</i>	0.18529869	ω	106.28184	+0.58629083		-0.79960768	
<i>a</i>	3.0471078	Ω	307.09690	+0.66705409		+0.56754375	
<i>e</i>	0.0468993	<i>i</i>	9.37760	+0.45967586		+0.19626933	
<i>P</i>	5.32	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 12	369	0.2+	0.2+	1996 01 18	369	0.0	0.5-	1998 06 28	809	0.2+	0.1+
1996 01 12	369	0.1+	0.2+	1996 02 10	691	0.3-	0.3+	1998 06 28	809	0.2-	0.9-
1996 01 12	369	0.2+	0.3-	1996 02 10	691	0.2-	0.2+	1998 06 28	809	0.3-	0.5+
1996 01 13	369	0.2-	0.0	1996 02 10	691	0.6+	0.3-	1998 07 01	809	(4.4+	3.1+)
1996 01 13	369	0.1-	0.8+	1998 06 24	704	0.4+	0.3-	1998 07 01	809	(3.8+	2.8+)
1996 01 13	369	0.1-	0.1+	1998 06 24	704	0.9-	0.1+	1998 07 01	809	(4.0+	2.8+)

1996 01 18	369	0.3-	0.2-	1998 06 24	704	0.8+	0.5+
1996 01 18	369	0.0	0.5-	1998 06 24	704	(2.0-	0.9+)

1996 AL₃ = 1998 MS₄₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Marsden			
<i>M</i>	22.46210	(2000.0)		P		Q	
<i>n</i>	0.19013159	ω	157.67654	-0.04491467		+0.99815281	
<i>a</i>	2.9952508	Ω	109.72980	-0.92299760		-0.02579675	
<i>e</i>	0.0295226	<i>i</i>	2.49095	-0.38217548		-0.05500450	
<i>P</i>	5.18	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 12 20	566	0.1+	0.2+	1996 01 10	608	0.8-	0.4-	1998 06 26	809	0.1+	0.7+
1995 12 20	566	0.6+	0.4+	1996 01 10	608	1.1-	0.4-	1998 06 27	809	0.3+	0.4-
1995 12 20	566	0.1-	0.3+	1996 01 13	608	0.7+	0.4+	1998 06 27	809	1.7-	1.0-
1995 12 25	566	0.0	0.5-	1996 01 13	608	1.1+	0.6+	1998 06 27	809	0.8-	0.7-
1995 12 25	566	0.2-	0.5-	1998 06 26	809	0.8+	0.6+				
1995 12 25	566	0.3-	0.3-	1998 06 26	809	1.3+	0.6+				

1996 BB₁ = 1998 MY₃₉

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	274.02437	(2000.0)		P		Q	
<i>n</i>	0.24077297	ω	164.57343	+0.75280557		-0.65590568	
<i>a</i>	2.5589643	Ω	236.54989	+0.59668026		+0.71552836	
<i>e</i>	0.1850163	<i>i</i>	3.80857	+0.27795042		+0.24043067	
<i>P</i>	4.09	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 21	557	0.4-	0.1-	1996 01 29	557	0.0	0.8-	1998 06 26	809	0.4+	0.0
1996 01 21	557	0.2+	0.1+	1996 02 08	557	0.4-	0.4-	1998 06 26	809	0.5+	0.3+
1996 01 21	557	0.1+	0.3+	1996 02 08	557	0.7+	0.6-	1998 06 27	809	0.1-	0.1+
1996 01 22	557	0.0	1.3+	1996 02 09	557	0.3+	0.4-	1998 06 27	809	0.8-	0.3+
1996 01 22	557	0.1-	1.0+	1996 02 09	557	0.3+	0.3-	1998 06 27	809	0.1-	1.1+
1996 01 22	557	0.3-	1.3+	1996 02 09	557	0.4+	0.5-	1998 07 19	557	0.5-	0.0
1996 01 24	557	0.8+	0.2+	1996 02 24	557	0.2+	0.2+	1998 07 19	557	0.7-	0.3-
1996 01 24	557	0.9-	0.8+	1996 02 24	557	0.4+	0.3-	1998 07 19	557	0.5-	0.2-
1996 01 29	557	0.9-	0.6-	1996 02 24	557	0.2+	0.3+				
1996 01 29	557	0.1-	0.4-	1998 06 26	809	1.6+	0.1-				

1996 BU₃

Id. B. A. Skiff (1997 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	161.56394	(2000.0)		P		Q	
<i>n</i>	0.17208853	ω	4.61311	-0.69391249		-0.66232495	
<i>a</i>	3.2011162	Ω	129.67230	+0.64834401		-0.74539474	
<i>e</i>	0.0982004	<i>i</i>	21.53277	+0.31326586		+0.07558008	
<i>P</i>	5.73	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 01 15	691	0.9-	0.1-	1996 01 30	411	1.9+	0.2-	1996 02 23	411	0.1-	0.8+
1996 01 15	691	1.2-	0.3-	1996 01 30	411	0.5+	0.7-	1996 03 12	411	0.2+	1.1-
1996 01 15	691	1.1-	0.1-	1996 01 30	411	0.1+	1.1-	1996 03 12	411	0.5+	0.4-
1996 01 21	691	0.6-	0.2-	1996 01 31	411	1.2+	0.1+	1997 08 01	688	0.4-	0.1+
1996 01 21	691	1.0-	0.0	1996 01 31	411	0.9+	0.5-	1997 08 01	688	0.3+	0.1-
1996 01 21	691	0.8-	0.1-	1996 02 12	411	0.7-	1.1+	1998 06 20	688	0.0	0.0
1996 01 27	411	0.6+	0.4+	1996 02 12	411	1.1-	0.6+	1998 06 20	688	0.1+	0.2-
1996 01 27	411	0.5+	0.9+	1996 02 23	411	1.0+	0.9+	1998 06 20	688	0.0	0.1+

1996 CP = 1998 KV₅₇

Id. G. V. Williams, A. Gnädig

M.P.C. 32244

1998 AUG. 8

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	177.39223		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.17976844	ω	355.15183	+0.55631630	-0.80737728
<i>a</i>	3.1092842	Ω	60.91610	+0.76976428	+0.41158635
<i>e</i>	0.1054292	<i>i</i>	13.00133	+0.31300977	+0.42277488
<i>P</i>	5.48	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 02 01	327	0.5-	0.2+	1996 02 08	327	0.3+	0.2-	1998 05 22	704	(1.0-	3.8+)
1996 02 01	327	0.1-	0.5+	1996 02 08	327	0.1+	0.1+	1998 05 22	704	1.8-	0.7+
1996 02 01	327	1.0+	0.3-	1996 02 11	327	0.2+	0.2+	1998 05 24	704	1.0-	0.3-
1996 02 02	327	0.1-	0.0	1996 02 11	327	0.0	0.6-	1998 05 24	704	0.1+	0.3-
1996 02 02	327	0.9-	0.6+	1996 02 11	327	0.3+	0.2+	1998 05 24	704	(2.5-	0.0)
1996 02 02	327	0.1-	0.5+	1996 02 11	327	0.1-	0.4-	1998 05 24	704	0.7+	0.1-
1996 02 04	327	0.2+	0.0	1998 05 22	704	(1.1-	2.4+)	1998 05 24	704	1.0+	0.1-
1996 02 08	327	0.4-	0.8-	1998 05 22	704	1.0+	0.1+				

1996 FP₁ = 1996 FW₂₃ = 1997 HO₇Id. S. Nakano (d, *MPC* 31437; unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	80.14243		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.12458631	ω	184.85857	-0.99305396	+0.11764259
<i>a</i>	3.9702925	Ω	1.90102	-0.10580096	-0.88534012
<i>e</i>	0.1244103	<i>i</i>	3.48269	-0.05147812	-0.44981450
<i>P</i>	7.91	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 03 17	608	1.4-	0.8-	1997 04 30	704	0.4+	0.3+	1997 05 01	704	0.2-	0.1-
1996 03 17	608	0.1+	0.6-	1997 04 30	704	0.8-	0.1+	1997 05 01	704	0.2+	0.2+
1996 03 19	608	0.2+	0.1+	1997 04 30	704	0.3+	0.3-	1997 05 05	704	0.4-	0.0
1996 03 19	608	0.0	0.0	1997 04 30	704	0.1-	0.1+	1997 05 05	704	0.1+	0.1-
1996 03 24	608	0.6+	0.6+	1997 05 01	704	0.2+	0.3-	1997 05 05	704	0.7-	0.2+
1996 03 24	608	0.5+	0.8+	1997 05 01	704	0.2+	0.7-	1997 05 05	704	0.3+	0.0
1997 04 30	704	0.3+	0.2-	1997 05 01	704	0.1-	0.1-	1997 05 05	704	0.2+	0.8+

1996 HH₁₀ = 1998 BD₃₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	178.07946		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.30888167	ω	100.92687	+0.49567141	+0.86831521
<i>a</i>	2.1674111	Ω	198.82119	-0.81745938	+0.45927505
<i>e</i>	0.1132054	<i>i</i>	3.26950	-0.29337692	+0.18733691
<i>P</i>	3.19	<i>H</i>	15.8	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 04 17	809	0.4+	2.0+	1996 06 08	809	0.1+	1.7-	1998 01 26	691	0.1+	0.8-
1996 04 17	809	0.1+	1.0+	1996 06 08	809	0.4+	1.6-	1998 01 26	691	0.4+	0.6-
1996 04 17	809	0.1+	0.5+	1996 06 08	809	1.3+	1.7-	1998 01 26	691	0.4+	0.6-
1996 04 18	809	1.4-	0.7+	1996 06 10	809	0.6+	0.2-	1998 02 02	691	0.2-	0.4-
1996 04 18	809	0.4-	0.3-	1996 06 10	809	0.4-	0.2-	1998 02 02	691	0.1+	0.2-
1996 04 18	809	1.0-	0.0	1996 06 10	809	0.1-	1.1-	1998 02 02	691	0.2-	0.7-

1996 HU₁₀ = 1978 WL₉ = 1998 MC₄₃

Id. K. Ichikawa, B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	15.98395		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.08101297	ω	307.66005	+0.07478309	+0.99715362
<i>a</i>	5.2897239	Ω	326.62490	-0.90932998	+0.06423898
<i>e</i>	0.0539767	<i>i</i>	0.99989	-0.40929999	+0.03947177
<i>P</i>	12.17	<i>H</i>	11.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1978 11 29	675	0.1+	0.4+	1996 04 18	809	0.4-	1.0-	1998 06 26	809	1.2+	0.1-
1978 11 29	675	2.2+	0.8-	1996 04 18	809	0.3-	1.0-	1998 06 26	809	0.9+	0.1-
1978 11 30	675	0.6-	0.5+	1996 05 19	809	0.2+	0.8+	1998 06 26	809	0.5+	0.7-

1978 11 30	675	1.6-	1.0-	1996 05 19	809	0.1-	0.2+	1998 06 27	809	0.6-	0.6+
1996 04 17	809	0.4+	1.2-	1996 05 19	809	0.2-	0.6+	1998 06 27	809	1.1-	0.1-
1996 04 17	809	1.4-	2.0-	1996 05 22	809	0.8+	2.0+	1998 06 27	809	0.6-	0.4-
1996 04 17	809	1.2-	1.2-	1996 05 22	809	1.2+	1.8+				
1996 04 18	809	0.5+	0.8-	1996 05 22	809	0.5+	1.4+				

1996 SW₂ = 1998 FU₄₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	64.92287		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.29328391	ω	127.10657	-0.72678005	-0.68684845
<i>a</i>	2.2435920	Ω	9.51659	+0.61921969	-0.65862749
<i>e</i>	0.1412082	<i>i</i>	1.89775	+0.29725030	-0.30732562
<i>P</i>	3.36	<i>H</i>	15.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1996 09 19	691	0.1+	0.3+	1998 03 20	704	0.7+	0.6-	1998 03 28	704	1.3-	0.2-
1996 09 19	691	0.2+	0.4+	1998 03 20	704	0.4+	0.7-	1998 03 29	704	0.2-	0.4+
1996 09 19	691	0.2+	0.4+	1998 03 20	704	0.1+	0.3-	1998 03 29	704	0.4+	0.8+
1996 09 22	691	1.2-	0.0	1998 03 22	704	0.8+	0.6+	1998 03 29	704	0.2-	0.6+
1996 09 22	691	0.7-	0.4+	1998 03 22	704	0.5+	0.2-	1998 03 29	704	0.5-	0.9+
1996 09 22	691	1.0-	0.3+	1998 03 22	704	0.5-	0.5+	1998 03 29	704	0.3-	0.9+
1996 10 07	809	0.0	0.7-	1998 03 22	704	0.1-	0.2-	1998 04 19	704	0.5+	0.7-
1996 10 07	809	1.4+	0.5-	1998 03 22	704	0.1-	0.3-	1998 04 19	704	0.4+	0.7-
1996 10 07	809	1.2+	0.4-	1998 03 28	704	0.2+	0.1-	1998 04 19	704	0.1-	0.0
1998 03 20	704	0.3+	0.3-	1998 03 28	704	0.5-	0.3+	1998 04 19	704	0.7-	0.5-
1998 03 20	704	0.2+	0.6-	1998 03 28	704	0.8+	0.3+	1998 04 19	704	0.6-	0.0

1996 TJ₁₀ = 1998 FA₁₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	281.70290		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.35992637	ω	307.84654	+0.75906248	+0.64727419
<i>a</i>	1.9573129	Ω	12.35348	-0.44630389	+0.59534380
<i>e</i>	0.0802222	<i>i</i>	19.01781	-0.47395885	+0.47602719
<i>P</i>	2.74	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 09 18	327	0.6+	0.3+	1998 03 25	699	1.1+	0.8+	1998 04 01	704	1.6-	1.7-
1996 09 18	327	0.0	0.7+	1998 03 25	704	0.7-	0.1-	1998 04 01	704	0.4-	0.6+
1996 09 18	327	0.2+	0.7+	1998 03 25	704	1.0+	0.5+	1998 04 01	704	0.2-	0.3+
1996 10 09	399	(1.3-	2.8+)	1998 03 25	704	0.4+	0.5-	1998 04 20	704	0.7+	0.4+
1996 10 09	399	0.1-	0.2+	1998 03 25	704	0.4+	0.5-	1998 04 20	704	0.4+	0.7+
1996 10 10	399	(1.2-	3.6+)	1998 03 25	704	1.0+	0.1-	1998 04 20	704	0.1+	0.9+
1996 10 10	399	(2.1-	4.0+)	1998 03 29	704	0.0	0.7-	1998 04 20	704	0.6+	0.7+
1996 10 16	399	1.7-	0.8+	1998 03 29	704	0.3+	1.0+	1998 04 20	704	0.1-	0.7+
1996 10 16	399	1.1-	1.4+	1998 03 29	704	0.4-	1.2+	1998 05 03	566	0.4-	0.7-
1996 11 03	399	0.4+	0.6-	1998 03 29	704	0.5-	0.9+	1998 05 03	566	0.2+	0.3-
1996 11 03	399	0.7-	0.5-	1998 03 29	704	0.3-	0.4+	1998 05 03	566	0.3+	0.3-
1998 03 25	699	0.8+	0.2+	1998 04 01	704	0.1+	0.4-				
1998 03 25	699	0.3+	0.6-	1998 04 01	704	0.0	0.2-				

1996 TX₁₄ = 1998 HK₃₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	144.34900		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28480797	ω	65.99297	+0.40343934	-0.91500629
<i>a</i>	2.2878873	Ω	0.21509	+0.79219397	-0.34905359
<i>e</i>	0.1522434	<i>i</i>	6.59980	+0.45789235	+0.20229949
<i>P</i>	3.46	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1996 10 13	966	0.7+	0.9-	1998 03 20	704	0.4+	1.0+	1998 04 18	704	0.2-	0.0
1996 10 13	966	0.6-	0.5-	1998 03 20	704	3.0+	0.3-	1998 04 18	704	1.8-	1.7-
1996 10 13	966	0.8+	0.1+	1998 03 29	704	0.1-	0.2+	1998 04 18	704	1.3-	1.9-
1996 10 16	966	0.1+	0.3+	1998 03 29	704	0.5-	0.6-	1998 04 20	704	1.6-	0.2+
1996 10 16	966	0.2-	0.4+	1998 03 29	704	1.6+	0.7+	1998 04 20	704	1.8-	1.1-
1996 10 18	566	0.2-	0.0	1998 03 29	704	1.3-	0.5+	1998 04 20	704	0.7+	0.3+

1996 10 18	566	0.3−	0.2+	1998 04 01	704	0.3−	0.5−	1998 04 20	704	2.0−	1.6−
1996 10 18	566	0.3−	0.0	1998 04 01	704	0.4+	1.1−	1998 04 22	704	0.3+	0.2+
1996 10 18	966	0.2+	0.6+	1998 04 01	704	1.7−	1.3+	1998 04 22	704	2.5+	0.7+
1996 10 18	966	0.3−	0.5−	1998 04 01	704	0.9−	0.6+	1998 04 22	704	0.6+	1.2+
1996 10 19	966	0.3+	0.1−	1998 04 01	704	2.3−	1.4+	1998 04 22	704	3.3+	1.6+
1998 03 20	704	0.6+	2.4−	1998 04 18	704	0.0	0.1−	1998 04 22	704	0.8+	2.1+
1998 03 20	704	0.6+	0.0	1998 04 18	704	0.9+	0.9−				

1996 TT₃₈ = 1982 BC₁₅ = 1997 WM₃₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	233.57759	(2000.0)		P	Q		
<i>n</i>	0.17228984	ω	127.15217	−0.70166304	+0.71134396		
<i>a</i>	3.1986221	Ω	98.23349	−0.66606803	−0.63455758		
<i>e</i>	0.1500967	<i>i</i>	2.35849	−0.25302641	−0.30220266		
<i>P</i>	5.72	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 01 30	675	0.8−	0.1+	1996 10 10	809	1.8+	1.2+	1997 11 29	704	1.4−	0.0
1982 01 31	675	0.9+	0.5+	1996 10 10	809	0.0	1.0+	1997 11 29	704	0.6−	1.4−
1996 10 07	809	1.0+	0.6+	1996 10 10	809	0.2+	0.9+	1997 12 04	704	0.2+	0.5−
1996 10 07	809	1.1+	0.3+	1996 10 12	566	(0.7−	3.3−)	1997 12 04	704	1.8+	0.5+
1996 10 07	809	0.7+	0.2−	1996 10 12	566	(0.2−	3.3−)	1997 12 04	704	1.0+	1.1−
1996 10 08	809	2.0−	1.1−	1996 10 12	566	(1.6−	3.1−)	1997 12 04	704	0.7+	0.7+
1996 10 08	809	2.0−	1.2−	1997 11 29	704	0.6−	0.5−				
1996 10 08	809	1.1−	0.9−	1997 11 29	704	0.9−	1.8+				

1996 TQ₅₄ = 1998 FX₁₃₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	178.70492	(2000.0)		P	Q		
<i>n</i>	0.28792263	ω	185.91818	+0.88323715	−0.46875831		
<i>a</i>	2.2713576	Ω	202.04911	+0.43159248	+0.82309995		
<i>e</i>	0.0596621	<i>i</i>	1.91756	+0.18335779	+0.32058091		
<i>P</i>	3.42	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 10 05	327	0.7+	0.1−	1996 11 01	327	0.3+	0.2−	1998 03 28	704	2.3−	2.2−
1996 10 05	327	0.7+	0.3−	1996 11 01	327	0.4−	0.4−	1998 03 28	704	(5.0−	0.5+)
1996 10 05	327	0.3+	0.2−	1996 11 01	327	0.7−	0.6−	1998 03 29	704	0.3+	0.9+
1996 10 14	327	0.4−	0.0	1996 11 15	327	0.4−	0.4+	1998 03 29	704	1.5+	0.3−
1996 10 14	327	0.3−	0.1+	1996 11 15	327	0.2+	0.8+	1998 03 29	704	0.5+	0.6+
1996 10 14	327	0.4+	0.0	1996 11 15	327	0.6+	0.4+	1998 03 29	704	1.5+	0.7−
1996 10 14	327	0.4−	0.2−	1996 11 15	327	0.3+	0.5+				
1996 10 14	327	0.6−	0.5−	1998 03 28	704	1.8−	1.1+				

1996 VK = 1998 FG₁₄₄

Id. M. W. Buie, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	122.94758	(2000.0)		P	Q		
<i>n</i>	0.22402860	ω	355.74524	+0.57508580	−0.81062476		
<i>a</i>	2.6849348	Ω	59.11213	+0.75432750	+0.47324011		
<i>e</i>	0.0614208	<i>i</i>	7.38389	+0.31664861	+0.34486418		
<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 11 03	385	0.4−	0.1+	1996 11 14	385	0.5+	0.1−	1998 03 25	704	0.1+	1.9−
1996 11 03	385	0.4−	0.3−	1996 11 14	385	0.9+	0.1−	1998 03 25	704	1.2−	0.1−
1996 11 03	385	0.9−	0.4−	1996 11 14	385	1.0+	0.3+	1998 03 25	704	0.5+	0.3+
1996 11 04	385	0.1+	0.2+	1996 12 01	385	0.7−	0.1+	1998 03 25	704	0.4+	0.5+
1996 11 04	385	0.2−	0.1−	1996 12 01	385	1.3−	0.2−	1998 04 20	688	0.2+	0.5+
1996 11 04	385	0.3−	0.1+	1996 12 01	385	0.7−	1.1−	1998 04 20	688	0.1−	0.3+
1996 11 09	385	0.7+	1.1+	1997 01 09	385	1.2+	0.9−	1998 04 20	688	0.3+	0.8+
1996 11 09	385	0.7+	0.8+	1997 01 09	385	0.3−	0.4+				

1996 VM₃ = 1981 UK₇

Id. M. W. Buie (1998 observations), G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	172.05981	(2000.0)		P	Q		
<i>n</i>	0.19790562	ω	93.33319	+0.99976697	+0.00615191		
<i>a</i>	2.9162894	Ω	266.31504	−0.01385401	+0.91794358		
<i>e</i>	0.0652757	<i>i</i>	1.18810	+0.01655490	+0.39666325		
<i>P</i>	4.98	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 10 30	381	0.0	0.6−	1996 11 30	411	0.1−	0.1+	1998 01 28	566	0.3−	0.2+
1981 10 30	381	0.3+	0.8−	1996 12 08	411	0.0	0.0	1998 01 28	566	0.5−	0.5+
1996 11 06	411	0.9+	0.7+	1996 12 08	411	0.3−	0.4−	1998 01 28	566	0.1−	0.0
1996 11 06	411	0.9+	0.4+	1996 12 15	691	1.0−	0.1+	1998 02 24	566	0.4+	0.2−
1996 11 13	411	0.0	0.1−	1996 12 15	691	1.3−	0.4+	1998 02 24	566	0.2+	0.1−
1996 11 13	411	0.7+	0.0	1996 12 15	691	1.1−	0.1−	1998 02 24	566	0.1−	0.0
1996 11 15	411	0.3+	0.4−	1997 02 04	691	0.0	0.2+	1998 04 20	688	0.1+	0.4−
1996 11 15	411	0.8+	0.6−	1997 02 04	691	0.0	0.5+	1998 04 20	688	0.0	0.4−
1996 11 30	411	0.2−	0.2+	1997 02 04	691	0.1+	0.6+	1998 04 20	688	0.2+	0.3−

1996 VN₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	285.07329	(2000.0)		P	Q		
<i>n</i>	0.24584401	ω	359.98795	+0.97413595	+0.21776030		
<i>a</i>	2.5236529	Ω	346.95211	−0.20729439	+0.75495402		
<i>e</i>	0.1470237	<i>i</i>	15.49894	−0.08993435	+0.61856679		
<i>P</i>	4.01	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 11 13	599	1.1−	0.6+	1997 02 03	411	0.4−	0.8+	1998 06 25	426	0.1−	0.1−
1996 11 13	599	1.0+	0.2−	1997 04 03	104	0.0	0.2+	1998 06 25	426	0.1+	0.4+
1996 11 14	599	0.6+	0.8+	1997 04 03	104	0.1+	0.3+	1998 06 26	426	0.5−	0.0
1996 11 14	599	0.4+	0.4−	1997 04 03	104	0.2+	0.4+	1998 06 26	426	0.4−	0.4+
1997 02 01	411	0.4−	0.1−	1997 04 08	104	0.2−	0.1−	1998 06 26	426	0.2+	0.2−
1997 02 01	411	0.3−	0.7−	1997 04 08	104	0.1−	0.6−				
1997 02 03	411	0.5+	0.7−	1998 06 25	426	0.8+	0.4−				

1996 VO₈ = 1998 HU₅₆

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	148.01689	(2000.0)		P	Q		
<i>n</i>	0.26978148	ω	352.59563	+0.41769842	−0.90694013		
<i>a</i>	2.3720725	Ω	72.70228	+0.83651830	+0.36039005		
<i>e</i>	0.1863376	<i>i</i>	3.28189	+0.35463385	+0.21812523		
<i>P</i>	3.65	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 11 06	399	1.9+	0.7+	1998 03 29	704	0.5+	0.1+	1998 04 21	704	0.9−	0.7+
1996 11 07	399	1.3−	1.0−	1998 03 29	704	0.9−	0.5+	1998 04 21	704	0.1+	0.4+
1996 11 07	399	0.1−	0.6−	1998 03 29	704	0.1−	0.2−	1998 04 22	704	0.5+	0.5−
1996 11 12	399	0.8+	0.8+	1998 03 29	704	0.2+	0.7−	1998 04 22	704	0.4+	0.4−
1996 11 12	399	0.2+	0.0	1998 04 21	704	0.2−	0.5−	1998 04 22	704	0.0	0.6+
1996 11 15	399	1.1−	0.2−	1998 04 21	704	0.7−	0.9−	1998 04 22	704	1.1+	0.2+
1996 11 15	399	0.4−	0.4+	1998 04 21	704	0.3+	0.3−	1998 04 22	704	0.2−	1.0+

1996 WA₁

Id. J. Broughton (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	136.69400	(2000.0)		P	Q		
<i>n</i>	0.28902447	ω	188.97517	−0.42587359	−0.90382371		
<i>a</i>	2.2655812	Ω	286.23973	+0.83279043	−0.37357916		
<i>e</i>	0.0861146	<i>i</i>	2.48608	+0.35368317	−0.20866554		
<i>P</i>	3.41	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 11 19	411	0.1−	0.1+	1996 12 19	411	0.5−	0.4−	1998 05 24	704	1.0−	0.1+
1996 11 19	411	0.2+	0.6+	1996 12 28	411	0.2+	0.9+	1998 05 24	704	1.3−	0.1−
1996 11 21	411	0.1+	0.0	1996 12 28	411	0.2+	0.1−	1998 05 24	704	1.9−	1.1+
1996 11 21	411	0.3+	0.1−	1998 05 22	704	0.8+	1.4−	1998 05 27	428	0.7+	0.2−
1996 11 30	411	0.0	0.0	1998 05 22	704	0.2+	0.1+	1998 05 27	428	1.6+	0.4−
1996 11 30	411	0.1+	0.2+	1998 05 22	704	1.2−	1.4+	1998 05 28	428	1.3+	0.3−
1996 12 06	411	0.4−	0.2−	1998 05 22	704	1.0+	1.3−	1998 05 28	428	0.0	0.5+
1996 12 06	411	0.0	0.4−	1998 05 24	704	0.3+	0.5+				
1996 12 19	411	0.1−	0.4−	1998 05 24	704	0.4−	0.3+				

1996 XQ₄ = 1998 FU₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	225.30052		(2000.0)	P	Q
<i>n</i>	0.26131844	ω	337.02235	+0.86077215	+0.50880339
<i>a</i>	2.4230145	Ω	352.34955	−0.44941645	+0.74701773
<i>e</i>	0.1287373	<i>i</i>	5.94952	−0.23894802	+0.42788272
<i>P</i>	3.77	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 12 06	691	0.4−	0.1−	1996 12 08	691	0.5+	0.2+	1998 03 20	691	0.2−	0.1+
1996 12 06	691	0.3−	0.2+	1996 12 08	691	0.8+	0.1−	1998 03 20	691	0.4+	0.2+
1996 12 06	691	0.2−	0.1−	1996 12 13	691	0.1−	0.2+	1998 03 25	691	0.0	0.2−
1996 12 07	691	0.6−	0.9−	1996 12 13	691	0.1−	0.2+	1998 03 25	691	0.3−	0.1−
1996 12 07	691	0.2−	0.1−	1996 12 13	691	0.2−	0.3+	1998 03 25	691	0.2−	0.1+
1996 12 08	691	0.6+	0.1+	1998 03 20	691	0.2+	0.0				

1996 XJ₆ = 1998 HB₁₅₁

Id. G. V. Williams, M. W. Buie

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	149.82805		(2000.0)	P	Q
<i>n</i>	0.25803369	ω	349.70687	+0.28257631	−0.95069159
<i>a</i>	2.4435343	Ω	83.79102	+0.88897559	+0.20948300
<i>e</i>	0.2258149	<i>i</i>	7.38680	+0.36037901	+0.22869713
<i>P</i>	3.82	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 12 03	905	0.2−	1.2−	1997 01 06	385	0.9−	0.8+	1998 04 21	704	(4.8−	0.4+)
1996 12 03	905	0.2+	0.3−	1997 01 06	385	1.5−	0.7+	1998 04 21	688	0.1−	0.1−
1996 12 06	905	0.4+	1.1−	1997 01 28	385	0.7−	0.0	1998 05 01	704	0.5−	0.7+
1996 12 06	905	0.1−	0.7−	1997 01 28	385	0.1+	0.3+	1998 05 01	704	0.6+	1.1−
1996 12 08	385	0.2−	0.3+	1998 04 21	704	0.4+	0.9−	1998 05 01	704	0.3+	0.4+
1996 12 08	385	0.1−	0.1+	1998 04 21	704	0.6+	0.0	1998 05 01	704	0.9−	0.3−
1996 12 08	385	0.1−	0.1−	1998 04 21	704	0.5−	0.9+	1998 05 24	704	0.4+	2.1−
1996 12 12	905	0.8+	0.3+	1998 04 21	704	1.3−	0.2+	1998 05 24	704	1.4+	0.6+
1996 12 12	905	1.3+	0.1+	1998 04 21	688	0.1−	0.0	1998 05 24	704	2.2+	0.3−
1996 12 12	385	0.7+	0.1+	1998 04 21	688	0.0	0.0	1998 05 24	704	3.1−	0.5+

1996 XA₁₂ = 1979 SW₁ = 1985 JA₁ = 1998 NK

Id. G. V. Williams, E. Bowell

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	10.04910		(2000.0)	P	Q
<i>n</i>	0.30960904	ω	192.62511	+0.16004472	+0.98262549
<i>a</i>	2.1640151	Ω	86.64063	−0.89727350	+0.18450356
<i>e</i>	0.2079204	<i>i</i>	5.40211	−0.41144374	−0.02013916
<i>P</i>	3.18	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1979 09 22	095	0.6−	1.7+	1996 12 14	691	0.4−	0.2+	1998 07 02	699	0.3+	0.0
1985 05 13	675	(6.9−	1.9−)	1996 12 14	691	0.0	0.0	1998 07 16	699	0.1+	0.4−
1985 05 14	675	0.2+	0.6+	1996 12 14	691	0.1+	0.1−	1998 07 16	699	0.1+	0.2−
1996 12 04	691	0.3−	0.1+	1998 06 29	704	1.0+	1.5+	1998 07 16	699	0.3+	0.4−
1996 12 04	691	0.6−	0.2−	1998 06 29	704	0.4+	0.2+	1998 07 24	566	0.4−	0.9−
1996 12 04	691	0.0	0.2−	1998 06 29	704	(0.7−	2.5+)	1998 07 24	566	0.1−	0.8−
1996 12 09	691	0.4+	0.0	1998 06 29	704	1.9−	0.4−	1998 07 24	566	0.3−	0.9−

1996 12 09	691	0.4+	0.2−	1998 07 02	699	0.6+	0.1+
1996 12 09	691	0.2+	0.7−	1998 07 02	699	0.3+	0.5+

1996 XY₁₄ = 1998 MH₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	3.92947		(2000.0)	P	Q
<i>n</i>	0.30021242	ω	344.02567	+0.00214831	+0.99562470
<i>a</i>	2.2089384	Ω	286.02566	−0.90651166	−0.03749984
<i>e</i>	0.1632678	<i>i</i>	5.57766	−0.42217531	+0.08558754
<i>P</i>	3.28	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1996 12 10	327	0.2+	0.3+	1996 12 19	327	0.2−	0.1−	1998 06 26	704	0.6+	0.5−
1996 12 10	327	0.0	0.0	1996 12 19	327	0.6−	0.4−	1998 06 26	704	0.4+	1.0−
1996 12 10	327	0.2−	0.1+	1998 06 24	704	0.2−	0.4−	1998 06 26	704	0.3+	0.2+
1996 12 11	327	0.1−	0.1−	1998 06 24	704	0.7−	0.3+	1998 06 26	704	0.9+	0.7−
1996 12 11	327	0.4+	0.2+	1998 06 24	704	0.3−	1.5+	1998 06 26	704	0.5−	0.8−
1996 12 11	327	0.2+	0.2+	1998 06 24	704	0.1−	0.2+				
1996 12 19	327	0.1+	0.4−	1998 06 24	704	0.4−	0.9+				

1996 XD₁₉ = 1998 LG₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	92.94131		(2000.0)	P	Q
<i>n</i>	0.25696578	ω	296.79044	−0.93438762	−0.35274151
<i>a</i>	2.4502996	Ω	222.60535	+0.34742034	−0.87118954
<i>e</i>	0.1280900	<i>i</i>	4.23002	+0.07885989	−0.34147067
<i>P</i>	3.84	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 12 08	411	0.7−	0.0	1996 12 28	411	0.4+	0.4−	1998 06 03	704	0.4+	0.0
1996 12 08	411	0.7−	0.5+	1997 01 13	411	0.7+	0.6−	1998 06 24	704	0.2+	1.6+
1996 12 11	411	0.1−	0.6+	1997 01 13	411	0.7−	0.0	1998 06 24	704	0.3−	1.0−
1996 12 11	411	0.1+	0.4+	1997 03 09	689(19.9−	1.0−)		1998 06 26	704	2.8+	0.5+
1996 12 18	411	0.1+	0.0	1998 06 03	704	0.4+	1.2+	1998 06 26	704	1.2−	1.3−
1996 12 18	411	0.4+	0.3+	1998 06 03	704	0.0	0.5−	1998 06 26	704	0.2−	0.2−
1996 12 28	411	0.5+	0.0	1998 06 03	704	0.2+	0.6−	1998 06 26	704	2.3−	1.0+

1996 XO₁₉ = 1992 YW₅ = 1998 KD₆₂

Id. G. V. Williams, M. W. Buie

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	135.35378		(2000.0)	P	Q
<i>n</i>	0.23888673	ω	324.27053	−0.08869524	−0.99411383
<i>a</i>	2.5724170	Ω	130.73209	+0.93187843	−0.10487695
<i>e</i>	0.1703729	<i>i</i>	4.70954	+0.35176091	+0.02717586
<i>P</i>	4.13	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 12 23	372	0.7+	0.8−	1996 12 18	411	0.0	0.4+	1998 05 24	704	0.6+	1.2+
1992 12 23	372	0.9−	0.5−	1996 12 18	411	0.1+	0.2−	1998 05 24	704	0.3+	0.9+
1996 12 08	411	0.0	0.3+	1996 12 28	411	0.0	0.1+	1998 05 24	704	0.8−	1.4−
1996 12 08	411	0.3−	0.5+	1996 12 28	411	0.2+	0.1+	1998 06 20	688	0.6−	0.0
1996 12 11	411	0.4+	0.3−	1997 01 13	411	0.0	0.8+	1998 06 20	688	0.2−	0.1−
1996 12 11	411	0.4−	0.1−	1998 05 24	704	0.9+	0.0	1998 06 20	688	0.2−	0.3−

1996 XS₂₃ = 1998 HC₁₅₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	183.81386		(2000.0)	P	Q
<i>n</i>	0.28211619	ω	6.36465	+0.66010570	−0.68757361
<i>a</i>	2.3024173	Ω	42.92392	+0.66811897	+0.35335392
<i>e</i>	0.2402922	<i>i</i>	26.37053	+0.34333292	+0.63433708
<i>P</i>	3.49	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1996 12 08	693	0.2−	0.5−	1996 12 17	657	0.9−	0.2−	1997 05 02	658	0.7−	0.1−
1996 12 08	693	0.7−	1.4−	1996 12 17	657	0.3−	0.4+	1997 05 02	658	0.3−	1.2−
1996 12 14	657	0.2+	0.4−	1996 12 17	696	0.2−	0.1−	1997 07 13	696	0.3−	0.2+
1996 12 14	657	0.6+	0.1−	1996 12 17	696	0.0	0.0	1997 07 13	696	0.7−	0.2+
1996 12 14	657	0.8+	0.3−	1996 12 17	696	0.1−	0.1−	1997 07 13	696	0.6−	0.4+
1996 12 14	657	0.2+	0.0	1997 01 26	658	1.7−	1.7+	1998 04 21	704	0.8+	0.7+
1996 12 14	709	0.3+	0.1−	1997 01 26	658	1.2−	2.1+	1998 04 21	704	0.2+	0.6−
1996 12 15	709	0.2+	0.0	1997 01 26	658	(1.3−	3.4+)	1998 04 21	704	0.9−	0.7−
1996 12 15	709	0.1+	0.2−	1997 03 21	693	0.3+	0.3−	1998 04 21	704	0.6−	1.0+
1996 12 15	709	0.2+	0.3−	1997 03 21	693	0.3+	0.4−	1998 05 01	704	0.0	0.5−
1996 12 15	709	0.3+	0.0	1997 03 22	658	0.9+	0.3+	1998 05 01	704	0.3+	0.0
1996 12 15	709	0.2+	0.1−	1997 03 22	658	0.9+	0.5+	1998 05 01	704	0.2−	0.6−
1996 12 15	709	0.3+	0.1−	1997 03 22	658	0.8+	0.5+	1998 05 01	704	(0.6−	3.0−)
1996 12 17	657	0.6−	0.2+	1997 05 02	658	0.4−	0.3−				

1996 XP₂₉ = 1998 KL₂₃

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22762343	ω	256.33648	+0.64257053	−0.76571449		
<i>a</i>	2.6565913	Ω	153.61553	+0.72511046	+0.59587058		
<i>e</i>	0.0129121	<i>i</i>	3.61345	+0.24762459	+0.24211481		
<i>P</i>	4.33	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 13	691	0.2+	0.3−	1997 01 16	610	0.3−	0.3−	1998 05 05	699	0.5+	1.6+
1996 12 13	691	0.0	0.2−	1998 04 20	691	0.6−	0.3−	1998 05 22	704	1.0−	0.2−
1996 12 13	691	0.0	0.2−	1998 04 20	691	0.6−	0.0	1998 05 22	704	0.1−	1.3−
1996 12 17	691	0.2+	0.3−	1998 04 20	691	0.8−	0.0	1998 05 22	704	1.1−	0.2−
1996 12 17	691	0.1+	0.0	1998 05 01	704	0.1−	0.8+	1998 05 22	704	0.9+	0.9+
1996 12 17	691	0.2+	0.0	1998 05 01	704	0.1−	0.9−	1998 05 22	704	0.2−	0.1+
1997 01 14	610	0.7−	0.7+	1998 05 01	704	0.3+	0.0	1998 05 24	704	0.2−	1.0−
1997 01 14	610	0.3+	0.1+	1998 05 01	704	0.6+	0.2+	1998 05 24	704	0.0	0.1+
1997 01 14	610	1.0+	0.4−	1998 05 01	704	0.9+	0.2−	1998 05 24	704	0.0	0.2−
1997 01 16	610	0.5−	0.6+	1998 05 05	699	(2.5+	0.4+)	1998 05 24	704	0.9+	0.3+
1997 01 16	610	0.4−	0.1+	1998 05 05	699	0.0	0.7+	1998 05 24	704	0.5+	0.8−

1996 XE₃₁ = 1998 MO₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26227103	ω	302.97214	−0.80203581	+0.56670598		
<i>a</i>	2.4171439	Ω	272.23148	−0.46537798	−0.79089903		
<i>e</i>	0.1276761	<i>i</i>	10.88145	−0.37438201	−0.23091788		
<i>P</i>	3.76	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 14	411	0.1+	0.7−	1997 01 13	411	0.6−	0.4+	1998 06 24	704	0.5+	0.4−
1996 12 14	411	0.1+	0.0	1997 02 07	566	0.7+	0.2−	1998 06 24	704	0.0	0.2+
1996 12 16	411	0.2−	0.7+	1997 02 07	566	0.2+	0.1+	1998 06 26	704	1.1−	0.3−
1996 12 16	411	0.2+	0.2+	1997 02 07	566	0.3−	0.1+	1998 06 26	704	0.8+	0.6+
1996 12 29	411	0.2+	0.5−	1998 06 24	704	0.8+	0.9−	1998 06 26	704	1.5−	2.4−
1996 12 29	411	0.3−	0.3−	1998 06 24	704	1.1+	0.0	1998 06 26	704	1.7−	1.0+
1997 01 13	411	0.2−	0.0	1998 06 24	704	1.2+	2.0+				

1996 XZ₃₁ = 1998 MO₄₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29794705	ω	136.46667	−0.66941738	+0.73248771		
<i>a</i>	2.2201210	Ω	91.10073	−0.71101619	−0.58341810		
<i>e</i>	0.0896469	<i>i</i>	7.11644	−0.21525880	−0.35083483		
<i>P</i>	3.31	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 12 08	369	1.0−	0.1+	1996 12 30	369	0.4−	0.0	1998 06 24	704	0.7+	0.4+
1996 12 08	369	0.4−	1.2−	1997 02 06	369	0.3+	0.8−	1998 06 24	704	2.0−	2.8−
1996 12 14	369	0.4−	0.3+	1997 02 06	369	0.1−	0.0	1998 06 26	704	1.5+	0.7−
1996 12 14	369	0.5+	0.2+	1997 02 27	369	0.9−	0.9+	1998 06 26	704	2.6+	0.1−
1996 12 19	369	1.4+	0.4−	1997 02 27	369	0.6+	0.4−	1998 06 26	704	0.1−	2.4+
1996 12 19	369	1.0+	0.7−	1998 06 24	704	0.3+	1.0+	1998 06 26	704	2.7−	0.4+
1996 12 30	369	0.7−	0.1+	1998 06 24	704	0.4−	2.3−				

1996 XL₃₃ = 1998 LT

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24391247	ω	84.67354	−0.91649992	−0.37021765		
<i>a</i>	2.5369586	Ω	73.52841	+0.27484878	−0.85801965		
<i>e</i>	0.1839683	<i>i</i>	9.09278	+0.29066484	−0.35600727		
<i>P</i>	4.04	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 04	098	0.1+	0.3−	1996 12 19	327	0.4+	0.3+	1998 05 22	704	0.6−	0.7+
1996 12 06	098	1.2+	1.6+	1996 12 29	327	0.9−	0.0	1998 06 01	809	(0.6−	3.5−)
1996 12 06	098	0.2−	0.5+	1996 12 29	327	0.8−	0.4−	1998 06 01	809	(1.0−	3.6−)
1996 12 08	098	0.5−	0.5−	1996 12 29	327	0.2−	0.6−	1998 06 01	809	(1.2−	3.8−)
1996 12 08	098	1.1+	0.2+	1998 05 22	704	0.7+	0.9−	1998 06 02	809	1.2+	0.8+
1996 12 19	327	0.8−	0.1+	1998 05 22	704	0.3+	0.1+	1998 06 02	809	0.4+	1.1+
1996 12 19	327	0.1+	0.1+	1998 05 22	704	2.0−	0.0	1998 06 02	809	0.7+	1.1+
1996 12 19	327	0.3+	0.0	1998 05 22	704	0.4−	1.9−				

1996 YJ₂ = 1969 AU = 1991 XQ₄ = 1998 KE₆₀

Id. G. V. Williams, S. Nakano, A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21213973	ω	351.21609	−0.28207975	−0.94438117		
<i>a</i>	2.7843343	Ω	115.02326	+0.89116779	−0.32317753		
<i>e</i>	0.1899366	<i>i</i>	10.75167	+0.35531816	+0.06083169		
<i>P</i>	4.65	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1969 01 15	095	(63.6−	7.9−)	1997 01 08	327	0.9+	0.4+	1998 05 23	704	0.0	0.1+
1991 12 02	675	0.3+	0.9−	1997 01 08	327	0.7−	0.1+	1998 05 23	704	1.8+	0.3−
1991 12 02	675	0.0	0.2−	1997 01 12	400	1.3+	1.5−	1998 05 23	704	0.6−	0.6+
1996 12 24	327	0.5−	0.8+	1997 01 12	400	(0.6+	2.1−)	1998 05 23	704	0.2−	0.5+
1996 12 24	327	0.7−	0.3+	1997 01 13	400	(0.3−	2.6+)	1998 05 23	704	0.2+	1.2−
1996 12 24	327	0.7−	0.1+	1997 01 13	905	0.5−	1.3−	1998 05 26	704	0.2−	0.7−
1996 12 25	327	0.5+	0.9+	1997 01 13	905	0.1+	0.7−	1998 05 26	704	0.7+	0.5+
1996 12 25	327	0.9+	0.0	1997 01 16	905	0.0	1.4+	1998 05 26	704	0.5−	0.1−
1996 12 25	327	0.3−	0.6+	1997 01 16	905	1.2−	0.4+	1998 05 26	704	(1.8−	2.6−)
1997 01 04	327	0.8+	0.2+	1997 01 19	400	0.1+	0.2−	1998 06 26	699	0.6−	0.2+
1997 01 04	327	0.2+	0.2+	1997 01 19	400	0.0	0.2−	1998 06 26	699	0.1−	0.0
1997 01 04	327	0.5+	0.4+	1997 01 19	400	0.6−	0.9−	1998 06 26	699	0.9−	0.3−
1997 01 08	327	0.0	0.4+	1997 01 19	400	0.1+	0.8−				

1997 AQ = 1998 KB₆₂

Id. M. W. Buie, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29084317	ω	300.53553	+0.50882612	−0.85228573		
<i>a</i>	2.2561266	Ω	118.39616	+0.82951291	+0.44773236		
<i>e</i>	0.1231573	<i>i</i>	7.92347	+0.23022666	+0.27045290		
<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 12 07	691	0.1+	0.3−	1997 01 09	411	0.2+	0.1+	1998 05 22	704	0.4+	1.3+
1996 12 07	691	0.1+	0.2−	1997 01 09	411	0.2−	0.3−	1998 05 22	704	0.1+	2.0−
1996 12 07	691	0.1+	0.2−	1997 01 14	411	0.2−	0.2+	1998 05 22	704	0.7+	0.6+
1997 01 02	411	0.2+	0.5+	1997 01 14	411	0.2−	0.3+	1998 05 22	704	3.8−	0.2−

M.P.C. 32248

1997 01 02	411	0.1+	0.6+	1997 01 26	411	0.7−	0.2+	1998 06 20	688	0.3+	0.1+
1997 01 03	411	0.8+	0.0	1997 01 26	411	0.0	0.4−	1998 06 20	688	0.6+	0.2−
1997 01 03	411	0.1−	0.7−	1998 05 22	704	1.2+	0.2+	1998 06 20	688	0.5+	0.1+

1997 AR₁ = 1998 MR₃₁

Id. G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Marsden		
<i>M</i>	24.98159	(2000.0)	P	Q	
<i>n</i>	0.26381528	ω	175.31786	−0.27555822	+0.95956589
<i>a</i>	2.4077021	Ω	78.67866	−0.88385280	−0.22940781
<i>e</i>	0.1691925	<i>i</i>	3.35912	−0.37798399	−0.16311148
<i>P</i>	3.74	<i>H</i>	14.5	<i>G</i>	0.15

Residuals in seconds of arc

1997 01 02	411	0.6+	0.1−	1997 01 26	411	0.1−	0.6+	1998 06 26	704	0.4+	0.8−
1997 01 02	411	0.2−	0.3+	1998 06 24	704	0.3−	0.7−	1998 06 28	809	0.9+	1.4+
1997 01 03	411	1.0−	0.6+	1998 06 24	704	0.0	0.6−	1998 06 28	809	0.4+	1.3+
1997 01 03	411	0.6+	0.3−	1998 06 24	704	0.8−	0.9−	1998 06 28	809	0.9+	1.4+
1997 01 09	411	0.3−	0.1−	1998 06 24	704	0.0	0.6−	1998 07 01	809	(1.2+	2.4+)
1997 01 09	411	0.1+	0.1+	1998 06 24	704	0.1−	0.1+	1998 07 01	809	(0.0	2.7+)
1997 01 14	411	0.5+	0.1−	1998 06 26	704	0.2+	0.3−	1998 07 01	809	(1.2+	2.6+)
1997 01 14	411	0.0	0.4−	1998 06 26	704	0.9−	0.1+				
1997 01 26	411	0.1−	0.2−	1998 06 26	704	1.0−	0.3−				

1997 AL₃ = 1998 MJ₂₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	28.11256	(2000.0)	P	Q	
<i>n</i>	0.24300034	ω	127.83625	−0.47716217	+0.86021583
<i>a</i>	2.5433031	Ω	112.74780	−0.85508275	−0.40721226
<i>e</i>	0.2030320	<i>i</i>	11.24568	−0.20285404	−0.30693142
<i>P</i>	4.06	<i>H</i>	15.5	<i>G</i>	0.15

Residuals in seconds of arc

1996 12 20	327	0.4+	0.6+	1997 01 06	691	0.4−	0.2+	1998 06 24	704	0.1+	1.2−
1996 12 20	327	0.4−	0.5−	1997 01 06	691	0.6−	0.1−	1998 06 24	704	1.0−	0.1−
1996 12 20	327	1.0+	0.1+	1997 01 10	566	0.7+	0.0	1998 06 24	704	2.4+	0.4−
1997 01 03	691	0.5−	0.1−	1997 01 10	566	0.3+	0.0	1998 06 26	704	0.5−	0.0
1997 01 03	691	0.5−	0.0	1997 01 10	566	0.3+	0.1+	1998 06 26	704	0.7+	1.0−
1997 01 03	691	0.2−	0.2+	1998 06 24	704	0.0	1.1−	1998 06 26	704	0.5−	1.3+
1997 01 06	691	0.0	0.3−	1998 06 24	704	0.6+	0.6+	1998 06 26	704	1.9−	2.0+

1997 AZ₃ = 1998 KA₆₂

Id. M. W. Buie, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	99.08503	(2000.0)	P	Q	
<i>n</i>	0.23549922	ω	29.08481	−0.90977318	−0.35867289
<i>a</i>	2.5970266	Ω	128.36724	+0.31029277	−0.92199507
<i>e</i>	0.0443888	<i>i</i>	15.45735	+0.27573749	−0.14587270
<i>P</i>	4.19	<i>H</i>	13.5	<i>G</i>	0.15

Residuals in seconds of arc

1997 01 06	411	0.5+	0.3−	1997 02 16	411	0.2−	0.1−	1998 06 19	704	0.8−	0.7+
1997 01 06	411	0.3+	0.4−	1998 05 26	704	0.3−	1.0−	1998 06 20	688	0.2+	0.1−
1997 01 07	411	0.2−	0.2+	1998 05 26	704	0.4−	1.3+	1998 06 20	688	0.3+	0.6−
1997 01 07	411	0.1−	0.2+	1998 05 26	704	0.4−	0.7+	1998 06 20	688	0.0	0.0
1997 01 16	411	0.1+	0.0	1998 05 26	704	0.2−	0.4−	1998 06 25	704	0.1+	0.4+
1997 01 16	411	0.3+	0.4+	1998 05 26	704	1.2+	1.1−	1998 06 25	704	1.4+	0.4−
1997 01 28	411	0.6−	0.0	1998 06 19	704	0.1+	0.5+	1998 06 25	704	0.1+	0.6+
1997 01 28	411	0.2−	0.0	1998 06 19	704	1.4−	0.0	1998 06 25	704	0.0	0.7−
1997 02 16	411	0.2+	0.1+	1998 06 19	704	0.2+	0.1+				

1998 AUG. 8

1997 AF₄ = 1998 MD₁₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	103.24773	(2000.0)	P	Q	
<i>n</i>	0.21350225	ω	12.24423	−0.80105547	−0.58724468
<i>a</i>	2.7724756	Ω	131.16966	+0.53537792	−0.78955216
<i>e</i>	0.1591355	<i>i</i>	8.86381	+0.26773235	−0.17818830
<i>P</i>	4.62	<i>H</i>	13.5	<i>G</i>	0.15

Residuals in seconds of arc

1997 01 02	691	0.6−	0.4−	1997 01 16	411	0.1−	0.2+	1998 06 19	704	0.7+	0.8−
1997 01 02	691	0.9−	0.4−	1997 01 28	411	0.1−	0.3+	1998 06 19	704	0.4+	0.6+
1997 01 02	691	0.7−	0.5−	1997 01 28	411	0.2+	0.0	1998 06 19	704	1.0−	1.4+
1997 01 06	411	1.3+	0.1+	1997 01 29	411	0.1+	0.9−	1998 06 19	704	1.4−	0.2−
1997 01 06	411	0.9+	0.2+	1997 01 29	411	0.2−	0.3−	1998 06 26	704	0.0	0.3+
1997 01 07	411	0.2−	0.6+	1998 06 03	704	0.5+	0.2+	1998 06 26	704	1.0+	1.5−
1997 01 07	411	0.4+	0.1−	1998 06 03	704	0.4−	0.4+	1998 06 26	704	0.7+	0.7+
1997 01 11	411	0.3−	0.2+	1998 06 03	704	0.9+	0.0	1998 06 26	704	0.3−	0.4−
1997 01 11	411	0.0	0.4+	1998 06 03	704	(3.9−	1.4−)	1998 06 26	704	0.9−	0.6−
1997 01 16	411	0.1+	0.4+	1998 06 19	704	0.1−	0.2−				

1997 AJ₄

Id. E. Bowell (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	71.26346	(2000.0)	P	Q	
<i>n</i>	0.29828169	ω	306.74390	−0.68337045	+0.72290031
<i>a</i>	2.2184603	Ω	279.81420	−0.63246351	−0.65603313
<i>e</i>	0.1198613	<i>i</i>	5.94618	−0.36468444	−0.21687709
<i>P</i>	3.30	<i>H</i>	14.0	<i>G</i>	0.15

Residuals in seconds of arc

1996 12 07	691	1.1−	0.2−	1997 01 11	411	0.3−	0.3+	1998 06 30	699	0.8−	0.4+
1996 12 07	691	1.3−	0.1+	1997 01 11	411	0.1−	1.3+	1998 06 30	699	0.6−	0.8−
1996 12 07	691	1.1−	0.0	1997 01 16	411	1.2+	0.4+	1998 07 26	699	0.2+	0.6+
1997 01 06	411	0.5−	1.8−	1997 01 16	411	1.0+	0.0	1998 07 26	699	0.1+	1.0+
1997 01 06	411	0.7+	0.9−	1997 01 27	411	0.1+	0.8+	1998 07 26	699	0.6+	0.2+
1997 01 07	411	0.8+	0.7+	1997 01 27	411	0.1+	0.5+				
1997 01 07	411	0.3+	0.4+	1998 06 30	699	0.4−	0.1+				

1997 AQ₄ = 1989 YU₁

Id. S. Nakano, A. Gnädig, M. W. Buie (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	90.34990	(2000.0)	P	Q	
<i>n</i>	0.28350988	ω	86.21772	−0.95030408	+0.30040146
<i>a</i>	2.2948655	Ω	111.24977	−0.30892658	−0.87739132
<i>e</i>	0.0840882	<i>i</i>	5.03136	−0.03855551	−0.37409015
<i>P</i>	3.48	<i>H</i>	15.0	<i>G</i>	0.15

Residuals in seconds of arc

1989 12 30	413	1.3−	0.8+	1997 01 07	411	0.1+	0.2−	1997 02 16	411	0.4+	0.1−
1989 12 30	413	0.9−	1.8+	1997 01 11	411	0.4−	0.4−	1997 02 16	411	0.3−	0.3+
1989 12 31	413	1.5+	1.6−	1997 01 11	411	0.1+	1.0+	1998 06 21	688	0.2−	0.3+
1989 12 31	413	0.8+	0.4−	1997 01 16	411	0.4−	0.5−	1998 06 21	688	0.0	0.2+
1997 01 06	411	0.1−	1.1+	1997 01 16	411	0.6−	0.0	1998 06 21	688	0.1+	0.0
1997 01 06	411	0.3+	0.1+	1997 01 28	411	0.7+	0.5−				
1997 01 07	411	0.2−	0.7−	1997 01 28	411	0.4+	0.0				

1997 AB₇ = 1998 MJ₄₄

Id. E. Bowell, G. V. Williams

1998 AUG. 8

M.P.C. 32249

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	80.82412		(2000.0)	P		Q	
<i>n</i>	0.26393276	ω	94.06476	−0.92727695	+0.37151779		
<i>a</i>	2.4069876	Ω	107.74940	−0.35984191	−0.85044124		
<i>e</i>	0.0967885	<i>i</i>	2.77886	−0.10330179	−0.37245703		
<i>P</i>	3.73	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 09	411	1.5+	1.1+	1997 01 28	411	0.4+	0.0	1998 06 24	704	0.4−	2.2+
1997 01 09	411	0.2−	0.7+	1997 02 07	566	0.8−	1.1−	1998 06 24	704	0.6+	0.4−
1997 01 10	411	0.3+	0.6+	1997 02 07	566	0.5−	1.3−	1998 07 16	699	0.4+	0.4+
1997 01 10	411	0.3+	0.1−	1997 02 07	566	0.7−	1.2−	1998 07 16	699	0.2−	0.0
1997 01 13	411	0.5−	0.4+	1997 02 14	411	0.3+	0.3+	1998 07 16	699	1.5−	0.2+
1997 01 13	411	1.0−	0.3+	1997 02 14	411	0.6+	0.9+				
1997 01 28	411	0.7+	0.5+	1998 06 24	704	1.1+	1.2−				

1997 AO₇

Id. E. Bowell (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	24.37291		(2000.0)	P		Q	
<i>n</i>	0.29951134	ω	121.54175	+0.07006477	+0.99675623		
<i>a</i>	2.2123841	Ω	152.39299	−0.94175300	+0.07918293		
<i>e</i>	0.1279169	<i>i</i>	4.90182	−0.32892584	−0.01439008		
<i>P</i>	3.29	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 09	411	0.0	0.0	1997 01 29	411	0.1+	0.8−	1998 06 20	688	0.5+	0.1+
1997 01 09	411	0.1−	1.6−	1997 01 29	411	0.5+	0.1+	1998 06 20	688	0.4+	0.0
1997 01 10	411	0.6−	0.2−	1997 02 14	411	0.8+	0.4+	1998 07 28	684	0.2−	0.0
1997 01 10	411	0.3−	0.1−	1997 02 14	411	0.1+	0.8+	1998 07 28	684	0.1−	0.0
1997 01 13	411	1.2−	0.5+	1998 05 24	699	0.6−	0.1−	1998 07 30	684	0.2+	0.3+
1997 01 13	411	0.5−	0.3+	1998 05 24	699	0.3−	0.8−	1998 07 30	684	0.1+	0.7−
1997 01 28	411	0.4+	0.2−	1998 05 24	699	0.1+	0.2−				
1997 01 28	411	0.5+	0.4−	1998 06 20	688	0.0	0.2+				

1997 AR₁₇ = 1997 EK₄₆ = 1998 MW₃₇

Id. E. Bowell, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	59.38106		(2000.0)	P		Q	
<i>n</i>	0.29020571	ω	320.47929	−0.73437203	+0.67793239		
<i>a</i>	2.2594293	Ω	262.23655	−0.61393641	−0.68434121		
<i>e</i>	0.1217809	<i>i</i>	1.92292	−0.28944742	−0.26848609		
<i>P</i>	3.40	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 01 14	595	0.4−	0.2−	1997 03 09	595	1.3+	0.3+	1998 06 26	704	0.4+	0.2−
1997 01 14	595	0.2+	0.1+	1997 03 09	595	0.2−	0.8+	1998 07 02	699	0.6+	0.5−
1997 01 15	595	0.5−	0.8+	1997 03 09	595	1.3−	0.1+	1998 07 02	699	1.1+	0.6−
1997 01 15	595	0.4+	0.4−	1997 03 10	595(61.9−	11.3−)		1998 07 02	699	0.0	0.2−
1997 01 27	595	0.6−	0.5−	1997 03 10	595(68.7−	14.0−)		1998 07 16	595	0.4−	1.3+
1997 01 27	595	0.4+	0.7−	1998 06 26	704	0.6+	1.0−	1998 07 17	595	0.8−	0.4+
1997 01 28	595	0.3+	0.2−	1998 06 26	704	0.2+	0.1−	1998 07 17	595	0.4−	0.5−
1997 01 28	595	0.3+	0.6−	1998 06 26	704	1.0−	0.8+				

1997 AT₁₇ = 1998 MG₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	93.27050		(2000.0)	P		Q	
<i>n</i>	0.18266914	ω	72.21459	−0.61845990	−0.78530630		
<i>a</i>	3.0762805	Ω	56.02273	+0.70742537	−0.57208712		
<i>e</i>	0.2274467	<i>i</i>	1.95629	+0.34213549	−0.23666505		
<i>P</i>	5.40	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 01 12	683	0.3−	0.1+	1997 01 30	683	0.1+	0.3+	1997 03 05	683	0.1+	0.1−
1997 01 12	683	0.2−	0.5+	1997 01 31	683	0.3−	0.5+	1997 03 05	683	0.1+	0.1+
1997 01 12	683	0.8+	0.6−	1997 01 31	683	0.3+	0.2+	1997 04 07	683	0.2−	0.3−
1997 01 16	683	0.2−	0.3+	1997 02 01	683	0.2−	0.2+	1997 04 07	683	0.7−	0.4−
1997 01 16	683	0.0	0.1+	1997 02 01	683	0.3−	0.0	1997 04 08	683	0.2+	0.9−
1997 01 16	683	0.2−	0.3+	1997 02 01	683	0.2−	0.0	1997 04 08	683	0.1−	0.7−
1997 01 28	683	0.1+	0.0	1997 02 14	683	0.4+	0.2+	1997 04 08	683	0.0	0.4+
1997 01 28	683	0.2+	0.1−	1997 02 14	683	0.2+	0.3−	1998 06 19	691	0.1+	0.4+
1997 01 28	683	0.2+	0.2−	1997 02 14	683	0.2−	0.0	1998 06 19	691	0.1−	0.1+
1997 01 30	683	0.3+	0.2+	1997 03 03	683	0.0	0.1−	1998 06 25	691	0.0	0.0
1997 01 30	683	0.1+	0.0	1997 03 03	683	0.0	0.0	1998 06 25	691	0.1−	0.2+
1997 01 30	683	0.1−	0.1−	1997 03 05	683	0.1−	0.2−	1998 06 25	691	0.3+	0.1+

1997 AW₁₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	94.59447		(2000.0)	P		Q	
<i>n</i>	0.26588956	ω	110.98564	−0.98619794	+0.16148832		
<i>a</i>	2.3951637	Ω	78.32183	−0.16236482	−0.90004139		
<i>e</i>	0.1268132	<i>i</i>	2.13831	−0.03242348	−0.40478021		
<i>P</i>	3.71	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 13	910	0.2−	0.0	1997 01 18	360	0.4+	0.0	1997 03 07	360	0.1−	0.4−
1997 01 13	910	0.0	0.2−	1997 01 18	360	0.6+	0.0	1997 04 07	360	0.2−	0.2−
1997 01 13	910	0.1−	0.0	1997 01 31	360	0.3−	0.1+	1997 04 07	360	0.1−	0.3−
1997 01 13	897	0.0	1.2+	1997 01 31	360	0.0	0.1+	1998 07 02	360	0.4−	0.3+
1997 01 13	360	0.0	0.1+	1997 01 31	360	0.3−	0.2+	1998 07 02	360	0.0	0.4+
1997 01 13	897	0.9+	0.8+	1997 02 04	360	0.2+	0.1−	1998 07 02	360	0.1−	0.4+
1997 01 13	360	0.2−	0.1+	1997 02 04	360	0.1+	0.0	1998 07 03	360	0.5−	0.6+
1997 01 13	360	0.2−	0.1+	1997 02 24	360	0.1−	0.3+	1998 07 03	360	0.3−	0.3+
1997 01 15	360	0.1−	0.1+	1997 02 24	360	0.0	0.1+	1998 07 23	360	0.4+	0.1−
1997 01 15	360	0.1−	0.1+	1997 03 01	360	0.2−	0.1−	1998 07 23	360	0.4+	0.0
1997 01 15	360	0.0	0.4+	1997 03 01	360	0.1−	0.2−				
1997 01 18	360	0.4+	0.3−	1997 03 07	360	0.1+	0.5−				

1997 AZ₁₇ = 1998 MT₃₁

Id. G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	150.39823		(2000.0)	P		Q	
<i>n</i>	0.28415999	ω	77.57873	−0.68215393	−0.72994576		
<i>a</i>	2.2913641	Ω	55.51923	+0.64900072	−0.63147796		
<i>e</i>	0.1083375	<i>i</i>	2.98708	+0.33684429	−0.26156217		
<i>P</i>	3.47	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 15	411	1.0+	0.7+	1997 02 03	046	0.0	0.2−	1997 03 06	704	0.4+	1.0+
1997 01 15	411	0.3−	0.3+	1997 02 03	046	0.1−	0.3−	1997 03 06	704	0.1+	1.6+
1997 01 16	411	0.2+	0.0	1997 02 04	385	0.0	0.1+	1998 06 24	704	0.2−	0.4−
1997 01 16	411	0.0	0.1+	1997 02 04	385	0.2+	0.1−	1998 06 24	704	0.4+	0.7−
1997 01 28	411	0.0	0.5+	1997 02 07	046	0.1+	0.0	1998 06 24	704	0.5+	0.9−
1997 01 28	411	0.3+	0.6+	1997 02 07	046	0.1+	0.5+	1998 06 26	704	1.0−	0.1+
1997 02 02	046	0.3+	0.6−	1997 02 07	046	0.1+	0.2+	1998 06 26	704	0.2−	0.3−
1997 02 02	046	0.1−	0.5−	1997 02 13	411	0.1−	0.6+	1998 06 26	704	0.5+	0.3−
1997 02 02	046	0.0	0.6−	1997 02 13	411	0.2−	0.2+	1998 06 26	704	1.1+	0.6−
1997 02 02	046	0.1−	0.5−	1997 02 15	691	1.0−	0.0	1998 06 28	809	0.7−	0.1−
1997 02 02	046	0.3+	0.8−	1997 02 15	691	1.1−	0.1−	1998 06 28	809	0.7−	0.2−
1997 02 03	385	0.1+	0.4−	1997 02 15	691	1.0−	0.0	1998 06 28	809	1.2−	0.5−
1997 02 03	385	0.3−	0.2−	1997 03 04	704	1.3+	0.3−	1998 07 01	809	0.5+	1.5+
1997 02 03	046	0.0	0.2−	1997 03 04	704	0.4−	1.7−	1998 07 01	809	0.0	0.7+
1997 02 03	046	0.1−	0.3−	1997 03 05	704	0.3+	0.6+	1998 07 01	809	0.9+	1.5+
1997 02 03	046	0.1−	0.3−	1997 03 05	704	0.5+	0.2+				

1997 AW₁₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	116.64819		(2000.0)	P		Q	
<i>n</i>	0.28561961	ω	198.17590	−0.95670446	−0.28544788		
<i>a</i>	2.2835509	Ω	325.07747	+0.27785464	−0.83747747		
<i>e</i>	0.0888467	<i>i</i>	5.70293	+0.08667966	−0.46599464		
<i>P</i>	3.45	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 09	369	0.2−	0.1+	1997 03 04	369	0.3+	0.1+	1998 06 26	704	0.0	0.4+
1997 01 09	369	0.2−	0.4−	1997 04 07	566	0.7+	0.7−	1998 06 26	704	1.4+	1.6−
1997 01 15	369	0.2−	0.3+	1997 04 07	566	0.2−	0.1−	1998 06 26	426	0.3−	0.4−
1997 01 15	369	0.6+	1.6−	1997 04 07	566	0.6−	0.2+	1998 06 26	426	0.5−	0.5−
1997 01 18	369	0.1+	0.6+	1998 06 24	704	(0.5+	2.3−)	1998 06 26	426	0.1−	0.4−
1997 01 18	369	0.1+	0.0	1998 06 24	704	1.2+	0.5−	1998 06 28	809	(0.8+	2.7+)
1997 01 18	369	0.4+	1.1+	1998 06 24	704	0.4−	1.3+	1998 06 28	809	(0.6+	2.4+)
1997 01 30	369	0.3−	0.2+	1998 06 24	704	(2.1−	1.4−)	1998 06 28	809	0.7+	1.8+
1997 01 30	369	0.4−	0.3+	1998 06 25	426	0.4−	0.1+	1998 07 01	809	(0.4−	3.4+)
1997 02 09	369	0.4+	0.5−	1998 06 25	426	0.3−	0.1−	1998 07 01	809	0.1+	1.7+
1997 02 09	369	0.0	0.2−	1998 06 25	426	0.6−	0.1+	1998 07 01	809	(0.4+	2.8+)
1997 03 01	369	0.6−	0.4−	1998 06 26	704	0.8+	1.5−				
1997 03 04	369	0.2+	1.1+	1998 06 26	704	1.5−	0.3−				

1997 BC₂ = 1989 OD₁ = 1998 HU₁₀₆

Id. A. Gnädig, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	196.88718		(2000.0)	P		Q	
<i>n</i>	0.18999483	ω	263.48796	+0.90194682	−0.39475687		
<i>a</i>	2.9966880	Ω	119.63689	+0.43070252	+0.85179669		
<i>e</i>	0.1171704	<i>i</i>	11.62185	−0.03142092	+0.34439718		
<i>P</i>	5.19	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 07 29	675	0.2−	1.4−	1998 03 24	704	0.7+	0.4+	1998 04 24	704	0.5−	0.6+
1989 07 29	675	0.3+	0.5−	1998 03 24	704	0.7+	0.4+	1998 04 24	704	0.2−	0.1+
1997 01 29	411	0.1+	0.2+	1998 03 24	704	1.3−	0.9−	1998 04 24	704	0.5−	0.2−
1997 01 29	411	0.3−	0.4−	1998 03 24	704	0.5−	0.5−	1998 05 16	704	0.9+	2.0+
1997 01 30	411	0.1+	0.2−	1998 03 24	704	0.1+	0.2+	1998 05 16	704	(0.6−	2.4+)
1997 01 30	411	0.3−	0.3−	1998 04 22	566	0.9−	1.3−	1998 05 16	704	(1.0+	2.5+)
1997 02 03	691	1.0−	0.2−	1998 04 22	566	1.3−	1.6−	1998 05 16	704	0.2+	0.7+
1997 02 03	691	1.0−	0.1+	1998 04 22	566	0.7−	1.3−	1998 05 16	704	0.6+	1.6+
1997 02 03	691	0.9−	0.1−	1998 04 23	704	0.6+	0.5−	1998 05 28	704	0.2−	0.2+
1997 02 04	411	0.0	0.2−	1998 04 23	704	0.4+	0.0	1998 05 28	704	0.7+	1.5+
1997 02 04	411	0.5+	0.3−	1998 04 23	704	0.3+	0.2−	1998 05 28	704	1.0+	0.3+
1997 02 13	411	0.8+	0.5−	1998 04 23	704	0.5−	0.5−	1998 05 28	704	0.4−	0.5+
1997 02 13	411	0.5+	0.4−	1998 04 23	704	1.4+	1.0−	1998 05 28	704	0.8−	0.8+
1997 02 26	411	1.1+	0.8+	1998 04 24	704	0.2−	0.5−				
1997 02 26	411	0.2+	0.1+	1998 04 24	704	0.4+	0.3−				

1997 BJ₂ = 1998 MQ₂₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	48.82452		(2000.0)	P		Q	
<i>n</i>	0.28215356	ω	119.67220	−0.47890411	+0.87251936		
<i>a</i>	2.3022140	Ω	121.40151	−0.83951931	−0.42297572		
<i>e</i>	0.0828942	<i>i</i>	6.50866	−0.25662849	−0.24454345		
<i>P</i>	3.49	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 14	566	0.4+	0.3+	1997 02 04	411	0.3+	1.6+	1998 06 25	691	0.4+	0.3−
1997 01 14	566	0.2−	0.4+	1997 02 06	566	1.0−	0.6−	1998 06 25	691	0.1−	0.0
1997 01 14	566	0.5+	0.3+	1997 02 06	566	1.0−	0.7−	1998 06 25	691	0.2+	0.0
1997 01 30	411	1.3−	1.1−	1997 02 06	566	0.6−	0.2−	1998 06 30	691	0.2−	0.3+
1997 01 30	411	0.4−	0.7−	1997 02 13	411	0.8+	0.1+	1998 06 30	691	0.2−	0.1+
1997 01 31	411	0.7+	0.2+	1997 02 13	411	0.6−	0.2+	1998 06 30	691	0.2−	0.1+

1997 01 31	411	0.5+	0.2+	1997 02 27	411	0.1+	0.0
1997 02 04	411	1.3+	0.0	1997 02 27	411	0.6+	0.3+

1997 BU₂ = 1998 MH

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	97.31550		(2000.0)	P		Q	
<i>n</i>	0.24462525	ω	64.65726	−0.99360298	+0.04488945		
<i>a</i>	2.5320281	Ω	117.76611	−0.07823642	−0.93534179		
<i>e</i>	0.1820336	<i>i</i>	6.72528	+0.08143824	−0.35088557		
<i>P</i>	4.03	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 30	411	0.6+	0.1+	1997 02 14	411	0.2+	0.1+	1998 06 17	691	0.4−	0.6+
1997 01 30	411	0.1−	0.3+	1997 02 14	411	0.4−	0.2+	1998 06 18	691	0.1−	0.1−
1997 01 31	411	0.2−	0.2−	1997 02 26	411	0.2−	0.2−	1998 06 18	691	0.2−	0.1+
1997 01 31	411	0.3−	0.2−	1997 02 26	411	0.5+	0.2+	1998 06 18	691	0.8−	0.4−
1997 02 06	411	0.2−	0.3−	1998 06 17	691	0.0	0.6−	1998 06 23	691	0.3+	0.1−
1997 02 06	411	0.1+	0.2−	1998 06 17	691	0.3+	0.5+	1998 06 23	691	0.8+	0.1−

1997 BU₄ = 1998 MA₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	43.62052		(2000.0)	P		Q	
<i>n</i>	0.21237471	ω	72.49728	−0.80245976	+0.57866917		
<i>a</i>	2.7822801	Ω	142.48736	−0.59662048	−0.77395461		
<i>e</i>	0.1055657	<i>i</i>	13.83407	−0.01011609	−0.25716971		
<i>P</i>	4.64	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 31	691	0.2−	0.1−	1997 03 01	369	0.4−	0.7−	1998 06 03	704	1.4−	1.5+
1997 01 31	691	0.2−	0.1+	1997 03 01	369	0.1−	0.1−	1998 06 19	704	1.3−	0.9+
1997 01 31	691	0.2−	0.4−	1997 03 04	704	0.3+	0.7+	1998 06 19	704	0.1+	0.4+
1997 02 01	691	0.2−	0.2+	1997 03 04	704	0.9+	0.2+	1998 06 19	704	0.2−	0.3−
1997 02 01	691	0.4−	0.1+	1997 03 05	704	1.0+	0.5−	1998 06 19	704	0.6+	0.2+
1997 02 01	691	0.4−	0.2+	1997 03 05	704	0.4+	0.4+	1998 06 19	704	1.3−	0.6−
1997 02 02	691	0.0	0.4+	1997 03 06	704	0.2−	0.7−	1998 06 25	704	1.4−	0.9−
1997 02 02	691	0.2+	0.2+	1997 03 06	704	0.6+	0.1+	1998 06 25	704	0.7+	0.4−
1997 02 02	691	0.2+	0.0	1998 06 03	704	1.1+	0.5+	1998 06 25	704	0.1+	0.1−
1997 02 27	369	0.8−	0.2+	1998 06 03	704	1.4+	0.9−	1998 06 25	704	(2.3−	0.6+)
1997 02 27	369	0.5−	0.3−	1998 06 03	704	1.6+	0.2−				

1997 BN₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	216.47161		(2000.0)	P		Q	
<i>n</i>	0.19240983	ω	215.86542	+0.53785787	−0.84071979		
<i>a</i>	2.9715603	Ω	201.80687	+0.80734847	+0.53499721		
<i>e</i>	0.0817852	<i>i</i>	9.67698	+0.24268779	+0.08347587		
<i>P</i>	5.12	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 17	599	0.3−	0.1−	1997 05 05	691	0.0	0.1−	1998 06 02	809	0.1+	0.4+
1997 01 17	599	0.0	0.5−	1997 05 08	691	0.6−	0.3−	1998 06 24	104	0.5−	1.1−
1997 01 18	599	0.5+	0.6+	1997 05 08	691	0.8−	0.1−	1998 06 24	104	0.3−	0.9−
1997 01 18	599	0.7−	0.8+	1997 05 08	691	0.9−	0.2−	1998 06 24	104	0.2+	0.5−
1997 04 06	566	0.7+	0.0	1998 06 01	809	0.0	1.2+	1998 06 26	104	0.3+	1.1−
1997 04 06	566	0.5+	0.1−	1998 06 01	809	0.3−	0.7+	1998 06 26	104	0.3−	0.7−
1997 04 06	566	1.0+	0.2−	1998 06 01	809	0.1−	0.5+	1998 06 26	104	0.1−	0.3−
1997 05 05	691	0.0	0.1−	1998 06 02	809	0.4+	0.9+				
1997 05 05	691	0.0	0.0	1998 06 02	809	0.5+	1.4+				

1997 CQ = 4390 T-3 = 1991 RH₁₂ = 1991 RO₄₀ = 1998 MT₁₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	101.20790		(2000.0)		P		Q
<i>n</i>	0.27252280	ω	39.52992	−0.99358211			+0.08806811
<i>a</i>	2.3561385	Ω	145.32536	−0.10549099			−0.94792171
<i>e</i>	0.0330323	<i>i</i>	7.16743	+0.04081965			−0.30608566
<i>P</i>	3.62	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 10 16	675	1.7−	0.1+	1997 02 11	411	0.5−	0.0	1998 06 27	104	0.9−	0.2−
1977 10 16	675	1.7−	1.4+	1997 02 11	411	1.7−	0.7−	1998 06 30	108	1.3+	1.0+
1977 10 17	675	1.2+	0.1+	1997 03 01	411	0.8+	1.5−	1998 06 30	108	1.8+	0.2+
1977 10 17	675	1.0+	0.7−	1997 03 01	411	2.0+	0.6−	1998 06 30	108	2.7+	0.4−
1977 10 21	675	0.0	0.8−	1998 06 24	704	0.4+	1.4+	1998 07 16	104	1.4−	1.7−
1977 10 21	675	1.1+	0.1+	1998 06 24	704	0.7−	0.7+	1998 07 16	104	1.0−	0.9−
1977 10 22	675	1.2+	0.6−	1998 06 24	704	0.3+	0.0	1998 07 16	104	0.6−	0.4−
1977 10 22	675	0.9−	0.3−	1998 06 24	704	1.1−	0.5+	1998 07 17	910	0.7+	0.2+
1991 09 04	809	0.7−	0.3−	1998 06 24	704	1.1−	1.1−	1998 07 17	910	1.0+	0.0
1991 09 04	809	1.0−	0.5−	1998 06 25	104	0.3−	0.6+	1998 07 17	910	0.5+	0.2+
1991 09 04	809	0.6−	0.6−	1998 06 25	104	1.0−	0.0	1998 07 18	104	0.5−	0.8−
1991 09 07	809	0.5+	0.8+	1998 06 25	104	0.8−	0.5−	1998 07 18	104	0.2−	0.3−
1991 09 07	809	0.9+	0.5+	1998 06 26	704	0.0	0.1+	1998 07 18	104	0.2−	0.2+
1991 09 07	809	0.8+	0.0	1998 06 26	704	0.1−	1.2+	1998 07 21	104	0.0	0.0
1997 02 01	411	1.6+	0.1−	1998 06 26	704	1.5−	0.6+	1998 07 21	104	0.1+	0.6−
1997 02 01	411	0.2−	0.8+	1998 06 26	704	2.0+	0.1−	1998 07 21	104	0.7−	0.1+
1997 02 03	411	0.7−	0.1−	1998 06 26	704	1.5+	0.7−				
1997 02 03	411	1.5−	0.7+	1998 06 27	104	0.2−	0.2−				

1997 CK₁

Id. E. Bowell (1989 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	92.26799		(2000.0)		P		Q
<i>n</i>	0.23957759	ω	98.36640	−0.97090412			+0.22713884
<i>a</i>	2.5674693	Ω	94.78703	−0.23851654			−0.88903813
<i>e</i>	0.1726260	<i>i</i>	4.36528	−0.02133181			−0.39751622
<i>P</i>	4.11	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1989 03 30	675	0.8−	0.1+	1997 02 01	411	0.0	0.2+	1997 03 01	411	0.3−	0.1+
1989 03 30	675	1.0+	0.2+	1997 02 03	411	0.2−	0.7−	1997 03 01	411	0.3+	0.4−
1996 11 14	599	0.5−	0.2−	1997 02 03	411	0.0	0.8−	1998 06 20	688	0.2+	0.0
1996 11 14	599	0.6+	0.5+	1997 02 11	411	0.1+	0.6+	1998 06 20	688	0.0	0.1−
1997 02 01	411	0.1−	0.1+	1997 02 11	411	0.1−	0.1+	1998 06 20	688	0.1−	0.3−

1997 CY₁₆ = 1998 HZ₁₅₀

Id. M. W. Buie, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	155.68375		(2000.0)		P		Q
<i>n</i>	0.17449782	ω	262.25787	+0.23408256			−0.97203946
<i>a</i>	3.1715828	Ω	174.10576	+0.94797334			+0.22396622
<i>e</i>	0.1314311	<i>i</i>	10.41491	+0.21575889			+0.07055786
<i>P</i>	5.65	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 02 06	369	0.3+	0.3−	1997 04 29	704	0.2−	0.0	1998 04 23	704	0.1−	0.8−
1997 02 06	369	0.4−	0.7+	1997 04 29	704	0.2−	0.1+	1998 04 23	704	1.3+	0.1−
1997 02 06	369	0.1+	0.1−	1997 04 29	704	0.5+	0.2+	1998 04 23	704	0.7−	0.6+
1997 02 09	369	0.1+	0.0	1997 04 29	704	0.0	0.0	1998 05 23	704	0.7−	0.3+
1997 02 09	369	0.3−	0.4+	1997 04 29	704	0.4+	0.0	1998 05 23	704	1.8−	1.5+
1997 02 13	369	0.3−	0.1+	1997 04 29	704	0.2+	0.3−	1998 05 23	704	1.4+	1.0+
1997 02 13	369	0.4−	0.7−	1997 04 29	704	0.5+	0.1+	1998 05 23	704	0.5−	0.8−
1997 02 27	369	0.5+	0.5−	1997 04 29	704	0.2−	0.5−	1998 05 23	704	0.9+	0.4+
1997 02 27	369	0.2+	0.6+	1998 04 19	688	0.0	0.5−	1998 06 20	688	0.3−	0.3−
1997 03 01	369	0.9−	0.5+	1998 04 19	688	0.5+	0.4−	1998 06 20	688	0.5−	0.1−

1997 03 01	369	0.2−	0.8+	1998 04 19	688	0.1+	0.4−	1998 06 20	688	0.5−	0.3−
1997 04 29	704	0.9+	1.5−	1998 04 23	704	0.8+	0.1+				

1997 CP₁₉ = 1998 KF₆₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	181.12868		(2000.0)		P		Q
<i>n</i>	0.24098136	ω	293.13437	+0.28834326			−0.94572468
<i>a</i>	2.5574889	Ω	139.14683	+0.94079300			+0.25067688
<i>e</i>	0.1592734	<i>i</i>	13.24563	+0.17823215			+0.20679927
<i>P</i>	4.09	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 02 04	566	0.5+	0.7−	1997 02 17	327	0.5+	0.1+	1998 05 23	704	0.4−	0.5−
1997 02 04	566	0.6+	0.6−	1997 02 17	327	0.8+	0.0	1998 05 23	704	0.3+	0.1−
1997 02 04	566	0.5+	0.6−	1997 02 17	327	0.7−	0.4+	1998 05 26	704	0.4+	0.6−
1997 02 06	327	0.6−	0.1+	1997 02 18	327	0.5−	0.3+	1998 05 26	704	0.2+	1.4+
1997 02 06	327	1.0−	0.5+	1997 02 18	327	0.4−	1.3+	1998 05 26	704	1.9+	0.0
1997 02 06	327	(0.5+ 2.4+)		1997 02 18	327	0.6+	0.0	1998 05 26	704	1.5−	0.6−
1997 02 11	411	0.2−	0.2+	1997 03 01	411	1.1−	0.4−	1998 06 19	704	0.4−	0.3+
1997 02 11	411	0.5−	0.3+	1997 03 01	411	0.2−	0.3−	1998 06 19	704	(1.5− 3.1+)	
1997 02 12	411	0.3+	0.4−	1997 03 07	411	0.8+	0.7−	1998 06 19	704	0.9−	0.2+
1997 02 12	411	0.3+	0.3+	1997 03 07	411	0.8+	0.2−	1998 06 19	704	1.0+	0.5−
1997 02 16	411	0.5−	0.4+	1998 05 23	704	0.5−	0.7−	1998 06 19	704	0.2−	0.4−
1997 02 16	411	0.2−	0.2−	1998 05 23	704	0.0	1.6+				

1997 CH₂₈ = 1979 YH₉ = 1998 FM₁₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	89.49455		(2000.0)		P		Q
<i>n</i>	0.17462483	ω	151.66912	−0.33108831			−0.93693289
<i>a</i>	3.1700447	Ω	317.39724	+0.83150983			−0.23360230
<i>e</i>	0.1625046	<i>i</i>	9.52124	+0.44606269			−0.25997447
<i>P</i>	5.64	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 12 25	095	0.0	0.3−	1997 02 20	327	0.4−	0.5−	1998 03 31	704	0.8−	0.9−
1997 02 11	327	0.3−	0.2+	1997 02 20	327	0.1+	0.5−	1998 04 01	704	0.7+	1.0+
1997 02 11	327	0.4−	0.2+	1997 02 20	327	0.6+	0.0	1998 04 01	704	0.1−	0.6+
1997 02 11	327	0.4−	0.2+	1998 03 31	704	0.4+	0.2−	1998 04 01	704	0.3−	0.7+
1997 02 13	327	0.0	0.3+	1998 03 31	704	0.7+	1.0−	1998 04 01	704	0.2−	0.4−
1997 02 13	327	0.8+	0.2+	1998 03 31	704	0.0	0.4+				
1997 02 13	327	0.1+	0.3+	1998 03 31	704	0.5−	0.3−				

1997 CS₂₈ = 1998 KY₃₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	245.14604		(2000.0)		P		Q
<i>n</i>	0.23377428	ω	293.33941	+0.96887171			−0.23937336
<i>a</i>	2.6097860	Ω	80.55746	+0.24402098			+0.88041606
<i>e</i>	0.0718240	<i>i</i>	3.67047	+0.04172972			+0.40935065
<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 02 03	566	0.2+	0.0	1997 02 14	327	0.4+	0.5−	1998 05 22	704	0.2+	0.3+
1997 02 03	566	0.1−	0.3−	1997 02 14	327	0.2−	0.4−	1998 05 24	704	1.5+	1.0+
1997 02 03	566	0.3+	0.2−	1997 02 14	327	0.6−	0.0	1998 05 24	704	0.6+	0.3−
1997 02 04	327	1.1−	0.9+	1998 05 22	704	0.2+	0.1+	1998 05 24	704	0.4−	0.0
1997 02 04	327	1.2+	0.4+	1998 05 22	704	0.7−	1.1−	1998 05 24	704	0.9−	0.6+
1997 02 04	327	0.1−	0.1+	1998 05 22	704	0.5−	0.5−	1998 05 24	704	0.1−	0.1−

1997 DL

Id. A. Nakamura (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	163.21084	(2000.0)	P	Q
<i>n</i>	0.29109932	ω 157.72826	−0.56907122	−0.82092439
<i>a</i>	2.2548029	Ω 326.90295	+0.74076235	−0.48680738
<i>e</i>	0.1598861	<i>i</i> 4.97347	+0.35697212	−0.29849912
<i>P</i>	3.39	<i>H</i> 16.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 02 27	360	0.3−	0.1+	1997 03 05	360	0.1−	0.2−	1997 04 12	360	0.2−	0.2+
1997 02 27	360	0.2+	0.2−	1997 03 11	360	0.2−	0.1−	1998 07 23	360	0.2−	0.1−
1997 02 27	360	0.0	0.4+	1997 03 11	360	0.0	0.1−	1998 07 23	360	0.5+	0.4−
1997 03 01	360	0.2+	0.2+	1997 03 31	360	0.2+	0.2−	1998 07 23	360	0.3−	0.6+
1997 03 01	360	0.3+	0.2+	1997 03 31	360	0.2−	0.2−	1998 07 30	360	0.0	0.0
1997 03 01	360	0.1+	0.2+	1997 03 31	360	0.1−	0.0	1998 07 30	360	0.1+	0.0
1997 03 04	360	0.0	0.0	1997 04 07	360	0.2−	0.1+	1998 07 30	360	0.0	0.0
1997 03 04	360	0.1−	0.0	1997 04 07	360	0.1−	0.2−				
1997 03 05	360	0.0	0.1−	1997 04 12	360	0.4+	0.2+				

1997 ED₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	119.25152	(2000.0)	P	Q
<i>n</i>	0.23698774	ω 157.31433	−0.95894486	−0.28351088
<i>a</i>	2.5861406	Ω 6.22759	+0.24961575	−0.85520356
<i>e</i>	0.1652539	<i>i</i> 3.59753	+0.13459840	−0.43387607
<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 03 08	684	0.1−	0.2+	1997 03 31	684	0.3−	0.0	1997 04 27	684	0.3−	0.1−
1997 03 08	684	0.2−	0.3+	1997 03 31	684	0.9−	0.1−	1997 05 10	684	0.0	0.0
1997 03 09	684	0.2+	0.2+	1997 04 02	704	1.4+	0.3+	1997 05 10	684	0.2−	0.2−
1997 03 09	684	0.1+	0.2+	1997 04 02	704	0.9+	0.8+	1998 06 20	684	0.0	0.5−
1997 03 10	684	0.0	0.2+	1997 04 02	704	0.8+	0.5−	1998 06 20	684	0.4−	0.2−
1997 03 10	684	0.3+	0.3+	1997 04 02	704	0.9+	0.3+	1998 06 20	684	1.5−	0.8−
1997 03 14	684	0.1−	0.2−	1997 04 13	684	0.6−	0.1−	1998 06 21	684	0.5−	0.4−
1997 03 14	684	0.0	0.0	1997 04 13	684	0.5−	0.1−	1998 06 21	684	1.7+	1.1+
1997 03 14	684	0.1−	0.2−	1997 04 27	684	0.5−	0.7−	1998 06 21	684	0.5+	1.3+
1997 03 31	684	0.8−	0.2−	1997 04 27	684	0.3−	0.3−				

1997 EO₁₇ = 1998 MX₃₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	283.57059	(2000.0)	P	Q
<i>n</i>	0.28603154	ω 320.44484	+0.90751002	−0.40350040
<i>a</i>	2.2813580	Ω 63.72093	+0.41075834	+0.79450794
<i>e</i>	0.1672958	<i>i</i> 7.47671	+0.08776757	+0.45381115
<i>P</i>	3.45	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 10	721	0.1+	0.3+	1997 05 14	688	0.0	0.0	1998 06 24	704	0.3−	0.2−
1997 03 10	721	0.2+	0.5−	1997 05 14	688	0.1+	0.0	1998 06 24	704	0.1+	1.3−
1997 03 11	721	0.2−	0.7−	1997 05 14	688	0.0	0.0	1998 06 26	704	1.6+	1.6+
1997 03 11	721	0.2−	0.4−	1997 05 14	688	0.2−	0.0	1998 06 26	704	0.6+	1.1+
1997 03 18	599	0.3+	0.5+	1998 06 24	704	1.3−	1.6−	1998 06 26	704	0.4−	0.1+
1997 03 18	599	0.2−	0.7+	1998 06 24	704	0.8+	1.0+	1998 06 26	704	1.1−	0.7−

1997 EQ₃₀ = 1998 LE₃

Id. E. Bowell, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	65.43583	(2000.0)	P	Q
<i>n</i>	0.22390211	ω 110.63143	−0.81202343	+0.55028091
<i>a</i>	2.6859459	Ω 103.23048	−0.58161355	−0.73535614
<i>e</i>	0.1446061	<i>i</i> 11.52216	−0.04841099	−0.39552784
<i>P</i>	4.40	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 10	959	1.2+	0.8−	1998 06 02	691	0.3−	0.5−	1998 07 02	699	0.3−	0.4−
1997 03 11	959	0.3−	0.7+	1998 06 02	691	0.5−	0.5−	1998 07 16	699	0.0	0.5+
1997 03 12	959	1.6+	0.8−	1998 06 02	691	0.4−	0.6−	1998 07 16	699	0.7+	0.1+
1997 03 15	132	1.6−	0.4+	1998 06 24	699	0.2+	0.0	1998 07 16	699	0.2+	0.1+
1997 03 16	132	1.3−	0.1−	1998 06 24	699	0.8+	0.1−	1998 07 23	627	0.6+	0.2+
1997 03 16	132	1.5−	0.4+	1998 06 24	699	(0.9+	3.1−)	1998 07 23	627	0.1+	0.2+
1997 03 16	959	0.0	0.5+	1998 06 26	704	0.3−	0.3−	1998 07 23	627	0.2−	0.4−
1997 03 16	959	0.3+	0.5−	1998 06 26	704	0.6−	0.8+	1998 07 25	132	1.9−	0.6+
1997 03 17	959	1.5+	0.0	1998 06 26	704	0.3+	0.3+	1998 07 25	132	0.4+	2.0−
1997 03 17	959	1.2+	0.2+	1998 06 26	704	0.5−	0.5−	1998 07 25	132	0.4+	1.4+
1997 03 27	132	1.2−	1.2+	1998 07 02	699	0.8+	0.7+				
1997 03 27	132	0.2+	1.0−	1998 07 02	699	0.3+	0.3+				

1997 FB

Id. P. G. Comba (1998 observations)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	86.71991	(2000.0)	P	Q
<i>n</i>	0.30643930	ω 68.96715	−0.34004385	+0.94040857
<i>a</i>	2.1789123	Ω 181.15598	−0.88617001	−0.32092109
<i>e</i>	0.1588253	<i>i</i> 3.91410	−0.31475846	−0.11243385
<i>P</i>	3.22	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 18	684	0.1−	0.3−	1997 04 01	684	0.5+	0.1+	1997 04 27	684	0.1−	0.3−
1997 03 18	684	0.1−	0.4−	1997 04 01	684	0.4+	0.1+	1997 05 10	684	0.2−	0.5−
1997 03 18	684	0.2−	0.4−	1997 04 08	684	0.1−	0.2+	1997 05 10	684	0.1−	0.5−
1997 03 19	684	0.4−	0.4−	1997 04 08	684	0.1−	0.1+	1997 05 10	684	0.2−	0.1−
1997 03 19	684	0.4−	0.3−	1997 04 08	684	0.3−	0.3+	1998 06 28	684	0.8−	0.1+
1997 03 19	684	0.5−	0.4−	1997 04 09	684	0.2−	0.5+	1998 06 28	684	1.7+	0.5+
1997 03 29	684	0.6+	0.2+	1997 04 09	684	0.1−	0.6+	1998 06 28	684	0.2+	0.3−
1997 03 29	684	0.6+	0.3+	1997 04 09	684	0.2−	0.8+	1998 06 29	684	1.2+	0.4+
1997 03 29	684	0.6+	0.3+	1997 04 27	684	0.1+	0.1−	1998 06 29	684	1.4−	0.5−
1997 04 01	684	0.6+	0.1+	1997 04 27	684	0.1+	0.0	1998 06 29	684	0.9−	0.2−

1997 FG₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	131.28844	(2000.0)	P	Q
<i>n</i>	0.26251689	ω 28.29957	−0.94701370	−0.30223836
<i>a</i>	2.4156344	Ω 133.67301	+0.25900450	−0.91874337
<i>e</i>	0.1624559	<i>i</i> 8.64393	+0.18995188	−0.25409172
<i>P</i>	3.75	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 23	118	0.1−	0.2+	1997 04 08	118	0.1−	0.4+	1997 06 01	118	0.2+	0.3+
1997 03 23	118	0.1+	0.2+	1997 04 28	118	0.1−	0.7+	1997 06 01	118	0.6+	0.6+
1997 03 23	118	0.2+	0.5+	1997 04 28	118	0.1+	0.6+	1997 06 10	118	0.3+	1.2+
1997 03 27	118	0.8+	0.1−	1997 04 28	118	0.1+	0.7+	1997 06 10	118	0.1−	1.1+
1997 03 27	118	0.5+	0.1−	1997 04 29	118	0.5−	0.8−	1997 06 10	118	0.3+	0.8+
1997 03 27	118	0.5+	0.6−	1997 04 29	118	1.1−	0.9−	1998 07 19	118	0.7+	0.1−
1997 03 30	118	0.0	0.2−	1997 04 29	118	1.5−	0.9−	1998 07 19	118	0.3+	0.2−
1997 03 30	118	0.0	0.4−	1997 05 04	118	0.0	0.4+	1998 07 19	118	1.2+	0.5−
1997 03 31	118	0.2−	0.2−	1997 05 04	118	0.1−	0.5+	1998 07 20	118	0.2+	0.2−
1997 04 01	118	(2.5−	1.7−)	1997 05 04	118	0.0	0.3+	1998 07 21	118	0.4+	0.2−
1997 04 01	118	(2.4−	1.6−)	1997 05 15	118	1.0+	1.0−	1998 07 26	691	0.8−	0.6+
1997 04 03	118	0.5−	0.0	1997 05 15	118	1.1+	0.7−	1998 07 26	691	0.8−	0.3+
1997 04 03	118	0.3−	0.1−	1997 05 15	118	0.9+	0.5−	1998 07 26	691	1.0−	0.1−
1997 04 08	118	0.7−	0.3−	1997 05 27	118	0.7−	0.5−				
1997 04 08	118	0.2−	0.2+	1997 05 27	118	0.6−	1.2−				

1998 AUG. 8

M.P.C. 32253

1997 GJ₈ = 1980 BE = 1998 MJ₁₃
Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	189.84496	ω	238.18983	-0.18265420	-0.97587236		
<i>a</i>	3.0738323	Ω	222.86006	+0.95101344	-0.14449886		
<i>e</i>	0.0965234	<i>i</i>	10.12915	+0.24942109	-0.16368634		
<i>P</i>	5.39	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 01 21	801	0.1-	0.4-	1997 04 30	704	0.3+	0.0	1997 05 05	704	1.0-	0.6-
1997 04 02	704	1.1+	0.2+	1997 04 30	704	0.9+	0.2-	1997 05 05	704	1.0-	0.7-
1997 04 02	704	0.7+	0.1+	1997 04 30	704	0.1+	0.3+	1998 06 19	704	0.2-	0.0
1997 04 06	704	0.7-	0.5-	1997 05 01	704	0.0	0.1+	1998 06 19	704	1.4+	1.8+
1997 04 06	704	0.1+	0.1+	1997 05 01	704	0.4+	0.1-	1998 06 19	704	1.2+	0.3+
1997 04 06	704	0.0	0.1-	1997 05 01	704	0.6+	0.3-	1998 06 19	704	0.3+	0.8-
1997 04 06	704	0.1+	1.6+	1997 05 01	704	0.3+	0.4-	1998 06 25	704	1.9+	0.1-
1997 04 08	704	0.7-	0.1-	1997 05 01	704	0.6+	0.0	1998 06 25	704	0.5+	0.4-
1997 04 08	704	0.2+	0.9+	1997 05 05	704	0.5-	0.2-	1998 06 25	704	1.5-	0.8-
1997 04 30	704	0.0	0.4+	1997 05 05	704	0.7-	0.2-	1998 06 25	704	3.3-	0.3-
1997 04 30	704	0.0	0.3+	1997 05 05	704	0.8-	0.2-				

1997 GL₂₈
Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	110.95696	ω	310.03087	-0.95198515	-0.26126109		
<i>a</i>	3.2540524	Ω	215.67243	+0.28813062	-0.94078312		
<i>e</i>	0.1637300	<i>i</i>	15.88203	-0.10346504	-0.21603187		
<i>P</i>	5.87	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 14	684	0.3-	0.6+	1997 05 03	684	0.5-	0.6-	1997 07 01	684	0.0	0.3+
1997 04 14	684	0.3-	0.3+	1997 05 28	684	0.2-	0.3+	1998 05 29	684	1.0+	0.8-
1997 04 15	684	0.1-	0.1+	1997 05 28	684	0.3-	0.4-	1998 05 29	684	0.8+	0.1+
1997 04 15	684	0.1+	0.0	1997 06 09	684	0.6+	0.2+	1998 06 20	684	1.6-	0.3+
1997 04 27	684	0.1+	0.1-	1997 06 09	684	0.6+	0.0	1998 06 20	684	0.1-	0.1+
1997 04 27	684	0.8+	0.2+	1997 06 09	684	0.5+	0.1+	1998 06 21	684	0.2+	0.6+
1997 05 03	684	0.2-	0.6-	1997 07 01	684	0.4-	0.0	1998 06 21	684	0.2-	0.3-
1997 05 03	684	0.2-	0.3-	1997 07 01	684	0.2-	0.1+				

1997 GT₃₄ = 1998 MH₁₆
Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	68.60413	ω	127.83864	-0.78339270	+0.62132960		
<i>a</i>	3.0427698	Ω	90.58016	-0.57504829	-0.71501565		
<i>e</i>	0.1159599	<i>i</i>	0.89764	-0.23582904	-0.32047176		
<i>P</i>	5.31	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1997 03 12	809	0.5+	1.4+	1997 04 03	704	0.3-	0.7-	1998 06 27	691	0.7-	0.4+
1997 03 12	809	0.8+	0.4+	1997 04 03	704	1.0-	1.0-	1998 06 28	691	0.5+	0.5-
1997 03 12	809	0.1+	0.2+	1997 04 11	704	0.3-	1.3-	1998 06 28	691	0.9+	0.3+
1997 03 13	809	0.6+	0.7+	1997 04 11	704	0.3-	1.4-	1998 06 28	691	0.6+	0.1+
1997 03 13	809	0.9+	1.5+	1998 06 27	691	0.7-	0.1+				
1997 03 13	809	0.8-	0.6+	1998 06 27	691	0.7-	0.1+				

1997 HT₅ = 1998 KT₅₄
Id. A. Gnädig

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	116.43372	ω	302.93000	-0.56541100	-0.82477386		
<i>a</i>	3.1326486	Ω	181.56457	+0.81887017	-0.56020496		
<i>e</i>	0.1625959	<i>i</i>	16.26475	+0.09880308	-0.07693164		
<i>P</i>	5.54	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 07	566	0.4+	0.4-	1997 04 29	704	0.8+	0.1-	1998 06 19	704	0.4-	0.6+
1997 04 07	566	0.4-	0.5-	1997 04 29	704	0.7+	0.2+	1998 06 19	704	1.2-	1.3-
1997 04 07	566	0.3+	0.2-	1998 05 23	704	0.0	0.7+	1998 06 19	704	(5.2-	0.3-)
1997 04 28	704	0.8-	0.2-	1998 05 23	704	0.3-	1.0-	1998 06 20	691	0.6-	0.2-
1997 04 28	704	0.7-	0.2-	1998 05 23	704	1.1-	1.0-	1998 06 20	691	0.7-	0.0
1997 04 28	704	1.2-	0.2-	1998 05 26	704	0.9+	1.1-	1998 06 20	691	0.5-	0.1-
1997 04 28	704	0.5-	0.3-	1998 05 26	704	0.2+	0.1-	1998 07 02	691	0.3+	0.0
1997 04 28	704	(2.4-	0.3+)	1998 05 26	704	0.4+	0.1-	1998 07 02	691	0.2-	1.2+
1997 04 29	704	0.6+	0.2+	1998 05 26	704	0.6-	0.5-	1998 07 02	691	1.3+	0.2-
1997 04 29	704	1.1+	0.6+	1998 06 19	704	1.2+	1.4+				
1997 04 29	704	0.4-	1.4+	1998 06 19	704	1.3+	1.7+				

1997 JA = 1991 ET₈ = 1998 MQ₃₃
Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	135.80923	ω	66.66893	-0.88188168	-0.46976663		
<i>a</i>	3.1331435	Ω	85.29123	+0.41656122	-0.81614368		
<i>e</i>	0.0941985	<i>i</i>	2.30309	+0.22081995	-0.33649488		
<i>P</i>	5.55	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 03 12	675	0.4-	0.4-	1997 05 01	046	0.1+	0.2+	1997 05 31	046	1.0-	0.3+
1991 03 12	675	0.7+	0.8+	1997 05 02	046	0.0	0.5+	1997 05 31	046	0.6-	0.1-
1997 04 06	704	0.0	0.2+	1997 05 02	046	0.2+	0.0	1997 05 31	046	0.7-	0.1-
1997 04 06	704	0.4+	0.9+	1997 05 02	046	0.1-	0.3+	1997 06 01	046	1.3-	0.7-
1997 04 06	704	1.0+	0.6+	1997 05 02	046	0.2-	0.2+	1997 06 01	046	1.1-	0.1+
1997 04 06	704	0.3+	1.3+	1997 05 02	046	0.0	0.3+	1997 06 01	046	1.4-	0.8+
1997 04 07	809	1.3-	1.6-	1997 05 03	046	1.1-	0.9-	1997 06 10	046	0.8+	0.3-
1997 04 07	809	1.8-	1.9-	1997 05 03	046	0.7-	0.3-	1997 06 10	046	0.1+	0.2-
1997 04 07	809	1.9-	1.9-	1997 05 03	046	0.2-	0.3+	1997 06 10	046	0.0	0.1-
1997 04 08	809	(0.8+	4.2+)	1997 05 04	046	0.2-	0.4-	1998 06 24	704	0.3+	0.6-
1997 04 08	809	1.0+	3.7+	1997 05 04	046	0.3-	0.6-	1998 06 24	704	0.5+	1.0-
1997 04 08	809	(0.5+	4.1+)	1997 05 04	046	0.2-	0.7-	1998 06 24	704	0.7+	0.8+
1997 04 08	704	0.0	1.2+	1997 05 05	704	1.3+	0.0	1998 06 24	704	0.8+	0.8-
1997 04 08	704	0.3-	1.8+	1997 05 05	704	0.8+	0.3+	1998 06 24	704	0.3-	1.4-
1997 04 30	704	1.0+	0.5+	1997 05 05	704	0.7+	0.2-	1998 06 26	704	0.6-	0.9-
1997 04 30	704	1.0+	0.2-	1997 05 05	704	0.7+	0.1-	1998 06 26	704	0.2-	1.2+
1997 04 30	704	0.9+	0.2+	1997 05 05	704	0.5+	0.2-	1998 06 26	704	0.1-	0.3-
1997 04 30	704	0.9+	0.5+	1997 05 05	046	0.5-	0.9-	1998 07 03	699	1.1+	2.4+
1997 04 30	704	1.1+	0.7+	1997 05 05	046	0.9-	0.9-	1998 07 03	699	0.3-	1.1+
1997 05 01	704	1.2+	0.6+	1997 05 05	046	0.2+	1.1-	1998 07 03	699	0.8-	0.0
1997 05 01	704	0.1+	0.2+	1997 05 09	046	0.2+	1.0-	1998 07 19	046	0.2-	0.0
1997 05 01	704	1.1+	0.5+	1997 05 09	046	0.3+	0.9-	1998 07 19	046	0.4-	0.4+
1997 05 01	704	1.0+	0.7+	1997 05 09	046	0.4+	0.9-	1998 07 19	046	0.1-	0.1-
1997 05 01	704	1.1+	0.5+	1997 05 16	046	1.0-	0.7-	1998 07 20	046	0.3-	0.4+
1997 05 01	046	0.6+	0.4+	1997 05 16	046	1.4-	0.7-	1998 07 20	046	0.3+	0.2+
1997 05 01	046	0.8-	0.5+	1997 05 16	046	0.6-	0.9-	1998 07 20	046	0.1-	0.1-
1997 05 01	046	0.6+	0.4+	1997 05 16	046	1.1-	0.9-				

1997 JU₃
Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	103.47674	ω	153.46370	-0.85968800	+0.49416043		
<i>a</i>	2.8158099	Ω	56.74627	-0.49185360	-0.73239270		
<i>e</i>	0.1489780	<i>i</i>	8.90099	-0.13790060	-0.46840837		
<i>P</i>	4.73	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 03	809	0.7+	0.9-	1997 05 08	684	0.2+	0.4-	1997 06 09	684	0.2-	0.5-
1997 05 03	809	(0.4-	2.5-)	1997 05 08	684	0.3+	0.4-	1997 06 30	684	0.6-	0.0
1997 05 03	809	(0.4-	2.3-)	1997 05 11	684	0.7+	1.0-	1997 06 30	684	0.3-	0.1+
1997 05 04	809	1.5-	1.4+	1997 05 11	684	0.7+	0.9-	1997 07 02	684	0.2+	0.1+
1997 05 04	809	1.1-	1.6+	1997 05 29	684	0.1+	0.2+	1997 07 02	684	0.5+	0.5+
1997 05 04	809	0.5-	1.6+	1997 05 29	684	0.1+	0.1-	1998 07 25	684	0.1+	0.1-
1997 05 06	684	0.4+	0.4-	1997 05 29	684	0.1+	0.1-	1998 07 25	684	0.4+	0.1-

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1997 05 06	684	0.3+	0.2−	1997 06 09	684	0.4−	0.5−	1998 07 26	684	0.4−	0.6+
1997 05 08	684	0.3+	0.4−	1997 06 09	684	0.0	0.1+	1998 07 26	684	0.2−	0.4−

1997 MW₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	212.28366		(2000.0)	P	Q	Williams
<i>n</i>	1.08572105	<i>ω</i>	203.64478	−0.22800388	−0.94899688	
<i>a</i>	0.9375416	<i>Ω</i>	260.11061	+0.92486927	−0.14118218	
<i>e</i>	0.3464287	<i>i</i>	12.77035	+0.30435351	−0.28190871	
<i>P</i>	0.91	<i>H</i>	19.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 06 29	683	(1.2−	2.6+)	1997 07 04	402	0.3−	0.1+	1997 07 17	568	0.3−	0.1+
1997 06 29	683	0.5+	0.9+)	1997 07 04	620	1.1+	0.4+	1997 07 17	568	0.3−	0.1+
1997 06 30	683	0.8+	1.0−	1997 07 04	620	1.1+	0.4+	1997 07 23	360	0.4+	0.8+
1997 06 30	683	0.5−	1.3+	1997 07 04	620	0.9+	0.1+	1997 07 23	360	0.2+	0.5+
1997 06 30	402	1.3+	0.7+	1997 07 05	360	0.1−	0.3−	1997 07 23	360	0.2+	0.7+
1997 06 30	402	1.6+	0.4−	1997 07 05	360	0.1−	0.3−	1997 07 29	658	0.7−	0.3+
1997 06 30	402	1.6+	0.9−	1997 07 05	360	0.0	0.2−	1997 07 29	658	0.2−	0.4+
1997 07 01	683	1.4−	0.9+	1997 07 06	402	0.1−	0.6−	1997 07 29	658	0.2−	0.0
1997 07 01	683	1.5+	0.4−	1997 07 06	402	0.3−	0.1−	1997 07 29	557	0.2+	0.7+
1997 07 01	683	1.1−	0.5+	1997 07 06	402	0.2−	0.6−	1997 07 30	360	0.7+	0.1−
1997 07 01	683	0.4+	0.1+	1997 07 06	104	0.9−	0.8+	1997 07 30	360	0.6+	0.2+
1997 07 01	691	1.3−	0.6+	1997 07 06	104	0.0	1.0+	1997 07 30	360	0.4+	0.0
1997 07 01	691	1.8−	1.2+	1997 07 06	104	0.3+	1.2+	1997 08 05	557	0.5+	0.0
1997 07 01	422	1.2+	1.0−	1997 07 06	046	0.3−	0.0	1997 08 10	557	0.2−	0.2+
1997 07 01	422	(2.6+	2.2+)	1997 07 06	046	1.6−	0.7−	1997 08 10	557	0.3+	0.4+
1997 07 01	422	0.9+	1.1−	1997 07 06	046	0.6−	0.7−	1997 08 12	658	0.1−	0.1+
1997 07 01	422	0.0	0.2−	1997 07 06	046	0.9−	1.1−	1997 08 12	658	0.2+	0.2+
1997 07 01	422	0.3+	0.2−	1997 07 06	046	0.3−	0.4−	1997 08 12	658	0.3−	0.2+
1997 07 01	355	1.7+	0.4−	1997 07 07	422	0.5−	0.3−	1997 08 24	360	0.5−	0.1+
1997 07 01	355	1.6−	1.0+	1997 07 07	422	0.2−	1.1−	1997 08 24	360	0.1+	0.3−
1997 07 01	046	0.8−	1.5+	1997 07 07	422	0.8−	0.7−	1997 08 24	360	0.2−	0.5−
1997 07 01	046	0.4+	0.7+	1997 07 08	046	0.2+	0.7−	1997 10 20	658	1.1+	0.1+
1997 07 01	046	0.5+	0.5+	1997 07 08	046	0.6−	0.4−	1997 10 20	658	0.3−	0.1−
1997 07 01	557	0.1+	0.3+	1997 07 08	046	0.5−	0.3−	1998 06 17	696	0.5−	0.3−
1997 07 01	557	0.1+	0.2+	1997 07 08	587	0.3−	0.2−	1998 06 17	696	0.3+	0.3+
1997 07 01	108	(0.5+	2.2+)	1997 07 08	587	0.1+	0.2−	1998 06 17	696	0.1−	0.0
1997 07 01	108	0.8−	0.3+	1997 07 08	587	0.1−	0.6−	1998 06 18	696	0.4−	0.6−
1997 07 02	683	0.5−	0.3+	1997 07 08	557	0.0	0.1−	1998 06 18	696	0.4−	0.5−
1997 07 02	683	(2.1−	1.4+)	1997 07 08	557	0.2+	0.2−	1998 07 02	683	0.2−	0.8+
1997 07 02	683	0.1−	0.1+	1997 07 08	557	0.3−	0.1−	1998 07 02	683	0.4+	0.8+
1997 07 02	355	0.2+	0.2−	1997 07 09	046	0.2+	0.2−	1998 07 02	683	0.7−	0.9+
1997 07 02	355	0.8+	1.0+	1997 07 09	046	0.2−	0.4−	1998 07 03	683	0.2−	0.2−
1997 07 03	658	1.3−	0.2−	1997 07 09	046	0.2+	0.1+	1998 07 03	683	0.7−	0.4+
1997 07 03	658	0.9−	0.1−	1997 07 09	599	0.4+	0.4+	1998 07 03	683	0.4−	0.6+
1997 07 03	658	0.9−	0.3−	1997 07 09	599	1.6−	1.7+	1998 07 05	402	0.4−	0.2−
1997 07 03	658	0.5−	0.2−	1997 07 09	599	1.0−	0.9+	1998 07 05	402	0.4−	1.5+
1997 07 03	568	0.0	0.0	1997 07 09	599	1.3−	0.1−	1998 07 05	402	0.5−	1.2+
1997 07 03	568	0.5−	0.1+	1997 07 09	118	0.1+	0.3−	1998 07 18	402	0.3+	0.6−
1997 07 03	568	0.7+	0.3−	1997 07 09	118	0.3−	0.4−	1998 07 18	402	0.8+	0.4−
1997 07 03	422	1.2+	0.0	1997 07 11	696	0.6+	0.4+	1998 07 18	402	0.4+	0.6−
1997 07 03	422	0.6+	0.1+	1997 07 11	696	0.4+	0.0	1998 07 20	046	0.1+	0.9+
1997 07 03	422	0.9+	0.3−	1997 07 11	696	0.5+	0.1−	1998 07 20	046	0.0	0.2+
1997 07 03	422	1.2+	0.7+	1997 07 11	046	0.5+	0.4−	1998 07 20	046	0.4−	0.2−
1997 07 03	104	0.0	0.2+	1997 07 11	046	1.1+	0.1−	1998 07 20	046	0.8−	0.8−
1997 07 03	104	0.8+	0.4+	1997 07 11	046	1.2+	0.5−	1998 07 20	046	0.4−	0.2+
1997 07 03	104	1.2+	0.2+	1997 07 11	046	0.3+	0.1+	1998 07 20	046	0.1−	1.2−
1997 07 03	046	1.4−	0.4−	1997 07 12	046	0.2−	0.2−	1998 07 20	046	0.6−	0.5+
1997 07 03	046	1.4−	0.5+	1997 07 12	046	0.1+	0.8−	1998 07 26	683	0.3−	0.5−
1997 07 03	046	0.4−	0.4−	1997 07 12	046	0.0	0.0	1998 07 26	683	0.0	0.7+
1997 07 03	473	0.8−	1.6−	1997 07 12	046	0.4+	0.4−	1998 07 26	683	0.3+	0.4+
1997 07 03	473	(2.2+	1.2−)	1997 07 13	696	0.4+	0.6−	1998 07 27	683	0.2+	0.1−
1997 07 03	557	0.1−	0.2−	1997 07 13	696	0.4+	0.7−	1998 07 27	683	0.1−	0.2−
1997 07 03	557	0.0	0.2−	1997 07 13	696	0.4+	0.6−	1998 07 27	683	1.0+	0.3−
1997 07 04	568	0.5−	0.1−	1997 07 14	696	0.1+	0.0	1998 07 27	683	0.5+	0.1−
1997 07 04	568	0.0	0.4−	1997 07 14	696	0.0	0.1−	1998 07 27	683	0.3+	0.6+

1998 AUG. 8

1997 07 04	568	0.0	0.2−	1997 07 14	696	0.1+	0.1+	1998 07 27	683	0.9+	0.6−
1997 07 04	402	0.1−	0.0	1997 07 16	568	0.0	0.1+				
1997 07 04	402	0.1−	0.0	1997 07 16	568	0.1+	0.1−				

1997 MD₈ = 1990 SO₁₃

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Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	228.21546		(2000.0)	P	Q	Williams
<i>n</i>	0.26404719	<i>ω</i>	335.73574	−0.96292267	−0.26975408	
<i>a</i>	2.4062921	<i>Ω</i>	188.61692	+0.25123644	−0.89185984	
<i>e</i>	0.1597984	<i>i</i>	1.36095	+0.09828622	−0.36306853	
<i>P</i>	3.73	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1990 09 23	809	0.5+	0.3−	1990 09 24	809	0.3−	0.3+	1997 07 06	691	0.0	0.2+
1990 09 23	809	0.6+	0.2−	1990 09 24	809	0.1+	0.2+	1997 07 06	691	0.3+	0.1−
1990 09 23	809	1.1+	0.2−	1990 09 24	809	0.7+	0.3+	1997 07 06	691	0.3+	0.1−
1990 09 24	809	1.2−	0.1+	1997 06 29	691	0.0	0.4−	1997 07 10	691	0.3−	0.1+
1990 09 24	809	1.0−	0.0	1997 06 29	691	0.1−	0.1+	1997 07 10	691	0.3−	0.0
1990 09 24	809	0.6−	0.0	1997 06 29	691	0.0	0.3+	1997 07 10	691	0.2+	0.0

1997 NU₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	126.02891		(2000.0)	P	Q	Williams
<i>n</i>	0.20935640	<i>ω</i>	355.74692	−0.59370464	+0.79521250	
<i>a</i>	2.8089578	<i>Ω</i>	237.78518	−0.73392392	−0.59784940	
<i>e</i>	0.0917733	<i>i</i>	8.36568	−0.32995527	−0.10106029	
<i>P</i>	4.71	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 07 09	122	0.2+	0.1+	1997 07 23	046	0.9−	0.3−	1997 08 12	122	0.1+	0.4−
1997 07 09	122	0.3+	0.2+	1997 07 29	122	0.3+	0.1+	1997 08 12	122	0.5+	0.4−
1997 07 09	122	0.2+	0.2+	1997 07 29	122	0.2+	0.2+	1997 08 31	122	0.4−	0.3+
1997 07 09	122	0.1+	0.3+	1997 07 29	122	0.4+	0.1+	1997 08 31	122	0.2−	0.6+
1997 07 09	122	0.1+	0.5+	1997 07 29	122	0.5+	0.2+	1997 08 31	122	0.1+	0.5+
1997 07 12	122	0.3+	0.5−	1997 08 01	122	0.1−	0.1+	1998 07 23	122	0.2−	0.5−
1997 07 13	122	0.4+	0.4−	1997 08 01	122	0.2−	0.0	1998 07 23	122	0.4+	0.1−
1997 07 13	122	0.1−	0.4−	1997 08 01	122	0.0	0.2+	1998 07 23	122	0.2+	0.1−
1997 07 13	122	0.0	0.5−	1997 08 01	122	0.0	0.1−	1998 07 26	122	0.5−	0.3+
1997 07 13	122	0.2−	0.1−	1997 08 03	122	0.6+	0.0	1998 07 26	122	0.2−	0.1−
1997 07 23	046	0.8−	0.1+	1997 08 03	122	0.3+	0.0	1998 07 26	122	0.3+	0.4+
1997 07 23	046	0.4−	0.0	1997 08 12	122	0.3−	0.1+				
1997 07 23	046	1.1−	0.3−	1997 08 12	122	0.2+	0.3−				

1997 QH₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	356.15673		(2000.0)	P	Q	Marsden
<i>n</i>	0.00349320	<i>ω</i>	5.05352	+0.99973683	−0.01549493	
<i>a</i>	43.0183517	<i>Ω</i>	355.72334	+0.00238990	+0.80375254	
<i>e</i>	0.0373076	<i>i</i>	13.11174	+0.02281580	+0.59476193	
<i>P</i>	282	<i>H</i>	7.0	<i>G</i>	0.15	

Residuals in seconds of arc

1998 AUG. 8

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1997 QJ₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	40.27558	(2000.0)	P	Q
<i>n</i>	0.00395618	ω	315.88902	+0.54571400 +0.83546259
<i>a</i>	39.5930133	Ω	346.74090	-0.66913493 +0.38791028
<i>e</i>	0.1717899	<i>i</i>	16.41026	-0.50443501 +0.38926582
<i>P</i>	249	<i>H</i>	7.5	<i>G</i> 0.15

Residuals in seconds of arc

1997 08 28	568	0.3-	0.5+	1997 09 01	568	0.1-	0.9+	1997 09 27	696	0.0	0.3-
1997 08 28	568	0.0	0.8+	1997 09 23	568	0.2+	0.4-	1997 10 05	675	1.0+	1.3-
1997 08 28	568	0.3-	0.7+	1997 09 23	568	0.3+	0.7-	1997 10 05	675	1.0+	1.2-
1997 08 29	568	0.5-	0.6+	1997 09 23	568	0.2+	0.3-	1998 06 29	568	0.2-	0.2+
1997 08 29	568	0.2-	0.4+	1997 09 24	568	0.1-	0.3-	1998 06 29	568	0.1-	0.2+
1997 09 01	568	0.1-	0.8+	1997 09 24	568	0.0	0.5-	1998 06 30	568	0.1+	0.2+
1997 09 01	568	0.5-	0.9+	1997 09 27	696	0.4-	1.1-				

1997 RX₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

<i>M</i>	247.18367	(2000.0)	P	Q
<i>n</i>	0.00366973	ω	297.18719	-0.22516116 -0.96442992
<i>a</i>	41.6274969	Ω	163.89485	+0.97231827 -0.21330735
<i>e</i>	0.0318714	<i>i</i>	29.94801	-0.06244706 +0.15612464
<i>P</i>	269	<i>H</i>	8.0	<i>G</i> 0.15

Residuals in seconds of arc

1997 09 07	675	0.1-	0.8+	1997 10 05	675	0.2+	0.1-	1998 06 29	568	0.2-	0.1-
1997 09 07	675	0.1-	0.8+	1997 10 05	675	0.1+	0.4-	1998 06 29	568	0.1+	0.3+
1997 09 08	675	0.5-	0.5+	1997 10 06	675	0.4+	0.9-	1998 06 30	568	0.0	0.0
1997 09 08	675	0.4-	0.3+	1997 10 06	675	0.3+	0.8-				
1997 10 05	675	0.0	0.4+	1997 10 06	675	0.3+	1.0-				

1997 SK₁ = 1991 FF₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	284.93019	(2000.0)	P	Q
<i>n</i>	0.23108030	ω	156.86462	-0.71333441 -0.70038862
<i>a</i>	2.6300304	Ω	338.61536	+0.63194508 -0.62759327
<i>e</i>	0.0861858	<i>i</i>	3.88330	+0.30298422 -0.33997422
<i>P</i>	4.27	<i>H</i>	14.2	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1991 03 20	809	0.8+	0.9-	1997 09 24	046	0.1+	0.2-	1997 09 28	046	0.6-	0.1+
1991 03 20	809	1.0+	0.9-	1997 09 24	046	0.3-	0.5-	1997 09 28	046	0.1+	0.2+
1991 03 20	809	1.1+	0.9-	1997 09 25	046	0.0	0.1-	1997 09 28	046	0.4-	0.3+
1991 03 21	809	1.2-	0.7+	1997 09 25	046	0.2-	0.0	1997 10 05	046	0.3+	0.2+
1991 03 21	809	1.0-	0.7+	1997 09 25	046	0.3-	0.4-	1997 10 06	046	0.2-	0.4-
1991 03 21	809	0.9-	0.8+	1997 09 26	046	0.1-	0.3+	1997 10 06	046	0.1-	0.3-
1997 09 22	046	0.4+	0.2+	1997 09 26	046	0.5-	0.4+	1997 10 06	046	0.2-	0.1-
1997 09 22	046	0.3+	0.3+	1997 09 26	046	0.3+	0.1+	1997 10 22	046	0.3+	0.2-
1997 09 22	046	0.0	0.0	1997 09 26	046	0.3-	0.1-	1997 10 22	046	0.6+	0.4-
1997 09 22	046	1.1+	0.1-	1997 09 27	046	0.1-	0.2-	1997 10 22	046	0.0	0.1-
1997 09 23	046	0.2+	0.4-	1997 09 27	046	0.2-	0.1-	1997 10 23	046	0.4-	0.4+
1997 09 23	046	0.3+	0.2+	1997 09 27	046	0.2-	0.1-	1997 10 23	046	0.3+	0.2+
1997 09 23	046	1.2+	0.5-	1997 09 27	046	0.3-	0.0				
1997 09 24	046	0.6-	0.2+	1997 09 27	046	0.2-	0.4+				

1997 YR₁₃ = 1990 TC₁₆ = 1991 XX₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	122.58888	(2000.0)	P	Q
<i>n</i>	0.17129795	ω	162.25587	+0.93868366 -0.34477791
<i>a</i>	3.2109579	Ω	217.91242	+0.31611535 +0.86189144
<i>e</i>	0.1292699	<i>i</i>	0.10085	+0.13763744 +0.37184855
<i>P</i>	5.75	<i>H</i>	13.0	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1990 10 15	095	0.6-	0.1-	1998 01 01	411	0.5-	0.4+	1998 02 23	566	0.5+	0.2+
1990 10 15	095	0.6+	0.1+	1998 01 06	411	0.1-	1.0-	1998 02 23	566	0.3+	0.4+
1991 12 14	691	0.1-	0.1-	1998 01 06	411	0.6-	0.5-	1998 02 23	566	0.3+	0.0
1991 12 14	691	0.1+	0.3-	1998 01 24	411	0.2-	0.1+	1998 02 28	910	0.7+	0.2-
1992 01 01	691	0.2-	0.6+	1998 01 24	411	0.9-	0.1+	1998 02 28	910	0.8+	0.1-
1992 01 01	691	0.5+	0.2-	1998 01 28	566	0.5-	0.4+	1998 02 28	910	0.7+	0.0
1992 01 01	691	0.2-	0.2+	1998 01 28	566	0.6-	0.3+	1998 03 01	910	0.6+	0.3-
1997 12 31	411	0.2-	0.3+	1998 01 28	566	0.5-	0.3+	1998 03 01	910	0.7+	0.1-
1997 12 31	411	0.1+	0.3-	1998 01 30	411	0.9-	0.3+	1998 03 01	910	1.0+	0.3-
1998 01 01	411	0.1+	0.1+	1998 01 30	411	0.5-	0.1-				

1998 AY = 1993 XL₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	37.43404	(2000.0)	P	Q
<i>n</i>	0.26985002	ω	45.70440	-0.79070115 -0.60773722
<i>a</i>	2.3716709	Ω	96.73103	+0.53840184 -0.74769457
<i>e</i>	0.2146994	<i>i</i>	4.26199	+0.29140205 -0.26759728
<i>P</i>	3.65	<i>H</i>	17.0	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1993 12 14	691	0.2-	0.4-	1998 01 09	411	1.7-	0.4+	1998 02 04	411	0.4-	0.9+
1993 12 14	691	0.0	0.2-	1998 01 09	411	0.2+	0.3+	1998 02 04	411	0.4-	0.0
1993 12 14	691	0.0	0.0	1998 01 24	411	0.1+	0.2-	1998 02 19	699	0.3-	0.2+
1994 01 18	691	0.7+	0.1+	1998 01 24	411	1.0+	0.4-	1998 02 19	699	1.1-	1.2+
1994 01 18	691	0.0	1.0+	1998 01 29	910	1.1+	1.3-	1998 02 19	699	0.9-	1.1+
1994 01 18	691	0.7-	0.2+	1998 01 30	910	1.1+	1.2-	1998 02 25	566	0.5-	0.0
1998 01 05	411	0.6-	0.5-	1998 01 30	910	1.2+	1.1-	1998 02 25	566	0.0	0.4+
1998 01 05	411	0.6-	0.8-	1998 01 31	910	0.4+	0.3-	1998 02 25	566	0.2-	0.2-
1998 01 06	411	0.6+	1.1+	1998 01 31	910	0.3+	0.3-				
1998 01 06	411	0.2-	0.6+	1998 01 31	910	0.4+	0.2-				

1998 DD₁₀ = 1986 RA₁₀ = 1996 TK₅₆

Id. S. Nakano, G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	105.46066	(2000.0)	P	Q
<i>n</i>	0.29549541	ω	184.21791	+0.00435781 -0.99518398
<i>a</i>	2.2323840	Ω	265.55272	+0.92032309 +0.04229506
<i>e</i>	0.0457485	<i>i</i>	5.63688	+0.39113479 -0.08843063
<i>P</i>	3.34	<i>H</i>	14.5	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1986 09 08	095	0.2+	0.5-	1998 02 22	566	0.5-	0.3+	1998 02 27	566	0.3+	1.4-
1996 10 02	809	(4.3+	1.1+)	1998 02 22	566	0.5-	0.2+	1998 02 27	566	0.4+	1.8-
1996 10 02	809	(3.7+	2.0+)	1998 02 22	566	0.5-	0.2+	1998 03 03	704	0.4-	1.7+
1996 10 02	809	(3.7+	2.2+)	1998 02 24	566	0.0	0.1+	1998 03 03	704	0.6+	1.3+
1996 10 03	809	0.1+	0.1+	1998 02 24	566	0.1-	0.0	1998 03 03	704	0.8+	0.5+
1996 10 03	809	0.3-	0.1-	1998 02 24	566	0.4-	0.2+	1998 03 03	704	(2.9+	0.9-)
1996 10 03	809	0.0	0.5+	1998 02 27	566	0.4+	1.5-				

1998 DD₁₈ = 1995 ML₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	281.68696	(2000.0)	P	Q
<i>n</i>	0.28896294	ω	165.83440	+0.60746873 +0.79148565
<i>a</i>	2.2659028	Ω	141.50787	-0.73892052 +0.59415347
<i>e</i>	0.1906065	<i>i</i>	6.20945	-0.29151021 +0.14329034
<i>P</i>	3.41	<i>H</i>	16.1	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1995 06 25	691	0.3-	0.0	1995 07 02	691	0.4-	0.1+	1998 02 28	691	0.2-	0.1-
1995 06 25	691	0.0	0.0	1998 02 23	691	0.0	0.1+	1998 03 03	691	0.1+	0.2-
1995 06 25	691	0.2+	0.1-	1998 02 23	691	0.1+	0.1-	1998 03 03	691	0.0	0.2-
1995 07 02	691	0.5+	0.0	1998 02 28	691	0.2-	0.4+	1998 03 03	691	0.3+	0.1-
1995 07 02	691	0.0	0.1+	1998 02 28	691	0.1-	0.3+				

1998 DT₃₄ = 1989 SQ₈

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	259.31495	(2000.0)	P	Q	
<i>n</i>	0.29765773	ω	302.24989	+0.74752288	+0.66372154
<i>a</i>	2.2215594	Ω	16.21589	−0.57359195	+0.66485810
<i>e</i>	0.1833089	<i>i</i>	5.37093	−0.33496541	+0.34269145
<i>P</i>	3.31	<i>H</i>	15.0	<i>G</i>	0.15 <i>U</i> 5

Residuals in seconds of arc

1989 09 25	809	0.7−	0.4−	1998 02 28	809	0.8−	0.0	1998 03 29	704	0.6−	0.7+
1989 09 25	809	0.7−	0.6−	1998 02 28	809	0.9+	1.0+	1998 03 29	704	1.3−	0.3+
1989 09 25	809	1.4−	0.3−	1998 03 22	704	0.8+	1.7−	1998 03 29	704	(0.1+	2.5+)
1989 09 26	809	1.3+	0.4+	1998 03 22	704	0.5+	1.3−	1998 03 29	704	0.9−	0.9−
1989 09 26	809	0.6+	0.3+	1998 03 22	704	(0.1+	2.4+)	1998 04 18	704	1.1+	0.7+
1989 09 26	809	1.1+	0.3+	1998 03 22	704	(1.8+	2.6−)	1998 04 18	704	1.5+	0.9+
1998 02 27	809	(3.5+	0.8−)	1998 03 26	704	1.0−	0.5−	1998 04 18	704	(3.3+	1.0+)
1998 02 27	809	1.0+	0.2−	1998 03 26	704	1.2−	0.2+	1998 04 18	704	(2.7+	1.2+)
1998 02 27	809	0.1+	0.3+	1998 03 26	704	1.1−	0.0				
1998 02 28	809	1.0+	0.5+	1998 03 29	704	0.1+	0.2−				

1998 EX₁ = 1979 QT

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	197.25381	(2000.0)	P	Q	
<i>n</i>	0.24333813	ω	325.94581	+0.92592262	−0.37754749
<i>a</i>	2.5409489	Ω	56.23990	+0.34947405	+0.84508230
<i>e</i>	0.1805699	<i>i</i>	0.77116	+0.14330106	+0.37854167
<i>P</i>	4.05	<i>H</i>	14.5	<i>G</i>	0.15 <i>U</i> 6

Residuals in seconds of arc

1979 08 22	809	0.5−	1.2−	1998 03 03	910	0.2+	0.0	1998 03 29	704	1.0+	1.2+
1979 08 22	809	(4.8+	1.1+)	1998 03 03	910	0.2+	0.2+	1998 03 29	704	1.3+	0.6+
1979 08 22	809	0.2+	0.7−	1998 03 03	910	0.2+	0.1+	1998 03 29	704	0.3+	0.6−
1979 08 23	809	0.4+	1.0+	1998 03 24	704	(3.0−	2.7−)	1998 03 29	704	(2.5−	1.7−)
1979 08 23	809	0.0	0.9+	1998 03 24	704	0.9+	1.3+	1998 04 01	704	1.0+	1.4−
1998 03 02	910	0.0	0.2+	1998 03 24	704	1.4−	1.1+	1998 04 01	704	0.3−	0.4−
1998 03 02	910	0.1−	0.0	1998 03 24	704	0.4−	0.4−	1998 04 01	704	1.8−	0.0
1998 03 02	910	0.1−	0.1−	1998 03 29	704	0.9−	0.8−	1998 04 01	704	0.1−	0.7−

1998 ER₁₀ = 1993 HO₃

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	81.21716	(2000.0)	P	Q	
<i>n</i>	0.18612338	ω	337.66088	+0.11267809	−0.99168618
<i>a</i>	3.0381003	Ω	105.82536	+0.92112688	+0.08079815
<i>e</i>	0.2369007	<i>i</i>	3.70358	+0.37259754	+0.10015083
<i>P</i>	5.30	<i>H</i>	14.5	<i>G</i>	0.15 <i>U</i> 5

Residuals in seconds of arc

1993 03 19	809	0.9+	1.4+	1998 03 01	809	1.0+	0.4−	1998 03 25	704	(0.8+	2.3−)
1993 03 20	809	0.4+	1.0+	1998 03 01	809	0.4−	1.8−	1998 03 25	704	0.2+	1.2+
1993 03 24	809	0.3−	1.5+	1998 03 01	809	0.4−	2.0−	1998 03 25	704	0.2−	1.4+
1993 04 18	413	(2.6−	1.0+)	1998 03 02	809	0.1+	1.0+	1998 03 25	704	(3.7+	1.3+)
1993 04 20	691	0.5−	1.0−	1998 03 02	809	0.1+	1.3+	1998 03 25	704	1.5−	1.1+
1993 04 20	691	0.1+	0.6−	1998 03 02	809	0.5−	0.7+	1998 03 26	704	0.7+	0.3+
1993 04 20	691	0.0	0.6−	1998 03 24	704	0.9+	1.2−	1998 03 26	704	0.2−	0.1+
1993 04 24	691	0.1−	0.1−	1998 03 24	704	0.6+	1.5−	1998 03 26	704	1.1−	0.2+
1993 04 24	691	0.1−	0.3−	1998 03 24	704	0.4+	1.2−				
1993 04 24	691	0.2−	0.8−	1998 03 24	704	(0.2−	2.4−)				

1998 ED₂₁ = 1987 DD₃ = 1996 RS₂

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	88.53027	(2000.0)	P	Q	
<i>n</i>	0.27145144	ω	296.66705	−0.07680471	−0.99528945
<i>a</i>	2.3623339	Ω	157.50164	+0.96090352	−0.08972124
<i>e</i>	0.1061722	<i>i</i>	8.89384	+0.26601780	+0.03672891
<i>P</i>	3.63	<i>H</i>	15.5	<i>G</i>	0.15 <i>U</i> 3

Residuals in seconds of arc

1987 02 23	010	1.7−	0.3+	1996 09 18	566	0.1−	0.1+	1998 03 04	809	1.1−	0.8−
1987 02 23	010	0.5+	0.4−	1998 01 28	566	(1.0+	2.5−)	1998 03 04	809	1.4−	0.7−
1987 02 23	010	1.2+	0.3+	1998 01 28	566	(1.2+	2.7−)	1998 03 20	704	0.5+	0.0
1996 09 10	566	0.1−	0.4+	1998 01 28	566	(1.0+	2.3−)	1998 03 20	704	0.1+	0.1+
1996 09 10	566	0.6−	0.2+	1998 02 07	809	(3.5−	0.4−)	1998 03 20	704	1.5+	0.4+
1996 09 10	566	0.6+	0.5+	1998 02 07	809	(6.2−	0.5−)	1998 03 20	704	0.3−	0.1+
1996 09 15	566	0.1+	0.3−	1998 02 07	809	(4.2−	0.6−)	1998 03 20	704	1.4+	0.2−
1996 09 15	566	0.1+	0.2−	1998 03 03	809	(2.4+	0.1+)	1998 03 21	691	0.9−	0.2−
1996 09 15	566	0.1+	0.2−	1998 03 03	809	1.5+	1.0+	1998 03 21	691	0.9−	0.1+
1996 09 18	566	0.0	0.6−	1998 03 03	809	1.3+	0.6+	1998 03 21	691	1.1−	0.2+
1996 09 18	566	0.2−	0.2+	1998 03 04	809	0.7−	1.0−				

1998 FD = 1982 BW₁₃ = 1993 FA₂₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Nakano			
<i>M</i>	58.14886	(2000.0)	P	Q	
<i>n</i>	0.18760471	ω	136.27446	−0.29378053	−0.95567682
<i>a</i>	3.0220865	Ω	330.79405	+0.86572633	−0.25743369
<i>e</i>	0.2274979	<i>i</i>	2.27389	+0.40522946	−0.14286257
<i>P</i>	5.25	<i>H</i>	13.6	<i>G</i>	0.15 <i>U</i> 5

Residuals in seconds of arc

1982 01 30	675	0.2−	0.0	1998 03 04	704	(2.8−	1.3−)	1998 03 20	704	0.5−	0.2+
1982 01 31	675	0.3+	0.3+	1998 03 04	704	(3.1−	1.5−)	1998 03 20	704	0.4−	0.2+
1993 03 21	809	1.0+	1.6+	1998 03 17	133	0.6+	1.0−	1998 03 22	704	0.3−	0.3−
1993 03 22	809	1.6+	0.9+	1998 03 17	133	(1.3+	3.0+)	1998 03 22	704	0.8+	0.7−
1993 03 26	809	2.2−	1.8−	1998 03 18	133	0.0	1.3+	1998 03 22	704	1.0+	0.1−
1998 03 03	704	0.4+	0.3−	1998 03 18	133	0.1+	0.0	1998 03 22	704	0.4+	0.8−
1998 03 03	704	0.0	0.7+	1998 03 18	133	0.3+	0.2+	1998 03 22	704	1.7+	0.7−
1998 03 03	704	0.6+	0.2+	1998 03 19	133	1.6+	0.3−	1998 03 26	566	0.7−	0.4−
1998 03 03	704	0.4−	0.7+	1998 03 19	133	1.1+	1.4+	1998 03 26	566	1.0−	0.5−
1998 03 03	704	0.9−	0.5+	1998 03 19	133	0.7+	0.5+	1998 03 26	566	1.1−	0.2−
1998 03 04	704	(2.7−	0.4−)	1998 03 20	704	0.6−	0.3−	1998 03 27	566	1.1−	0.4−
1998 03 04	704	(2.5−	0.8−)	1998 03 20	704	0.9+	0.4−	1998 03 27	566	0.5−	0.1−
1998 03 04	704	2.0−	1.1−	1998 03 20	704	0.2−	0.5+	1998 03 27	566	0.7−	0.0

1998 FO₁ = 1979 QD₁ = 1987 DU₁ = 1990 VO = 1992 CT₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Gnädig			
<i>M</i>	220.54616	(2000.0)	P	Q	
<i>n</i>	0.19124213	ω	190.29991	+0.98019013	+0.18672231
<i>a</i>	2.9836440	Ω	158.59259	−0.16640487	+0.95723964
<i>e</i>	0.0845017	<i>i</i>	10.42507	−0.10740912	+0.22096844
<i>P</i>	5.15	<i>H</i>	13.5	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1979 08 22	809	0.9+	0.7+	1987 02 23	010	0.9+	1.5−	1998 03 21	620	0.2−	0.9+
1979 08 22	809	1.0−	0.2+	1990 11 08	413	(5.5+	2.2+)	1998 03 21	620	0.8−	1.2+
1979 08 22	809	1.2+	0.6−	1990 11 09	413	0.4−	0.7−	1998 04 19	704	0.1+	0.5−
1979 08 23	809	0.7+	0.5+	1990 11 09	413	0.6+	2.0+	1998 04 19	704	0.4+	0.8−
1979 08 23	809	(3.7+	0.5−)	1992 02 02	809	0.5+	1.0+	1998 04 19	704	0.5−	0.6−
1979 08 26	809	0.3−	1.4+	1992 02 02	809	0.5−	1.4+	1998 04 20	704	0.5+	0.0
1979 08 26	809	0.7−	1.2+	1992 02 02	809	1.3−	1.4+	1998 04 20	704	0.7+	0.0
1979 08 30	809	1.0−	0.9+	1998 03 19	620	0.4+	1.4+	1998 04 20	704	0.3+	0.2−
1979 08 30	809	1.0−	1.1+	1998 03 19	620	0.5+	1.2+	1998 04 20	704	0.0	0.2+
1987 02 23	010	0.0	0.2+	1998 03 19	620	0.9+	1.0+	1998 04 20	704	0.6−	0.5+
1987 02 23	010	0.2+	0.7+	1998 03 20	620	0.4−	0.0				

1998 FV₁₅ = 1996 SF₄

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29903865	ω	336.45886	+0.94984969	+0.31261207		
<i>a</i>	2.2147149	Ω	5.34205	−0.27216146	+0.83856544		
<i>e</i>	0.1209814	<i>i</i>	4.74303	−0.15399255	+0.44618572		
<i>P</i>	3.30	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 09 19	327	0.1+	0.0	1998 03 22	704	0.6+	0.5−	1998 03 29	704	0.1+	0.8+
1996 09 19	327	0.6+	0.2+	1998 03 22	704	1.3−	1.8−	1998 03 29	704	1.1+	0.0
1996 09 19	327	0.7+	0.2+	1998 03 22	704	0.3+	0.1+	1998 03 29	704	0.3−	0.4−
1996 09 19	327	0.4+	0.1−	1998 03 22	704	(2.5−	1.7−)	1998 03 29	704	0.5+	0.2−
1996 09 21	327	0.5+	0.2−	1998 03 22	704	0.5+	0.8+	1998 03 29	704	0.4+	0.7+
1996 09 21	327	0.4+	0.8+	1998 03 22	704	0.2+	0.2+	1998 04 01	704	0.1−	0.6−
1996 09 21	327	0.3−	0.5−	1998 03 22	704	0.2+	1.4+	1998 04 01	704	0.7+	1.2+
1996 09 22	327	1.0−	0.4−	1998 03 22	704	1.1−	0.1−	1998 04 01	704	(0.7+	2.1+)
1996 09 22	327	0.4−	0.2+	1998 03 22	704	0.2+	1.4+	1998 04 01	704	0.2−	0.0
1996 09 22	327	0.5−	0.2+	1998 03 24	704	1.5−	0.3−	1998 04 01	704	0.2+	0.5+
1996 09 22	327	0.5−	0.1−	1998 03 24	704	(3.0−	0.5+)	1998 04 19	704	0.3−	0.2−
1998 03 20	704	(0.7−	2.9+)	1998 03 24	704	0.8+	0.3−	1998 04 19	704	0.3−	0.2−
1998 03 20	704	1.1−	1.3−	1998 03 24	704	0.6+	0.5−	1998 04 19	704	1.0+	0.3+
1998 03 20	704	(2.5−	1.2−)	1998 03 24	704	0.7−	0.7−	1998 04 19	704	1.1−	0.1+
1998 03 20	704	(2.6−	0.6+)	1998 03 28	620	1.0+	0.4+	1998 04 19	704	0.1+	0.6−
1998 03 20	704	0.8−	0.7−	1998 03 28	620	1.4+	0.1+	1998 04 20	704	0.7+	0.1−
1998 03 22	620	0.8−	0.0	1998 03 28	620	(2.6+	1.3−)	1998 04 20	704	0.8−	0.5+
1998 03 22	620	0.5−	0.0	1998 03 28	704	0.2−	0.6+	1998 04 20	704	0.1−	1.4+
1998 03 22	620	0.2−	0.0	1998 03 28	704	0.6−	1.0−	1998 04 20	704	0.5−	0.1+
1998 03 22	620	0.1+	0.0	1998 03 28	704	0.6+	0.2−	1998 04 20	704	0.5+	0.2−
1998 03 22	620	1.2+	0.1+	1998 03 28	704	0.5−	0.4−				
1998 03 22	704	0.3+	0.3+	1998 03 28	704	0.1−	0.5−				

1998 FC₃₄ = 1994 AJ₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26823394	ω	320.33960	−0.88532328	−0.46466591		
<i>a</i>	2.3811874	Ω	192.00637	+0.44464294	−0.83536394		
<i>e</i>	0.1713671	<i>i</i>	4.68175	+0.13599759	−0.29368805		
<i>P</i>	3.67	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 01 11	675	1.1+	0.5+	1998 03 22	704	0.8−	0.6+	1998 04 01	704	0.0	0.6−
1994 01 11	675	1.8+	0.6−	1998 03 22	704	1.1−	0.5+	1998 04 01	704	1.5+	0.6−
1994 01 16	675	1.2−	0.1−	1998 03 25	566	0.0	0.3−	1998 04 01	704	0.5+	0.3−
1994 01 16	675	1.7−	0.1−	1998 03 25	566	0.5+	0.4−	1998 04 18	704	0.1−	0.3−
1998 03 20	704	0.2−	0.3−	1998 03 25	566	0.1+	0.2−	1998 04 18	704	0.0	0.4−
1998 03 20	704	0.4+	0.4+	1998 03 29	704	0.4+	0.4+	1998 04 18	704	0.4+	0.2+
1998 03 20	704	0.4+	0.3+	1998 03 29	704	0.2+	0.1+	1998 04 19	704	0.1−	0.3+
1998 03 20	704	0.1−	0.5+	1998 03 29	704	0.3+	0.6+	1998 04 19	704	0.1+	0.3−
1998 03 20	704	0.4−	0.1+	1998 03 29	704	0.0	0.2+	1998 04 19	704	1.0−	1.0−
1998 03 22	704	0.2−	0.0	1998 03 29	704	0.9+	0.2+	1998 04 19	704	0.4+	1.5−
1998 03 22	704	1.7−	0.1−	1998 04 01	704	0.6+	0.2−	1998 04 19	704	0.9−	1.9+
1998 03 22	704	0.5−	0.2+	1998 04 01	704	0.1+	0.0				

1998 FC₃₅ = 1995 OS₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17253197	ω	264.58759	+0.13454873	−0.99088865		
<i>a</i>	3.1956288	Ω	177.65421	+0.95744399	+0.12843544		
<i>e</i>	0.2573952	<i>i</i>	8.46687	+0.25533832	+0.04054647		
<i>P</i>	5.71	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 07 24	691	0.0	0.7+	1998 03 22	704	1.1+	0.4+	1998 03 29	704	1.1+	0.1−
1995 07 24	691	0.3+	0.2+	1998 03 22	704	0.2−	0.5−	1998 03 29	704	0.6+	0.2+
1995 07 24	691	0.1+	0.0	1998 03 22	704	1.0−	1.1−	1998 03 29	704	0.4−	0.1−
1995 07 30	691	0.4−	0.4−	1998 03 22	704	0.1+	0.3+	1998 03 29	704	1.2−	1.0+
1995 07 30	691	0.2+	0.2−	1998 03 25	566	0.5+	0.6−	1998 03 29	704	0.9−	0.4+
1995 07 30	691	0.2−	0.3−	1998 03 25	566	0.6+	0.5−	1998 04 19	704	0.5+	1.0+
1998 03 20	704	1.1−	1.2−	1998 03 25	566	0.4+	0.2−	1998 04 19	704	0.5−	0.5+
1998 03 20	704	0.1+	0.3+	1998 03 28	704	0.4+	0.1−	1998 04 19	704	0.4+	0.1+
1998 03 20	704	0.3−	0.8+	1998 03 28	704	0.5−	0.3+	1998 04 19	704	0.3−	0.4−
1998 03 20	704	1.2−	1.5+	1998 03 28	704	(2.3+	0.9−)	1998 04 19	704	0.2−	0.9−
1998 03 20	704	(0.0	4.7−)	1998 03 28	704	1.2+	0.6−				
1998 03 22	704	0.2−	0.2−	1998 03 28	704	1.0+	0.4−				

1998 FF₃₅ = 1990 WN₁₂ = 1995 TJ₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18591234	ω	33.54264	−0.57097388	+0.82093310		
<i>a</i>	3.0403990	Ω	201.64221	−0.75767721	−0.53049482		
<i>e</i>	0.0633548	<i>i</i>	1.17990	−0.31609189	−0.21129147		
<i>P</i>	5.30	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 23	372	0.0	0.2+	1998 03 20	704	0.1−	0.7−	1998 03 28	704	0.0	0.5−
1990 11 23	372	0.1−	0.5+	1998 03 20	704	(4.2+	2.4+)	1998 03 28	704	0.5−	0.6+
1995 10 15	691	0.0	0.4−	1998 03 20	704	0.3+	1.8−	1998 03 29	704	0.4−	0.9−
1995 10 15	691	0.1+	0.2−	1998 03 20	704	0.1−	0.5−	1998 03 29	704	0.3+	0.4+
1995 10 15	691	0.1−	0.1−	1998 03 22	704	0.3+	0.1−	1998 03 29	704	0.0	0.0
1995 10 21	691	0.4+	0.1+	1998 03 22	704	0.2+	0.1−	1998 03 29	704	0.1−	0.4+
1995 10 21	691	0.1−	0.1+	1998 03 22	704	0.3+	0.7−	1998 03 29	704	0.1+	0.8+
1995 10 21	691	0.2−	0.1+	1998 03 22	704	0.2+	0.3+	1998 04 19	704	0.3+	0.1−
1998 02 25	566	1.5+	1.0+	1998 03 22	704	0.7−	0.6−	1998 04 19	704	0.4−	0.4+
1998 02 25	566	1.2+	1.7−	1998 03 28	704	1.4−	0.1+	1998 04 19	704	1.0+	1.4+
1998 02 25	566	(0.8−	2.7−)	1998 03 28	704	0.0	0.4−	1998 04 19	704	0.2+	1.0+
1998 03 20	704	1.1−	0.2+	1998 03 28	704	0.2−	0.2+	1998 04 19	704	0.7−	1.4+

1998 FU₃₆ = 1985 CQ = 1985 FU₂ = 1993 TG₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30332063	ω	64.91149	+0.32766462	−0.94473716		
<i>a</i>	2.1938221	Ω	5.98981	+0.82707884	+0.28151546		
<i>e</i>	0.1223001	<i>i</i>	5.70466	+0.45670175	+0.16799029		
<i>P</i>	3.25	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1985 02 13	691	0.0	0.2+	1998 02 26	566	0.2−	0.1+	1998 03 26	566	1.0−	1.0−
1985 02 13	691	0.1−	0.7−	1998 03 08	699	1.0−	0.0	1998 03 28	704	0.3+	0.6−
1985 02 13	691	0.1−	0.2+	1998 03 08	699	0.6+	0.6−	1998 03 28	704	0.1+	0.3+
1985 03 22	801	(4.7−	0.1+)	1998 03 08	699	0.4+	0.4+	1998 03 28	704	0.1−	0.4−
1993 10 11	400	1.6+	0.5+	1998 03 20	704	0.1+	0.6+	1998 03 28	704	0.0	0.3−
1993 10 11	400	(3.5+	0.2−)	1998 03 20	704	0.7+	0.3+	1998 03 28	704	0.3+	0.1+
1993 10 13	675	1.1−	0.6−	1998 03 20	704	1.1+	0.4−	1998 03 29	704	0.3−	0.1−
1993 10 13	675	(0.5+	2.2−)	1998 03 20	704	1.2+	0.1+	1998 03 29	704	0.7−	0.6+
1993 10 15	691	1.1−	0.5+	1998 03 20	704	(2.1+	1.3−)	1998 03 29	704	0.7−	0.3−
1993 10 15	691	0.5−	0.4+	1998 03 22	704	0.0	0.3+	1998 03 29	704	0.7−	0.0
1993 10 15	675	0.8+	0.9−	1998 03 22	704	0.6+	1.0+	1998 03 29	704	0.1−	0.1−
1993 10 15	691	0.6−	0.4+	1998 03 22	704	0.4−	0.7+	1998 04 19	704	0.1+	0.0
1993 10 19	400	0.6+	0.2+	1998 03 22	704	0.9−	0.8+	1998 04 19	704	0.6+	0.8+
1993 10 19	400	(3.3−	4.8−)	1998 03 22	704	0.4−	0.6+	1998 04 19	704	0.4−	0.4+
1998 02 26	566	0.5−	0.1−	1998 03 26	566	0.1−	0.7−	1998 04 19	704	0.8+	0.1−
1998 02 26	566	0.2−	0.2−	1998 03 26	566	0.2−	1.1−	1998 04 19	704	1.1+	0.4−

1998 FW₃₉ = 1996 TL₆₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	278.74720			(2000.0)			P		Q		
<i>n</i>	0.31393832	ω		85.88194			+0.51866460		+0.85362838		
<i>a</i>	2.1440743	Ω		215.49381			−0.81357881		+0.47550696		
<i>e</i>	0.0857438	<i>i</i>		4.74379			−0.26282418		+0.21263048		
<i>P</i>	3.14	<i>H</i>		16.0	<i>G</i>		0.15	<i>U</i>	5		
Residuals in seconds of arc											
1996 10 08	691	0.3+	0.0	1998 03 22	704	0.8−	0.5−	1998 03 25	566	0.1+	0.1−
1996 10 08	691	0.2+	0.2−	1998 03 22	704	(0.0	2.6+)	1998 03 25	566	0.4−	0.3−
1996 10 08	691	0.3+	0.6−	1998 03 22	704	0.3−	1.1+	1998 03 29	704	0.2−	0.4+
1996 10 09	566	0.3+	0.3+	1998 03 22	704	1.6−	0.3−	1998 03 29	704	1.2−	0.9+
1996 10 09	566	0.3−	0.0	1998 03 24	704	0.2+	0.2+	1998 03 29	704	(2.2−	0.1+)
1996 10 09	566	0.7−	0.3+	1998 03 24	704	0.1+	1.1+	1998 03 29	704	0.3−	1.1−
1998 03 20	704	0.8+	0.8+	1998 03 24	704	0.3+	1.1+	1998 04 01	704	0.4+	0.5+
1998 03 20	704	0.6+	0.8−	1998 03 24	704	0.7−	0.1−	1998 04 01	704	0.1+	0.1+
1998 03 20	704	0.9+	0.7−	1998 03 24	704	0.6−	0.4−	1998 04 01	704	(2.2+	1.0−)
1998 03 20	704	1.5+	0.2−	1998 03 25	566	0.1−	0.0	1998 04 01	704	1.2+	2.0−

1998 FM₄₀ = 1978 PV = 1995 UL₄₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	302.08247		(2000.0)			P		Q		
<i>n</i>	0.23801838	ω	28.81698			+0.29299115		+0.95591917		
<i>a</i>	2.5786697	Ω	258.22567			−0.88096623		+0.26203930		
<i>e</i>	0.2317130	<i>i</i>	1.13303			−0.37155712		+0.13249128		
<i>P</i>	4.14	<i>H</i>	14.0			<i>G</i>	0.15	<i>U</i>	4	
Residuals in seconds of arc										
1978 08 08	095	0.0	0.2−	1998 03 22	704	1.1+	1.6+	1998 04 01	704	0.2+ 0.7+
1995 10 20	010	1.4−	1.5+	1998 03 22	704	1.0−	1.0+	1998 04 01	704	0.4− 0.4+
1995 10 20	010	0.0	2.7+	1998 03 22	704	1.2+	0.3−	1998 04 01	704	1.4+ 0.6+
1995 10 20	010	0.2−	1.6+	1998 03 22	704	0.4+	1.1−	1998 04 01	704	0.9− 1.1−
1995 10 23	010	0.9+	1.8−	1998 03 22	704	0.2+	0.8−	1998 04 19	704	0.7− 1.0−
1995 10 23	010	0.9−	3.0−	1998 03 29	704	0.4+	0.4−	1998 04 19	704	0.7− 1.3−
1995 10 23	010	1.7+	1.5−	1998 03 29	704	0.7+	0.4+	1998 04 19	704	0.4− 1.2+
1998 03 20	704	0.1−	0.5−	1998 03 29	704	0.8−	0.2+	1998 04 19	704	0.5+ 0.3+
1998 03 20	704	0.3−	1.0+	1998 03 29	704	0.3+	0.1+	1998 04 19	704	0.6− 0.9+
1998 03 20	704	0.9−	0.5−	1998 03 29	704	0.6+	0.4−			
1998 03 20	704	0.5−	0.1+	1998 04 01	704	0.1+	1.5−			

1998 FZ₄₀ = 1991 NE₉ = 1996 WN₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	283.91117		(2000.0)			$\mathbf{P}$		$\mathbf{Q}$			
n	0.25155508	ω	40.35300			+0.37680442		+0.92629017			
a	2.4853105	Ω	251.78299			−0.85045917		+0.34500346			
e	0.0927004	i	0.13420			−0.36706625		+0.15152272			
P	3.92	H	15.0	G	0.15		U	5			
Residuals in seconds of arc											
1991 07 12	809	0.1+	1.1−	1998 03 20	704	0.1+	0.3−	1998 03 29	704	1.0+	1.0+
1991 07 12	809	0.3+	1.1−	1998 03 20	704	0.4−	0.3−	1998 03 29	704	0.1+	0.6−
1991 07 12	809	0.4+	1.6−	1998 03 20	704	2.0−	0.5+	1998 03 29	704	2.1−	0.1−
1996 11 20	327	0.1−	0.4−	1998 03 22	704	0.8+	0.3+	1998 03 29	704	0.9+	0.2−
1996 11 20	327	1.1−	0.5−	1998 03 22	704	0.9+	0.2+	1998 03 29	704	0.5−	0.1−
1996 11 20	327	0.2−	0.3−	1998 03 22	704	0.2−	0.0	1998 04 19	704	0.1+	1.2+
1996 11 20	327	0.4−	0.6−	1998 03 22	704	0.2+	0.8−	1998 04 19	704	0.4+	1.2−
1996 11 30	327	0.2+	0.9−	1998 03 22	704	1.6−	0.4−	1998 04 19	704	0.7+	0.6−
1996 11 30	327	1.1+	0.6−	1998 03 28	704	0.3+	0.7+	1998 04 19	704	0.5−	1.7+
1996 11 30	327	0.8+	0.7−	1998 03 28	704	1.5−	0.1−	1998 04 19	704	0.2+	0.9+
1998 03 20	704	1.4+	0.7−	1998 03 28	704	0.8+	0.3−				
1998 03 20	704	0.0	1.5−	1998 03 28	704	0.0	1.8−				

1998 FH₄₁ = 1991 JQ₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	319.38458		(2000.0)			P		Q			
n	0.26995710	ω	81.70656			+0.01480952		+0.99987194			
a	2.3710437	Ω	189.14856			−0.93174271		+0.01159890			
e	0.1903487	i	2.18618			−0.36281703		+0.01102603			
P	3.65	H	15.5	G	0.15	U	5				
Residuals in seconds of arc											
1991 05 13	033	1.1−	0.1−	1998 03 26	566	0.4−	1.5−	1998 03 29	704	0.1+	0.6+
1991 05 13	033	0.1+	0.2−	1998 03 26	566	0.0	0.7−	1998 04 01	704	1.3+	1.7+
1991 05 14	033	1.0+	0.3+	1998 03 26	566	0.5+	0.7−	1998 04 01	704	0.1−	0.9−
1998 03 20	704	0.3+	0.0	1998 03 28	704	1.0+	0.5+	1998 04 01	704	(0.1+	3.3+)
1998 03 20	704	0.9−	0.2+	1998 03 28	704	0.1+	0.0	1998 04 01	704	0.2+	0.3−
1998 03 20	704	0.7+	0.6+	1998 03 28	704	0.2+	0.5−	1998 04 01	704	0.5+	0.1+
1998 03 20	704	0.6+	0.1+	1998 03 28	704	1.4−	0.5−	1998 04 19	704	0.3+	0.1+
1998 03 20	704	1.4+	0.1+	1998 03 28	704	0.4−	0.2+	1998 04 19	704	1.6+	0.7−
1998 03 22	704	(1.2+	2.2−)	1998 03 29	704	0.0	0.6−	1998 04 19	704	0.5−	1.3−
1998 03 22	704	(2.1−	1.6−)	1998 03 29	704	0.3−	0.0	1998 04 19	704	0.8−	0.7+
1998 03 22	704	0.7−	0.8+	1998 03 29	704	0.7−	0.2−	1998 04 19	704	0.7−	1.6+
1998 03 22	704	1.1−	0.6+	1998 03 29	704	0.9−	0.0				

1998 FY₄₃ = 1996 TS₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	82.52293	(2000.0)		P		Q					
n	0.24078832	ω	103.12977	−0.23812593		−0.97123200					
a	2.5588556	Ω	0.65738	+0.80477724		−0.19852746					
e	0.1871910	i	10.57530	+0.54371834		−0.13151138					
P	4.09	H	15.5	G	0.15	U	5				
Residuals in seconds of arc											
1996 10 08	566	0.2+	0.3−	1998 03 22	704	0.3+	0.2+	1998 03 29	704	0.1+	1.3+
1996 10 08	566	0.4+	0.3+	1998 03 22	704	0.2−	0.1−	1998 03 29	704	0.2−	0.4+
1996 10 08	566	0.2+	0.0	1998 03 22	704	0.1+	1.3+	1998 03 29	704	0.4+	0.6+
1996 10 09	566	0.5−	0.1−	1998 03 22	704	0.4+	0.9+	1998 03 29	704	0.1+	1.1+
1996 10 09	566	0.0	0.0	1998 03 22	704	1.3−	0.8−	1998 04 01	704	0.9−	0.6+
1996 10 09	566	0.3−	0.0	1998 03 28	704	0.4+	1.0+	1998 04 01	704	0.0	0.1−
1998 03 20	704	0.1−	0.2−	1998 03 28	704	0.2+	1.6+	1998 04 01	704	0.6−	0.9−
1998 03 20	704	0.5−	0.3+	1998 03 28	704	1.0+	0.4−	1998 04 01	704	0.5−	1.7−
1998 03 20	704	0.4+	0.4−	1998 03 28	704	1.6+	0.6−	1998 04 01	704	0.5−	1.7−
1998 03 20	704	0.4−	0.8−	1998 03 28	704	(3.4−	1.8+)				
1998 03 20	704	0.1−	1.3−	1998 03 29	704	0.3+	0.2−				

1998 FV₄₈ = 1996 TC₆₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	92.53981		(2000.0)		P		Q				
n	0.25759893		ω	271.93693	−0.27011823		−0.96236632				
a	2.4462829		Ω	193.84509	+0.92545653		−0.25097446				
e	0.1042458		i	7.15036	+0.26564329		−0.10422523				
P	3.83 <th>H</th> <td>15.5<th>G</th><td>0.15<th>U</th><td>4</td></td></td>		H	15.5 <th>G</th> <td>0.15<th>U</th><td>4</td></td>	G	0.15 <th>U</th> <td>4</td>	U	4			
Residuals in seconds of arc											
1996 10 11	566	0.1−	0.2+	1998 03 20	704	0.6−	0.2+	1998 03 29	704	0.4+	1.4+
1996 10 11	566	0.1−	0.1+	1998 03 22	704	0.1−	0.5−	1998 03 29	704	0.2+	0.0
1996 10 11	566	0.1+	0.0	1998 03 22	704	0.1+	0.2−	1998 03 29	704	1.3−	1.5+
1996 10 14	327	0.3−	0.3+	1998 03 22	704	1.0+	0.1−	1998 03 29	704	0.9+	0.1−
1996 10 14	327	0.2+	0.0	1998 03 22	704	0.3−	1.5−	1998 03 29	704	0.7−	0.5−
1996 10 14	327	0.3+	0.6−	1998 03 22	704	1.1−	0.7+	1998 04 19	704	0.4+	0.3−
1998 03 20	704	0.2+	1.1−	1998 03 28	704	0.5+	1.2+	1998 04 19	704	0.1−	0.7−
1998 03 20	704	0.4−	0.6−	1998 03 28	704	0.7+	0.6+	1998 04 19	704	0.6−	0.3−
1998 03 20	704	0.5+	0.4−	1998 03 28	704	0.3+	0.4+	1998 04 19	704	(8.2−	3.1+)
1998 03 20	704	(0.6−	2.3+)	1998 03 28	704	0.2−	0.3+				

1998 AUG. 8

M.P.C. 32259

1998 FQ₄₉ = 1976 OS

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	258.72739		(2000.0)			P		Q			
<i>n</i>	0.25872077	ω	355.56801			+0.85234399		+0.52281393			
<i>a</i>	2.4392062	Ω	332.89790			−0.47892841		+0.77012638			
<i>e</i>	0.2108919	<i>i</i>	1.66546			−0.21008879		+0.36547362			
<i>P</i>	3.81	<i>H</i>	14.5		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1976 07 27	095	1.8+	0.0	1998 03 28	704	0.8+	0.3−	1998 04 18	704	0.4−	0.4+
1976 08 01	095	1.8−	0.1−	1998 03 28	704	0.0	0.9−	1998 04 18	704	0.2−	0.1−
1998 03 20	704	0.6−	0.0	1998 03 28	704	0.7+	1.0−	1998 04 18	704	0.2−	0.5−
1998 03 20	704	0.7−	0.4−	1998 03 28	704	0.9−	0.8−	1998 04 18	704	1.4−	0.4−
1998 03 20	704	0.2+	0.5−	1998 03 28	704	0.1−	1.1−	1998 04 18	704	0.5−	0.7−
1998 03 20	704	0.4+	0.1+	1998 03 29	704	0.4+	0.0	1998 04 19	704	0.5+	1.0+
1998 03 20	704	1.1+	3.1−	1998 03 29	704	1.1+	0.6+	1998 04 19	704	0.3+	0.0
1998 03 22	704	0.4−	0.3+	1998 03 29	704	0.3−	0.3−	1998 04 19	704	0.1−	0.5−
1998 03 22	704	1.0−	0.5−	1998 03 29	704	0.6+	1.0+	1998 04 19	704	0.7+	0.8−
1998 03 22	704	0.8−	0.6−	1998 03 29	704	0.4+	0.2+	1998 04 19	704	0.7−	0.6−
1998 03 22	704	1.2−	1.1+	1998 04 01	704	0.8+	0.0	1998 04 24	699	0.4+	0.7+
1998 03 22	704	0.2−	0.9+	1998 04 01	704	1.1+	0.5+	1998 04 24	699	0.6−	0.2+
1998 03 24	566	0.6−	0.1+	1998 04 01	704	1.0+	0.7+	1998 04 24	699	0.0	0.7+
1998 03 24	566	0.2−	0.1+	1998 04 01	704	1.0+	1.8+				
1998 03 24	566	0.7−	0.2+	1998 04 01	704	0.2+	2.3+				

1998 FN₅₄ = 1981 VM₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	107.15487		(2000.0)			P		Q			
<i>n</i>	0.25970625	ω	248.77479			+0.15600618		-0.98747871			
<i>a</i>	2.4330318	Ω	192.31968			+0.94205564		+0.15587104			
<i>e</i>	0.2073137	<i>i</i>	6.29814			+0.29697346		+0.02429036			
<i>P</i>	3.80	<i>H</i>	15.0			<i>G</i>	0.15	<i>U</i>	2		
Residuals in seconds of arc											
1981 11 03	033	0.1+	0.6+	1998 03 24	704	0.1-	0.3+	1998 04 01	704	0.3-	0.3-
1981 11 03	033	0.3-	0.2+	1998 03 24	704	0.0	0.2-	1998 04 01	704	0.1-	0.1+
1996 10 19	910	0.1+	0.4-	1998 03 25	566	0.4+	0.6-	1998 04 19	704	0.5+	0.6+
1996 10 19	910	0.2+	0.5-	1998 03 25	566	0.2+	0.5-	1998 04 19	704	0.2-	0.3+
1996 10 19	910	0.2+	0.5-	1998 03 25	566	0.4+	0.7-	1998 04 19	704	0.5+	1.0+
1998 03 20	704	0.4+	0.2-	1998 03 28	704	0.2+	0.6-	1998 04 19	704	1.0-	0.6+
1998 03 20	704	0.5+	0.3-	1998 03 28	704	0.1-	0.3-	1998 04 20	704	0.9-	0.1+
1998 03 20	704	0.8+	0.7+	1998 03 28	704	0.1-	0.6-	1998 04 20	704	1.3-	0.3+
1998 03 20	704	0.8+	0.1+	1998 03 28	704	0.4-	0.2+	1998 04 20	704	0.7+	1.0+
1998 03 20	704	0.3+	0.9-	1998 03 28	704	0.2+	0.5-	1998 04 20	704	0.4+	2.3+
1998 03 22	704	0.0	0.4-	1998 03 29	704	0.1+	0.3-	1998 04 20	704	0.1-	1.6+
1998 03 22	704	0.8-	0.1-	1998 03 29	704	0.2-	0.6-	1998 04 24	699	0.8-	0.2+
1998 03 22	704	0.2-	0.1-	1998 03 29	704	0.5+	0.6-	1998 04 24	699	0.4-	0.5+
1998 03 22	704	0.9+	0.2-	1998 03 29	704	2.5-	1.2+	1998 04 24	699	1.8-	0.2-
1998 03 22	704	0.1-	0.0	1998 03 29	704	1.0+	0.6-	1998 05 02	699	0.5+	0.2-
1998 03 24	704	0.3+	0.1-	1998 04 01	704	0.1+	0.8-	1998 05 02	699	0.0	0.4-
1998 03 24	704	0.8+	0.0	1998 04 01	704	0.6+	0.4-	1998 05 02	699	1.3-	0.1+
1998 03 24	704	0.8+	0.1+	1998 04 01	704	0.1-	0.4-				

1998 FO₅₄ = 1994 CC₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	95.73035		(2000.0)			P		Q			
<i>n</i>	0.26508364	ω	108.52145			+0.02457407		-0.99965134			
<i>a</i>	2.4000158	Ω	340.06298			+0.90618931		+0.02635472			
<i>e</i>	0.2457290	<i>i</i>	1.62329			+0.42215762		+0.00161821			
<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 02 08	303	0.2-	0.3-	1998 03 24	704	0.5+	0.1+	1998 03 29	704	0.5-	0.9+
1994 02 08	303	0.3-	0.1-	1998 03 24	704	0.3-	0.3+	1998 03 29	704	0.2-	0.1+
1994 02 08	303	0.3+	0.1-	1998 03 24	704	0.5+	0.4+	1998 03 29	704	0.3-	0.6-

1994 02 09	303	0.2+	0.3+	1998 03 24	704	1.7+	1.0+	1998 04 01	704	0.6+	0.5-
1998 03 20	704	0.6+	0.8+	1998 03 24	704	0.0	0.6+	1998 04 01	704	0.9+	0.4-
1998 03 20	704	0.0	1.0-	1998 03 24	704	0.8+	0.2-	1998 04 01	704	0.6+	1.2+
1998 03 20	704	0.2+	0.7+	1998 03 24	704	0.2+	0.6-	1998 04 01	704	(0.8+	3.0-)
1998 03 20	704	0.2+	0.7+	1998 03 24	704	0.1+	0.4+	1998 04 01	704	0.3-	1.2-
1998 03 20	704	(2.0-	2.3-)	1998 03 24	704	0.3-	0.2+	1998 04 19	704	1.0+	0.4-
1998 03 22	704	0.3-	0.9-	1998 03 28	704	0.7-	1.2+	1998 04 19	704	0.4-	0.4-
1998 03 22	704	0.7-	0.1-	1998 03 28	704	0.1+	0.3-	1998 04 19	704	0.1-	0.3-
1998 03 22	704	0.5-	0.9-	1998 03 28	704	0.3+	0.0	1998 04 19	704	1.4-	0.0
1998 03 22	704	1.4-	0.8+	1998 03 28	704	0.7-	1.4-	1998 04 19	704	(6.0-	1.3+)
1998 03 22	704	0.7+	1.1-	1998 03 29	704	0.7-	0.4+				
1998 03 24	704	0.3+	0.7+	1998 03 29	704	0.8-	0.1-				

1998 FX₅₅ = 1976 UZ₁₆ = 1986 VH₄ = 1986 VA₉

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	181.38943		(2000.0)			P		Q				
<i>n</i>	0.29521965	ω	269.96403			+0.89847191		-0.43537070				
<i>a</i>	2.2337739	Ω	115.84479			+0.42365749		+0.82598009				
<i>e</i>	0.1660497	<i>i</i>	3.60405			+0.11516318		+0.35806318				
<i>P</i>	3.34	<i>H</i>	15.0			<i>G</i>	0.15	<i>U</i>		3		
Residuals in seconds of arc												
1976 10 22	381	0.6-	0.6-	1998 03 20	704	0.0	0.9-	1998 04 19	704	0.8+	0.1-	
1976 10 22	381	0.1+	0.6-	1998 03 20	704	0.2+	0.1-	1998 04 19	704	0.4+	0.4+	
1976 10 24	381	0.1+	0.5-	1998 03 20	704	0.8+	0.0	1998 04 19	704	0.7+	0.4+	
1976 10 24	381	0.8+	0.5+	1998 03 20	704	0.2-	0.6-	1998 04 19	704	1.3+	0.4+	
1986 11 04	095	1.1-	0.7-	1998 03 20	704	0.5-	1.7-	1998 04 20	704	0.1+	0.9+	
1986 11 07	010	1.7-	2.0+	1998 03 22	704	0.3-	0.2+	1998 04 20	704	0.0	0.7+	
1986 11 07	010	1.7+	1.7+	1998 03 22	704	0.1-	0.4-	1998 04 20	704	0.7-	1.1+	
1997 12 08	910	0.1+	0.9-	1998 03 22	704	0.5-	1.2-	1998 04 20	704	1.0-	1.9+	
1997 12 08	910	0.1+	0.5-	1998 03 22	704	0.4+	0.7+	1998 04 20	704	0.1-	0.9+	
1997 12 08	910	0.0	0.6-	1998 03 22	704	0.6-	0.5+					

1998 FN₅₈ = 1994 EH₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	299.33147		(2000.0)	P		Q					
<i>n</i>	0.25960642	<i>ω</i>	279.00337	+0.36479150		+0.93100393					
<i>a</i>	2.4336555	<i>Ω</i>	12.41386	−0.82957009		+0.33113394					
<i>e</i>	0.1468436	<i>i</i>	3.36112	−0.42277727		+0.15356431					
<i>P</i>	3.80	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1994 03 06	691	0.2−	0.6−	1998 03 22	704	1.1−	1.3−	1998 04 01	704	0.1−	1.4+
1994 03 06	691	0.7−	0.2+	1998 03 26	566	0.6−	0.4+	1998 04 01	704	1.1+	0.4+
1994 03 06	691	0.6−	1.0−	1998 03 26	566	0.3−	0.0	1998 04 01	704	1.0+	0.0
1994 04 02	691	0.7+	0.6+	1998 03 26	566	0.6−	0.3+	1998 04 01	704	0.0	1.3+
1994 04 02	691	0.4+	0.4+	1998 03 28	704	0.4+	0.5−	1998 04 19	704	0.4−	0.2−
1994 04 02	691	0.4+	0.4+	1998 03 28	704	1.5+	0.2−	1998 04 19	704	0.3−	0.8−
1998 03 20	704	0.3+	1.0+	1998 03 28	704	0.5−	0.2+	1998 04 19	704	1.1+	0.9−
1998 03 20	704	0.9+	1.2+	1998 03 28	704	0.2+	0.2−	1998 04 19	704	0.8−	0.5−
1998 03 20	704	1.2+	0.9−	1998 03 28	704	0.4+	1.7−	1998 04 19	704	2.2−	0.4−
1998 03 20	704	1.2−	0.4−	1998 03 29	704	0.1+	0.4−	1998 04 20	704	0.7+	0.3+
1998 03 20	704	(4.1−	0.5+)	1998 03 29	704	0.1−	0.6−	1998 04 20	704	0.2+	0.1+
1998 03 22	704	0.7−	0.4+	1998 03 29	704	0.2+	0.2+	1998 04 20	704	1.0+	0.4−
1998 03 22	704	1.0+	0.5−	1998 03 29	704	0.7−	0.4+	1998 04 20	704	0.5−	0.0
1998 03 22	704	0.4−	0.2+	1998 03 29	704	0.7+	0.0	1998 04 20	704	0.6−	0.7+
1998 03 22	704	1.4−	1.0+	1998 04 01	704	0.2+	0.3+				

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	251.47157	(2000.0)		P		Q	
<i>n</i>	0.23409765	ω	324.25571	+0.86570456	+0.49985902		
<i>a</i>	2.6073821	Ω	5.93728	-0.37912790	+0.68921256		
<i>e</i>	0.1159923	<i>i</i>	14.78260	-0.32682970	+0.52452551		
<i>P</i>	4.21	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1991 10 03	033	0.1-	0.4+	1998 03 22	704	0.8+	0.7-
1991 10 04	033	0.0	0.2-	1998 03 22	704	1.2+	0.1-
1991 10 04	033	1.0+	0.1+	1998 03 22	704	(2.3+ 1.6-)	1998 04 01 704 0.2- 1.1+
1991 10 07	033	0.3-	0.3-	1998 03 22	704	(0.6+ 2.7-)	1998 04 01 704 1.0- 0.4+
1991 10 07	033	1.0-	0.3-	1998 03 22	704	0.4-	1998 04 01 704 0.7- 0.6+
1991 10 08	033	0.4-	0.3-	1998 03 29	704	0.1+	1998 04 19 704 1.1+ 1.2+
1991 10 09	033	0.7+	0.6+	1998 03 29	704	0.3-	1998 04 19 704 0.1+ 0.1+
1998 03 20	704	0.1+	0.8-	1998 03 29	704	0.1-	1998 04 19 704 0.1- 0.1-
1998 03 20	704	0.9+	0.1-	1998 03 29	704	0.3+	1998 04 19 704 0.4- 0.6-
1998 03 20	704	0.3+	0.6+	1998 03 29	704	0.4-	1998 04 19 704 1.7- 1.2-
1998 03 20	704	0.4+	0.3-	1998 04 01	704	0.0	1998 04 20 704 0.8- 0.7+
1998 03 20	704	1.6-	1.7+	1998 04 01	704	0.0	1998 04 20 704 0.5+ 0.9+
							1998 04 20 704 0.1- 0.2-
							1998 04 20 704 2.0+ 1.3-

1998 FB₆₁ = 1977 RK₁₄ = 1998 HL₂₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	229.13372	(2000.0)		P		Q	
<i>n</i>	0.17170383	ω	12.85547	+0.97020019	+0.24226117		
<i>a</i>	3.2058958	Ω	333.12315	-0.22320010	+0.88616321		
<i>e</i>	0.1520578	<i>i</i>	0.58236	-0.09430431	+0.39499910		
<i>P</i>	5.74	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1977 09 09	675	0.4+	0.2-	1998 03 28	704	0.1+	0.0
1977 09 10	675	0.2-	0.3-	1998 03 28	704	(4.4- 1.8-)	1998 04 19 704 1.1+ 0.3-
1998 03 20	704	0.6-	1.8-	1998 03 29	704	0.5-	1998 04 19 704 0.5+ 0.7-
1998 03 20	704	(0.4+ 2.4+)		1998 03 29	704	0.1-	1998 04 19 704 (5.1- 2.5-)
1998 03 20	704	(2.7- 2.2+)		1998 03 29	704	0.1+	1998 04 20 704 0.0
1998 03 20	704	0.6+	0.6-	1998 03 29	704	0.7+	1998 04 20 704 0.5+ 0.0
1998 03 20	704	(4.9- 0.5-)		1998 03 29	704	0.8-	1998 04 20 704 0.1- 0.0
1998 03 22	704	0.6+	0.7+	1998 04 01	704	1.0-	1998 04 20 704 0.2- 0.1-
1998 03 22	704	0.5+	0.1+	1998 04 01	704	1.0+	1998 04 20 704 0.0 0.1-
1998 03 22	704	0.2-	1.0+	1998 04 01	704	0.3-	1998 04 22 704 1.1- 0.6+
1998 03 22	704	1.0-	0.3+	1998 04 01	704	0.3-	1998 04 22 704 0.0 0.9+
1998 03 28	704	0.3+	0.7-	1998 04 01	704	(3.9- 1.1+)	1998 04 22 704 1.0+ 1.5+
1998 03 28	704	0.1+	0.2-	1998 04 19	704	0.6+	1998 04 22 704 (2.2- 1.5-)
1998 03 28	704	0.5+	1.4-	1998 04 19	704	0.5+	1998 04 22 704 1.5- 0.5-

1998 FV₆₄ = 1993 FM₈₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	38.18265	(2000.0)		P		Q	
<i>n</i>	0.19918412	ω	328.66490	-0.99202211	-0.12573238		
<i>a</i>	2.9037970	Ω	204.11709	+0.11979424	-0.91763036		
<i>e</i>	0.0169374	<i>i</i>	1.28141	+0.03926151	-0.37702241		
<i>P</i>	4.95	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1993 03 19	809	(1.6+ 3.9+)		1998 03 20	704	(5.1- 4.0+)	1998 03 29 704 0.5+ 1.6+
1993 03 20	809	2.0+	0.3+	1998 03 22	704	0.3+	1998 04 01 704 0.1- 1.6-
1993 03 24	809	1.3+	1.0+	1998 03 22	704	0.3+	1998 04 01 704 0.1+ 0.4+
1993 03 26	691	1.4-	0.2-	1998 03 22	704	0.5+	1998 04 01 704 0.1+ 0.9-
1993 03 26	691	0.2-	0.8+	1998 03 22	704	0.6+	1998 04 01 704 (1.1+ 2.8-)
1993 03 26	691	0.5-	1.4+	1998 03 22	704	(5.4- 0.0)	1998 04 01 704 0.3+ 0.1-
1993 03 28	691	1.0-	1.5-	1998 03 28	704	0.6-	1998 04 19 704 0.8- 0.5+
1993 03 28	691	0.7+	2.6-	1998 03 28	704	0.0	1998 04 19 704 0.8+ 0.3-
1993 03 28	691	1.2-	0.3-	1998 03 28	704	1.1-	1998 04 19 704 1.4- 0.5+
1998 03 20	704	1.5+	0.3+	1998 03 28	704	1.9-	1998 04 19 704 1.9- 1.3+

1998 03 20	704	1.1+	0.9-	1998 03 29	704	0.3+	0.4+
1998 03 20	704	0.8+	0.3+	1998 03 29	704	0.8+	0.7-

1998 FQ₆₇ = 1992 AX₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	282.71833	(2000.0)		P		Q	
<i>n</i>	0.19446360	ω	196.68572	+0.49529918	+0.86655910		
<i>a</i>	2.9506011	Ω	103.04029	-0.78968213	+0.47850727		
<i>e</i>	0.0923319	<i>i</i>	3.60583	-0.36205090	+0.14179601		
<i>P</i>	5.07	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1992 01 09	691	0.1+	0.3-	1998 03 25	704	1.0+	0.0
1992 01 09	691	0.1+	0.4-	1998 03 25	704	0.7+	1.2-
1992 01 09	691	0.0	0.4-	1998 03 25	704	0.5+	0.2-
1992 01 31	691	0.3-	0.0	1998 03 25	704	0.6+	0.1+
1992 01 31	691	0.0	0.0	1998 04 17	691	0.9-	0.2-
1992 01 31	691	0.1+	0.9+	1998 04 17	691	1.2-	0.2-
1998 03 20	704	0.3+	0.2-	1998 04 17	691	2.4-	0.1-
1998 03 20	704	0.7-	0.8-	1998 04 18	691	0.3+	0.3+
1998 03 20	704	0.6-	2.0+	1998 04 18	691	0.1+	0.0
1998 03 20	704	0.8-	0.6+	1998 04 18	691	0.1+	0.1+
1998 03 20	704	0.5-	0.4+	1998 04 20	704	0.7+	0.1-
1998 03 22	704	0.0	0.2+	1998 04 20	704	0.9+	0.7-
1998 03 22	704	0.7+	0.3-	1998 04 20	704	0.8+	0.6-
1998 03 22	704	0.3+	0.0	1998 04 20	704	1.0+	0.1+
1998 03 22	704	0.5+	0.5+	1998 04 20	704	1.4-	0.3+
1998 03 22	704	0.3-	0.7+	1998 04 22	704	0.8+	0.5-
1998 03 25	704	0.2+	0.4-	1998 04 22	704	0.6+	0.3+

1998 FJ₇₂ = 1973 UZ₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	245.01322	(2000.0)		P		Q	
<i>n</i>	0.30248524	ω	153.39902	+0.95592565	+0.29341509		
<i>a</i>	2.1978595	Ω	189.55683	-0.27952642	+0.89836156		
<i>e</i>	0.1120909	<i>i</i>	3.68297	-0.08983947	+0.32688544		
<i>P</i>	3.26	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1973 10 31	033	1.2-	0.8-	1998 03 28	704	0.1+	0.3-
1973 11 02	033	1.2+	1.0+	1998 03 28	704	0.0	0.5+
1998 03 20	704	2.4+	1.6-	1998 03 28	704	0.4-	1.2-
1998 03 20	704	0.5+	1.0+	1998 03 29	704	0.1+	1.3-
1998 03 20	704	0.6-	0.0	1998 03 29	704	0.2+	0.1+
1998 03 20	704	0.5+	0.5+	1998 03 29	704	0.9+	1.4+
1998 03 22	704	0.9-	0.1-	1998 03 29	704	0.7-	1.1+
1998 03 22	704	0.6-	0.6-	1998 03 29	704	2.0-	2.0+
1998 03 22	704	0.5+	0.8-	1998 04 19	704	1.0+	0.6-
1998 03 22	704	1.6-	0.6-	1998 04 19	704	1.7+	0.4+
1998 03 28	704	0.9+	0.1+	1998 04 19	704	0.1-	1.7+

1998 FW₇₇ = 1994 GS₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	345.43986	(2000.0)		P		Q	
<i>n</i>	0.23607396	ω	190.30397	-0.48400864	+0.86853294		
<i>a</i>	2.5928098	Ω	50.83487	-0.79274484	-0.38357165		
<i>e</i>	0.0976847	<i>i</i>	7.91054	-0.37052835	-0.31388424		
<i>P</i>	4.17	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1994 04 15	691	0.7+	1.5-	1998 03 24	704	0.3-	0.3+
1994 04 15	691	0.0	0.9+	1998 03 25	704	0.2+	0.1+
1994 04 15	691	0.6-	1.1+	1998 03 25	704	0.7-	1.0+
1994 05 16	691	0.5-	0.1+	1998 03 25	704	0.5+	0.5-
1994 05 16	691	0.1+	0.5-	1998 03 25	704	0.5+	0.0

1994 05 16	691	0.1+	0.4−	1998 03 25	704	0.7−	0.3+	1998 05 16	704	0.5−	0.1+
1998 03 24	704	0.0	0.8−	1998 04 20	704	0.6+	0.6−	1998 05 16	704	2.0+	0.5+
1998 03 24	704	0.3−	0.9+	1998 04 20	704	2.1+	0.4−	1998 05 16	704	0.3−	0.9+
1998 03 24	704	0.4−	1.0−	1998 04 20	704	0.3−	0.1−	1998 05 16	704	0.1−	1.0−
1998 03 24	704	0.9+	0.8−	1998 04 20	704	0.8−	0.6−				

1998 FH₇₈ = 1995 SH₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	340.48502		(2000.0)		P		Q
<i>n</i>	0.22935606	ω	66.81671	−0.45282183			+0.89146307
<i>a</i>	2.6431952	Ω	176.14867	−0.87935067			−0.44362512
<i>e</i>	0.0334960	<i>i</i>	13.50344	−0.14729147			−0.09214312
<i>P</i>	4.30	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 09 18	691	0.2−	0.2−	1998 03 24	704	1.4−	0.5+	1998 04 21	704	1.1+	0.7+
1995 09 18	691	0.3−	0.2−	1998 03 24	704	1.2−	2.1+	1998 04 21	704	0.8+	0.9−
1995 09 18	691	0.2−	0.2+	1998 03 25	704	0.5+	0.1+	1998 04 21	704	1.0+	0.6−
1995 09 27	691	0.2+	0.2−	1998 03 25	704	1.0+	1.2+	1998 04 24	704	0.7−	0.4−
1995 09 27	691	0.0	0.3+	1998 03 25	704	0.6−	1.1−	1998 04 24	704	1.8−	1.6−
1995 09 27	691	0.5+	0.1+	1998 03 25	704	1.0−	0.1−	1998 04 24	704	1.4−	0.6+
1998 03 24	704	1.2+	2.4−	1998 03 25	704	0.6+	0.5−	1998 04 24	704	0.8−	0.3+
1998 03 24	704	0.7−	0.4+	1998 04 21	704	1.3+	0.1+	1998 04 24	704	0.6−	1.1+
1998 03 24	704	0.8+	0.2−	1998 04 21	704	1.6+	0.8+				

1998 FK₁₁₃ = 1987 DK₄ = 1992 CC₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	46.45290		(2000.0)		P		Q
<i>n</i>	0.18547725	ω	258.50782	−0.93395493			−0.33827987
<i>a</i>	3.0451518	Ω	261.63827	+0.35613566			−0.85389347
<i>e</i>	0.1053185	<i>i</i>	6.69260	+0.02992608			−0.39551570
<i>P</i>	5.31	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 02 23	010	0.3−	0.1+	1998 03 31	704	1.6+	1.2+	1998 04 19	704	0.5+	0.3−
1987 02 24	010	(4.1−	2.2+)	1998 03 31	704	1.8−	0.9+	1998 04 19	704	0.7−	0.4−
1987 02 24	010	1.5+	2.5+	1998 03 31	704	0.8−	0.3−	1998 04 19	704	0.0	0.8−
1992 02 02	809	0.5−	0.8−	1998 04 01	704	0.1−	0.4+	1998 04 20	704	0.2+	0.8−
1992 02 02	809	1.0+	0.7−	1998 04 01	704	0.2−	0.5+	1998 04 20	704	1.0+	0.4+
1992 02 02	809	1.1−	0.6−	1998 04 01	704	1.1−	0.9−	1998 04 20	704	0.7−	0.3−
1998 03 31	704	0.4−	0.3+	1998 04 01	704	2.0+	0.3−	1998 04 20	704	0.4+	0.3+
1998 03 31	704	0.2+	0.9−	1998 04 19	704	0.0	0.6−	1998 04 20	704	0.7−	0.3+

1998 FH₁₁₅ = 1968 QT = 1992 PF₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	221.05398		(2000.0)		P		Q
<i>n</i>	0.28600084	ω	104.39034	+0.96264576			−0.25552593
<i>a</i>	2.2815212	Ω	270.47360	+0.20082167			+0.89564189
<i>e</i>	0.2199832	<i>i</i>	5.13803	+0.18161441			+0.36404959
<i>P</i>	3.45	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1968 08 27	095	0.5+	2.9−	1998 03 31	704	0.3+	0.2+	1998 04 21	704	0.3+	0.5−
1968 08 31	095	0.1−	2.4+	1998 03 31	704	0.1−	0.1−	1998 04 21	704	0.5−	0.1+
1992 08 06	675	0.1−	0.7+	1998 03 31	704	0.0	0.5−	1998 04 21	704	0.6+	0.2+
1992 08 06	675	0.1+	0.6−	1998 03 31	704	0.6−	1.2−	1998 04 21	704	0.0	0.8+
1992 08 06	675	0.1+	1.1+	1998 04 01	704	0.6+	0.7−	1998 04 22	704	0.2−	0.3−
1992 08 06	675	0.0	0.5−	1998 04 01	704	0.4+	0.2+	1998 04 22	704	0.1−	0.0
1992 08 07	675	0.2+	0.3−	1998 04 01	704	0.9+	0.3−	1998 04 22	704	0.1+	0.0
1992 08 07	675	0.3−	0.1+	1998 04 01	704	1.3−	1.9+	1998 04 22	704	0.8−	0.3−
1998 03 31	704	1.0+	0.5−	1998 04 21	704	0.5−	0.3+	1998 04 22	704	0.1+	0.4+

1998 FR₁₁₅ = 1979 WJ

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	104.85374		(2000.0)		P		Q
<i>n</i>	0.18301970	ω	110.19908	−0.12733498			−0.99099464
<i>a</i>	3.0723510	Ω	346.90954	+0.82802027			−0.08321977
<i>e</i>	0.1200830	<i>i</i>	10.53687	+0.54604783			−0.10490037
<i>P</i>	5.39	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1979 11 22	675	0.2−	0.2+	1998 03 31	704	1.4−	0.7−	1998 04 18	704	0.8+	1.0−
1979 11 24	675	0.2+	0.2−	1998 03 31	704	(3.6−	3.0−)	1998 04 18	704	0.6−	0.3+
1998 03 25	704	0.4+	1.1+	1998 04 01	704	0.3+	1.4+	1998 04 18	704	(5.2−	2.9+)
1998 03 25	704	1.2+	0.3−	1998 04 01	704	0.1−	0.6+	1998 04 20	704	0.3+	0.9−
1998 03 25	704	0.8+	1.4−	1998 04 01	704	0.6−	0.8+	1998 04 20	704	0.8+	0.1−
1998 03 25	704	(3.4+	1.8+)	1998 04 01	704	1.2−	0.2+	1998 04 20	704	0.1+	0.8+
1998 03 31	704	0.3+	0.1+	1998 04 01	704	0.2−	0.2−	1998 04 20	704	0.7+	0.8+
1998 03 31	704	1.0−	0.7−	1998 04 18	704	0.6−	1.0−				

1998 FY₁₁₆ = 1950 NP₁ = 1981 NA₁ = 1986 TP₄ = 1990 SE₁₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	298.54440		(2000.0)		P		Q
<i>n</i>	0.22228881	ω	21.96909	+0.47325521			+0.87625097
<i>a</i>	2.6989260	Ω	276.37753	−0.82119757			+0.40158986
<i>e</i>	0.1469923	<i>i</i>	5.23231	−0.31884802			+0.26628900
<i>P</i>	4.43	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 07 15	760	0.1−	1.3−	1998 03 31	704	0.6+	0.2−	1998 04 20	704	0.6+	0.3−
1950 07 15	760	0.2+	1.1+	1998 03 31	704	0.5−	0.6−	1998 04 20	704	0.5−	0.6−
1981 07 02	805	0.1−	1.4+	1998 03 31	704	0.2+	1.5+	1998 04 30	699	0.5+	0.5+
1981 07 02	805	0.0	0.3+	1998 04 01	704	0.3−	0.2−	1998 04 30	699	0.1+	0.1+
1986 10 09	033	0.3−	0.4+	1998 04 01	704	0.2+	0.1+	1998 04 30	699	0.3+	0.6+
1986 10 10	033	0.1+	0.8+	1998 04 01	704	0.3−	0.1+	1998 05 03	566	0.4+	0.3−
1990 09 16	675	0.2+	1.8−	1998 04 01	704	0.1+	0.6+	1998 05 03	566	0.1+	0.1+
1990 09 16	675	(1.9−	5.5−)	1998 04 01	704	0.1−	0.9+	1998 05 03	566	0.4−	0.1−
1998 03 25	704	1.4−	0.4+	1998 04 18	704	0.7+	0.8−	1998 05 16	704	1.1+	0.6−
1998 03 25	704	1.5−	0.6+	1998 04 18	704	0.9+	2.1−	1998 05 16	704	0.6+	0.5−
1998 03 25	704	1.6−	0.9+	1998 04 18	704	0.3−	1.2−	1998 05 16	704	0.1+	1.2+
1998 03 25	704	0.7−	0.7+	1998 04 18	704	0.7−	0.1−	1998 05 16	704	1.1+	0.3−
1998 03 25	704	0.9−	1.0+	1998 04 20	704	0.1+	0.2−	1998 05 16	704	0.9+	0.9−
1998 03 31	704	0.9+	0.1−	1998 04 20	704	0.3+	0.0				
1998 03 31	704	0.2−	0.5−	1998 04 20	704	0.5−	0.3+				

1998 FS₁₂₀ = 1993 FM₅₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	91.74946		(2000.0)		P		Q
<i>n</i>	0.19004778	ω	273.83646	+0.08992391			−0.99526544
<i>a</i>	2.9961314	Ω	170.75787	+0.98039786			+0.08194035
<i>e</i>	0.1631892	<i>i</i>	13.27649	+0.17531037			+0.05227310
<i>P</i>	5.19	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 17	809	1.0−	0.3−	1998 03 22	704	1.6+	0.8+	1998 03 29	704	1.3−	0.7−
1993 03 18	809	0.9+	0.0	1998 03 22	704	0.2+	0.3+	1998 03 29	704	1.3+	0.9+
1998 02 23	327	0.4−	0.3−	1998 03 22	704	1.1+	0.3+	1998 03 29	704	0.6−	0.4+
1998 02 23	327	0.1−	0.0	1998 03 24	327	1.2+	0.1−	1998 04 17	327	0.6−	0.1+
1998 02 23	327	0.3−	0.6−	1998 03 24	327	0.9+	0.0	1998 04 17	327	0.1+	0.5−
1998 03 20	704	0.6−	0.2+	1998 03 24	327	0.1−	0.3+	1998 04 17	327	0.2−	0.3+
1998 03 20	704	0.1+	1.3−	1998 03 24	327	0.2+	0.8+	1998 04 24	327	0.0	0.3−
1998 03 20	704	1.0−	0.0	1998 03 29	704	1.7−	1.9−	1998 04 24	327	0.7−	0.4+
1998 03 20	704	0.3+	0.0	1998 03 29	704	0.6+	0.9+	1998 04 24	327	0.2−	0.1−

1998 FQ₁₂₁ = 1998 HW₁₂₉ = 1977 EB₉ = 1978 TT₆ = 1985 SC₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	298.53165		(2000.0)		P		Q
<i>n</i>	0.28302607	ω	53.44301	+0.49981118			+0.86612835
<i>a</i>	2.2974801	Ω	246.54480	-0.79578562			+0.45773760
<i>e</i>	0.1854178	<i>i</i>	0.20211	-0.34192693			+0.20074356
<i>P</i>	3.48	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 03 14	381	1.4-	0.7+	1998 03 22	704	0.4-	0.2+	1998 04 01	704	0.7-	1.0+
1977 03 14	381	1.3+	0.5-	1998 03 22	704	0.1-	0.1+	1998 04 01	704	0.4-	1.0+
1977 03 15	381	0.5-	1.6-	1998 03 22	704	0.8+	0.7+	1998 04 01	704	0.0	1.3+
1977 03 15	381	(4.5-	0.9-)	1998 03 28	704	0.2+	0.5+	1998 04 19	704	0.8+	0.0
1978 10 02	095	(5.3-	8.8+)	1998 03 28	704	0.3+	0.3+	1998 04 19	704	0.4+	0.1-
1985 09 21	095	0.3-	1.0+	1998 03 28	704	0.3-	0.2+	1998 04 19	704	0.0	0.5+
1998 03 02	910	0.4+	0.6+	1998 03 28	704	0.5-	0.7-	1998 04 19	704	0.5+	1.0-
1998 03 03	910	0.5+	0.1+	1998 03 28	704	0.1-	0.2-	1998 04 19	704	0.0	1.5-
1998 03 03	910	0.5+	0.2+	1998 03 29	704	(2.9-	0.1-)	1998 04 20	704	0.5+	0.2+
1998 03 20	704	0.6+	0.7-	1998 03 29	704	0.6-	0.0	1998 04 20	704	0.3+	0.3+
1998 03 20	704	(5.6-	0.2-)	1998 03 29	704	1.5-	0.3-	1998 04 20	704	0.7+	0.2-
1998 03 20	704	0.1+	0.2+	1998 03 29	704	0.3-	1.2+	1998 04 20	704	0.8+	1.2-
1998 03 20	704	0.3-	0.7-	1998 03 29	704	0.6-	0.0	1998 04 20	704	0.0	0.4-
1998 03 20	704	0.3-	0.9-	1998 04 01	704	0.1-	0.7+				
1998 03 22	704	0.3-	0.4+	1998 04 01	704	0.2+	0.3+				

1998 FH₁₂₃ = 1995 QZ₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	8.56581		(2000.0)		P		Q
<i>n</i>	0.23648138	ω	297.55103	-0.74351347			+0.66801599
<i>a</i>	2.5898310	Ω	284.38042	-0.60182130			-0.68843970
<i>e</i>	0.2606462	<i>i</i>	1.81606	-0.29154561			-0.28249853
<i>P</i>	4.17	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 08 22	691	0.1-	0.9+	1998 03 25	699	0.5+	0.0	1998 04 01	704	0.8-	0.1-
1995 08 22	691	0.1+	1.1+	1998 03 25	699	0.0	0.4+	1998 04 01	704	1.7-	1.4+
1995 08 22	691	0.4-	1.0+	1998 03 25	699	0.4-	0.2-	1998 04 20	704	0.1+	0.8-
1995 10 28	691	0.4-	0.6+	1998 03 25	704	0.5+	0.6+	1998 04 20	704	0.6-	0.6+
1995 10 28	691	1.0-	0.8+	1998 03 25	704	0.4+	1.2+	1998 04 20	704	1.4+	0.8-
1995 10 28	691	0.3-	0.5+	1998 03 25	704	0.6-	0.1+	1998 04 20	704	0.5+	1.1+
1998 03 20	704	0.6+	0.7+	1998 03 25	704	(3.1-	0.1+)	1998 04 20	704	0.6-	0.3+
1998 03 20	704	1.4+	0.6-	1998 03 29	704	0.1-	0.8+	1998 04 22	704	0.4+	1.7-
1998 03 20	704	1.3+	0.5-	1998 03 29	704	0.7-	0.3-	1998 04 22	704	0.0	0.8-
1998 03 20	704	0.1-	1.8-	1998 03 29	704	0.1+	0.3+	1998 04 22	704	0.8+	1.0-
1998 03 22	704	0.2+	1.0+	1998 03 29	704	2.2-	1.9+	1998 04 22	704	0.0	0.3-
1998 03 22	704	0.4+	0.1-	1998 03 29	704	0.6-	1.1+	1998 04 22	704	0.9+	1.5-
1998 03 22	704	0.8+	0.4+	1998 04 01	704	0.2-	0.6+	1998 04 30	699	0.6+	0.0
1998 03 22	704	0.9+	0.7+	1998 04 01	704	0.6-	0.3+	1998 04 30	699	0.1+	0.3+
1998 03 22	704	1.3-	1.0-	1998 04 01	704	0.2+	0.6+	1998 04 30	699	0.0	0.3+

1998 FL₁₂₃ = 1994 CQ₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	20.82669		(2000.0)		P		Q
<i>n</i>	0.26112653	ω	270.70130	-0.97824934			+0.20582117
<i>a</i>	2.4242015	Ω	281.17652	-0.17831746			-0.89796644
<i>e</i>	0.1309764	<i>i</i>	1.50724	-0.10597691			-0.38896520
<i>P</i>	3.77	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 02 11	691	0.5+	0.2-	1998 03 22	704	0.6+	0.3+	1998 04 01	704	1.9-	2.3+
1994 02 11	691	0.2+	0.2-	1998 03 22	704	0.3+	0.0	1998 04 01	704	2.2-	1.8+
1994 02 11	691	0.2+	0.3-	1998 03 28	704	2.2+	2.0+	1998 04 01	704	1.0-	2.6+
1994 02 16	691	0.5-	0.5-	1998 03 28	704	1.0+	0.3-	1998 04 01	704	1.4+	0.8+
1994 02 16	691	0.7-	0.1-	1998 03 28	704	1.1+	1.3-	1998 04 01	704	1.1-	0.6-
1994 02 16	691	0.2-	0.4-	1998 03 28	704	0.4+	0.6-	1998 04 19	704	1.7-	0.5+

1998 03 20	704	0.3-	0.2-	1998 03 28	704	0.5-	2.9-	1998 04 19	704	0.5+	1.8-
1998 03 20	704	1.0+	0.2+	1998 03 29	704	2.1+	0.1+	1998 04 19	704	1.2-	3.8-
1998 03 20	704	0.5-	1.3+	1998 03 29	704	0.7+	0.9+	1998 04 19	704	1.5+	2.5-
1998 03 20	704	0.4-	2.0+	1998 03 29	704	0.7+	0.4+	1998 04 19	704	1.4-	1.1-
1998 03 22	704	1.7+	0.5-	1998 03 29	704	1.4+	2.6+				
1998 03 22	704	1.1-	0.8-	1998 03 29	704	3.1-	0.8-				

1998 FN₁₂₃ = 9050 P-L

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	147.30130		(2000.0)		P		Q
<i>n</i>	0.27486141	ω	79.80148	+0.56583465			-0.82412051
<i>a</i>	2.3427550	Ω	335.68365	+0.73003071			+0.51519427
<i>e</i>	0.1146316	<i>i</i>	3.56756	+0.38325750			+0.23537257
<i>P</i>	3.59	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 10 17	675	1.2-	0.4-	1998 03 22	704	0.7+	0.1+	1998 03 29	704	1.3-	1.1-
1960 10 22	675	0.1-	0.6+	1998 03 22	704	2.0+	2.8+	1998 04 01	704	1.0+	1.8-
1960 10 24	675	0.3-	0.2-	1998 03 28	704	2.0+	0.5-	1998 04 01	704	0.3+	0.1-
1960 10 26	675	1.8+	0.1-	1998 03 28	704	1.4-	1.4-	1998 04 01	704	0.9+	1.2+
1998 03 20	704	0.3-	0.1-	1998 03 28	704	0.2-	0.7+	1998 04 01	704	1.0+	1.0+
1998 03 20	704	0.0	0.9-	1998 03 28	704	1.4-	0.4-	1998 04 01	704	3.5-	2.0+
1998 03 20	704	0.8-	0.5+	1998 03 29	704	0.7+	0.1-	1998 04 19	704	(4.7-	0.8-)
1998 03 20	704	0.2+	2.2-	1998 03 29	704	1.7-	0.6+	1998 04 19	704	0.4-	0.7-
1998 03 22	704	0.3+	0.2+	1998 03 29	704	0.1+	1.7+	1998 04 19	704	0.8+	0.6-
1998 03 22	704	1.0+	1.0-	1998 03 29	704	1.0-	0.4+	1998 04 19	704	1.1+	0.4-

1998 FP₁₂₆ = 1994 RV₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano

<i>M</i>	359.68834		(2000.0)		P		Q
<i>n</i>	0.17645155	ω	45.63031	-0.88830426			+0.45709906
<i>a</i>	3.1481281	Ω	161.42942	-0.45098309			-0.84991962
<i>e</i>	0.1184274	<i>i</i>	8.02347	-0.08677434			-0.26210128
<i>P</i>	5.59	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 09 02	691	0.6+	0.3+	1998 03 31	046	0.1+	0.0	1998 04 20	046	0.4-	0.2+
1994 09 02	691	0.1+	0.4+	1998 03 31	046	0.4-	0.4-	1998 04 20	046	0.1+	0.2+
1994 09 02	691	0.0	0.4+	1998 03 31	046	0.3-	0.2-	1998 04 20	046	0.4-	0.3-
1994 09 08	691	0.0	0.7-	1998 04 07	046	1.0+	0.4+	1998 04 20	046	0.4-	0.3+
1994 09 08	691	0.5-	0.5-	1998 04 07	046	0.5+	0.1-	1998 04 22	046	0.6+	0.5-
1994 09 08	691	0.2-	0.1+	1998 04 07	046	0.1-	0.7+	1998 04 22	046	0.1+	0.4-
1998 03 31	046	0.7-	0.2+	1998 04 20	046	0.8-	0.4+	1998 04 22	046	1.1+	0.4-

1998 FZ₁₃₀ = 1988 RB₄ = 1994 CS₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	281.42063		(2000.0)		P		Q
<i>n</i>	0.26984277	ω	303.02714	+0.68941621			+0.72400967
<i>a</i>	2.3717133	Ω	10.64965	-0.61687612			+0.60325124
<i>e</i>	0.1269061	<i>i</i>	7.05566	-0.37969613			+0.33451149
<i>P</i>	3.65	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1988 09 09	033	0.4+	0.1-	1994 02 13	809	0.5+	0.2+	1998 03 29	704	0.7-	0.0
1988 09 10	033	0.1-	0.1-	1998 03 22	704	0.3+	0.2-	1998 03 29	704	0.4-	0.5-
1988 09 10	033	0.5-	1.1-	1998 03 22	704	(2.7+	1.2-)	1998 03 29	704	0.2-	0.5-
1988 09 11	033	0.4+	1.0+	1998 03 22	704	0.9+	0.3+	1998 04 01	704	1.5-	0.0
1994 02 08	809	0.6-	1.7-	1998 03 22	704	0.1-	0.8+	1998 04 01	704	1.0-	1.3+
1994 02 08	809	(2.3-	2.3-)	1998 03 22	704	(3.2-	0.8-)	1998 04 01	704	0.1+	1.2-
1994 02 08	809	(2.3-	2.5-)	1998 03 25	704	0.2-	0.4+	1998 04 01	704	0.5+	0.4-
1994 02 10	809	0.1+	0.6+	1998 03 25	704	0.6-	0.1-	1998 04 01	704	0.8-	0.3+
1994 02 10	809	0.0	0.8+	1998 03 25	704	0.7-	0.6-	1998 04 22	704	0.3+	1.7+
1994 02 10	809	0.0	1.2+	1998 03 25	704	(2.2-	0.1+)	1998 04 22	704	1.0+	0.7+
1994 02 13	809	0.6+	0.5-	1998 03 29	704	1.1+	1.3-	1998 04 22	704	(0.6-	2.1+)
1994 02 13	809	0.4-	0.4-	1998 03 29	704	0.6+	0.2-	1998 04 22	704	1.4+	1.0-

1998 AUG. 8

M.P.C. 32263

1998 GB₇ = 1986 LK₁ = 1993 BE₁₅
 Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	243.14201	ω	232.97139	+0.89944792	+0.35694483		
<i>a</i>	2.6217120	Ω	104.87424	−0.26964595	+0.90733122		
<i>e</i>	0.0976887	<i>i</i>	15.12351	−0.34392514	+0.22212711		
<i>P</i>	4.24	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 05 31	809	0.8−	0.0	1998 04 02	704	0.0	0.2−	1998 05 16	704	0.1−	0.2−
1986 06 03	809	0.5−	1.1+	1998 04 03	704	0.1+	0.4−	1998 05 16	704	0.2+	1.7−
1986 06 03	809	0.7+	0.5+	1998 04 03	704	0.1+	0.3+	1998 05 29	704	0.2−	0.7+
1986 06 04	809	1.0+	0.6−	1998 04 03	704	0.6+	0.1+	1998 05 29	704	(2.1+ 0.3−)	
1986 06 07	809	0.1+	1.2−	1998 04 03	704	0.1+	0.4−	1998 05 29	704	0.1+	1.2−
1986 06 07	809	0.2−	1.1+	1998 04 03	704	0.1−	0.3−	1998 05 29	704	0.1+	0.7+
1986 06 08	809	(4.2− 2.4−)		1998 04 24	704	0.3−	0.4−	1998 05 29	704	1.0+	0.4−
1993 01 18	400	1.9+	0.4+	1998 04 24	704	0.8−	0.2−	1998 06 21	699	0.6+	0.2−
1993 01 18	400	0.5+	0.2+	1998 04 24	704	0.5−	0.9+	1998 06 21	699	0.8+	0.4−
1993 01 22	399	0.5−	1.0+	1998 04 24	704	0.2−	0.2+	1998 06 21	699	0.7−	1.0+
1993 01 22	399	1.9−	0.5−	1998 04 24	704	0.6−	0.2−	1998 06 22	699	0.1+	0.6+
1998 04 02	704	0.4−	0.3+	1998 05 16	704	(2.0− 0.0)		1998 06 22	699	0.6−	0.4+
1998 04 02	704	0.9+	0.3+	1998 05 16	704	0.0	0.3+	1998 06 22	699	0.2−	0.1−

1998 GV₈ = 1989 GR
 Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	6.79871	ω	102.58875	−0.76612607	+0.60532429		
<i>a</i>	2.6762953	Ω	115.07433	−0.64221087	−0.70806881		
<i>e</i>	0.1335236	<i>i</i>	13.79308	−0.02482036	−0.36362214		
<i>P</i>	4.38	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 04 06	675	1.8+	0.4+	1998 04 28	704	0.1−	0.2+	1998 05 29	704	0.2+	0.1+
1989 04 06	675	(2.3− 3.2−)		1998 04 28	704	0.2−	0.2+	1998 05 29	704	0.4+	1.9+
1989 04 08	675	1.7−	0.9−	1998 04 28	704	0.8−	0.4+	1998 05 29	704	0.0	0.1−
1989 04 08	675	0.2+	1.6+	1998 05 16	704	0.1−	0.4+	1998 05 29	704	(1.3− 2.7+)	
1998 04 02	704	0.1+	0.4−	1998 05 16	704	0.6+	0.7+	1998 06 17	704	1.0+	1.5−
1998 04 02	704	0.0	0.5−	1998 05 16	704	0.7−	0.3+	1998 06 17	704	0.9−	1.5+
1998 04 02	704	0.4−	0.5−	1998 05 16	704	(2.5+ 1.3+)		1998 06 17	704	0.4−	0.0
1998 04 03	704	0.1+	0.4−	1998 05 16	704	0.8+	0.3−	1998 06 17	704	0.3+	1.5−
1998 04 03	704	(2.8+ 0.9−)		1998 05 28	704	0.2+	0.2+	1998 06 17	704	0.5−	1.2+
1998 04 03	704	0.7−	0.1−	1998 05 28	704	0.3+	0.8−	1998 06 21	699	0.1−	0.8+
1998 04 03	704	0.0	0.3−	1998 05 28	704	0.4−	0.3−	1998 06 21	699	0.4+	0.0
1998 04 03	704	0.8+	0.7−	1998 05 28	704	0.5−	0.2−	1998 06 21	699	0.5+	0.7−
1998 04 28	704	0.1−	0.5+	1998 05 28	704	0.8−	0.1+				
1998 04 28	704	0.1+	0.4−	1998 05 29	704	0.6+	0.0				

1998 GL₉ = 1993 CP
 Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	55.63458	ω	27.31093	−0.90625907	−0.35997637		
<i>a</i>	2.7413142	Ω	129.79735	+0.31570172	−0.92499034		
<i>e</i>	0.1382806	<i>i</i>	16.76450	+0.28111727	−0.12169584		
<i>P</i>	4.54	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 02 10	399	0.2+	0.1+	1998 04 03	704	0.5+	0.1+	1998 06 17	704	1.7+	0.6+
1993 02 10	399	0.6−	0.6−	1998 04 03	704	0.1+	0.5−	1998 06 17	704	0.4−	0.3−
1993 02 13	399	1.0+	0.4−	1998 04 03	704	0.4+	1.0−	1998 06 17	704	1.0+	0.7+
1993 02 13	399	2.1+	0.9−	1998 04 03	704	0.0	0.4−	1998 06 17	704	0.5+	0.8−
1993 02 21	399	1.5−	0.6+	1998 05 28	704	0.5−	0.3+	1998 06 21	699	0.5−	1.1+
1993 02 21	399	1.2−	2.1+	1998 05 28	704	0.1+	0.0	1998 06 21	699	0.4+	0.1−
1998 04 02	704	0.2−	0.7−	1998 05 28	704	1.0−	0.8+	1998 06 21	699	0.2−	0.2−
1998 04 02	704	0.6−	0.3−	1998 05 28	704	1.4−	0.9−	1998 06 22	699	0.0	0.4+

1998 04 02 704 0.2− 0.6+ 1998 05 28 704 1.2− 1.2+ 1998 06 22 699 0.4− 0.1+
 1998 04 03 704 0.1+ 0.5− 1998 06 17 704 1.2+ 0.1+ 1998 06 22 699 0.6+ 0.3−

1998 GQ₁₀ = 1994 GO₄
 Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	57.30103	ω	262.14207	−0.26128677	−0.96430674		
<i>a</i>	2.5750759	Ω	203.14259	+0.92305867	−0.23661323		
<i>e</i>	0.4021793	<i>i</i>	6.26886	+0.28229758	−0.11885577		
<i>P</i>	4.13	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 04 06	691	0.4+	0.0	1998 03 20	704	0.1−	0.5−	1998 04 01	704	0.9+	1.4−
1994 04 06	691	0.8+	0.7−	1998 03 20	704	0.1−	0.3−	1998 04 01	704	0.6+	0.5+
1994 04 06	691	0.1+	0.2−	1998 03 20	704	0.3−	1.5−	1998 04 01	704	1.1−	0.4+
1994 04 16	691	0.2−	0.4+	1998 03 20	704	(2.1− 0.8−)		1998 04 01	704	0.2−	0.8+
1994 04 16	691	0.4−	0.3+	1998 03 29	704	0.6+	0.3−	1998 04 04	725	0.4−	0.8+
1994 04 16	691	0.8−	0.1+	1998 03 29	704	0.1+	0.3+	1998 04 04	725	0.3−	0.8+
1998 02 27	566	0.2−	0.3+	1998 03 29	704	0.0	0.4+	1998 04 05	725	0.0	0.3+
1998 02 27	566	0.2+	0.2+	1998 03 29	704	0.2−	0.3+	1998 04 05	725	0.1−	0.4+
1998 02 27	566	0.0	0.6+	1998 03 29	704	0.1−	0.1−				
1998 03 20	704	0.3+	1.1−	1998 04 01	704	0.4+	0.8−				

1998 HV₇ = 1975 TM₅ = 1975 VN₇ = 1990 TR₇ = 1994 NL₇
 Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	224.28873	ω	122.37494	+0.99979874	−0.01369786		
<i>a</i>	2.9288532	Ω	238.41378	+0.00690905	+0.92102193		
<i>e</i>	0.0798918	<i>i</i>	0.98592	+0.01883455	+0.38926979		
<i>P</i>	5.01	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 10 14	095	1.5+	0.8+	1998 03 29	704	0.1+	0.1+	1998 04 21	120	0.2−	0.3+
1975 11 06	095	1.5−	0.2−	1998 03 29	704	0.8−	0.2+	1998 04 22	704	0.4−	0.9−
1990 10 13	033	0.3+	0.4+	1998 04 01	704	0.2−	0.4+	1998 04 22	704	0.4+	0.4−
1990 10 13	033	0.0	0.5+	1998 04 01	704	0.3+	0.4+	1998 04 22	704	1.1−	1.0+
1990 10 14	033	0.1−	0.9+	1998 04 01	704	0.4+	0.2+	1998 04 22	704	1.0−	0.2+
1990 10 18	033	0.7−	0.2−	1998 04 01	704	0.6+	0.7+	1998 04 22	704	0.3−	0.5−
1994 07 11	809	0.9+	0.1+	1998 04 01	704	1.2+	0.8+	1998 04 23	120	0.6+	1.5+
1994 07 11	809	0.0	0.2−	1998 04 20	704	0.2+	0.5−	1998 04 23	120	1.9+	0.7−
1994 07 11	809	1.3+	0.5+	1998 04 20	704	1.3−	1.0−	1998 04 23	120	0.9−	1.0+
1994 07 12	809	0.2−	0.1+	1998 04 20	704	1.2+	0.1+	1998 04 25	699	1.5+	0.3−
1994 07 12	809	1.0−	0.6+	1998 04 20	704	0.0	1.0−	1998 04 25	699	0.7+	0.5−
1994 07 12	809	1.2−	0.5−	1998 04 20	704	1.3−	0.1+	1998 04 25	699	0.8+	0.4+
1998 03 25	704	0.4−	0.2+	1998 04 21	704	0.1−	0.2−	1998 05 16	704	0.6+	0.6−
1998 03 25	704	0.8+	0.0	1998 04 21	704	0.3−	0.1−	1998 05 16	704	1.5−	0.2−
1998 03 25	704	(0.7+ 2.7−)		1998 04 21	704	0.0	0.5+	1998 05 16	704	1.0−	0.4+
1998 03 25	704	(3.2− 2.6+)		1998 04 21	704	0.7+	0.3−	1998 05 16	704	0.0	0.8+
1998 03 29	704	0.1−	0.3+	1998 04 21	704	0.1+	0.6−	1998 05 28	699	0.4+	0.5+
1998 03 29	704	0.5−	0.3−	1998 04 21	120	0.6−	0.4−	1998 05 28	699	0.1+	0.1+
1998 03 29	704	0.2−	0.5−	1998 04 21	120	0.1+	1.5+	1998 05 28	699	0.6+	0.3−

1998 HQ₁₂ = 1990 DK₂
 Epoch 1998 July 6.0 TT = JDT 2451000.5

M	87.93094		(2000.0)			P		Q		
n	0.26480993	ω	3.69491			−0.86677591		−0.48291941		
a	2.4016693	Ω	146.49661			+0.45157252		−0.86593155		
e	0.1166028	i	13.03008			+0.21161705		−0.13019751		
P	3.72	H	15.0			G	0.15	U	5	
Residuals in seconds of arc										
1990 02 24	809	(1.0− 2.8−)	1998 04 19	691	0.0	0.4+	1998 05 23	704	0.8−	0.3−
1990 02 24	809	(0.7− 2.7−)	1998 04 24	691	0.4−	0.3+	1998 05 26	704	1.4+	0.2−
1990 02 24	809	(0.2+ 2.8−)	1998 04 24	691	0.6−	0.3+	1998 05 26	704	0.2+	0.3+
1990 02 25	809	0.5− 0.2−	1998 04 24	691	0.4−	0.2+	1998 05 26	704	0.8+	0.9−

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1990 02 25	809	0.0	0.1−	1998 04 27	691	0.1−	0.2+	1998 05 26	704	0.3−	1.0−
1990 02 25	809	0.5+	0.0	1998 04 27	691	0.1−	0.2+	1998 05 26	704	0.2+	1.5−
1990 02 28	809	(3.4−	1.7+)	1998 04 27	691	0.2−	0.3+	1998 06 03	704	0.4−	1.4+
1990 02 28	809	(3.1−	2.1+)	1998 05 23	704	0.6+	0.6−	1998 06 03	704	(2.4+	2.0+)
1990 02 28	809	(3.1−	2.3+)	1998 05 23	704	1.2+	0.1+	1998 06 03	704	0.6−	0.7+
1998 04 19	691	0.1+	0.3+	1998 05 23	704	0.3+	0.1+	1998 06 03	704	1.3−	0.7−
1998 04 19	691	0.3+	0.6+	1998 05 23	704	(0.5−	2.1−)				

1998 HL₁₄ = 1992 BG₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Nakano							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17255023	<i>ω</i>	49.53499	−0.13230639	−0.94433789		
<i>a</i>	3.1954033	<i>Ω</i>	50.75854	+0.75026207	−0.29399238		
<i>e</i>	0.1041910	<i>i</i>	22.88617	+0.64776681	+0.14762936		
<i>P</i>	5.71	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 01 30	675	0.7−	0.1+	1998 04 23	699	1.2−	0.8−	1998 04 27	566	0.0	0.5−
1992 01 30	675	0.4+	0.3−	1998 04 23	699	1.1−	0.8−	1998 05 01	566	0.1+	0.3+
1992 02 01	675	0.3+	0.3+	1998 04 26	566	0.3+	0.2+	1998 05 01	566	0.1−	0.2−
1998 04 22	699	2.1+	0.6+	1998 04 26	566	0.4−	0.3−	1998 05 01	566	0.1−	0.1+
1998 04 22	699	1.4−	1.8+	1998 04 26	566	0.1−	0.0	1998 05 02	566	0.2−	0.3+
1998 04 22	699	(3.1−	2.8+)	1998 04 27	566	0.2−	0.1+	1998 05 02	566	0.3+	0.0
1998 04 23	699	1.9+	0.6−	1998 04 27	566	0.1−	0.1−	1998 05 02	566	0.2+	0.0

1998 HC₁₉ = 2217 T-3

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21579746	<i>ω</i>	77.01260	+0.96185935	−0.27115629		
<i>a</i>	2.7527821	<i>Ω</i>	298.71056	+0.23232532	+0.87939198		
<i>e</i>	0.1337495	<i>i</i>	2.35685	+0.14440062	+0.39133620		
<i>P</i>	4.57	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 11	675	0.5−	0.7+	1998 03 20	704	1.2−	0.5−	1998 04 18	704	0.5−	1.5−
1977 10 11	675	0.7−	0.1+	1998 03 28	704	1.2+	1.1+	1998 04 19	704	0.2+	1.1+
1977 10 12	675	1.1−	0.7+	1998 03 28	704	1.9+	1.3+	1998 04 19	704	0.8+	0.2−
1977 10 12	675	1.0−	0.1−	1998 03 28	704	1.0+	1.4+	1998 04 19	704	0.1−	1.3+
1977 10 16	675	0.2−	1.8−	1998 03 29	704	1.1−	1.7−	1998 04 19	704	0.3−	1.0−
1977 10 16	675	0.8+	2.6−	1998 03 29	704	0.2+	0.6+	1998 04 20	704	0.9+	0.7−
1977 10 17	675	0.2−	1.1+	1998 03 29	704	1.2−	0.1−	1998 04 20	704	0.3+	0.6+
1977 10 17	675	0.5−	0.8+	1998 04 01	704	0.6−	1.2+	1998 04 20	704	0.5+	0.5−
1977 10 21	675	1.2+	0.6−	1998 04 01	704	0.7+	0.1−	1998 04 20	704	2.1+	1.8−
1977 10 21	675	1.4+	0.8−	1998 04 01	704	0.9−	1.2−	1998 04 22	691	1.3−	0.9+
1977 10 22	675	0.6+	0.9+	1998 04 01	704	0.6−	0.1+	1998 04 22	691	1.3−	0.6+
1977 10 22	675	0.6+	0.9+	1998 04 01	704	0.7+	0.7+	1998 04 22	691	1.2−	0.9+
1998 03 20	704	1.2−	1.3−	1998 04 18	704	1.6+	0.4−	1998 04 28	691	0.4−	0.0
1998 03 20	704	0.1+	2.3+	1998 04 18	704	0.8−	0.9−	1998 04 28	691	0.5+	0.1−
1998 03 20	704	0.4+	0.7−	1998 04 18	704	0.3−	2.4−	1998 04 28	691	0.3−	0.0

1998 HN₁₉ = 1994 HG

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23844385	<i>ω</i>	159.44855	+0.99292514	−0.09606423		
<i>a</i>	2.5756013	<i>Ω</i>	206.36160	+0.07451741	−0.96174510		
<i>e</i>	0.1914511	<i>i</i>	9.04346	+0.09244906	+0.25655023		
<i>P</i>	4.13	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 04 16	691	0.4−	0.1+	1998 03 28	704	0.2−	1.2−	1998 04 01	704	(3.6−	0.1+)
1994 04 16	691	0.0	0.3+	1998 03 28	704	0.1−	0.8+	1998 04 18	704	0.6+	0.4−
1994 04 16	691	0.4+	0.0	1998 03 28	704	(5.7−	0.7+)	1998 04 18	704	0.2+	0.2−
1994 04 19	691	0.2−	0.4−	1998 03 29	704	1.2+	0.7−	1998 04 18	704	0.4−	0.9−
1994 04 19	691	0.2+	0.0	1998 03 29	704	0.9−	0.4−	1998 04 18	704	0.2−	1.0+
1994 04 19	691	0.0	0.3−	1998 03 29	704	0.8+	0.2−	1998 04 19	704	0.7−	0.6−

1998 AUG. 8

1998 03 20	704	(2.4+	0.9−)	1998 03 29	704	0.1+	0.1−	1998 04 19	704	0.5−	1.4+
1998 03 20	704	1.1−	0.1+	1998 03 29	704	0.0	0.0	1998 04 19	704	0.2+	0.5−
1998 03 20	704	0.4−	1.4+	1998 04 01	704	0.8−	0.0	1998 04 19	704	1.3+	1.1+
1998 03 20	704	(5.6−	1.2+)	1998 04 01	704	0.8+	0.5−				
1998 03 28	704	(3.9−	1.1+)	1998 04 01	704	(0.0	2.2−)				

1998 HT₁₉ = 1993 TX₁₁ = 1996 TZ₅₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.31590044	<i>ω</i>	168.95422	+0.90793935	−0.41831754		
<i>a</i>	2.1351869	<i>Ω</i>	215.80895	+0.38110345	+0.84951387		
<i>e</i>	0.1168187	<i>i</i>	2.51005	+0.17437398	+0.32146014		
<i>P</i>	3.12	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 13	675	0.3−	0.4−	1998 03 22	704	0.0	0.1−	1998 04 01	704	0.1−	0.2+
1993 10 13	675	0.3+	1.0−	1998 03 22	704	0.6+	1.3−	1998 04 01	704	1.0+	1.0+
1993 10 15	675	0.8+	0.6−	1998 03 22	704	1.6−	0.2+	1998 04 01	704	0.5−	1.8−
1993 10 15	565	2.2+	1.8+	1998 03 28	704	0.1−	0.4−	1998 04 01	704	0.7−	0.5+
1993 10 15	565	2.7−	1.0−	1998 03 28	704	1.0−	0.7+	1998 04 18	704	0.6−	0.4−
1996 10 10	327	0.5−	0.6+	1998 03 28	704	0.6+	1.0+	1998 04 18	704	0.7+	0.0
1996 10 10	327	0.5−	0.3+	1998 03 28	704	0.4+	1.4+	1998 04 18	704	0.5−	1.5−
1996 10 10	327	0.5−	0.2−	1998 03 28	704	2.3−	2.9+	1998 04 18	704	0.0	0.2−
1996 10 14	327	0.3−	0.0	1998 03 29	704	0.0	1.4−	1998 04 19	704	0.1+	1.7−
1996 10 14	327	0.3+	1.0+	1998 03 29	704	1.4+	1.6+	1998 04 19	704	2.1+	0.8+
1996 10 14	327	0.6+	0.6+	1998 03 29	704	0.7+	0.5+	1998 04 19	704	0.1−	0.7−
1998 03 22	704	0.3−	0.4+	1998 03 29	704	0.5+	0.8+	1998 04 19	704	1.7+	2.0−
1998 03 22	704	0.2+	0.6+	1998 03 29	704	0.9−	0.2−	1998 04 19	704	0.5−	0.1+

1998 HZ₂₀ = 1981 XJ₁ = 1992 UV₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26591060	<i>ω</i>	302.12231	+0.98873512	−0.13075484		
<i>a</i>	2.3950373	<i>Ω</i>	65.48067	+0.14939693	+0.89183231		
<i>e</i>	0.2215700	<i>i</i>	4.59215	−0.00913300	+0.43305694		
<i>P</i>	3.71	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 12 04	511	0.6+	0.2+	1998 03 28	704	1.9+	1.7+	1998 04 19	704	1.0−	0.4−
1981 12 04	511	0.7−	0.0	1998 03 28	704	0.9+	0.8+	1998 04 19	704	1.1−	0.4−
1992 10 21	402	1.3+	0.2−	1998 03 28	704	0.2+	0.8−	1998 04 19	704	0.2−	2.1+
1992 10 21	402	1.0−	0.6−	1998 03 28	704	2.0+	0.7−	1998 04 19	704	0.2+	0.0
1992 10 24	402	0.6−	0.3+	1998 03 28	704	2.6−	1.4+	1998 04 20	704	0.8−	1.4−
1992 10 24	402	0.3+	0.5+	1998 03 28	704	2.0+	2.6−	1998 04 20	704	0.4+	0.8−
1998 03 22	704	0.9−	0.4−	1998 03 29	704	0.2+	0.1−	1998 04 20	704	1.4+	0.1−
1998 03 22	704	0.4+	1.7−	1998 03 29	704	1.0+	1.2−	1998 04 20	704	0.2+	0.4+
1998 03 22	704	0.5+	1.5−	1998 03 29	704	0.4+	1.2+	1998 04 22	704	2.1−	1.4+
1998 03 22	704	0.3+	1.2−	1998 03 29	704	0.1−	0.3−	1998 04 22	704	0.6+	1.2+
1998 03 28	704	0.9+	0.3+	1998 04 04	691	1.4−	0.1+	1998 04 22	704	1.1−	0.9+
1998 03 28	704	0.4−	0.7−	1998 04 04	691	1.2−	0.0	1998 04 22	704	0.7−	1.0+
1998 03 28	704	0.8+	1.8+	1998 04 04	691	1.1−	0.0				

1998 HC₂₂ = 1995 OT₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams							
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1998 AUG. 8

M.P.C. 32265

1995 07 30	691	0.4−	0.4−	1998 03 29	704	0.4−	0.4+	1998 04 20	704	0.3+	1.7−
1995 07 30	691	0.2+	0.2−	1998 03 29	704	0.2−	0.2+	1998 04 22	704	0.0	0.9+
1998 03 20	704	(2.2−	0.7−)	1998 04 01	704	0.6+	0.3+	1998 04 22	704	0.5+	1.6+
1998 03 20	704	1.8−	1.0−	1998 04 01	704	0.6−	0.0	1998 04 22	704	(0.7+	2.1+)
1998 03 20	704	0.4+	0.3+	1998 04 01	704	0.4+	0.1−	1998 04 22	704	(0.8−	3.1+)
1998 03 20	704	0.9−	1.0+	1998 04 01	704	1.3+	0.4+	1998 04 29	566	0.2−	0.1−
1998 03 20	704	(4.0−	0.1−)	1998 04 01	704	0.5−	1.4−	1998 04 29	566	0.1−	0.0
1998 03 24	566	0.1−	0.3+	1998 04 04	699	1.0+	0.1−	1998 04 29	566	0.3−	0.0
1998 03 24	566	0.2−	0.1+	1998 04 04	699	1.0+	0.2−	1998 04 30	699	1.5+	0.2−
1998 03 24	566	(2.5−	0.8−)	1998 04 04	699	0.5+	1.1−	1998 04 30	699	0.2+	0.4−
1998 03 28	704	0.8+	0.1+	1998 04 19	704	0.3−	0.1−	1998 04 30	699	0.9−	0.3+
1998 03 28	704	0.5+	0.0	1998 04 19	704	0.1−	0.7+	1998 05 01	699	0.7+	0.4+
1998 03 28	704	0.1−	0.8+	1998 04 19	704	0.8+	1.1−	1998 05 01	699	0.3−	0.3+
1998 03 28	704	0.6−	1.4+	1998 04 19	704	0.6−	0.5−	1998 05 01	699	0.0	0.5+

1998 HM₂₂ = 1980 FC₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	6.27227		(2000.0)		P		Q
<i>n</i>	0.27517380	ω	57.91013	−0.78337644			+0.62139542
<i>a</i>	2.3409816	Ω	160.49697	−0.58323974			−0.72726793
<i>e</i>	0.1421933	<i>i</i>	2.36056	−0.21483192			−0.29146027
<i>P</i>	3.58	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1980 03 16	809	0.1−	0.2+	1998 03 22	704	0.6−	0.9−	1998 04 19	704	(2.5+	1.6+)
1980 03 16	809	0.3−	0.3−	1998 03 22	704	1.4−	0.0	1998 04 19	704	0.3+	0.0
1980 03 16	809	0.5−	0.2−	1998 03 22	704	(4.7−	3.3+)	1998 04 20	704	0.4+	0.6−
1980 03 16	809	0.1−	0.2+	1998 03 28	704	0.3+	0.3−	1998 04 20	704	1.3+	0.7+
1980 03 17	809	0.3+	0.4+	1998 03 28	704	0.2+	0.0	1998 04 20	704	0.1−	0.6−
1980 03 17	809	0.5+	0.6−	1998 03 28	704	1.3−	0.6+	1998 04 20	704	0.8+	0.6−
1980 03 17	809	0.2−	0.5+	1998 03 28	704	1.0+	0.8+	1998 04 20	704	0.2+	0.5+
1980 03 17	809	0.0	1.4−	1998 03 28	704	0.6−	1.1−	1998 04 22	704	0.2+	0.2−
1998 03 20	704	0.9+	0.1−	1998 03 29	704	0.4+	0.1−	1998 04 22	704	1.7+	0.9−
1998 03 20	704	1.5−	0.1+	1998 03 29	704	0.7+	0.1−	1998 04 22	704	0.8+	1.3+
1998 03 20	704	0.7+	0.3+	1998 03 29	704	0.5+	0.9+	1998 04 22	704	(1.7+	2.2−)
1998 03 20	704	0.9−	0.3−	1998 03 29	704	0.2−	0.3+	1998 04 22	704	(4.9−	0.7+)
1998 03 20	704	(2.4−	0.4−)	1998 03 29	704	(2.2−	0.2+)	1998 05 01	691	1.4−	0.5−
1998 03 22	704	0.0	1.2+	1998 04 19	704	0.2+	0.5−	1998 05 01	691	1.2−	0.1−
1998 03 22	704	0.9+	1.5+	1998 04 19	704	1.1−	0.2−	1998 05 01	691	1.1−	0.2−

1998 HR₃₁ = 1990 VN₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	123.51851		(2000.0)		P		Q
<i>n</i>	0.18450612	ω	344.95344	+0.06242981			−0.98395875
<i>a</i>	3.0558277	Ω	101.25349	+0.93238801			−0.00223136
<i>e</i>	0.0256876	<i>i</i>	9.81060	+0.35602686			+0.17838218
<i>P</i>	5.34	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 11 11	809	1.0+	0.3−	1998 04 24	704	(1.9−	2.6+)	1998 05 01	557	0.1−	0.4−
1990 11 11	809	1.3+	0.7−	1998 04 24	704	0.5+	1.5−	1998 05 01	557	0.1+	0.4−
1990 11 11	809	0.1−	1.3−	1998 04 24	704	(5.2−	0.8+)	1998 05 01	557	0.3−	0.0
1990 11 18	809	0.1−	1.0+	1998 04 27	557	0.4+	1.6+	1998 05 15	557	0.5+	0.3+
1990 11 18	809	0.3−	0.2+	1998 04 28	557	0.2+	0.5+	1998 05 15	557	0.6−	0.9+
1990 11 18	809	1.9−	1.2+	1998 04 28	557	0.2−	0.5+	1998 06 14	557	0.2+	0.2−
1998 04 24	704	0.7+	0.1+	1998 04 30	557	0.1−	0.4−	1998 06 14	557	0.5−	0.7+
1998 04 24	704	0.9−	0.4+	1998 04 30	557	0.7−	1.5−	1998 06 16	557	0.9+	0.6−

1998 HH₃₃ = 1994 CA₂₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	104.85313		(2000.0)		P		Q
<i>n</i>	0.26432769	ω	98.42859	−0.15961791			−0.98717829
<i>a</i>	2.4045895	Ω	0.75861	+0.87095167			−0.14133509
<i>e</i>	0.1584703	<i>i</i>	4.63460	+0.46472067			−0.07418499
<i>P</i>	3.73	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 02 09	809	0.4+	0.1−	1998 03 29	704	0.4+	1.0−	1998 04 18	704	0.5−	1.2−
1994 02 09	809	0.9+	0.4−	1998 03 29	704	0.4+	0.3−	1998 04 20	704	1.1+	0.4+
1994 02 09	809	0.2+	1.1−	1998 03 29	704	0.9−	0.3+	1998 04 20	704	0.2−	0.3+
1994 02 12	809	0.2+	0.3+	1998 04 01	704	0.3−	0.5+	1998 04 20	704	0.0	0.4+
1994 02 12	809	0.7−	0.6+	1998 04 01	704	(0.2−	3.3+)	1998 04 20	704	0.1−	0.4+
1994 02 12	809	1.2−	0.6+	1998 04 01	704	0.4+	0.6−	1998 04 22	704	0.7+	0.7+
1998 03 25	704	0.5+	0.3+	1998 04 01	704	0.7+	0.2−	1998 04 22	704	0.6−	1.3+
1998 03 25	704	0.7+	1.6+	1998 04 01	704	1.4−	0.4+	1998 04 22	704	0.8+	1.0−
1998 03 25	704	(0.1+	2.7+)	1998 04 18	704	0.3+	0.4−	1998 04 22	704	1.9−	0.7−
1998 03 25	704	(2.5−	0.3−)	1998 04 18	704	0.3+	0.7−	1998 04 22	704	0.6−	0.4−
1998 03 29	704	0.3+	0.2+	1998 04 18	704	0.1−	0.1−				

1998 HJ₃₃ = 1082 T-1

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	7.20746		(2000.0)		P		Q
<i>n</i>	0.25633541	ω	250.20172	−0.77082648			+0.63684546
<i>a</i>	2.4543151	Ω	329.34899	−0.57214394			−0.70308884
<i>e</i>	0.1383118	<i>i</i>	1.79285	−0.28013898			−0.31637626
<i>P</i>	3.84	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	0.0	1.2−	1998 03 25	704	1.3+	0.8−	1998 04 18	704	1.8−	0.4−
1971 03 25	675	0.4−	1.0+	1998 03 29	704	0.4+	0.2−	1998 04 18	704	0.4−	0.6−
1971 03 25	675	2.0−	0.1+	1998 03 29	704	0.0	0.3+	1998 04 20	704	0.9−	0.8+
1971 03 26	675	0.6+	1.1−	1998 03 29	704	0.8−	0.6+	1998 04 20	704	0.5+	0.1−
1971 03 27	675	0.9+	0.9−	1998 03 29	704	0.1+	0.8+	1998 04 20	704	1.2+	0.9−
1998 03 22	704	0.1−	1.7−	1998 03 29	704	0.1+	0.7+	1998 04 20	704	0.4−	0.6+
1998 03 22	704	0.1+	0.5+	1998 04 01	704	0.3+	0.2+	1998 04 20	704	(3.3−	0.1−)
1998 03 22	704	0.1+	1.5+	1998 04 01	704	0.5+	0.6+	1998 04 22	704	0.3−	1.0−
1998 03 22	704	(5.3−	0.8+)	1998 04 01	704	0.3−	1.2+	1998 04 22	704	0.4+	0.5−
1998 03 25	704	0.4−	0.3−	1998 04 01	704	0.4−	0.0	1998 04 22	704	0.6−	0.7−
1998 03 25	704	0.6+	0.7+	1998 04 01	704	0.7+	0.4−	1998 04 22	704	0.3−	0.7+
1998 03 25	704	0.6+	1.0+	1998 04 18	704	0.6+	0.4−				
1998 03 25	704	0.3+	0.8+	1998 04 18	704	0.3−	0.7−				

1998 HV₃₃ = 2222 T-3 = 1996 XP₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	232.80275		(2000.0)		P		Q
<i>n</i>	0.21724193	ω	52.65957	+0.97901513			+0.20288060
<i>a</i>	2.7405661	Ω	295.62771	−0.19306112			+0.89318416
<i>e</i>	0.0390049	<i>i</i>	1.22054	−0.06524403			+0.40132471
<i>P</i>	4.54	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 10 07	675	1.3+	0.4−	1996 12 11	327	0.1+	0.1−	1998 04 20	704	0.3+	0.5−
1977 10 07	675	(1.7+	3.0−)	1996 12 11	327	0.0	0.2−	1998 04 20	704	(1.1+	2.2−)
1977 10 11	675	0.5+	0.4−	1996 12 11	327	0.3−	0.1−	1998 04 20	704	0.0	0.7+
1977 10 11	675	0.9−	1.0+	1996 12 18	327	0.7−	0.2−	1998 04 20	704	1.4+	0.7−
1977 10 11	675	0.9−	0.0	1996 12 18	327	1.2+	0.2−	1998 04 20	704	0.2+	1.6−
1977 10 11	675	0.6+	1.1+	1996 12 18	327	0.3−	0.3−	1998 04 22	704	0.4−	0.5−
1977 10 12	675	0.3−	0.0	1998 03 29	704	0.1−	1.2+	1998 04 22	704	0.3+	0.5−
1977 10 12	675	0.9+	0.9+	1998 03 29	704	0.4−	0.8+	1998 04 22	704	0.7+	0.3−
1977 10 12	675	0.2−	0.8−	1998 03 29	704	0.8−	0.5+	1998 04 22	704	1.0−	0.7+
1977 10 12	675	0.2−	0.9−	1998 03 29	704	0.5+	0.4−	1998 04 22	704	0.3−	0.9−
1977 10 16	675	(0.7−	3.3−)	1998 04 01	704	0.2−	0.5−	1998 05 16	704	1.3+	0.9−
1977 10 16	675	0.3−	1.9−	1998 04 01	704	0.3−	0.5+	1998 05 16	704	0.6+	1.5−
1996 12 10	327	0.1+	0.2−	1998 04 01	704	1.2−	0.9+	1998 05 16	704	0.2−	0.6−
1996 12 10	327	0.0	0.5+	1998 04 01	704	0.6−	1.3+	1998 05 16	704	1.3+	0.5−
1996 12 10	327	0.1−	0.3+	1998 04 01	704	1.7−	1.2+				

1998 HT₃₇ = 1984 WG₁ = 1986 EC₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	107.81364		(2000.0)	P		Q	
<i>n</i>	0.16989259	ω	95.21355	-0.11581950	-0.99326178		
<i>a</i>	3.2286410	Ω	1.45654	+0.83525242	-0.09963111		
<i>e</i>	0.1086278	<i>i</i>	9.29972	+0.53753068	-0.05920026		
<i>P</i>	5.80	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1984 11 20	010	1.3-	0.4+	1998 04 01	704	0.3-	0.5-
1984 11 20	010	1.3+	0.4-	1998 04 01	704	0.2-	1.7+
1986 03 12	809	0.2-	0.3-	1998 04 01	704	0.8+	2.1+
1998 03 22	704	0.2-	0.4-	1998 04 01	704	0.8+	0.4-
1998 03 22	704	0.8-	1.9+	1998 04 01	704	0.0	0.6+
1998 03 22	704	0.2+	0.0	1998 04 01	704	1.7+	1.8+
1998 03 22	704	0.8+	0.4+	1998 04 01	704	1.3-	1.6-
1998 03 22	704	0.6-	0.5-	1998 04 01	704	1.4-	0.3-
1998 03 25	704	0.7-	0.3-	1998 04 01	704	(4.7-	0.5+)
1998 03 25	704	1.2-	0.6-	1998 04 20	704	0.5+	1.1-
1998 03 25	704	1.4-	2.1+	1998 04 20	704	1.7+	0.7-
1998 03 25	704	0.7+	1.1+	1998 04 20	704	1.0+	0.2+
1998 03 25	704	2.0-	0.4-	1998 04 20	704	1.0-	0.1-
1998 04 01	704	0.0	0.3-	1998 04 21	704	0.2+	1.7-

1998 HN₃₈ = 1982 OJ₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	344.37096		(2000.0)	P		Q	
<i>n</i>	0.29916711	ω	245.70445	-0.19907976	+0.97992252		
<i>a</i>	2.2140809	Ω	12.82670	-0.88035433	-0.17393713		
<i>e</i>	0.1616750	<i>i</i>	2.81774	-0.43051539	-0.09745629		
<i>P</i>	3.29	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1982 07 27	675	1.6-	0.2-	1998 03 29	704	0.4-	0.1-
1982 07 27	675	0.3+	0.3+	1998 03 29	704	0.4-	0.8+
1982 07 27	675	0.9-	2.0+	1998 03 29	704	1.6-	1.0+
1982 07 27	675	0.1+	0.0	1998 04 01	704	0.5+	0.6+
1982 07 28	675	0.7-	1.0+	1998 04 01	704	2.2+	0.4+
1982 07 28	675	0.1+	1.2-	1998 04 01	704	0.9-	0.5+
1982 07 28	675	1.5+	0.6-	1998 04 01	704	0.2+	0.5+
1982 07 28	675	1.0+	0.8-	1998 04 01	704	1.1+	0.2+
1998 03 25	699	0.9+	0.0	1998 04 20	704	0.3-	0.3+
1998 03 25	699	0.1+	0.5+	1998 04 20	704	0.3-	0.6-
1998 03 25	699	0.8+	0.1-	1998 04 20	704	0.2-	0.8+
1998 03 25	704	0.6+	0.0	1998 04 20	704	1.0-	1.3-
1998 03 25	704	1.2+	1.1+	1998 04 20	704	0.7-	0.6-
1998 03 25	704	1.0-	0.9+	1998 04 21	704	0.1+	0.2+
1998 03 25	704	0.3-	0.7-	1998 04 21	704	0.1+	0.2+
1998 03 25	704	0.1-	1.0-	1998 04 21	704	0.8+	1.2+
1998 03 29	704	0.1+	0.3+	1998 04 21	704	1.3-	0.7-

1998 HO₃₈ = 1993 XA₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	286.68662		(2000.0)	P		Q	
<i>n</i>	0.31740218	ω	76.77640	+0.70045046	+0.71315430		
<i>a</i>	2.1284467	Ω	237.72283	-0.66693484	+0.64011816		
<i>e</i>	0.0963692	<i>i</i>	1.89309	-0.25410051	+0.28576159		
<i>P</i>	3.11	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1993 12 14	381	0.8+	0.1-	1998 03 29	704	0.4-	0.4+
1993 12 14	381	0.7-	0.1+	1998 03 29	704	2.0+	1.2+
1993 12 14	381	0.9-	0.4-	1998 03 29	704	0.5-	0.0
1993 12 15	381	0.8+	0.1-	1998 03 29	704	0.5-	0.5-
1993 12 15	381	0.3+	0.1-	1998 04 01	704	0.7-	0.2+

1993 12 15	381	0.2-	0.4+	1998 04 01	704	0.1-	1.4+
1998 03 25	704	0.1+	0.5+	1998 04 01	704	0.6+	0.7-
1998 03 25	704	0.8+	1.5+	1998 04 01	704	1.9+	1.0+
1998 03 25	704	1.5-	0.5-	1998 04 01	704	0.1-	0.2-
1998 03 25	704	1.7-	1.0-	1998 04 20	704	0.5+	0.4+
1998 03 25	704	0.1-	1.0-	1998 04 20	704	1.6-	1.0+
1998 03 29	704	1.0+	0.5-	1998 04 20	704	1.0-	1.3+

1998 HP₄₂ = 1958 TR = 1975 YK = 1985 FY₂ = 1989 CF₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	156.17255		(2000.0)	P		Q	
<i>n</i>	0.23550985	ω	338.61081	+0.65405366	-0.72047448		
<i>a</i>	2.5969485	Ω	69.74202	+0.72478450	+0.50963596		
<i>e</i>	0.1789000	<i>i</i>	14.22311	+0.21656693	+0.47030597		
<i>P</i>	4.19	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1958 10 13	760	1.1+	2.3-	1998 04 23	566	0.1+	0.1-
1958 10 13	760	0.5+	1.0-	1998 04 24	704	0.7+	0.1+
1975 12 23	330	0.2-	0.4+	1998 04 24	704	0.1-	0.2+
1985 03 26	801	0.1+	0.0	1998 04 24	704	1.1+	0.7+
1989 02 02	675	0.9-	0.3-	1998 04 24	704	0.4+	0.4+
1989 02 02	675	0.5-	0.8-	1998 04 24	704	0.8+	0.6+
1998 04 23	566	0.1+	0.2-	1998 05 01	566	1.1-	1.2-
1998 04 23	566	0.2+	0.1-	1998 05 01	566	2.2-	1.4-

1998 HU₄₃ = 1978 ES₃ = 1983 VU

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	163.66695		(2000.0)	P		Q	
<i>n</i>	0.30314041	ω	17.06397	+0.57398225	-0.81519757		
<i>a</i>	2.1946916	Ω	38.00796	+0.73585343	+0.47199098		
<i>e</i>	0.1377302	<i>i</i>	7.22491	+0.35925494	+0.33567459		
<i>P</i>	3.25	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1978 03 06	095	0.1+	0.4+	1998 03 25	704	0.3-	0.5-
1983 11 04	688	0.8+	1.7-	1998 03 25	704	0.2+	0.6-
1983 11 04	688	1.2+	1.9-	1998 04 20	704	0.0	0.4-
1998 03 22	691	0.9-	0.1+	1998 04 20	704	0.5-	0.4-
1998 03 22	691	1.0-	0.2+	1998 04 20	704	0.1-	0.3+
1998 03 22	691	0.9-	0.3+	1998 04 20	704	0.2+	0.9+
1998 03 25	699	0.2+	0.1-	1998 04 20	704	0.5-	0.2+
1998 03 25	699	0.2+	0.6+	1998 04 21	704	0.0	0.6-
1998 03 25	699	0.3-	0.9+	1998 04 21	704	0.3+	0.0
1998 03 25	704	1.7+	0.3-	1998 04 21	704	0.5+	0.6-
1998 03 25	704	1.0-	0.7-	1998 04 21	704	0.3+	1.1-
1998 03 25	704	0.6-	0.7-	1998 04 21	704	0.7+	0.3-

1998 HY₄₄ = 1994 LM₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	288.36485		(2000.0)	P		Q	
<i>n</i>	0.22148881	ω	40.19184	+0.55184259	+0.83390697		
<i>a</i>	2.7054210	Ω	263.30321	-0.76726220	+0.50378936		
<i>e</i>	0.0750066	<i>i</i>	0.47890	-0.32676975	+0.22537843		
<i>P</i>	4.45	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1994 06 08	809	0.6-	0.2+	1998 03 29	704	0.0	1.1-
1994 06 08	809	0.7+	0.6-	1998 03 29	704	(1.4+	2.4+)
1994 06 08	809	1.1-	0.5-	1998 03 29	704	1.1+	0.8+
1994 06 09	809	1.8+	0.9+	1998 03 29	704	0.3+	0.5+
1994 06 09	809	0.3-	0.4+	1998 04 01	704	0.2-	1.0-
1994 06 09	809	0.6-	0.4-	1998 04 01	704	0.7-	0.4+
1998 03 25	704	0.9-	0.7+	1998 04 01	704	0.1-	0.7+
1998 03 25	704	1.0+	0.1+	1998 04 01	704	(2.0-	0.1-)

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1998 03 25	704	0.4+	0.2-	1998 04 01	704	1.4-	0.6-	1998 04 22	704	0.5+	1.0-
1998 03 25	704	1.4-	0.2+	1998 04 20	704	0.3-	1.6+	1998 04 22	704	(3.7-	1.6+)
1998 03 25	704	0.2+	0.6+	1998 04 20	704	0.4-	1.0-				
1998 03 29	704	1.7+	0.4-	1998 04 20	704	1.1+	1.8-				

1998 HB₄₅ = 1989 SP₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	330.29494		(2000.0)		P		Q
<i>n</i>	0.30338050	ω	253.42926		-0.05259886		+0.99841411
<i>a</i>	2.1935335	Ω	13.60281		-0.88060739		-0.03689828
<i>e</i>	0.0778717	<i>i</i>	4.89425		-0.47091823		-0.04251808
<i>P</i>	3.25	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1989 09 25	809	1.6+	0.6-	1998 03 29	704	0.4-	0.1-	1998 04 21	704	0.3+	0.7+
1989 09 25	809	0.7+	0.5-	1998 03 29	704	0.2+	0.7-	1998 04 21	704	0.4-	0.6-
1989 09 25	809	0.1-	0.7-	1998 03 29	704	0.8+	0.2-	1998 04 21	704	1.0-	0.7-
1989 09 26	809	1.6-	1.0+	1998 03 29	704	0.0	1.1-	1998 04 21	704	0.6-	0.1+
1989 09 26	809	0.8-	0.9+	1998 04 01	704	0.3-	0.4+	1998 04 22	704	0.3+	0.1-
1989 09 26	809	0.3-	0.8+	1998 04 01	704	0.3-	0.9+	1998 04 22	704	0.1+	0.3+
1998 03 25	699	1.2+	0.3-	1998 04 01	704	0.1-	0.6+	1998 04 22	704	0.4-	0.4+
1998 03 25	699	0.1-	0.8+	1998 04 01	704	0.4-	0.1+	1998 04 22	704	0.6+	0.4-
1998 03 25	699	1.6+	0.3+	1998 04 01	704	0.0	0.3+	1998 04 22	704	0.8+	0.7+
1998 03 25	704	0.6+	0.2+	1998 04 20	704	0.4-	0.7+	1998 05 16	704	0.0	1.0-
1998 03 25	704	0.9+	0.0	1998 04 20	704	(2.7-	0.7-)	1998 05 16	704	0.7+	0.5-
1998 03 25	704	0.6+	0.3-	1998 04 20	704	0.9-	0.1+	1998 05 16	704	0.3-	0.8-
1998 03 25	704	0.4+	0.3-	1998 04 20	704	0.8-	0.2+	1998 05 16	704	0.1-	0.8+
1998 03 25	704	0.5-	0.2-	1998 04 20	704	1.7-	0.1+	1998 05 16	704	(2.7-	0.1-)
1998 03 29	704	0.6+	0.2+	1998 04 21	704	0.6-	0.2+				

1998 HK₄₅ = 2020 T-1

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	305.85352		(2000.0)		P		Q
<i>n</i>	0.25783192	ω	293.31930		+0.52672040		+0.84965039
<i>a</i>	2.4448090	Ω	8.60248		-0.70362558		+0.45275284
<i>e</i>	0.1866734	<i>i</i>	9.88845		-0.47694513		+0.27038690
<i>P</i>	3.82	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	0.4-	2.1-	1998 03 29	704	0.8+	1.0+	1998 04 20	704	0.3-	0.1-
1971 03 25	675	0.5+	1.5+	1998 03 29	704	0.2-	1.0+	1998 04 21	704	0.3+	0.1-
1971 03 25	675	0.4+	0.7+	1998 04 01	704	0.7+	0.5+	1998 04 21	704	0.8+	0.1-
1971 03 26	675	0.5-	0.1-	1998 04 01	704	0.2+	0.5+	1998 04 21	704	0.7+	0.2-
1998 03 25	704	0.9-	0.8-	1998 04 01	704	1.1-	0.9-	1998 04 21	704	0.3-	0.4+
1998 03 25	704	0.6+	0.0	1998 04 01	704	0.5-	0.8-	1998 04 21	704	0.8+	0.1-
1998 03 25	704	0.3+	0.4-	1998 04 01	704	0.3+	0.5-	1998 04 22	704	0.9+	0.1-
1998 03 25	704	0.1-	1.0-	1998 04 20	704	0.3+	0.6+	1998 04 22	704	0.3+	0.1-
1998 03 29	704	0.2+	0.1+	1998 04 20	704	1.2-	1.3-	1998 04 22	704	0.7-	0.7-
1998 03 29	704	0.2+	0.3+	1998 04 20	704	0.4-	1.3+	1998 04 22	704	0.7-	0.1-
1998 03 29	704	0.4-	1.3+	1998 04 20	704	0.4-	0.3-	1998 04 22	704	0.0	0.7+

1998 HW₄₅ = 1978 NX₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	350.85691		(2000.0)		P		Q
<i>n</i>	0.24022867	ω	226.64575		-0.39009891		+0.92051589
<i>a</i>	2.5628282	Ω	20.42431		-0.82573617		-0.33928282
<i>e</i>	0.1778398	<i>i</i>	3.57439		-0.40740965		-0.19374640
<i>P</i>	4.10	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 07 10	675	0.7-	2.8-	Y	1998 03 29	704	0.8-	0.3-	1998 04 20	704	1.1-	0.1+
1978 07 11	675	1.8+	3.6+	Y	1998 03 29	704	0.3-	1.2+	1998 04 20	704	0.6-	1.0+
1978 07 13	675	1.3-	0.5-	Y	1998 03 29	704	0.1+	0.5-	1998 04 20	704	0.8-	0.1-
1998 03 25	704	0.7+	0.3+		1998 04 01	704	0.3+	0.4+	1998 04 21	704	0.3-	0.5+
1998 03 25	704	1.0+	0.7+		1998 04 01	704	1.1+	0.9-	1998 04 21	704	0.0	0.1+

1998 03 25	704	2.4-	1.7+	1998 04 01	704	1.3-	0.6-	1998 04 21	704	0.0	0.2-
1998 03 25	699	0.6+	0.9+	1998 04 01	704	1.1-	1.6-	1998 04 21	704	0.2-	0.4-
1998 03 25	704	0.2+	1.0+	1998 04 01	704	0.1-	1.5-	1998 04 21	704	0.1+	0.1-
1998 03 25	699	0.5+	0.3+	1998 04 04	699	0.6+	0.0	1998 04 22	704	0.4-	0.1+
1998 03 25	699	0.5+	0.4-	1998 04 04	699	1.8+	0.8+	1998 04 22	704	0.4-	0.0
1998 03 25	704	0.7-	0.3-	1998 04 04	699	1.6+	0.4-	1998 04 22	704	0.3-	0.1-
1998 03 29	704	1.1+	0.1+	1998 04 20	704	1.1+	0.3-	1998 04 22	704	0.0	0.5-
1998 03 29	704	0.5+	0.4-	1998 04 20	704	0.4-	0.8-	1998 04 22	704	0.7-	0.3+

1998 HE₅₁ = 2079 T-2

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	301.44335		(2000.0)		P		Q
<i>n</i>	0.30812374	ω	105.26508		+0.74986740		+0.66053317
<i>a</i>	2.1709639	Ω	213.41983		-0.63004197		+0.69574945
<i>e</i>	0.1757211	<i>i</i>	3.88816		-0.20185638		+0.28218546
<i>P</i>	3.20	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 25	675	2.0-	0.0	1998 04 22	704	0.9+	0.8+	1998 05 18	699	0.3+	0.3-
1973 09 25	675	2.2-	1.2-	1998 04 22	704	0.5+	0.1+	1998 05 18	699	1.5+	0.6+
1973 09 29	675	0.2+	2.1+	1998 04 22	704	0.3-	0.2-	1998 05 22	704	0.3+	1.4+
1973 09 29	675	0.8+	1.4+	1998 04 22	704	1.6-	1.4-	1998 05 22	704	0.8-	0.7-
1973 09 30	675	0.0	1.5-	1998 04 25	699	0.2-	0.1-	1998 05 22	704	1.0+	1.1+
1973 09 30	675	0.9+	1.2-	1998 04 25	699	0.2-	0.4+	1998 05 22	699	1.1-	0.7+
1973 10 04	675	1.9+	0.0	1998 04 25	699	0.2+	0.0	1998 05 22	699	1.3-	0.0
1973 10 04	675	0.9+	0.1+	1998 05 01	704	0.8-	0.4-	1998 05 22	704	0.9+	0.6-
1973 10 05	675	0.1+	0.4+	1998 05 01	699	0.5+	0.6-	1998 05 22	699	0.4-	0.6-
1973 10 05	675	0.6-	0.6-	1998 05 01	704	0.2-	0.8-	1998 05 22	704	1.2-	0.1+
1998 04 21	704	0.7+	0.3+	1998 05 01	699	0.2-	1.1-	1998 05 23	704	0.4+	0.3+
1998 04 21	704	0.3+	0.4-	1998 05 01	704	0.6-	0.6-	1998 05 23	704	0.7+	0.3+
1998 04 21	704	0.4+	0.4+	1998 05 01	699	0.5-	0.1-	1998 05 23	704	0.9+	0.2+
1998 04 21	704	0.0	0.4+	1998 05 01	704	0.4-	0.8-	1998 05 23	704	0.1+	0.3-
1998 04 21	704	0.7-	0.9+	1998 05 01	704	0.2-	0.9-	1998 05 23	704	0.7+	0.2-
1998 04 22	704	0.2-	1.1+	1998 05 18	699	0.5+	0.6+				

1998 HQ₅₁ = 1977 RX₈ = 1986 TH₅ = 1986 TW10 = 1986 UR₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	290.04990		(2000.0)		P		Q
<i>n</i>	0.22528248	ω	133.89880		+0.68572082		+0.72786444
<i>a</i>	2.6749630	Ω	179.39270		-0.68190369		+0.64268731
<i>e</i>	0.2514281	<i>i</i>	2.99934		-0.25454727		+0.23909492
<i>P</i>	4.38	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 09 08	675	0.4+	0.6-	1998 03 25	704	1.1-	0.1-	1998 04 22	704	1.2-	0.7+
1977 09 09	675	0.1-	0.5-	1998 03 25	704	0.4-	1.3-	1998 04 24	699	0.1+	0.6-
1986 10 01	010 (7.8+	1.5-)		1998 04 19	704	0.2+	0.0	1998 04 24	699	0.1+	0.2+
1986 10 01	010	1.2+	2.7-	1998 04 19	704	0.8+	0.2-	1998 04 24	699	0.3+	0.3-
1986 10 03	095	0.2+	1.4-	1998 04 19	704	0.1+	1.0+	1998 04 28	699	0.4+	0.6+
1986 10 27	010(20.8-	3.6+)		1998 04 19	704	1.0+	0.7+	1998 04 28	699	0.3+	0.4-
1986 10 27	010(17.6-	5.7+)		1998 04 20	704	2.6-	0.8+	1998 04 28	699	0.9+	0.3-
1998 03 22	704	1.1+	0.2+	1998 04 20	704	0.3+	1.2-	1998 04 30	699	0.5+	0.3-
1998 03 22	704	1.4+	0.0	1998 04 20	704	0.7-	0.2-	1998 04 30	699	0.1-	0.4+
1998 03 22	704	0.3-	1.0-	1998 04 20	704	0.1-	1.3-	1998 04 30	699	0.0	0.6-
1998 03 22	704	0.6+	1.0-	1998 04 20	704	(6.2-	1.9-)	1998 05 01	699	0.2-	0.2+
1998 03 22	704	0.6+	1.8-	1998 04 22	704	0.9-	0.7-	1998 05 01	699	0.7+	0.3+
1998 03 25	704	1.3-	1.5-	1998 04 22	704	0.5-	0.6+	1998 05 01	699	0.2+	1.3+
1998 03 25	704	0.6-	0.2+	1998 04 22	704	0.3-	0.1+				
1998 03 25	704	1.3-	0.6-	1998 04 22	704	0.1-	0.2+				</

1998 HJ₅₄ = 1996 AY₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21627550	ω	77.13747	+0.39334537	+0.91540808		
<i>a</i>	2.7487242	Ω	216.40190	−0.88948700	+0.35538230		
<i>e</i>	0.1227978	<i>i</i>	8.28207	−0.23257750	+0.18902771		
<i>P</i>	4.56	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 11	327	0.3+	0.2+	1998 03 29	704	0.3−	1.0+	1998 04 21	704	0.2−	1.5+
1996 01 11	327	0.1+	0.0	1998 03 29	704	0.9+	1.8−	1998 04 21	704	0.6+	1.2+
1996 01 11	327	0.1+	0.3+	1998 03 29	704	0.4−	0.0	1998 04 21	704	0.9+	1.0+
1996 01 12	327	0.3−	0.0	1998 03 29	704	0.1−	0.6+	1998 04 21	704	0.4−	0.7+
1996 01 12	327	0.4+	0.3−	1998 03 29	704	0.5−	1.0−	1998 04 22	704	0.7+	1.0−
1996 01 12	327	0.5−	0.2−	1998 04 01	704	0.3−	0.3−	1998 04 22	704	0.8−	0.8−
1998 03 25	704	0.6+	0.4+	1998 04 01	704	0.5+	0.2+	1998 04 22	704	0.6+	0.6−
1998 03 25	704	(3.0+	1.9+)	1998 04 01	704	0.4+	0.7−	1998 04 22	704	0.2−	0.4−
1998 03 25	704	0.8+	0.0	1998 04 01	704	1.2−	0.5+	1998 04 22	704	0.1+	0.3−
1998 03 25	704	0.5−	0.7+	1998 04 21	704	1.1−	1.1−				

1998 HS₆₀ = 1983 VO₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30056859	ω	120.84511	−0.03174528	−0.99932677		
<i>a</i>	2.2071930	Ω	330.95691	+0.90359587	−0.02082951		
<i>e</i>	0.0596320	<i>i</i>	2.17114	+0.42720809	−0.03020179		
<i>P</i>	3.28	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1983 11 07	046	0.1−	2.0−	1998 03 29	704	0.4+	0.2−	1998 04 22	704	0.7−	0.2−
1983 11 07	046	1.9−	0.4−	1998 04 01	704	0.2+	0.1+	1998 04 22	704	0.8−	0.5+
1983 11 07	046	0.3+	2.0−	1998 04 01	704	0.0	0.4+	1998 04 22	704	1.1−	0.4+
1983 11 08	046	0.4+	0.5+	1998 04 01	704	0.3+	0.4−	1998 04 22	704	1.7−	0.8+
1983 11 08	381	0.3+	1.0+	1998 04 01	704	0.7−	0.1−	1998 05 16	704	0.2+	0.7−
1983 11 08	381	0.9+	1.1+	1998 04 01	704	0.0	0.3+	1998 05 16	704	0.7+	1.6+
1983 11 12	046	0.6−	0.9+	1998 04 21	704	0.1+	0.1+	1998 05 16	704	1.1+	1.4+
1983 11 12	046	0.9+	0.1−	1998 04 21	704	0.1+	0.7−	1998 05 16	704	0.6+	1.6−
1998 03 29	704	0.7+	0.3+	1998 04 21	704	0.9+	0.3−	1998 05 16	704	(4.2−	2.1+)
1998 03 29	704	0.6+	0.3−	1998 04 21	704	0.9+	0.1−	1998 05 28	699	0.6−	0.1−
1998 03 29	704	0.6+	0.2+	1998 04 21	704	0.2−	0.3+	1998 05 28	699	0.2−	1.6−
1998 03 29	704	0.1+	0.3−	1998 04 22	704	0.4−	0.5−	1998 05 28	699	1.7−	0.5−

1998 HV₇₈ = 1938 RA = 1955 UF₁ = 1975 NJ₁ = 1992 US₁₀ = 1992 XQ

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29272372	ω	101.27733	+0.99164135	+0.10122882		
<i>a</i>	2.2464536	Ω	252.95050	−0.12399152	+0.91915486		
<i>e</i>	0.2936221	<i>i</i>	4.80004	+0.03568665	+0.38066662		
<i>P</i>	3.37	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1938 09 01	024	0.5−	1.3−	1998 04 21	704	1.8+	0.2−	1998 05 16	691	1.5−	0.1−
1955 10 25	760	1.1+	1.1+	1998 04 21	704	0.9+	0.3−	1998 05 16	691	1.6−	0.1−
1955 10 25	760	(6.2+	2.1+)	1998 04 21	704	0.5−	0.9−	1998 05 16	691	1.5−	0.1+
1975 07 12	095	0.2+	1.0+	1998 04 21	704	1.2+	0.6−	1998 05 18	691	0.0	0.2−
1992 10 28	095	2.0+	0.6−	1998 04 22	704	0.1−	0.2−	1998 05 18	691	0.7−	0.2+
1992 12 13	010	0.8−	1.6−	1998 04 22	704	0.2−	0.2−	1998 05 18	691	0.5−	0.0
1992 12 14	010	2.8−	1.2−	1998 04 22	704	0.8+	0.4−				
1998 04 21	704	0.4+	0.8−	1998 04 22	704	0.5+	0.7+				

1998 HY₇₉ = 1995 WT₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23021378	ω	338.85723	+0.80730672	+0.58997669		
<i>a</i>	2.6366258	Ω	344.96401	−0.53367108	+0.72008096		
<i>e</i>	0.1885812	<i>i</i>	2.99199	−0.25189490	+0.36525458		
<i>P</i>	4.28	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 18	691	0.4−	0.1−	1998 04 21	704	0.1−	0.6−	1998 04 25	699	0.9−	0.0
1995 11 18	691	0.0	0.1+	1998 04 21	704	2.0−	0.2−	1998 04 25	699	0.1−	0.2+
1995 11 24	691	0.2−	0.2+	1998 04 22	704	0.2+	0.7−	1998 05 23	691	0.8+	0.7+
1995 11 24	691	0.4+	0.1−	1998 04 22	704	0.1−	0.4−	1998 05 23	691	1.1−	0.3+
1995 11 24	691	0.2+	0.0	1998 04 22	704	0.6+	0.1−	1998 05 30	691	0.5−	0.1−
1998 04 21	704	0.0	0.5+	1998 04 22	704	0.8+	0.2+	1998 05 30	691	0.3−	0.3−
1998 04 21	704	1.0+	0.1−	1998 04 22	704	0.6+	0.4+	1998 05 30	691	1.2+	0.4−
1998 04 21	704	(0.1+	3.3+)	1998 04 25	699	0.1−	0.6+				

1998 HH₈₀ = 1971 SK = 1992 XP

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28369573	ω	339.42181	+0.99934437	+0.00019087		
<i>a</i>	2.2938632	Ω	20.66713	+0.01735813	+0.87504023		
<i>e</i>	0.1885908	<i>i</i>	5.88786	−0.03177316	+0.48405016		
<i>P</i>	3.47	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 09 16	808	0.0	0.0	1998 04 21	704	0.7+	1.0−	1998 05 18	691	1.0−	0.6+
1992 12 13	010	0.2−	0.1−	1998 04 22	704	0.9+	0.2+	1998 05 26	691	0.6−	0.0
1992 12 14	010	0.3+	0.2−	1998 04 22	704	1.3+	0.6+	1998 05 26	691	0.6−	0.5+
1998 04 21	704	0.7+	0.2+	1998 04 22	704	1.2+	0.1−	1998 05 26	691	0.5−	0.4+
1998 04 21	704	0.1−	0.1+	1998 04 22	704	1.6+	0.9−	1998 05 27	691	0.9−	0.4+
1998 04 21	704	0.6+	1.8−	1998 05 18	691	1.7−	0.6+	1998 05 27	691	0.7−	0.2+
1998 04 21	704	0.9+	0.6−	1998 05 18	691	1.5−	0.5+	1998 05 27	691	1.1−	0.3+

1998 HB₈₄ = 1990 VH₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17579382	ω	275.45708	−0.19627356	−0.98036954		
<i>a</i>	3.1559757	Ω	185.96152	+0.95592259	−0.18704631		
<i>e</i>	0.1927457	<i>i</i>	10.41087	+0.21837742	−0.06236373		
<i>P</i>	5.61	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 11 15	809	0.0	0.9−	1998 04 21	704	0.3−	0.6+	1998 05 01	704	0.3−	0.7+
1990 11 15	809	0.7+	0.8−	1998 04 21	704	0.8+	2.0−	1998 05 01	704	0.3−	0.7−
1990 11 15	809	2.5−	0.7−	1998 04 21	704	1.4−	0.4−	1998 05 22	704	0.2−	1.6−
1990 11 17	809	0.2−	0.5+	1998 04 22	704	1.0+	0.4+	1998 05 22	704	0.3+	0.7−
1990 11 17	809	0.9+	0.0	1998 04 22	704	0.4+	0.6+	1998 05 22	704	0.1+	0.5−
1990 11 17	809	1.2+	0.1−	1998 04 22	704	0.1−	0.6−	1998 05 22	704	0.5−	0.9+
1990 11 23	809	0.5+	1.2+	1998 04 22	704	1.1−	0.7+	1998 05 22	704	1.0−	2.0+
1990 11 23	809	0.0	0.5+	1998 04 22	704	2.2+	0.7−	1998 05 23	704	1.6+	1.5+
1990 11 23	809	0.5−	0.1+	1998 05 01	704	0.9+	0.7+	1998 05 23	704	0.7+	0.9−
1998 04 21	704	1.2−	1.8+	1998 05 01	704	0.0	0.3−	1998 05 23	704	0.5+	0.0
1998 04 21	704	0.7−	0.8−	1998 05 01	704	1.1−	0.5+	1998 05 23	704	0.1−	1.4−

1998 HL₈₄ = 1995 SD₃₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25954547	ω	119.19129	+0.48251563	+0.87588712		
<i>a</i>	2.4340365	Ω	179.65657	−0.83623864	+0.46089175		
<i>e</i>	0.1314939	<i>i</i>	6.15434	−0.26054482	+0.14283047		
<i>P</i>	3.80	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

1998 AUG. 8

M.P.C. 32269

Residuals in seconds of arc

1995 09 24	691	0.4−	0.1−	1998 04 21	704	0.6+	0.5−	1998 05 01	704	1.4−	1.0−
1995 09 24	691	0.3−	0.1+	1998 04 22	704	0.4−	0.2+	1998 05 22	704	0.2+	0.3−
1995 09 24	691	0.1−	0.1−	1998 04 22	704	0.2−	0.4+	1998 05 22	704	0.0	0.0
1995 09 29	691	0.2+	0.0	1998 04 22	704	1.1+	0.9+	1998 05 22	704	1.0+	0.4+
1995 09 29	691	0.6+	0.1+	1998 04 22	704	(1.6+	2.8−)	1998 05 23	704	0.1−	0.6+
1995 09 29	691	0.1−	0.0	1998 04 22	704	0.2+	1.8−	1998 05 23	704	0.1−	1.0−
1998 04 21	704	0.4+	0.9+	1998 05 01	704	0.3−	0.1+	1998 05 23	704	(3.4−	2.6−)
1998 04 21	704	0.2+	0.3−	1998 05 01	704	1.5+	0.0	1998 05 23	704	0.6−	0.0
1998 04 21	704	0.9−	0.3−	1998 05 01	704	0.9−	1.2+				
1998 04 21	704	(2.9+	0.3−)	1998 05 01	704	0.3−	0.5+				

1998 HH₉₃ = A915 RE = 1965 AG = 1983 TT = 1986 RM₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	163.23999		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.30536477	ω	75.73557	+0.31793339	−0.94810783
<i>a</i>	2.1840208	Ω	355.72255	+0.85279996	+0.28742077
<i>e</i>	0.0711221	<i>i</i>	2.41838	+0.41430735	+0.13594428
<i>P</i>	3.23	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1915 09 15	029	(13.9−	13.3−)	Y	1998 04 22	704	0.3−	1.1−	1998 05 18	699	0.0	1.4+
1965 01 01	330	0.1−	1.1−		1998 04 22	704	0.0	1.5−	1998 05 18	699	0.2−	0.1−
1983 10 07	046	(0.5+	4.4−)		1998 04 22	704	0.1−	0.5−	1998 05 18	699	0.1+	1.2+
1983 10 07	046	(0.2−	3.9−)		1998 04 25	699	0.1+	0.5−	1998 05 22	704	0.5−	0.2−
1983 10 14	046	0.4+	0.9−		1998 04 25	699	0.1+	0.5−	1998 05 22	704	0.6−	0.4+
1983 10 14	046	0.5+	1.1−		1998 04 25	699	0.3−	0.8−	1998 05 22	704	0.3−	0.5+
1986 09 12	095	0.7+	1.5−		1998 04 25	699	0.1+	0.6−	1998 05 22	704	0.2+	0.4+
1998 04 21	704	0.0	0.2−		1998 04 25	699	0.0	1.0−	1998 05 22	704	0.2−	1.4+
1998 04 21	704	0.1+	1.0−		1998 04 25	699	0.0	0.7−	1998 05 23	704	0.1+	0.7+
1998 04 21	704	1.8+	0.3−		1998 05 01	704	0.1−	1.9−	1998 05 23	704	0.7−	0.3+
1998 04 21	704	0.2−	1.3+		1998 05 01	704	0.0	0.3−	1998 05 23	704	0.2−	0.8+
1998 04 21	704	(3.4−	2.6−)		1998 05 01	704	0.1−	0.1−	1998 05 23	704	0.2−	0.3+
1998 04 22	704	0.7−	0.3−		1998 05 01	704	0.5−	0.1+	1998 05 23	704	1.1+	0.3−
1998 04 22	704	0.3+	0.5−		1998 05 01	704	0.4−	0.2+				

1998 HJ₉₄ = 1995 TJ₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	145.54682		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.17442710	ω	214.69906	+0.22870648	−0.95549204
<i>a</i>	3.1724399	Ω	222.94896	+0.94360071	+0.26465881
<i>e</i>	0.0990039	<i>i</i>	15.87326	+0.23939725	−0.13034826
<i>P</i>	5.65	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1995 10 14	327	0.4+	0.5+	1998 04 21	704	0.9−	0.7−	1998 05 15	046	0.6−	0.7−
1995 10 14	327	0.3+	0.8+	1998 04 21	704	0.3−	0.0	1998 05 15	046	0.2+	1.0+
1995 10 14	327	0.1−	0.1+	1998 04 21	704	0.2+	0.9+	1998 05 15	046	0.2−	0.4+
1995 10 15	327	0.3−	0.5−	1998 04 21	704	0.0	1.8+	1998 05 15	046	0.6−	0.0
1995 10 15	327	0.1−	0.3−	1998 04 22	704	0.4+	0.6−	1998 05 19	046	0.5+	0.1−
1995 10 15	327	0.5+	0.5+	1998 04 22	704	1.0+	1.1−	1998 05 19	046	0.6+	0.6+
1995 10 28	327	0.3−	0.4−	1998 04 22	704	1.6−	0.3+	1998 05 19	046	1.0+	0.2+
1995 10 28	327	0.3−	0.3+	1998 04 22	704	0.3−	0.8−	1998 05 19	046	0.4+	0.5−
1995 10 28	327	0.1−	0.2+	1998 04 22	704	0.7−	1.1−	1998 05 19	046	1.0+	0.0
1998 04 21	704	0.5−	0.5+	1998 05 15	046	0.5+	1.0+				

1998 HH₉₇ = 1979 TC₂ = 1979 UX₁ = 1987 ST₁₉

Id. A. Gnädig, H. Oishi (d, JAM 1789)

Epoch 1998 July 6.0 TT = JDT 2451000.5

Gnädig

<i>M</i>	166.41306		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23906379	ω	210.37411	+0.45500388	−0.88712877
<i>a</i>	2.5711467	Ω	212.74117	+0.84305753	+0.45709219
<i>e</i>	0.1469675	<i>i</i>	8.21623	+0.28674983	+0.06379088
<i>P</i>	4.12	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1979 10 14	095	(0.8−	3.8−)	1998 04 21	704	0.1−	0.1+	1998 05 22	704	0.5−	0.1+
1979 10 19	010	0.4+	0.4−	1998 04 22	704	0.6−	0.0	1998 05 22	704	0.4−	1.4+
1979 10 23	010	0.2−	0.6−	1998 04 22	704	0.2−	0.0	1998 05 22	704	1.1+	0.3−
1987 09 17	095	0.1−	0.2+	1998 04 22	704	0.5+	0.3+	1998 05 24	704	0.1+	0.1+
1998 04 21	704	0.3+	0.1−	1998 04 22	704	0.3−	0.7+	1998 05 24	704	0.8+	0.2−
1998 04 21	704	0.9+	0.2−	1998 04 22	704	1.6−	0.1+	1998 05 24	704	1.2−	1.9+
1998 04 21	704	1.0+	1.3−	1998 05 22	704	0.2−	1.2−	1998 05 24	704	1.4+	1.7−
1998 04 21	704	0.1+	0.9−	1998 05 22	704	0.7−	0.3+	1998 05 24	704	0.6−	0.2−

1998 HT₉₈ = 1990 RT₇ = 1994 NB₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	48.75705		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21372620	ω	120.98851	−0.99687733	+0.07338277
<i>a</i>	2.7705386	Ω	63.23388	−0.07888005	−0.90818857
<i>e</i>	0.0388678	<i>i</i>	1.87186	−0.00367807	−0.41207825
<i>P</i>	4.61	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1990 09 14	809	0.0	0.4−	1998 04 21	704	0.0	0.4+	1998 05 02	327	0.4+	0.5−
1990 09 14	809	0.3+	0.1−	1998 04 21	704	0.7−	0.3+	1998 05 02	327	0.3+	0.3−
1990 09 14	809	0.6+	0.4−	1998 04 21	704	0.3−	0.6+	1998 05 02	327	0.6+	0.5−
1990 09 15	809	0.3−	0.6−	1998 04 21	704	0.4−	0.5+	1998 05 22	704	0.1+	0.1+
1990 09 15	809	0.1+	0.5−	1998 04 22	704	0.3+	0.1−	1998 05 22	704	1.1−	0.3+
1990 09 15	809	0.5+	0.8−	1998 04 22	704	0.8+	0.4+	1998 05 22	704	0.2−	0.8−
1994 07 08	809	1.6−	0.3+	1998 04 22	704	0.4+	0.0	1998 05 22	704	0.0	0.8−
1994 07 08	809	0.2−	0.0	1998 04 22	704	0.8−	0.1−	1998 05 22	704	0.7−	0.0
1994 07 08	809	0.6−	1.4+	1998 04 22	704	0.7−	0.2+	1998 05 24	704	0.7+	0.4+
1994 07 09	809	0.7+	0.1+	1998 05 01	704	0.2−	0.7−	1998 05 24	704	0.9+	1.5−
1994 07 09	809	0.4+	0.3+	1998 05 01	704	0.9+	0.1+	1998 05 24	704	1.6−	0.1+
1994 07 09	809	1.0+	1.0+	1998 05 01	704	0.0	0.3−	1998 05 24	704	(0.5+	2.1−)
1998 04 21	704	0.4+	0.2−	1998 05 01	704	0.5+	0.3+	1998 05 24	704	0.7−	0.7−

1998 HE₁₀₀ = 1976 SJ₃ = 1985 QC₁ = 1990 TV₂ = 1993 FC₇₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	269.85337		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21322091	ω	156.44830	+0.96590694	+0.25775333
<i>a</i>	2.7749140	Ω	188.72079	−0.25558743	+0.93450243
<i>e</i>	0.1759378	<i>i</i>	9.19507	−0.04121715	+0.24549630
<i>P</i>	4.62	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1976 09 24	095	1.6−	0.1−	1998 04 21	704	0.2+	0.9+	1998 05 01	704	1.1−	0.7−
1976 09 29	095	1.6+	0.1+	1998 04 21	704	0.0	0.1−	1998 05 22	704	0.6−	0.2+
1985 08 16	675	(28.8−	2.1−)	1998 04 21	704	0.3+	0.9−	1998 05 22	704	1.0+	0.4−
1985 08 16	675	(26.8−	0.7−)	1998 04 21	704	0.8−	0.5+	1998 05 22	704	1.0+	0.6+
1985 08 17	675	(3.9+	12.0−)	1998 04 22	704	0.2+	0.9+	1998 05 22	704	0.3+	0.2+
1985 08 17	675	(6.5+	9.8−)	1998 04 22	704	0.6+	1.7+	1998 05 22	704	0.4−	0.1+
1990 10 14	675	0.2+	0.4+	1998 04 22	704	0.1+	0.4+	1998 05 24	704	0.2+	0.6+
1990 10 14	675	1.2−	0.7+	1998 04 22	704	0.4−	0.3+	1998 05 24	704	0.9−	0.6+
1990 10 16	675	0.6+	0.0	1998 04 22	704	1.1−	1.6+	1998 05 24	704	1.4−	0.4−
1990 10 16	675	0.0	0.9+	1998 05 01	704	0.5+	0.4−	1998 05 24	704	0.2+	0.1−
1993 03 21	809	(0.9−	2.7+)	1998 05 01	704	0.5+	0.8−	1998 05 24	704	0.5+	0.8−
1993 03 22	809	0.4+	1.3+	1998 05 01	704	0.4+	0.8−				
1998 04 21	704	0.1+	0.5−	1998 05 01	704	0.8+	1.4−				

1998 HH₁₀₀ = 1991 RQ₃₀ = 1994 GT₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	267.36253		(2000.0)	P	Q
n	0.25462698	ω	273.56337	+0.98573617	+0.13468341
a	2.4652811	Ω	78.71503	-0.08146590	+0.90655947
e	0.2188890	i	5.90667	-0.14726680	+0.40001289
P	3.87	H	13.5	G 0.15	U 4

Residuals in seconds of arc

1991 09 14	675	0.1+	0.3+	1998 04 22	704	0.1-	0.7+	1998 05 23	704	0.8+	0.0
1991 09 14	675	0.2-	0.3+	1998 04 22	704	1.2-	1.2+	1998 05 23	704	0.3+	0.2-
1991 09 15	675	0.5+	0.6-	1998 04 22	704	1.1-	1.2+	1998 05 23	704	1.0+	0.1+
1991 09 15	675	0.1-	0.7-	1998 05 01	704	0.3+	0.7-	1998 05 23	704	0.2+	0.1-
1994 04 14	675	1.1-	0.2-	1998 05 01	704	0.1+	1.1-	1998 05 23	704	0.2+	0.4+
1994 04 14	675	1.5-	1.4-	1998 05 01	704	(1.5-	2.1-)	1998 05 23	704	0.9+	0.6-
1994 04 15	675	0.2-	1.8-	1998 05 01	704	0.5+	1.0-	1998 05 23	704	1.1+	0.2-
1994 04 15	675	1.2+	0.4+	1998 05 01	704	0.2-	0.7-	1998 05 23	704	0.4+	0.5-
1998 04 21	704	0.2-	0.6+	1998 05 22	704	0.6+	0.1+	1998 05 24	704	0.4+	0.5-
1998 04 21	704	0.6-	0.6+	1998 05 22	704	0.0	0.1-	1998 05 24	704	0.3+	0.5-
1998 04 21	704	1.3-	0.6+	1998 05 22	704	1.3+	1.3+	1998 05 24	704	0.4+	0.1+
1998 04 21	704	0.6-	0.4+	1998 05 22	704	0.3+	0.3+	1998 05 24	704	0.1-	0.4-
1998 04 21	704	1.1-	0.6+	1998 05 22	704	(3.9-	2.6-)	1998 05 24	704	(0.3-	3.5-)
1998 04 22	704	0.5-	0.2+	1998 05 23	704	0.3+	0.4-				
1998 04 22	704	1.8-	1.0+	1998 05 23	704	0.8+	0.0				

1998 HS₁₀₀ = 1992 EX₃₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	121.56065		(2000.0)	P	Q
n	0.18453827	ω	301.59761	-0.24755956	-0.96875711
a	3.0554728	Ω	162.71654	+0.90511668	-0.23675177
e	0.0826848	i	2.88714	+0.34565598	-0.07388012
P	5.34	H	13.0	G 0.15	U 6

Residuals in seconds of arc

1992 03 03	809	1.2-	0.1-	1998 04 22	704	1.1-	0.9-	1998 05 22	704	0.8-	0.5+
1992 03 06	809	1.1+	0.0	1998 04 22	704	0.3-	0.1+	1998 05 22	704	0.1+	0.5+
1998 04 21	704	0.4+	0.6+	1998 04 22	704	1.6-	0.0	1998 05 22	704	(2.4+	0.4-)
1998 04 21	704	0.6+	0.1-	1998 05 01	704	0.0	0.8+	1998 05 24	704	0.3+	0.1+
1998 04 21	704	0.1-	0.1+	1998 05 01	704	0.3+	0.7+	1998 05 24	704	0.1-	1.2-
1998 04 21	704	0.4+	1.0-	1998 05 01	704	0.1+	0.1+	1998 05 24	704	0.2+	0.1+
1998 04 21	704	0.6+	0.3-	1998 05 01	704	0.6+	0.7+	1998 05 24	704	0.4-	1.8-
1998 04 22	704	0.3+	0.2+	1998 05 01	704	0.7+	1.2-	1998 05 24	704	(5.7-	4.6+)
1998 04 22	704	0.6-	1.6+	1998 05 22	704	0.5+	0.4+				

1998 HV₁₀₁ = 5117 T-2

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	324.90878		(2000.0)	P	Q
n	0.22932901	ω	32.66510	+0.47480865	+0.87501183
a	2.6434030	Ω	265.83923	-0.82642460	+0.40640295
e	0.1735857	i	5.43105	-0.30262042	+0.26304172
P	4.30	H	15.5	G 0.15	U 5

Residuals in seconds of arc

1973 09 19	675	(5.8+	2.3+)	1998 04 24	428	0.1-	0.5+	1998 05 22	704	0.5+	0.1-
1973 09 20	675	0.8+	0.3-	1998 04 26	428	0.4+	0.4-	1998 05 22	704	0.0	0.7+
1973 09 20	675	2.1+	0.4-	1998 04 26	428	0.1+	0.5-	1998 05 22	704	(2.3-	1.8+)
1973 09 24	675	0.6+	1.2+	1998 04 29	428	0.8-	0.2+	1998 05 24	704	0.0	0.5-
1973 09 24	675	0.3+	0.5+	1998 04 30	428	1.2-	0.5+	1998 05 24	704	1.2+	1.2-
1973 09 25	675	0.5-	0.3+	1998 04 30	428	0.1+	0.4+	1998 05 24	704	(2.3-	0.9+)
1973 09 25	675	1.2-	0.0	1998 05 01	704	0.3-	0.1+	1998 05 24	704	(1.7+	2.7+)
1973 09 29	675	1.1-	0.1-	1998 05 01	704	0.3+	1.0+	1998 05 25	428	0.1+	0.2-
1973 09 29	675	1.2-	0.1+	1998 05 01	704	0.1-	0.7+	1998 05 25	428	0.1-	0.0
1973 09 30	675	0.2+	1.1-	1998 05 01	704	(1.6-	2.1-)	1998 06 20	428	0.2-	0.2+
1973 09 30	675	(1.3-	2.8-)	1998 05 18	428	(2.2-	0.6-)	1998 06 20	428	0.4+	0.0
1998 04 24	428	0.5+	0.2-	1998 05 22	704	0.9-	0.9-				

1998 HW₁₀₁ = 1976 UJ₃ = 1986 XS₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	32.10012		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29912918	ω	180.17589	-0.84984483	+0.52368560
a	2.2142681	Ω	31.63044	-0.48340511	-0.72971495
e	0.0546244	i	6.49312	-0.20996013	-0.43962425
P	3.29	H	15.0	G 0.15	U 3

Residuals in seconds of arc

1976 10 26	095	0.6-	1.2+	1998 05 01	704	0.6+	0.8-	1998 05 24	704	0.9-	0.1-
1986 12 03	010	(10.8-	0.5-)	1998 05 01	704	0.6+	0.0	1998 05 24	704	0.1-	0.4+
1986 12 03	010	0.4-	1.2+	1998 05 01	704	0.5+	0.4-	1998 05 24	704	1.5+	1.1+
1986 12 03	010	0.7-	1.1+	1998 05 01	704	0.4+	0.5-	1998 05 24	704	0.6+	1.7+
1998 04 22	704	0.2+	1.2-	1998 05 03	566	0.1-	0.4-	1998 05 24	704	0.5-	1.1+
1998 04 22	704	0.7+	0.2-	1998 05 03	566	0.4-	0.3-	1998 05 25	428	0.4-	0.0
1998 04 22	704	0.4+	0.3+	1998 05 03	566	0.3-	0.2-	1998 05 25	428	0.2-	0.0
1998 04 22	704	0.3+	0.5+	1998 05 06	428	0.1+	0.4+	1998 06 02	428	0.2+	0.5-
1998 04 22	704	1.4+	0.3+	1998 05 06	428	0.1+	0.3+	1998 06 02	428	0.3+	0.5-
1998 04 28	428	0.3-	0.3-	1998 05 16	428	0.7-	0.9+	1998 06 19	428	0.3+	0.7-
1998 04 28	428	0.5-	0.3-	1998 05 16	428	0.4-	0.4+	1998 06 19	428	0.3-	0.3-
1998 04 29	428	0.3-	0.5+	1998 05 22	704	0.3-	0.1+	1998 07 01	428	0.1+	0.4-
1998 04 29	428	0.2+	0.0	1998 05 22	704	1.1-	1.1+	1998 07 01	428	1.3+	0.9-
1998 04 29	428	0.4+	0.1-	1998 05 22	704	0.8-	0.9+	1998 07 02	428	0.7+	0.1-
1998 04 30	428	0.2-	0.0	1998 05 22	704	0.7-	0.8+	1998 07 02	428	0.2+	0.9-
1998 04 30	428	0.3-	0.0	1998 05 22	704	0.2-	0.7+				

1998 HG₁₀₃ = 1995 QY₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	295.57431		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.27924108	ω	234.24566	+0.91483054	+0.40363818
a	2.3181944	Ω	101.94551	-0.36619745	+0.84240987
e	0.1957794	i	0.74381	-0.17024839	+0.35696194
P	3.53	H	15.0	G 0.15	U 5

Residuals in seconds of arc

1995 08 19	809	0.2+	0.0	1995 09 29	809	0.3-	0.5-	1998 05 22	704	0.8-	0.8-
1995 08 20	809	0.5-	0.4-	1998 04 25	809	2.0-	0.0	1998 05 22	704	0.0	0.8-
1995 08 22	809	0.4-	0.0	1998 04 25	809	1.3-	0.6-	1998 05 22	704	0.1-	2.2-
1995 08 24	809	0.6+	0.1+	1998 04 25	809	0.9-	1.1+	1998 05 23	699	1.5+	0.1+
1995 08 25	809	1.1+	0.1+	1998 04 25	809	0.2+	0.7-	1998 05 23	699	0.3-	1.6+
1995 08 26	809	0.1-	0.1-	1998 04 25	809	0.7-	2.1-	1998 05 23	699	0.5+	0.2+
1995 08 27	809	0.6-	0.4-	1998 04 25	809	0.5-	1.8-	1998 05 24	704	1.5+	0.8-
1995 08 27	809	0.1+	0.7-	1998 04 25	699	0.4-	0.6+	1998 05 24	704	0.1+	1.2+
1995 08 28	809	0.1-	0.4-	1998 04 25	699	0.1-	0.3+	1998 05 24	704	0.3-	0.8+
1995 09 17	809	0.7-	0.1-	1998 04 25	699	0.2+	1.6+	1998 05 24	704	0.8+	0.2-
1995 09 18	809	0.4+	0.1-	1998 04 28	809	2.6+	0.1+	1998 05 24	704	0.4-	0.8+
1995 09 18	809	1.5+	2.8+	1998 04 28	809	1.3+	0.6+	1998 06 16	691	0.2-	0.3+
1995 09 20	809	0.7-	0.1-	1998 04 28	809	(4.5+	0.7+)	1998 06 16	691	0.2-	0.1+
1995 09 22	809	0.4-	0.4-	1998 05 22	704	0.2-	0.4+	1998 06 16	691	0.3-	0.5+

1998 HB₁₁₅ = 1989 CA₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	93.10512		(2000.0)	P	Q
n	0.23160588	ω	345.89536	-0.60329120	-0.78123477
a	2.6260500	Ω	140.84904	+0.75412351	-0.62423355
e	0.0904783	i	14.71271	+0.25949463	-0.00216909
P	4.26	H	13.0	G 0.15	U 4

Residuals in seconds of arc

1989 02 11	675	0.0	0.5-	1998 04 24	704	0.3+	0.6+	1998 05 28	704	0.8+	0.5-
1989 02 12	675	0.2+	0.5+	1998 04 24	704	0.4-	0.6+	1998 05 28	704	0.8+	0.4-
1989 03 04	675	(5.1-	4.7+)	1998 04 24	704	0.4-	0.3+	1998 05 28	704	0.7+	0.3-
1989 03 06	675	0.2-	0.2-	1998 04 24	704	0.9-	0.1-	1998 05 28	704	0.1+	0.0
1998 04 23	704	0.8+	0.0	1998 05 23	704	0.0	0.3-	1998 06 17	704	0.3-	0.1+
1998 04 23	704	1.1+	0.1-	1998 05 23	704	0.4-	1.0+	1998 06 17	704	0.4+	0.3+

1998 AUG. 8

M.P.C. 32271

1998 04 23	704	0.8−	1.1−	1998 05 23	704	0.1+	0.1+	1998 06 17	704	0.2−	0.3−
1998 04 23	704	0.2+	0.6−	1998 05 23	704	0.1−	0.4+	1998 06 17	704	1.5−	1.1−
1998 04 23	704	0.4+	0.2+	1998 05 23	704	0.8−	0.8+	1998 06 17	704	0.3−	0.5−
1998 04 24	704	0.1−	1.1+	1998 05 28	704	0.3+	0.2−				

1998 HN₁₁₅ = 1996 XP₂₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	321.67707		(2000.0)	P	Q
<i>n</i>	0.21127226	<i>ω</i>	151.24022	+0.17974547	+0.97410154
<i>a</i>	2.7919506	<i>Ω</i>	128.77403	−0.93286587	+0.21304226
<i>e</i>	0.1273266	<i>i</i>	10.13420	−0.31217436	−0.07575739
<i>P</i>	4.67	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 12 12	691	0.0	0.1+	1998 04 23	704	0.1+	0.1−	1998 05 27	699	0.8+	0.2−
1996 12 12	691	0.0	0.2+	1998 04 23	704	0.5−	0.8−	1998 05 27	699	0.5+	0.5+
1996 12 12	691	0.0	0.2+	1998 04 23	704	0.8−	1.1−	1998 05 27	699	0.6+	0.1+
1996 12 13	691	0.0	0.2+	1998 04 24	704	0.0	0.4+	1998 05 28	704	0.7+	0.2−
1996 12 13	691	0.1+	0.2+	1998 04 24	704	0.3−	0.1−	1998 05 28	704	0.5+	0.1+
1996 12 13	691	0.1−	0.2+	1998 04 24	704	0.2−	0.2−	1998 05 28	704	0.7+	0.1+
1998 03 24	704	0.6+	0.5−	1998 04 24	704	0.3−	0.2−	1998 05 28	704	0.7+	1.1−
1998 03 24	704	0.4+	0.1−	1998 04 24	704	0.4+	0.1+	1998 05 28	704	0.7−	0.3+
1998 03 24	704	0.0	0.8−	1998 05 23	704	0.6+	0.2+	1998 06 17	704	(0.1− 2.9+)	
1998 03 24	704	0.5−	1.1−	1998 05 23	704	0.6+	0.9+	1998 06 17	704	1.8−	1.6+
1998 03 24	704	0.9−	0.6+	1998 05 23	704	0.0	0.1+	1998 06 17	704	0.6−	0.1+
1998 04 23	704	0.5−	0.2+	1998 05 23	704	0.9+	0.7+	1998 06 17	704	(2.7− 0.4−)	
1998 04 23	704	0.3+	0.1+	1998 05 23	704	1.3−	0.6+				

1998 HQ₁₁₅ = 1980 BN = 1993 BN₅ = 1993 DK₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	133.13352		(2000.0)		P	Q	
n	0.22912991	ω	307.72468		+0.20514075	−0.96871351	
a	2.6449341	Ω	129.84364		+0.94545028	+0.15923468	
e	0.2130818	i	10.48206		+0.25306332	+0.19036399	
P	4.30	H	13.5	G	0.15	U	5

Residuals in seconds of arc

1980 01 22	688	0.7−	0.7−	1998 04 23	704	0.4+	0.4+	1998 05 23	704	0.6−	1.4−
1980 01 22	688	0.7+	0.8+	1998 04 23	704	0.1+	0.3−	1998 05 23	704	0.1+	1.0−
1993 01 27	010	1.4+	0.4+	1998 04 23	704	0.7−	1.0−	1998 05 28	704	0.4+	0.4+
1993 01 27	010	0.8+	0.2+	1998 04 23	704	1.0+	1.8−	1998 05 28	704	0.0	0.5−
1993 01 27	010	0.5+	0.0	1998 04 23	704	1.4−	1.2−	1998 05 28	704	(0.3− 2.9+)	
1993 01 28	010	0.4+	0.6+	1998 04 24	704	0.4−	1.0+	1998 05 28	704	0.9−	0.2+
1993 01 28	010	0.5+	0.6−	1998 04 24	704	0.7+	0.3+	1998 05 28	704	1.5−	1.7+
1993 01 28	010	0.5−	0.3−	1998 04 24	704	0.2+	0.4−	1998 05 29	704	0.7+	0.0
1993 01 29	691	1.6−	0.2−	1998 04 24	704	1.4−	0.9−	1998 05 29	704	0.1+	0.4−
1993 01 29	691	1.4−	0.0	1998 04 24	704	0.9+	1.9+	1998 05 29	704	0.5+	1.2+
1993 01 29	691	(2.3− 0.1−)		1998 05 23	704	0.6+	1.5+	1998 05 29	704	1.1−	1.4−
1993 02 21	399	(0.3+ 2.3+)		1998 05 23	704	0.8+	1.9+	1998 05 29	704	(4.4− 0.1+)	
1993 02 21	399	(1.8− 3.1−)		1998 05 23	704	1.4+	0.2−				

1998 HR₁₁₅ = 1997 EO₃₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	274.33845		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.19076135	ω	178.67384	+0.80882312	+0.57730737
a	2.9886551	Ω	145.28224	−0.54131980	+0.80528202
e	0.0987113	i	11.33086	−0.22973471	+0.13504468
P	5.17	H	13.0	G 0.15	U 5

Residuals in seconds of arc

1997 03 05	704	0.4−	0.1−	1998 04 24	704	0.3+	0.2−	1998 05 23	704	1.0−	0.4+
1997 03 05	704	0.4+	0.5+	1998 04 24	704	0.7−	0.1−	1998 05 27	699	0.2−	0.2+
1997 03 06	704	0.2−	0.2+	1998 04 24	704	0.5+	0.0	1998 05 27	699	0.6+	0.2+
1997 03 06	704	0.1+	0.7−	1998 04 24	704	0.1−	0.2−	1998 05 27	699	1.2+	0.1+
1998 04 23	704	0.1+	0.9+	1998 04 24	704	0.2+	0.7+	1998 05 28	704	0.4−	1.0+

1998 04 23	704	0.7+	0.3−	1998 05 23	704	0.1+	0.0	1998 05 28	704	0.8−	1.1−
1998 04 23	704	0.2−	0.4−	1998 05 23	704	0.7+	0.0	1998 05 28	704	0.5+	0.1−
1998 04 23	704	0.2+	0.4−	1998 05 23	704	0.4−	0.3−	1998 05 28	704	(0.0 2.2−)	
1998 04 23	704	0.9−	0.2+	1998 05 23	704	0.7+	0.6+	1998 05 28	704	1.0−	1.0−

1998 HL₁₁₇ = 1936 PK = 1980 WO₃ = 1992 DQ₁ = 1994 TG₁₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	278.82383		(2000.0)	P	Q
n	0.20407543	ω	242.48463	+0.94591393	+0.29427996
a	2.8572105	Ω	100.13723	−0.22647824	+0.90037336
e	0.3005613	i	7.97358	−0.23228098	+0.32051072
P	4.83	H	13.0	G 0.15	U 2

Residuals in seconds of arc

1936 08 09	078(48.0+ 15.0+)X	1998 04 21	704	0.6+	0.3−	1998 05 22	566	0.4−	0.1−
1980 11 29	675 0.0 0.6−	1998 04 21	704	0.7−	0.1+	1998 05 22	566	0.5−	0.5−
1980 12 01	675 0.5+ 0.7−	1998 04 23	704	0.5−	0.5−	1998 05 22	566	0.1−	0.0
1992 02 27	033 0.3+ 0.4−	1998 04 23	704	0.1+ 0.7−		1998 05 23	704	0.2+ 0.5+	
1992 02 27	033 0.2+ 0.4+	1998 04 23	704	0.1+ 0.3+		1998 05 23	704	0.6+ 0.0	
1992 02 28	033 0.4− 0.4+	1998 04 23	704	0.5− 0.3+		1998 05 23	704	0.1− 0.4−	
1994 10 07	675 1.7+ 1.2+	1998 04 23	704	0.1− 0.9−		1998 05 23	704	0.3+ 0.2+	
1994 10 09	675 0.1− 1.1−	1998 04 23	704	0.3+ 0.2−		1998 05 23	704	0.8− 1.0−	
1994 10 09	675 1.7− 0.1−	1998 04 23	704	0.1+ 0.2−		1998 05 27	699	0.4+ 0.5+	
1998 03 24	704 1.7+ 0.1+	1998 04 23	704	0.4− 0.1+		1998 05 27	699	0.0 0.4−	
1998 03 24	704 0.5+ 0.3+	1998 04 23	704	0.2+ 0.6−		1998 05 27	699	0.5+ 0.0	
1998 03 24	704 0.4+ 0.3+	1998 04 23	704	0.3− 0.5−		1998 05 28	704	0.6− 0.1−	
1998 03 24	704 1.5+ 0.4+	1998 04 24	704	1.6− 0.3+		1998 05 28	704	0.8− 0.8−	
1998 03 24	704 0.1+ 0.4+	1998 04 24	704	0.3− 0.8+		1998 05 28	704	0.1− 0.4+	
1998 04 21	704 0.0 0.3+	1998 04 24	704	0.9− 0.7+		1998 05 28	704	0.3+ 1.6−	
1998 04 21	704 0.2− 0.7−	1998 04 24	704	0.3− 0.2+		1998 05 28	704	0.8+ 1.8+	
1998 04 21	704 0.5+ 0.0	1998 04 24	704	(2.3− 0.2+)					

1998 HM₁₁₇ = 1991 JS₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	3.68857		(2000.0)	P	Q
n	0.27767460	ω	71.86632	−0.55344349	+0.83228754
a	2.3269048	Ω	164.40826	−0.80168257	−0.52204180
e	0.1078186	i	6.74902	−0.22584364	−0.18646666
P	3.55	H	15.5	G 0.15	U 5

Residuals in seconds of arc

1991 05 13	809	0.7−	0.5+	1998 04 23	704	0.3−	1.2+	1998 05 23	704	0.4+	0.2−
1991 05 13	809	1.7−	0.9+	1998 04 23	704	0.6−	1.4+	1998 05 23	704	0.6+	1.6−
1991 05 13	809	0.2−	0.4+	1998 04 23	704	1.0−	0.7+	1998 05 23	704	1.0+	0.1+
1991 05 17	809	1.0+	0.0	1998 04 23	704	0.4−	0.2−	1998 05 23	704	(1.3−	2.0−)
1991 05 17	809	1.0+	0.4−	1998 04 23	704	0.7−	0.1−	1998 05 28	704	0.1−	0.5−
1991 05 17	809	(3.0+	1.4−)	1998 04 24	704	0.7+	0.5+	1998 05 28	704	0.8−	1.1−
1998 04 21	704	1.0+	0.0	1998 04 24	704	0.4+	0.1−	1998 05 28	704	(0.1−	2.7+)
1998 04 21	704	0.5−	0.6−	1998 04 24	704	1.4+	1.1−	1998 05 28	704	1.9−	0.6−
1998 04 21	704	0.2−	0.4+	1998 04 24	704	0.2−	0.1+	1998 05 28	704	0.9+	1.3+
1998 04 21	704	0.8+	0.0	1998 04 24	704	0.4−	0.1−				
1998 04 21	704	0.3−	0.8−	1998 05 23	704	0.0	0.4−				

1988 02 16	809	1.6−	0.4+	1998 04 24	704	0.9−	1.7−	1998 05 28	704	0.3−	1.6−
1998 04 23	704	0.6+	0.5+	1998 04 24	704	0.8−	0.1+	1998 05 28	704	1.4+	1.2+
1998 04 23	704	0.6−	0.4+	1998 05 23	704	0.5+	1.0−	1998 05 28	704	0.6−	0.8+
1998 04 23	704	0.9−	0.3+	1998 05 23	704	0.2+	0.3+	1998 05 28	704	0.7−	0.3+
1998 04 23	704	0.5−	0.4+	1998 05 23	704	0.1+	1.2−				

1998 HW₁₁₈ = 1992 EU₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams											
<i>M</i>	294.43501			(2000.0)		P			Q		
<i>n</i>	0.19243509	<i>ω</i>	188.20073			+0.76137576			+0.62966096		
<i>a</i>	2.9713003	<i>Ω</i>	131.58837			−0.58248809			+0.76894242		
<i>e</i>	0.2136063	<i>i</i>	11.91220			−0.28463061			+0.11070064		
<i>P</i>	5.12	<i>H</i>	14.0			<i>G</i>	0.15		<i>U</i>	4	

Residuals in seconds of arc

1992 03 02	809	0.1−	0.2+	1998 04 23	704	(5.5−	0.5+)	1998 05 23	704	0.9+	0.1−
1992 03 05	809	1.0+	1.0−	1998 04 24	704	0.6+	1.4+	1998 05 23	704	1.4+	1.1−
1992 03 07	809	0.9−	0.6+	1998 04 24	704	0.0	0.0	1998 05 28	704	0.7−	1.0+
1998 04 23	704	0.0	0.6−	1998 04 24	704	0.3−	1.1−	1998 05 28	704	0.4−	0.2−
1998 04 23	704	0.6−	1.3+	1998 05 23	704	0.0	1.1−	1998 05 28	704	0.6−	1.2−
1998 04 23	704	0.5+	1.3+	1998 05 23	704	0.2+	0.9+	1998 05 28	704	0.1−	0.2−
1998 04 23	704	0.2+	0.1−	1998 05 23	704	0.2+	0.8−	1998 05 28	704	1.3−	0.9+

1998 HZ₁₁₈ = 1989 VK₄ = 1989 XH₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams											
<i>M</i>	293.69840			(2000.0)		P			Q		
<i>n</i>	0.18089926	<i>ω</i>	231.10095			+0.56835601			+0.77983268		
<i>a</i>	3.0963130	<i>Ω</i>	75.52199			−0.64579038			+0.62039169		
<i>e</i>	0.1136718	<i>i</i>	15.72165			−0.50982960			+0.08351732		
<i>P</i>	5.45	<i>H</i>	13.0			<i>G</i>	0.15		<i>U</i>	4	

Residuals in seconds of arc

1989 11 06	809	0.1−	0.4+	1998 04 23	704	0.9+	0.8−	1998 05 23	704	1.7−	1.7+
1989 11 06	809	0.0	0.1−	1998 04 23	704	0.2−	0.1−	1998 05 23	704	0.3+	0.6+
1989 11 06	809	1.3−	0.1−	1998 04 23	704	1.1+	0.1+	1998 05 23	704	1.1+	0.5−
1989 12 02	809	0.2−	0.8+	1998 04 23	704	0.4+	0.7+	1998 05 23	704	1.9+	0.4−
1989 12 02	809	0.3−	0.2+	1998 04 24	704	0.4−	1.0−	1998 05 28	704	0.1+	0.4−
1989 12 02	809	1.3−	1.6+	1998 04 24	704	0.2+	0.7−	1998 05 28	704	0.7−	0.6+
1989 12 03	809	0.5+	0.6−	1998 04 24	704	0.4−	0.1−	1998 05 28	704	0.3+	1.9+
1989 12 03	809	1.3+	0.2−	1998 04 24	704	0.3−	0.8−	1998 05 28	704	1.2+	0.0
1989 12 03	809	0.4+	0.1+	1998 04 24	704	0.2−	0.3+	1998 05 28	704	0.9−	1.7+
1998 04 23	704	0.2−	0.0	1998 05 23	704	1.4−	0.7−				

1998 HC₁₂₀ = 1977 DO = 1987 QS₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams											
<i>M</i>	146.87658			(2000.0)		P			Q		
<i>n</i>	0.24226893	<i>ω</i>	288.32383			+0.24446784			−0.96078707		
<i>a</i>	2.5484194	<i>Ω</i>	146.63798			+0.95501986			+0.21521473		
<i>e</i>	0.1567310	<i>i</i>	13.76583			+0.16784679			+0.17484515		
<i>P</i>	4.07	<i>H</i>	13.5			<i>G</i>	0.15		<i>U</i>	3	

Residuals in seconds of arc

1977 02 13	675	0.5−	0.9+	1987 08 25	809	0.2+	0.7+	1998 04 24	704	0.8+	0.5+
1977 02 14	675	1.0−	0.9+	1987 08 26	809	2.0−	1.5−	1998 04 24	704	0.2−	0.6+
1977 02 18	381	1.5+	0.2+	1987 08 26	809	0.3+	0.8−	1998 05 23	704	0.7+	0.3−
1977 02 18	381	1.0+	0.2−	1987 08 26	809	1.9+	0.7−	1998 05 23	704	0.7−	0.3−
1977 02 19	381	0.4−	0.2−	1998 04 23	704	0.2+	0.1−	1998 05 23	704	0.6+	0.1−
1977 02 19	381	0.4−	0.2+	1998 04 23	704	0.1+	0.1−	1998 05 23	704	0.6−	0.8+
1987 08 22	809	0.0	0.6+	1998 04 23	704	0.1−	0.4+	1998 05 25	704	0.8−	0.3+
1987 08 22	809	0.6−	0.4+	1998 04 23	704	0.8−	0.8−	1998 05 25	704	0.2+	0.6+
1987 08 22	809	1.3+	1.2+	1998 04 23	704	1.0−	0.1−	1998 05 25	704	2.2+	0.9−
1987 08 25	809	0.6−	1.1+	1998 04 24	704	0.3−	0.3+	1998 05 25	704	0.1+	0.6−
1987 08 25	809	0.7−	0.8+	1998 04 24	704	0.5−	0.5−				

1998 HF₁₂₁ = 1987 CF = 1987 DA₁

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Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams											
<i>M</i>	23.94940			(2000.0)		P			Q		
<i>n</i>	0.27885338	<i>ω</i>	91.52566			−0.82374318			+0.55896341		
<i>a</i>	2.3203426	<i>Ω</i>	122.46833			−0.55457437			−0.75957278		
<i>e</i>	0.0696364	<i>i</i>	6.45881			−0.11787469			−0.33257945		
<i>P</i>	3.53	<i>H</i>	14.5			<i>G</i>	0.15		<i>U</i>	4	

Residuals in seconds of arc

1987 02 02	033	0.3+	0.1+	1998 04 24	704	0.1+	0.8+	1998 05 25	704	1.0−	0.2+
1987 02 02	033	0.7+	0.7−	1998 04 24	704	0.2+	0.8+	1998 05 25	704	0.7−	1.8+
1987 02 25	046	0.6−	0.0	1998 04 24	704	0.5+	0.7+	1998 06 02	699	0.0	0.4−
1987 02 25	046	0.5−	0.0	1998 05 23	704	0.5−	0.4−	1998 06 02	699	0.8−	0.3−
1998 04 23	704	0.0	1.1+	1998 05 23	704	0.7−	0.7+	1998 06 02	699	0.1+	0.0
1998 04 23	704	1.1+	0.6+	1998 05 23	704	0.3−	1.3−	1998 06 16	704	0.1−	1.8+
1998 04 23	704	0.1−	0.3+	1998 05 23	704	1.1+	1.7−	1998 06 16	704	(0.5+	2.4+)
1998 04 23	704	1.0+	0.3+	1998 05 23	704	0.4+	1.7−	1998 06 16	704	0.8+	1.1−
1998 04 23	704	0.3−	1.9−	1998 05 25	704	0.1−	0.3−	1998 06 16	704	0.2−	0.2−
1998 04 24	704	0.1+	0.3+	1998 05 25	704	1.3−	0.5−	1998 06 16	704	0.8+	0.4+

1998 HU₁₂₃ = 1997 GG₃₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams											
<i>M</i>	150.95817			(2000.0)		P			Q		
<i>n</i>	0.23809912	<i>ω</i>	292.97029			+0.23551687			−0.95964611		
<i>a</i>	2.5780868	<i>Ω</i>	142.33921			+0.95810205			+0.20274108		
<i>e</i>	0.1595122	<i>i</i>	14.56594			+0.16300999			+0.19487277		
<i>P</i>	4.14	<i>H</i>	13.5			<i>G</i>	0.15		<i>U</i>	4	

Residuals in seconds of arc

1997 04 11	327	0.1−	0.1−	1998 04 23	704	0.0	0.3+	1998 05 23	704	0.4−	0.2+
1997 04 11	327	0.1+	0.3−	1998 04 23	704	0.9+	0.8−	1998 05 23	704	0.2+	0.3+
1997 04 11	327	0.0	0.2−	1998 04 23	704	0.1+	0.1+	1998 05 23	704	0.2−	0.5+
1997 04 11	327	0.1+	0.0	1998 04 23	704	1.9−	0.6−	1998 05 23	704	0.1+	0.3+
1997 04 17	327	0.2+	0.1−	1998 04 24	704	0.3+	0.0	1998 05 25	704	0.9+	0.6+
1997 04 17	327	0.8−	1.1+	1998 04 24	704	0.5+	0.0	1998 05 25	704	0.5+	0.5+
1997 04 17	327	0.5+	0.0	1998 04 24	704	0.8−	0.3+	1998 05 25	704	0.1−	0.8+
1998 04 23	704	0.1+	0.8−	1998 05 23	704	0.5+	0.4−	1998 05 25	704	0.8−	1.3−

1998 HY₁₂₄ = 1995 XP

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams											
<i>M</i>	301.57151			(2000.0)		P			Q		
<i>n</i>	0.17297256	<i>ω</i>	218.85724			+0.40074201			+0.82899161		
<i>a</i>	3.1902000	<i>Ω</i>	77.99295			−0.70910263			+0.55025954		
<i>e</i>	0.0483542	<i>i</i>	23.50484			−0.58015455			−0.09993668		
<i>P</i>	5.70	<i>H</i>	13.0			<i>G</i>	0.15		<i>U</i>	3	

Residuals in seconds of arc

1995 12 13	817	0.7−	0.9+	1998 04 23	704	0.8+	0.1+	1998 05 23	704	0.0	0.6+
1995 12 13	817	0.2−	0.7+	1998 04 24	704	0.5+	0.4−	1998 05 26	704	0.4+	0.2−
1995 12 13	817	0.2−	0.6+	1998 04 24	704	1.1−	0.1+	1998 05 26	704	0.6−	0.2+
1995 12 14	817	0.2+	0.3−	1998 04 24	704	1.1−	0.5−	1998 05 26	704	(1.7−	3.1+)
1995 12 14	817	0.5+	0.2−	1998 05 22	566	0.0	0.1−	1998 05 26	704	0.0	0.9+
1995 12 14	817	0.3+	0.4−	1998 05 22	566	0.0	0.3−	1998 05 27	699	0.4−	0.2−
1995 12 23	817	0.1+	0.7−	1998 05 22	566	0.1+	0.1+	1998 05 27	699	0.1−	0.3−
1995 12 23	817	0.0	0.4−	1998 05 23	704	0.2−	0.1+	1998 05 27	699	(2.3+	0.4−)
1998 04 23	704	0.3−	0.4−	1998 05 23	704	0.3+	0.4+	1998 06 02	699	0.6+	0.1−
1998 04 23	704	0.6+	0.1+	1998 05 23	704	0.7−	0.8−	1998 06 02	699	0.4+	0.0
1998 04 23	704	1.4+	0.2+	1998 05 23	704	0.7−	0.3+	1998 06 02	699	0.4+	0.2+

1998 AUG. 8

1998 HW₁₂₅ = 1991 LF₆ = 1994 CR₂
Epoch 1998 July 6.0 TT = JDT 2451000.5

Epoch 1998 July 6.0 TT = JDT 2451000.5						Williams					
<i>M</i> 101.97060		(2000.0)		P		Q					
<i>n</i>	0.27596648	ω	17.07897	−0.57682434		−0.80648574					
<i>a</i>	2.3364966	Ω	108.33247	+0.73257795		−0.58104062					
<i>e</i>	0.1621690	<i>i</i>	7.86074	+0.36139068		−0.10941913					
<i>P</i>	3.57	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>		4			
Residuals in seconds of arc											
1991 06 06	809	1.3+	0.3−	1994 02 17	372	(0.2−	2.7+)	1998 05 23	704	0.2−	0.8−
1991 06 06	809	1.3−	0.5+	1998 04 23	704	0.4−	0.7−	1998 05 23	704	0.6+	0.2+
1991 06 06	809	0.0	0.4−	1998 04 23	704	0.0	0.3+	1998 05 23	704	1.4+	0.1−
1994 02 13	372	0.7−	0.3−	1998 04 23	704	1.1+	1.2+	1998 05 23	704	0.8−	0.5−
1994 02 13	372	(1.0−	2.6+)	1998 04 23	704	0.6−	0.5+	1998 05 23	704	0.6−	0.2−
1994 02 15	675	0.6+	0.1−	1998 04 24	704	0.4+	0.7−	1998 05 25	704	1.0−	1.3+
1994 02 15	675	0.0	0.3−	1998 04 24	704	0.5−	0.4−	1998 05 25	704	(1.7−	2.3−)
1994 02 16	372	(2.4−	0.3−)	1998 04 24	704	0.8+	0.6+	1998 05 25	704	0.6−	0.9−
1994 02 16	372	(2.4+	1.8−)	1998 05 05	699	0.5+	0.0	1998 05 25	704	(3.6−	1.0−)
1994 02 17	372	0.6−	0.7−	1998 05 05	699	0.7+	0.6+				
1994 02 17	372	0.6+	1.2+	1998 05 05	699	0.8−	0.2−				

1998 HU₁₂₉ = 1992 SZ₂
Epoch 1998 July 6.0 TT = JDT 2451000.5

Epoch 1998 July 6.0 TT = JDT 2451000.5						Williams					
<i>M</i>	308.43265		(2000.0)		P		Q				
<i>n</i>	0.29799928		<i>ω</i>	291.25073		+0.39121955		+0.92029505			
<i>a</i>	2.2198617		<i>Ω</i>	1.78367		−0.81779503		+0.34867602			
<i>e</i>	0.2098735		<i>i</i>	3.81175		−0.42208831		+0.17743183			
<i>P</i>	3.31		<i>H</i>	16.5		<i>G</i>	0.15		<i>U</i>	5	
Residuals in seconds of arc											
1992 09 24	691	0.1−	0.0	1998 03 28	704	1.3−	0.6+	1998 04 01	704	1.8+	2.2+
1992 09 24	691	0.2+	0.0	1998 03 28	704	1.6−	0.2−	1998 04 01	704	1.3+	2.6−
1992 09 24	691	0.2+	0.1+	1998 03 28	704	0.5−	0.2−	1998 04 01	704	0.4−	0.4+
1992 09 25	691	0.3−	0.5−	1998 03 28	704	0.1+	1.6+	1998 04 19	704	1.5+	0.7+
1992 09 25	691	0.2+	0.2+	1998 03 29	704	0.1+	1.5+	1998 04 19	704	1.1+	0.4+
1992 09 25	691	0.1−	0.1+	1998 03 29	704	2.5+	0.6+	1998 04 19	704	0.7+	0.6+
1998 03 22	704	0.5−	0.6−	1998 03 29	704	0.8+	0.1−	1998 04 19	704	0.8−	0.1+
1998 03 22	704	1.4−	1.0−	1998 03 29	704	1.0−	0.8−	1998 04 19	704	1.5−	0.0
1998 03 22	704	1.9−	1.4−	1998 03 29	704	1.8+	1.1+	1998 04 20	704	1.3+	1.7−
1998 03 22	704	(5.6−	0.1−)	1998 04 01	704	1.3+	0.1−	1998 04 20	704	1.0−	1.2−
1998 03 28	704	0.1−	0.4+	1998 04 01	704	0.2+	0.2−	1998 04 20	704	2.8−	0.1−

1998 HZ₁₃₂ = 1994 PY₁₂
Epoch 1998 July 6.0 TT = JDT 2451000.5

Epoch 1998 July 6.0 TT = JDT 2451000.5					Williams						
<i>M</i>	330.17957		(2000.0)		P		Q				
<i>n</i>	0.18999056		ω 319.17814		−0.21913471		+0.97528530				
<i>a</i>	2.9967329		Ω 298.14625		−0.88664232		−0.21113919				
<i>e</i>	0.1564972		<i>i</i> 1.83656		−0.40724118		−0.06510620				
<i>P</i>	5.19		<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 03 29	704	0.9+	1.4+	1998 04 19	704	2.0+	0.6+
1994 08 10	809	0.2+	0.2−	1998 03 29	704	1.6−	0.5−	1998 04 19	704	2.0+	0.5+
1994 08 10	809	0.3−	0.3−	1998 04 01	704	1.0+	0.4−	1998 04 19	704	0.6−	1.7+
1994 08 11	809	0.1+	0.2−	1998 04 01	704	0.0	1.2+	1998 04 20	704	0.8−	0.7−
1994 08 11	809	0.7−	0.9−	1998 04 01	704	0.2−	1.1−	1998 04 20	704	0.3+	0.0
1994 08 11	809	0.1−	0.1−	1998 04 01	704	0.5+	0.3−	1998 04 20	704	2.0−	0.9−
1998 03 29	704	1.0−	0.5−	1998 04 01	704	0.3+	1.2+	1998 04 20	704	1.6−	0.2−
1998 03 29	704	0.0	1.1−	1998 04 19	704	0.7+	0.8−				

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1998 HW₁₄₀ = 1995 YX₂₅
Epoch 1998 July 6.0 TT = JDT 2451000.5

Epoch 1998 July 6.0 TT = JDT 2451000.5						Williams					
<i>M</i> 358.16087		(2000.0)		P		Q					
<i>n</i>	0.18070383	ω	161.56121			-0.56889060		+0.81063599			
<i>a</i>	3.0985450	Ω	73.54347			-0.77157498		-0.46771249			
<i>e</i>	0.2530357	<i>i</i>	8.31447			-0.28466742		-0.35229863			
<i>P</i>	5.45	<i>H</i>	14.5		<i>G</i>	0.15		<i>U</i>	4		
Residuals in seconds of arc											
1995 12 16	691	0.0	0.2+	1998 04 21	704	0.4+	0.1+	1998 05 16	704	0.3-	0.5+
1995 12 16	691	0.1+	0.1+	1998 04 21	704	0.7-	0.4+	1998 05 16	704	0.1+	0.1+
1995 12 16	691	0.1-	0.7+	1998 04 21	704	0.1+	0.9+	1998 05 19	620	0.2-	1.0-
1995 12 22	691	0.4+	0.3-	1998 04 21	704	0.3-	0.6+	1998 05 19	620	0.0	0.8-
1995 12 22	691	0.0	0.3-	1998 04 23	704	0.2-	0.0	1998 05 19	620	0.0	0.6-
1995 12 22	691	0.5-	0.0	1998 04 23	704	0.5+	0.2-	1998 05 19	620	0.1+	0.1-
1998 03 24	704	1.7+	1.3-	1998 04 23	704	0.7-	0.2-	1998 05 21	620	1.4+	0.5+
1998 03 24	704	0.8+	0.8-	1998 04 23	704	0.4-	1.0-	1998 05 21	620	0.8+	0.5+
1998 03 24	704	0.5+	0.8+	1998 04 23	704	0.0	0.4-	1998 05 21	620	0.5+	0.5+
1998 03 24	704	0.9-	1.2-	1998 05 16	704	0.7+	0.6-	1998 05 25	699	0.0	0.1+
1998 03 24	704	1.0-	1.2+	1998 05 16	704	1.4-	1.2+	1998 05 25	699	0.4+	1.4-
1998 04 21	704	0.6-	0.9+	1998 05 16	704	0.9-	1.6+	1998 05 25	699	0.1-	0.1-

1998 HO₁₄₅ = 1995 QX₁₀
Epoch 1998 July 6.0 TT = JDT 2451000.5

Epoch 1998 July 6.0 TT = JDT 2451000.5						Williams					
<i>M</i>		39.92703		(2000.0)		P		Q			
<i>n</i>	0.24120467	ω	46.84807			-0.98060221		+0.19158664			
<i>a</i>	2.5559101	Ω	144.13885			-0.19400954		-0.91861930			
<i>e</i>	0.0960063	<i>i</i>	4.05235			-0.02792138		-0.34559101			
<i>P</i>	4.09	<i>H</i>	15.5			<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc											
1995 08 19	809	0.8+	0.2+	1998 04 22	704	0.3+	1.8+	1998 05 01	704	0.3-	0.1+
1995 08 26	809	0.0	0.3+	1998 04 22	704	1.3-	0.2+	1998 05 22	704	0.0	0.3+
1995 08 27	809	0.8-	0.4-	1998 04 22	704	0.1+	0.3-	1998 05 22	704	1.3+	1.5-
1995 08 29	809	0.1-	0.3+	1998 04 22	704	1.4+	1.7+	1998 05 22	704	1.0+	0.6+
1998 04 21	704	0.1-	0.2-	1998 04 25	699	1.2+	0.0	1998 05 22	704	0.3+	0.1+
1998 04 21	704	0.5+	0.7-	1998 04 25	699	0.8-	0.5+	1998 05 24	704	0.6-	1.0-
1998 04 21	704	0.9+	0.2-	1998 04 25	699	2.0-	0.7+	1998 05 24	704	(1.3+	2.7-)
1998 04 21	704	0.2+	0.5-	1998 05 01	704	0.3+	0.9-	1998 05 24	704	0.8-	0.2+
1998 04 21	704	0.2+	0.2+	1998 05 01	704	0.6-	0.7-	1998 05 24	704	(0.9+	2.7+)
1998 04 22	704	0.4+	0.0	1998 05 01	704	0.1+	0.5-	1998 05 24	704	1.7-	0.0

1998 HM₁₄₆ = 1997 AE₉
Id. A. Gnädig
Epoch 1998 July 6.0 TT = JDT 2451000.5

Id. A. Gnädig				Williams			
Epoch 1998 July 6.0 TT = JDT 2451000.5							
<i>M</i>	250.88328	(2000.0)		P	Q		
<i>n</i>	0.20941739	ω	201.41524	+0.98425423	+0.17578894		
<i>a</i>	2.8084125	Ω	148.44249	−0.15660940	+0.91577332		
<i>e</i>	0.0507565	<i>i</i>	2.02459	−0.08195791	+0.36118897		
<i>P</i>	4.71	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1997 01 02	691	0.3+	0.0	1998 04 22	704	0.6−	0.8−
1997 01 02	691	0.1+	0.1−	1998 04 22	704	0.1−	1.5+
1997 01 02	691	0.2+	0.1−	1998 04 22	704	0.9−	0.6+
1997 01 10	691	0.1−	0.1−	1998 04 22	704	1.4−	1.0−
1997 01 10	691	0.1−	0.1−	1998 05 01	704	0.7+	0.3−
1997 01 10	691	0.3−	0.3+	1998 05 01	704	0.0	0.2−
1998 04 21	704	0.1+	0.1−	1998 05 01	704	0.3+	0.2−
1998 04 21	704	0.0	0.4−	1998 05 01	704	0.8+	0.2−
1998 04 21	704	0.6+	0.2+	1998 05 01	704	(3.6−	0.1−)
1998 04 21	704	0.9+	0.9+	1998 05 22	704	0.1+	1.0−

1998 HH₁₄₇ = 1994 BB₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29328851	ω	97.09795	−0.51491055	+0.85425091		
<i>a</i>	2.2435686	Ω	141.63556	−0.82498527	−0.47111593		
<i>e</i>	0.0502734	<i>i</i>	6.62180	−0.23295157	−0.21978434		
<i>P</i>	3.36	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1994 01 30	010	1.3−	0.4+	1998 04 23	704	0.8+	0.3+
1994 01 30	010	0.8−	0.9−	1998 04 24	704	0.7−	0.4+
1994 01 31	010	0.9+	0.6+	1998 04 24	704	(0.1+	2.7+)
1994 01 31	010	1.1+	0.1−	1998 04 24	704	0.8−	0.5+
1994 01 31	010	(2.8+	1.0+)	1998 05 23	704	0.5+	0.6−
1998 04 23	704	0.1−	0.5−	1998 05 23	704	0.0	0.7+
1998 04 23	704	0.9+	0.7+	1998 05 23	704	0.3+	0.3−
1998 04 23	704	0.3−	1.6−	1998 05 23	704	0.8+	0.8+

1998 HD₁₄₈ = 1991 RO₂₉

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23540088	ω	188.37425	+0.45625409	−0.87313545		
<i>a</i>	2.5977499	Ω	234.65128	+0.82812866	+0.48722472		
<i>e</i>	0.1478749	<i>i</i>	12.14915	+0.32563035	−0.01570226		
<i>P</i>	4.19	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1991 09 12	675	0.3+	0.2+	1998 05 22	704	0.9+	0.9−
1991 09 12	675	0.2−	0.0	1998 05 22	699	0.4−	0.3+
1991 09 16	675	0.4+	1.0−	1998 05 22	699	0.1+	0.2+
1991 09 16	675	0.5−	0.8+	1998 05 22	704	0.2+	0.3−
1998 04 25	809	(1.3−	4.2−)	1998 05 22	699	1.7+	0.4−
1998 04 25	809	(0.6−	5.2−)	1998 05 22	704	(4.2−	1.7+)
1998 04 25	809	(1.2−	5.1−)	1998 05 23	699	0.3+	0.3+
1998 04 28	809	(2.0+	2.2+)	1998 05 23	699	0.4−	0.7−
1998 04 28	809	1.2+	1.3+	1998 05 23	699	0.3−	0.6+
1998 04 28	809	(1.6+	3.1+)	1998 05 24	704	0.8−	0.4−
1998 05 22	704	0.7−	0.0	1998 05 24	704	0.2−	0.2−
1998 05 22	704	0.7−	0.3+	1998 05 24	704	0.1−	0.2−

1998 HF₁₄₈ = 1993 OZ₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17244884	ω	154.43284	+0.94048071	+0.33985254		
<i>a</i>	3.1966557	Ω	185.70504	−0.31808009	+0.87619425		
<i>e</i>	0.0656706	<i>i</i>	2.22155	−0.11967077	+0.34176372		
<i>P</i>	5.72	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1993 07 13	809	0.2+	1.4−	1998 04 25	809	0.7+	0.3+
1993 07 13	809	1.6−	1.3−	1998 04 25	809	1.0+	0.1+
1993 07 13	809	2.3−	2.5−	1998 04 28	809	0.5+	0.6+
1993 07 20	809	1.8+	1.6+	1998 04 28	809	0.9+	0.0
1993 07 20	809	0.8+	1.4+	1998 04 28	809	0.4−	1.7+
1993 07 20	809	0.5+	1.5+	1998 05 22	704	2.0−	0.8−
1993 07 24	809	0.6+	1.0+	1998 05 22	704	1.9−	0.4+
1998 04 25	809	1.2+	0.8+	1998 05 22	704	0.2−	1.3−

1998 HB₁₄₉ = 1977 RO₅ = 1988 VZ₉ = 1988 XS₃ = 1995 UQ₂₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27407038	ω	230.34331	+0.95796726	+0.28595094		
<i>a</i>	2.3472606	Ω	113.02999	−0.25494382	+0.88540480		
<i>e</i>	0.2205200	<i>i</i>	1.43451	−0.13153853	+0.36645654		
<i>P</i>	3.60	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1977 09 09	095	0.1−	0.2+	1998 04 28	809	(2.5+	0.5+)
1988 11 15	875	0.6+	0.5+	1998 04 28	809	(2.3+	2.1+)
1988 11 15	875	0.4+	0.6+	1998 05 22	704	0.2−	0.9+
1988 12 01	054	1.1−	1.0−	1998 05 22	704	0.5−	0.1−
1995 10 20	691	0.5+	0.1−	1998 05 22	704	0.4−	1.1+
1995 10 20	691	0.2+	0.1+	1998 05 22	704	1.1−	0.5+
1995 10 20	691	0.3+	0.1+	1998 05 22	704	0.2+	0.9+
1995 10 25	691	0.5−	0.0	1998 05 24	704	0.2+	1.7−
1995 10 25	691	0.3−	0.2−	1998 05 24	704	0.2−	0.4+
1995 10 25	691	0.2−	0.0	1998 05 24	704	(0.1+	2.0+)
1998 04 25	809	0.4+	0.1+	1998 05 24	704	0.3+	1.3+
1998 04 25	809	0.6+	1.1−	1998 05 24	704	0.1−	1.8+
1998 04 25	809	1.8+	0.8−	1998 06 16	704	0.1−	0.2+
1998 04 28	809	(2.1+	0.6−)	1998 06 16	704	1.1−	0.3+

1998 HR₁₅₀ = 1978 VD₁₆ = 1995 QT₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22393165	ω	251.49120	−0.13008087	−0.98677126		
<i>a</i>	2.6857096	Ω	206.56389	+0.97160886	−0.10741228		
<i>e</i>	0.1420750	<i>i</i>	12.49525	+0.19762386	−0.12142935		
<i>P</i>	4.40	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1978 11 01	095	0.2+	2.8−	1998 04 22	704	0.1+	0.9−
1995 08 25	691	0.1−	0.7−	1998 04 22	704	0.3−	0.3−
1995 08 25	691	0.1−	0.2−	1998 04 22	704	0.4−	0.8−
1995 08 25	691	0.1−	0.1−	1998 04 22	704	0.0	1.1−
1995 08 31	691	0.0	0.4+	1998 05 01	704	0.0	0.3−
1995 08 31	691	0.2+	0.1+	1998 05 01	704	0.1−	0.8−
1995 08 31	691	0.3+	0.1+	1998 05 01	704	0.7−	0.7−
1998 04 20	691	(2.2−	0.6−)	1998 05 01	704	0.2−	0.6−
1998 04 20	691	(2.3−	0.4−)	1998 05 01	704	1.2+	0.6−
1998 04 20	691	(2.4−	0.3−)	1998 05 22	704	0.1+	0.4+

1998 JL₁ = 1994 CW₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26806223	ω	182.88959	−0.95527618	+0.29549528		
<i>a</i>	2.3822041	Ω	14.31340	−0.27038024	−0.85717275		
<i>e</i>	0.1298182	<i>i</i>	2.64301	−0.11975788	−0.42182630		
<i>P</i>	3.68	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1994 02 08	809	0.7+	0.9+	1998 04 25	699	0.1+	0.5+
1994 02 08	809	0.4+	0.3+	1998 05 01	566	0.2+	0.2−
1994 02 08	809	0.1−	0.6−	1998 05 01	566	0.3−	0.1−
1994 02 10	809	0.4+	0.2−	1998 05 01	566	0.8−	0.1−
1994 02 10	809	0.5−	0.0	1998 05 02	566	0.0	0.4+
1994 02 10	809	0.9−	0.5−	1998 05 02	566	0.4+	0.1+
1998 04 25	699	0.2+	0.3−	1998 05 02	566	0.5−	0.1−
1998 04 25	699	0.7+	0.0	1998 05 22	704	0.6−	0.3−

1998 AUG. 8

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1998 JM₁ = 1988 TT₃ = 1990 DL₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	226.98051		(2000.0)	P		Q	
<i>n</i>	0.26812819	ω	57.35679	+0.95566751	−0.29372624		
<i>a</i>	2.3818134	Ω	319.71377	+0.25835395	+0.87003284		
<i>e</i>	0.0486740	<i>i</i>	1.82600	+0.14125457	+0.39593908		
<i>P</i>	3.68	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1988 10 03	046	1.8−	0.3−	1990 03 02	809	0.4+	0.6−
1988 10 03	046	1.4+	1.2+	1990 03 04	809	0.2−	0.0
1990 02 28	809	0.4−	0.1+	1990 03 04	809	0.2−	0.0
1990 02 28	809	0.2+	0.0	1990 03 04	809	0.1−	0.0
1990 02 28	809	0.8+	0.3−	1998 05 01	566	0.1+	0.1+
1990 03 01	809	0.5−	1.0+	1998 05 01	566	0.1−	0.2+
1990 03 01	809	0.1−	0.7+	1998 05 01	566	0.3−	0.2+
1990 03 01	809	0.4+	0.6+	1998 05 02	566	0.4−	0.2−
1990 03 02	809	0.0	0.4−	1998 05 02	566	0.3−	0.1−
1990 03 02	809	0.1+	0.6−	1998 05 02	566	0.6−	0.1+
1998 05 22	704	1.5+	1.7+	1998 05 22	704	1.5+	1.7+
1998 05 22	704	1.9−	0.3+	1998 05 22	704	1.9−	0.3+
1998 05 22	704	0.0	0.4+	1998 05 22	704	0.0	0.4+
1998 05 22	704	0.9+	1.0+	1998 05 22	704	0.9+	1.0+
1998 05 22	704	0.3+	1.4+	1998 05 22	704	0.3+	1.4+
1998 05 24	704	0.1+	0.3−	1998 05 24	704	0.1+	0.3−
1998 05 24	704	0.5−	0.6−	1998 05 24	704	0.5−	0.6−
1998 05 24	704	0.3+	0.9−	1998 05 24	704	0.3+	0.9−
1998 05 24	704	0.9+	1.4−	1998 05 24	704	0.9+	1.4−
1998 05 24	704	0.3+	1.3−	1998 05 24	704	0.3+	1.3−

1998 JZ₁ = 1976 QR₂ = 1976 RA

Id. A. Gnädig, B. G. Marsden (d)

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	345.95366		(2000.0)	P		Q	
<i>n</i>	0.31126836	ω	246.66588	+0.30622178	+0.94960168		
<i>a</i>	2.1563176	Ω	41.35396	−0.83220138	+0.30119437		
<i>e</i>	0.2905107	<i>i</i>	5.81747	−0.46224354	+0.08682511		
<i>P</i>	3.17	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1976 08 30	808	0.5−	0.4−	1998 05 02	566	0.4−	0.1+
1976 08 30	808	0.1−	0.6+	1998 05 02	566	0.0	0.1+
1976 09 15	808	0.4+	2.2−	1998 05 06	566	0.4−	0.2+
1976 09 15	808	0.8+	0.4+	1998 05 06	566	0.4−	0.1+
1998 04 25	809	(3.3+ 1.8+)	1998 05 06	566	0.3−	0.0	1998 06 16
1998 04 25	809	(2.7+ 2.0+)	1998 05 22	704	1.1+	0.1−	1998 06 16
1998 04 25	809	(2.8+ 1.4+)	1998 05 22	704	0.0	0.9+	1998 06 16
1998 04 28	809	1.5+ 0.9−	1998 05 22	704	0.6+	0.4−	1998 06 16
1998 04 28	809	1.7+ 1.0−	1998 05 22	704	0.6+	0.6−	1998 06 16
1998 04 28	809	0.9+ 1.0−	1998 05 22	704	0.3+	0.6−	1998 07 11
1998 05 01	566	1.7− 1.0−	1998 05 22	566	0.5−	0.3+	1998 07 11
1998 05 01	566	1.7− 0.8−	1998 05 22	566	0.6−	0.4+	1998 07 11
1998 05 01	566	1.2− 0.5−	1998 05 22	566	1.2−	0.5+	
1998 05 02	566	0.6− 0.1−	1998 05 24	704	0.5+	0.7+	

1998 JQ₂ = 1990 SW₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	303.31907		(2000.0)	P		Q	
<i>n</i>	0.22399709	ω	164.87084	+0.76573154	+0.64035123		
<i>a</i>	2.6851866	Ω	155.00169	−0.60385782	+0.74793482		
<i>e</i>	0.1966861	<i>i</i>	8.16879	−0.22138415	+0.17476788		
<i>P</i>	4.40	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1990 09 14	809	0.6−	0.2+	1990 09 25	809	0.4+	1.4+
1990 09 14	809	1.0−	0.8−	1998 04 23	704	0.5+	0.1−
1990 09 14	809	(1.9−	1.0−)	1998 04 23	704	0.6−	1.2−
1990 09 22	809	0.3+	0.3−	1998 04 23	704	0.2+	0.7+
1990 09 22	809	0.1+	1.4−	1998 04 23	704	0.0	0.4+
1990 09 22	809	0.2−	0.8−	1998 04 24	704	0.3−	1.6−
1990 09 25	809	(0.9+	1.9+)	1998 04 24	704	0.9−	0.8+
1990 09 25	809	0.6+	1.5+	1998 04 24	704	0.5+	0.2+

1998 KJ = 1980 WB₄ = 1985 VE₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	306.96938		(2000.0)	P		Q					
n	0.19040877	ω	183.12122	-0.18113875	+0.96546394						
a	2.9923433	Ω	76.50042	-0.89808226	-0.08478629						
e	0.0520882	i	11.10372	-0.40079546	-0.24635477						
P	5.18	H	13.0	G	0.15	U	3				
Residuals in seconds of arc											
1980 11 29	675	0.7-	1.5+	1998 05 19	557	0.0	0.2-	1998 05 28	557	0.2-	0.3-
1980 12 01	675	0.0	0.2+	1998 05 19	557	0.1+	0.4-	1998 05 28	557	0.1+	0.6-
1985 11 11	095	1.2+	2.4-	1998 05 20	557	0.2-	0.4-	1998 05 28	557	0.1-	0.2-
1998 04 28	566	0.1-	0.7+	1998 05 20	557	1.0+	0.0	1998 06 14	557	1.2-	0.2+
1998 04 28	566	0.4-	0.8+	1998 05 20	557	0.3-	0.7-	1998 06 14	557	0.0	0.0
1998 04 28	566	0.2+	0.9+	1998 05 26	557	0.0	0.2-	1998 06 14	557	0.5+	0.1-
1998 05 19	557	0.0	0.4-	1998 05 26	557	0.2-	0.2-				
1998 05 19	557	0.0	0.3-	1998 05 26	557	0.2+	0.1+				

1998 KC₂ = 1978 WT₂₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	61.63368		(2000.0)	P		Q					
<i>n</i>	0.27174081	ω	290.37680	−0.82764963	−0.51283704						
<i>a</i>	2.3606566	Ω	219.74240	+0.54658686	−0.82875887						
<i>e</i>	0.3152331	<i>i</i>	20.89489	−0.12743192	−0.22395739						
<i>P</i>	3.63	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1978 11 28	675	0.2+	0.7+	1998 05 01	704	0.5−	0.1−	1998 05 24	704	0.4+	0.7+
1978 11 29	675	0.2−	1.1−	1998 05 01	704	1.3+	0.1−	1998 05 24	704	0.1+	0.1−
1998 04 22	704	0.2−	0.4−	1998 05 22	704	0.4+	0.4+	1998 05 24	704	0.3−	0.3−
1998 04 22	704	0.1−	0.2−	1998 05 22	704	0.5+	0.2+	1998 05 25	699	0.2+	0.1+
1998 04 22	704	0.7−	0.0	1998 05 22	704	0.3+	0.7−	1998 05 25	699	0.1−	0.1+
1998 04 22	704	0.6−	0.2+	1998 05 22	704	0.2+	0.1−	1998 05 25	699	0.0	0.0
1998 04 22	704	0.0	0.5+	1998 05 22	704	0.4+	0.5−	1998 06 02	699	0.3+	0.3−
1998 05 01	704	0.2+	0.2−	1998 05 24	704	0.0	0.3+	1998 06 02	699	0.5−	0.8+
1998 05 01	704	0.7+	0.3−	1998 05 24	704	0.8−	0.6−	1998 06 02	699	1.2−	0.2+

1998 KG₂ = 1977 LW

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	359.19734		(2000.0)			P		Q			
<i>n</i>	0.23399891	ω	4.64460			−0.20362850		+0.94674768			
<i>a</i>	2.6081155	Ω	253.76233			−0.90641901		−0.27858980			
<i>e</i>	0.2594222	<i>i</i>	15.05642			−0.37005407		+0.16142041			
<i>P</i>	4.21	<i>H</i>	15.0			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1977 06 12	675	0.2−	0.4+	1998 05 24	704	0.1−	0.6−	1998 06 25	691	0.1+	0.1+
1977 06 13	675	0.2+	0.5−	1998 06 16	704	0.8+	0.0	1998 06 25	691	0.3+	0.8+
1998 05 22	704	1.0+	0.4+	1998 06 16	704	0.2+	0.4+	1998 06 27	699	0.7+	0.4+
1998 05 22	704	0.3+	0.5+	1998 06 16	704	0.9−	0.3−	1998 06 27	699	(2.2+ 0.1+)	
1998 05 22	704	0.3−	0.1−	1998 06 16	704	0.1+	1.0−	1998 06 27	699	0.6+	1.0+
1998 05 22	704	0.6+	0.7−	1998 06 16	704	0.9−	0.2+	1998 06 29	699	0.3+	0.7−
1998 05 22	704	1.1−	0.8−	1998 06 18	704	0.1−	0.7−	1998 06 29	699	0.1+	0.2−
1998 05 24	704	0.4−	0.6+	1998 06 18	704	0.4+	1.4−	1998 06 29	699	0.6−	0.0
1998 05 24	704	0.3−	0.1−	1998 06 18	704	1.1+	0.6+	1998 07 02	691	1.0−	0.2+
1998 05 24	704	0.7−	1.1+	1998 06 18	704	1.2+	0.2+	1998 07 02	691	0.8−	0.3+
1998 05 24	704	0.1−	0.0	1998 06 25	691	0.1+	0.3−	1998 07 02	691	0.8−	0.3+

1998 KQ₂ = 1989 YE₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28832351	ω	358.68143	−0.36984683	+0.85447587		
<i>a</i>	2.2692517	Ω	249.50741	−0.84882145	−0.47041065		
<i>e</i>	0.1085984	<i>i</i>	22.92045	−0.37777701	+0.22041962		
<i>P</i>	3.42	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1989 12 25	033	1.3−	0.3−	1998 05 24	704	0.0	0.5+	1998 06 03	704	1.6−	1.3+
1989 12 25	033	1.6+	1.7+	1998 05 24	704	0.1+	0.7−	1998 06 03	704	0.4−	1.1+
1989 12 26	033	0.1−	1.0−	1998 05 24	327	0.4+	0.7−	1998 06 03	704	0.7−	1.4+
1998 05 22	704	0.2+	0.8−	1998 05 24	327	0.5+	0.5−	1998 06 26	699	1.0−	1.3−
1998 05 22	704	0.5−	0.0	1998 05 24	327	0.4+	0.7−	1998 06 26	699	1.0−	0.9−
1998 05 22	704	0.5+	0.4+	1998 05 24	327	0.6+	0.4−	1998 06 26	699	0.9−	1.0−
1998 05 22	704	0.1−	1.1+	1998 05 25	327	0.4+	0.6−	1998 07 15	699	0.5+	0.7+
1998 05 22	704	0.2+	0.4+	1998 05 25	327	0.4+	0.6−	1998 07 15	699	0.5+	0.3+
1998 05 24	704	0.4+	0.1+	1998 05 25	327	0.3+	0.6−	1998 07 15	699	0.6+	0.1+
1998 05 24	704	0.2−	0.3−	1998 06 03	704	0.9+	0.7+				
1998 05 24	704	0.3+	0.2+	1998 06 03	704	0.8−	1.1+				

1998 KC₄ = 1979 YJ₃ = 1992 FT₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18366767	ω	219.31579	+0.24044864	+0.95664426		
<i>a</i>	3.0651207	Ω	65.15927	−0.83867039	+0.29000475		
<i>e</i>	0.0522074	<i>i</i>	10.43523	−0.48868847	−0.02700001		
<i>P</i>	5.37	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 12 24	095	0.3+	2.0−	1998 05 22	699	0.7+	0.7+	1998 06 16	704	0.3−	0.7−
1992 03 22	372	0.9+	0.8−	1998 05 22	699	0.7+	0.3+	1998 06 16	704	2.3−	2.5−
1992 03 22	372	0.5−	0.9+	1998 05 24	704	0.5+	0.2+	1998 06 18	704	0.1+	0.1+
1998 04 20	327	0.1+	0.1+	1998 05 24	704	0.0	0.5−	1998 06 18	704	1.3−	1.0−
1998 04 20	327	0.3−	0.1+	1998 05 24	699	0.6+	0.3−	1998 06 18	704	0.7−	0.7−
1998 04 20	327	0.0	0.5+	1998 05 24	704	0.0	0.6+	1998 06 18	704	0.1−	0.2+
1998 04 20	327	0.4+	0.0	1998 05 24	699	0.0	0.4+	1998 06 21	691	1.1−	0.2−
1998 05 22	704	0.1+	0.1+	1998 05 24	699	0.1+	0.4+	1998 06 21	691	1.4−	0.4−
1998 05 22	704	0.2−	0.2−	1998 05 24	704	1.4+	0.2+	1998 06 21	691	1.3−	0.0
1998 05 22	704	0.6+	0.2+	1998 05 24	704	1.0−	0.3+	1998 06 29	699	0.7+	0.9+
1998 05 22	704	0.4−	0.2+	1998 06 16	704	0.2+	0.0	1998 06 29	699	0.1+	0.3−
1998 05 22	699	0.7+	0.4+	1998 06 16	704	0.7+	0.4−	1998 06 29	699	0.5+	0.1−
1998 05 22	704	0.8+	0.4+	1998 06 16	704	0.0	0.6−				

1998 KO₆ = 1976 DU

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18867311	ω	165.78527	−0.42984318	+0.88279607		
<i>a</i>	3.0106669	Ω	78.46854	−0.84614117	−0.32061257		
<i>e</i>	0.0182464	<i>i</i>	11.15082	−0.31508724	−0.34333465		
<i>P</i>	5.22	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1976 02 28	033	0.9−	0.0	1998 05 23	699	0.2+	0.5+	1998 06 16	704	0.6−	0.1+
1976 02 29	033	0.9+	0.0	1998 05 23	699	0.5+	0.6+	1998 06 18	704	(1.0−	2.4+)
1998 05 05	699	0.3+	0.3+	1998 05 24	704	(2.6+	0.6−)	1998 06 18	704	0.5−	0.1−
1998 05 05	699	0.1+	0.0	1998 05 24	704	0.3−	0.1−	1998 06 18	704	0.1−	1.3+
1998 05 05	699	0.0	0.4+	1998 05 24	704	0.2−	0.3−	1998 06 18	704	0.3+	1.5−
1998 05 22	704	0.1−	0.3+	1998 05 24	704	0.9−	0.2−	1998 06 18	704	0.7+	1.4−
1998 05 22	704	0.2+	0.0	1998 05 24	704	0.1−	0.2−	1998 06 27	699	0.2+	0.3+
1998 05 22	704	0.4−	0.6−	1998 06 03	704	0.6+	0.1−	1998 06 27	699	0.2+	0.0
1998 05 22	704	0.4−	0.9−	1998 06 03	704	1.0−	0.6+	1998 06 27	699	0.8−	0.6+
1998 05 22	699	0.1+	0.2+	1998 06 03	704	0.8+	1.2−	1998 06 30	699	0.2+	0.5−
1998 05 22	704	0.0	0.1+	1998 06 03	704	0.5−	0.4−	1998 06 30	699	0.2−	0.0
1998 05 22	699	0.0	0.0	1998 06 16	704	0.5+	0.1+	1998 06 30	699	0.4+	0.3+

1998 05 22	699	0.3+	0.2+	1998 06 16	704	0.5+	0.6+
1998 05 23	699	0.7+	0.1+	1998 06 16	704	0.7−	1.0+

1998 KS₆ = 1995 MK

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27773448	ω	49.48731	−0.87127614	−0.48527660		
<i>a</i>	2.3265703	Ω	101.36496	+0.42462234	−0.82030957		
<i>e</i>	0.1192670	<i>i</i>	4.29242	+0.24611738	−0.30265297		
<i>P</i>	3.55	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1995 06 26	327	0.1+	0.8−	1995 06 27	327	0.5+	0.9+	1998 05 23	699	0.5−	0.0
1995 06 26	327	0.0	0.3+	1995 06 27	327	0.3+	0.8+	1998 05 23	699	0.5+	1.2−
1995 06 26	327	0.2−	0.9−	1998 05 22	699	0.6−	0.7+	1998 06 03	704	0.9+	0.1+
1995 06 26	327	0.1+	0.6−	1998 05 22	699	0.3+	0.3+	1998 06 03	704	(1.5−	1.6+)
1995 06 27	327	0.2+	0.3−	1998 05 22	699	0.1+	0.2+	1998 06 03	704	(0.8+	1.6−)
1995 06 27	327	1.1−	0.6+	1998 05 23	699	0.7+	0.0	1998 06 03	704	1.3−	0.2−

1998 KT₆ = 1996 XG₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28476743	ω	207.73099	+0.50014898	+0.85909689		
<i>a</i>	2.2881044	Ω	92.46145	−0.77299831	+0.49948805		
<i>e</i>	0.1476769	<i>i</i>	6.24294	−0.39028784	+0.11164329		
<i>P</i>	3.46	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 11	691	0.5−	0.4+	1998 05 22	699	0.0	0.1−	1998 06 03	704	(2.2+	1.2+)
1996 12 11	691	0.2−	0.1+	1998 05 22	699	0.6+	0.6−	1998 06 03	704	0.9+	0.4−
1996 12 11	691	0.6−	0.0	1998 05 22	699	0.5−	0.2+	1998 06 03	704	0.6−	0.9−
1996 12 14	691	0.5+	0.2−	1998 05 23	699	0.6+	0.7+	1998 06 03	704	0.1+	0.2+
1996 12 14	691	0.4+	0.3−	1998 05 23	699	0.3−	0.2−	1998 06 03	704	(4.5−	1.4+)
1996 12 14	691	0.4+	0.1−	1998 05 23	699	0.6+	0.6+	1998 06 16	704	1.4+	0.5+
1998 05 22	704	0.1−	0.0	1998 05 24	704	0.3+	0.3+	1998 06 16	704	0.1+	0.5+
1998 05 22	704	0.2−	0.1+	1998 05 24	704	0.9+	0.8+	1998 06 16	704	0.6−	0.2+
1998 05 22	704	0.4−	0.7−	1998 05 24	704	(2.3−	0.7+)	1998 06 16	704	1.1−	1.0−
1998 05 22	704	0.4+	0.7−	1998 05 24	704	0.8−	0.0				
1998 05 22	704	(2.6−	3.7+)	1998 05 24	704	1.3−	0.4+				

1998 KW₇ = 1998 HA₅₁ = 1998 HA₁₄₉ = 1995 WB₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18655843	ω	291.22830	−0.87576361	−0.47184843		
<i>a</i>	3.0333751	Ω	220.80552	+0.48017947	−0.82973610		
<i>e</i>	0.0470220	<i>i</i>	8.97671	+0.04965667	−0.29815610		
<i>P</i>	5.28	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 11 16	399	(2.9+	0.2+)	1998 05 23	699	0.2−	0.1+	1998 06 16	704	0.1+	0.5+
1995 11 16	399	1.5+	0.9+	1998 05 23	699	0.2−	0.0	1998 06 16	704	0.6+	1.1+
1995 11 17	399	(0.8+	2.8+)	1998 05 23	699	0.1−	0.5+	1998 06 16	704	0.3+	0.7−
1995 11 17	399	0.4+	0.1−	1998 05 24	704	0.1−	0.2+	1998 06 16	704	(0.5−	2.3+)
1995 11 21	399	0.8−	0.9−	1998 05 24	704	0.8−	0.7+	1998 06 18	704	0.2−	0.5+
1995 11 21	399	1.2−	0.7+	1998 05 24	699	1.0−	1.2+	1998 06 18	704	0.4+	1.5−
1998 04 25	809	(0.6−	3.4−)	1998 05 24	704	0.1−	0.0	1998 06 18	704	0.8+	0.4+
1998 04 25	809	(0.0	3.9−)	1998 05 24	699	0.3+	0.7+	1998 06 18	704	0.8+	0.4−
1998 04 25	809	(0.2−	3.7−)	1998 05 24	699	0.0	1.3+	1998 06 18	704	(5.0−	0.6−)
1998 04 25	699	0.5+	0.5+	1998 05 24	704	0.1+	0.0	1998 06 26	699	0.3−	0.4+
1998 04 25	699	0.4+	0.6+	1998 05 24	704	0.6−	0.3−	1998 06 26	699	0.2+	0.1−
1998 04 25	699	1.0+	0.3−	1998 06 03	704	0.4+	0.4−	1998 06 26	699	0.2−	0.5+
1998 05 22	704	0.4−	0.4−	1998 06 03	704	0.8−	0.8−	1998 06 30	699	0.3−	0.3+
1998 05 22	704	0.5−	0.6−	1998 06 03	704	0.8−	0.2+	1998 06 30	699	0.2−	0.4+

1998 AUG. 8

1998 05 22 704 0.2− 1.2− 1998 06 03 704 1.0+ 0.6−
 1998 05 22 704 0.4+ 1.1− 1998 06 16 704 0.8+ 0.8−

1998 KM₈ = 1979 KK

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	336.33236		(2000.0)	P	Q
<i>n</i>	0.20526384	ω	93.54795	+0.32053936	+0.94634872
<i>a</i>	2.8461716	Ω	195.34040	−0.91890737	+0.30016356
<i>e</i>	0.2036134	<i>i</i>	8.90918	−0.22992122	+0.11969099
<i>P</i>	4.80	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1979 05 19	809	0.3+	0.0	1998 05 23	699	0.0	0.6−	1998 05 26	704	1.7+	0.2−
1979 05 20	809	0.0	0.0	1998 05 23	699	0.3−	0.8−	1998 05 26	704	(3.1− 1.3−)	
1979 05 24	809	0.3−	0.0	1998 05 23	704	0.4+	0.2+	1998 06 03	704	0.7−	0.1+
1998 05 05	699	0.3−	0.2+	1998 05 23	699	0.0	0.3+	1998 06 03	704	0.9−	0.1+
1998 05 05	699	0.4+	0.8−	1998 05 24	699	0.1−	0.0	1998 06 03	704	0.6+	1.4+
1998 05 05	699	0.3+	1.1+	1998 05 24	699	0.1+	1.1−	1998 06 03	704	(1.8− 2.8+)	
1998 05 23	704	0.7+	0.8−	1998 05 24	699	0.0	0.5+	1998 06 03	704	(0.8− 2.3+)	
1998 05 23	704	0.5−	0.6+	1998 05 26	704	0.3−	0.2+	1998 06 28	699	0.4+	0.2+
1998 05 23	704	0.4−	0.5−	1998 05 26	704	0.5−	0.0	1998 06 28	699	0.1+	0.2+
1998 05 23	704	0.1+	0.0	1998 05 26	704	0.6−	0.7+	1998 06 28	699	0.2−	0.6−

1998 KD₂₂ = 1953 FV = 1992 FO

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	7.22230		(2000.0)	P	Q
<i>n</i>	0.17661834	ω	154.73750	−0.59818737	+0.79991569
<i>a</i>	3.1461458	Ω	78.48637	−0.74330016	−0.53145587
<i>e</i>	0.1249916	<i>i</i>	2.80948	−0.29946075	−0.27872845
<i>P</i>	5.58	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1953 03 16	024	0.1+	1.3−	1998 04 22	704	0.1−	0.4−	1998 05 22	699	0.3−	0.7+
1953 03 20	024	0.6−	0.2+	1998 04 22	704	0.1−	0.1+	1998 05 24	704	0.0	0.5−
1992 03 23	400	0.2−	0.8−	1998 04 22	704	0.2−	0.3+	1998 05 24	704	0.2+	0.3−
1992 03 23	400	1.2+	0.3−	1998 05 07	120	1.0+	0.1−	1998 05 24	704	0.5−	0.3+
1992 03 24	400	0.0	0.9+	1998 05 07	120	0.6+	0.2+	1998 05 24	704	0.1+	0.9+
1992 03 24	400	(2.7+ 0.7+)		1998 05 22	704	0.3−	0.2+	1998 05 24	704	0.4+	0.1+
1992 03 26	399	0.4+	0.2+	1998 05 22	704	0.6+	0.2+	1998 06 16	704	0.2+	0.3+
1992 03 26	399	0.8−	1.2+	1998 05 22	704	0.1−	0.2−	1998 06 16	704	(0.4+ 2.1+)	
1992 03 28	400	(4.8+ 3.7+)		1998 05 22	704	1.0−	0.5−	1998 06 16	704	0.7+	0.4+
1992 03 28	400	(5.5+ 1.5+)		1998 05 22	704	0.7−	0.7−	1998 06 16	704	1.3−	1.8−
1998 04 22	704	0.1+	0.6−	1998 05 22	699	0.0	0.7+	1998 06 16	704	(4.6− 2.9−)	
1998 04 22	704	0.4+	0.4−	1998 05 22	699	0.3+	0.6+				

1998 KW₂₅ = 1997 EK₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	273.84200		(2000.0)	P	Q
<i>n</i>	0.26603523	ω	229.18934	+0.98946862	+0.13515600
<i>a</i>	2.3942893	Ω	122.98248	−0.10708892	+0.92436690
<i>e</i>	0.1896362	<i>i</i>	3.54136	−0.09738489	+0.35676138
<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 03 05	704	0.9+	0.2+	1998 05 16	691	1.1−	0.4+	1998 05 22	704	0.5+	0.6+
1997 03 05	704	0.5+	0.0	1998 05 16	691	1.2−	0.5+	1998 05 22	704	(0.1− 3.2+)	
1997 03 06	704	1.0−	0.0	1998 05 19	910	0.7+	0.2+	1998 05 22	704	0.7−	0.0
1997 03 06	704	0.4−	0.4−	1998 05 20	910	0.8+	0.2−	1998 05 24	704	0.3−	0.1−
1998 04 22	910	0.0	0.2+	1998 05 20	910	0.7+	0.1−	1998 05 24	704	0.8−	1.1−
1998 04 22	910	0.3+	0.2+	1998 05 22	704	1.6+	0.1−	1998 05 24	704	0.1+	0.7−
1998 04 22	910	0.2+	0.2+	1998 05 22	704	1.0+	1.1+	1998 05 24	704	1.8−	1.1−

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1998 KT₂₈ = 1982 JA₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	184.16198		(2000.0)	P	Q
<i>n</i>	0.18477007	ω	210.27830	+0.53570070	−0.84099116
<i>a</i>	3.0529167	Ω	207.54447	+0.80391277	+0.53544298
<i>e</i>	0.0974943	<i>i</i>	9.44492	+0.25835832	+0.07768322
<i>P</i>	5.33	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1982 05 15	675	1.4+	1.6−	1998 05 16	691	(2.6− 1.2+)	1998 05 23	699	0.4+	0.2+	
1982 05 16	675	1.2−	0.2−	1998 05 19	910	0.2+	0.5−	1998 05 23	699	0.5−	1.0−
1982 05 16	675	0.6−	0.5+	1998 05 20	910	0.4+	0.4−	1998 05 23	699	0.0	0.3−
1982 05 17	675	0.1−	0.8+	1998 05 20	910	0.5+	0.4−	1998 05 24	704	0.2+	0.8−
1982 05 18	675	0.5+	0.8+	1998 05 22	704	0.0	0.1−	1998 05 24	704	0.1+	0.1+
1998 05 02	910	0.1+	0.2+	1998 05 22	704	1.3+	0.0	1998 05 24	704	(0.1+ 2.8+)	
1998 05 02	910	0.0	0.1+	1998 05 22	704	0.1−	0.9−	1998 05 24	704	0.5−	0.5−
1998 05 02	910	0.1−	0.0	1998 05 22	704	0.0	1.9+	1998 05 24	704	1.0−	0.9+
1998 05 16	691	(2.2− 0.3+)		1998 05 22	704	1.0−	1.2+				

1998 KE₃₀ = 1981 UW₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	305.59454		(2000.0)	P	Q
<i>n</i>	0.21560884	ω	59.35519	+0.63538093	+0.76546489
<i>a</i>	2.7543873	Ω	250.44570	−0.74028766	+0.56632106
<i>e</i>	0.0689081	<i>i</i>	6.19920	−0.21969354	+0.30552243
<i>P</i>	4.57	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1981 10 24	675	0.4+	0.1−	1998 05 22	704	0.8−	1.2+	1998 06 25	691	0.3−	0.5−
1981 10 25	675	0.0	0.3+	1998 05 22	704	0.7+	0.3−	1998 06 25	691	0.3−	0.1+
1981 10 26	675	0.4−	0.2−	1998 05 22	704	(1.2+ 2.3−)		1998 06 25	691	0.2−	0.2+
1998 04 28	809	(2.6+ 3.8+)		1998 05 24	704	0.7+	0.2+	1998 07 01	691	0.2+	0.6+
1998 04 28	809	(1.7+ 3.7+)		1998 05 24	704	0.1−	1.5−	1998 07 01	691	0.1+	0.3−
1998 04 28	809	(1.7+ 3.2+)		1998 05 24	704	0.1−	0.3+	1998 07 01	691	0.3+	0.4−
1998 05 22	704	1.3+	1.0−	1998 05 24	704	1.6−	1.3+				

1998 KY₃₀ = 1978 XL

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	101.24672		(2000.0)	P	Q
<i>n</i>	0.17186094	ω	58.61489	−0.52883445	−0.81874916
<i>a</i>	3.2039416	Ω	64.94144	+0.67050726	−0.56453113
<i>e</i>	0.1902070	<i>i</i>	14.28829	+0.52034040	−0.10466330
<i>P</i>	5.73	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1978 12 03	675	0.2+	0.0	1998 05 22	704	1.5−	0.3+	1998 06 20	691	0.8−	0.2−
1978 12 03	675	0.3−	0.4−	1998 05 23	699	(2.6+ 1.3+)		1998 06 20	691	1.0−	0.1−
1978 12 05	675	0.9+	0.6−	1998 05 23	699	(2.3+ 1.1+)		1998 06 20	691	0.9−	0.3−
1978 12 06	675	1.4−	0.2+	1998 05 23	699	1.0+	0.3+	1998 06 27	691	0.4+	0.8−
1978 12 06	675	0.9+	0.3+	1998 05 24	704	0.3−	0.4−	1998 06 27	691	0.1−	0.2−
1998 05 22	704	0.1+	0.1+	1998 05 24	704	0.9+	0.5+	1998 06 27	691	0.0	0.1+
1998 05 22	704	(3.0+ 0.1−)		1998 05 24	704	0.9+	1.3+	1998 07 02	691	0.3−	1.3+
1998 05 22	704	0.0	1.4−	1998 05 24	704	(0.2− 2.1−)		1998 07 02	691	0.7+	0.1+
1998 05 22	704	(3.2+ 3.7−)		1998 05 24	704	0.2−	1.4−	1998 07 02	691	0.8+	0.4+

1998 KK₃₁ = 1996 XG₃₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	74.98557		(2000.0)	P	Q
<i>n</i>	0.18348430	ω	49.20352	−0.76560830	−0.61597646
<i>a</i>	3.0671624	Ω	91.94343	+0.52007147	−0.76238607
<i>e</i>	0.2606964	<i>i</i>	10.69756	+0.37864178	−0.19834433
<i>P</i>	5.37	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1996 12 08	327	1.1−	0.3−	1998 05 22	704	0.9−	0.3+	1998 05 24	704	2.3+	0.8+
1996 12 08	327	0.3+	0.1−	1998 05 22	704	0.2−	0.1−	1998 06 19	691	0.3+	0.3−
1996 12 08	327	0.5−	0.3−	1998 05 22	704	0.7−	0.5+	1998 06 19	691	0.2+	0.1−
1996 12 18	327	0.9+	0.0	1998 05 22	704	0.8−	0.7+	1998 06 19	691	0.4+	0.1−
1996 12 18	327	0.3+	0.4+	1998 05 23	699	0.2−	0.5+	1998 06 23	691	0.7−	0.2−
1996 12 18	327	0.1+	0.2+	1998 05 23	699	0.7+	0.0	1998 06 23	691	0.9−	0.4−
1998 05 05	699	0.8−	0.1+	1998 05 23	699	0.7+	0.2+	1998 06 23	691	0.8−	0.2+
1998 05 05	699	0.4−	1.1−	1998 05 24	704	0.1−	0.6−	1998 07 15	691	0.1+	0.3−
1998 05 05	699	0.3−	0.9−	1998 05 24	704	0.3+	0.2+	1998 07 15	691	0.1+	0.0
1998 05 22	704	0.5+	0.0	1998 05 24	704	0.8+	0.5+	1998 07 15	691	0.2+	0.2−

1998 KL₃₁ = 1989 JM

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
				P	Q		
<i>M</i>	0.62607		(2000.0)				
<i>n</i>	0.22549491	ω	169.18721	−0.32044292	+0.91435971		
<i>a</i>	2.6732827	Ω	81.76584	−0.88669719	−0.19759805		
<i>e</i>	0.1265339	<i>i</i>	14.48290	−0.33329331	−0.35341382		
<i>P</i>	4.37	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 05 05	046	1.4−	0.0	1998 05 23	699	0.2+	0.1−	1998 06 16	704	0.2−	0.1−
1989 05 05	046	0.2−	0.3+	1998 05 23	699	0.2+	0.1−	1998 06 16	691	0.8−	0.1+
1989 05 07	046	1.5−	0.8−	1998 05 24	704	0.7−	0.6+	1998 06 16	704	0.4+	0.4−
1989 05 07	046	1.0−	0.4−	1998 05 24	704	0.7+	1.2+	1998 06 18	704	0.1+	0.6−
1989 05 08	046(27.1−	20.6+)		1998 05 24	704	0.6−	0.9+	1998 06 18	704	0.1+	1.2−
1989 05 08	046(22.0−	24.8+)		1998 05 24	704	(2.6+	0.6+)	1998 06 18	704	1.4+	0.3+
1989 05 09	046	0.9+	0.1−	1998 05 24	704	0.7−	1.1−	1998 06 18	704	0.7+	0.5+
1989 05 09	046	0.4+	0.4+	1998 06 03	704	1.2+	0.9+	1998 06 18	704	0.1+	0.2+
1989 05 09	046	1.2+	0.3−	1998 06 03	704	0.5+	0.9+	1998 06 21	691	0.7−	0.2+
1989 05 09	046	1.7+	0.8+	1998 06 03	704	0.8+	0.7−	1998 06 21	691	0.4−	0.2+
1998 05 22	704	1.2−	0.4+	1998 06 03	704	0.5+	0.2+	1998 06 21	691	0.4−	0.4+
1998 05 22	704	0.2−	0.2+	1998 06 16	704	0.0	0.3−	1998 06 26	699	0.5−	0.2−
1998 05 22	704	0.2−	0.5−	1998 06 16	704	0.2−	0.8+	1998 06 26	699	0.9+	0.1+
1998 05 22	704	0.9+	1.5−	1998 06 16	691	1.0−	0.2−	1998 06 26	699	0.1+	0.4−
1998 05 22	704	0.0	1.0−	1998 06 16	704	0.5−	0.1−				
1998 05 23	699	0.2+	0.2+	1998 06 16	691	0.8−	0.0				

1998 KO₃₁ = 4310 T-2

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
				P	Q		
<i>M</i>	94.93432		(2000.0)				
<i>n</i>	0.26423598	ω	0.70592	−0.84946678	−0.52613809		
<i>a</i>	2.4051458	Ω	147.44978	+0.48373882	−0.80669771		
<i>e</i>	0.0694956	<i>i</i>	4.24334	+0.21072005	−0.26910502		
<i>P</i>	3.73	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 29	675	1.1−	1.4−	1998 05 24	704	0.8−	0.6+	1998 06 22	691	1.9−	0.5−
1973 09 29	675	1.0+	0.2−	1998 05 24	699	0.9+	0.8+	1998 06 22	691	1.8−	0.4−
1973 09 30	675	0.4+	1.8+	1998 05 24	699	0.2+	0.3−	1998 06 22	691	1.8−	0.2−
1973 09 30	675	0.1−	0.4+	1998 05 24	704	0.9+	0.7+	1998 06 26	699	1.1+	0.5−
1973 10 05	675	0.3+	1.0+	1998 05 24	704	0.8+	0.8+	1998 06 26	699	0.2−	0.4−
1973 10 05	675	1.1−	0.1−	1998 05 24	704	0.8+	0.7+	1998 06 26	699	0.2−	0.6+
1998 05 22	704	1.3+	0.0	1998 05 24	704	0.6−	1.6+	1998 06 29	691	1.1−	0.6−
1998 05 22	704	0.5+	0.3−	1998 06 03	704	0.3+	1.5−	1998 06 29	691	1.2−	0.6−
1998 05 22	704	0.5+	0.0	1998 06 03	704	(1.0+	2.4−)	1998 06 29	691	1.1−	0.4−
1998 05 22	704	0.8+	0.2+	1998 06 03	704	1.9+	0.9+	1998 07 15	691	0.1+	1.3−
1998 05 22	704	0.7+	0.9+	1998 06 03	704	1.1−	0.4+	1998 07 15	691	0.0	0.4−
1998 05 24	699	0.1+	0.2+	1998 06 03	704	(4.3−	1.6+)	1998 07 15	691	0.1+	0.7−

1998 KQ₃₁ = 1995 QN₈

Id. S. Nakano

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
				P	Q		
<i>M</i>	217.80655		(2000.0)				
<i>n</i>	0.26898084	ω	195.07680	+0.79163073	−0.60977743		
<i>a</i>	2.3767772	Ω	202.63242	+0.57045576	+0.76026899		
<i>e</i>	0.1014166	<i>i</i>	5.76132	+0.21886299	+0.22396995		
<i>P</i>	3.66	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 08 28	691	0.0	0.3−	1998 05 22	704	0.5+	0.9−	1998 06 16	691	0.6−	0.2+
1995 08 28	691	0.5−	0.5+	1998 05 22	704	(3.0−	2.2+)	1998 06 22	691	0.5+	0.4−
1995 08 28	691	0.0	0.0	1998 05 24	704	1.5+	0.9+	1998 06 22	691	0.6+	0.0
1995 09 02	691	0.2+	0.1−	1998 05 24	704	0.7+	0.6+	1998 06 22	691	0.5+	0.1+
1995 09 02	691	0.2+	0.1−	1998 05 24	704	0.3−	0.2−	1998 06 29	691	0.0	0.1−
1995 09 02	691	0.1+	0.2+	1998 05 24	704	0.6−	1.3−	1998 06 29	691	0.1+	0.4−
1998 05 22	704	(2.3+	0.3−)	1998 06 16	691	0.8−	0.2+	1998 06 29	691	0.0	0.6−
1998 05 22	704	1.2−	1.6+	1998 06 16	691	0.8−	0.2+				

1998 KT₃₂ = 1995 UZ₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
				P	Q		
<i>M</i>	332.77847		(2000.0)				
<i>n</i>	0.26310480	ω	247.77310	+0.33975134	+0.93885096		
<i>a</i>	2.4120346	Ω	42.22015	−0.82935972	+0.32711083		
<i>e</i>	0.1262038	<i>i</i>	4.77413	−0.44354422	+0.10750525		
<i>P</i>	3.75	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 20	691	0.2−	0.0	1998 05 22	704	0.6−	0.7−	1998 06 16	704	1.0+	0.4+
1995 10 20	691	0.0	0.1−	1998 05 24	704	0.6−	0.2−	1998 06 16	704	0.1−	0.2−
1995 10 20	691	0.2−	0.1−	1998 05 24	704	0.5−	0.1+	1998 06 16	704	0.9−	0.8−
1995 10 25	691	0.2+	0.2+	1998 05 24	704	0.9−	0.4+	1998 06 16	704	0.6−	1.3−
1995 10 25	691	0.1+	0.0	1998 05 24	704	0.2+	1.1+	1998 06 18	704	1.1+	0.6−
1995 10 25	691	0.2+	0.1+	1998 06 03	704	0.3+	0.6+	1998 06 18	704	1.9−	0.3+
1998 05 22	704	0.7−	0.0	1998 06 03	704	0.1+	1.6+	1998 06 18	704	0.8−	0.1−
1998 05 22	704	0.3+	0.7−	1998 06 03	704	0.5+	1.1+	1998 06 18	704	0.5+	0.4−
1998 05 22	704	0.8+	0.5−	1998 06 03	704	0.8+	0.4−				
1998 05 22	704	0.9+	0.7−	1998 06 16	704	1.0+	0.9+				

1998 KW₃₃ = 1994 LC₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
				P	Q		
<i>M</i>	264.83997		(2000.0)				
<i>n</i>	0.23850984	ω	214.68084	+0.99988970	+0.01153754		
<i>a</i>	2.5751262	Ω	144.65453	−0.00703898	+0.92262825		
<i>e</i>	0.1199785	<i>i</i>	0.92635	−0.01307828	+0.38551783		
<i>P</i>	4.13	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 06 08	809	0.1−	0.4+	1998 05 22	704	0.1−	0.1−	1998 06 27	691	0.4+	0.8−
1994 06 08	809	0.8+	1.6+	1998 05 22	704	1.3−	1.4+	1998 06 27	691	0.6+	1.1−
1994 06 08	809	0.2−	1.6+	1998 05 22	704	1.8+	1.8−	1998 06 27	691	0.8+	0.8−
1994 06 09	809	1.1+	0.1−	1998 05 24	704	0.5−	2.0+	1998 07 02	691	0.9−	0.7−
1994 06 09	809	0.1−	0.3+	1998 05 24	704	0.3−	0.4+	1998 07 02	691	0.7−	0.6−
1994 06 09	809	1.2−	1.4−	1998 05 24	704	1.2−	0.9+	1998 07 02	691	0.9−	0.7−
1998 05 22	704	0.9+	0.2+	1998 05 24	704	0.7+	1.1−				

1998 KN₃₄ = 1978 WV₁₂

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	13.07577		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.17361224	ω	154.70795	−0.60077212	+0.72321355
a	3.1823589	Ω	76.45536	−0.78002543	−0.43702486
e	0.1782453	i	20.51081	−0.17502341	−0.53476297
P	5.68	H	14.0	G 0.15	U 4

1998 AUG. 8

M.P.C. 32279

Residuals in seconds of arc

1978 11 29	675	0.8+	0.1-	1998 05 24	704	0.5-	0.1-	1998 06 16	704	0.8-	0.8-
1978 11 30	675	0.7-	0.1-	1998 05 24	704	0.3-	0.7+	1998 06 16	704	1.2+	0.1+
1998 05 22	704	0.4+	0.3+	1998 05 24	704	0.2+	0.1-	1998 06 18	704	0.6+	0.5+
1998 05 22	704	0.4-	0.6+	1998 05 24	704	0.4-	0.1+	1998 06 18	704	(1.9-	2.9-)
1998 05 22	704	0.3+	0.5-	1998 06 03	704	(0.5-	2.1+)	1998 06 18	704	0.2+	0.7-
1998 05 22	704	0.5+	1.0-	1998 06 03	704	(0.5-	2.6+)	1998 06 18	704	0.6+	1.0-
1998 05 22	704	1.2+	0.6+	1998 06 03	704	1.7-	1.2+	1998 06 29	699	0.6-	1.0+
1998 05 23	699	0.4+	0.1+	1998 06 03	704	1.5-	0.2+	1998 06 29	699	0.1+	0.8+
1998 05 23	699	0.1+	0.3+	1998 06 03	704	0.3-	0.5-	1998 06 29	699	0.8-	0.8-
1998 05 23	699	0.0	0.5-	1998 06 16	704	0.2-	0.2+				
1998 05 24	704	0.1+	0.6-	1998 06 16	704	1.6+	0.2-				

1998 KL₃₅ = 1982 VD₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	176.25522	(2000.0)	P	Q	
<i>n</i>	0.28618486	ω	4.15691	+0.26751536	-0.95853742
<i>a</i>	2.2805431	Ω	70.34874	+0.88100958	+0.20205721
<i>e</i>	0.1127794	<i>i</i>	5.98476	+0.39020206	+0.20094500
<i>P</i>	3.44	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1982 11 14	381	0.4+	0.1-	1998 05 22	704	0.6+	1.2-	1998 05 24	704	0.7+	0.6+
1982 11 14	381	0.9+	0.4+	1998 05 22	704	0.9-	0.0	1998 05 24	704	1.2+	0.0
1982 12 13	381	0.2-	1.2+	1998 05 22	704	0.8+	1.3+	1998 05 24	704	0.2-	1.4+
1982 12 13	381	0.0	0.4+	1998 05 22	704	0.7+	0.5+	1998 06 19	691	0.7-	0.6+
1982 12 14	381	0.8-	0.7+	1998 05 24	704	0.3-	0.5-	1998 06 19	691	0.7-	0.5+
1982 12 14	381	1.2-	0.5-	1998 05 24	704	0.3+	1.1-	1998 06 19	691	0.9-	0.6+

1998 KM₃₅ = 1993 KT₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	353.66681	(2000.0)	P	Q	
<i>n</i>	0.20071933	ω	202.49639	-0.07215474	+0.96466988
<i>a</i>	2.8889714	Ω	64.16564	-0.86689020	+0.06498173
<i>e</i>	0.2419038	<i>i</i>	16.35123	-0.49324950	-0.25532216
<i>P</i>	4.91	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1993 05 25	691	0.1+	0.5-	1998 05 22	704	0.2+	1.6-	1998 06 16	704	1.6-	0.8+
1993 05 25	691	0.2+	0.4+	1998 05 24	704	1.1-	0.5+	1998 06 18	704	0.7+	0.3-
1993 05 25	691	0.7-	0.0	1998 05 24	704	2.1+	0.1-	1998 06 18	704	0.6-	0.2-
1993 06 22	691	0.0	0.7-	1998 05 24	704	0.4+	1.0+	1998 06 18	704	0.8-	0.0
1993 06 22	691	0.0	0.0	1998 05 24	704	2.1-	1.3+	1998 06 18	704	0.3+	0.3+
1993 06 22	691	0.0	0.0	1998 05 24	704	0.3+	0.0	1998 06 18	704	0.1-	0.0
1998 05 22	704	0.3+	0.7-	1998 06 16	704	0.0	0.8-	1998 07 13	699	0.0	0.6+
1998 05 22	704	0.5+	0.4+	1998 06 16	704	0.9+	0.8-	1998 07 13	699	0.2-	0.6+
1998 05 22	704	0.1-	0.9+	1998 06 16	704	0.1+	0.1-	1998 07 13	699	0.3-	0.5+
1998 05 22	704	0.4+	0.2+	1998 06 16	704	1.0+	1.4-				

1998 KS₃₅ = 1994 CJ₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	36.19152	(2000.0)	P	Q	
<i>n</i>	0.28338295	ω	107.72188	-0.86660277	+0.49883144
<i>a</i>	2.2955508	Ω	102.20255	-0.46268374	-0.79357215
<i>e</i>	0.1462744	<i>i</i>	0.75718	-0.18687802	-0.34844000
<i>P</i>	3.48	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1993 11 20	691	0.3-	0.9-	1998 05 22	704	0.1-	0.2+	1998 06 18	704	0.7+	1.6-
1993 11 20	691	0.3-	0.7-	1998 05 22	704	1.1+	1.4-	1998 06 18	704	1.5+	1.0+
1993 11 20	691	0.0	0.7-	1998 05 22	704	1.0-	0.5+	1998 06 18	704	(3.5-	0.4+)
1994 02 08	303	0.5+	0.6+	1998 05 24	704	0.1+	0.2+	1998 06 19	691	0.5-	0.0
1994 02 08	303	0.1+	0.4+	1998 05 24	704	0.3-	0.1-	1998 06 19	691	0.3-	0.1-
1994 02 08	303	0.4-	0.0	1998 05 24	704	0.2-	0.8+	1998 06 19	691	0.5-	0.2-
1994 02 09	303	(4.5+	2.1-)	1998 05 24	704	0.1+	0.1-	1998 06 25	691	0.3-	0.1+

1998 05 22	704	0.1-	0.3+	1998 05 24	704	0.0	0.7+	1998 06 25	691	0.3-	0.2-
1998 05 22	704	0.3+	0.5-	1998 06 18	704	(2.3+	0.4+)	1998 06 25	691	0.3-	0.4-

1998 KT₃₆ = 1996 XN

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	38.48539	(2000.0)	P	Q	
<i>n</i>	0.28823769	ω	314.54423	-0.85355667	+0.51721106
<i>a</i>	2.2697022	Ω	256.69618	-0.45787550	-0.80212090
<i>e</i>	0.1045790	<i>i</i>	3.69522	-0.24857804	-0.29848748
<i>P</i>	3.42	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1996 12 01	721	0.5+	0.3+	1998 05 22	704	0.8-	0.6-	1998 06 03	704	0.1-	0.2-
1996 12 01	721	0.5+	0.5+	1998 05 22	704	0.3+	0.1+	1998 06 03	704	0.2+	0.4-
1996 12 03	721	1.3-	0.9-	1998 05 24	704	0.5-	0.3-	1998 06 03	704	0.8+	0.9-
1996 12 03	721	0.2+	0.3+	1998 05 24	704	0.2+	0.4+	1998 06 03	704	(2.6+	0.6-)
1998 05 22	704	0.3+	0.7-	1998 05 24	704	0.1-	0.2+	1998 06 27	699	0.3+	0.4+
1998 05 22	704	0.1+	0.9-	1998 05 24	704	0.2-	1.0+	1998 06 27	699	0.2+	0.2+
1998 05 22	704	0.1-	0.9+	1998 05 24	704	0.0	1.2+	1998 06 27	699	0.6-	0.1-

1998 KL₃₇ = 1992 SD₂₅

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	165.24688	(2000.0)	P	Q	
<i>n</i>	0.28447923	ω	239.50727	+0.07221606	-0.99632976
<i>a</i>	2.2896495	Ω	206.46902	+0.94678897	+0.08296880
<i>e</i>	0.0704250	<i>i</i>	5.91794	+0.31364867	-0.02105200
<i>P</i>	3.46	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1992 09 30	675	0.4-	0.4-	1998 05 24	699	0.0	1.1+	1998 06 21	691	0.0	0.0
1992 09 30	675	0.2-	0.2-	1998 05 24	704	0.2-	0.1+	1998 06 21	691	0.1+	0.3-
1992 10 03	675	0.3+	0.0	1998 05 24	699	0.9+	0.5+	1998 06 21	691	0.0	0.1-
1992 10 03	675	0.3+	0.5+	1998 05 24	699	0.5-	0.7+	1998 06 26	699	0.5+	0.3+
1998 05 22	704	0.3+	0.7+	1998 05 24	704	0.1+	1.3-	1998 06 26	699	0.5+	0.3+
1998 05 22	704	0.2-	0.0	1998 05 24	704	0.1+	1.8-	1998 06 26	699	1.1+	0.2+
1998 05 22	704	1.4-	0.2+	1998 06 03	704	0.9+	0.6+	1998 06 29	691	0.6-	0.3+
1998 05 22	704	0.5-	1.1-	1998 06 03	704	0.8-	0.6-	1998 06 29	691	0.7-	0.2-
1998 05 22	704	0.9-	0.4+	1998 06 03	704	0.4+	0.8-	1998 06 29	691	0.9-	0.0
1998 05 24	704	0.7+	0.0	1998 06 03	704	1.8+	1.1+				
1998 05 24	704	(2.1-	0.3-)	1998 06 03	704	0.9-	0.4-				

1998 KM₃₇ = 1990 SU₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

			Williams		
<i>M</i>	345.37810	(2000.0)	P	Q	
<i>n</i>	0.22863415	ω	167.21795	+0.22033850	+0.97353888
<i>a</i>	2.6487562	Ω	115.48450	-0.90073823	+0.22691854
<i>e</i>	0.2419445	<i>i</i>	3.84959	-0.37432818	+0.02701878
<i>P</i>	4.31	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1990 09 15	809	0.2+	1.0-	1998 05 22	704	(0.0	2.1+)	1998 06 03	704	0.4-	0.6-
1990 09 15	809	0.2+	0.7-	1998 05 24	704	0.6+	0.3+	1998 06 18	704	0.7+	0.0
1990 09 15	809	0.6-	0.0	1998 05 24	704	0.0	0.3+	1998 06 18	704	0.5-	0.1-
1990 09 22	809	0.1+	0.0	1998 05 24	699	0.1+	0.7+	1998 06 18	704	1.0-	0.3+
1990 09 22	809	0.2-	0.3-	1998 05 24	704	0.7+	0.4-	1998 06 18	704	0.4+	0.0
1990 09 22	809	0.1+	0.5-	1998 05 24	699	0.2-	0.8+	1998 06 18	704	(4.2-	2.3-)
1990 09 25	809	0.1-	1.7+	1998 05 24	699	0.0	0.6+	1998 06 20	566	0.4-	0.3-
1990 09 25	809	0.3+	1.0+	1998 05 24	704	0.1+	0.1+	1998 06 20	566	0.5-	0.2-
1990 09 25	809	(1.3+	2.3+)	1998 05 24	704	0.5+	0.8+	1998 06 20	566	1.5-	0.1-
1998 05 22	704	0.1-	0.4-	1998 06 03	704	0.7+	0.1+	1998 06 29	699	0.7+	0.1-
1998 05 22	704	0.4-	0.7-	1998 06 03	704	1.5+	0.2+	1998 06 29	699	0.3+	0.2+
1998 05 22	704	(0.6+	2.1+)	1998 06 03	704	1.1-	0.1-	1998 06 29	699	0.4+	0.0
1998 05 22	704	(2.2+	1.6+)	1998 06 03	704	0.2-	0.9-				

1998 KX₃₇ = 1995 WP₁₃

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	358.15836	(2000.0)		P		Q					
<i>n</i>	0.21393427	ω	168.46282	−0.20920356		+0.96454045					
<i>a</i>	2.7687419	Ω	89.30872	−0.90949730		−0.13146886					
<i>e</i>	0.1458483	<i>i</i>	9.26104	−0.35923326		−0.22886167					
<i>P</i>	4.61	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1995 11 16	691	0.1−	0.0	1998 05 22	704	(2.2−	1.0+)	1998 06 18	704	0.6−	1.1+
1995 11 16	691	0.0	0.3−	1998 05 24	704	0.3+	0.4+	1998 06 18	704	1.6+	0.7−
1995 11 16	691	0.3−	0.2+	1998 05 24	704	0.7+	0.1−	1998 06 18	704	0.7−	0.0
1995 11 21	691	0.1+	0.0	1998 05 24	704	0.1−	0.2−	1998 06 18	704	0.4+	0.1−
1995 11 21	691	0.1+	0.2+	1998 05 24	704	0.1+	0.9−	1998 06 18	704	1.1−	2.0−
1995 11 21	691	0.3+	0.0	1998 05 24	704	0.2−	1.4−	1998 06 29	699	0.9+	0.8+
1998 05 22	704	0.7−	0.2+	1998 06 03	704	1.4−	0.9+	1998 06 29	699	0.1−	0.0
1998 05 22	704	0.9−	0.5+	1998 06 03	704	1.4+	0.2−	1998 06 29	699	1.0−	0.3+
1998 05 22	704	0.7+	0.1−	1998 06 03	704	1.0+	0.4+				
1998 05 22	704	0.2−	1.3+	1998 06 03	704	(2.3+	1.5−)				

1998 KM₃₉ = 1992 VK

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	2.34265		(2000.0)			P		Q			
<i>n</i>	0.30019421	ω	54.05355			-0.19526451		+0.98073762			
<i>a</i>	2.2090278	Ω	204.68772			-0.90366834		-0.18191545			
<i>e</i>	0.1514543	<i>i</i>	0.69249			-0.38112374		-0.07113706			
<i>P</i>	3.28	<i>H</i>	15.8			<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc											
1992 11 15	689	0.4-	0.4+	1998 05 22	704	0.3+	0.1-	1998 05 24	704	0.5-	1.0+
1992 11 15	689	0.4-	0.4+	1998 05 22	704	0.6-	0.0	1998 05 24	704	0.1-	0.5+
1992 11 15	689	0.4-	0.1+	1998 05 22	704	0.0	0.1+	1998 06 03	704	0.4+	0.1-
1992 11 15	689	0.6-	0.0	1998 05 22	704	0.5+	0.7+	1998 06 03	704	0.6+	0.5-
1992 11 16	689	0.6+	0.1-	1998 05 22	704	0.1-	0.7+	1998 06 03	704	0.9-	1.7-
1992 11 16	689	0.4+	0.1-	1998 05 24	704	0.2+	0.4+	1998 06 03	704	0.4-	0.6-
1992 11 16	689	0.3+	0.3-	1998 05 24	704	0.7+	0.0				
1992 11 16	689	0.3+	0.0	1998 05 24	704	0.0	0.1-				

1998 KP₄₁ = 1994 BX₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	29.03528		(2000.0)			P		Q			
<i>n</i>	0.29904057	ω	269.25679			-0.68166977		+0.73040616			
<i>a</i>	2.2147054	Ω	317.66218			-0.64346147		-0.62632377			
<i>e</i>	0.0876129	<i>i</i>	3.64484			-0.34825804		-0.27244335			
<i>P</i>	3.30	<i>H</i>	15.6		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1994 01 18	691	0.3-	0.6+	1998 05 22	704	1.5+	2.0+	1998 05 29	428	0.2+	0.4+
1994 01 18	691	0.1-	0.0	1998 05 22	704	0.5+	0.0	1998 05 29	428	0.5+	0.2+
1994 01 18	691	0.8+	0.1+	1998 05 22	704	1.5-	1.1+	1998 05 30	428	0.3+	0.9-
1994 01 19	691	0.3+	0.1-	1998 05 24	704	0.1+	0.1+	1998 05 30	428	0.7-	0.7-
1994 01 19	691	0.2-	0.3-	1998 05 24	704	1.3-	0.4-	1998 05 31	428	0.3-	0.9-
1994 01 19	691	0.5-	0.3-	1998 05 24	704	1.2+	0.4+	1998 06 02	428	0.1+	0.7+
1998 05 22	704	0.4-	1.7-	1998 05 24	704	0.1-	1.7-	1998 06 02	428	0.1-	1.3+
1998 05 22	704	0.4-	0.5+	1998 05 24	704	0.3+	0.1-				

1998 KR₄₄ = 1991 RC₂₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	324.62581		(2000.0)	P			Q				
n	0.26481391	ω	181.93426	+0.68830784		+0.72411591					
a	2.4016452	Ω	131.56541	-0.66477642		+0.65361247					
e	0.2120351	i	3.32969	-0.29035259		+0.22010652					
P	3.72	H	15.0	G	0.15	U	5				
Residuals in seconds of arc											
1991 09 14	675	0.7+	0.2-	1998 05 22	704	0.2+	0.1-	1998 06 03	704	0.5-	1.0+
1991 09 14	675	0.4-	0.5+	1998 05 24	704	0.7-	0.9-	1998 06 03	704	0.3+	0.1+
1991 09 16	675	0.0	0.1-	1998 05 24	704	0.5+	0.8-	1998 06 29	699	0.2-	0.4+
1991 09 16	675	0.3-	0.4-	1998 05 24	704	0.5-	0.4+	1998 06 29	699	1.1+	0.4-
1998 05 22	704	0.1+	0.5-	1998 05 24	704	0.2-	0.2-	1998 06 29	699	0.5-	0.1-
1998 05 22	704	0.8+	0.7+	1998 05 24	704	0.4-	0.2-	1998 07 02	699	0.3+	0.2+
1998 05 22	704	0.6+	0.4+	1998 06 03	704	0.9-	1.2+	1998 07 02	699	0.1-	0.2-
1998 05 22	704	0.6+	0.7-	1998 06 03	704	0.3-	0.4-	1998 07 02	699	0.1+	0.2+

1998 KT₄₄ = 1993 FH₇₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	305.62765		(2000.0)		P		Q				
n	0.22374016	ω	132.46589		+0.87979684		+0.47367472				
a	2.6872418	Ω	199.36663		-0.46374701		+0.83687733				
e	0.1912643	i	6.90580		-0.10438501		+0.27435122				
P	4.41	H	15.0		G	0.15	U	5			
Residuals in seconds of arc											
1993 03 21	809	0.5-	0.4+	1998 05 22	704	(4.8-	0.8+)	1998 06 03	704	1.0+	0.2+
1993 03 22	809	0.5+	0.4-	1998 05 24	704	1.1+	0.7+	1998 06 03	704	1.3-	0.1+
1998 05 22	704	0.7-	0.2+	1998 05 24	704	1.0-	0.7+	1998 06 03	704	0.7-	1.1-
1998 05 22	704	1.2+	0.9-	1998 05 24	704	0.6+	0.5+	1998 06 03	704	1.0+	0.3+
1998 05 22	704	1.5-	0.4-	1998 05 24	704	0.1+	0.2+	1998 06 03	704	(5.5-	0.7-)
1998 05 22	704	0.2+	1.0-	1998 05 24	704	0.2+	0.4+				

1998 KH₄₅ = 1995 WT₂₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	343.43268		(2000.0)			P		Q			
<i>n</i>	0.25824190	ω	189.33039			+0.27239201		+0.95937762			
<i>a</i>	2.4422207	Ω	96.50253			-0.87795171		+0.27906167			
<i>e</i>	0.1712581	<i>i</i>	4.24039			-0.39370470		+0.04146288			
<i>P</i>	3.82	<i>H</i>	15.5			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1995 11 19	691	0.3-	0.0	1998 05 24	704	(0.3+	2.4+)	1998 06 24	704	1.8-	1.2+
1995 11 19	691	0.1+	0.0	1998 05 24	704	0.3+	0.9+	1998 06 24	704	0.4-	1.0-
1995 11 19	691	0.3+	0.2-	1998 05 24	704	0.5+	1.1+	1998 06 24	704	0.1-	1.0+
1995 11 25	691	0.1-	0.0	1998 05 24	704	1.1+	0.3-	1998 06 24	704	(4.2-	1.0+)
1995 11 25	691	0.1-	0.0	1998 05 24	704	0.8+	0.5-	1998 06 29	699	0.5+	0.4+
1995 11 25	691	0.3+	0.0	1998 06 01	809	(2.7+	1.3+)	1998 06 29	699	0.6+	0.3+
1998 05 22	704	0.2-	0.2+	1998 06 01	809	(2.5+	1.3+)	1998 06 29	699	0.9+	0.6+
1998 05 22	704	0.1+	0.1+	1998 06 01	809	(2.6+	0.7+)	1998 07 02	699	0.1+	0.5-
1998 05 22	704	0.8-	0.7-	1998 06 02	809	(3.2+	0.5-)	1998 07 02	699	0.5-	0.7-
1998 05 22	704	0.7-	0.7-	1998 06 02	809	(3.2+	0.8+)	1998 07 02	699	0.5+	0.7-
1998 05 22	704	0.8-	0.9-	1998 06 02	809	(3.2+	0.5+)				

1998 KR₄₆ = 1988 QM = 1991 LG₄ = 1997 EU₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	271.78003		(2000.0)		P		Q
n	0.28233595	ω	167.24047		+0.98833242		-0.14826577
a	2.3012224	Ω	201.38045		+0.12998832		+0.94040800
e	0.1772008	i	5.48957		+0.07938557		+0.30602297
P	3.49	H	14.5	G	0.15	U	2

1998 AUG. 8

M.P.C. 32281

Residuals in seconds of arc

1988 08 19	413	0.8−	1.3+	1997 03 12	704	0.2−	0.3+	1998 06 24	704	0.3+	0.7−
1988 08 19	413	1.0+	0.6−	1997 03 12	704	0.7−	0.3+	1998 06 24	704	0.4+	0.3+
1988 08 20	413	0.6−	0.3+	1998 05 22	704	0.1−	1.8−	1998 06 24	704	0.2+	0.2−
1991 06 06	809	2.0+	0.2−	1998 05 22	704	1.4+	0.5+	1998 06 24	704	0.1−	0.1−
1991 06 06	809	0.4+	0.6−	1998 05 22	704	0.2+	0.5−	1998 06 26	704	1.4−	1.5+
1991 06 06	809	0.6+	0.4−	1998 05 22	704	0.6+	1.2−	1998 06 26	704	2.7−	2.6+
1991 06 08	809	0.4−	0.7+	1998 05 22	704	1.2−	0.2−	1998 06 26	704	0.1+	1.1+
1991 06 08	809	0.1−	1.4+	1998 05 24	704	0.1−	1.0−	1998 06 26	704	0.4+	0.6−
1991 06 08	809	2.0−	1.2+	1998 05 24	704	0.2+	1.1−	1998 07 01	699	0.2−	0.5+
1997 03 10	704	0.2−	0.8+	1998 05 24	704	0.9+	1.4+	1998 07 01	699	0.2−	0.5+
1997 03 10	704	0.2+	1.4+	1998 05 24	704	1.1+	1.5−	1998 07 01	699	0.7−	0.6+
1997 03 11	704	0.2−	1.0−	1998 05 24	704	0.2+	0.5−				
1997 03 11	704	1.6+	0.3+	1998 06 24	704	0.2+	1.5−				

1998 KS₄₆ = 1991 LE₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	301.98836		(2000.0)		P		Q
<i>n</i>	0.28120450	ω	124.72982	+0.94448499			+0.32123514
<i>a</i>	2.3073911	Ω	216.67019	−0.32634426			+0.89292510
<i>e</i>	0.1952364	<i>i</i>	6.63120	−0.03804646			+0.31542471
<i>P</i>	3.50	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 06 06	809	0.6−	0.0	1998 05 24	704	0.4−	0.0	1998 06 24	704	0.3+	0.3+
1991 06 06	809	0.0	0.2−	1998 05 24	704	1.3+	1.1+	1998 06 24	704	0.5−	0.4−
1991 06 06	809	0.1+	1.1−	1998 05 24	704	0.8−	0.8−	1998 06 26	704	0.1+	0.1+
1991 06 08	809	0.4+	0.3+	1998 05 24	704	0.3−	0.4−	1998 06 26	704	0.7+	1.5−
1991 06 08	809	0.1−	0.5−	1998 06 03	704	0.3−	1.0−	1998 06 26	704	0.9−	0.1+
1991 06 08	809	0.2+	0.2+	1998 06 03	704	0.6−	0.7+	1998 06 26	704	0.2+	0.7+
1998 05 22	704	0.7−	0.9+	1998 06 03	704	0.7+	0.8+	1998 06 26	704	0.5−	1.1−
1998 05 22	704	0.4−	0.5+	1998 06 03	704	0.2+	0.4+	1998 07 01	699	0.0	0.4+
1998 05 22	704	1.5+	1.5−	1998 06 03	704	1.2−	0.7+	1998 07 01	699	0.1−	0.3+
1998 05 22	704	1.3+	0.1+	1998 06 24	704	0.8+	0.3+	1998 07 01	699	0.1−	0.6+
1998 05 22	704	1.0−	0.2−	1998 06 24	704	0.1+	0.6−				
1998 05 24	704	0.4+	0.0	1998 06 24	704	0.3+	0.9+				

1998 KW₄₆ = 1978 WS

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	307.97697		(2000.0)		P		Q
<i>n</i>	0.18063945	ω	74.05015	+0.73942044			+0.64834314
<i>a</i>	3.0992811	Ω	245.15317	−0.66843805			+0.67485070
<i>e</i>	0.0830801	<i>i</i>	11.53183	−0.08029939			+0.35245950
<i>P</i>	5.46	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 11 29	675	(3.7−	1.3−)	1998 05 24	704	0.6−	1.2+	1998 06 26	704	0.4+	1.1+
1978 11 30	675	0.1−	0.2+	1998 05 24	704	0.1−	0.9+	1998 06 26	704	1.0−	0.6+
1978 11 30	675	0.5−	0.9−	1998 05 24	704	1.0−	0.9−	1998 06 26	704	0.0	0.8+
1978 12 01	675	0.7+	0.8+	1998 06 01	809	(3.1+	0.8+)	1998 06 26	704	0.3+	0.7−
1998 05 22	704	0.7+	0.3+	1998 06 01	809	(3.9+	0.5+)	1998 06 26	704	0.2+	0.5−
1998 05 22	704	0.5+	0.8−	1998 06 01	809	(3.2+	0.5−)	1998 07 02	699	0.2+	0.2−
1998 05 22	704	0.9−	0.1+	1998 06 02	809	(5.7+	1.2+)	1998 07 02	699	0.4−	0.4−
1998 05 24	704	1.0+	1.0−	1998 06 02	809	(4.7+	1.4+)	1998 07 02	699	0.1+	0.7−
1998 05 24	704	0.4+	0.0	1998 06 02	809	(4.4+	1.3+)				

1998 KZ₄₆ = 1991 XX₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	232.46249		(2000.0)		P		Q
<i>n</i>	0.23475001	ω	137.19525	+0.78950301			−0.56605047
<i>a</i>	2.6025494	Ω	258.77835	+0.47717457			+0.80919690
<i>e</i>	0.1172072	<i>i</i>	13.99519	+0.38599148			+0.15743965
<i>P</i>	4.20	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 12 10	033	0.6−	0.5+	1998 05 24	704	0.3+	0.4−	1998 06 26	704	0.6−	0.0
1991 12 10	033	0.8+	0.1+	1998 05 24	704	0.3+	1.3+	1998 06 26	704	1.3−	1.3+
1991 12 11	033	0.1−	1.1+	1998 05 24	704	0.1+	0.6−	1998 06 26	704	0.7+	0.2+
1998 05 22	704	0.7+	0.1−	1998 05 24	704	0.6−	1.9+	1998 06 26	704	1.5−	0.6−
1998 05 22	704	1.6+	1.3+	1998 06 24	704	1.1+	0.2+	1998 07 02	699	0.4−	0.4−
1998 05 22	704	1.0−	1.2−	1998 06 24	704	0.1−	2.0−	1998 07 02	699	0.0	0.5+
1998 05 22	704	0.6+	2.0−	1998 06 24	704	0.2+	0.3+	1998 07 02	699	0.8+	0.2+
1998 05 22	704	2.5−	0.8+	1998 06 24	704	1.3+	1.0+				

1998 KQ₄₇ = 1976 SP₁ = 1980 FX = 1990 BT₃ = 1992 GB₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	331.27951		(2000.0)		P		Q
<i>n</i>	0.17514678	ω	114.29094	+0.62636893			+0.77917215
<i>a</i>	3.1637436	Ω	194.56561	−0.74480984			+0.58930057
<i>e</i>	0.2429922	<i>i</i>	5.36403	−0.23004404			+0.21357808
<i>P</i>	5.63	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1976 09 24	095	1.0−	0.2+	1992 04 06	809	(2.5−	1.2−)	1998 06 23	682	0.3+	0.1+
1976 09 28	095	0.1+	2.0+	1992 04 06	809	(2.6−	1.9−)	1998 06 23	682	0.5−	1.0+
1980 03 16	809	0.6+	0.4+	1992 04 06	809	(3.0−	1.4−)	1998 06 23	682	0.6+	1.3−
1980 03 16	809	0.8+	0.2+	1998 05 22	704	0.4+	0.1+	1998 06 24	704	0.6−	0.1−
1980 03 16	809	0.1+	1.0+	1998 05 22	704	0.4−	1.8−	1998 06 24	704	0.4−	0.2+
1980 03 16	809	0.6+	0.4+	1998 05 22	704	1.6−	0.1+	1998 06 24	704	0.1+	0.5+
1980 03 17	809	0.3−	0.9+	1998 05 22	704	0.3+	0.2+	1998 06 24	704	0.2−	0.4+
1980 03 17	809	0.4+	0.0	1998 05 22	704	0.1−	0.1+	1998 06 24	704	0.3−	0.5+
1980 03 17	809	0.1−	1.2+	1998 05 24	704	0.2−	0.4−	1998 06 26	704	1.0+	0.1+
1980 03 17	809	0.5+	0.3+	1998 05 24	704	0.2+	0.7+	1998 06 26	704	1.0−	0.1−
1990 01 24	033	0.1+	0.8+	1998 05 24	704	0.1−	0.4+	1998 06 26	704	1.0+	0.8−
1990 01 24	033	0.3−	0.6+	1998 05 24	704	0.3+	1.0+	1998 06 26	704	0.8+	0.8+
1992 04 04	809	0.6−	1.9−	1998 05 24	704	0.3+	0.5+	1998 06 26	704	0.0	0.9+
1992 04 04	809	1.3−	1.8−	1998 06 22	682	0.7+	0.1+	1998 07 13	689	0.1+	0.2−
1992 04 04	809	(1.1−	2.6−)	1998 06 22	682	0.1+	0.2+				

1998 KR₄₇ = 1990 VT₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	324.01527		(2000.0)		P		Q
<i>n</i>	0.22520223	ω	101.18796	+0.80430453			+0.58201154
<i>a</i>	2.6755984	Ω	223.36379	−0.59016449			+0.75889980
<i>e</i>	0.2728475	<i>i</i>	10.04983	−0.06928270			+0.29211925
<i>P</i>	4.38	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 11	372	1.5−	1.3−	1998 05 22	704	1.0+	0.5+	1998 06 19	704	0.1−	0.8+
1990 11 11	372	0.9+	0.2+	1998 05 24	704	1.4−	0.7−	1998 06 19	704	0.3+	0.1+
1990 11 13	372	(2.7−	0.2−)	1998 05 24	704	0.3−	0.9+	1998 06 19	704	0.8+	1.3−
1990 11 13	372	0.3−	0.2−	1998 05 24	704	0.2−	0.9+	1998 06 19	704	0.7+	1.5+
1990 11 14	372	0.9+	1.2+	1998 05 24	704	(0.8−	2.7+)	1998 06 19	704	0.1−	0.3+
1990 11 14	372	(1.0+	2.3+)	1998 05 24	704	0.2+	0.3−	1998 06 25	704	0.6+	0.7−
1998 05 22	704	0.7+	0.8−	1998 06 03	704	1.7−	0.3−	1998 06 25	704	0.6+	0.8−
1998 05 22	704	0.2−	0.5−	1998 06 03	704	0.1−	0.7+	1998 06 25	704	0.8−	0.6−
1998 05 22	704	1.2+	0.2−	1998 06 03	704	0.5−	0.5−	1998 06 25	704	0.5−	0.4+
1998 05 22	704	0.7+	0.3+	1998 06 03	704	0.4−	0.7−	1998 06 25	704	0.5−	1.0+

1998 KS₄₇ = 1980 DB = 1993 FC₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	76.64739		(2000.0)		P		Q
<i>n</i>	0.22795958	ω	27.98793	−0.99691343			−0.06655265
<i>a</i>	2.6539790	Ω	148.11269	+0.04881423			−0.94090890
<i>e</i>	0.0764544	<i>i</i>	4.52171	+0.06148807			−0.33205599
<i>P</i>	4.32	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1980 02 19	801	0.1+	0.3+	1998 05 22	704	2.2+	0.1+	1998 06 24	704	0.5+	1.0-
1993 03 24	033	0.5-	0.7+	1998 05 22	704	1.2-	1.7-	1998 06 24	704	0.8-	1.2+
1993 03 26	033	0.4-	0.1-	1998 05 24	704	0.7+	0.4-	1998 06 24	704	1.4-	1.0+
1993 03 26	033	0.5+	0.1+	1998 05 24	704	1.7-	2.2+	1998 06 26	704	1.4+	2.4-
1993 03 29	033	0.3+	1.0-	1998 05 24	704	0.2-	0.9+	1998 06 26	704	0.4-	0.1-
1998 05 22	704	0.2+	0.9-	1998 05 24	704	0.8+	0.5-	1998 06 26	704	0.7+	1.9+
1998 05 22	704	1.5+	1.9+	1998 05 24	704	2.2-	2.1-				

1998 KV₄₇ = 2374 T-3

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	158.95017		(2000.0)	P	Q						
<i>n</i>	0.26764620	ω	239.11659	-0.13896026	-0.98874737						
<i>a</i>	2.3846720	Ω	218.99243	+0.93598685	-0.11286312						
<i>e</i>	0.1011945	<i>i</i>	5.05081	+0.32344808	-0.09818637						
<i>P</i>	3.68	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1977 10 07	675	2.4+	1.6-	1977 10 21	675	0.7+	0.6-	1998 06 03	704	0.1-	0.6+
1977 10 11	675	0.3+	1.8+	1977 10 22	675	0.3+	0.9-	1998 06 03	704	1.7-	0.3-
1977 10 11	675	0.7-	1.5+	1977 10 22	675	0.7+	1.3-	1998 06 03	704	1.8+	0.4-
1977 10 12	675	0.1-	0.1-	1998 05 22	704	0.7-	1.3-	1998 06 03	704	1.5-	1.3-
1977 10 12	675	0.1+	0.9+	1998 05 22	704	0.2+	1.9+	1998 06 24	704	1.9+	1.3-
1977 10 16	675	0.9-	0.7-	1998 05 22	704	1.7-	0.3+	1998 06 24	704	1.4+	0.7+
1977 10 16	675	0.6-	0.3-	1998 05 24	704	0.7-	0.9+	1998 06 24	704	0.3+	0.6-
1977 10 17	675	1.6-	0.8+	1998 05 24	704	0.6+	0.5-	1998 06 24	704	0.0	1.2+
1977 10 17	675	1.5-	0.5+	1998 05 24	704	0.9+	0.7+				
1977 10 21	675	1.0+	0.0	1998 05 24	704	0.6-	0.9-				

1998 KW₄₇ = 1995 UW₅

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	17.92864		(2000.0)	P	Q						
<i>n</i>	0.24602978	ω	33.01888	-0.48294474	+0.87535874						
<i>a</i>	2.5223824	Ω	208.12257	-0.81343542	-0.45804290						
<i>e</i>	0.1385522	<i>i</i>	2.75004	-0.32417156	-0.15473776						
<i>P</i>	4.01	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1995 10 21	399	0.0	0.7+	1998 05 24	704	0.2+	0.2+	1998 06 24	704	1.0-	0.9+
1995 10 21	399	0.5-	0.8+	1998 05 24	704	1.3+	1.0-	1998 06 24	704	0.7+	0.5-
1995 10 27	399	0.4-	1.2-	1998 05 24	704	(2.6-	2.1-)	1998 06 24	704	0.1-	1.5-
1995 10 27	399	0.9+	0.3-	1998 05 24	704	0.2+	0.3-	1998 06 24	704	0.2+	0.2-
1998 05 22	704	0.5+	0.2+	1998 06 03	704	0.3+	1.0+	1998 06 26	704	0.7+	0.5+
1998 05 22	704	0.2+	0.5+	1998 06 03	704	0.4-	0.3+	1998 06 26	704	0.8-	0.5+
1998 05 22	704	0.1+	0.8+	1998 06 03	704	0.3-	0.4-	1998 06 26	704	0.1+	0.2+
1998 05 22	704	0.8-	0.1-	1998 06 03	704	0.4-	0.4-	1998 06 26	704	0.8+	0.4-
1998 05 22	704	1.0-	0.7-	1998 06 03	704	(3.1-	0.9+)	1998 06 26	704	0.3-	0.3+
1998 05 24	704	0.0	0.2+	1998 06 24	704	0.1-	0.2-				

1998 KZ₄₇ = 1995 QH₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	346.94425		(2000.0)	P	Q						
<i>n</i>	0.28487882	ω	176.05812	+0.23611471	+0.96345827						
<i>a</i>	2.2875080	Ω	107.56506	-0.89512900	+0.26630555						
<i>e</i>	0.1172182	<i>i</i>	7.62385	-0.37814538	-0.02880149						
<i>P</i>	3.46	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1995 08 31	372	0.8-	0.2-	1998 05 24	704	0.9+	0.0	1998 06 24	704	0.7-	1.0-
1995 08 31	372	0.1+	0.8-	1998 05 24	704	0.2+	1.3+	1998 06 24	704	0.2+	0.6-
1995 09 04	372	0.7+	1.1+	1998 05 24	704	0.2+	0.1+	1998 06 24	704	0.8+	0.1-
1998 05 22	704	0.5+	1.6-	1998 06 03	704	1.3-	2.6+	1998 06 24	704	1.6-	0.9+
1998 05 22	704	0.4-	0.1-	1998 06 03	704	0.8-	0.4+	1998 06 26	704	0.3+	0.4-
1998 05 22	704	1.0+	0.2-	1998 06 03	704	1.0+	0.4+	1998 06 26	704	0.0	0.3-

1998 05 22	704	0.2-	2.6-	1998 06 03	704	0.9-	0.1+	1998 06 26	704	0.8+	1.3+
1998 05 24	704	0.2-	0.1-	1998 06 03	704	0.1+	0.6+	1998 06 26	704	0.1+	0.6-
1998 05 24	704	0.3+	1.0+	1998 06 24	704	0.0	0.6-	1998 06 26	704	0.3-	0.6-

1998 KM₄₈ = 1991 NH₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	340.73532		(2000.0)	P	Q						
<i>n</i>	0.27963592	ω	86.24228	+0.52489914	+0.84731370						
<i>a</i>	2.3160117	Ω	215.79730	-0.82548063	+0.48359270						
<i>e</i>	0.2454144	<i>i</i>	7.94734	-0.20751538	+0.21953951						
<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 07 14	675	1.1-	1.0+	1998 05 24	704	0.6-	1.0-	1998 06 19	704	0.1+	0.2+
1991 07 14	675	0.6-	0.4-	1998 05 24	704	0.1-	0.4-	1998 06 19	704	0.9-	0.0
1991 07 18	675	0.8+	0.5+	1998 05 26	704	0.6-	0.7-	1998 06 19	704	0.3+	0.8-
1991 07 18	675	0.8+	0.4-	1998 05 26	704	0.4+	1.6+	1998 06 19	704	0.5-	0.5-
1998 05 22	704	0.6-	0.7+	1998 05 26	704	0.5-	0.9+	1998 06 19	704	0.9-	1.2-
1998 05 22	704	1.1+	0.2-	1998 05 26	704	1.6+	0.9+	1998 06 25	704	0.5+	0.1-
1998 05 22	704	(1.8-	2.7-)	1998 06 03	704	0.2+	0.8+	1998 06 25	704	0.2+	0.6+
1998 05 24	704	0.7-	0.1-	1998 06 03	704	0.8+	0.9+	1998 06 25	704	1.2+	0.3-
1998 05 24	704	0.8+	1.4-	1998 06 03	704	0.9-	0.8-	1998 06 25	704	0.2-	0.5-
1998 05 24	704	1.0-	0.3+	1998 06 03	704	0.4+	0.6+				

1998 KG₅₁ = 1981 UD₂₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	283.16324		(2000.0)	P	Q						
<i>n</i>	0.27596261	ω	183.90086	+0.97401939	+0.22436548						
<i>a</i>	2.3365185	Ω	163.03815	-0.20481944	+0.93071345						
<i>e</i>	0.1364212	<i>i</i>	6.05303	-0.09661901	+0.28884702						
<i>P</i>	3.57	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1981 10 24	675	0.3+	0.1+	1998 05 25	699	0.0	0.8-	1998 06 03	704	1.1+	0.2+
1981 10 25	675	0.3+	0.1+	1998 05 26	704	0.2+	0.7-	1998 06 26	699	0.1-	0.3+
1981 10 26	675	0.6-	0.0	1998 05 26	704	1.0-	0.7+	1998 06 26	699	0.5-	0.1-
1998 05 23	704	0.0	0.4+	1998 05 26	704	0.5+	0.2+	1998 06 26	699	0.6+	0.0
1998 05 23	704	0.8+	0.9+	1998 05 26	704	0.2-	0.2+	1998 07 01	699	0.5+	0.2+
1998 05 23	704	0.0	0.0	1998 05 26	704	0.2-	0.0	1998 07 01	699	0.7+	0.7-
1998 05 23	704	(2.4-	1.0-)	1998 06 03	704	0.4-	1.1-	1998 07 01	699	1.6-	0.5+
1998 05 25	699	1.0-	0.1-	1998 06 03	704	0.3+	0.2+				
1998 05 25	699	0.3+	0.4+	1998 06 03	704	0.0	0.5-				

1998 KJ₅₂ = 1977 RK₁₇

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	96.72500		(2000.0)	P	Q						
<i>n</i>	0.17575314	ω	332.82245	-0.89813098	-0.43971406						
<i>a</i>	3.1564627	Ω	181.11007	+0.42913116	-0.87471941						
<i>e</i>	0.0167563	<i>i</i>	10.42683	+0.09595414	-0.20375843						
<i>P</i>	5.61	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1977 09 09	675	0.1+	0.2+	1998 05 23	704	0.5-	0.2+	1998 06 03	704	0.8-	1.4+
1977 09 10	675	0.1-	0.2-	1998 05 26	704	0.8+	0.2-	1998 06 03	704	(0.9-	5.3+)
1998 05 06	566	0.9-	0.1-	1998 05 26	704	1.1+	0.1+	1998 06 19	704	0.1-	0.2+
1998 05 06	566	1.9-	0.0	1998 05 26	704	0.9+	0.0	1998 06 19	704	0.0	0.3+
1998 05 06	566	0.5-	0.6-	1998 05 26	704	0.2+	0.0	1998 06 19	704	0.0	0.5-
1998 05 23	704	0.3+	0.2+	1998 05 26	704	0.5-	0.2-	1998 06 19	704	0.8+	0.9-
1998 05 23	704	0.5+	0.8+	1998 06 03	704	0.0	0.5-	1998 06 19	704	0.1+	0.3-
1998 05 23	704	0.8+	0.5+	1998 06 03	704	0.3-	0.2+				
1998 05 23	704	0.1+	0.5+	1998 06 03	704	0.4-	1.1-				

1998 AUG. 8

M.P.C. 32283

1998 KK₅₄ = 1992 BO₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	116.66442		(2000.0)			P		Q			
<i>n</i>	0.20512889	ω	19.29484			-0.65611071		-0.71806804			
<i>a</i>	2.8474197	Ω	112.45680			+0.65517233		-0.69465870			
<i>e</i>	0.0754818	<i>i</i>	14.54894			+0.37452364		-0.04275022			
<i>P</i>	4.80	<i>H</i>	13.5		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1992 01 29	691	0.6-	0.2+	1998 05 23	704	1.4+	0.9+	1998 06 19	704	1.8+	1.5-
1992 01 29	691	0.6+	0.4-	1998 05 26	704	0.5+	0.2+	1998 06 19	704	0.5-	1.1+
1992 01 29	691	0.2-	0.5+	1998 05 26	704	0.3+	0.5+	1998 06 19	704	0.2+	0.7+
1992 01 30	691	1.0-	0.4+	1998 05 26	704	0.3+	0.0	1998 06 19	704	0.5-	1.1-
1992 01 30	691	1.3+	0.7-	1998 05 26	704	1.4-	0.5-	1998 06 19	704	1.1-	0.0
1992 01 30	691	0.2-	0.1+	1998 05 26	704	0.9-	1.0-	1998 06 25	704	0.9+	1.1-
1998 05 23	704	0.3-	0.7-	1998 06 03	704	(2.4-	1.0+)	1998 06 25	704	0.7+	0.9+
1998 05 23	704	0.8+	1.5+	1998 06 03	704	1.2-	0.3-	1998 06 25	704	0.5+	1.7+
1998 05 23	704	0.2-	0.4-	1998 06 03	704	0.5+	0.5-	1998 06 25	704	1.9-	0.6-
1998 05 23	704	0.3+	0.2+	1998 06 03	704	(2.2-	0.8+)				

1998 KW₅₄ = 9101 P-L = 1993 RT₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	323.00444		(2000.0)			P		Q			
<i>n</i>	0.17878672	ω	129.49209			+0.72889623		+0.68357798			
<i>a</i>	3.1206558	Ω	187.65722			-0.68225034		+0.72066086			
<i>e</i>	0.2299914	<i>i</i>	16.49560			-0.05696275		+0.11562469			
<i>P</i>	5.51	<i>H</i>	13.0		<i>G</i>	0.15		<i>U</i>		3	
Residuals in seconds of arc											
1960 10 17	675	0.1-	0.7-	1998 05 23	704	0.1+	0.0	1998 06 15	699	0.1-	0.3+
1960 10 22	675	0.6+	0.5+	1998 05 23	704	0.4+	0.1-	1998 06 19	704	0.8+	0.4-
1960 10 24	675	0.4-	1.9+	1998 05 26	704	0.8+	0.2-	1998 06 19	704	0.6+	0.0
1960 10 26	675	0.2-	0.6-	1998 05 26	704	0.1-	0.5+	1998 06 19	704	0.6-	0.1-
1993 08 21	675	0.3+	0.2-	1998 05 26	704	0.2-	0.3+	1998 06 19	704	0.0	0.4-
1993 08 21	675	1.1-	1.4+	1998 05 26	704	0.8+	0.6-	1998 06 19	704	0.2+	0.0
1993 08 23	675	1.6-	0.5+	1998 05 26	704	0.7+	0.5+	1998 07 26	699	0.0	0.1-
1993 08 23	675	(3.5-	0.7-)	1998 06 03	704	0.1-	0.1-	1998 07 26	699	0.2+	0.8-
1993 09 12	675	(6.6-	32.8-)	1998 06 03	704	0.2-	0.3+	1998 07 26	699	0.1-	0.2-
1993 09 14	675	1.3+	1.1-	1998 06 03	704	0.8-	1.7+	1998 07 28	691	0.2+	0.6-
1993 09 14	675	1.3+	1.0-	1998 06 03	704	0.4-	0.7+	1998 07 28	691	0.1-	0.7-
1998 05 23	704	1.7-	0.3+	1998 06 03	704	1.6-	1.0+	1998 07 28	691	0.1-	0.6-
1998 05 23	704	0.7+	0.1-	1998 06 15	699	0.5+	0.1-				
1998 05 23	704	0.2+	0.6-	1998 06 15	699	0.2+	0.1-				

1998 KY₅₄ = 1996 XF₃₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	50.94953		(2000.0)			P		Q			
<i>n</i>	0.22335101	ω	98.69449			-0.89697661		+0.30001871			
<i>a</i>	2.6903623	Ω	99.26371			-0.40411046		-0.85424507			
<i>e</i>	0.1092483	<i>i</i>	19.20674			+0.17924199		-0.42456346			
<i>P</i>	4.41	<i>H</i>	14.0			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1996 12 03	691	0.6+	0.1+	1998 05 23	704	0.2+	0.3-	1998 06 19	704	0.4-	0.7+
1996 12 03	691	0.4+	0.2-	1998 05 26	704	0.9+	0.4+	1998 06 19	704	1.3+	0.3-
1996 12 03	691	0.7+	1.5+	1998 05 26	704	0.4+	0.2+	1998 06 25	704	0.3-	0.4+
1996 12 08	691	0.8-	0.6-	1998 05 26	704	0.3-	0.3+	1998 06 25	704	0.7-	0.3-
1996 12 08	691	0.8-	0.5-	1998 05 26	704	0.5+	1.1-	1998 06 25	704	0.8-	0.0
1998 05 23	704	0.5+	1.9-	1998 05 26	704	0.7+	0.5-	1998 06 25	704	0.2-	0.4+
1998 05 23	704	0.1+	1.0+	1998 06 19	704	0.7+	0.1+	1998 07 01	699	0.3+	0.9-
1998 05 23	704	0.4+	0.2+	1998 06 19	704	0.4-	0.4+	1998 07 01	699	0.1+	0.6-
1998 05 23	704	2.7-	0.4+	1998 06 19	704	1.1-	1.0+	1998 07 01	699	0.8+	0.4+

1998 KZ₅₄ = 1997 HH₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	336.18867		(2000.0)			P		Q			
<i>n</i>	0.18617789	ω	111.97269			+0.35023435		+0.93664980			
<i>a</i>	3.0375072	Ω	178.50370			-0.91284334		+0.34247241			
<i>e</i>	0.1144316	<i>i</i>	10.59687			-0.20988793		+0.07348338			
<i>P</i>	5.29	<i>H</i>	13.5		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1997 04 28	704	0.2+	0.5+	1997 04 29	704	0.1+	1.5+	1998 05 26	704	0.8+	0.5-
1997 04 28	704	0.1-	0.4-	1998 05 23	704	0.3+	0.7-	1998 05 26	704	0.1+	1.6+
1997 04 28	704	0.5-	0.6-	1998 05 23	704	0.1+	0.1-	1998 06 19	704	0.5+	0.4+
1997 04 28	704	1.0-	0.9+	1998 05 23	704	0.1-	0.2+	1998 06 19	704	0.1+	0.3+
1997 04 28	704	3.6-	0.9-	1998 05 23	704	0.7-	0.3+	1998 06 19	704	0.3+	0.3-
1997 04 29	704	1.2+	0.0	1998 05 23	704	0.9-	0.2-	1998 06 19	704	0.3-	0.2-
1997 04 29	704	1.1+	0.5-	1998 05 26	704	0.4+	0.7-	1998 06 19	704	0.5-	0.3+
1997 04 29	704	1.6+	0.3-	1998 05 26	704	0.3+	0.1+				
1997 04 29	704	0.9+	0.2-	1998 05 26	704	0.4-	0.5-				

1998 KA₅₅ = 1992 FF₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	293.98377		(2000.0)			P		Q			
<i>n</i>	0.19013617	ω	198.94835			+0.89484061		+0.42676010			
<i>a</i>	2.9952028	Ω	135.05418			−0.38187865		+0.88372342			
<i>e</i>	0.0769861	<i>i</i>	10.67879			−0.23114710		+0.19211647			
<i>P</i>	5.18	<i>H</i>	13.0			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1992 03 30	033	0.2+	0.0	1998 05 26	704	0.1−	0.1+	1998 07 16	910	0.2+	0.1−
1992 03 31	033	0.6−	0.6−	1998 05 26	704	0.4+	0.2−	1998 07 16	910	0.4+	0.1+
1992 04 03	033	0.5+	0.6+	1998 05 26	704	0.2−	0.2−	1998 07 16	910	0.4+	0.1+
1998 05 23	704	0.8+	0.4−	1998 05 26	704	0.3+	0.1+	1998 07 17	910	0.5+	0.1+
1998 05 23	704	0.2+	0.5+	1998 06 25	704	1.1−	1.0−	1998 07 17	910	0.3+	0.1+
1998 05 23	704	0.1+	0.2+	1998 06 25	704	0.3−	0.3−	1998 07 17	910	0.3+	0.0
1998 05 23	704	0.0	0.2−	1998 06 25	704	0.2−	0.1+	1998 07 26	699	0.5−	0.1+
1998 05 23	704	0.1+	0.2+	1998 06 25	704	1.0−	0.7+	1998 07 26	699	0.4−	0.2−
1998 05 26	704	0.3−	0.4−	1998 06 25	704	0.0	0.6+	1998 07 26	699	0.2+	0.0

1998 KB₅₅ = 1985 OF₁ = 1986 WB₃

Id. A. Doppler

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	262.55383		(2000.0)			P			Q		
<i>n</i>	0.22307444	ω	207.39097			+0.97472178			-0.21980894		
<i>a</i>	2.6925855	Ω	165.14303			+0.22267317			+0.94108950		
<i>e</i>	0.1405851	<i>i</i>	8.97912			+0.01827898			+0.25697195		
<i>P</i>	4.42	<i>H</i>	13.5			<i>G</i>	0.15		<i>U</i>	3	
Residuals in seconds of arc											
1985 07 20	413	0.0	0.3+	1998 05 26	704	0.9+	0.6+	1998 06 19	704	0.2+	0.7+
1986 11 27	033	0.5-	0.2-	1998 05 26	704	0.8+	0.1-	1998 06 19	704	0.2+	0.1-
1986 11 27	033	0.5+	0.2+	1998 05 26	704	0.5+	1.6+	1998 06 19	704	0.0	0.9-
1998 05 23	704	0.2+	0.5-	1998 06 03	704	0.3-	1.0+	1998 06 25	704	1.2+	0.6-
1998 05 23	704	1.8-	0.4+	1998 06 03	704	1.0+	0.1+	1998 06 25	704	1.0-	0.7+
1998 05 23	704	0.6+	1.1-	1998 06 03	704	1.8-	1.3-	1998 06 25	704	0.7-	0.6-
1998 05 23	704	(3.9-	0.3-)	1998 06 03	704	(0.1+	2.4-)	1998 06 25	704	0.3-	0.4-
1998 05 26	704	0.8+	0.7-	1998 06 19	704	0.2-	0.8-	1998 06 25	704	0.8-	0.4+
1998 05 26	704	0.8+	1.0+	1998 06 19	704	0.2-	0.3+				

1998 KM₅₅ = 1948 WO = 1976 JF₁ = 1978 TZ₂ = 1991 XM₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	136.68638		(2000.0)		P		Q				
<i>n</i>	0.22879591	ω	253.89751		-0.41937684		-0.89620721				
<i>a</i>	2.6475075	Ω	221.86413		+0.89353718		-0.37935148				
<i>e</i>	0.1303973	<i>i</i>	12.52174		+0.16035705		-0.23001105				
<i>P</i>	4.31	<i>H</i>	13.0		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1948 11 24	012	2.7-	0.7-	1998 05 23	704	0.6+	1.0+	1998 06 19	704	0.1+	0.3-
1948 11 25	012	3.8+	3.3+	1998 05 23	704	(3.6+	3.0+)	1998 06 19	704	0.2-	0.8+
1948 11 27	012	1.3-	4.2+	1998 05 23	704	0.3-	1.6+	1998 06 19	704	0.6-	0.7+
1976 05 02	095	0.5+	1.7+	1998 05 26	704	1.6+	0.4-	1998 06 25	704	1.2-	0.6-
1978 10 04	095	0.4-	0.5-	1998 05 26	704	1.6-	0.1+	1998 06 25	704	0.0	0.2-
1991 12 04	399	0.8-	1.1-	1998 05 26	704	0.5+	0.1-	1998 06 25	704	0.5+	0.1-
1991 12 04	399	0.5-	0.5-	1998 05 26	704	0.1-	0.9-	1998 06 25	704	0.2-	0.3-
1991 12 07	399	0.7+	0.5-	1998 05 26	704	0.0	0.5+	1998 06 25	704	0.3-	0.8+
1991 12 07	399	1.2+	0.4+	1998 06 19	704	0.2-	0.5+				
1998 05 23	704	0.9+	0.1-	1998 06 19	704	0.1-	0.7+				

1998 KU₅₅ = 1983 XZ₁ = 1991 VA₁₄ = 1991 VE₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	234.28339		(2000.0)		P		Q				
<i>n</i>	0.24094294	ω	264.22672		+0.72932622		-0.67769587				
<i>a</i>	2.5577607	Ω	138.38489		+0.67024529		+0.68019290				
<i>e</i>	0.1729306	<i>i</i>	8.12563		+0.13731172		+0.27940280				
<i>P</i>	4.09	<i>H</i>	13.5		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1983 12 05	561	0.8-	0.0	1998 05 26	704	1.0-	0.4+	1998 06 24	704	1.1+	0.6+
1983 12 05	561	0.8+	0.2-	1998 05 26	704	1.1-	1.5-	1998 06 24	704	1.3+	0.8+
1991 11 07	675	1.3+	1.4-	1998 05 26	704	1.3-	0.4+	1998 06 24	704	0.2+	0.4-
1991 11 07	675	0.5+	1.7-	1998 06 03	704	0.7+	0.3+	1998 06 24	704	0.1+	0.2+
1991 11 09	809	0.8-	2.9+	1998 06 03	704	0.2-	1.0+	1998 06 24	704	0.2+	0.0
1991 11 09	809	1.0-	0.3+	1998 06 03	704	0.1+	0.4+	1998 06 26	704	0.2-	0.1+
1998 05 23	704	0.9+	0.2-	1998 06 03	704	1.1-	0.4+	1998 06 26	704	0.6+	0.2-
1998 05 23	704	1.2+	0.8+	1998 06 03	704	0.9+	0.0	1998 06 26	704	0.6-	0.5-
1998 05 23	704	0.0	0.1-	1998 06 19	704	1.6+	0.9-	1998 06 26	704	0.1-	0.8+
1998 05 23	704	1.6+	1.5-	1998 06 19	704	3.7-	0.2+	1998 06 26	704	0.1-	1.3-
1998 05 26	704	0.5-	0.2+	1998 06 19	704	0.4+	0.5-				
1998 05 26	704	0.9-	0.6+	1998 06 19	704	0.1-	0.2-				

1998 KM₆₁ = 1992 SK₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	15.69931		(2000.0)		P		Q				
<i>n</i>	0.30522213	ω	100.20402		-0.40728159		+0.91182533				
<i>a</i>	2.1847012	Ω	145.61401		-0.86980985		-0.36992278				
<i>e</i>	0.1325748	<i>i</i>	5.27534		-0.27848256		-0.17813395				
<i>P</i>	3.23	<i>H</i>	16.0		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1992 09 26	691	0.1+	1.5-	1998 05 26	704	0.3-	0.5-	1998 06 24	704	0.3-	0.2+
1992 09 26	691	0.1+	0.4+	1998 05 26	704	0.3-	0.4+	1998 06 24	704	0.9+	0.1-
1992 09 26	691	0.0	0.2+	1998 05 26	704	0.5+	0.7+	1998 06 24	704	0.0	0.8+
1992 09 27	691	0.0	0.5+	1998 05 26	704	0.3-	0.1-	1998 06 24	704	0.3+	0.4+
1992 09 27	691	0.1-	0.3+	1998 05 26	704	0.7+	1.9+	1998 06 24	704	1.2+	0.2-
1992 09 27	691	0.1-	0.2+	1998 06 19	704	0.8+	0.3-	1998 06 26	704	0.9-	1.0-
1998 05 23	704	0.2+	0.1-	1998 06 19	704	0.5+	0.2-	1998 06 26	704	0.7-	0.0
1998 05 23	704	0.7+	0.5+	1998 06 19	704	0.4+	0.7-	1998 06 26	704	1.6-	0.0
1998 05 23	704	0.0	0.4-	1998 06 19	704	0.5+	0.2-	1998 06 26	704	0.5-	0.2-
1998 05 23	704	1.5-	1.8-	1998 06 19	704	0.6-	0.6+	1998 06 26	704	0.3+	0.3+

1998 LA = 1994 NR₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	14.41951		(2000.0)		P		Q				
n	0.23854315	ω	126.46797		-0.39637746		+0.91495792				
a	2.5748864	Ω	120.01344		-0.86783393		-0.34648287				
e	0.2110773	i	5.01817		-0.29958167		-0.20688551				
P	4.13	H	15.0		G	0.15	U	4			
Residuals in seconds of arc											
1994 07 08	809	0.0	0.5-	1998 06 12	727	1.3+	0.1-	1998 06 25	727	0.4+	0.3-
1994 07 08	809	0.1-	0.5-	1998 06 12	727	0.6+	0.5-	1998 06 26	704	0.4+	0.0
1994 07 08	809	1.0-	0.3-	1998 06 12	727	0.1+	0.2+	1998 06 26	704	0.9-	0.1-
1994 07 09	809	0.8+	0.9+	1998 06 12	727	0.5-	0.5+	1998 06 26	704	0.4-	0.1-
1994 07 09	809	0.6+	0.6+	1998 06 15	727	0.6-	0.0	1998 06 26	704	0.6-	0.1+
1994 07 09	809	0.3-	0.9+	1998 06 15	727	0.7-	0.2-	1998 06 26	704	1.2-	1.6+
1998 06 02	727	0.4-	0.1-	1998 06 15	727	0.5-	0.1-	1998 06 30	727	1.0-	0.0
1998 06 02	727	0.0	0.2-	1998 06 16	727	0.4-	0.0	1998 06 30	727	0.9-	0.1+
1998 06 02	727	0.5+	0.0	1998 06 16	727	0.4-	0.0	1998 06 30	727	0.7-	0.2+
1998 06 03	727	0.4-	0.0	1998 06 16	727	0.5-	0.1+	1998 07 14	727	0.1+	0.1+
1998 06 03	727	0.4-	0.3+	1998 06 24	704	0.7+	0.1+	1998 07 14	727	0.2+	0.4-
1998 06 03	727	0.4-	0.4+	1998 06 24	727	0.3+	0.2-	1998 07 14	727	0.3-	0.3-
1998 06 03	704	1.7+	0.3+	1998 06 24	727	0.3+	0.1-	1998 07 14	727	0.1+	0.4-
1998 06 03	704	1.1-	0.6-	1998 06 24	704	0.5+	0.4+	1998 07 15	727	0.1-	0.7-
1998 06 03	704	0.9+	0.0	1998 06 24	727	0.6+	0.3-	1998 07 15	727	0.2+	1.1-
1998 06 03	704	1.0+	0.4-	1998 06 24	704	0.3+	0.4+	1998 07 15	727	0.3+	0.4-
1998 06 04	727	0.5+	0.3-	1998 06 24	704	0.4+	0.3+				
1998 06 04	727	0.7+	0.5+	1998 06 24	704	0.1-	0.2+				

1998 LU = 1990 HB₇ = 1996 XJ₂₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	27.83424		(2000.0)		P		Q				
n	0.24058707	ω	338.30416		-0.66013126		+0.74845595				
a	2.5602823	Ω	250.32536		-0.67885982		-0.63068221				
e	0.0662985	i	3.87071		-0.32152148		-0.20506984				
P	4.10	H	14.0		G	0.15	U	4			
Residuals in seconds of arc											
1990 04 29	413	0.1+	0.3-	1998 05 22	704	1.3+	1.5+	1998 06 24	704	(2.5-	0.3-)
1996 12 12	691	0.2+	0.1-	1998 06 01	809	1.7+	0.2+	1998 06 24	704	0.1-	0.7+
1996 12 12	691	0.1+	0.1-	1998 06 01	809	0.1+	0.3-	1998 06 24	704	0.4-	0.8+
1996 12 12	691	0.2+	0.1-	1998 06 01	809	0.1+	0.1-	1998 06 24	704	0.9-	0.6+
1996 12 13	691	0.0	0.3+	1998 06 02	809	1.3+	0.7+	1998 06 26	704	0.2-	0.3-
1996 12 13	691	0.2-	0.2+	1998 06 02	809	1.1+	0.0	1998 06 26	704	0.7-	0.3-
1996 12 13	691	0.2-	0.1+	1998 06 02	809	1.3+	0.2+	1998 06 26	704	0.1-	0.1+
1998 05 22	704	1.5-	0.7-	1998 06 03	704	0.4+	0.7+	1998 06 26	704	0.8-	0.6-
1998 05 22	704	1.0-	0.5-	1998 06 03	704	0.8-	0.4-	1998 06 26	704	0.1-	0.8+
1998 05 22	704	0.2-	1.2-	1998 06 03	704	0.3-	0.3-				
1998 05 22	704	0.4+	0.9-	1998 06 03	704	0.8-	0.2-				

1998 LK₂ = 1959 LK = 1970 PH = 1981 WR₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	312.21892		(2000.0)		P		Q				
n	0.27911166	ω	176.78989		+0.94177455		+0.33464978				
a	2.3189109	Ω	163.54377		-0.31101401		+0.90395034				
e	0.2106100	i	6.63145		-0.12779272		+0.26623919				
P	3.53	H	14.5		G	0.15	U	2			
Residuals in seconds of arc											
1959 06 04	760	0.1+	1.2+	1998 06 01	809	0.2+	0.7-	1998 06 19	704	0.8-	0.4+
1959 06 04	760	0.2-	0.6-	1998 06 01	809	0.0	1.1-	1998 06 19	704	1.4-	0.2+
1970 08 03	095	0.1+	0.0	1998 06 01	809	0.3-	0.9-	1998 06 19	704	0.5-	0.1-
1981 11 25	095	0.0	0.6-	1998 06 02	809	0.0	0.9-	1998 06 25	704	0.1+	0.6+
1998 05 26	704	0.2-	0.3+	1998 06 02	809	0.1+	0.9-	1998 06 25	704	1.1-	0.1+
1998 05 26	704	3.6+	0.0	1998 06 02	809	0.2-	1.4-	1998 06 25	704	0.3-	0.4+

1998 AUG. 8

M.P.C. 32285

1998 05 26	704	0.3+	0.0	1998 06 19	704	0.2+	0.1-	1998 06 25	704	0.4+	1.2+
1998 05 26	704	0.5+	1.5+	1998 06 19	704	0.2-	0.3+				

1998 LT₂ = 1981 SA₉ = 1981 UP₂₆ = 1988 UU = 1997 EB₃₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	291.38773		(2000.0)	P	Q
<i>n</i>	0.27890885	ω	158.80159	+0.99626176	+0.06884241
<i>a</i>	2.3200349	Ω	197.49525	-0.07942200	+0.96755730
<i>e</i>	0.1435064	<i>i</i>	9.99637	+0.03398008	+0.24309174
<i>P</i>	3.53	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1981 09 24	033	0.1+	0.1-	1997 03 08	691	0.2-	0.1-	1998 06 19	704	0.8-	1.6-
1981 09 24	033	0.1-	0.0	1997 03 16	691	0.0	0.8-	1998 06 19	704	0.0	0.7-
1981 10 25	675	0.4-	0.7-	1997 03 16	691	0.2-	0.4-	1998 06 19	704	1.1-	0.0
1981 10 26	675	0.3+	0.0	1997 03 16	691	0.4-	0.2-	1998 06 19	704	0.2-	0.7-
1988 10 18	046	0.1+	0.2-	1998 06 01	809	1.8+	2.0+	1998 06 19	704	0.0	1.6-
1988 10 18	046	0.3+	0.2-	1998 06 01	809	1.4+	1.9+	1998 06 25	704	1.8-	1.2-
1988 11 05	046	(0.8+	4.6-)	1998 06 01	809	2.3+	1.7+	1998 06 25	704	0.8-	0.7-
1988 11 05	046	(2.2-	3.7-)	1998 06 02	809	0.0	0.4+	1998 06 25	704	1.4-	1.0-
1997 03 08	691	0.2+	0.2-	1998 06 02	809	0.7+	0.6+				
1997 03 08	691	0.1-	0.3-	1998 06 02	809	0.5+	0.0				

1998 MH₃ = 1978 UD₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	200.38117		(2000.0)	P	Q
<i>n</i>	0.22954080	ω	174.11153	+0.61859533	-0.68284304
<i>a</i>	2.6417768	Ω	236.95641	+0.70063056	+0.70328061
<i>e</i>	0.0328299	<i>i</i>	27.62394	+0.35560741	-0.19779221
<i>P</i>	4.29	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1978 10 26	675	1.0+	1.2+	1998 05 23	699	0.5+	1.2+	1998 06 16	704	0.4+	0.9-
1978 10 27	675	1.0-	1.1-	1998 05 23	699	0.3-	0.2-	1998 06 23	691	0.7-	0.1+
1998 05 22	704	0.5-	1.2-	1998 06 16	691	0.8-	0.0	1998 06 23	691	0.9-	0.4+
1998 05 22	704	1.9+	0.5-	1998 06 16	691	0.9-	0.1-	1998 06 23	691	0.9-	0.3+
1998 05 22	704	0.8+	0.1-	1998 06 16	704	0.6+	1.4-	1998 06 24	691	0.7+	0.3+
1998 05 22	704	0.2-	0.2-	1998 06 16	691	0.9-	0.0	1998 06 24	691	0.5+	0.5+
1998 05 22	704	2.4-	2.7+	1998 06 16	704	1.2+	1.8+	1998 06 24	691	0.7+	0.4+
1998 05 23	699	0.7-	1.3-	1998 06 16	704	1.9+	1.8-				

1998 MK₄ = 1931 CD = 1982 PU₁ = 1993 PN₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	18.90626		(2000.0)	P	Q
<i>n</i>	0.17933572	ω	98.99937	-0.20030730	+0.96852620
<i>a</i>	3.1142838	Ω	157.70925	-0.97971830	-0.19718354
<i>e</i>	0.1322931	<i>i</i>	22.92720	-0.00538845	-0.15190668
<i>P</i>	5.50	<i>H</i>	12.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1931 02 10	754	0.0	0.1-	1993 08 19	010	(3.6+	2.2-)	1998 07 02	658	0.7-	0.6+
1982 08 13	095	0.0	2.5+	1993 08 19	010	(4.0+	1.6-)	1998 07 02	658	0.9-	0.5+
1993 08 15	010	0.3-	0.2-	1993 08 20	010	(3.0+	2.4-)	1998 07 02	658	0.9-	0.6+
1993 08 15	010	0.9-	0.3+	1998 06 23	703	0.2-	0.3+	1998 07 18	127	0.5+	0.5-
1993 08 16	010	0.3+	1.2-	1998 06 23	703	0.6+	0.2-	1998 07 18	127	0.3+	0.8-
1993 08 16	010	0.5+	1.1-	1998 06 24	703	0.5+	0.3-	1998 07 19	127	0.3+	0.3-
1993 08 16	010	0.4+	0.5-	1998 06 24	703	0.6-	0.1+	1998 07 19	127	1.1+	0.2-

1998 MZ₇ = 1987 QC₁₁ = 1992 KT

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	344.57844		(2000.0)	P	Q
<i>n</i>	0.18040847	ω	93.32177	+0.91360572	+0.33855747
<i>a</i>	3.1019260	Ω	246.98787	-0.39540280	+0.86884149
<i>e</i>	0.2905183	<i>i</i>	14.16070	+0.09476927	+0.36123857
<i>P</i>	5.46	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1987 08 28	095	0.0	0.1-	1998 06 26	699	0.4+	0.1+	1998 07 17	699	0.4-	0.5+
1992 05 29	675	0.4-	0.1-	1998 06 26	699	0.3+	0.3+	1998 07 17	699	0.2-	0.3+
1992 05 29	675	0.5-	0.3+	1998 06 26	699	0.1-	0.3+	1998 07 23	750	1.0-	0.9-
1992 06 01	675	0.6+	1.0+	1998 06 30	704	1.0+	1.7-	1998 07 23	750	1.5-	0.8+
1992 06 01	675	0.2+	0.8-	1998 06 30	704	0.6+	0.6-	1998 07 24	750	1.4-	0.7+
1998 06 19	699	0.8-	0.8+	1998 06 30	704	1.9+	0.8-	1998 07 31	750	0.3+	0.1+
1998 06 19	699	0.5-	0.1+	1998 06 30	704	1.3+	1.4-	1998 07 31	750	1.1+	0.7+
1998 06 19	699	0.2-	0.2+	1998 07 17	699	0.5-	0.2+				

1998 MN₈ = 1997 CL₁₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	314.00859		(2000.0)	P	Q
<i>n</i>	0.29047175	ω	188.23310	+0.91450542	+0.39700783
<i>a</i>	2.2580495	Ω	148.01950	-0.36231046	+0.88931256
<i>e</i>	0.2336474	<i>i</i>	8.45530	-0.18003049	+0.22695363
<i>P</i>	3.39	<i>H</i>	16.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 02 10	684	0.7+	0.4+	1998 05 26	704	(2.8-	1.2-)	1998 06 27	699	0.8+	1.7-
1997 02 10	684	0.2-	0.5-	1998 06 19	704	0.9-	0.1-	1998 06 27	699	0.0	0.2-
1997 02 10	684	0.1+	0.6-	1998 06 19	704	0.8+	1.9+	1998 07 22	910	0.4+	0.2-
1997 02 12	684	0.4-	0.2-	1998 06 19	704	0.6-	0.4-	1998 07 22	910	0.5+	0.1-
1997 02 12	684	0.5+	0.0	1998 06 25	704	0.4+	1.4-	1998 07 22	910	0.2+	0.2-
1997 02 12	684	0.8-	0.2-	1998 06 25	704	0.6+	0.7+	1998 07 23	910	0.2-	0.0
1998 05 26	704	0.6+	0.2+	1998 06 25	704	0.5-	0.2-	1998 07 23	910	0.0	0.1-
1998 05 26	704	1.5+	1.7+	1998 06 25	704	1.8-	1.0-	1998 07 23	910	0.1-	0.2-
1998 05 26	704	0.4-	0.9+	1998 06 27	699	1.3-	0.1+				

1998 MB₁₆ = 1997 EG₃₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	85.07817		(2000.0)	P	Q
<i>n</i>	0.19693207	ω	79.61744	-0.92266813	-0.38066939
<i>a</i>	2.9258929	Ω	77.98584	+0.32462989	-0.85284516
<i>e</i>	0.0408842	<i>i</i>	3.60120	+0.20808401	-0.35741566
<i>P</i>	5.00	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 05	704	0.6+	0.4+	1998 05 22	704	0.1+	1.7-	1998 06 21	691	0.0	0.3-
1997 03 05	704	1.1-	0.1+	1998 05 24	704	1.2+	0.0	1998 06 21	691	0.1-	0.1-
1997 03 06	704	0.2+	0.7-	1998 05 24	704	1.6-	0.5-	1998 06 21	691	0.0	0.0
1997 03 06	704	0.4+	0.2+	1998 05 24	704	0.1+	0.9+	1998 06 28	691	0.1+	0.2+
1998 05 22	704	1.8+	1.1+	1998 05 24	704	1.0+	0.5-	1998 06 28	691	0.3-	0.2+
1998 05 22	704	1.3-	0.7-	1998 05 24	704	1.4-	1.7+	1998 06 28	691	0.2+	0.1-

1998 MN₁₆ = 1995 YO₁₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	292.69471		(2000.0)	P	Q
<i>n</i>	0.23641904	ω	272.02827	+0.86038601	-0.45878818
<i>a</i>	2.5902862	Ω	115.34384	+0.50742675	+0.81172870
<i>e</i>	0.1761816	<i>i</i>	14.21465	-0.04747629	+0.36139996
<i>P</i>	4.17	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 12 22	691	0.1+	0.3-	1998 06 24	699	0.5+	0.7+	1998 06 28	691	0.2-	0.8-
1995 12 22	691	0.1-	0.1-	1998 06 24	699	1.6+	0.5+	1998 07 02	699	0.3+	0.3+

1995 12 22	691	0.2−	0.1−	1998 06 27	691	0.9−	0.8−	1998 07 02	699	0.5+	0.5−
1995 12 27	691	0.2+	0.1+	1998 06 27	691	3.5−	1.2+	1998 07 02	699	1.0+	0.4−
1995 12 27	691	0.0	0.1+	1998 06 27	691	0.5−	0.2−	1998 07 16	699	0.1+	0.6+
1995 12 27	691	0.0	0.2+	1998 06 28	691	0.3−	0.7−	1998 07 16	699	0.4+	0.1+
1998 06 24	699	1.0+	0.6+	1998 06 28	691	0.3−	0.5−	1998 07 16	699	0.2+	0.1−

1998 MM₁₉ = 4229 T-3 = 1993 RN₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	99.79607	(2000.0)		P	Q		
<i>n</i>	0.36534246	ω	334.80531	−0.97960675	−0.17368091		
<i>a</i>	1.9379205	Ω	196.18874	+0.17948753	−0.98241219		
<i>e</i>	0.0579579	<i>i</i>	21.24426	−0.09030417	−0.06856547		
<i>P</i>	2.70	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 10 16	675	0.2−	0.9+	1977 10 22	675	0.8+	2.3−	1998 06 04	704	1.5+	1.1+
1977 10 16	675	0.7−	1.9+	1993 09 15	675	0.0	0.2−	1998 06 04	704	1.4+	0.5−
1977 10 16	675	0.2−	0.4+	1993 09 15	675	0.9+	0.1+	1998 06 23	704	0.3−	0.4+
1977 10 16	675	0.0	2.9+	1993 09 16	675	0.7−	0.7−	1998 06 23	704	0.8−	0.0
1977 10 17	675	0.1−	1.2+	1998 05 28	704	0.2+	1.1+	1998 06 23	704	0.8+	0.7−
1977 10 17	675	0.1+	1.1−	1998 05 28	704	0.1−	0.1−	1998 06 23	704	0.7−	0.8−
1977 10 17	675	0.0	0.1+	1998 05 28	704	1.0−	1.2+	1998 06 27	704	0.2−	0.2+
1977 10 17	675	0.1−	0.3+	1998 05 28	704	0.1−	0.4−	1998 06 27	704	0.3−	0.3+
1977 10 21	675	0.2−	1.6−	1998 06 04	704	0.7−	1.0−	1998 06 27	704	0.2−	0.1+
1977 10 21	675	0.1+	0.9−	1998 06 04	704	0.3−	0.0	1998 06 27	704	0.1−	0.3−
1977 10 22	675	0.4+	0.9−	1998 06 04	704	0.9+	0.6+	1998 06 27	704	0.0	0.7−

1998 MO₁₉ = 1950 SM = 1989 TK₁ = 1991 GS

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	171.91680	(2000.0)		P	Q		
<i>n</i>	0.18000571	ω	252.17123	−0.21495970	−0.94509269		
<i>a</i>	3.1065513	Ω	213.49953	+0.97581616	−0.21809064		
<i>e</i>	0.0792893	<i>i</i>	26.48663	−0.03968825	−0.24338505		
<i>P</i>	5.48	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 09 19	012	1.8+	1.8+	1998 05 28	704	0.2−	0.9−	1998 06 23	704	0.1+	0.5+
1950 09 22	012	1.7−	0.0	1998 05 28	704	0.1+	1.2−	1998 06 23	704	0.1+	1.2+
1989 10 05	327	0.1−	0.1+	1998 05 28	704	0.8−	0.8+	1998 06 27	704	0.4−	0.8+
1989 10 05	327	0.2+	0.1−	1998 06 04	704	0.7+	0.9−	1998 06 27	704	0.2+	0.6+
1989 10 07	327	0.3−	0.8−	1998 06 04	704	0.5+	0.1−	1998 06 27	704	0.4−	0.3+
1989 10 07	327	0.0	0.3+	1998 06 04	704	0.4+	0.1−	1998 06 27	704	0.3−	0.4−
1991 04 09	675	0.7+	0.6+	1998 06 04	704	0.1−	0.4+	1998 06 27	704	0.7−	0.6+
1991 04 09	675	0.1−	1.0+	1998 06 04	704	0.4−	0.3+	1998 07 24	566	0.0	2.0−
1991 04 11	675	0.6+	0.3+	1998 06 23	704	0.6−	1.2+	1998 07 24	566	1.7+	1.3−
1991 04 11	675	1.0−	0.5−	1998 06 23	704	1.1−	1.1+	1998 07 24	566	1.3+	0.8−

1998 MZ₂₃ = 1994 NC₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	302.87649	(2000.0)		P	Q		
<i>n</i>	0.25418159	ω	80.00241	+0.96774830	−0.23575937		
<i>a</i>	2.4681601	Ω	293.58987	+0.17597104	+0.88479664		
<i>e</i>	0.1496849	<i>i</i>	5.55888	+0.18027043	+0.40193585		
<i>P</i>	3.88	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 07 11	809	0.4+	1.4+	1998 06 02	699	0.0	0.3−	1998 06 29	704	0.6−	0.4−
1994 07 11	809	0.5+	1.4+	1998 06 24	699	1.0+	0.5−	1998 06 29	704	1.5−	0.4−
1994 07 11	809	1.0+	0.5+	1998 06 24	699	0.9+	0.3−	1998 06 29	704	0.6+	0.9+
1994 07 12	809	0.5−	0.3−	1998 06 24	699	1.2+	0.3−	1998 07 01	691	0.5−	0.2+
1994 07 12	809	0.2−	1.3−	1998 06 25	691	0.3−	0.2+	1998 07 01	691	0.5−	0.3+
1994 07 12	809	1.3−	1.6−	1998 06 25	691	0.3−	0.2+	1998 07 01	691	0.6−	0.1+
1998 06 02	699	0.1−	0.3+	1998 06 25	691	0.3−	0.3+				
1998 06 02	699	0.3−	0.0	1998 06 29	704	1.4+	0.3−				

1998 MF₂₄ = 1993 HK₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	37.81603	(2000.0)		P	Q		
<i>n</i>	0.23042756	ω	122.82114	−0.30280894	+0.95110784		
<i>a</i>	2.6349948	Ω	129.43121	−0.89862386	−0.26367213		
<i>e</i>	0.1202414	<i>i</i>	4.51725	−0.31746166	−0.16084426		
<i>P</i>	4.28	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 04 20	691	0.3−	0.1−	1993 04 22	691	0.1−	0.4+	1998 06 25	691	0.3+	0.4+
1993 04 20	691	0.3+	0.4+	1993 04 22	691	1.0−	0.0	1998 07 01	691	0.5−	0.2−
1993 04 21	691	0.0	0.5+	1993 04 24	691	0.1−	0.5−	1998 07 01	691	0.3−	0.0
1993 04 21	691	0.0	0.3+	1993 04 24	691	0.3+	0.4−	1998 07 01	691	0.4−	0.3−
1993 04 21	691	0.0	0.4+	1993 04 24	691	0.9+	1.4−	1998 07 16	691	0.2+	0.2+
1993 04 22	691	0.3−	0.4+	1998 06 21	691	0.2−	0.8−	1998 07 16	691	0.3+	0.1+
1993 04 22	691	0.1+	0.0	1998 06 21	691	0.3+	0.1+	1998 07 16	691	0.1+	0.0
1993 04 22	691	0.1−	0.1+	1998 06 21	691	0.0	0.2+				
1993 04 22	691	0.3+	0.1−	1998 06 25	691	0.3+	0.2+				

1998 MP₂₄ = 1993 FR₆₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	289.95162	(2000.0)		P	Q		
<i>n</i>	0.24716208	ω	74.48228	+0.96239730	−0.26965869		
<i>a</i>	2.5146728	Ω	301.15167	+0.23222844	+0.87936642		
<i>e</i>	0.1744538	<i>i</i>	2.19628	+0.14093045	+0.39242692		
<i>P</i>	3.99	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 21	809	0.0	0.3+	1998 06 25	426	0.1+	0.6−	1998 07 17	426	0.2−	0.0
1993 03 22	809	0.0	0.2−	1998 07 01	426	0.2−	0.1−	1998 07 21	426	0.1+	0.5−
1998 06 25	426	0.7+	0.3−	1998 07 01	426	0.2+	1.0+	1998 07 21	426	0.7+	0.1−
1998 06 25	426	0.6−	0.1+	1998 07 17	426	0.8−	0.4+	1998 07 21	426	0.0	0.2+

1998 MU₂₄ = 1990 SZ₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	353.04824	(2000.0)		P	Q		
<i>n</i>	0.24075510	ω	121.87532	+0.40776479	+0.91209959		
<i>a</i>	2.5590910	Ω	171.84327	−0.90572246	+0.40993167		
<i>e</i>	0.3153300	<i>i</i>	17.41027	−0.11573551	+0.00551059		
<i>P</i>	4.09	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 09 16	675	0.2−	0.6−	1998 06 23	704	0.2−	0.4+	1998 06 27	704	0.9−	0.6+
1990 09 16	675	0.1−	0.6−	1998 06 23	704	1.2+	0.7−	1998 06 27	703	0.1−	0.0
1990 09 19	675	0.2+	2.3+	1998 06 23	704	0.1+	0.8−	1998 07 01	683	0.3−	0.5+
1990 09 19	675	0.1+	1.1−	1998 06 23	704	0.9−	0.2−	1998 07 01	683	0.3−	0.3+
1998 06 04	704	0.5−	0.6−	1998 06 27	704	1.2+	0.3+	1998 07 01	683	0.4−	0.1−
1998 06 04	704	0.0	1.2+	1998 06 27	704	1.8+	1.8+	1998 07 02	683	0.6−	1.0+
1998 06 04	704	0.5−	0.1+	1998 06 27	704	0.8−	1.4−	1998 07 02	683	0.6−	0.2+
1998 06 04	704	0.0	0.2−	1998 06 27	703	0.6+	1.5−	1998 07 02	683	1.1−	0.5+
1998 06 04	704	0.1+	0.1+	1998 06 27	704	1.2+	0.0				
1998 06 23	704	0.7+	0.0	1998 06 27	703	0.4+	1.4−				

1998 MZ₃₀ = 1957 YD = 1990 QK₁₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	283.34389	(2000.0)		P	Q
n	0.23471768	ω	236.35769	+0.92690529	-0.36260841
a	2.6027883	Ω	144.62570	+0.37513448	+0.88764033
e	0.1262964	i	9.62117	+0.01098610	+0.28391861
P	4.20	H	13.5	G 0.15	U 4

1998 AUG. 8

1990 08 16	809	0.1+	0.2+	1998 06 26	704	1.2+	0.2+	1998 07 26	704	1.1-	0.0
1990 08 16	809	0.8+	0.5+	1998 06 26	704	0.4-	0.5+	1998 07 26	704	0.6-	0.0
1990 08 16	809	0.9-	0.6-	1998 06 26	704	0.2+	0.2+	1998 07 26	704	0.3-	0.6-
1998 06 24	704	0.6-	0.4+	1998 06 26	704	0.6+	0.7-	1998 07 26	704	0.4+	0.2-
1998 06 24	704	0.9+	1.5-	1998 07 21	704	0.7+	0.6-				
1998 06 24	704	1.2+	1.8+	1998 07 21	704	1.1-	0.6+				

1998 MC₃₂ = 1977 PC₁ = 1977 QS₅ = 1977 RZ₃ = 1995 WD₄₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	329.08441		(2000.0)		P		Q
n	0.27971651	ω	36.98070		+0.90395485		+0.41296022
a	2.3155668	Ω	298.27469		-0.41628975		+0.79040701
e	0.2116801	i	7.24321		-0.09781858		+0.45246063
P	3.52	H	14.5	G	0.15	U	3

Residuals in seconds of arc

1977 08 14	095	0.1-	2.0+	1998 06 24	704	0.3+	0.3+	1998 07 01	809	1.3+	2.4+
1977 08 21	095	0.1+	1.0+	1998 06 24	704	0.3-	0.2+	1998 07 21	704	1.6+	0.3-
1977 09 09	095	0.7-	1.9-	1998 06 26	704	0.1-	0.6-	1998 07 21	704	2.2-	0.2-
1995 11 24	327	0.2-	0.1+	1998 06 26	704	0.3-	0.2-	1998 07 21	704	1.1+	2.2-
1995 11 24	327	0.1+	0.0	1998 06 26	704	0.3+	1.1-	1998 07 21	704	1.1-	0.2-
1995 11 24	327	0.2+	0.1-	1998 06 26	704	0.5-	1.1-	1998 07 26	704	0.7+	0.4+
1995 11 30	327	0.9+	0.3-	1998 06 28	809	0.4-	0.7-	1998 07 26	704	0.3+	0.0
1995 11 30	327	0.6-	0.1-	1998 06 28	809	1.1-	0.4-	1998 07 26	704	1.3-	0.6-
1995 11 30	327	0.4-	0.3-	1998 06 28	809	0.4-	0.4-	1998 07 26	704	0.7+	0.1+
1998 06 24	704	0.2-	0.2-	1998 07 01	809	0.6+	1.9+				
1998 06 24	704	0.3+	0.1-	1998 07 01	809	1.3+	1.2+				

1998 MP₃₂ = 1985 QL₆ = 1994 CO₁₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	10.33647		(2000.0)		P		Q
n	0.29817386	ω	159.04381		+0.10633051		+0.99128233
a	2.2189951	Ω	116.98989		-0.92425222		+0.12738794
e	0.1477037	i	5.00896		-0.36667650		-0.03364011
P	3.31	H	15.0	G	0.15	U	4

Residuals in seconds of arc

1985 08 24	095	1.2-	3.1+	1994 02 12	809	0.7-	1.3+	1998 06 26	704	0.3+	0.0
1994 02 07	809	0.6+	1.0-	1998 06 24	704	0.4-	0.7+	1998 06 26	704	0.1+	1.0-
1994 02 07	809	1.0-	0.1-	1998 06 24	704	0.7-	0.4-	1998 07 19	120	0.5+	0.5+
1994 02 07	809	0.6-	0.9-	1998 06 24	704	0.8-	0.3+	1998 07 19	120	1.3+	0.7+
1994 02 09	809	2.0+	1.5+	1998 06 24	704	1.2-	0.7-	1998 07 21	120	0.3+	1.0+
1994 02 09	809	0.6+	0.7+	1998 06 24	704	1.3-	0.9-	1998 07 21	120	0.4+	0.9+
1994 02 09	809	1.0+	0.6+	1998 06 26	704	0.4-	0.9+	1998 07 24	566	0.1+	0.4-
1994 02 12	809	0.1+	1.2+	1998 06 26	704	0.4+	0.1-	1998 07 24	566	0.4+	0.8-
1994 02 12	809	0.6-	1.0+	1998 06 26	704	0.5+	0.4+	1998 07 24	566	0.2+	0.5-

1998 MT₃₂ = 1994 GJ₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

<i>M</i>	42.77933		(2000.0)		P		Q
<i>n</i>	0.28409922	ω	355.35719		-0.51146402		+0.85682639
<i>a</i>	2.2916908	Ω	243.86861		-0.78603934		-0.49717116
<i>e</i>	0.0995571	<i>i</i>	4.16567		-0.34719838		-0.13663595
<i>P</i>	3.47	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 04 11	675	0.7-	0.6+	1998 06 24	704	0.7+	0.3+	1998 07 17	910	1.1+	0.3+
1994 04 11	675	0.0-	0.5-	1998 06 26	704	0.4+	0.6-	1998 07 17	910	0.3+	0.4-
1994 04 15	675	0.5+	0.5+	1998 06 26	704	0.0	0.2-	1998 07 23	910	0.6-	0.1-
1994 04 15	675	0.2+	0.6-	1998 06 26	704	0.0	1.2-	1998 07 23	910	0.7-	0.2-
1998 06 24	704	1.5-	0.0	1998 06 26	704	0.2-	0.1-	1998 07 23	910	0.4-	0.0
1998 06 24	704	0.1-	1.1-	1998 06 26	704	0.7-	0.7+				
1998 06 24	704	0.5+	2.4+	1998 07 17	910	1.1+	0.2+				

M.P.C. 32287

1998 MT₃₄ = 1984 JC₁ = 1987 DZ₃ = 1994 GK₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	33.61567		(2000.0)		P		Q
n	0.28738829	ω	9.41763		-0.35690379		+0.93032563
a	2.2741721	Ω	239.71363		-0.86328978		-0.36297952
e	0.1401130	i	5.60531		-0.35686193		-0.05234582
P	3.43	H	14.5	G	0.15	U	2

Residuals in seconds of arc

1984 05 03	688	1.0+	2.4-	1998 06 24	704	0.9+	0.8+	1998 06 27	910	0.8+	0.2+
1984 05 03	688	1.4-	0.7-	1998 06 24	704	(2.8+	5.3+)	1998 06 27	910	0.9+	0.2+
1987 02 23	010	1.1-	0.8+	1998 06 24	704	1.1-	0.6+	1998 06 27	910	0.7+	0.2+
1987 02 24	010	0.8-	0.1+	1998 06 24	704	0.0	0.9+	1998 07 20	566	1.0-	0.5-
1987 02 24	010	2.0+	0.5-	1998 06 26	704	1.1+	0.3+	1998 07 20	566	1.1-	0.5-
1994 04 06	033	0.8+	0.6+	1998 06 26	704	0.5+	0.1-	1998 07 20	566	0.8-	0.7-
1994 04 06	033	0.5+	1.0+	1998 06 26	704	1.1-	1.4+				
1994 04 08	033	0.3-	0.7+	1998 06 26	704	0.4-	0.1-				

1998 MX₃₄ = 1995 YJ₂₂

Id. G. V. Williams

Epoch 1998 July 6.0 TT = JDT 2451000.5

Marsden

M	18.17721		(2000.0)		P		Q
n	0.23704632	ω	356.47974		+0.01324943		+0.97348881
a	2.5857145	Ω	274.18621		-0.91171866		-0.08201597
e	0.1374010	i	13.23594		-0.41060142		+0.21352499
P	4.16	H	14.5	G	0.15	U	6

Residuals in seconds of arc

1995 12 17	327	0.7+	0.2-	1998 06 24	704	1.6-	0.5+	1998 06 26	704	0.6-	0.2-
1995 12 17	327	0.0	0.4-	1998 06 26	910	0.8+	0.5-	1998 06 26	704	0.1+	0.0
1995 12 18	327	0.0	0.1+	1998 06 26	910	0.7+	0.4-	1998 06 27	809	(2.5-	2.7-)
1995 12 18	327	0.5-	0.4+	1998 06 26	910	0.7+	0.5-	1998 06 27	809	(2.4-	2.9-)
1995 12 18	327	0.2-	0.1+	1998 06 26	809	(3.5-	2.4-)	1998 06 27	809	(1.3-	3.8-)
1998 06 24	704	0.7-	0.3+	1998 06 26	809	(3.2-	2.2-)	1998 07 06	910	0.1-	0.0
1998 06 24	704	0.5-	0.2-	1998 06 26	809	(3.3-	3.4-)	1998 07 06	910	0.1-	0.1+
1998 06 24	704	0.1+	1.5+	1998 06 26	704	0.6-	0.4+	1998 07 06	910	0.0	0.0
1998 06 24	704	1.0+	1.2-	1998 06 26	704	1.0+	0.1+				

1998 MY₃₄ = 2317 T-2 = 1995 TL₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

Williams

M	359.56568		(2000.0)		P		Q
n	0.27221592	ω	79.02262		+0.39466763		+0.91842735
a	2.3579090	Ω	214.26227		-0.86062103		+0.35921795
e	0.1729122	i	2.74824		-0.32182122		+0.16569145
P	3.62	H	15.5	G	0.15	U	4

Residuals in seconds of arc

1973 09 29	675	0.8+	0.7+	1995 10 15	327	0.8-	1.4+	1998 06 26	704	1.4-	1.9-
1973 09 29	675	0.8-	1.1+	1995 10 15	327	0.5-	0.2+	1998 06 26	704	0.8-	0.2-
1973 09 30	675	0.4-	1.4-	1998 06 24	704	0.1-	0.3+	1998 06 26	704	2.0-	1.1+
1973 09 30	675	0.5-	1.1-	1998 06 24	704	1.4-	0.6-	1998 06 27	809	2.8+	0.8-
1973 10 04	675	1.0+	1.3-	1998 06 24	704	0.2-	1.4+	1998 06 27	809	1.7+	0.4-
1973 10 04	675	1.4+	0.7-	1998 06 24	704	0.9-	1.3-	1998 06 27	809	2.4+	0.4-
1973 10 05	675	0.4+	0.6-	1998 06 24	704	2.8-	1.1+	1998 07 17	910	0.8-	0.0
1973 10 05	675	0.4-	0.4-	1998 06 26	809	3.3+	0.8+	1998 07 18	910	0.7-	0.0
1995 10 14	327	0.5-	0.7+	1998 06 26	809	2.1+	0.2+	1998 07 18	910	0.8-	0.1+
1995 10 14	327	1.6+	0.9+	1998 06 26	809	2.1+	0.4+	1998 07 19	910	0.3-	0.5+
1995 10 14	327	0.1-	1.8+	1998 06 26	704	0.9-	1.0-	1998 07 19	910	0.2-	0.8+
1995 10 15	327	0.5-	0.6-	1998 06 26	704	0.9-	0.7+	1998 07 19	910	0.3-	0.7+

M.P.C. 32288

1998 AUG. 8

1998 MR₃₅ = 1989 VA₆

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	321.38667		(2000.0)		P		Q				
<i>n</i>	0.20009103	ω	285.52961		+0.93608840		+0.34909677				
<i>a</i>	2.8950160	Ω	54.05723		−0.29879480		+0.85397169				
<i>e</i>	0.0815971	<i>i</i>	3.06177		−0.18563455		+0.38582872				
<i>P</i>	4.93	<i>H</i>	13.5		<i>G</i>	0.15	<i>U</i>	7			
Residuals in seconds of arc											
1989 11 03	675	0.5−	0.7+	1998 06 24	704	1.0−	0.7+	1998 06 26	704	1.2−	0.5−
1989 11 03	675	0.4+	0.1+	1998 06 24	699	0.8+	0.2+	1998 06 26	704	0.5+	0.6−
1989 11 04	675	0.3+	0.4−	1998 06 24	704	0.7−	0.7−	1998 07 03	699	0.4+	0.8+
1989 11 04	675	0.3−	0.5−	1998 06 24	699	0.2−	0.8+	1998 07 03	699	0.1+	0.1+
1998 06 24	704	0.5+	0.8−	1998 06 24	699	1.1+	0.4−	1998 07 03	699	0.3+	0.0
1998 06 24	704	1.0+	0.5−	1998 06 26	704	0.2−	0.2−				
1998 06 24	704	0.3−	0.8−	1998 06 26	704	1.2−	1.9+				

1998 MF₃₇ = 1995 YZ₁₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	343.52548		(2000.0)		P		Q				
<i>n</i>	0.20160876	ω	187.41750		+0.77139823		+0.61322046				
<i>a</i>	2.8804684	Ω	133.29676		−0.57119034		+0.78500978				
<i>e</i>	0.1824158	<i>i</i>	13.50905		−0.28051091		+0.08786531				
<i>P</i>	4.89	<i>H</i>	13.0		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1995 12 19	691	0.6+	0.0	1998 06 24	699	0.1+	0.6+	1998 06 29	704	1.0−	0.6+
1995 12 19	691	0.3+	0.2+	1998 06 26	704	0.0	0.5−	1998 06 29	704	0.7−	0.3+
1995 12 19	691	0.9−	0.4−	1998 06 26	704	0.4+	0.3+	1998 06 29	704	1.4−	0.2+
1995 12 26	691	0.3+	0.1−	1998 06 26	704	0.0	0.3−	1998 07 19	910	0.0	0.1−
1995 12 26	691	0.1−	0.0	1998 06 26	704	0.1−	1.3−	1998 07 19	910	0.4+	0.1−
1995 12 26	691	0.2−	0.1+	1998 06 26	704	0.3+	1.3−	1998 07 19	910	0.4+	0.1−
1998 06 24	699	0.5+	0.8+	1998 06 29	704	0.3−	0.9+				
1998 06 24	699	0.7+	0.2+	1998 06 29	704	0.7+	0.2−				

1998 MK₃₇ = 1990 SN₁₅ = 1997 ES₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	16.82581		(2000.0)		P		Q				
n	0.23834870	ω	358.00545		+0.08235342		+0.98890352				
a	2.5762867	Ω	276.70294		-0.91263336		+0.02498733				
e	0.1710389	i	7.15157		-0.40039764		+0.14644272				
P	4.14	H	14.0	G	0.15	U	3				
Residuals in seconds of arc											
1990 09 18	675	0.1-	0.7-	1997 03 09	691	0.6+	0.5-	1998 06 29	704	(2.3+	0.4-)
1990 09 18	675	0.4+	1.1-	1997 03 09	691	0.2-	0.3-	1998 06 29	704	(2.4+	0.6+)
1990 09 20	675	0.0	0.7+	1998 06 02	699	(2.6-	0.1+)	1998 06 29	704	0.6+	1.1-
1990 09 20	675	0.3+	0.3-	1998 06 02	699	1.7-	0.5+	1998 06 29	704	0.0	1.2-
1997 03 03	691	0.4-	0.2-	1998 06 02	699	1.6-	0.1+	1998 06 29	704	0.4+	0.3+
1997 03 03	691	0.6-	0.2-	1998 06 24	699	0.7+	0.5-	1998 07 02	699	0.4+	0.1+
1997 03 03	691	0.6-	0.2-	1998 06 24	699	0.5+	0.2-	1998 07 02	699	0.4+	0.2+
1997 03 09	691	0.2+	0.9-	1998 06 24	699	0.4+	0.4+	1998 07 02	699	0.2-	0.7+

1998 MT₃₇ = 1997 JY₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	296.34051		(2000.0)		P		Q				
<i>n</i>	0.21392152	ω	340.94941		+0.87501912		-0.48239383				
<i>a</i>	2.7688520	Ω	47.96070		+0.45091726		+0.78179424				
<i>e</i>	0.2197375	<i>i</i>	3.12359		+0.17611124		+0.39508727				
<i>P</i>	4.61	<i>H</i>	14.5	<i>G</i>	0.15		<i>U</i>	6			
Residuals in seconds of arc											
1997 05 03	809	1.4+	1.3+	1997 05 04	809	0.3+	0.5+	1998 07 02	699	0.0	0.2-
1997 05 03	809	0.4-	1.2+	1998 06 24	699	0.4+	0.5+	1998 07 02	699	0.7+	0.2+

1997 05 03	809	1.9-	1.9-	1998 06 24	699	1.6-	1.1-	1998 07 16	699	0.1-	0.3+
1997 05 04	809	0.4-	0.5-	1998 06 24	699	0.6+	0.0	1998 07 16	699	0.2-	0.2+
1997 05 04	809	1.0+	0.6-	1998 07 02	699	0.4+	0.2+	1998 07 16	699	0.3-	0.1-

1998 MV₃₇ = 1994 NK₁₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	316.56598		(2000.0)			P		Q			
n	0.25333386	ω	249.33982			+0.96319251		+0.11521410			
a	2.4736631	Ω	103.41682			-0.02905736		+0.94282329			
e	0.1610369	i	14.45885			-0.26723747		+0.31274583			
P	3.89	H	14.0		G	0.15		U	5		
Residuals in seconds of arc											
1994 07 08	809	1.0-	0.4-	1998 06 24	699	0.3+	0.2+	1998 07 03	699	0.4+	0.1+
1994 07 08	809	0.2-	0.2-	1998 06 26	704	0.0	0.1-	1998 07 03	699	0.1-	0.4+
1994 07 08	809	0.4+	0.1-	1998 06 26	704	0.1+	0.0	1998 07 03	699	0.2-	1.1+
1994 07 09	809	0.4-	0.4-	1998 06 26	704	0.3+	0.3-	1998 07 20	566	1.0-	0.9-
1994 07 09	809	0.3+	0.1+	1998 06 26	704	0.7+	1.0-	1998 07 20	566	0.5-	0.3-
1994 07 09	809	0.8+	0.5+	1998 07 02	699	0.1+	0.1-	1998 07 20	566	0.1+	0.3+
1998 06 24	699	0.7-	1.0+	1998 07 02	699	0.2-	0.0				
1998 06 24	699	0.5+	0.2+	1998 07 02	699	0.2+	0.1-				

1998 MZ₃₇ = 1997 ED₂₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	342.00502		(2000.0)			P		Q			
n	0.27130136	ω	211.65392			+0.71154759		+0.69404911			
a	2.3632050	Ω	103.97302			-0.61880266		+0.69282903			
e	0.1142954	i	6.48052			-0.33284126		+0.19566241			
P	3.63	H	15.0		G	0.15		U	6		
Residuals in seconds of arc											
1997 03 12	691	0.5+	0.1+	1998 06 23	699	0.3+	0.9+	1998 06 26	704	0.2+	0.9-
1997 03 12	691	0.5+	0.1-	1998 06 24	704	2.6-	0.1-	1998 06 26	704	0.1-	0.3-
1997 03 12	691	0.4+	0.1+	1998 06 24	704	0.8+	0.3-	1998 07 03	699	0.5-	0.4+
1997 03 13	691	0.7-	0.1-	1998 06 24	704	1.8+	0.1-	1998 07 03	699	0.1+	0.6+
1997 03 13	691	0.7-	0.0	1998 06 24	704	0.1+	0.2-	1998 07 03	699	0.6+	0.5-
1998 06 23	699	0.1-	0.3+	1998 06 24	704	1.6-	0.2-				
1998 06 23	699	1.1+	0.3+	1998 06 26	704	(1.2+	7.0-)				

1998 MG₃₈ = 1989 CW₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

M	21.75975		(2000.0)		P		Q				
n	0.23503555	ω	331.73704		-0.77637941		+0.59750350				
a	2.6004410	Ω	246.36598		-0.52914705		-0.79081115				
e	0.2190564	i	12.64577		-0.34240095		-0.13269247				
P	4.19	H	14.5	G	0.15	U	3				
Residuals in seconds of arc											
1989 02 05	809	0.9-	1.3+	1998 05 22	704	0.0	0.5-	1998 06 18	704	0.1+	0.2+
1989 02 05	809	0.4+	1.2+	1998 05 22	704	0.3-	0.0	1998 06 18	704	0.7-	1.3-
1989 02 05	809	0.2-	1.7+	1998 05 22	704	0.4+	1.6-	1998 06 29	699	0.2+	0.1-
1989 02 07	809	0.5-	1.0-	1998 05 22	704	0.1-	0.9+	1998 06 29	699	0.3-	0.1-
1989 02 07	809	1.0+	1.7-	1998 05 22	704	0.1+	1.2+	1998 06 29	699	0.3-	0.4+
1989 02 07	809	0.0	1.8-	1998 06 16	704	0.2+	0.7-	1998 06 30	699	0.5-	0.6+
1998 05 01	704	0.4+	0.6+	1998 06 16	704	0.1+	0.2-	1998 06 30	699	0.3-	0.1-
1998 05 01	704	0.1+	0.3+	1998 06 16	704	0.7-	0.1-	1998 06 30	699	0.5-	0.0
1998 05 01	704	0.2-	0.2+	1998 06 16	704	0.1-	0.0	1998 07 16	699	0.9+	0.3+
1998 05 01	566	0.1-	0.1-	1998 06 16	704	(2.7-	1.0+)	1998 07 16	699	0.5+	0.1+
1998 05 01	566	0.1-	0.1+	1998 06 18	704	0.6+	1.3-	1998 07 16	699	0.7+	1.0+
1998 05 01	566	0.3+	0.3+	1998 06 18	704	(0.8+	2.7-)				

1998 AUG. 8

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1998 MY₄₅ = 1997 EY₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	347.31957	ω	65.06898	+0.60886336	+0.79096190		
<i>a</i>	2.4221429	Ω	242.57387	-0.75020158	+0.54931982		
<i>e</i>	0.1978014	<i>i</i>	3.91073	-0.25784297	+0.26949398		
<i>P</i>	3.77	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 10	704	1.0-	0.6-	1998 06 24	704	0.6-	0.2-	1998 07 21	704	0.7+	0.0
1997 03 10	704	0.1+	0.2-	1998 06 26	704	1.0+	0.0	1998 07 21	704	0.7+	0.5+
1997 03 12	704	1.1+	0.1+	1998 06 26	704	0.1-	0.1+	1998 07 21	704	0.2-	0.2+
1997 03 12	704	0.2-	0.6+	1998 06 26	704	0.3+	0.4+	1998 07 26	704	0.5-	1.0-
1998 06 24	704	0.1+	0.0	1998 06 26	704	0.3+	2.7+	1998 07 26	704	0.3-	0.3-
1998 06 24	704	0.2-	0.8-	1998 06 26	704	1.9-	0.5-	1998 07 26	704	0.9+	0.3+
1998 06 24	704	1.0+	1.7-	1998 07 21	704	0.3-	0.4-	1998 07 26	704	0.8-	0.5+

1998 OJ = 1991 LH₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	56.23684	ω	357.87166	-0.52676625	+0.84790633		
<i>a</i>	2.2302492	Ω	240.33596	-0.77884948	-0.50963513		
<i>e</i>	0.1317892	<i>i</i>	3.94404	-0.34045675	-0.14603731		
<i>P</i>	3.33	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 06 06	809	1.2-	0.2-	1998 07 19	104	0.7+	0.1+	1998 07 21	104	0.1+	0.0
1991 06 06	809	0.4+	0.4+	1998 07 19	104	0.3-	1.2+	1998 07 23	104	1.2-	0.5-
1991 06 06	809	0.3-	1.3+	1998 07 19	104	0.0	0.5+	1998 07 23	104	1.1-	0.1-
1991 06 08	809	0.5+	0.2-	1998 07 20	104	0.0	0.2-	1998 07 23	104	0.4-	0.0
1991 06 08	809	0.4+	0.8-	1998 07 21	104	0.9-	0.4+	1998 07 29	104	0.4+	0.4-
1991 06 08	809	0.2+	0.6-	1998 07 21	104	1.5+	0.4-	1998 07 29	104	0.3+	0.0
1998 07 19	104	1.4-	0.5+	1998 07 21	104	1.1+	0.8-	1998 07 29	104	0.4+	0.0
1998 07 19	104	0.4+	0.3+	1998 07 21	104	0.3+	0.4-				

1998 OQ = 1995 VN₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	194.10134	ω	231.14323	-0.29380638	-0.95388216		
<i>a</i>	2.5314563	Ω	236.04946	+0.89836436	-0.25356815		
<i>e</i>	0.1348481	<i>i</i>	4.25424	+0.32652608	-0.16066122		
<i>P</i>	4.03	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 14	691	0.3+	0.1+	1998 07 20	910	0.8-	0.1+	1998 07 23	910	0.4-	0.0
1995 11 14	691	0.5+	0.1+	1998 07 20	910	0.6-	0.5+	1998 07 24	910	0.2-	0.1+
1995 11 14	691	0.4+	0.2+	1998 07 20	910	0.7+	0.4+	1998 07 24	910	0.1-	0.0
1995 11 19	691	0.5-	0.2-	1998 07 20	910	0.2+	0.1-	1998 07 26	910	0.4+	0.4-
1995 11 19	691	0.5-	0.3-	1998 07 21	910	0.5+	0.2-	1998 07 27	910	0.1-	0.2-
1995 11 19	691	0.3-	0.1+	1998 07 21	910	0.1+	0.1-	1998 07 27	910	0.2+	0.3-

1998 OR = 1995 YO₂₂ = 1997 GG₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	251.35643	ω	188.30290	+0.47631053	-0.87783385		
<i>a</i>	2.2692397	Ω	233.26729	+0.81028742	+0.46045621		
<i>e</i>	0.1546900	<i>i</i>	3.60260	+0.34141261	+0.13186284		
<i>P</i>	3.42	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 12 19	327	0.8+	0.5+	1997 04 07	704	0.6-	0.3+	1998 07 23	910	0.0	0.1+
1995 12 19	327	0.4-	0.2+	1997 04 07	704	0.2+	0.7+	1998 07 24	910	0.0	0.1+
1995 12 19	327	0.6-	0.3+	1997 04 07	704	0.6-	0.8+	1998 07 24	910	0.0	0.1-
1995 12 21	327	0.3-	0.5+	1997 04 07	704	0.7+	0.1-	1998 07 26	910	0.1+	0.5+

1995 12 21	327	0.8+	0.6+	1998 07 20	910	0.5+	0.3-	1998 07 27	910	0.1+	0.5+
1995 12 21	327	1.4-	0.7+	1998 07 20	910	0.2+	0.5-	1998 07 27	910	0.1+	0.6+
1997 04 03	704	0.1+	1.0+	1998 07 20	910	0.3+	1.4-	1998 07 29	910	0.1-	0.2-
1997 04 03	704	0.6+	0.1+	1998 07 20	910	0.6-	0.6+	1998 07 29	910	0.1+	0.1-
1997 04 05	704	0.3+	0.5-	1998 07 21	910	0.9-	0.4+	1998 07 29	910	0.6+	0.1+
1997 04 05	704	0.2+	0.1+	1998 07 21	910	0.6-	0.6+				

1998 OP₂ = 1981 UA₉ = 1997 EV₄₈

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	59.15156	ω	301.67396	-0.51420227	+0.85571401		
<i>a</i>	2.7353794	Ω	297.27459	-0.76320845	-0.48731302		
<i>e</i>	0.0569742	<i>i</i>	3.73344	-0.39129131	-0.17401019		
<i>P</i>	4.52	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 10 30	381	0.1+	0.5+	1998 07 02	699	0.9+	0.0	1998 07 27	691	1.5-	0.4+
1981 10 30	381	0.3-	0.3+	1998 07 02	691	0.3-	0.1-	1998 07 27	691	1.6-	0.3+
1997 03 11	809	0.4-	1.0-	1998 07 02	699	1.9+	0.2-	1998 07 27	691	1.5-	0.3+
1997 03 11	809	0.9-	1.6-	1998 07 02	699	0.3+	0.3-	1998 07 29	120	0.5-	0.5-
1997 03 11	809	0.5-	1.2-	1998 07 16	691	0.3-	0.4+	1998 07 29	120	0.4+	0.1-
1997 03 12	809	1.2+	1.7+	1998 07 16	691	0.4-	0.2+	1998 07 29	120	0.4+	0.3-
1997 03 12	809	0.7+	1.5+	1998 07 16	691	0.6-	0.1+	1998 07 30	120	0.7+	0.2-
1997 03 12	809	0.1+	1.4+	1998 07 26	691	0.2+	0.6+	1998 07 30	120	1.4+	0.6-
1998 07 02	691	0.6-	0.5+	1998 07 26	691	0.3+	0.3+	1998 07 30	120	0.5+	0.6-
1998 07 02	691	0.5-	0.2+	1998 07 26	691	0.4+	0.3+	1998 07 30	120	0.3+	0.2-

2085 P-L = 1998 KX₆₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	128.81384	ω	192.70326	-0.36844208	-0.92949077		
<i>a</i>	2.9038530	Ω	278.91835	+0.85445735	-0.33127517		
<i>e</i>	0.0270108	<i>i</i>	1.00012	+0.36626911	-0.16218404		
<i>P</i>	4.95	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	0.4-	0.4-	1960 10 25	675	0.2-	0.0	1998 05 22	704	2.5-	0.4+
1960 09 26	675	0.0	0.1+	1960 10 26	675	0.1-	0.2-	1998 05 24	704	0.9-	0.7-
1960 09 28	675	0.3-	0.7+	1998 05 22	704	0.8+	1.1+	1998 05 24	704	0.5-	0.2-
1960 09 29	675	0.7+	0.2+	1998 05 22	704	1.3+	2.7-	1998 05 24	704	0.2-	0.7+
1960 10 22	675	0.3+	0.3-	1998 05 22	704	1.7+	0.2+	1998 05 24	704	0.2+	1.2+

2613 P-L = 1998 OG₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	260.67917	ω	220.76078	+0.59291043	-0.80507650		
<i>a</i>	3.1268193	Ω	192.90759	+0.75775259	+0.56518015		
<i>e</i>	0.1477323	<i>i</i>	4.51378	+0.27252199	+0.18006451		
<i>P</i>	5.53	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.5+	0.0	1960 10 22	675	0.5-	0.5-	1998 07 29	910	0.3+	0.2-
1960 09 26	675	0.6+	0.4-	1960 10 25	675	0.4+	0.3-	1998 07 30	910	0.2-	0.2+
1960 09 28	675	0.3+	0.0	1960 10 26	675	0.2+	0.0	1998 07 30	910	0.3-	0.3+
1960 09 28	675	1.3-	0.2+	1998 07 29	910	0.1+	0.2-	1998 07 30	910	0.0	0.2+
1960 10 17	675	0.1-	1.0+	1998 07 29	910	0.1+	0.2-				

2757 P-L = 1977 RS₁₃ = 1994 PW₂₈

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Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	236.70380	(2000.0)	P		Q	
<i>n</i>	0.17337654	ω	307.54978	+0.97131810	+0.23727841	
<i>a</i>	3.1852424	Ω	38.73115	-0.20960709	+0.88516894	
<i>e</i>	0.2148601	<i>i</i>	1.41911	-0.11227647	+0.40021858	
<i>P</i>	5.68	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.3-	0.3-	1994 08 12	809	0.4-	0.4-	1994 09 04	809	0.8-	0.4+
1960 09 26	675	0.3+	0.5+	1994 08 12	809	0.7-	0.4-	1994 09 04	809	1.2-	0.2+
1960 09 28	675	0.3-	0.1-	1994 08 13	809	1.1+	0.6+	1994 09 05	809	0.1-	1.4-
1960 09 29	675	0.3+	0.0	1994 08 13	809	1.0+	0.2+	1994 09 05	809	0.9-	1.8-
1960 10 25	675	0.2+	0.1+	1994 08 13	809	0.4+	0.5+	1994 09 05	809	0.1+	1.8-
1960 10 26	675	0.5-	0.8+	1994 09 03	809	1.1-	0.1+	1994 09 06	809	1.4+	1.7+
1977 09 09	675	1.0-	2.0-	1994 09 03	809	1.2-	0.5+	1994 09 06	809	1.9+	1.4+
1977 09 10	675	1.7+	0.5+	1994 09 03	809	0.9-	0.4+	1994 09 06	809	1.8+	1.0+
1994 08 12	809	0.5-	0.4+	1994 09 04	809	0.2-	0.6-				

3503 P-L = 1998 MV₂₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	339.23200	(2000.0)	P		Q	
<i>n</i>	0.22958536	ω	57.05913	+0.51195908	+0.84030089	
<i>a</i>	2.6414349	Ω	244.73421	-0.83918549	+0.44491490	
<i>e</i>	0.1512664	<i>i</i>	11.37124	-0.18348190	+0.30975013	
<i>P</i>	4.29	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1960 09 28	675	1.7+	0.2+	1960 10 22	675	0.2-	1.6-	1998 06 24	704	1.0+	2.1+
1960 10 17	675	0.3-	0.9+	1960 10 24	675	0.9+	0.9-	1998 06 24	704	1.2-	0.4+
1960 10 17	675	1.8-	0.4+	1960 10 25	675	0.3-	0.3+	1998 06 24	704	1.1-	0.9-
1960 10 17	675	0.2+	1.1+	1960 10 26	675	0.5-	0.8+	1998 06 26	704	0.0	0.3-
1960 10 22	675	0.2+	0.4-	1960 10 26	675	0.2+	1.0-	1998 06 26	704	1.3-	0.1+
1960 10 22	675	0.3-	0.2+	1998 06 24	704	2.1+	0.1+	1998 06 26	704	0.5+	1.4-

4587 P-L = 1979 QQ₆ = 1998 OW₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	348.68227	(2000.0)	P		Q	
<i>n</i>	0.25772727	ω	122.54462	+0.71932235	+0.69460320	
<i>a</i>	2.4454707	Ω	193.46913	-0.65099366	+0.66895096	
<i>e</i>	0.1772969	<i>i</i>	2.48202	-0.24245125	+0.26463373	
<i>P</i>	3.82	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1960 09 24	675	0.3+	0.5-	1960 10 17	675	1.2-	0.3-	1998 07 29	120	0.7+	0.3+
1960 09 25	675	0.5+	0.3-	1960 10 22	675	0.1+	1.3+	1998 07 29	120	0.3-	0.2+
1960 09 26	675	0.2+	0.2+	1960 10 25	675	0.2+	0.8+	1998 07 30	120	0.1-	0.4+
1960 09 26	675	0.7+	0.1-	1960 10 26	675	0.1+	0.9+	1998 07 30	120	0.1+	0.1+
1960 09 27	675	1.0+	0.2-	1979 08 27	095	0.5-	1.3-	1998 07 30	120	0.4-	0.2-
1960 09 28	675	0.9-	0.3-	1998 07 29	120	0.2-	0.3-	1998 07 30	120	0.3+	0.3+
1960 09 28	675	0.6-	0.6-	1998 07 29	120	0.0	0.3+				

1182 T-1 = 1998 KB₅₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	228.48896	(2000.0)	P		Q	
<i>n</i>	0.22630474	ω	208.34068	+0.80072429	-0.59808270	
<i>a</i>	2.6669014	Ω	188.63392	+0.58324705	+0.79122765	
<i>e</i>	0.1634274	<i>i</i>	12.98437	+0.13661442	+0.12749861	
<i>P</i>	4.36	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1971 03 24	675	0.5+	0.2-	1998 05 23	704	0.2+	0.7+	1998 06 03	704	1.6-	3.0+
1971 03 25	675	1.5-	0.7-	1998 05 23	704	0.4+	0.6-	1998 06 03	704	0.4-	0.5+
1971 03 25	675	1.4-	0.3+	1998 05 23	704	0.5-	0.9+	1998 06 03	704	0.6-	1.9-
1971 03 26	675	1.5+	0.1-	1998 05 25	699	0.1+	0.1+	1998 06 19	704	0.2-	0.4-

1998 AUG. 8

1971 03 27	675	0.5+	0.8-	1998 05 25	699	0.4+	0.5+	1998 06 19	704	0.4+	0.3+
1971 04 02	675	0.5-	1.6+	1998 05 25	699	0.6+	0.6-	1998 06 19	704	0.3+	0.4-
1971 04 16	675	0.1+	1.0+	1998 05 26	704	0.3-	1.6-	1998 06 19	704	0.5-	0.6+
1971 04 16	675	0.9+	0.1-	1998 05 26	704	0.1-	0.6+	1998 06 19	704	0.2-	0.5+
1971 05 13	675	0.7+	1.0+	1998 05 26	704	0.4+	0.5+	1998 06 26	699	0.3+	0.5-
1971 05 14	675	0.4+	0.2-	1998 05 26	704	0.0	1.0-	1998 06 26	699	0.1-	0.0
1971 05 16	675	1.2-	2.0-	1998 05 26	704	0.4+	0.0	1998 06 26	699	0.6+	0.4-
1998 05 23	704	0.4-	0.2-	1998 06 03	704	0.9+	1.3-				
1998 05 23	704	0.2+	0.1-	1998 06 03	704	0.2-	0.8+				

2088 T-1 = 4114 T-2 = 1998 FR₁₁₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	296.78997	(2000.0)	P		Q	
<i>n</i>	0.18069809	ω	79.55140	-0.22466138	+0.97440354	
<i>a</i>	3.0986107	Ω	177.42348	-0.94941913	-0.21702313	
<i>e</i>	0.0772075	<i>i</i>	10.33177	-0.21938684	-0.05864043	
<i>P</i>	5.45	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1971 03 25	675	0.0	0.0	1973 09 24	675	0.6+	0.2-	1973 10 05	675	0.2-	0.9+
1971 03 25	675	0.8-	0.4+	1973 09 24	675	0.4-	0.1+	1998 03 20	704	0.8+	1.3+
1971 03 26	675	0.3+	0.0	1973 09 25	675	0.7+	0.4-	1998 03 20	704	1.4-	0.8-
1971 03 27	675	0.3+	1.1+	1973 09 25	675	0.1+	1.0+	1998 03 20	704	1.2+	1.0-
1971 04 02	675	0.7+	0.1+	1973 09 29	675	(2.6+	2.6-)	1998 03 20	704	0.9+	0.1-
1973 09 19	675	1.1-	0.9-	1973 09 29	675	(2.1+	2.3-)	1998 03 20	704	0.4-	0.8-
1973 09 19	675	0.2-	0.4+	1973 09 30	675	1.3+	1.3-	1998 03 22	704	0.6-	0.3+
1973 09 19	675	(2.2-	1.0-)	1973 09 30	675	1.6+	1.4-	1998 03 22	704	1.0+	0.6-
1973 09 19	675	0.4+	1.2+	1973 10 04	675	1.0-	0.3+	1998 03 22	704	1.7-	0.5+
1973 09 20	675	0.8-	1.8+	1973 10 04	675	1.2+	0.2+	1998 03 22	704	0.2+	1.1+
1973 09 20	675	0.7-	0.8+	1973 10 05	675	1.5-	0.9-				

2206 T-1 = 1998 KC₆₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	8.36552	(2000.0)	P		Q	
<i>n</i>	0.29492581	ω	225.56368	-0.43653029	+0.89929934	
<i>a</i>	2.2352574	Ω	18.60372	-0.80006507	-0.37455420	
<i>e</i>	0.1136327	<i>i</i>	4.76404	-0.41150600	-0.22576504	
<i>P</i>	3.34	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1971 03 24	675	0.6-	0.6+	1971 04 16	675	0.9-	1.2-	1998 05 22	704	0.1-	0.6+
1971 03 25	675	0.2-	0.5+	1971 05 13	675	1.0-	0.4+	1998 05 22	704	0.2+	0.2-
1971 03 25	675	0.6-	1.0+	1971 05 14	675	0.4-	0.3-	1998 05 24	704	0.3-	0.8-
1971 03 26	675	0.1+	1.1+	1971 05 16	675	0.6+	0.6+	1998 05 24	704	0.1+	0.5-
1971 03 27	675	1.1+	0.5+	1998 05 22	704	0.8-	0.4-	1998 05 24	704	0.2+	0.7+
1971 04 02	675	1.7+	1.0-	1998 05 22	704	0.6-	0.8+	1998 05 24	704	0.6+	0.1-
1971 04 16	675	0.2-	2.5-	1998 05 22	704	0.2+	1.3-	1998 05 24	704	0.5+	1.7+

3024 T-1 = 1998 HT₃₂

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	141.52419	(2000.0)	P		Q	
<i>n</i>	0.25674334	ω	266.43535	+0.34018396	-0.94035494	
<i>a</i>	2.4517146	Ω	163.67576	+0.86657685	+0.31236274	
<i>e</i>	0.1032494	<i>i</i>	0.55713	+0.36512935	+0.13476688	
<i>P</i>	3.84	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1971 03 24	675	1.0+	0.3-	1998 03 29	704	0.8-	1.6+	1998 04 22	704	0.3-	1.1-
1971 03 24	675	0.4+	1.2+	1998 03 29	704	1.2+	0.6+	1998 04 22	704	0.3+	1.9-
1971 03 25	675	1.2-	0.5-	1998 04 01	704	0.5+	0.8+	1998 04 22	704	0.8+	1.4+
1971 03 26	675	0.3-	2.2+	1998 04 01	704	(1.3+	3.3+)	1998 04 22	704	1.0-	0.3+
1971 03 26	675	0.4+	1.5-	1998 04 01	704	0.1-	0.4-	1998 04 22	704	0.2+	0.7-
1971 03 26	675	0.2-	0.4+	1998 04 01	704	1.4-	0.6-	1998 05 23	950	0.0	0.0
1971 03 26	675	0.2-	0.3-	1998 04 01	704	0.2+	0.2+	1998 05 23	950	0.1+	0.0

1998 AUG. 8

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1971 03 27	675	1.4+	2.0−	1998 04 20	704	0.6−	0.9+	1998 05 24	950	0.3−	0.1−
1971 04 02	675	1.5−	0.3+	1998 04 20	704	1.4+	0.8−	1998 05 24	950	0.1+	0.0
1998 03 29	704	0.7−	1.3−	1998 04 20	704	0.8−	1.0+	1998 05 24	950	0.1+	0.0
1998 03 29	704	1.0+	0.9+	1998 04 20	704	0.2+	0.3+				
1998 03 29	704	0.0	0.6−	1998 04 20	704	(5.6−	0.9+)				

3058 T-1 = 1985 QU₄ = 1996 CHId. G. V. Williams (*MPC* 19322, unpublished)

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	328.84292		(2000.0)	P	Q		
<i>n</i>	0.30384983	ω	13.29477	+0.99474803	−0.10135872		
<i>a</i>	2.1912742	Ω	352.47911	+0.08110821	+0.86545861		
<i>e</i>	0.1655745	<i>i</i>	6.24562	+0.06243242	+0.49061981		
<i>P</i>	3.24	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	1.8+	2.0−	1996 02 01	327	0.1+	0.6−	1997 04 07	566	0.5−	0.6+
1971 03 25	675	1.1+	0.3−	1996 02 01	327	0.3−	0.8−	1997 04 07	566	0.6−	0.5+
1971 03 26	675	1.5−	1.7−	1996 02 03	327	0.4+	0.6−	1997 04 07	566	0.0	0.5+
1971 03 26	675	0.9+	1.7−	1996 02 03	327	0.6+	0.9−	1998 06 29	704	0.8−	2.0+
1971 03 27	675	1.2−	0.3+	1996 02 03	327	0.1+	0.3−	1998 06 29	704	0.1+	0.2−
1971 04 16	675	2.0−	0.0	1997 03 11	809	(0.4+	4.8+)	1998 06 29	704	0.6+	0.5−
1971 04 16	675	(4.4−	1.7−)	1997 03 11	809	(1.2+	4.7+)	1998 06 29	704	1.4+	2.0−
1985 08 17	095	1.2−	1.8−	1997 03 11	809	(0.6+	4.7+)	1998 07 26	699	1.3+	0.4−
1985 08 19	095	1.3−	0.7−	1997 03 12	809	(1.3+	5.0+)	1998 07 26	699	0.8+	0.4−
1985 08 24	095	1.1+	1.6+	1997 03 12	809	(0.9+	3.9+)	1998 07 26	699	1.0+	1.2−
1996 02 01	327	0.1−	0.3−	1997 03 12	809	(0.6+	4.2+)				

3075 T-1 = 1998 BD₁₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	52.55856		(2000.0)	P	Q		
<i>n</i>	0.17783615	ω	96.97731	+0.13275428	−0.99114099		
<i>a</i>	3.1317663	Ω	345.39211	+0.90301872	+0.12260402		
<i>e</i>	0.1551511	<i>i</i>	0.90398	+0.40857495	+0.05106647		
<i>P</i>	5.54	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	0.3+	0.8+	1998 01 20	704	0.6−	0.6+	1998 01 25	704	1.7+	0.4+
1971 03 25	675	0.6−	0.4+	1998 01 20	704	0.1+	0.3+	1998 01 25	704	0.4−	0.3−
1971 03 26	675	0.1−	0.2−	1998 01 20	704	0.2+	0.8+	1998 01 25	704	0.1+	0.4+
1971 03 26	675	0.8+	0.3−	1998 01 20	704	0.5−	0.4+	1998 01 25	704	0.1+	0.1−
1971 03 27	675	0.3−	0.4−	1998 01 20	704	1.0−	0.2+	1998 01 25	704	0.1+	0.1+
1971 04 16	675	0.5−	1.2−	1998 01 23	704	0.7−	0.1−	1998 01 25	704	0.2+	0.3+
1971 04 16	675	0.3+	0.8+	1998 01 23	704	0.3+	0.1+	1998 01 25	704	0.0	0.3+
1998 01 02	691	0.1−	0.3−	1998 01 23	704	0.1−	0.2+	1998 01 25	704	0.5+	0.0
1998 01 02	691	0.1−	0.3−	1998 01 23	704	0.2+	0.0	1998 01 25	704	0.1−	1.1+
1998 01 02	691	0.0	0.4−	1998 01 23	704	0.0	0.1−	1998 01 25	704	0.2+	0.0
1998 01 08	704	0.0	0.1−	1998 01 24	704	0.1−	0.2+	1998 04 21	688	0.0	0.0
1998 01 08	704	0.3+	0.2−	1998 01 24	704	0.1+	1.2−	1998 04 21	688	0.1−	0.1+
1998 01 08	704	0.3+	0.1+	1998 01 24	704	0.2−	1.0−	1998 04 21	688	0.2+	0.1+
1998 01 08	704	0.1−	0.3−	1998 01 24	704	0.5−	0.6−				
1998 01 20	704	0.2+	0.1+	1998 01 24	704	0.1−	0.5−				

3285 T-1 = 1998 HO₅₆

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	77.09463		(2000.0)	P	Q		
<i>n</i>	0.25664159	ω	297.52735	−0.59954361	−0.80022393		
<i>a</i>	2.4523627	Ω	189.34690	+0.76092921	−0.56460918		
<i>e</i>	0.2111239	<i>i</i>	4.85733	+0.24806087	−0.20213396		
<i>P</i>	3.84	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	0.5+	0.9−	1971 05 14	675	0.6+	0.4−	1998 03 29	704	0.1−	1.3+
1971 03 25	675	1.5+	1.1−	1971 05 16	675	0.4−	0.0	1998 04 21	704	0.5+	1.0−

1971 03 26	675	(2.7+	3.3−)	1998 03 25	704	0.5+	0.3−	1998 04 21	704	(0.0	2.2−)
1971 03 26	675	(2.4+	3.4−)	1998 03 25	704	0.1−	0.1−	1998 04 21	704	0.3+	1.2−
1971 03 27	675	0.8+	1.1−	1998 03 25	704	(3.0+	0.4−)	1998 04 21	704	0.4+	1.6+
1971 04 02	675	1.7−	1.4+	1998 03 25	704	0.1−	0.7+	1998 04 21	704	0.1+	0.1+
1971 04 16	675	1.4−	0.3−	1998 03 25	704	0.1+	0.7+	1998 04 22	704	0.2−	0.5−
1971 04 16	675	0.9+	0.6+	1998 03 29	704	0.2−	0.1−	1998 04 22	704	0.7+	0.5−
1971 04 16	675	1.7−	0.7−	1998 03 29	704	1.3−	0.2−	1998 04 22	704	0.6−	0.0
1971 04 16	675	0.4−	1.7+	1998 03 29	704	0.6−	1.0+	1998 04 22	704	0.1−	0.3−
1971 05 13	675	1.0+	0.8−	1998 03 29	704	1.0+	1.2+	1998 04 22	704	0.1−	0.6−

3329 T-1 = 1998 MM₉

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	315.31097		(2000.0)	P	Q		
<i>n</i>	0.18824187	ω	118.66217	+0.69823489	+0.71429100		
<i>a</i>	3.0152633	Ω	195.91526	−0.70228282	+0.67060786		
<i>e</i>	0.0513611	<i>i</i>	9.97553	−0.13880516	+0.20018359		
<i>P</i>	5.24	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	(6.5+	1.5−)	1971 05 13	675	0.7+	0.6+	1998 06 19	704	(2.7+	1.4−)
1971 03 25	675	1.5+	1.6+	1971 05 14	675	0.1+	0.3−	1998 06 19	704	0.8−	0.3+
1971 03 26	675	0.6−	0.1−	1971 05 16	675	0.8−	1.6+	1998 06 19	704	0.9+	1.0−
1971 03 26	675	0.3−	0.2−	1998 06 03	704	0.6−	1.1+	1998 06 25	704	0.2−	0.7−
1971 03 27	675	(5.0+	2.0−)	1998 06 03	704	0.5−	0.1−	1998 06 25	704	1.3−	0.9+
1971 04 02	675	1.0−	0.4−	1998 06 03	704	1.2+	0.3+	1998 06 25	704	0.4+	0.3+
1971 04 16	675	0.5+	2.2−	1998 06 03	704	0.4−	0.4−	1998 06 25	704	0.2−	0.7−
1971 04 16	675	0.0	0.4−	1998 06 19	704	1.6+	0.0				

4269 T-1 = 1993 FU₈₂ = 1998 DV₇

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Nakano			
<i>M</i>	14.97130		(2000.0)	P	Q		
<i>n</i>	0.17951461	ω	70.39054	−0.88914150	−0.45442391		
<i>a</i>	3.1122145	Ω	82.54970	+0.39677110	−0.82439016		
<i>e</i>	0.1132398	<i>i</i>	3.12738	+0.22803529	−0.33746078		
<i>P</i>	5.49	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	1.6−	1.9+	1993 03 24	691	0.5−	0.3+	1998 02 23	327	0.2−	0.8−
1971 03 26	675	0.4+	0.5−	1993 03 24	691	0.3−	0.3+	1998 03 01	327	0.6−	0.0
1971 03 26	675	1.6+	0.6−	1993 03 24	691	0.4−	0.5+	1998 03 01	327	0.1−	0.6+
1971 03 27	675	1.4−	1.7−	1998 02 17	327	0.5+	0.5+	1998 03 01	327	0.1−	0.2−
1971 04 02	675	1.2+	1.5+	1998 02 17	327	0.3+	0.2+	1998 03 01	327	0.8+	0.1−
1993 03 19	809	0.8−	2.1−	1998 02 17	327	0.2−	0.4+	1998 03 01	327	0.4−	0.3−
1993 03 20	809	0.7+	0.9−	1998 02 23	327	0.1−	0.6−	1998 03 01	327	0.1−	0.8+
1993 03 23	809	1.1+	1.2+	1998 02 23	327	0.3+	0.4−				

4310 T-1 = 1998 FL₈₄

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

				Williams			
<i>M</i>	83.98399		(2000.0)	P	Q		
<i>n</i>	0.21718900	ω	67.60362	+0.06261917	−0.99484452		
<i>a</i>	2.7410114	Ω	19.32405	+0.80390101	+0.00291107		
<i>e</i>	0.1710791	<i>i</i>	13.94920	+0.59145752	+0.10137013		
<i>P</i>	4.54	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	(4.8+	2.0−)	1971 05 14	675	0.8+	0.2+	1998 03 24	704	0.0	1.0−
1971 03 26	675	1.1+	0.1−	1998 02 17	327	0.9−	0.8+	1998 03 24	704	0.4+	0.9−
1971 03 26	675	0.2+	0.5−	1998 02 17	327	0.8−	0.6+	1998 03 25	704	0.4+	0.6+
1971 03 27	675	1.1−	1.7−	1998 02 17	327	0.6−	0.9+	1998 03 25	704	0.3−	0.3+
1971 04 02	675	0.7−	0.9+	1998 02 27	566	0.2−	0.2+	1998 03 25	704	0.3−	0.3+
1971 04 16	675	0.8+	0.4+	1998 02 27	566	0.1+	0.0	1998 03 25	704	0.6+	0.2−
1971 04 16	675	0.3+	0.4+	1998 02 27	566	0.4−	0.1−	1998 03 25	704	1.0+	1.3−
1971 05 13	675	(2.8−	1.3−)	1998 03 24	704	0.6+	0.2+				
1971 05 13	675	1.5−	0.4+	1998 03 24	704	0.7+	0.3−				

1241 T-2 = 1998 FP₁₄₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	293.92207	(2000.0)	P		Q		Williams	
<i>n</i>	0.18396871	ω	280.66987	+0.27524804	+0.96126643			
<i>a</i>	3.0617759	Ω	5.37156	-0.81133551	+0.24026204			
<i>e</i>	0.0829134	<i>i</i>	8.80577	-0.51572591	+0.13505929			
<i>P</i>	5.36	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1973 09 19	675	0.1-	0.2-	1973 10 05	675	1.3+	2.2-	1998 03 29	704	0.2-	0.4+
1973 09 19	675	0.5+	0.2-	1973 10 05	675	1.4+	0.0	1998 03 29	704	1.5-	1.7-
1973 09 24	675	0.4+	1.1-	1998 03 22	704	1.3-	1.1-	1998 03 29	704	0.3-	0.2-
1973 09 24	675	0.8-	0.9+	1998 03 22	704	0.2-	1.0+	1998 04 01	704	0.4+	1.4+
1973 09 25	675	(3.5-	2.2-)	1998 03 22	704	0.8+	1.2-	1998 04 01	704	0.1-	0.6+
1973 09 25	675	1.1-	0.2+	1998 03 22	704	1.2+	0.3+	1998 04 01	704	0.5+	0.5+
1973 09 29	675	1.0+	1.0+	1998 03 22	704	(5.3-	2.2+)	1998 04 01	704	0.1+	0.6+
1973 09 29	675	0.9+	0.8+	1998 03 28	704	0.0	0.9-	1998 04 01	704	1.4+	0.9-
1973 09 30	675	1.9-	0.1+	1998 03 28	704	1.4-	0.1+	1998 04 20	704	1.0+	1.5+
1973 09 30	675	1.5-	0.2-	1998 03 28	704	(3.6-	1.5+)	1998 04 20	704	0.2-	0.4+
1973 10 04	675	1.1+	0.3+	1998 03 28	704	(7.5-	5.3+)	1998 04 20	704	0.3-	0.8+
1973 10 04	675	0.8-	0.1-	1998 03 29	704	1.1+	0.7-	1998 04 20	704	1.5-	1.6-

1552 T-2 = 1978 PM₄ = 1979 WR₃ = 1982 HB₁ = 1997 GL₁ = 1998 LO₂

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	339.99117	(2000.0)	P		Q		Williams	
<i>n</i>	0.19023774	ω	107.79094	+0.39236372	+0.91966943			
<i>a</i>	2.9941365	Ω	185.39302	-0.89538973	+0.37788446			
<i>e</i>	0.0748160	<i>i</i>	9.85663	-0.21054203	+0.10682454			
<i>P</i>	5.18	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	2	

Residuals in seconds of arc

1973 09 19	675	0.1-	0.1+	1997 04 11	560	0.9-	1.2+	1998 05 26	704	1.2-	0.0
1973 09 19	675	0.9+	0.1-	1997 04 13	560	0.5-	0.3-	1998 05 26	704	1.2+	1.1+
1973 09 20	675	0.3+	1.2-	1997 04 13	560	0.4+	0.0	1998 06 01	809	(3.2+	5.0+)
1973 09 24	675	0.5+	0.3-	1997 04 13	560	0.8+	1.2-	1998 06 01	809	(2.8+	5.0+)
1973 09 24	675	1.1+	1.3-	1997 04 25	560	0.7+	0.4-	1998 06 01	809	(2.7+	4.6+)
1973 09 25	675	1.4-	1.6-	1997 04 25	560	0.1-	0.4+	1998 06 02	809	(3.4+	3.9+)
1973 09 25	675	1.0+	0.5-	1997 04 25	560	0.2+	0.5+	1998 06 02	809	(2.9+	3.0+)
1978 08 09	095	1.2-	0.8-	1997 04 25	560	0.4-	0.1-	1998 06 02	809	(3.2+	3.3+)
1979 11 16	095	(4.2+	1.3-)	1997 05 04	560	0.4-	0.0	1998 06 03	704	0.3+	0.5-
1982 04 24	688	(1.6-	4.0-)	1997 05 04	560	0.1+	0.6-	1998 06 03	704	0.5-	0.1-
1982 04 24	688	0.1-	0.8-	1997 05 04	560	1.2+	0.4-	1998 06 03	704	0.5+	0.8-
1997 04 04	560	0.4+	1.2-	1997 05 10	560	0.3+	0.2+	1998 06 03	704	0.4-	0.8-
1997 04 04	560	0.0	0.4+	1997 05 10	560	0.3-	0.2+	1998 06 19	704	0.1-	0.6+
1997 04 04	560	1.7-	0.2-	1997 05 10	560	0.1+	0.6-	1998 06 19	704	0.0	0.5+
1997 04 05	560	0.8+	0.2+	1997 05 28	560	0.5+	0.1+	1998 06 19	704	0.2-	0.5+
1997 04 05	560	0.5-	0.6-	1997 05 28	560	0.8-	0.8-	1998 06 19	704	0.4+	0.8-
1997 04 05	560	0.0	0.2-	1997 05 28	560	0.6-	0.6-	1998 06 19	704	0.2-	1.1-
1997 04 09	560	0.2-	0.8-	1997 05 30	560	0.0	0.4-	1998 06 25	704	0.5+	0.4+
1997 04 09	560	0.1+	0.3-	1997 05 30	560	0.4+	0.4+	1998 06 25	704	0.0	0.6+
1997 04 09	560	0.1-	0.7+	1997 05 30	560	1.1-	0.3+	1998 06 25	704	0.2-	0.1-
1997 04 11	560	0.2+	1.1-	1998 05 26	704	1.1+	0.4-	1998 06 25	704	0.9-	0.2+
1997 04 11	560	0.3-	0.4-	1998 05 26	704	(2.5-	0.4+)	1998 06 25	704	0.0	1.6+

2081 T-2 = 1998 FJ₃₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	48.71153	(2000.0)	P		Q		Williams	
<i>n</i>	0.25899022	ω	203.75635	-0.87083182	-0.49030169			
<i>a</i>	2.4375141	Ω	306.83598	+0.45781591	-0.78264642			
<i>e</i>	0.1257118	<i>i</i>	2.53810	+0.17904338	-0.38349555			
<i>P</i>	3.81	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1973 09 24	675	1.2-	0.1-	1998 02 25	566	0.6+	0.2-	1998 03 29	704	0.6-	0.5+
1973 09 24	675	0.1-	1.4+	1998 03 20	704	0.1-	1.4-	1998 03 29	704	0.2+	0.8+
1973 09 29	675	0.6-	0.3-	1998 03 20	704	0.8-	0.1+	1998 03 29	704	0.7-	0.7+
1973 09 29	675	2.1+	2.4+	1998 03 20	704	0.0	0.6+	1998 03 29	704	0.1-	0.5-
1973 09 30	675	0.2-	2.3-	1998 03 20	704	1.5-	0.6+	1998 04 01	704	0.4+	0.6-
1973 09 30	675	0.1-	1.5-	1998 03 20	704	(2.2-	1.0+)	1998 04 01	704	1.9+	1.3-
1973 10 04	675	1.0-	0.6+	1998 03 22	704	0.5-	0.1-	1998 04 01	704	0.4+	0.9-
1973 10 04	675	2.5+	0.5-	1998 03 22	704	1.5-	0.7+	1998 04 01	704	0.0	0.7-
1973 10 05	675	1.1+	0.4-	1998 03 22	704	0.6+	1.1+	1998 04 19	704	1.0+	0.9+
1973 10 05	675	1.7-	1.0-	1998 03 22	704	1.1+	1.2-	1998 04 19	704	1.9-	1.5-
1998 02 25	566	1.3+	0.4-	1998 03 22	704	1.4-	1.3+	1998 04 19	704	0.4-	0.3-
1998 02 25	566	1.0+	0.2-	1998 03 29	704	0.7+	0.5+	1998 04 19	704	0.4-	0.1-

2132 T-2 = 1993 SE₉

Id. K. Ichikawa, A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	294.31890	(2000.0)	P		Q		Gnädig	
<i>n</i>	0.19666739	ω	230.78670	+0.50411017	-0.86303802			
<i>a</i>	2.9285174	Ω	189.11116	+0.84177327	+0.49934732			
<i>e</i>	0.0461830	<i>i</i>	11.74123	+0.19310801	+0.07627346			
<i>P</i>	5.01	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	7	

Residuals in seconds of arc

1973 09 20	675	1.8-	0.4-	1973 09 30	675	0.9-	0.5-	1993 09 22	809	0.1+	0.9-
1973 09 24	675	2.8-	0.8+	1973 10 04	675	0.1+	0.5+	1993 09 22	809	0.8-	1.4-
1973 09 24	675	(2.6-	2.9+)	1973 10 04	675	0.7+	0.0	1993 09 22	809	1.2-	0.6-
1973 09 25	675	1.1-	0.0	1973 10 05	675	2.7-	0.7-	1993 09 24	809	(0.9-	4.3+)
1973 09 25	675	(3.6-	2.1+)	1973 10 05	675	0.7-	0.9-	1993 09 24	809	1.1-	2.7+
1973 09 29	675	0.1-	0.0	1993 09 18	809	0.5+	0.6-	1993 09 24	809	1.5-	0.7+
1973 09 29	675	0.7-	1.0-	1993 09 18	809	1.6+	0.3-				
1973 09 30	675	1.3+	0.2+	1993 09 18	809	(1.3+	2.5-)				

2199 T-2 = 1997 LC₁₁

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	97.64656	(2000.0)	P		Q		Gnädig	
<i>n</i>	0.23496554	ω	53.32081	-0.57038514	+0.82137546			
<i>a</i>	2.6009575	Ω	181.90475	-0.76960066	-0.53518348			
<i>e</i>	0.0347326	<i>i</i>	3.05928	-0.28701153	-0.19728406			
<i>P</i>	4.19	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1973 09 19	675	(3.7+	1.3+)	1973 09 29	675	0.2-	0.2+	1973 10 05	675	0.1+	0.1-
1973 09 19	675	1.2+	0.9-	1973 09 29	675	0.0	0.9+	1973 06 07	809	0.1-	0.0
1973 09 20	675	0.1+	0.3-	1973 09 30	675	0.1-	0.0	1973 06 07	809	0.4-	0.2+
1973 09 24	675	0.9-	0.6+	1973 09 30	675	1.5-	0.3-	1973 06 07	809	0.9-	0.6-
1973 09 24	675	0.5-	1.8+	1973 10 04	675	0.3+	0.8+	1973 06 08	809	0.7+	0.0
1973 09 25	675	0.1-	1.0-	1973 10 04	675	0.3+	0.6-	1973 06 08	809	0.7+	0.3+
1973 09 25	675	(2.5+	0.4-)	1973 10 05	675	1.4+	1.1-	1973 06 08	809	0.0	0.1+

3061 T-2 = 1998 FO₅₉

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	201.79958	(2000.0)	P		Q		Williams	
<i>n</i>	0.18190986	ω	193.03112	+0.99525344	-0.08790928			
<i>a</i>	3.0848347	Ω	171.66808	+0.09232475	+0.98854398			
<i>e</i>	0.0046146	<i>i</i>	16.74263	-0.03076913	+0.12268969			
<i>P</i>	5.42	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1973 09 19	675	0.7-	1.1+	1973 09 30	675	0.4-	0.1-	1998 03 22	704	(0.3-	2.6+)
1973 09 19	675	0.9-	0.1+	1973 09 30	675	(2.7-	3.0-)	1998 03 22	704	(2.3-	2.2+)
1973 09 20	675	0.5-	0.6-	1973 10 05	675	0.3+	1.1+	1998 03 22	704	0.3+	1.3-
1973 09 24	675	1.6+	0.8-	1973 10 05	675	1.8+	0.8-	1998 03 22	704	1.3-	1.2-
1973 09 24	675	0.1-	0.5-	1998 03 20	704	0.7-	0.5+	1998 04 20	704	(2.1+	2.1-)

1998 AUG. 8

1973 09 25	675	(0.5−	3.5−)	1998 03 20	704	1.0−	0.1+	1998 04 20	704	0.8+	0.7−
1973 09 25	675	(0.7+	3.8−)	1998 03 20	704	0.4+	0.0	1998 04 20	704	0.3−	0.7+
1973 09 29	675	1.0−	1.4−	1998 03 20	704	0.6+	0.7+	1998 04 20	704	1.2+	0.6+
1973 09 29	675	0.2+	1.2+	1998 03 20	704	(4.3−	1.1−)	1998 04 20	704	(2.5−	1.4−)

3169 T-2 = 1998 FK₁₄₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	175.62286	(2000.0)	P	Q	
<i>n</i>	0.30123085	ω 26.12298	+0.74427235	−0.66661050	
<i>a</i>	2.2039568	Ω 15.89738	+0.58348092	+0.61904872	
<i>e</i>	0.1414239	<i>i</i> 8.62934	+0.32497488	+0.41522177	
<i>P</i>	3.27	<i>H</i> 16.0	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1973 09 19	675	1.1−	1.5+	1973 09 30	675	0.5+	0.7−	1998 04 01	704	1.3+	0.2−
1973 09 19	675	1.4+	0.9+	1973 10 04	675	1.1+	0.6+	1998 04 01	704	1.2+	0.2−
1973 09 20	675	0.3−	1.2+	1973 10 04	675	2.0+	0.6−	1998 04 01	704	1.0−	0.3−
1973 09 24	675	(3.2−	0.1+)	1973 10 05	675	0.9+	1.3−	1998 04 18	704	1.1−	0.3+
1973 09 24	675	2.1−	0.2+	1973 10 05	675	1.5+	0.0	1998 04 18	704	(3.9+	1.9−)
1973 09 25	675	0.3−	1.7−	1998 03 29	704	1.9−	0.8−	1998 04 18	704	0.0	0.7+
1973 09 25	675	1.2−	0.4−	1998 03 29	704	0.2+	0.4−	1998 04 18	704	0.4+	1.1+
1973 09 29	675	0.0	0.2−	1998 03 29	704	(2.5−	2.2−)	1998 04 18	704	(2.6−	0.1+)
1973 09 29	675	0.5−	0.7−	1998 03 29	704	0.5−	1.0−				
1973 09 30	675	0.7−	0.6−	1998 04 01	704	0.0	1.6−				

4149 T-2 = 1998 MD₃₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	314.07062	(2000.0)	P	Q	
<i>n</i>	0.31230177	ω 294.09280	+0.99045888	+0.13193730	
<i>a</i>	2.1515581	Ω 58.34761	−0.10324462	+0.90170161	
<i>e</i>	0.1652301	<i>i</i> 2.67959	−0.09127840	+0.41173626	
<i>P</i>	3.16	<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+	1.2−	1973 09 29	675	0.4+	0.2+	1998 06 24	704	1.1−	1.6−
1973 09 19	675	0.2−	0.3−	1973 09 30	675	0.5+	0.8−	1998 06 24	704	1.2+	0.0
1973 09 20	675	1.1−	0.5+	1973 09 30	675	0.4+	0.4−	1998 06 26	704	0.5−	0.1−
1973 09 24	675	1.1+	0.0	1973 10 04	675	0.1−	0.1−	1998 06 26	704	0.7+	0.6+
1973 09 24	675	0.4−	0.6+	1973 10 04	675	1.0−	0.5+	1998 06 26	704	1.1−	1.1−
1973 09 25	675	0.4+	0.0	1973 10 05	675	0.4+	0.1−	1998 06 26	704	1.1+	1.4+
1973 09 25	675	0.1−	1.2+	1973 10 05	675	0.3+	0.6−				
1973 09 29	675	1.5−	0.6+	1998 06 24	704	0.2−	0.8+				

4281 T-2 = 1996 FR₁₅

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Gnädig			
<i>M</i>	118.62977	(2000.0)	P	Q	
<i>n</i>	0.20339957	ω 252.04448	−0.00436843	+0.99803203	
<i>a</i>	2.8635363	Ω 18.05292	−0.82401651	+0.03184782	
<i>e</i>	0.1533214	<i>i</i> 11.64544	−0.56654895	−0.05401645	
<i>P</i>	4.85	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1973 09 20	675	0.5+	0.7+	1973 09 30	675	1.3−	1.1+	1973 10 05	675	(4.0−	1.6+)
1973 09 24	675	0.2+	0.0	1973 10 04	675	1.2+	0.9+	1996 03 22	809	1.7+	0.6+
1973 09 24	675	0.3+	0.0	1973 10 04	675	(3.2−	2.6+)	1996 03 22	809	0.9+	0.4−
1973 09 25	675	(4.1+	3.9−)	1973 10 04	675	0.4+	0.1+	1996 03 22	809	0.4+	0.1−
1973 09 25	675	(3.1−	3.4+)	1973 10 04	675	(3.6−	1.3+)	1996 03 26	809	0.2+	0.7+
1973 09 29	675	0.5−	1.2−	1973 10 05	675	0.2−	1.1−	1996 03 26	809	1.9−	0.1+
1973 09 29	675	0.1+	1.6−	1973 10 05	675	(3.2−	2.3+)	1996 03 26	809	1.2−	0.8−
1973 09 30	675	0.1−	1.3+	1973 10 05	675	0.4−	0.3+				

M.P.C. 32293

4616 T-2 = 1998 LW₂

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Marsden			
<i>M</i>	291.30292	(2000.0)	P	Q	
<i>n</i>	0.18867753	ω 167.94083	+0.93967305	+0.34117206	
<i>a</i>	3.0106199	Ω 171.97816	−0.32677154	+0.91673240	
<i>e</i>	0.0107465	<i>i</i> 10.24619	−0.10116779	+0.20785410	
<i>P</i>	5.22	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1973 09 20	675	1.2−	2.0−	1973 09 30	675	1.7+	1.3+	1998 06 01	809	1.4−	1.2−
1973 09 24	675	0.4+	1.4+	1973 09 30	675	0.1+	1.2+	1998 06 01	809	1.0−	1.1−
1973 09 24	675	1.1+	0.4+	1973 10 04	675	0.6−	0.7−	1998 06 02	809	2.4+	1.8+
1973 09 25	675	0.7−	0.5+	1973 10 04	675	0.2−	0.4−	1998 06 02	809	(3.3+	1.7+)
1973 09 25	675	0.9−	0.6+	1973 10 05	675	0.4+	0.3+	1998 06 02	809	1.2+	1.7+
1973 09 29	675	0.2+	0.5−	1973 10 05	675	1.2−	0.2−				
1973 09 29	675	0.8+	2.0−	1998 06 01	809	1.2−	1.2−				

2065 T-3 = 1998 FT₁₄₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	245.91535	(2000.0)	P	Q	
<i>n</i>	0.31059837	ω 355.13236	+0.81855060	+0.57301703	
<i>a</i>	2.1594174	Ω 329.79391	−0.52429075	+0.71656715	
<i>e</i>	0.0145482	<i>i</i> 4.59765	−0.23472136	+0.39772226	
<i>P</i>	3.17	<i>H</i> 16.0	<i>G</i> 0.15	<i>U</i> 6	

Residuals in seconds of arc

1977 10 07	675	1.4+	1.2−	1977 10 17	675	1.2−	0.8+	1998 03 29	704	0.1−	0.2−
1977 10 11	675	0.1+	0.1+	1977 10 21	675	1.7+	0.4+	1998 03 29	704	0.8+	1.2+
1977 10 11	675	1.7−	0.7+	1977 10 21	675	0.9+	1.2−	1998 04 01	704	0.6+	0.7−
1977 10 12	675	1.0−	0.2+	1977 10 22	675	0.2−	0.7+	1998 04 01	704	0.1−	0.7−
1977 10 12	675	1.5−	0.7+	1977 10 22	675	0.6+	0.6−	1998 04 01	704	1.3−	0.8−
1977 10 16	675	0.2−	1.4−	1998 03 29	704	0.7+	1.7+	1998 04 01	704	0.3−	0.9−
1977 10 16	675	0.2+	1.3−	1998 03 29	704	0.6+	0.1+				
1977 10 17	675	0.9+	2.1+	1998 03 29	704	0.9−	0.4+				

2317 T-3 = 1998 HU₄₅

Id. A. Gnädig

Epoch 1998 July 6.0 TT = JDT 2451000.5

		Williams			
<i>M</i>	55.93866	(2000.0)	P	Q	
<i>n</i>	0.26274679	ω 160.13000	−0.95253856	−0.30441187	
<i>a</i>	2.4142252	Ω 2.15002	+0.27189262	−0.85359553	
<i>e</i>	0.1190085	<i>i</i> 2.94474	+0.13691129	−0.42273878	
<i>P</i>	3.75	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1977 10 07	675	0.6+	0.1−	1977 10 17	675	0.3−	0.1−	1998 03 29	704	0.0	0.2−
1977 10 07	675	1.1−	0.2+	1977 10 17	675	0.8−	2.0−	1998 03 29	704	0.1+	1.2+
1977 10 11	675	0.2−	1.0+	1977 10 21	675	0.5−	1.2+	1998 03 29	704	0.1+	0.5−
1977 10 11	675	0.5−	1.9+	1977 10 21	675	0.2+	1.0+	1998 04 01	704	0.1+	0.6−
1977 10 11	675	0.7−	0.1−	1977 10 22	675	1.4+	2.1−	1998 04 01	704	0.6+	0.2+
1977 10 11	675	0.5−	1.9+	1977 10 22	675	(3.9+	2.5−)	1998 04 01	704	0.9+	1.2+
1977 10 12	675	0.3+	0.4−	1998 03 25	704	0.3−	0.1−	1998 04 01	704	0.4+	1.1+
1977 10 12	675	0.9+	0.6+	1998 03 25	704	0.1−	0.8+	1998 04 01	704	0.4+	0.9+
1977 10 12	675	0.4+	1.0−	1998 03 25	704	0.9−	0.3−	1998 04 20	704	1.5−	1.2−
1977 10 12	675	0.3−	0.6+	1998 03 25	699	0.8−	0.5−	1998 04 20	704	0.1−	0.8−
1977 10 16	675	(0.6+	3.4−)	1998 03 25	704	1.1+	0.9+	1998 04 20	704	0.5+	1.0−
1977 10 16	675	0.4+	0.4−	1998 03 25	699	0.1−	0.7−	1998 04 20	704	0.3+	0.5+
1977 10 16	675	(0.4+	2.9−)	1998 03 25	699	0.4−	1.5−	1998 04 21	704	0.6−	0.6+
1977 10 16	675	0.3−	0.7+	1998 03 25	704	0.0	0.5−	1998 04 21	704	0.0	0.1−
1977 10 17	675	0.1+	0.9−	1998 03 29	704	0.6+	0.1+	1998 04 21	704	0.1+	0.9+
1977 10 17	675	0.3+	1.0−	1998 03 29	704	0.2+	0.2+	1998 04 21	704	0.3−	0.0

3138 T-3 = 1990 EW₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	121.57447		(2000.0)	P		Q		Gnädig	
<i>n</i>	0.26779907	ω	302.00753	-0.74508958	-0.66686910				
<i>a</i>	2.3837645	Ω	196.17589	+0.62476865	-0.69193409				
<i>e</i>	0.1078084	<i>i</i>	2.31950	+0.23346445	-0.27660950				
<i>P</i>	3.68	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1977 10 07	675	3.2+	0.5+	1977 10 17	675	1.3-	0.2+	1990 03 02	809	0.3+	0.3-
1977 10 11	675	0.6-	1.1+	1977 10 17	675	0.2-	0.4-	1990 03 02	809	0.5+	1.1-
1977 10 11	675	1.3-	0.6-	1977 10 21	675	0.7+	1.3+	1990 03 04	809	0.6-	0.2+
1977 10 12	675	0.1-	0.6-	1977 10 21	675	0.4+	0.5+	1990 03 04	809	0.4-	0.8+
1977 10 12	675	0.3+	0.6+	1977 10 22	675	0.7-	1.6-	1990 03 04	809	0.3-	0.5+
1977 10 16	675	0.3-	0.9-	1990 03 02	809	0.4+	0.2-				

3157 T-3 = 1992 EQ₂₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	310.74794		(2000.0)	P		Q		Gnädig	
<i>n</i>	0.30238914	ω	139.74105	-0.94080397	+0.33411725				
<i>a</i>	2.1983251	Ω	59.86520	-0.32546726	-0.84350124				
<i>e</i>	0.1120983	<i>i</i>	3.78162	-0.09465174	-0.42056071				
<i>P</i>	3.26	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1977 10 07	675	(3.4+	3.4-)	1977 10 16	675	0.9+	1.3-	1977 10 21	675	0.6-	0.1-
1977 10 11	675	0.8-	1.0+	1977 10 16	675	0.9+	1.8+	1977 10 22	675	1.1+	0.1-
1977 10 11	675	1.6-	0.3+	1977 10 17	675	0.8+	1.0+	1977 10 22	675	0.3+	1.5-
1977 10 12	675	0.5-	0.6-	1977 10 17	675	1.3-	0.1+	1992 03 04	809	0.5+	0.2-
1977 10 12	675	0.9+	2.5-	1977 10 17	675	0.4+	0.6-	1992 03 09	809	0.5-	0.2+
1977 10 16	675	(1.8+	2.0-)	1977 10 17	675	0.4+	0.4+				
1977 10 16	675	0.2-	0.9+	1977 10 21	675	0.9-	1.1+				

3449 T-3 = 1987 KJ₃ = 1998 HB₇₀

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	250.03326		(2000.0)	P		Q		Gnädig	
<i>n</i>	0.17365564	ω	312.03570	+0.97683494	+0.20190668				
<i>a</i>	3.1818286	Ω	36.48197	-0.14349819	+0.86383271				
<i>e</i>	0.1684718	<i>i</i>	6.84884	-0.15875064	+0.46154820				
<i>P</i>	5.68	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1977 10 07	675	0.1+	0.7+	1977 10 21	675	0.3-	2.0+	1998 04 21	704	0.4+	0.3-
1977 10 11	675	1.3-	0.1-	1977 10 22	675	(3.4+	0.3-)	1998 04 21	704	0.3+	0.6-
1977 10 11	675	1.4-	0.2+	1977 10 22	675	(3.0+	0.7+)	1998 04 21	704	0.1+	0.1+
1977 10 12	675	1.1+	2.1-	1987 05 30	413	0.4+	0.3-	1998 04 22	704	0.5+	1.0+
1977 10 12	675	1.9+	0.7-	1987 05 30	413	0.6-	0.2-	1998 04 22	704	0.2+	0.3+
1977 10 16	675	0.3-	0.6-	1998 03 03	910	0.6-	0.1+	1998 04 22	704	0.1+	0.2+
1977 10 16	675	0.2+	0.5-	1998 03 03	910	0.6-	0.2-	1998 04 22	704	0.4+	0.5+
1977 10 17	675	1.5-	0.0	1998 03 03	910	0.9-	0.4-	1998 04 22	704	0.6+	0.1-
1977 10 17	675	(2.3-	0.2-)	1998 04 21	704	0.4+	0.3+				
1977 10 21	675	0.8+	1.5+	1998 04 21	704	0.6-	0.0				

3465 T-3 = 1993 TW₄₄

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	5.81565		(2000.0)	P		Q		Gnädig	
<i>n</i>	0.18494171	ω	295.17418	+0.73450149	+0.67459523				
<i>a</i>	3.0510276	Ω	22.63766	-0.53306554	+0.64075098				
<i>e</i>	0.1440416	<i>i</i>	11.03608	-0.41993891	+0.36655076				
<i>P</i>	5.33	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1977 10 07	675	0.9+	1.7-	1977 10 17	675	0.2-	0.4+	1993 10 10	809	0.2-	0.2+
1977 10 11	675	1.2-	0.4+	1977 10 17	675	1.7-	0.1+	1993 10 10	809	1.8-	0.3-
1977 10 11	675	0.3-	0.1+	1977 10 21	675	0.1-	0.5+	1993 10 22	809	1.4+	0.6+
1977 10 12	675	(3.0+	0.6-)	1977 10 21	675	0.8-	0.6+	1993 10 22	809	0.1+	1.1-
1977 10 12	675	0.7+	0.2+	1977 10 22	675	(3.0+	0.2-)	1993 10 22	809	0.0	0.0
1977 10 16	675	0.3+	0.0	1977 10 22	675	1.8+	0.5-				
1977 10 16	675	0.2-	0.5-	1993 10 10	809	0.8+	0.3+				

3482 T-3 = 1998 MM₃

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	272.59478		(2000.0)	P		Q		Williams	
<i>n</i>	0.18148753	ω	73.73919	+0.63405593	-0.77328359				
<i>a</i>	3.0896185	Ω	336.91031	+0.70715837	+0.58106637				
<i>e</i>	0.1816752	<i>i</i>	0.34494	+0.31288996	+0.25376046				
<i>P</i>	5.43	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	7		

Residuals in seconds of arc

1977 10 07	675	0.8+	2.1-	1977 10 17	675	1.1-	0.0	1998 06 17	691	0.1+	0.1-
1977 10 11	675	0.0	0.9+	1977 10 17	675	1.1-	0.4-	1998 06 17	691	0.0	0.2-
1977 10 11	675	1.2-	0.3+	1977 10 21	675	0.8-	0.8+	1998 06 23	691	0.3+	0.4+
1977 10 12	675	0.5+	1.0+	1977 10 21	675	0.5-	1.5+	1998 06 23	691	0.4-	0.1-
1977 10 12	675	0.3+	2.1+	1977 10 22	675	1.8+	1.8-	1998 06 23	691	0.3-	0.2-
1977 10 16	675	0.1+	0.4-	1977 10 22	675	1.6+	0.5-				
1977 10 16	675	0.4-	1.4-	1998 06 17	691	0.4+	0.1+				

4031 T-3 = 1998 MO₄₀

Id. B. G. Marsden

Epoch 1998 July 6.0 TT = JDT 2451000.5

<i>M</i>	304.73617		(2000.0)	P		Q		Williams	
<i>n</i>	0.27667765	ω	210.86422	+0.99623548	-0.08102627				
<i>a</i>	2.3324911	Ω	153.73034	+0.08667781	+0.93659309				
<i>e</i>	0.1525681	<i>i</i>	3.99245	-0.00135102	+0.34092247				
<i>P</i>	3.56	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1977 10 07	675	0.7+	1.1+	1977 10 17	675	0.0	0.0	1998 06 26	809	1.3+	0.1+
1977 10 11	675	0.1-	0.3+	1977 10 21	675	0.5-	0.8+	1998 06 26	809	0.5+	0.1-
1977 10 11	675	0.1-	0.1+	1977 10 21	675	0.5+	1.2+	1998 06 26	809	0.0	0.8+
1977 10 12	675	0.1-	0.1+	1977 10 22	675	0.6+	2.4-	1998 06 27	809	0.1+	0.6-
1977 10 12	675	0.0	0.7-	1998 06 24	704	(0.5+	2.3+)	1998 06 27	809	0.4-	1.1-
1977 10 16	675	1.4-	0.5+	1998 06 24	704	0.4-	0.9+	1998 06 27	809	0.2+	1.0-
1977 10 16	675	(2.7-	0.9+)	1998 06 24	704	1.2-	0.4-				
1977 10 17	675	0.2+	0.9-	1998 06 24	704	0.0	1.2+				

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
(154)	7.58	0.15	19980706	70.86070	153.06490	37.17493	21.10362	0.0904022	3.1814921	259	58 1875-1997	0.56	M-v 0	Goffin	22073	(154)
(238)	8.18	0.15	19980706	300.73407	208.07016	184.23971	12.40671	0.0915903	2.9077006	206	51 1884-1997	0.56	M-v 0	Goffin	32041	(238)
(297)	9.5	0.15	19980706	37.46022	356.52452	332.28424	7.55369	0.1468768	3.1623212	130	33 1890-1997	0.55	M-v 0	Goffin	25326	(297)
(311)	9.89	0.15	19980706	5.36183	67.47907	81.26104	3.22796	0.0074039	2.8980737	208	44 1891-1998	0.54	M-v 0	Goffin	30753	(311)
(369)	8.52	0.15	19980706	46.13041	267.85839	94.54229	12.71714	0.0976587	2.6480445	156	37 1893-1997	0.55	M-v 0	Goffin	21100	(369)
(418)	9.77	0.15	19980706	115.42553	125.84931	249.20822	6.82832	0.1176234	2.5933412	97	29 1896-1996	0.55	M-v 0	Goffin	23969	(418)
(438)	9.80	0.15	19980706	292.90524	208.04548	49.36868	7.39597	0.0694634	2.5536517	149	37 1898-1998	0.56	M-v 0	Goffin	29653	(438)

(458)	9.63	0.15	19980706	289.88485	274.71812	135.07039	12.64112	0.2453878	2.9905878	48	18	1900-1998	0.87	M-v	1	Bowell	26418	(458)
(474)	10.6	0.15	19980706	322.72752	156.27650	161.95007	8.80633	0.2123596	2.4520226	117	29	1901-1995	0.56	M-v	0	Goffin	31579	(474)
(531)	11.8	0.15	19980706	59.38961	58.00705	197.92234	33.98169	0.1952970	2.7889362	43	9	1904-1993	0.56	M-v	0	Goffin	30779	(531)
(565)	10.88	0.15	19980706	211.01544	290.58847	226.14440	10.98017	0.1275034	2.4457830	86	27	1905-1997	0.55	M-v	0	Goffin	31415	(565)
(581)	9.4	0.15	19980706	334.36239	29.60742	102.85290	21.86434	0.0248634	3.2136817	47	21	1907-1997	0.54	M-v	0	Goffin	26915	(581)
(587)	12.7	0.15	19980706	311.57484	188.80466	324.75301	24.99614	0.1674505	2.3345832	42	13	1906-1993	0.56	M-v	0	Goffin	26915	(587)
(608)	10.6	0.15	19980706	163.60441	70.70673	294.23695	9.38088	0.1162203	3.0275348	94	20	1906-1998	0.56	M-v	0	Goffin	26915	(608)
(655)	9.6	0.15	19980706	185.02464	282.43605	130.30405	6.49694	0.0899080	2.9873327	96	32	1907-1998	0.56	M-v	0	Goffin	26916	(655)
(685)	11.8	0.15	19980706	219.01425	80.24168	235.51941	3.64400	0.1959369	2.2364620	126	19	1909-1998	0.54	M-v	0	Goffin	25536	(685)
(724)	13.2	0.15	19980706	183.79921	205.04422	204.36926	11.71198	0.2483868	2.4556795	50	11	1911-1998	0.54	M-v	0	Goffin	32042	(724)
(737)	8.81	0.15	19980706	266.08252	133.92663	185.10660	12.36306	0.2406138	2.5933990	256	41	1914-1998	0.55	M-v	0	Goffin	31271	(737)
(755)	9.81	0.15	19980706	340.78723	42.88893	177.48470	3.23301	0.1517121	3.1683611	189	36	1908-1998	0.54	M-v	0	Goffin	30090	(755)
(819)	11.9	0.15	19980706	346.63267	305.95184	333.42060	4.90053	0.1410718	2.1974890	108	24	1904-1994	0.55	M-v	0	Goffin	27709	(819)
(831)	12.8	0.15	19980706	274.59884	224.71093	178.25009	4.83322	0.1463263	2.2120454	44	11	1971-1998	0.82	M-v	1	Bowell	26918	(831)
(854)	12.1	0.15	19980706	145.15363	83.02259	190.99470	6.08763	0.1753084	2.3670531	74	20	1942-1997	0.54	M-v	0	Goffin	31580	(854)
(887)	13.76	-0.12	19980706	77.41858	350.05461	110.71673	9.30328	0.5627235	2.4854985	420	21	1918-1998	0.56	M-v	0	Goffin	28882	(887)
(905)	11.59	0.15	19980706	68.93572	342.77463	37.32430	5.32828	0.1529821	2.2158734	100	28	1918-1997	0.56	M-v	0	Goffin	31580	(905)
(973)	9.6	0.15	19980706	130.52000	91.80782	348.74618	15.79017	0.1065194	3.2166324	112	29	1922-1998	0.56	M-v	0	Goffin	26919	(973)
(982)	9.9	0.15	19980706	6.62478	352.12357	299.57870	13.62030	0.2278723	3.0758023	70	18	1933-1998	0.79	M-v	1	Williams	28611	(982)
(1036)	9.45	0.30	19980706	349.71579	132.30528	215.78893	26.64455	0.5387967	2.6583768	1299	46	1924-1998	0.55	M-v	0	Goffin	26920	(1036)
(1237)	10.7	0.15	19980706	334.77636	306.43057	58.05306	9.71850	0.0785693	2.6136403	67	20	1931-1998	0.99	M-v	1	Williams	29653	(1237)
(1290)	12.5	0.15	19980706	260.69952	78.73493	307.63484	5.59858	0.1536672	2.3656082	63	11	1933-1998	0.92	M-v	1	Williams	31781	(1290)
(1324)	12.7	0.15	19980706	292.44067	329.43988	304.65457	4.51584	0.1628616	2.1852559	70	14	1934-1998	0.86	M-v	1	Williams	31272	(1324)
(1515)	13.1	0.15	19980706	355.72275	350.04328	49.48546	10.65279	0.2328896	2.5720389	60	6	1907-1996	0.53	M-v	1	Goffin	30893	(1515)
(1559)	11.9	0.15	19980706	54.77815	214.74884	328.38132	3.20712	0.1352179	2.3895514	79	18	1935-1998	0.73	M-v	0	Bowell	30893	(1559)
(1580)	14.52	0.00	19980706	293.45401	159.30290	62.37891	52.11237	0.4899252	2.1947742	158	13	1950-1997	0.56	M-v	0	Goffin	22698	(1580)
(1584)	10.67	0.15	19980706	177.01431	187.75566	305.58078	26.67261	0.1947653	2.3759262	119	13	1927-1998	0.95	M-v	0	Bowell	22698	(1584)
(1589)	12.0	0.15	19980706	233.22760	289.27077	90.58320	5.25944	0.0929922	2.4166245	115	21	1924-1998	0.86	M-v	1	Bowell	31782	(1589)
(1627)	13.2	0.60	19980706	36.61756	167.48978	133.26783	8.44102	0.3967619	1.8634434	380	17	1929-1997	0.54	M-v	0	Goffin	30893	(1627)
(1646)	11.82	0.15	19980706	218.19534	279.81215	120.18598	8.38733	0.1193645	2.3596898	77	19	1937-1998	0.54	M-v	0	Goffin	30090	(1646)
(1685)	14.23	0.15	19980706	38.24263	126.92138	274.42323	9.37736	0.4358307	1.3670097	259	21	1948-1997	0.55	M-v	0	Goffin	22698	(1685)
(1726)	12.1	0.15	19980706	359.85696	68.57970	231.41716	3.47473	0.0420497	2.7872062	81	18	1924-1998	0.95	M-v	1	Williams	31782	(1726)
(1745)	12.0	0.15	19980706	260.65771	336.44312	78.90602	3.25773	0.0576992	2.8456930	59	18	1941-1998	0.93	M-v	1	Bowell	30686	(1745)
(1822)	13.6	0.15	19980706	47.36595	29.95826	221.54709	0.95049	0.1521798	2.1706148	80	17	1950-1998	0.87	M-v	1	Bowell	30288	(1822)
(1862)	16.25	0.09	19980706	347.15269	285.67582	35.90531	6.35633	0.5600491	1.4711693	248	12	1930-1998	0.54	M-v	0	Goffin	28613	(1862)
(1863)	15.54	0.15	19980706	268.66422	266.94592	347.51540	18.42223	0.6057132	2.2606563	88	11	1948-1996	0.56	M-v	0	Goffin	32044	(1863)
(1864)	14.85	0.15	19980706	76.13129	325.46682	6.77270	22.18278	0.6148280	1.4610147	107	12	1971-1997	0.53	M-v	0	Goffin	26739	(1864)
(1865)	16.84	0.15	19980706	178.34886	325.13290	213.03651	16.09032	0.4670001	1.0801784	90	10	1971-1992	0.54	M-v	0	Goffin	30288	(1865)
(1866)	13.0	0.15	19980706	318.19115	292.99524	63.67811	41.16916	0.5392080	1.8932770	267	18	1964-1998	0.54	M-v	0	Goffin	25537	(1866)
(1910)	10.7	0.15	19980706	179.97675	322.65150	201.23715	10.13308	0.0434186	3.0546385	58	17	1916-1996	0.56	M-v	0	Goffin	23536	(1910)
(1917)	13.9	0.15	19980706	273.94040	194.31347	188.44181	23.94414	0.5043423	2.1500698	136	13	1954-1998	0.54	M-v	0	Goffin	30780	(1917)
(1936)	11.1	0.15	19980706	155.71356	254.33997	265.64269	10.23074	0.1387076	2.6760253	46	12	1951-1998	0.90	M-v	1	Bowell	32044	(1936)
(1943)	15.75	0.15	19980706	258.78046	338.14720	246.45009	8.70244	0.2558912	1.4300400	273	11	1973-1997	0.53	M-v	0	Goffin	32045	(1943)
(2026)	12.8	0.15	19980706	134.87188	209.29574	311.70018	2.46628	0.1168239	2.4462528	48	11	1951-1998	0.84	M-v	1	Bowell	31581	(2026)
(2061)	16.56	0.15	19980706	27.94951	156.35834	207.80475	3.76560	0.5370692	2.2648276	56	6	1960-1997	0.54	M-v	0	Goffin	30686	(2061)
(2265)	13.1	0.15	19980706	182.72298	339.10119	133.54975	19.81599	0.2103547	2.6163436	44	7	1950-1998	0.69	M-v	1	Williams	26560	(2265)
(2266)	10.80	0.15	19980706	273.70219	207.47120	229.80823	13.21455	0.1900980	3.3946343	36	13	1943-1998	0.83	M-v	1	Bowell	18118	(2266)
(2329)	14.9	0.15	19980706	310.24705	145.83405	169.50528	24.42901	0.6588592	2.4020676	92	10	1976-1998	0.53	M-v	0	Goffin	32046	(2329)
(2499)	12.1	0.15	19980706	43.03079	48.87724	192.41576	0.72708	0.1175813	3.1053756	53	16	1950-1998	0.93	M-v	1	Bowell	30470	(2499)
(2512)	12.7	0.15	19980706	219.15309	14.43879	69.69503	6.38374	0.1214088	2.2435189	43	15	1940-1998	0.84	M-v	1	Bowell	31005	(2512)
(2532)	12.7	0.15	19980706	322.86214	7.83960	345.30053	4.34295	0.1714069	2.3722659	27	9	1953-1998	0.77	M-v	1	Bowell	32046	(2532)
(2604)	12.9	0.15	19980706	26.90450	134.88079	123.19215	14.85215	0.2315916	2.3882607	71	7	1972-1998	0.49	M-v	0	Bowell	17965	(2604)
(2683)	11.8	0.15	19980706	306.64709	18.01621	342.86373	1.49470	0.0618313	2.9147377	46	17	1929-1998	0.93	M-v	1	Bowell	31785	(2683)

(2879)	11.7	0.15	19980706	137.96894	24.11966	149.65642	10.74085	0.1433212	2.7696057	29	10	1932-1998	0.87	M-v	1	Bowell	31785	(2879)
(3014)	13.0	0.15	19980706	89.42028	179.90720	140.82963	0.98378	0.2270299	2.3635962	56	11	1950-1997	0.54	M-v	0	Goffin	30091	(3014)
(3023)	13.6	0.15	19980706	86.87778	343.99950	230.88783	3.98794	0.0844225	2.2162420	25	5	1981-1998	0.81	M-v	1	Bowell	31785	(3023)
(3103)	15.38	0.15	19980706	21.09229	253.80943	129.89673	20.93541	0.3545575	1.4056478	174	8	1982-1997	0.52	M-v	0	Goffin	26399	(3103)
(3151)	12.1	0.15	19980706	78.68469	37.67406	212.61948	19.49537	0.1356055	2.7670728	28	6	1951-1998	0.86	M-v	2	Williams	26925	(3151)
(3288)	15.3	0.15	19980706	216.32157	349.22334	218.79332	5.93432	0.4579487	2.0317559	154	9	1982-1997	0.53	M-v	1	Goffin	30471	(3288)
(3324)	11.7	0.15	19980706	171.54102	178.63264	317.22066	10.77022	0.0264770	2.6991435	35	7	1961-1998	0.95	M-v	1	Bowell	31102	(3324)
(3353)	13.5	0.15	19980706	325.76251	34.51585	245.71897	21.80416	0.0844255	1.8629039	61	6	1980-1998	0.62	M-v	2	Williams	25650	(3353)
(3361)	19.03	0.15	19980706	113.06123	301.58689	189.74687	2.68274	0.3227594	1.2092184	87	7	1982-1998	0.53	M-v	0	Goffin	27455	(3361)
(3400)	14.1	0.15	19980706	181.21354	253.51214	254.46877	20.22519	0.0985959	1.9353112	25	6	1981-1998	0.86	M-v	2	Williams	31138	(3400)
(3551)	16.75	0.15	19980706	317.86882	193.10861	173.97787	9.50626	0.4871314	2.0923662	155	7	1983-1998	0.54	M-v	0	Goffin	32049	(3551)
(3728)	11.5	0.15	19980706	118.20255	280.41289	167.70816	22.56425	0.2120795	2.6512589	48	8	1950-1998	0.84	M-v	1	Bowell	26564	(3728)
(3737)	13.0	0.15	19980706	334.03131	85.23733	288.52053	20.16597	0.3943675	2.4074472	57	7	1983-1998	0.75	M-v	1	Bowell	26172	(3737)
(3786)	11.2	0.15	19980706	57.61923	356.75813	262.12120	14.27948	0.0776689	2.5518606	28	7	1931-1998	0.80	M-v	1	Bowell	30291	(3786)
(3918)	13.3	0.15	19980706	322.89653	202.62224	160.83601	7.50927	0.2089061	2.2441102	45	8	1931-1998	0.86	M-v	1	Bowell	30092	(3918)
(3979)	11.7	0.15	19980706	215.06095	102.53295	344.54891	3.07806	0.0421861	3.1021182	55	12	1974-1998	0.88	M-v	1	Bowell	31962	(3979)
(3981)	11.9	0.15	19980706	248.75484	349.14101	79.95400	2.46558	0.1814775	3.1546599	53	13	1965-1998	0.84	M-v	1	Bowell	32050	(3981)
(3982)	13.2	0.15	19980706	358.76204	50.54475	252.19344	5.29969	0.2191763	2.2587959	41	10	1930-1998	0.65	M-v	0	Bowell	32050	(3982)
(3986)	12.9	0.15	19980706	217.44042	163.44087	281.88088	4.94853	0.1336484	2.2533582	14	7	1929-1998	0.85	M-v	1	Bowell	32050	(3986)
(4021)	13.8	0.15	19980706	293.81913	326.68525	49.74793	3.54702	0.1701954	2.2820348	36	7	1957-1998	0.69	M-v	1	Williams	30897	(4021)
(4038)	13.3	0.15	19980706	312.10577	46.35395	334.51568	6.00447	0.1309298	2.3663675	39	7	1962-1998	0.84	M-v	1	Williams	31383	(4038)
(4044)	11.8	0.15	19980706	355.01292	253.01852	94.83149	10.67731	0.0944029	3.0419215	26	6	1977-1998	0.86	M-v	2	Williams	27455	(4044)
(4183)	14.4	0.15	19980706	26.30532	235.15993	295.90385	6.76535	0.6375500	1.9805541	147	9	1986-1998	0.69	M-v	2	Williams	28888	(4183)
(4295)	13.4	0.15	19980706	317.70127	28.71478	316.21414	2.34945	0.1581211	2.4496545	22	6	1960-1998	0.80	M-v	1	Bowell	31276	(4295)
(4347)	11.8	0.15	19980706	80.00237	121.20813	87.52388	0.56108	0.0603485	3.0528485	55	11	1978-1998	0.87	M-v	1	Bowell	30452	(4347)
(4453)	11.9	0.15	19980706	309.12198	74.10556	336.18569	9.36741	0.1094807	2.9913860	30	7	1959-1998	0.82	M-v	2	Williams	30092	(4453)
(4478)	13.9	0.15	19980706	22.21863	4.56053	267.29668	3.27968	0.1341627	2.2483052	66	9	1978-1998	0.76	M-v	1	Bowell	31238	(4478)
(4727)	12.8	0.15	19980706	302.45177	228.41234	133.47016	3.19794	0.0955840	2.8956423	58	8	1979-1998	0.98	M-v	1	Bowell	25220	(4727)
(4794)	14.0	0.15	19980706	143.50610	353.04219	174.23166	5.39611	0.1153777	2.2725480	30	7	1971-1998	0.78	M-v	1	Bowell	30900	(4794)
(4809)	13.5	0.15	19980706	349.24472	173.20547	169.42546	13.69574	0.2514601	2.5659791	21	5	1928-1998	0.67	M-v	2	Williams	28591	(4809)
(4984)	15.0	0.15	19980706	8.74603	66.04952	257.42773	1.97627	0.2095607	2.2537547	37	6	1951-1998	0.83	M-v	2	Williams	31420	(4984)
(5035)	12.0	0.15	19980706	160.00684	52.63624	52.08311	13.52070	0.1554397	2.6090659	32	7	1978-1998	0.56	M-v	1	Williams	31141	(5035)
(5079)	12.6	0.15	19980706	166.36463	245.39502	269.58004	10.74879	0.2070075	2.6422486	42	5	1975-1998	0.59	M-v	2	Williams	30783	(5079)
(5113)	12.6	0.15	19980706	121.17231	217.51243	320.01659	31.65062	0.2253118	2.6648387	22	4	1988-1998	0.75	M-v	1	Bowell	31728	(5113)
(5120)	9.5	0.15	19980706	334.79396	22.27100	295.90099	24.96697	0.1109073	5.2900866	35	7	1988-1998	0.79	M-v	1	Williams	31968	(5120)
(5210)	14.4	0.15	19980706	218.83464	74.70607	0.63354	2.14828	0.1498961	2.4384330	48	8	1970-1998	0.81	M-v	1	Williams	26405	(5210)
(5377)	13.6	0.15	19980706	98.79144	198.96073	337.59177	3.03108	0.0619067	2.1868907	54	8	1978-1998	0.80	M-v	1	Williams	26407	(5377)
(5472)	14.0	0.15	19980706	317.74220	324.76446	19.57160	1.54661	0.1074441	2.2732465	78	9	1971-1998	0.73	M-v	1	Bowell	30082	(5472)
(5501)	13.2	0.15	19980706	109.11655	311.16636	233.48972	4.27593	0.1368617	2.4308610	43	6	1982-1998	0.68	M-v	1	Bowell	29665	(5501)
(5516)	12.9	0.15	19980706	98.58233	35.87061	160.71768	13.03350	0.1702105	2.5834518	48	6	1989-1998	0.84	M-v	1	Bowell	29946	(5516)
(5537)	13.5	0.15	19980706	320.32113	4.98475	339.86823	5.95125	0.1651704	2.2759555	60	7	1964-1998	0.65	M-v	1	Williams	26749	(5537)
(5554)	13.8	0.15	19980706	278.68883	73.12077	312.12206	7.72539	0.1978064	2.2430378	38	8	1975-1998	0.74	M-v	1	Williams	26928	(5554)
(5672)	13.0	0.15	19980706	116.30676	351.29464	171.91327	10.21940	0.0522288	2.4097587	66	7	1956-1998	0.66	M-v	1	Williams	27115	(5672)
(5729)	12.3	0.15	19980706	272.36769	203.54873	203.89715	10.24915	0.1013421	3.0657850	54	7	1988-1998	0.83	M-v	1	Bowell	27561	(5729)
(5844)	14.0	0.15	19980706	339.24460	93.81650	235.50434	2.23303	0.1242717	2.1177743	47	7	1976-1998	0.84	M-v	1	Bowell	30902	(5844)
(6022)	13.9	0.15	19980706	218.66755	2.64916	74.60261	4.62540	0.0569535	2.2357314	61	6	1978-1998	0.78	M-v	1	Williams	30279	(6022)
(6046)	13.8	0.15	19980706	34.04606	93.23481	200.80160	6.93051	0.1465520	2.3001646	38	5	1955-1998	0.90	M-v	1	Williams	31144	(6046)
(6134)	13.3	0.15	19980706	30.15177	90.45457	183.91174	13.10287	0.1467931	2.5586329	31	6	1989-1998	0.67	M-v	1	Bowell	28601	(6134)
(6346)	11.7	0.15	19980706	350.50855	233.76817	120.15715	7.37994	0.1388669	3.1056621	41	6	1984-1998	0.80	M-v	1	Williams	29667	(6346)
(6350)	11.6	0.15	19980706	303.48346	50.60940	336.55746	11.47238	0.1131794	3.1123881	26	5	1960-1998	0.69	M-v	1	Williams	29633	(6350)
(6460)	14.1	0.15	19980706	170.54673	180.86521	299.28173	3.23045	0.1068311	2.2574415	65	5	1985-1998	0.71	M-v	1	Williams	31794	(6460)
(6637)	13.3	0.15	19980706	173.50306	219.88200	251.23552	4.67356	0.0539380	2.4047344	55	6	1988-1998	0.88	M-v	1	Williams	29929	(6637)
(6682)	14.3	0.15	19980706	265.55666	50.29937	359.16424	5.90395	0.2314864	2.3625307	43	6	1953-1998	0.84	M-v	2	Williams	30672	(6682)

(6689)	15.2	0.15	19980706	14.94610	77.32965	199.06855	4.41659	0.1720446	2.2124450	46	6	1981–1998	0.73	M-v	1	Bowell	30293	(6689)
(6695)	13.1	0.15	19980706	236.92580	267.03911	139.49230	15.74231	0.2053250	2.6054889	60	5	1986–1998	0.82	M-v	1	Williams	29931	(6695)
(6708)	12.8	0.15	19980706	344.41258	193.67383	116.08791	12.09798	0.1822867	2.4447872	64	5	1979–1998	0.66	M-v	1	Williams	29948	(6708)
(6711)	13.1	0.15	19980706	121.12070	345.50917	191.66388	14.73189	0.1203200	2.5642229	43	7	1989–1998	0.76	M-v	1	Bowell	30767	(6711)
(6729)	12.5	0.15	19980706	192.07528	68.92203	16.74522	13.99876	0.1742297	2.5964519	43	5	1972–1998	0.68	M-v	2	Williams	30282	(6729)
(6748)	12.9	0.15	19980706	5.95488	192.44427	80.77907	4.10639	0.1581086	2.4711676	51	6	1978–1998	0.68	M-v	1	Williams	30788	(6748)
(6756)	14.2	0.15	19980706	57.60609	303.73948	253.58924	3.63424	0.1858683	2.6779205	34	6	1971–1998	0.77	M-v	1	Williams	30474	(6756)
(6800)	13.0	0.15	19980706	287.29988	69.66198	339.66705	8.54364	0.1620973	2.6614792	62	6	1970–1998	0.55	M-v	1	Williams	30284	(6800)
(6806)	13.4	0.15	19980706	240.75862	87.23127	341.03950	4.68474	0.0935175	2.4540251	27	6	1960–1998	0.58	M-v	1	Bowell	30474	(6806)
(6815)	14.2	0.15	19980706	300.13988	126.58428	251.87105	1.56523	0.1904908	2.4319420	44	7	1979–1998	0.65	M-v	1	Bowell	31145	(6815)
(6838)	12.0	0.15	19980706	160.89248	242.55442	248.49232	13.59540	0.1730484	2.6491461	57	6	1962–1998	0.69	M-v	1	Williams	30674	(6838)
(6894)	11.9	0.15	19980706	238.23423	105.91933	296.97972	21.17842	0.0748915	2.6496082	31	5	1990–1998	0.62	M-v	1	Williams	30904	(6894)
(6907)	12.8	0.15	19980706	200.22929	3.07618	91.18394	9.07454	0.1958924	2.7394230	27	5	1990–1998	0.72	M-v	1	Williams	30904	(6907)
(7162)	14.2	0.15	19980706	163.82992	144.57116	222.60403	5.73686	0.1378757	2.3441697	24	5	1953–1998	0.75	M-v	1	Bowell	31423	(7162)
(7478)	14.1	0.15	19980706	328.78237	222.83058	122.11763	3.13822	0.0882839	2.8612084	28	6	1979–1998	0.68	M-v	1	Bowell	31255	(7478)
(7515)	13.6	0.15	19980706	62.04695	72.14049	175.46550	0.18657	0.0160537	2.3740817	36	6	1982–1998	0.66	M-v	1	Bowell	31257	(7515)
(7527)	13.6	0.15	19980706	315.63437	22.69022	326.20876	5.52290	0.1866984	2.2838974	44	6	1974–1998	0.64	M-v	1	Williams	31591	(7527)
(7534)	13.4	0.15	19980706	352.92149	203.67335	98.01877	5.67757	0.2503431	2.2942152	62	6	1988–1998	0.73	M-v	1	Williams	31797	(7534)
(7540)	13.4	0.15	19980706	106.73652	300.46415	216.59349	5.25373	0.0807766	2.4597711	31	8	1970–1998	1.05	M-v	2	Williams	31425	(7540)
(7557)	13.8	0.15	19980706	113.57196	298.83834	188.67161	4.45881	0.2214468	2.4642389	58	7	1978–1998	0.62	M-v	2	Williams	31130	(7557)
(7612)	11.5	0.15	19980706	225.66063	269.90785	154.41984	9.82791	0.0870285	3.1608363	34	7	1966–1998	0.89	M-v	1	Williams	31555	(7612)
(7684)	12.7	0.15	19980706	14.51223	283.05386	341.90098	3.06543	0.0519108	2.7943853	45	5	1983–1998	0.61	M-v	1	Williams	31265	(7684)
(8335)	14.7	0.15	19980706	34.46251	280.11669	328.28471	3.25029	0.1070041	2.2306464	54	5	1984–1998	0.67	M-v	1	Williams	32074	(8335)
(8687)	15.0	0.15	19980706	190.70948	174.47132	202.42305	2.51520	0.0711593	2.3188536	69	5	1978–1998	0.71	M-v	1	Bowell	17974	(8687)
1942 TB	13.0	0.15	19980706	261.11340	221.17621	151.10245	9.38763	0.2754071	2.5446095	41	4	1942–1998	0.77	M-v	4	Williams	32041	1942 TB
1953 TA ₁	14.5	0.15	19980706	334.90584	148.07474	214.85863	5.09098	0.2295940	2.2902483	28	4	1953–1998	0.97	M-v	3	Williams	29939	1953 TA ₁
1955 SF	13.5	0.15	19980706	359.74192	2.91139	335.21885	4.63702	0.1968303	2.2188668	34	6	1955–1998	0.61	M-v	2	Williams	26417	1955 SF
1955 UN ₁	14.0	0.15	19980706	326.74233	328.20933	21.05034	10.84366	0.2627735	2.3518687	40	5	1955–1998	0.53	M-v	1	Williams	29939	1955 UN ₁
1964 VL ₁	13.5	0.15	19980706	258.63510	355.75321	63.22837	5.43812	0.2576906	2.6676038	19	3	1964–1998	0.56	M-v	4	Marsden	30647	1964 VL ₁
1966 CM	13.0	0.15	19980706	197.51576	357.98601	149.73214	14.04228	0.1081069	2.6455423	35	4	1966–1998	0.76	M-v	2	Williams	30468	1966 CM
1971 UT ₁	13.0	0.15	19980706	296.71035	184.12507	171.89148	2.33762	0.2170257	3.1511549	23	8	1954–1998	0.65	M-v	1	Williams	22696	1971 UT ₁
1972 AU	13.0	0.15	19980706	229.17617	10.24629	342.21062	12.53407	0.1711125	2.5963141	45	4	1972–1998	0.56	M-v	2	Williams	32041	1972 AU
1972 PA	11.5	0.15	19980706	352.18746	92.02855	264.39895	8.72547	0.1236030	2.9754745	15	4	1972–1998	0.66	M-v	2	Williams	27301	1972 PA
1973 AW ₃	12.0	0.15	19980706	145.35688	83.23410	65.79502	7.71389	0.0684465	2.7798966	21	9	1973–1998	0.95	M-v	1	Williams	30892	1973 AW ₃
1974 QF	15.0	0.15	19980706	308.06140	109.21208	256.12384	2.29525	0.2111521	2.2833206	28	3	1974–1998	0.62	M-v	3	Williams	26165	1974 QF
1975 SG ₁	15.0	0.15	19980706	105.56112	48.40014	25.64801	10.07809	0.0950628	2.5992302	25	3	1975–1998	0.83	M-v	2	Williams	32041	1975 SG ₁
1975 SC ₂	13.0	0.15	19980706	156.62345	262.69745	191.13680	9.51895	0.0643847	3.4075044	26	3	1975–1998	0.81	M-v	4	Williams	32041	1975 SC ₂
1975 TE	14.5	0.15	19980706	289.43140	325.69552	24.40692	4.34201	0.2172850	2.2438648	27	3	1975–1998	0.86	M-v	4	Williams	32041	1975 TE
1975 YD	13.0	0.15	19980706	211.43042	205.00507	218.07030	12.27890	0.2560666	2.5616015	53	6	1975–1998	0.79	M-v	2	Williams	29652	1975 YD
1976 GG ₃	13.0	0.15	19980706	14.73478	237.96742	39.60155	14.36211	0.1573208	2.6331515	25	5	1973–1998	0.60	M-v	1	Williams	29939	1976 GG ₃
1976 QK ₁	14.5	0.15	19980706	275.58775	123.56371	200.18345	2.44509	0.2015671	2.4430399	46	3	1976–1998	0.71	M-v	4	Williams	31942	1976 QK ₁
1976 UN ₁₄	14.5	0.15	19980706	201.90761	334.91434	53.39421	5.37318	0.0366281	2.2189808	34	3	1976–1998	0.48	M-v	4	Williams	32041	1976 UN ₁₄
1976 UB ₁₆	13.5	0.15	19980706	252.13881	299.04006	37.70713	12.20073	0.1791740	2.8136968	35	3	1976–1998	0.75	M-v	3	Williams	32041	1976 UB ₁₆
1976 YG ₁	13.0	0.15	19980706	79.69778	165.27537	54.24215	7.03174	0.0373725	2.4531600	24	7	1958–1998	0.75	M-v	1	Williams	29652	1976 YG ₁
1977 DD ₁	13.5	0.15	19980706	314.00438	252.25885	142.46975	5.81394	0.1061656	2.1919960	27	8	1951–1998	0.82	M-v	2	Williams	27930	1977 DD ₁
1977 DL ₄	14.5	0.15	19980706	29.02308	213.28898	356.38991	4.46619	0.2358233	2.5705464	34	3	1977–1998	0.87	M-v	4	Williams	32041	1977 DL ₄
1977 EU ₁	14.0	0.15	19980706	20.14284	15.32711	155.21213	2.01619	0.1045270	2.6211385	41	3	1977–1998	0.68	M-v	4	Williams	32041	1977 EU ₁
1977 RL ₇	14.0	0.15	19980706	271.91815	194.95509	194.04432	13.33072	0.2428593	2.6609035	35	4	1977–1998	0.93	M-v	2	Williams	32041	1977 RL ₇
1977 TD ₁	13.5	0.15	19980706	288.42954	193.59030	208.69149	12.62784	0.1651210	2.6375171	21	4	1977–1998	0.55	M-v	2	Williams	24910	1977 TD ₁
1978 NC	14.0	0.15	19980706	312.05080	190.85099	114.67495	27.57097	0.1961116	2.5597529	15	4	1978–1998	0.66	M-v	2	Williams	26187	1978 NC
1978 NF	14.5	0.15	19980706	319.54537	193.99932	111.82164	14.35974	0.1647957	2.5523387	37	2	1978–1998	0.69	M-v	4	Williams	31943	1978 NF
1978 RU	14.5	0.15	19980706	338.98661	273.14235	12.58270	4.20180	0.2519466	2.5682083	35	5	1978–1998	0.83	M-v	2	Williams	32041	1978 RU
1978 RX ₁	14.5	0.15	19980706	330.62590	220.79566	137.78248	3.96892	0.2070900	2.2372412	12	3	1978–1998	0.86	M-v	4	Williams	22429	1978 RX ₁

1978 SE ₁	14.0	0.15	19980706	337.38583	273.62056	84.02198	7.50681	0.1969983	2.5254526	32	7	1954–1998	0.86	M-v	2	Williams	30090	1978 SE ₁
1978 SH ₃	14.0	0.15	19980706	335.92294	159.75628	213.80400	3.94212	0.1737716	2.2251746	12	3	1978–1998	1.25	M-v	4	Williams	21964	1978 SH ₃
1978 SE ₅	13.5	0.15	19980706	327.83390	144.93490	204.36950	8.97662	0.0604265	2.5558676	24	6	1978–1998	0.87	M-v	4	Williams	29939	1978 SE ₅
1978 SF ₅	15.0	0.15	19980706	294.71330	307.81161	32.34925	6.49009	0.1983272	2.2761847	17	2	1978–1998	0.81	M-v	4	Williams	31943	1978 SF ₅
1978 TP ₂	14.5	0.15	19980706	199.16701	246.78122	160.08613	4.30331	0.1531769	2.3135417	45	4	1953–1998	0.90	M-v	3	Williams	32041	1978 TP ₂
1978 UL ₄	13.5	0.15	19980706	219.39070	172.35316	216.68732	12.89399	0.1982566	2.6271385	28	3	1978–1998	0.84	M-v	4	Williams	32041	1978 UL ₄
1978 VP ₁	13.5	0.15	19980706	206.30412	171.90990	244.39120	5.63108	0.1364409	3.1085289	15	3	1978–1998	0.60	M-v	4	Marsden	29652	1978 VP ₁
1978 VH ₄	15.0	0.15	19980706	80.88163	259.06222	229.47276	1.58328	0.1450863	2.3743501	41	2	1978–1998	0.78	M-v	5	Williams	31943	1978 VH ₄
1978 VF ₅	15.0	0.15	19980706	86.30814	65.82656	67.15448	7.37215	0.0756085	2.3621605	20	2	1978–1998	0.64	M-v	5	Williams	31944	1978 VF ₅
1979 KO ₁	14.5	0.15	19980706	344.29008	5.33625	268.07484	7.26399	0.2258925	2.4393941	24	3	1979–1998	0.91	M-v	3	Williams	32042	1979 KO ₁
1979 MP ₁	15.0	0.15	19980706	327.21390	164.45707	166.06665	1.68111	0.1206494	2.4367629	32	4	1978–1998	0.81	M-v	1	Marsden	26418	1979 MP ₁
1979 MM ₃	14.0	0.15	19980706	261.72019	254.53105	120.06887	17.69403	0.1158202	2.8648893	21	3	1979–1998	0.63	M-v	4	Williams	30867	1979 MM ₃
1979 MM ₄	16.0	0.15	19980706	329.80596	55.26149	202.76413	2.79850	0.1671965	2.1939669	34	3	1979–1998	0.80	M-v	4	Williams	31944	1979 MM ₄
1979 MV ₈	16.5	0.15	19980706	7.88809	140.42169	148.86842	5.77850	0.1732564	2.4310862	14	3	1979–1998	0.71	M-v	4	Williams	29092	1979 MV ₈
1979 QM ₁	13.5	0.15	19980706	306.53953	145.56805	193.03512	1.01833	0.1197816	2.8708679	27	5	1979–1998	0.78	M-v	1	Williams	29607	1979 QM ₁
1980 KE	14.0	0.15	19980706	273.24509	53.67777	257.14975	8.02677	0.2179413	2.3874272	46	3	1980–1998	0.81	M-v	3	Williams	32042	1980 KE
1980 RL ₂	14.5	0.15	19980706	311.72047	8.21179	311.19375	1.73435	0.2119301	2.3984943	30	3	1980–1998	0.74	M-v	3	Williams	32042	1980 RL ₂
1980 VZ ₂	15.5	0.15	19980706	325.12491	112.37152	260.89903	3.58678	0.2436645	2.3641870	14	4	1969–1998	0.42	M-v	2	Williams	26737	1980 VZ ₂
1981 DG ₂	13.5	0.15	19980706	316.94448	107.71541	220.97153	10.09357	0.1722415	3.0473522	25	4	1981–1998	0.91	M-v	1	Williams	29653	1981 DG ₂
1981 EP ₁	13.0	0.15	19980706	38.78711	161.90873	358.48735	11.56358	0.1728156	3.1438765	73	3	1981–1998	0.69	M-v	2	Williams	32042	1981 EP ₁
1981 EA ₃	16.0	0.15	19980706	348.31373	352.24659	275.93854	5.76421	0.0872713	2.3208503	20	3	1981–1998	0.78	M-v	5	Williams	31944	1981 EA ₃
1981 EJ ₄	13.5	0.15	19980706	208.10888	166.51989	215.54772	10.05805	0.0339475	3.1147065	31	2	1981–1998	0.88	M-v	4	Williams	31945	1981 EJ ₄
1981 EO ₄	14.5	0.15	19980706	315.19595	56.69001	293.49189	9.50258	0.1190244	2.9918020	27	3	1981–1998	0.81	M-v	4	Williams	22696	1981 EO ₄
1981 EJ ₅	14.5	0.15	19980706	18.32236	9.71479	287.25511	4.94386	0.2257218	2.1980552	29	4	1975–1998	0.90	M-v	2	Williams	22074	1981 EJ ₅
1981 ET ₅	14.5	0.15	19980706	246.23549	143.44612	213.26462	10.79754	0.0539047	2.5754031	22	2	1981–1998	0.85	M-v	4	Williams	31945	1981 ET ₅
1981 EW ₅	14.0	0.15	19980706	196.92597	189.38684	223.84670	12.62070	0.1505770	2.5520808	30	2	1981–1998	0.83	M-v	4	Williams	32042	1981 EW ₅
1981 EM ₇	13.5	0.15	19980706	318.33083	73.70581	222.02922	5.80760	0.2061235	2.5869217	45	3	1981–1998	0.68	M-v	3	Williams	31945	1981 EM ₇
1981 EW ₇	15.0	0.15	19980706	342.55581	38.26404	193.71282	11.62886	0.1337247	2.6217106	48	3	1981–1998	0.87	M-v	3	Williams	31945	1981 EW ₇
1981 EK ₉	14.0	0.15	19980706	297.28249	33.77761	289.01053	2.88259	0.0728386	3.0692772	26	4	1981–1998	0.81	M-v	3	Williams	31946	1981 EK ₉
1981 EU ₉	15.0	0.15	19980706	300.57030	87.83546	214.18420	4.49032	0.1833402	2.2491604	68	2	1981–1998	0.80	M-v	4	Williams	32042	1981 EU ₉
1981 EE ₁₁	15.5	0.15	19980706	346.78524	316.02100	320.22076	2.90741	0.1573055	2.2329404	39	4	1979–1998	0.79	M-v	2	Williams	32042	1981 EE ₁₁
1981 EG ₁₂	14.5	0.15	19980706	31.66575	7.03154	220.54992	7.29698	0.1438076	2.5732786	32	3	1981–1998	1.09	M-v	4	Williams	32042	1981 EG ₁₂
1981 EP ₁₂	14.5	0.15	19980706	172.79662	155.59830	259.41102	5.11079	0.0728559	2.2427587	36	4	1981–1998	0.92	M-v	2	Williams	32042	1981 EP ₁₂
1981 ES ₁₂	13.5	0.15	19980706	159.92556	262.42175	203.28391	13.93238	0.1248287	3.0340182	37	4	1981–1998	0.81	M-v	2	Williams	30287	1981 ES ₁₂
1981 EL ₁₃	14.5	0.15	19980706	290.12946	153.90248	201.87782	9.51487	0.1218324	3.0238690	21	4	1981–1998	0.89	M-v	3	Williams	30779	1981 EL ₁₃
1981 EQ ₁₃	15.5	0.15	19980706	22.21666	203.44828	337.57781	12.40220	0.2331471	2.6288987	40	2	1981–1998	0.87	M-v	3	Williams	32042	1981 EQ ₁₃
1981 EV ₁₃	13.5	0.15	19980706	305.80117	69.94210	207.35708	9.97171	0.1678736	3.1787098	54	2	1981–1998	0.74	M-v	4	Williams	32042	1981 EV ₁₃
1981 EB ₁₅	15.5	0.15	19980706	123.16656	215.77550	257.64883	2.58679	0.1386694	2.5724964	23	3	1981–1998	0.85	M-v	4	Williams	32042	1981 EB ₁₅
1981 ED ₁₆	15.5	0.15	19980706	25.98323	290.43703	268.32219	3.58189	0.1447111	2.2559426	38	2	1981–1998	0.64	M-v	4	Williams	32042	1981 ED ₁₆
1981 EP ₁₆	15.0	0.15	19980706	346.85944	90.24221	255.22161	3.98209	0.1769759	2.1720430	26	5	1981–1998	0.73	M-v	2	Williams	30287	1981 EP ₁₆
1981 EL ₁₇	15.0	0.15	19980706	338.79855	43.53729	192.42687	14.09721	0.0774607	2.6211516	37	3	1981–1998	0.77	M-v	3	Williams	32042	1981 EL ₁₇
1981 EM ₁₇	14.0	0.15	19980706	277.54179	153.36809	200.26802	7.40825	0.2417628	2.5533241	63	4	1981–1998	0.70	M-v	3	Williams	32042	1981 EM ₁₇
1981 EN ₁₈	15.0	0.15	19980706	64.04711	310.13926	199.47527	5.47189	0.1156875	3.1341799	31	3	1981–1998	0.86	M-v	4	Williams	31946	1981 EN ₁₈
1981 ET ₁₈	15.5	0.15	19980706	72.22449	138.32276	341.92222	4.03511	0.1716439	2.6161691	44	4	1979–1998	0.89	M-v	2	Williams	32042	1981 ET ₁₈
1981 EH ₁₉	15.5	0.15	19980706	46.43275	201.52345	2.69199	3.43666	0.0927258	2.2294640	40	5	1979–1998	0.77	M-v	2	Williams	32043	1981 EH ₁₉
1981 EK ₂₀	14.5	0.15	19980706	314.07802	265.86579	358.84894	11.30431	0.1659724	2.6242293	50	2	1981–1998	0.86	M-v	5	Williams	32043	1981 EK ₂₀
1981 EB ₂₂	14.5	0.15	19980706	60.61274	42.85900	111.43494	2.19447	0.1282053	3.1336725	29	4	1981–1998	0.65	M-v	2	Williams	31946	1981 EB ₂₂
1981 EH ₂₂	15.0	0.15	19980706	330.05934	44.92965	207.63646	1.99939	0.0878496	2.6113841	45	3	1981–1998	0.93	M-v	4	Williams	32043	1981 EH ₂₂
1981 EZ ₂₂	15.0	0.15	19980706	332.60259	325.57349	355.67870	2.45760	0.1881881	2.2050456	23	6	1972–1998	1.05	M-v	2	Williams	29653	1981 EZ ₂₂
1981 EM ₂₃	14.0	0.15	19980706	140.50316	42.51986	3.38278	9.95852	0.2093205	3.1515769	43	3	1981–1998	1.03	M-v	4	Williams	32043	1981 EM ₂₃
1981 EN ₂₄	15.0	0.15	19980706	116.69910	197.63798	254.86204	1.78221	0.1142474	2.2514009	78	3	1981–1998	0.75	M-v	3	Williams	32043	1981 EN ₂₄
1981 EB ₂₅	13.5	0.15	19980706	8.74040	136.78438	178.88222	11.57559	0.2382465	2.9873662	26	4	1981–1998	1.00	M-v	3	Williams	30893	1981 EB ₂₅
1981 EK ₂₆	14.5	0.15	19980706	15.79653	106.09388	163.46109	2.88234	0.1165963	2.5461053	20	3	1978–1998	0.94	M-v	3	Williams	15880	1981 EK ₂₆

1981 EG ₂₇	15.0	0.15	19980706	91.53330	269.68408	314.79833	2.28744	0.0524747	2.9840706	22	4	1978–1998	0.81	M-v	1	Williams	26899	1981 EG ₂₇
1981 EU ₂₇	16.0	0.15	19980706	330.89704	94.73687	171.47055	6.16140	0.2560344	2.2646837	59	2	1981–1998	0.76	M-v	4	Williams	32043	1981 EU ₂₇
1981 EU ₂₈	15.0	0.15	19980706	308.62709	19.43942	296.96348	4.11158	0.1937975	2.2268650	24	4	1975–1998	0.66	M-v	2	Williams	31947	1981 EU ₂₈
1981 ER ₂₉	14.5	0.15	19980706	65.09066	309.00579	192.97838	13.29815	0.1360808	2.6139555	38	2	1981–1998	0.75	M-v	4	Williams	32043	1981 ER ₂₉
1981 EN ₃₀	13.0	0.15	19980706	260.20661	279.60517	59.12037	1.94555	0.1717026	3.1109408	26	3	1981–1998	0.82	M-v	5	Williams	31947	1981 EN ₃₀
1981 EO ₃₀	14.5	0.15	19980706	340.37167	74.05473	174.98877	12.29504	0.1691319	2.6126630	60	2	1981–1998	0.79	M-v	4	Williams	32043	1981 EO ₃₀
1981 EQ ₃₀	14.5	0.15	19980706	296.46701	316.92788	1.70966	12.66048	0.2640460	2.5908150	23	3	1978–1998	0.99	M-v	4	Williams	31947	1981 EQ ₃₀
1981 EG ₃₁	15.0	0.15	19980706	283.93879	1.99172	328.28937	3.47899	0.1672313	2.5814213	23	3	1981–1998	0.92	M-v	4	Williams	31947	1981 EG ₃₁
1981 EF ₃₅	15.5	0.15	19980706	212.59092	272.69005	165.29626	3.44312	0.0779779	2.5121068	17	5	1981–1998	0.98	M-v	2	Williams	29297	1981 EF ₃₅
1981 EU ₃₈	15.0	0.15	19980706	351.48854	43.33540	204.25789	3.17053	0.1338698	2.2509725	60	2	1981–1998	0.71	M-v	4	Williams	32043	1981 EU ₃₈
1981 EX ₃₈	14.0	0.15	19980706	48.37661	31.44981	272.75787	7.23430	0.1875350	2.4780688	17	6	1954–1998	0.97	M-v	2	Williams	29653	1981 EX ₃₈
1981 EN ₄₂	15.0	0.15	19980706	355.13311	79.98705	207.52057	1.08733	0.1653258	2.2196920	24	4	1981–1998	0.97	M-v	2	Williams	31580	1981 EN ₄₂
1981 ER ₄₅	16.5	0.15	19980706	70.95013	302.72997	192.87212	6.51796	0.1049374	2.2595452	51	2	1981–1998	0.81	M-v	5	Williams	32043	1981 ER ₄₅
1981 EE ₄₇	14.0	0.15	19980706	236.13928	214.15682	162.12461	6.01700	0.2109511	2.5561757	41	4	1981–1998	0.64	M-v	2	Williams	32043	1981 EE ₄₇
1981 RF ₂	12.0	0.15	19980706	12.85247	32.31799	255.23056	14.26401	0.1412452	3.2209600	31	4	1981–1998	0.80	M-v	2	Williams	32043	1981 RF ₂
1981 SE ₉	14.5	0.15	19980706	247.89461	214.34963	114.28378	3.26365	0.2418439	2.3577593	25	3	1981–1998	0.88	M-v	4	Williams	32043	1981 SE ₉
1981 UD ₂	13.0	0.15	19980706	290.84252	163.33597	229.99271	12.43238	0.1550079	2.6877458	33	6	1953–1998	0.72	M-v	1	Williams	30090	1981 UD ₂
1981 US ₂₂	14.5	0.15	19980706	308.62942	288.44384	76.41891	6.53948	0.1538841	2.3002301	24	5	1981–1998	0.39	M-v	1	Williams	29940	1981 US ₂₂
1981 UL ₂₉	14.0	0.15	19980706	277.91879	130.80632	214.43934	14.08535	0.2262939	2.7330253	21	3	1981–1998	0.81	M-v	4	Williams	32043	1981 UL ₂₉
1981 WF ₉	15.0	0.15	19980706	281.53530	141.82237	206.41985	6.23100	0.1351540	2.3377892	34	3	1981–1998	0.75	M-v	4	Williams	32043	1981 WF ₉
1982 BU	13.5	0.15	19980706	170.62217	351.40907	101.94107	27.18157	0.2022910	2.3977079	19	3	1982–1998	0.75	M-v	4	Williams	32043	1982 BU
1982 JD ₂	15.5	0.15	19980706	41.15771	94.11450	107.10293	4.08361	0.0687556	2.1734964	36	2	1982–1998	0.63	M-v	4	Williams	31947	1982 JD ₂
1982 RK	13.5	0.15	19980706	252.66320	290.24926	108.38976	4.86452	0.1411168	2.2117819	38	5	1982–1998	0.83	M-v	2	Williams	30287	1982 RK
1982 RR	14.0	0.15	19980706	284.36033	186.69945	174.11321	14.26729	0.3014891	2.5862892	38	4	1982–1998	0.83	M-v	3	Williams	32043	1982 RR
1982 SC	13.5	0.15	19980706	259.97922	353.40396	348.61146	9.89078	0.2430608	2.6315070	40	3	1982–1998	0.89	M-v	4	Williams	32043	1982 SC
1982 SP ₆	12.5	0.15	19980706	348.96367	36.48092	0.41350	10.28871	0.1138847	3.0105684	29	7	1956–1998	0.74	M-v	2	Williams	31580	1982 SP ₆
1982 TQ ₂	14.0	0.15	19980706	351.36955	21.21281	320.80414	4.88938	0.1500145	2.1845401	22	7	1955–1998	0.79	M-v	2	Williams	26418	1982 TQ ₂
1982 UE ₂	15.0	0.15	19980706	313.88035	324.47451	39.61255	4.34450	0.2844069	2.1958365	40	5	1971–1998	0.87	M-v	2	Williams	29654	1982 UE ₂
1982 UV ₆	13.5	0.15	19980706	148.57570	189.71531	223.09658	7.42169	0.2875798	2.7546790	23	3	1982–1998	1.03	M-v	3	Williams	31948	1982 UV ₆
1982 UR ₁₀	13.5	0.15	19980706	283.44794	13.48499	18.10280	1.73730	0.2060449	3.1771140	24	6	1976–1998	0.99	M-v	1	Marsden	27931	1982 UR ₁₀
1982 VC ₃	14.5	0.15	19980706	308.27314	261.09523	75.73818	5.90186	0.2745934	2.6016045	32	4	1982–1998	0.89	M-v	3	Williams	32043	1982 VC ₃
1982 VY ₃	14.0	0.15	19980706	322.82172	197.85720	67.42750	6.53205	0.1353906	2.2908466	21	2	1982–1998	0.55	M-v	5	Williams	31948	1982 VY ₃
1983 BD	12.0	0.15	19980706	211.61490	258.79850	115.41743	15.18893	0.1556869	2.7631265	75	5	1974–1998	0.71	M-v	2	Williams	32044	1983 BD
1983 CZ ₂	14.0	0.15	19980706	45.38619	192.90090	319.56802	6.48706	0.1755337	2.4098614	51	4	1979–1998	0.79	M-v	2	Williams	32044	1983 CZ ₂
1983 RB ₂	13.5	0.15	19980706	340.82297	180.36170	175.53583	13.39628	0.1211963	2.4114161	25	4	1989–1998	0.85	M-v	2	Williams	26578	1983 RB ₂
1983 RL ₃	15.0	0.15	19980706	214.31382	67.20222	295.15383	3.06704	0.1424923	2.1700803	72	3	1976–1998	0.79	M-v	4	Williams	32044	1983 RL ₃
1983 XN ₁	13.5	0.15	19980706	313.29606	109.60971	313.75399	8.54489	0.0710338	3.0022790	43	5	1954–1998	0.81	M-v	2	Williams	30468	1983 XN ₁
1984 MR	13.5	0.15	19980706	322.28286	184.28744	147.96798	7.69094	0.1510289	2.2992067	39	6	1984–1998	0.87	M-v	1	Marsden	29654	1984 MR
1984 SE ₆	14.0	0.15	19980706	321.53286	318.17005	6.43395	3.28471	0.2037490	2.3489874	45	5	1984–1998	0.84	M-v	2	Williams	26188	1984 SE ₆
1984 UD ₃	14.0	0.15	19980706	292.95145	183.48593	207.83484	6.39035	0.1152318	2.3450996	31	5	1954–1998	0.83	M-v	2	Williams	30468	1984 UD ₃
1985 PC	14.0	0.15	19980706	347.18227	86.61867	184.73538	3.22434	0.1098463	2.2416597	45	2	1985–1998	0.64	M-v	4	Williams	31948	1985 PC
1985 PQ	14.5	0.15	19980706	10.10896	115.88896	153.91073	4.76325	0.1933089	2.2131509	25	4	1985–1998	0.82	M-v	2	Williams	30469	1985 PQ
1985 PS	14.5	0.15	19980706	329.24726	223.24307	149.93335	7.52394	0.3614544	2.6571410	25	5	1955–1998	0.81	M-v	2	Williams	29940	1985 PS
1985 PT	13.5	0.15	19980706	339.33681	201.43615	139.67263	12.89835	0.2012934	2.6643869	20	3	1985–1998	0.76	M-v	3	Williams	23779	1985 PT
1985 RP	14.5	0.15	19980706	223.99770	226.06353	166.92824	8.01031	0.2298223	2.2925975	26	4	1978–1998	0.72	M-v	3	Williams	32044	1985 RP
1985 RQ ₃	14.0	0.15	19980706	344.12407	121.28077	161.21185	10.65266	0.2570801	2.7317067	64	4	1984–1998	0.61	M-v	1	Williams	32044	1985 RQ ₃
1985 TO ₃	15.0	0.15	19980706	271.70191	82.68415	276.05071	5.64692	0.1902680	2.2722245	17	3	1985–1998	0.68	M-v	4	Williams	31948	1985 TO ₃
1985 UK ₃	13.5	0.15	19980706	339.06035	265.22389	40.07573	4.60437	0.1556104	2.2510861	12	3	1985–1998	1.02	M-v	4	Williams	30288	1985 UK ₃
1985 VE	14.0	0.15	19980706	117.87319	340.82314	164.63839	4.83269	0.1021254	2.3256611	21	7	1985–1998	0.95	M-v	2	Williams	29655	1985 VE
1985 VF ₁	14.5	0.15	19980706	157.78159	151.59907	272.19358	1.21958	0.2146346	2.3587491	47	4	1985–1998	0.76	M-v	2	Williams	32044	1985 VF ₁
1986 AT ₂	12.5	0.15	19980706	117.08132	291.13448	147.98170	19.19333	0.1500889	3.1682483	52	4	1986–1998	0.59	M-v	3	Williams	32044	1986 AT ₂
1986 CB	13.5	0.15	19980706	208.24566	289.79910	131.91457	22.47643	0.3522220	2.3444831	28	6	1986–1998	1.01	M-v	2	Williams	30288	1986 CB
1986 EP ₅	13.0	0.15	19980706	342.71915	115.27938	165.11774	2.13946	0.1481531	3.1928042	48	5	1982–1998	0.77	M-v	1	Williams	32044	1986 EP ₅

1986 PX	15.5	0.15	19980706	295.60213	152.59581	195.64978	2.75533	0.1783767	2.1148123	43	7	1980–1998	0.80	M-v	2	Williams	32044	1986 PX
1986 QN	14.0	0.15	19980706	278.16819	239.60204	155.46664	4.73295	0.2471573	2.5545464	69	5	1951–1998	0.70	M-v	3	Williams	27727	1986 QN
1986 QZ	14.0	0.15	19980706	214.79222	230.47727	119.12923	3.97747	0.1895922	2.2044855	65	5	1986–1998	0.63	M-v	2	Williams	32044	1986 QZ
1986 QF ₁	14.5	0.15	19980706	176.87757	15.19580	9.47361	5.27014	0.1389903	2.2158741	95	2	1986–1998	0.59	M-v	5	Williams	32044	1986 QF ₁
1986 QQ ₁	14.5	0.15	19980706	278.86794	20.36448	27.88947	2.81829	0.2156899	2.5403200	52	4	1974–1998	0.60	M-v	3	Williams	30090	1986 QQ ₁
1986 QR ₂	14.0	0.15	19980706	270.14912	213.33251	145.56895	13.03664	0.2947108	2.6231244	41	3	1986–1998	0.71	M-v	3	Williams	31948	1986 QR ₂
1986 QU ₂	13.5	0.15	19980706	337.12212	198.13928	21.61529	3.62807	0.0343005	2.7264209	68	3	1986–1998	0.53	M-v	4	Williams	32044	1986 QU ₂
1986 QZ ₂	13.0	0.15	19980706	20.35722	247.39366	11.12598	9.66592	0.1628305	2.5712340	47	9	1953–1998	0.56	M-v	1	Williams	29655	1986 QZ ₂
1986 RP ₂	13.5	0.15	19980706	295.44738	208.72255	144.61907	12.38171	0.2035622	2.5895692	49	6	1980–1998	0.82	M-v	3	Williams	32044	1986 RP ₂
1986 RW ₅	14.5	0.15	19980706	216.62314	138.83063	218.02396	3.50854	0.1711474	2.2099414	43	4	1986–1998	0.83	M-v	2	Williams	32044	1986 RW ₅
1986 UH ₃	14.5	0.15	19980706	307.18123	72.44233	313.20389	0.70425	0.2388784	2.5689176	54	6	1986–1998	0.84	M-v	2	Marsden	30894	1986 UH ₃
1987 BR ₁	14.5	0.15	19980706	171.57848	172.22121	273.07442	3.69055	0.0950069	2.2497236	50	3	1987–1998	0.71	M-v	4	Williams	32044	1987 BR ₁
1987 BW ₁	15.5	0.15	19980706	118.21196	211.66330	243.56374	3.99289	0.1548989	2.3112080	59	3	1987–1998	0.80	M-v	3	Williams	32044	1987 BW ₁
1987 BZ ₁	13.5	0.15	19980706	284.09131	279.76045	140.33874	14.08207	0.1327964	2.6595096	29	5	1987–1998	0.81	M-v	1	Williams	30090	1987 BZ ₁
1987 DO	15.0	0.15	19980706	47.71458	357.93925	144.01203	2.72672	0.1732724	2.3679038	55	3	1987–1998	0.80	M-v	3	Williams	32044	1987 DO
1987 DD ₆	15.0	0.15	19980706	54.88256	41.69402	155.19255	4.15232	0.0914134	2.3055078	57	3	1987–1998	1.03	M-v	4	Williams	32044	1987 DD ₆
1987 HE	14.5	0.15	19980706	101.56162	13.56613	170.02898	23.43081	0.1999197	2.2927244	20	3	1987–1998	0.96	M-v	4	Williams	27727	1987 HE
1987 KF ₁	15.5	0.15	19980706	348.06844	103.39677	167.16107	11.44703	0.2948893	2.3943762	45	3	1987–1998	0.67	M-v	3	Williams	32044	1987 KF ₁
1987 OA	19.0	0.15	19980706	308.55382	235.42648	180.33372	9.01589	0.5953972	1.4965224	82	4	1987–1998	0.70	M-v	2	Marsden	30469	1987 OA
1987 QE ₇	13.5	0.15	19980706	179.58225	180.41195	191.37971	11.83993	0.1863400	2.6242795	36	2	1987–1998	0.78	M-v	5	Williams	32044	1987 QE ₇
1987 RB ₁	14.0	0.15	19980706	344.07003	121.75887	193.66813	1.33666	0.1948762	3.1718093	37	4	1987–1998	0.76	M-v	1	Williams	29655	1987 RB ₁
1987 RG ₁	13.5	0.15	19980706	310.45954	347.96438	348.83984	1.23070	0.1855049	2.4360385	43	4	1987–1998	0.64	M-v	2	Williams	30446	1987 RG ₁
1987 SQ	12.5	0.15	19980706	301.04277	66.52692	325.45300	3.70255	0.1615016	3.1763068	31	6	1953–1998	0.77	M-v	1	Williams	25079	1987 SQ
1987 SC ₁	14.0	0.15	19980706	188.75047	261.98216	139.70477	5.35332	0.2548728	2.5880557	37	4	1987–1998	0.77	M-v	1	Williams	32044	1987 SC ₁
1987 SE ₃	14.0	0.15	19980706	183.37470	341.24959	93.21389	4.65666	0.1203283	2.5339167	42	5	1975–1998	0.77	M-v	1	Marsden	32044	1987 SE ₃
1987 SJ ₃	14.0	0.15	19980706	319.88754	332.01296	15.12115	24.59814	0.0976949	1.9860303	33	6	1955–1998	0.63	M-v	2	Williams	29941	1987 SJ ₃
1987 SD ₄	13.5	0.15	19980706	0.95683	28.67968	291.61328	7.39873	0.2201989	2.3885105	20	6	1950–1998	0.98	M-v	2	Williams	28315	1987 SD ₄
1987 SC ₆	12.5	0.15	19980706	358.03395	151.70118	162.72980	1.16451	0.1663189	3.1804503	53	7	1987–1998	0.68	M-v	1	Marsden	30288	1987 SC ₆
1987 SS ₁₇	12.5	0.15	19980706	10.26144	327.85676	0.01907	6.95610	0.1688212	3.1475183	38	5	1981–1998	0.61	M-v	1	Williams	27324	1987 SS ₁₇
1987 ST ₁₇	13.5	0.15	19980706	308.59133	142.70799	225.18054	8.77471	0.1550450	2.4298264	21	5	1983–1998	0.89	M-v	2	Williams	23868	1987 ST ₁₇
1988 CY ₃	14.0	0.15	19980706	194.50933	168.57697	224.49622	8.67713	0.1604429	2.7633998	28	3	1981–1998	0.70	M-v	3	Williams	31949	1988 CY ₃
1988 CK ₄	14.0	0.15	19980706	20.13971	345.50721	291.40999	12.03019	0.1541615	2.6872747	32	4	1954–1998	0.77	M-v	2	Williams	32044	1988 CK ₄
1988 CL ₄	14.0	0.15	19980706	114.47569	240.35084	237.34749	7.57850	0.1542099	2.7723033	31	2	1988–1998	0.89	M-v	5	Marsden	31949	1988 CL ₄
1988 CF ₇	13.5	0.15	19980706	293.28187	135.15703	231.07344	7.99423	0.2019288	2.6166602	32	4	1988–1998	0.88	M-v	3	Williams	24117	1988 CF ₇
1988 CG ₇	14.0	0.15	19980706	173.03965	186.16522	223.89701	8.45208	0.1651884	2.7726858	15	3	1988–1998	0.80	M-v	6	Williams	23513	1988 CG ₇
1988 CO ₇	15.0	0.15	19980706	233.89051	288.91802	88.72898	1.06175	0.0669005	2.1204903	30	3	1988–1998	0.80	M-v	5	Williams	29095	1988 CO ₇
1988 GZ	12.0	0.15	19980706	232.52287	258.72811	30.07520	5.66496	0.1189010	3.0998789	17	3	1988–1998	0.72	M-v	4	Williams	31526	1988 GZ
1988 PP ₂	14.5	0.15	19980706	231.15062	11.76469	354.16892	2.47692	0.1711425	2.3819040	32	4	1977–1998	0.75	M-v	2	Williams	31949	1988 PP ₂
1988 PQ ₂	15.5	0.15	19980706	285.17773	244.33906	89.89854	1.69791	0.2310995	2.3278414	22	3	1988–1998	1.01	M-v	5	Williams	31949	1988 PQ ₂
1988 QY	10.5	0.15	19980706	321.41148	93.44251	222.66065	29.77724	0.0679789	5.1147416	31	8	1954–1998	0.81	M-v	1	Williams	30090	1988 QY
1988 RO ₂	13.5	0.15	19980706	302.83913	55.08867	318.77553	9.79719	0.1198529	3.0154249	17	3	1988–1998	0.78	M-v	5	Williams	29941	1988 RO ₂
1988 RY ₂	14.0	0.15	19980706	309.16572	168.23868	189.26375	9.00109	0.1061217	3.0735529	15	4	1988–1998	0.58	M-v	3	Williams	29912	1988 RY ₂
1988 RM ₃	14.0	0.15	19980706	244.94700	354.30135	356.18602	8.58739	0.1451209	2.3833420	35	2	1988–1998	0.70	M-v	5	Williams	32044	1988 RM ₃
1988 RO ₄	13.5	0.15	19980706	270.13140	243.08399	162.10735	11.07651	0.1235288	2.9964681	52	5	1988–1998	0.65	M-v	1	Williams	29656	1988 RO ₄
1988 RZ ₅	14.5	0.15	19980706	253.91142	166.02935	170.80038	3.37004	0.1135667	2.3637024	85	3	1988–1998	0.74	M-v	3	Williams	32044	1988 RZ ₅
1988 RE ₆	14.5	0.15	19980706	189.64146	340.52037	79.88500	1.88648	0.2056731	2.3747456	46	5	1981–1998	0.81	M-v	2	Williams	29656	1988 RE ₆
1988 RK ₉	13.5	0.15	19980706	330.98698	177.20793	145.62253	14.29071	0.1400065	2.9718096	65	4	1988–1998	0.72	M-v	2	Marsden	29133	1988 RK ₉
1988 RX ₁₀	13.5	0.15	19980706	239.77948	324.43231	23.39272	2.54287	0.1400653	3.2388312	21	2	1988–1998	0.66	M-v	4	Williams	31949	1988 RX ₁₀
1988 RX ₁₂	13.0	0.15	19980706	305.04140	167.87030	194.50102	9.80843	0.1095536	3.0114381	27	6	1951–1998	0.89	M-v	1	Williams	30090	1988 RX ₁₂
1988 SH ₂	12.0	0.15	19980706	332.83199	225.30444	109.10936	11.35173	0.1163449	2.9954412	25	5	1986–1998	0.67	M-v	3	Williams	30288	1988 SH ₂
1988 TG ₅	14.0	0.15	19980706	319.44255	165.05986	214.80578	3.10532	0.1567737	2.2464650	20	5	1978–1998	0.72	M-v	2	Williams	25729	1988 TG ₅
1988 VH ₂	14.0	0.15	19980706	238.90426	289.86564	75.51433	9.55911	0.2154787	2.4162771	35	2	1988–1998	0.86	M-v	4	Williams	31949	1988 VH ₂
1988 VL ₂	13.5	0.15	19980706	163.84916	222.37146	236.31386	10.45008	0.0965472	2.4223523	32	4	1986–1998	0.94	M-v	3	Williams	30652	1988 VL ₂

1988 VY ₂	11.5	0.15	19980706	314.00920	280.56833	64.27511	12.41749	0.1021130	3.1610456	21	5	1988–1998	0.99	M-v	2	Williams	30090	1988 VY ₂
1988 VN ₅	14.5	0.15	19980706	164.49540	281.82964	160.82857	2.54816	0.1661322	2.4358140	44	4	1988–1998	0.68	M-v	2	Williams	32045	1988 VN ₅
1988 VM ₉	14.0	0.15	19980706	152.78821	60.42815	27.77778	7.10154	0.1732843	2.4412925	57	6	1969–1998	0.77	M-v	2	Williams	32045	1988 VM ₉
1988 XL	14.0	0.15	19980706	233.76425	120.13739	220.68704	3.05678	0.1318661	2.4878021	55	3	1988–1998	0.66	M-v	5	Williams	32045	1988 XL
1988 XR ₁	13.0	0.15	19980706	224.31882	340.10759	82.19004	7.29053	0.1067060	2.3690709	24	3	1988–1998	0.82	M-v	4	Williams	29912	1988 XR ₁
1989 AG ₇	14.0	0.15	19980706	340.15061	121.82898	134.79022	12.68172	0.1364275	2.6138667	41	3	1989–1998	0.60	M-v	3	Williams	32045	1989 AG ₇
1989 CG ₁	12.5	0.15	19980706	76.69204	246.03896	305.88290	14.01227	0.0884103	2.5618815	28	5	1952–1998	0.62	M-v	1	Williams	29657	1989 CG ₁
1989 CH ₄	13.5	0.15	19980706	136.82251	231.67893	328.41904	2.05205	0.1519428	2.4185053	48	4	1989–1997	0.78	M-v	4	Marsden	30090	1989 CH ₄
1989 GJ ₄	14.0	0.15	19980706	121.11109	285.80629	237.34890	3.74402	0.1159689	2.5530498	36	3	1989–1998	0.70	M-v	5	Marsden	29912	1989 GJ ₄
1989 GN ₄	14.5	0.15	19980706	45.41292	344.99923	252.28193	2.79808	0.1385118	2.5922494	17	3	1989–1998	0.56	M-v	4	Williams	23972	1989 GN ₄
1989 GD ₅	13.0	0.15	19980706	353.04684	272.58779	34.44134	14.85425	0.1261547	2.5871603	36	6	1982–1998	0.78	M-v	2	Williams	30288	1989 GD ₅
1989 OB	16.5	0.15	19980706	352.29563	71.67293	289.76664	7.92006	0.5603530	2.6954200	85	3	1989–1998	0.89	M-v	1	Williams	24737	1989 OB
1989 QH	15.0	0.15	19980706	280.74933	28.70834	306.95769	2.78641	0.1501970	2.1717437	23	2	1989–1998	0.79	M-v	5	Williams	31950	1989 QH
1989 RL	14.5	0.15	19980706	242.10957	155.32112	176.94511	3.09171	0.1813574	2.2222099	33	3	1989–1998	0.90	M-v	4	Williams	32045	1989 RL
1989 SR	12.5	0.15	19980706	249.99054	130.43797	240.15970	8.88425	0.0981362	2.9873642	30	3	1989–1998	0.99	M-v	4	Williams	32045	1989 SR
1989 SZ ₁	15.0	0.15	19980706	347.10937	101.88249	158.89688	4.17566	0.1599163	2.1946134	46	4	1953–1998	0.81	M-v	3	Williams	32045	1989 SZ ₁
1989 SV ₂	13.5	0.15	19980706	54.69790	145.94794	44.20823	10.41714	0.0380139	3.0672123	51	3	1989–1998	0.85	M-v	3	Williams	32045	1989 SV ₂
1989 SY ₂	13.0	0.15	19980706	296.73598	132.62141	127.44918	5.87086	0.1070713	3.2036788	30	2	1989–1998	0.73	M-v	4	Williams	31950	1989 SY ₂
1989 SP ₃	14.5	0.15	19980706	70.45385	298.54430	192.37255	22.09981	0.3187732	2.3655777	37	3	1989–1998	0.91	M-v	3	Williams	32045	1989 SP ₃
1989 SC ₄	13.0	0.15	19980706	72.31683	323.05231	191.96100	21.57371	0.0614979	3.1592671	45	3	1989–1998	0.76	M-v	2	Williams	32045	1989 SC ₄
1989 SA ₁₀	15.0	0.15	19980706	113.93811	75.83054	4.65453	7.65864	0.0804929	2.2968823	45	3	1989–1998	0.65	M-v	2	Williams	32045	1989 SA ₁₀
1989 TP ₇	15.0	0.15	19980706	82.61344	18.84855	140.28295	5.40568	0.0743218	2.2390023	32	3	1984–1998	0.73	M-v	4	Williams	32045	1989 TP ₇
1989 UL	13.0	0.15	19980706	306.51492	189.32675	218.01165	5.43413	0.1392677	2.7796007	28	4	1980–1998	0.96	M-v	3	Williams	22599	1989 UL
1989 UA ₁	14.5	0.15	19980706	249.09248	0.55802	4.44147	5.26895	0.1859923	2.2070134	18	2	1989–1998	0.78	M-v	5	Williams	31950	1989 UA ₁
1989 UU ₅	13.0	0.15	19980706	138.20593	251.64494	199.76486	15.05468	0.0721143	3.1768664	21	3	1989–1998	0.65	M-v	3	Williams	31951	1989 UU ₅
1989 WZ ₁	14.0	0.15	19980706	133.22570	353.03467	57.95939	3.27432	0.1916826	2.3859892	33	2	1989–1998	0.85	M-v	4	Williams	32045	1989 WZ ₁
1989 WU ₂	13.0	0.15	19980706	223.79799	320.51568	84.01308	3.00909	0.1921010	3.0905578	45	8	1978–1998	0.75	M-v	1	Marsden	32045	1989 WU ₂
1989 WC ₃	14.5	0.15	19980706	232.29563	192.03287	241.05740	2.76118	0.0708738	2.1874865	35	6	1953–1998	0.83	M-v	2	Williams	30091	1989 WC ₃
1989 YA ₅	12.5	0.15	19980706	130.94563	233.84214	300.98580	19.69131	0.1420243	3.1234993	22	4	1989–1998	0.76	M-v	1	Williams	27728	1989 YA ₅
1989 YC ₆	15.0	0.15	19980706	233.43018	223.31091	160.34866	5.65485	0.1707679	2.2797625	23	3	1989–1998	0.79	M-v	5	Williams	31951	1989 YC ₆
1990 EC ₁	15.5	0.15	19980706	32.98358	6.11130	204.64079	9.87985	0.1161583	2.4400264	35	3	1990–1998	0.68	M-v	5	Williams	32046	1990 EC ₁
1990 EL ₈	13.5	0.15	19980706	350.08888	290.86223	352.45838	4.21814	0.0364099	2.3817115	24	5	1990–1998	0.66	M-v	1	Williams	29316	1990 EL ₈
1990 FL	14.0	0.15	19980706	72.97988	46.41811	162.00081	24.20296	0.1878694	2.3864209	32	4	1990–1998	0.72	M-v	2	Williams	26189	1990 FL
1990 HE	14.5	0.15	19980706	300.48949	255.79103	35.61596	24.80182	0.1147775	1.9408380	24	2	1990–1998	0.64	M-v	4	Williams	31784	1990 HE
1990 HJ	14.0	0.15	19980706	109.53042	110.72544	50.37351	3.90254	0.1462678	2.3923896	29	5	1968–1998	0.68	M-v	1	Williams	31416	1990 HJ
1990 HY	12.5	0.15	19980706	319.88195	156.99468	88.17391	16.32613	0.0784271	2.5888030	20	2	1990–1998	0.69	M-v	4	Williams	31715	1990 HY
1990 KD	14.5	0.15	19980706	342.64251	164.00536	101.70475	13.76710	0.2509646	2.5442695	38	2	1990–1998	0.65	M-v	4	Williams	32046	1990 KD
1990 KR	14.5	0.15	19980706	345.02351	83.33520	182.07395	11.70316	0.2273894	2.5428648	43	2	1990–1998	0.69	M-v	4	Williams	31951	1990 KR
1990 KD ₁	14.0	0.15	19980706	54.24806	346.39902	186.23824	12.40739	0.0949259	2.5462359	39	2	1990–1998	0.64	M-v	4	Williams	31951	1990 KD ₁
1990 OY ₁	13.5	0.15	19980706	350.05145	209.77014	72.98789	5.80423	0.1701136	2.5983987	31	4	1989–1998	0.76	M-v	2	Williams	32046	1990 OY ₁
1990 OO ₂	12.5	0.15	19980706	314.45371	353.72656	330.36958	15.07782	0.1389811	2.6010206	39	9	1975–1998	0.68	M-v	1	Williams	32046	1990 OO ₂
1990 QR	13.5	0.15	19980706	337.16178	123.44549	169.21235	13.55864	0.1709561	2.6193366	64	4	1990–1998	0.77	M-v	3	Williams	32046	1990 QR
1990 QF ₂	13.5	0.15	19980706	248.05405	182.06097	131.58530	3.10077	0.0466642	2.8795630	52	4	1988–1998	0.73	M-v	2	Williams	32046	1990 QF ₂
1990 QJ ₃	13.0	0.15	19980706	151.30369	71.97852	349.31503	12.62660	0.1543595	2.9039657	28	3	1990–1998	0.72	M-v	3	Williams	31951	1990 QJ ₃
1990 QZ ₅	13.0	0.15	19980706	172.53468	246.05692	159.88886	12.95996	0.1576289	2.8584063	81	3	1988–1998	0.80	M-v	3	Williams	32046	1990 QZ ₅
1990 QO ₆	14.0	0.15	19980706	296.53870	179.22085	157.72858	13.69195	0.1718524	2.6542050	37	3	1977–1998	0.66	M-v	3	Williams	32046	1990 QO ₆
1990 QD ₇	15.5	0.15	19980706	276.27147	171.65929	154.59301	5.20947	0.1590113	2.7368578	22	2	1990–1998	0.73	M-v	5	Williams	31951	1990 QD ₇
1990 QU ₇	13.5	0.15	19980706	109.21692	309.53320	148.05896	2.37629	0.1866457	2.9089064	47	3	1990–1998	0.57	M-v	3	Williams	32046	1990 QU ₇
1990 QX ₈	13.5	0.15	19980706	196.16699	340.76134	17.86616	2.11676	0.0710811	2.8949614	53	3	1990–1998	0.88	M-v	4	Williams	32046	1990 QX ₈
1990 QM ₉	14.5	0.15	19980706	299.48055	281.95567	14.05411	4.44662	0.0545245	2.7464311	34	4	1990–1998	0.81	M-v	2	Williams	32046	1990 QM ₉
1990 QW ₉	14.5	0.15	19980706	357.87360	104.23473	171.19980	11.29252	0.2825916	2.5968468	42	3	1990–1998	0.76	M-v	3	Williams	32046	1990 QW ₉
1990 QB ₁₉	14.5	0.15	19980706	349.94710	10.94167	314.12901	2.96545	0.2652894	2.5495861	13	3	1990–1998	0.73	M-v	3	Marsden	31005	1990 QB ₁₉
1990 RV ₃	15.0	0.15	19980706	335.94446	352.57373	346.80170	3.79711	0.2723545	2.5568254	11	4	1982–1998	0.53	M-v	3	Williams	25426	1990 RV ₃

1990 RD ₅	13.0	0.15	19980706	210.77757	168.46642	241.92414	4.18458	0.0540445	2.7343289	22	3	1990–1998	0.86	M-v	4	Williams	23974	1990 RD ₅
1990 RD ₆	14.5	0.15	19980706	320.91761	320.60162	343.52976	12.38085	0.1684407	2.6390366	30	3	1990–1998	0.77	M-v	4	Williams	29658	1990 RD ₆
1990 RO ₆	14.0	0.15	19980706	240.15076	302.62824	356.03791	1.69954	0.0853704	2.9248234	43	4	1986–1998	0.83	M-v	2	Williams	32046	1990 RO ₆
1990 SZ ₃	13.0	0.15	19980706	265.84116	94.71832	301.78475	11.65553	0.1750718	2.6641014	17	3	1990–1998	0.76	M-v	3	Williams	26560	1990 SZ ₃
1990 SS ₇	13.5	0.15	19980706	130.99208	350.18104	87.79572	3.30908	0.0969210	2.9285539	40	3	1990–1998	0.67	M-v	4	Williams	32046	1990 SS ₇
1990 SS ₈	14.0	0.15	19980706	217.24749	159.97673	163.84431	10.47450	0.0920995	2.9760824	22	3	1990–1998	0.81	M-v	4	Williams	32046	1990 SS ₈
1990 SG ₁₂	15.0	0.15	19980706	320.42127	158.33333	212.75741	3.99706	0.2128376	2.5503428	30	5	1986–1998	0.82	M-v	4	Williams	29913	1990 SG ₁₂
1990 SU ₁₅	14.0	0.15	19980706	284.60089	142.51479	179.14388	12.52291	0.2193550	2.7031320	29	2	1990–1998	0.78	M-v	4	Williams	31952	1990 SU ₁₅
1990 SL ₂₈	13.5	0.15	19980706	331.66855	0.27906	320.99354	1.25066	0.1942230	2.6397984	52	9	1964–1998	0.80	M-v	1	Williams	29658	1990 SL ₂₈
1990 TS ₄	12.5	0.15	19980706	285.05086	297.24212	101.51116	10.00016	0.0642314	2.6360472	19	4	1988–1998	0.86	M-v	1	Williams	28885	1990 TS ₄
1990 TL ₇	14.5	0.15	19980706	151.91545	233.38403	214.08772	1.17766	0.0970445	2.9237812	16	3	1990–1998	0.55	M-v	5	Marsden	26560	1990 TL ₇
1990 TG ₈	13.0	0.15	19980706	107.78547	61.62107	38.52428	17.38008	0.2235293	3.0945836	48	3	1990–1998	0.72	M-v	2	Williams	32046	1990 TG ₈
1990 TW ₁₁	15.0	0.15	19980706	277.11894	65.17243	346.02104	2.44751	0.2409883	2.6120779	26	3	1990–1998	0.68	M-v	4	Williams	24912	1990 TW ₁₁
1990 TV ₁₂	11.0	0.15	19980706	291.30907	110.82262	242.65886	24.04121	0.0923694	5.1974582	29	7	1954–1998	0.95	M-v	1	Williams	30470	1990 TV ₁₂
1990 UD ₃	13.5	0.15	19980706	262.95015	142.17178	228.22492	7.85703	0.2915675	2.7473884	23	4	1981–1998	0.87	M-v	2	Williams	32046	1990 UD ₃
1990 UU ₃	13.5	0.15	19980706	21.36602	99.58950	189.27939	11.89828	0.1701574	2.6344251	24	5	1976–1998	0.54	M-v	1	Williams	30895	1990 UU ₃
1990 UB ₄	14.0	0.15	19980706	235.04845	240.79035	185.87721	10.14700	0.1300643	2.7282211	19	4	1990–1998	0.91	M-v	3	Williams	30091	1990 UB ₄
1990 VU ₃	13.0	0.15	19980706	147.10689	303.64701	144.57614	1.30647	0.1377488	2.9772542	20	4	1990–1998	0.63	M-v	1	Williams	29658	1990 VU ₃
1990 VE ₆	13.5	0.15	19980706	179.06624	202.56639	202.20470	10.50242	0.0891615	3.0187559	21	2	1990–1998	0.59	M-v	5	Williams	31952	1990 VE ₆
1990 VL ₆	10.5	0.15	19980706	301.56088	127.28371	214.78279	18.50144	0.1432092	5.1926874	26	4	1989–1998	0.75	M-v	1	Williams	25080	1990 VL ₆
1990 VZ ₆	13.0	0.15	19980706	116.92327	71.99137	24.29754	8.48162	0.1972556	3.1234664	33	4	1976–1998	0.75	M-v	2	Williams	32046	1990 VZ ₆
1990 VU ₈	13.5	0.15	19980706	303.51856	188.18717	131.19255	9.85679	0.1437099	2.7906404	32	2	1990–1998	0.55	M-v	4	Williams	31952	1990 VU ₈
1990 VH ₁₂	13.0	0.15	19980706	203.13832	171.91253	199.82865	9.42552	0.0584537	3.0340566	68	4	1979–1998	0.68	M-v	2	Williams	32046	1990 VH ₁₂
1990 VC ₁₅	12.5	0.15	19980706	260.40739	228.85575	177.18724	3.70476	0.0850146	2.7143698	21	6	1981–1998	0.65	M-v	1	Williams	27934	1990 VC ₁₅
1990 WM ₁	14.0	0.15	19980706	168.73869	279.51457	139.97782	6.87595	0.1334880	2.9865629	20	4	1990–1998	0.71	M-v	2	Williams	32046	1990 WM ₁
1990 WK ₂	13.5	0.15	19980706	235.55191	138.83925	288.13237	12.60504	0.1871646	2.7207286	23	3	1990–1998	0.76	M-v	3	Williams	26925	1990 WK ₂
1990 WS ₄	13.5	0.15	19980706	282.30897	223.16309	157.90743	3.04263	0.0853535	2.7431081	35	6	1976–1998	0.63	M-v	1	Marsden	27934	1990 WS ₄
1990 WR ₅	13.5	0.15	19980706	235.42043	240.29077	97.82814	10.09902	0.0888995	3.0015069	38	5	1990–1998	0.77	M-v	1	Williams	32046	1990 WR ₅
1990 XU	13.0	0.15	19980706	222.87968	263.73937	132.33268	10.76673	0.1174459	2.9938604	38	3	1990–1998	0.61	M-v	4	Williams	31952	1990 XU
1990 YA	13.5	0.15	19980706	316.28266	127.42933	262.59950	4.39899	0.2763725	2.5616131	45	6	1953–1998	0.70	M-v	1	Williams	27728	1990 YA
1991 AG ₂	14.0	0.15	19980706	266.98411	242.98880	153.98878	14.76540	0.3025263	2.7137245	20	3	1981–1998	0.85	M-v	3	Williams	17833	1991 AG ₂
1991 AH ₂	12.5	0.15	19980706	306.89744	214.91616	121.08253	19.09407	0.1786859	2.7614653	29	3	1991–1998	0.46	M-v	3	Williams	31952	1991 AH ₂
1991 AY ₂	15.5	0.15	19980706	357.33970	253.49654	328.52040	0.74823	0.1013921	2.2410899	60	4	1991–1998	0.64	M-v	1	Williams	32047	1991 AY ₂
1991 CE ₁	12.5	0.15	19980706	85.52088	332.83713	217.25912	5.48776	0.0709839	3.1667285	29	6	1969–1998	0.67	M-v	1	Williams	30781	1991 CE ₁
1991 EM ₁	13.0	0.15	19980706	340.63267	192.65971	165.69187	11.09603	0.1229186	2.9813965	31	6	1950–1998	0.53	M-v	1	Williams	30470	1991 EM ₁
1991 EF ₂	14.0	0.15	19980706	63.94955	17.35383	175.93466	5.42469	0.0565396	2.1963508	40	2	1991–1998	0.57	M-v	4	Williams	31952	1991 EF ₂
1991 FA	17.0	0.15	19980706	275.50056	91.77471	339.53031	3.08100	0.4469870	1.9782690	34	3	1991–1998	0.51	M-v	3	Williams	28885	1991 FA
1991 FS	15.0	0.15	19980706	50.87639	109.21820	35.72583	4.79095	0.1773126	2.3105562	31	2	1991–1998	0.60	M-v	4	Williams	32047	1991 FS
1991 FZ ₂	13.5	0.15	19980706	159.72460	348.11152	176.34183	6.31228	0.0260767	3.0457424	21	3	1991–1998	0.66	M-v	4	Williams	25330	1991 FZ ₂
1991 FL ₄	12.0	0.15	19980706	36.72270	106.72477	182.21490	13.72433	0.1939495	3.1301051	30	5	1987–1998	0.76	M-v	1	Williams	29658	1991 FL ₄
1991 GO ₁	14.0	0.15	19980706	93.78621	251.33085	192.04238	22.70245	0.3136337	2.3405273	70	4	1975–1998	0.79	M-v	2	Williams	32047	1991 GO ₁
1991 GB ₃	13.5	0.15	19980706	106.01162	160.18950	19.85527	0.80163	0.1183353	3.2155845	64	4	1991–1998	0.78	M-v	2	Williams	30470	1991 GB ₃
1991 GU ₃	14.0	0.15	19980706	249.91674	122.04448	196.62748	6.88436	0.0933724	2.3588224	35	4	1981–1998	0.84	M-v	2	Williams	32047	1991 GU ₃
1991 GV ₃	15.0	0.15	19980706	314.88391	270.24192	32.33123	5.64092	0.1719267	2.2763044	40	2	1991–1998	0.67	M-v	4	Williams	31953	1991 GV ₃
1991 GY ₄	15.0	0.15	19980706	8.27206	196.87012	59.04685	2.08013	0.0639820	2.2391208	39	4	1991–1998	0.88	M-v	2	Williams	32047	1991 GY ₄
1991 GH ₅	14.0	0.15	19980706	21.12876	74.18778	213.35702	4.35078	0.1190651	3.2073524	27	3	1991–1998	0.68	M-v	3	Williams	30449	1991 GH ₅
1991 GC ₇	14.5	0.15	19980706	73.38051	137.69270	28.44495	5.18314	0.1086283	2.2662535	36	5	1953–1998	0.72	M-v	2	Williams	32047	1991 GC ₇
1991 GL ₇	15.0	0.15	19980706	156.86855	169.41363	251.82450	3.94423	0.0440506	2.3208059	42	2	1991–1998	0.70	M-v	5	Williams	32047	1991 GL ₇
1991 GP ₇	14.5	0.15	19980706	211.04942	81.35242	328.50934	2.39286	0.0936222	2.2315337	26	3	1991–1998	0.82	M-v	4	Williams	32047	1991 GP ₇
1991 JC	15.0	0.15	19980706	330.59346	193.00272	70.45264	3.46754	0.1901241	2.3450557	27	2	1991–1998	0.75	M-v	5	Williams	31953	1991 JC
1991 JD	15.0	0.15	19980706	318.73611	239.78664	39.26374	2.93158	0.2066138	2.3502951	38	2	1991–1998	0.51	M-v	4	Williams	31953	1991 JD
1991 JF	14.0	0.15	19980706	313.18495	23.24953	239.37897	6.21127	0.1020781	2.3774343	33	2	1991–1998	0.63	M-v	5	Williams	32047	1991 JF
1991 LB	14.5	0.15	19980706	331.65626	121.66082	218.87060	4.82750	0.1948830	2.2257975	22	3	1991–1998	0.38	M-v	3	Williams	32047	1991 LB

1991 LV ₂	14.5	0.15	19980706	269.42197	222.69314	101.71789	3.40389	0.1890864	2.4098775	32	3	1991–1998	0.71	M-v	4	Williams	32047	1991 LV ₂
1991 NP ₂	14.0	0.15	19980706	349.25365	350.35056	317.63299	6.85573	0.1497589	2.3169767	31	6	1977–1998	0.87	M-v	2	Williams	29659	1991 NP ₂
1991 NU ₃	13.5	0.15	19980706	241.88893	96.08659	286.56898	5.72117	0.1793192	2.4289269	33	3	1991–1998	0.64	M-v	4	Williams	32047	1991 NU ₃
1991 NB ₄	14.0	0.15	19980706	237.37996	157.00173	271.34990	3.72741	0.0897699	2.2854629	29	4	1991–1998	0.67	M-v	2	Williams	32047	1991 NB ₄
1991 OO	14.5	0.15	19980706	341.50877	108.95792	231.67564	3.38328	0.2016440	2.2940686	21	3	1991–1998	0.62	M-v	3	Williams	28845	1991 OO
1991 OW	15.0	0.15	19980706	38.96380	336.60429	282.45764	5.88321	0.1983914	2.2937476	21	5	1950–1998	0.69	M-v	2	Williams	29317	1991 OW
1991 PB	14.0	0.15	19980706	325.09231	182.23378	150.21802	2.58243	0.2463535	2.3385338	53	5	1984–1998	0.76	M-v	1	Williams	31006	1991 PB
1991 PG ₁	14.5	0.15	19980706	295.58096	194.45978	127.74336	12.44597	0.2751478	2.4287812	26	2	1991–1998	0.70	M-v	4	Williams	31953	1991 PG ₁
1991 PE ₂	16.0	0.15	19980706	279.75710	328.15701	12.77702	2.05028	0.2339139	2.4275972	21	4	1991–1998	0.58	M-v	2	Williams	31953	1991 PE ₂
1991 PH ₂	15.0	0.15	19980706	237.48218	244.50586	82.18105	1.33188	0.0864951	2.5528708	38	4	1991–1998	0.68	M-v	2	Williams	32047	1991 PH ₂
1991 PL ₂	15.0	0.15	19980706	301.51324	312.85718	338.96223	4.08497	0.1932149	2.4517357	45	3	1991–1998	0.84	M-v	4	Williams	32047	1991 PL ₂
1991 PQ ₂	15.0	0.15	19980706	335.28403	279.49232	14.77431	1.97655	0.1193880	2.3705930	24	4	1984–1998	0.76	M-v	2	Williams	32047	1991 PQ ₂
1991 PY ₂	14.0	0.15	19980706	131.52221	168.40805	324.21526	9.44657	0.1255995	2.3911989	26	4	1975–1997	0.78	M-v	2	Williams	30289	1991 PY ₂
1991 PJ ₃	14.5	0.15	19980706	210.39380	107.07500	349.67533	4.79978	0.0976082	2.3121350	37	8	1981–1998	0.89	M-v	1	Williams	30470	1991 PJ ₃
1991 PL ₅	15.0	0.15	19980706	321.54118	348.29691	301.15298	1.22718	0.1868859	2.4135042	33	2	1991–1998	0.74	M-v	4	Williams	31953	1991 PL ₅
1991 PX ₆	15.5	0.15	19980706	334.98619	250.59078	41.46530	1.85570	0.1823649	2.3843144	29	2	1991–1998	0.71	M-v	4	Williams	31954	1991 PX ₆
1991 PG ₁₁	15.0	0.15	19980706	3.24011	137.59556	179.36047	6.61331	0.2372932	2.3051657	26	4	1977–1998	0.79	M-v	3	Williams	30470	1991 PG ₁₁
1991 PJ ₁₁	13.5	0.15	19980706	245.13250	87.06419	241.77701	2.88491	0.2005740	2.5903130	34	3	1991–1998	0.82	M-v	4	Williams	32047	1991 PJ ₁₁
1991 PO ₁₁	14.0	0.15	19980706	12.08506	109.51882	187.10243	6.35710	0.1234233	2.3337854	30	5	1983–1998	0.77	M-v	2	Williams	32047	1991 PO ₁₁
1991 PF ₁₂	14.5	0.15	19980706	315.31194	37.74598	281.59855	6.94902	0.2363400	2.4034679	18	3	1991–1998	0.71	M-v	4	Williams	31954	1991 PF ₁₂
1991 PL ₁₃	14.5	0.15	19980706	297.38376	47.01818	268.06720	1.62707	0.1790589	2.4513950	55	3	1991–1998	0.60	M-v	2	Williams	32047	1991 PL ₁₃
1991 PT ₁₄	14.0	0.15	19980706	85.86365	50.86516	141.82650	2.82642	0.0474923	2.3725015	36	4	1991–1998	0.91	M-v	1	Williams	29659	1991 PT ₁₄
1991 PZ ₁₄	14.0	0.15	19980706	306.52253	70.80899	195.87959	6.55769	0.1577261	2.5259015	37	2	1991–1998	0.69	M-v	4	Williams	31785	1991 PZ ₁₄
1991 PJ ₁₅	14.5	0.15	19980706	28.71340	167.63237	118.85882	3.04517	0.1433079	2.2954305	14	3	1981–1998	0.70	M-v	5	Williams	20508	1991 PJ ₁₅
1991 PP ₁₆	14.0	0.15	19980706	308.62741	190.19318	151.65475	5.39584	0.1554346	2.3923124	29	4	1990–1998	0.84	M-v	2	Williams	28886	1991 PP ₁₆
1991 PU ₁₆	14.0	0.15	19980706	332.38796	303.29677	21.16741	3.26230	0.1227751	2.3709395	33	3	1991–1998	0.61	M-v	4	Marsden	27120	1991 PU ₁₆
1991 PH ₁₈	14.5	0.15	19980706	309.04278	150.28202	156.20886	12.35975	0.2133962	2.4415246	29	2	1991–1998	0.78	M-v	4	Williams	31954	1991 PH ₁₈
1991 RZ ₁	14.0	0.15	19980706	41.97753	75.19101	184.64283	23.08906	0.1922545	2.3084280	33	4	1991–1998	0.77	M-v	2	Williams	26420	1991 RZ ₁
1991 RO ₂	15.0	0.15	19980706	301.44007	131.04885	206.00191	5.59788	0.2819293	2.4266775	51	3	1971–1998	0.70	M-v	3	Williams	32047	1991 RO ₂
1991 RA ₄	15.0	0.15	19980706	24.23446	27.53537	214.14985	7.71532	0.1151308	2.4708890	29	3	1991–1998	0.65	M-v	4	Williams	32047	1991 RA ₄
1991 RD ₄	15.0	0.15	19980706	5.27651	64.50982	214.16667	4.34984	0.2033883	2.3941590	32	5	1990–1998	0.77	M-v	1	Williams	27325	1991 RD ₄
1991 RU ₈	14.5	0.15	19980706	340.90227	299.91423	4.04463	1.90490	0.1937541	2.3965126	20	3	1991–1998	0.70	M-v	5	Williams	29614	1991 RU ₈
1991 RP ₉	13.5	0.15	19980706	154.09326	20.53903	50.52900	16.19296	0.1086286	2.5274281	36	2	1991–1998	0.56	M-v	4	Williams	31954	1991 RP ₉
1991 RQ ₉	15.0	0.15	19980706	315.38915	4.40203	314.90805	1.66439	0.2223719	2.4200630	28	2	1991–1998	0.59	M-v	6	Williams	31954	1991 RQ ₉
1991 RN ₁₁	14.0	0.15	19980706	222.25569	299.76519	107.70228	3.20496	0.1749999	2.4286335	30	4	1988–1998	0.98	M-v	2	Williams	32047	1991 RN ₁₁
1991 RK ₁₅	14.0	0.15	19980706	348.81471	334.74783	3.86809	5.18542	0.1561639	2.3117106	21	6	1963–1998	0.75	M-v	3	Williams	30449	1991 RK ₁₅
1991 RM ₁₅	14.5	0.15	19980706	331.26904	4.15901	309.42598	2.09920	0.2234639	2.3867880	30	4	1980–1998	0.73	M-v	2	Williams	32047	1991 RM ₁₅
1991 RV ₁₇	15.0	0.15	19980706	293.55076	16.26027	326.47452	2.04201	0.2189805	2.4247650	20	2	1991–1998	0.64	M-v	5	Williams	31954	1991 RV ₁₇
1991 RY ₂₁	13.5	0.15	19980706	35.77508	127.89121	102.22386	3.30857	0.1536610	2.4111458	29	5	1979–1998	0.62	M-v	1	Williams	29659	1991 RY ₂₁
1991 RP ₂₃	13.5	0.15	19980706	292.63369	265.96916	9.88396	15.02670	0.0906106	2.5926924	33	2	1991–1998	0.64	M-v	4	Williams	32048	1991 RP ₂₃
1991 RB ₂₄	15.0	0.15	19980706	340.93339	143.63468	142.01952	4.02059	0.2124943	2.4003644	61	4	1972–1998	0.63	M-v	1	Williams	31954	1991 RB ₂₄
1991 RE ₂₅	14.5	0.15	19980706	227.08508	250.99902	136.94295	7.15704	0.2301534	2.5586465	28	3	1991–1998	0.80	M-v	4	Williams	32048	1991 RE ₂₅
1991 RC ₂₇	13.5	0.15	19980706	210.16566	343.69412	28.23960	13.63481	0.1769649	2.6364855	52	2	1991–1998	0.81	M-v	4	Williams	31955	1991 RC ₂₇
1991 SZ	14.0	0.15	19980706	324.35370	262.03627	52.96294	7.23374	0.1500713	2.3978302	22	2	1991–1998	0.66	M-v	4	Williams	31955	1991 SZ
1991 SE ₂	15.5	0.15	19980706	335.96773	145.17624	168.28407	2.41198	0.2310027	2.3597652	21	3	1991–1998	0.88	M-v	5	Williams	23517	1991 SE ₂
1991 TY	14.5	0.15	19980706	295.97748	239.81633	126.92472	23.20599	0.2917637	2.4003342	22	4	1976–1998	0.74	M-v	2	Williams	22594	1991 TY
1991 TQ ₂	15.5	0.15	19980706	244.45650	164.83653	270.72673	2.76224	0.2193948	2.4172409	34	3	1991–1998	0.47	M-v	4	Williams	26420	1991 TQ ₂
1991 TX ₂	14.5	0.15	19980706	139.96130	191.04332	257.07791	2.39821	0.0897639	2.6433178	26	2	1991–1998	0.71	M-v	5	Williams	31955	1991 TX ₂
1991 TD ₄	13.5	0.15	19980706	242.32482	160.47613	174.89720	17.91606	0.2665454	2.6139651	20	2	1991–1998	0.83	M-v	5	Williams	32048	1991 TD ₄
1991 TH ₆	16.0	0.15	19980706	324.95774	101.61248	246.87334	2.81803	0.1423919	2.3574370	33	3	1991–1998	0.52	M-v	4	Williams	29915	1991 TH ₆
1991 TL ₁₃	14.5	0.15	19980706	230.73864	337.04239	13.22869	9.56520	0.1385071	2.6021480	30	2	1991–1998	0.86	M-v	4	Williams	32048	1991 TL ₁₃
1991 UA	12.5	0.15	19980706	308.16520	28.85340	352.48766	2.36068	0.2509639	3.9898960	27	3	1991–1998	0.72	M-v	4	Williams	25215	1991 UA
1991 UH ₃	13.5	0.15	19980706	110.78662	65.27739	23.38092	8.60988	0.2885291	2.8550857	27	2	1991–1998	0.66	M-v	5	Williams	31955	1991 UH ₃

1991 UL ₃	13.5	0.15	19980706	245.31418	146.36523	214.43784	10.95595	0.2068414	2.5979665	39	3	1991–1998	0.59	M-v	3	Williams	31955	1991 UL ₃
1991 US ₃	13.5	0.15	19980706	270.38113	273.48222	65.08216	15.56629	0.1622396	2.5786721	48	2	1991–1998	0.60	M-v	4	Williams	31956	1991 US ₃
1991 UB ₄	13.0	0.15	19980706	95.91264	325.04762	189.78083	3.74218	0.1265521	2.6493471	30	4	1989–1998	0.78	M-v	1	Williams	29099	1991 UB ₄
1991 VJ ₁	15.0	0.15	19980706	229.84012	275.45060	107.87808	2.42930	0.3155107	2.5669320	48	3	1991–1998	0.51	M-v	2	Williams	31418	1991 VJ ₁
1991 VR ₁	13.5	0.15	19980706	259.01546	100.70485	316.44380	5.63756	0.2187943	2.4511708	31	6	1973–1998	0.78	M-v	1	Williams	26758	1991 VR ₁
1991 VV ₁	13.5	0.15	19980706	299.86531	124.95124	229.08584	13.30067	0.2271065	2.4482026	21	3	1991–1998	0.82	M-v	4	Williams	32048	1991 VV ₁
1991 VE ₂	13.0	0.15	19980706	209.26554	210.73967	228.41328	14.70299	0.1000263	2.5487849	25	3	1991–1998	0.80	M-v	3	Williams	26420	1991 VE ₂
1991 VU ₅	14.5	0.15	19980706	242.39096	165.59367	197.05619	11.13090	0.1919357	2.6088276	24	2	1991–1998	0.90	M-v	5	Williams	31956	1991 VU ₅
1991 VH ₆	15.0	0.15	19980706	295.79488	187.66111	172.28675	7.80871	0.1569835	2.4753073	27	3	1991–1998	0.77	M-v	4	Williams	29615	1991 VH ₆
1991 VJ ₆	14.0	0.15	19980706	184.36774	181.57808	194.26527	10.40531	0.1381159	2.7921858	35	2	1991–1998	0.94	M-v	5	Williams	32048	1991 VJ ₆
1991 VL ₆	15.0	0.15	19980706	229.89012	203.63544	205.85160	13.29259	0.1629030	2.5597721	27	4	1991–1998	0.78	M-v	2	Williams	28316	1991 VL ₆
1991 VZ ₈	14.5	0.15	19980706	204.32146	315.92712	59.88966	6.84580	0.1525113	2.6871766	24	2	1991–1998	0.70	M-v	4	Williams	32048	1991 VZ ₈
1991 VL ₁₀	14.0	0.15	19980706	167.25368	186.62383	165.68721	2.17463	0.0839731	2.9090738	18	3	1976–1998	0.39	M-v	5	Williams	32048	1991 VL ₁₀
1991 VY ₁₂	13.5	0.15	19980706	191.14296	147.89889	239.49596	4.21954	0.1736312	2.7310643	36	2	1991–1998	0.87	M-v	5	Williams	32048	1991 VY ₁₂
1991 WB	13.0	0.15	19980706	184.68424	315.07511	79.17087	35.98474	0.3296881	2.7476471	39	3	1977–1998	0.73	M-v	2	Marsden	32048	1991 WB
1991 XD	14.0	0.15	19980706	162.01439	11.53393	65.46095	22.70662	0.1015037	1.9371895	47	2	1991–1998	0.67	M-v	3	Williams	32048	1991 XD
1991 XH	13.0	0.15	19980706	247.73703	238.29195	134.16840	13.88937	0.1633130	2.6096654	48	6	1984–1998	0.53	M-v	2	Williams	32048	1991 XH
1991 XU	12.5	0.15	19980706	136.64759	251.89362	288.63059	11.91741	0.1134287	2.6012529	66	4	1991–1998	0.74	M-v	2	Williams	30290	1991 XU
1991 YV	13.0	0.15	19980706	182.85090	2.04542	109.43563	13.97771	0.1004071	2.6155323	30	5	1989–1998	0.83	M-v	2	Williams	30470	1991 YV
1992 AY	13.0	0.15	19980706	67.97937	18.14318	100.89696	15.38130	0.1517702	3.1276373	30	3	1992–1998	0.79	M-v	4	Williams	32048	1992 AY
1992 AE ₁	13.0	0.15	19980706	157.34753	27.18155	97.70336	10.67823	0.1938809	2.7336291	31	5	1954–1998	0.69	M-v	1	Marsden	26190	1992 AE ₁
1992 AR ₁	13.5	0.15	19980706	140.01780	235.38533	290.14446	6.56528	0.1901635	2.6782543	27	5	1986–1998	0.68	M-v	1	Williams	30091	1992 AR ₁
1992 AV ₁	14.5	0.15	19980706	165.15656	329.21805	110.67766	24.76952	0.0735440	1.9462563	25	2	1992–1998	0.63	M-v	3	Williams	31956	1992 AV ₁
1992 AT ₃	13.5	0.15	19980706	190.25858	150.03813	242.47801	0.99792	0.0793298	2.8976573	35	4	1992–1998	0.54	M-v	1	Williams	31956	1992 AT ₃
1992 BD	15.5	0.15	19980706	153.33926	21.28768	79.18815	28.98549	0.0654160	1.8965038	37	3	1975–1998	0.56	M-v	3	Williams	31957	1992 BD
1992 CZ ₁	12.5	0.15	19980706	46.22567	198.67338	322.32378	3.54955	0.1368139	3.1360278	51	3	1986–1998	0.75	M-v	5	Williams	32048	1992 CZ ₁
1992 CP ₂	13.5	0.15	19980706	351.69641	71.44469	197.87533	5.86980	0.0098396	2.7848704	41	4	1992–1998	0.70	M-v	2	Williams	32048	1992 CP ₂
1992 DT ₂	15.7	0.15	19920319	322.61698	61.85231	141.16920	2.94137	0.0371509	2.9448486	12	1	43 days	0.76			Nakano		1992 DT ₂
1992 DU ₅	14.0	0.15	19980706	313.54461	233.84479	148.34308	10.18267	0.2169103	2.5819809	23	4	1990–1998	0.62	M-v	2	Williams	27105	1992 DU ₅
1992 DW ₅	13.0	0.15	19980706	221.55463	296.75297	42.31070	1.93199	0.2010335	3.2217181	27	5	1977–1998	0.71	M-v	2	Williams	32048	1992 DW ₅
1992 DX ₅	13.0	0.15	19980706	253.09708	207.76881	100.21605	2.61761	0.1073086	3.2478364	22	2	1992–1998	0.67	M-v	6	Williams	32048	1992 DX ₅
1992 DL ₇	13.5	0.15	19980706	287.55549	231.02481	108.57623	2.39001	0.0646648	2.9016063	17	3	1982–1998	0.83	M-c	6	Williams	23861	1992 DL ₇
1992 DO ₇	14.5	0.15	19980706	352.62158	121.13196	104.69213	3.43712	0.0906851	3.1675432	21	3	1992–1998	0.88	M-v	4	Williams	32048	1992 DO ₇
1992 DQ ₇	13.5	0.15	19980706	241.34032	279.02074	64.73347	2.88386	0.1298239	3.0919678	15	2	1992–1998	0.75	M-v	6	Williams	31957	1992 DQ ₇
1992 DN ₈	13.5	0.15	19980706	70.06178	334.20603	172.80382	9.01629	0.0496585	3.0943449	20	2	1992–1998	0.82	M-v	4	Williams	31957	1992 DN ₈
1992 DD ₁₀	13.0	0.15	19980706	232.82266	104.66472	215.75004	4.39199	0.1066144	3.2422160	16	2	1992–1998	0.80	M-v	5	Williams	31957	1992 DD ₁₀
1992 ED ₁	12.5	0.15	19980706	265.06688	189.47753	241.42709	13.39479	0.1447450	2.6072026	28	5	1990–1998	0.66	M-v	2	Williams	24408	1992 ED ₁
1992 EG ₄	14.5	0.15	19980706	85.67513	32.67567	76.36539	3.07388	0.1300418	3.1462794	44	2	1992–1998	0.81	M-v	5	Williams	32048	1992 EG ₄
1992 ER ₄	14.0	0.15	19980706	310.14719	243.15820	69.29687	3.17538	0.0464893	2.8900986	30	3	1992–1998	0.73	M-v	5	Marsden	32048	1992 ER ₄
1992 EV ₄	13.0	0.15	19980706	246.60989	202.03723	138.67028	9.72817	0.0685103	3.0371479	52	3	1992–1998	0.67	M-v	3	Williams	31957	1992 EV ₄
1992 EB ₅	12.0	0.15	19980706	14.18610	28.25164	151.50606	22.49381	0.0411601	3.2158743	30	3	1987–1998	0.65	M-v	2	Williams	31584	1992 EB ₅
1992 EU ₅	12.5	0.15	19980706	103.14044	4.00061	97.51318	4.33424	0.1611390	3.0895424	27	3	1992–1998	0.56	M-v	4	Williams	31957	1992 EU ₅
1992 EG ₆	13.0	0.15	19980706	347.70758	129.92127	132.09534	9.71615	0.0930491	3.0052927	42	3	1992–1998	0.56	M-v	2	Williams	31957	1992 EG ₆
1992 EK ₇	14.0	0.15	19980706	50.14874	135.77118	43.15353	6.63026	0.1417993	3.0809745	35	3	1992–1998	0.68	M-v	4	Williams	32048	1992 EK ₇
1992 EX ₈	12.0	0.15	19980706	248.05610	317.60076	144.04061	15.69747	0.0519525	2.5716593	25	4	1977–1998	0.82	M-v	3	Williams	27713	1992 EX ₈
1992 EW ₉	12.0	0.15	19980706	333.70926	209.73647	154.86244	15.18956	0.1250491	2.5890088	23	4	1971–1998	0.43	M-v	2	Williams	27729	1992 EW ₉
1992 EY ₁₁	14.0	0.15	19980706	54.63124	70.38435	70.66906	2.53575	0.1262018	3.1982875	53	3	1992–1998	0.54	M-v	3	Williams	32048	1992 EY ₁₁
1992 EV ₁₃	13.0	0.15	19980706	92.16656	287.60324	227.02451	0.97379	0.0337349	2.9712762	33	4	1992–1998	0.66	M-v	1	Williams	26580	1992 EV ₁₃
1992 EE ₁₄	15.0	0.15	19980706	109.51066	352.04722	200.32594	3.52430	0.0387820	2.7648726	16	3	1992–1998	0.41	M-v	4	Williams	25650	1992 EE ₁₄
1992 EX ₂₅	13.5	0.15	19980706	61.32527	45.47086	100.42781	2.40627	0.1117300	3.1514724	27	2	1992–1998	0.75	M-v	5	Williams	31958	1992 EX ₂₅
1992 EU ₂₈	13.0	0.15	19980706	276.41107	250.59795	48.95920	1.70413	0.1816898	3.2054544	35	2	1992–1998	0.62	M-v	6	Williams	32048	1992 EU ₂₈
1992 FE ₁	12.5	0.15	19980706	321.46943	329.76550	51.00914	5.10237	0.1293560	2.6785150	50	5	1992–1998	0.61	M-v	1	Williams	30290	1992 FE ₁
1992 GQ	13.0	0.15	19980706	70.37487	67.46381	100.13067	9.32131	0.1634553	3.1211361	28	3	1992–1998	0.83	M-v	3	Williams	32048	1992 GQ

1992 GM ₂	15.0	0.15	19980706	293.46679	343.43695	301.56205	0.98446	0.0932823	2.1300408	34	2	1992–1998	0.66	M-v	5	Williams	32048	1992 GM ₂
1992 LF	12.0	0.15	19980706	279.06117	224.71985	152.51989	20.18039	0.1570428	3.1943914	26	5	1970–1998	0.73	M-v	2	Williams	31006	1992 LF
1992 OB ₃	15.0	0.15	19980706	312.01647	323.43311	305.64657	5.82751	0.1051878	2.2448017	24	3	1992–1998	0.64	M-v	4	Williams	32048	1992 OB ₃
1992 PZ ₁	15.0	0.15	19980706	281.29592	144.04100	172.06817	4.89230	0.2160907	2.2249821	42	3	1992–1998	0.62	M-v	4	Williams	32049	1992 PZ ₁
1992 PL ₂	12.0	0.15	19980706	133.02582	263.60445	296.24985	20.44294	0.0555389	3.1945239	14	4	1981–1998	0.57	M-v	2	Williams	30657	1992 PL ₂
1992 PO ₂	14.5	0.15	19980706	227.99523	149.11299	208.99989	6.10344	0.1427314	2.2935027	62	2	1992–1998	0.60	M-v	4	Williams	32049	1992 PO ₂
1992 PQ ₂	14.5	0.15	19980706	222.96068	104.36499	268.55586	5.74779	0.1272092	2.2754171	23	4	1982–1998	0.68	M-v	1	Williams	32049	1992 PQ ₂
1992 RX	14.0	0.15	19980706	25.72794	215.97596	22.69954	4.19571	0.1526886	2.1999373	37	5	1978–1998	0.66	M-v	2	Williams	29136	1992 RX
1992 RP ₃	14.5	0.15	19980706	69.53619	305.20056	164.54028	12.83388	0.1560007	2.4706124	22	2	1992–1998	0.67	M-v	5	Williams	32049	1992 RP ₃
1992 RS ₃	15.0	0.15	19980706	284.08241	103.77928	205.16548	2.34136	0.1406171	2.2607567	45	3	1992–1998	0.63	M-v	4	Williams	32049	1992 RS ₃
1992 RU ₃	14.5	0.15	19980706	346.80131	271.16425	330.87263	4.01484	0.0774281	2.2697651	64	4	1991–1998	0.64	M-v	1	Williams	31958	1992 RU ₃
1992 RL ₇	15.0	0.15	19980706	161.24483	312.46869	112.06718	2.75367	0.1780916	2.3656171	37	5	1974–1998	0.88	M-v	2	Williams	32049	1992 RL ₇
1992 SE	14.0	0.15	19980706	122.02054	220.69045	184.77234	12.86223	0.2802677	2.5684850	42	2	1992–1998	0.81	M-v	4	Williams	32049	1992 SE
1992 SO	14.5	0.15	19980706	267.28243	79.11308	244.53263	5.75406	0.1644187	2.3197167	35	2	1992–1998	0.60	M-v	4	Williams	32049	1992 SO
1992 SQ	14.5	0.15	19980706	277.08360	109.01425	269.55602	3.09305	0.1310320	2.1959314	22	4	1976–1998	0.79	M-v	2	Williams	26190	1992 SQ
1992 SX ₁	15.5	0.15	19980706	183.72469	5.82717	58.77406	1.22572	0.1116579	2.3022845	22	3	1980–1998	0.80	M-v	5	Williams	24108	1992 SX ₁
1992 ST ₂	14.0	0.15	19980706	190.57144	196.30128	195.08139	24.24526	0.1332707	2.3627854	37	2	1992–1998	0.91	M-v	4	Williams	31958	1992 ST ₂
1992 SS ₁₆	15.0	0.15	19980706	315.26421	134.37280	207.59547	0.61358	0.0496572	2.1540784	32	4	1992–1998	0.71	M-v	4	Williams	29660	1992 SS ₁₆
1992 US	14.0	0.15	19980706	192.72094	359.02797	41.06625	8.30485	0.2382877	2.3832592	35	2	1992–1998	0.75	M-v	5	Williams	31958	1992 US
1992 UF ₁	14.0	0.15	19980706	194.68648	349.07019	31.33662	8.08550	0.2206053	2.4149712	36	2	1992–1998	0.65	M-v	4	Williams	31959	1992 UF ₁
1992 US ₁	15.0	0.15	19980706	252.50916	317.59482	46.88992	7.81778	0.1342217	2.2849252	40	3	1964–1998	0.73	M-v	3	Williams	31959	1992 US ₁
1992 UL ₂	14.5	0.15	19980706	279.08295	65.69504	316.06988	2.97078	0.1749651	2.1917687	20	4	1979–1998	0.71	M-v	2	Williams	29136	1992 UL ₂
1992 UW ₂	14.5	0.15	19980706	269.20567	284.82051	54.05853	5.93467	0.2150360	2.2807069	52	2	1992–1998	0.84	M-v	4	Williams	32049	1992 UW ₂
1992 UX ₂	15.0	0.15	19980706	289.21667	124.65422	211.41677	5.96294	0.2208701	2.2505749	53	4	1978–1998	0.71	M-v	3	Williams	31959	1992 UX ₂
1992 UY ₂	14.5	0.15	19980706	215.20839	211.67668	205.43899	4.97411	0.0745877	2.2949787	36	5	1988–1998	0.78	M-v	2	Williams	30290	1992 UY ₂
1992 UH ₃	14.5	0.15	19980706	254.13097	41.54468	13.01104	5.98744	0.1111568	2.1866280	26	5	1979–1998	0.85	M-v	2	Williams	29661	1992 UH ₃
1992 UH ₆	13.5	0.15	19980706	292.03351	292.34724	64.78945	6.23851	0.1952429	2.2196137	30	4	1992–1998	0.67	M-v	2	Williams	29661	1992 UH ₆
1992 UJ ₆	14.5	0.15	19980706	242.09081	185.30916	205.55432	6.55748	0.1974050	2.2842712	33	3	1992–1998	0.73	M-v	3	Williams	32049	1992 UJ ₆
1992 UU ₆	13.5	0.15	19980706	107.63623	269.61118	158.19522	13.20625	0.1592331	2.5652969	18	2	1992–1998	0.30	M-v	4	Williams	31959	1992 UU ₆
1992 WC ₁	14.5	0.15	19980706	297.51367	81.27867	265.51271	4.71288	0.1908971	2.2378343	36	5	1955–1998	0.72	M-v	1	Williams	32049	1992 WC ₁
1992 WJ ₂	14.5	0.15	19980706	286.78392	273.46054	51.50788	7.12571	0.1483118	2.3272283	53	4	1991–1998	0.76	M-v	2	Williams	32049	1992 WJ ₂
1992 WJ ₃	14.0	0.15	19980706	61.59985	43.57336	174.05951	5.74159	0.0695191	2.3129696	25	5	1992–1998	0.84	M-v	2	Williams	29317	1992 WJ ₃
1992 WP ₅	13.0	0.15	19980706	67.97730	145.41584	104.51794	3.43493	0.0692249	2.2127132	41	6	1988–1998	0.97	M-v	2	Williams	29661	1992 WP ₅
1992 WH ₈	14.5	0.15	19980706	345.66205	329.04840	2.38333	1.00560	0.1106561	2.1633735	38	8	1956–1998	0.83	M-v	2	Williams	30896	1992 WH ₈
1992 YY	13.0	0.15	19980706	13.58253	324.14734	268.56147	11.39702	0.0885676	2.5313131	80	4	1959–1998	0.68	M-v	2	Williams	32049	1992 YY
1992 YA ₁	14.5	0.15	19980706	201.05514	245.52064	172.14971	2.19211	0.1934502	2.3705424	21	3	1992–1998	0.70	M-v	4	Williams	29661	1992 YA ₁
1992 YE ₁	14.0	0.15	19980706	151.95812	327.65593	79.82455	5.12154	0.1445258	2.5898942	27	3	1992–1998	0.61	M-v	4	Williams	31787	1992 YE ₁
1992 YJ ₂	14.0	0.15	19980706	240.40943	289.04337	90.35468	7.55736	0.1322532	2.3888337	54	3	1992–1998	0.70	M-v	3	Williams	32049	1992 YJ ₂
1992 YM ₂	14.0	0.15	19980706	231.65061	286.26337	86.42763	7.95039	0.0983468	2.4469741	42	3	1992–1998	0.54	M-v	3	Williams	32049	1992 YM ₂
1993 BA	12.5	0.15	19980706	316.53264	183.33676	114.27066	14.74864	0.0615965	2.5677979	60	4	1975–1998	0.74	M-v	2	Marsden	32049	1993 BA
1993 BT ₂	12.5	0.15	19980706	74.26904	195.55392	329.11057	5.42995	0.2088215	2.6336122	18	4	1955–1998	0.67	M-v	2	Williams	29661	1993 BT ₂
1993 BW ₂	17.5	0.15	19980706	231.96457	287.40076	121.17629	21.91728	0.3061316	1.3351963	137	3	1993–1998	0.59	M-v	2	Williams	32049	1993 BW ₂
1993 BR ₃	13.5	0.15	19980706	106.01310	8.79267	120.67046	13.11649	0.1017820	2.6158429	44	3	1993–1998	0.60	M-v	3	Williams	32049	1993 BR ₃
1993 BD ₄	10.5	0.15	19980706	347.26844	177.89032	138.90503	14.72657	0.1517897	5.1571198	32	3	1993–1998	0.77	M-v	3	Williams	31103	1993 BD ₄
1993 BN ₄	15.0	0.15	19980706	257.51300	267.64014	118.22694	3.18033	0.2216861	2.3744454	26	5	1993–1998	0.58	M-v	2	Williams	29136	1993 BN ₄
1993 BM ₅	13.5	0.15	19980706	274.25071	186.80433	96.35370	1.83880	0.0633776	2.8015226	37	2	1993–1998	0.71	M-v	5	Williams	32049	1993 BM ₅
1993 BD ₆	14.0	0.15	19980706	291.05701	329.03523	334.35464	2.34459	0.0540916	2.6396711	30	2	1993–1998	0.61	M-v	5	Williams	31960	1993 BD ₆
1993 BU ₇	15.0	0.15	19980706	282.23908	182.48423	124.31711	2.57966	0.0161093	2.3385024	19	3	1993–1998	0.66	M-v	4	Williams	30471	1993 BU ₇
1993 BH ₁₃	13.5	0.15	19980706	2.64831	352.89887	215.29599	2.24239	0.1978208	3.1238926	21	2	1993–1998	0.70	M-v	5	Williams	31233	1993 BH ₁₃
1993 BX ₁₃	14.0	0.15	19980706	321.48268	198.19056	184.56245	4.79163	0.1450235	2.2373567	14	5	1951–1998	0.86	M-v	2	Williams	27730	1993 BX ₁₃
1993 CA ₁	13.5	0.15	19980706	84.70383	186.79351	321.68709	13.68376	0.1074454	2.6470471	23	4	1950–1998	0.96	M-v	3	Williams	30658	1993 CA ₁
1993 CR ₁	13.5	0.15	19980706	68.03577	24.67545	149.44039	13.65888	0.1049991	2.6695365	40	3	1993–1998	0.71	M-v	2	Williams	32049	1993 CR ₁
1993 DT ₁	15.5	0.15	19980706	19.80598	55.22889	200.03565	3.19408	0.2405491	2.5959029	27	5	1981–1998	0.35	M-v	1	Williams	29136	1993 DT ₁

1993 EL	15.0	0.15	19980706	60.84135	88.15981	104.04123	15.92482	0.3439898	2.7034952	38	4	1993–1998	0.64	M-v	1	Marsden	29136	1993 EL
1993 ES	13.0	0.15	19980706	48.54302	224.25729	2.43735	11.49387	0.1912957	2.6703832	29	6	1977–1998	0.68	M-v	2	Williams	26190	1993 ES
1993 FS	20.0	0.15	19980706	207.29010	20.81815	179.39508	10.14304	0.4259258	2.2252217	28	1	86 days	0.52	M-v	4	Williams	23539	1993 FS
1993 FO ₁	12.5	0.15	19980706	335.76323	307.93926	49.56926	7.87702	0.1332081	2.4012206	26	5	1986–1998	0.79	M-v	2	Williams	29944	1993 FO ₁
1993 FQ ₂	13.0	0.15	19980706	65.90605	141.68973	25.66510	9.91122	0.1731574	2.7612788	21	4	1991–1998	0.74	M-v	3	Williams	27730	1993 FQ ₂
1993 FX ₂	14.0	0.15	19980706	220.06435	240.84816	115.57417	3.19714	0.0993191	2.8945903	43	3	1993–1998	0.65	M-v	4	Williams	32049	1993 FX ₂
1993 FO ₄	14.0	0.15	19980706	123.97737	314.85283	172.72477	11.94573	0.1463223	2.6483295	18	3	1980–1998	0.55	M-v	4	Williams	23521	1993 FO ₄
1993 FT ₅	12.5	0.15	19980706	33.07900	336.82368	167.46429	9.85138	0.0466733	3.0582107	31	5	1977–1998	0.63	M-v	1	Williams	32050	1993 FT ₅
1993 FU ₆	14.0	0.15	19980706	17.77014	100.82602	79.98854	3.33383	0.0432924	2.9459817	30	3	1990–1998	0.80	M-v	4	Williams	32050	1993 FU ₆
1993 FB ₈	14.0	0.15	19980706	328.33692	210.69608	76.76113	3.81033	0.1836328	2.7759993	25	2	1993–1998	0.63	M-v	5	Williams	31960	1993 FB ₈
1993 FT ₈	13.5	0.15	19980706	243.86336	314.24907	106.61502	3.35241	0.1611826	2.4477995	16	3	1993–1998	0.82	M-v	4	Williams	28616	1993 FT ₈
1993 FY ₈	14.0	0.15	19980706	288.88223	254.81809	56.92626	4.31274	0.0833957	2.7902459	30	3	1993–1998	0.85	M-v	4	Williams	31960	1993 FY ₈
1993 FC ₉	14.0	0.15	19980706	253.49980	216.81425	108.08391	3.50557	0.0504960	2.8782154	23	2	1993–1998	0.80	M-v	5	Williams	31960	1993 FC ₉
1993 FX ₉	13.5	0.15	19980706	136.16873	79.06450	81.37034	3.66157	0.0728282	2.5213481	15	4	1977–1998	0.58	M-v	5	Williams	29617	1993 FX ₉
1993 FN ₁₀	13.5	0.15	19980706	230.82929	269.26145	79.24696	3.14949	0.1008291	2.8835812	28	2	1993–1998	0.73	M-v	6	Williams	31960	1993 FN ₁₀
1993 FP ₁₀	15.0	0.15	19980706	239.71520	304.48614	134.38773	3.22690	0.1456959	2.4101586	16	3	1993–1998	0.40	M-v	4	Williams	26564	1993 FP ₁₀
1993 FQ ₁₀	13.5	0.15	19980706	108.44024	57.96650	21.47293	10.31740	0.1042941	2.9654982	29	3	1975–1998	0.66	M-v	4	Williams	32050	1993 FQ ₁₀
1993 FR ₁₁	13.0	0.15	19980706	6.25177	129.23624	171.99893	13.77319	0.1641518	2.5652294	10	4	1989–1998	0.47	M-v	2	Williams	31383	1993 FR ₁₁
1993 FY ₁₂	13.0	0.15	19980706	358.20544	66.97443	164.73732	9.45689	0.0751552	2.8475073	44	2	1993–1998	0.70	M-v	4	Williams	31961	1993 FY ₁₂
1993 FA ₁₃	13.0	0.15	19980706	222.28890	192.14119	170.48550	1.96008	0.0447931	2.8726450	33	3	1993–1998	0.59	M-v	4	Williams	31961	1993 FA ₁₃
1993 FH ₁₉	14.5	0.15	19980706	146.70798	349.11423	97.73026	6.79355	0.0961848	2.7606296	18	2	1993–1998	0.81	M-v	6	Williams	31961	1993 FH ₁₉
1993 FX ₂₀	13.5	0.15	19980706	245.43534	155.05036	179.55101	1.90158	0.0887087	2.9212680	36	2	1993–1998	0.94	M-v	6	Williams	32050	1993 FX ₂₀
1993 FK ₂₁	13.5	0.15	19980706	351.34579	153.45132	194.13725	2.00143	0.2027561	2.4497537	22	6	1975–1998	0.90	M-v	2	Williams	26758	1993 FK ₂₁
1993 FQ ₂₄	14.0	0.15	19980706	244.10235	151.78857	201.86750	7.90179	0.1229602	2.8081589	18	3	1985–1998	0.68	M-v	4	Williams	31961	1993 FQ ₂₄
1993 FU ₂₄	14.0	0.15	19980706	321.88786	312.34449	341.96284	1.72114	0.0512983	2.7318982	15	3	1993–1998	0.57	M-v	5	Williams	31139	1993 FU ₂₄
1993 FH ₂₅	13.0	0.15	19980706	52.10446	78.97007	201.65346	4.93119	0.0529965	2.4481584	15	4	1987–1998	0.92	M-v	3	Williams	30080	1993 FH ₂₅
1993 FK ₂₅	14.0	0.15	19980706	253.08292	187.43253	225.17059	2.10748	0.1778721	2.4691722	21	6	1987–1998	0.83	M-v	2	Williams	30471	1993 FK ₂₅
1993 FE ₂₆	15.0	0.15	19980706	130.47706	260.79162	204.68256	7.73138	0.1629412	2.7106030	17	4	1991–1998	0.58	M-v	2	Williams	23525	1993 FE ₂₆
1993 FX ₂₆	14.0	0.15	19980706	19.11705	240.24089	296.87326	2.79500	0.0716509	2.9937748	26	3	1993–1998	0.87	M-v	5	Williams	32050	1993 FX ₂₆
1993 FZ ₂₆	14.0	0.15	19980706	293.64586	88.97541	223.70907	3.58631	0.0585448	2.7819128	17	2	1993–1998	0.80	M-v	5	Williams	31961	1993 FZ ₂₆
1993 FQ ₃₂	13.5	0.15	19980706	218.00285	312.45591	46.02900	2.55657	0.0994546	2.9303861	32	2	1993–1998	0.81	M-v	6	Williams	32050	1993 FQ ₃₂
1993 FB ₃₅	16.0	0.15	19980706	42.14926	9.80024	135.53851	1.90267	0.3395438	2.9243425	18	2	1993–1998	0.82	M-v	6	Williams	31962	1993 FB ₃₅
1993 FF ₃₅	13.5	0.15	19980706	80.78741	349.98619	131.35891	2.47051	0.0940277	2.9212313	45	2	1993–1998	0.54	M-v	5	Williams	31962	1993 FF ₃₅
1993 FH ₃₆	13.0	0.15	19980706	257.07629	212.06507	179.00874	8.99783	0.1680132	2.5692977	31	5	1962–1998	0.88	M-v	2	Williams	30659	1993 FH ₃₆
1993 FK ₃₇	14.0	0.15	19980706	184.67546	350.20839	42.24634	2.55606	0.0800945	2.8825224	46	4	1993–1998	0.66	M-v	1	Williams	32050	1993 FK ₃₇
1993 FW ₃₇	14.0	0.15	19980706	99.89845	359.37619	184.08492	11.80181	0.1132953	2.6016494	21	3	1993–1998	0.73	M-v	3	Williams	29919	1993 FW ₃₇
1993 FF ₄₀	13.5	0.15	19980706	220.32459	160.79319	176.84594	10.72408	0.0458333	2.9934917	32	3	1993–1998	0.61	M-v	4	Williams	32050	1993 FF ₄₀
1993 FN ₄₀	13.5	0.15	19980706	256.33342	269.91349	48.37337	2.75912	0.0834279	2.9337929	43	5	1975–1998	0.66	M-v	1	Williams	31962	1993 FN ₄₀
1993 FC ₄₂	13.5	0.15	19980706	290.24253	253.63820	11.00480	9.71043	0.0542814	3.0334451	27	2	1993–1998	0.54	M-v	4	Williams	32050	1993 FC ₄₂
1993 FY ₄₃	14.5	0.15	19980706	3.07656	300.43170	352.64287	2.39286	0.1296920	2.5980251	24	4	1993–1998	0.78	M-v	2	Williams	30471	1993 FY ₄₃
1993 FB ₄₄	13.5	0.15	19980706	158.91705	203.81038	213.26294	1.51191	0.0511159	2.8638697	44	2	1993–1998	0.85	M-v	5	Williams	32050	1993 FB ₄₄
1993 FZ ₄₄	14.0	0.15	19980706	70.96386	335.04961	155.79289	2.08046	0.1076113	2.8925246	41	2	1993–1998	0.64	M-v	5	Williams	32050	1993 FZ ₄₄
1993 FL ₈₂	14.5	0.15	19980706	16.84277	43.14635	157.96903	4.52248	0.0867940	2.8779203	24	3	1993–1998	0.79	M-v	4	Williams	32050	1993 FL ₈₂
1993 HZ ₅	15.0	0.15	19980706	93.14263	68.02109	68.14264	26.22783	0.1019071	1.8519952	28	2	1993–1998	0.66	M-v	4	Williams	31962	1993 HZ ₅
1993 LE	13.0	0.15	19980706	340.90157	144.36157	132.13142	11.91969	0.0816067	3.0214041	42	3	1993–1998	0.57	M-v	4	Williams	32050	1993 LE
1993 LF ₂	13.0	0.15	19980706	329.05042	237.84977	94.52838	10.30093	0.1569350	2.7743817	32	4	1962–1998	0.78	M-v	2	Marsden	25531	1993 LF ₂
1993 NV	14.0	0.15	19980706	12.17824	41.84750	245.32778	0.79135	0.0536950	2.8733138	26	4	1993–1998	0.96	M-v	1	Williams	30471	1993 NV
1993 OW ₁	14.5	0.15	19980706	274.27287	212.69676	128.08509	27.35276	0.0962652	1.9414028	30	4	1992–1998	0.60	M-v	2	Williams	32050	1993 OW ₁
1993 OU ₇	13.5	0.15	19980706	341.58703	195.44826	164.45345	2.01559	0.0453538	2.7045479	32	6	1987–1998	0.91	M-v	2	Williams	30291	1993 OU ₇
1993 OK ₉	13.5	0.15	19980706	27.58337	142.01190	129.26926	2.97556	0.0175066	2.8861742	18	3	1989–1998	0.92	M-v	5	Williams	31537	1993 OK ₉
1993 OR ₉	14.0	0.15	19980706	32.12324	111.27146	149.45191	2.48472	0.0117447	2.9193433	22	3	1993–1998	0.56	M-v	4	Williams	29919	1993 OR ₉
1993 OM ₁₀	14.5	0.15	19980706	260.09205	212.58300	155.25403	1.57161	0.1921522	3.2001999	19	4	1988–1998	0.68	M-v	2	Williams	29944	1993 OM ₁₀
1993 PB	16.5	0.15	19980706	55.58002	212.22497	316.02840	40.87465	0.6070704	1.4236393	94	4	1993–1998	0.55	M-v	3	Williams	31276	1993 PB

1993 PC	18.0	0.15	19980706	163.17669	168.12826	337.56718	4.15843	0.4745088	1.1544217	44	4	1993–1998	0.62	M-v	3	Williams	30782	1993 PC
1993 PC ₅	13.5	0.15	19980706	331.65903	162.55661	168.63927	10.43584	0.1242189	3.0399746	30	5	1988–1998	0.71	M-v	2	Williams	29944	1993 PC ₅
1993 PB ₇	13.0	0.15	19980706	28.54723	73.96512	172.69113	0.49360	0.1328696	3.1539405	28	5	1988–1998	0.76	M-v	1	Williams	29944	1993 PB ₇
1993 QF ₃	13.0	0.15	19980706	110.07393	26.95548	153.76370	2.06663	0.1269370	3.1645615	26	3	1993–1998	0.79	M-v	4	Williams	30092	1993 QF ₃
1993 QQ ₄	13.5	0.15	19980706	60.16071	61.38924	160.25846	1.88475	0.1169493	3.1949264	33	5	1973–1998	0.84	M-v	2	Williams	29920	1993 QQ ₄
1993 SQ ₁₄	15.5	0.15	19980706	260.02366	156.45952	231.34207	20.60952	0.1193822	1.9301133	20	3	1985–1998	0.83	M-v	4	Williams	25642	1993 SQ ₁₄
1993 TS ₁	12.5	0.15	19980706	322.81337	172.42802	196.89442	13.96206	0.1033076	3.1319675	13	3	1987–1998	0.94	M-v	3	Williams	30661	1993 TS ₁
1993 TA ₁₅	15.5	0.15	19980706	89.40902	75.88238	30.91380	5.05831	0.1159502	2.1901351	39	2	1993–1998	0.72	M-v	5	Williams	31962	1993 TA ₁₅
1993 TJ ₂₄	16.0	0.15	19980706	164.71656	264.57324	123.30646	2.25480	0.1178875	2.1759847	22	4	1992–1998	0.54	M-v	2	Williams	32050	1993 TJ ₂₄
1993 WB	15.0	0.15	19980706	75.31930	123.10662	337.88345	1.74185	0.1829143	2.3314352	59	3	1993–1998	0.84	M-v	4	Williams	32051	1993 WB
1994 AS	13.0	0.15	19980706	182.96269	202.16213	31.78235	1.80846	0.1631922	3.1083657	34	6	1981–1997	0.72	M-v	1	Williams	32051	1994 AS
1994 AG ₁	15.0	0.15	19980706	44.95675	14.87532	159.51117	5.12717	0.1681070	2.3609670	41	2	1994–1998	0.71	M-v	4	Williams	32051	1994 AG ₁
1994 AB ₈	16.0	0.15	19980706	44.48541	126.99211	31.46321	1.75666	0.1203215	2.3988695	25	2	1994–1998	0.78	M-v	4	Williams	32051	1994 AB ₈
1994 AY ₁₀	16.0	0.15	19980706	335.17708	234.54963	45.41369	3.13899	0.2067861	2.2529066	37	2	1994–1998	0.51	M-v	4	Williams	31963	1994 AY ₁₀
1994 AK ₁₆	14.5	0.15	19980706	78.83311	264.89117	213.64068	6.61219	0.1014035	2.3910191	42	2	1994–1998	0.67	M-v	4	Williams	32051	1994 AK ₁₆
1994 BY	14.0	0.15	19980706	105.28891	107.98768	35.96691	5.16548	0.1100741	2.2246885	27	4	1989–1998	0.71	M-v	1	Williams	32051	1994 BY
1994 BF ₁	14.0	0.15	19980706	131.28736	51.27287	358.75668	3.69338	0.1997005	2.4235012	39	3	1994–1998	0.73	M-v	4	Williams	32051	1994 BF ₁
1994 BN ₃	16.0	0.15	19980706	96.34327	270.04759	164.96478	2.70163	0.1703219	2.4272747	19	2	1994–1998	0.81	M-v	5	Williams	31963	1994 BN ₃
1994 CL	13.5	0.15	19980706	332.49872	255.61942	356.66728	10.94348	0.1309603	2.4195191	72	3	1994–1998	0.65	M-v	3	Williams	32051	1994 CL
1994 CO ₁	15.5	0.15	19980706	17.84711	53.67010	181.55338	3.57440	0.1110470	2.2868934	29	2	1994–1998	0.50	M-v	4	Williams	31963	1994 CO ₁
1994 CD ₈	14.5	0.15	19980706	40.84168	9.01261	220.25011	3.41955	0.1127083	2.2843406	18	4	1978–1998	0.59	M-v	1	Williams	25651	1994 CD ₈
1994 CV ₉	15.0	0.15	19980706	348.90724	121.41683	142.09344	6.59993	0.1146882	2.3237468	40	3	1994–1998	0.59	M-v	3	Williams	31963	1994 CV ₉
1994 CX ₁₂	14.5	0.15	19980706	44.68834	145.33527	40.04366	4.02086	0.0653760	2.3742328	36	3	1987–1998	0.80	M-v	3	Williams	31963	1994 CX ₁₂
1994 CL ₁₈	14.5	0.15	19980706	186.24851	282.22778	119.34008	7.08801	0.0789147	2.3529427	23	2	1994–1998	0.77	M-v	5	Williams	31964	1994 CL ₁₈
1994 EL ₂	14.5	0.15	19980706	8.70965	193.76939	2.27933	12.61293	0.1926642	2.5485467	37	2	1994–1998	0.78	M-v	4	Williams	32051	1994 EL ₂
1994 EV ₃	7.0	0.15	19980706	173.40634	10.00668	19.52724	1.66452	0.0469099	42.6841085	36	4	1994–1998	0.66	M-v	5	Marsden	30092	1994 EV ₃
1994 EC ₅	14.5	0.15	19980706	271.32634	328.73211	345.76087	6.14326	0.0599317	2.4147310	59	2	1994–1998	0.61	M-v	5	Williams	32051	1994 EC ₅
1994 EO ₆	14.5	0.15	19980706	194.01725	317.64303	74.05855	5.08501	0.0988535	2.3604174	37	2	1994–1998	0.92	M-v	5	Williams	32051	1994 EO ₆
1994 FF	14.0	0.15	19980706	79.20252	79.08846	129.17761	6.03326	0.1350369	2.2597260	23	3	1994–1998	0.55	M-v	2	Williams	32051	1994 FF
1994 GA ₁	14.0	0.15	19980706	21.38235	207.04410	85.82120	4.81921	0.1634440	2.2415228	18	6	1974–1998	1.09	M-v	2	Williams	29663	1994 GA ₁
1994 GG ₁	13.0	0.15	19980706	347.73484	69.80344	142.65341	13.27323	0.1569895	2.6453712	15	3	1985–1998	0.68	M-v	4	Williams	31725	1994 GG ₁
1994 GM ₁	14.0	0.15	19980706	339.94018	228.97515	90.84805	4.71506	0.1234303	2.3215504	26	5	1988–1998	0.62	M-v	1	Williams	26191	1994 GM ₁
1994 GB ₉	14.5	0.15	19980706	79.23974	25.35270	175.12534	2.40952	0.1280612	2.3010466	25	3	1980–1998	0.93	M-v	4	Williams	32051	1994 GB ₉
1994 GL ₉	15.5	0.15	19980706	87.88259	332.65329	224.93863	3.50450	0.1004049	2.2828130	25	5	1989–1998	0.57	M-v	3	Williams	29663	1994 GL ₉
1994 GV ₉	7.0	0.15	19980706	56.23343	300.39396	176.83483	0.55967	0.0572076	43.4645320	28	5	1994–1998	0.77	M-v	4	Marsden	31586	1994 GV ₉
1994 GW ₁₀	14.5	0.15	19980706	74.22878	97.43996	62.05075	7.70813	0.1873745	2.4367843	36	4	1990–1998	0.66	M-v	2	Williams	31964	1994 GW ₁₀
1994 JB	15.0	0.15	19980706	314.26801	222.68858	65.96427	3.15780	0.1882765	2.5465301	36	2	1994–1998	0.62	M-v	5	Williams	32051	1994 JB
1994 JQ	15.0	0.15	19980706	183.77188	6.89994	40.03464	2.33626	0.0513099	2.5369604	33	2	1994–1998	0.71	M-v	6	Williams	31964	1994 JQ
1994 JR	13.5	0.15	19980706	332.60919	167.92270	82.85949	15.08357	0.1200251	2.5861444	61	4	1992–1998	0.55	M-v	2	Williams	32051	1994 JR
1994 JS	8.0	0.15	19980706	326.94025	237.87492	56.34978	14.06546	0.2180076	42.2068121	37	4	1994–1998	0.52	M-v	3	Marsden	30092	1994 JS
1994 JQ ₁	7.0	0.15	19980706	297.98945	256.11598	25.67514	3.75632	0.0485230	43.8933359	37	4	1994–1998	0.46	M-v	4	Marsden	30092	1994 JQ ₁
1994 JR ₁	7.5	0.15	19980706	2.31494	103.48735	144.86448	3.80082	0.1170103	39.3619452	37	4	1994–1998	0.46	M-v	4	Marsden	32051	1994 JR ₁
1994 JU ₈	14.0	0.15	19980706	322.19695	58.28360	231.29599	15.78024	0.1220543	2.5221099	43	2	1994–1998	0.76	M-v	5	Williams	32051	1994 JU ₈
1994 JE ₉	14.0	0.15	19980706	356.08590	149.71702	118.84227	6.75268	0.1114754	2.4511297	47	3	1994–1998	0.51	M-v	4	Williams	32051	1994 JE ₉
1994 KA	12.5	0.15	19980706	335.05107	251.53784	69.12814	23.31006	0.2720660	2.3585813	32	3	1994–1998	0.74	M-v	2	Williams	32051	1994 KA
1994 LJ ₁	13.0	0.15	19980706	22.11072	93.84819	84.31558	12.30965	0.2057654	2.6877373	35	3	1989–1998	0.61	M-v	2	Williams	31789	1994 LJ ₁
1994 NR ₁	12.0	0.15	19980706	156.29912	302.67867	133.04131	11.45227	0.1903735	2.9930274	45	3	1994–1998	0.73	M-v	4	Williams	32051	1994 NR ₁
1994 NW ₁	14.0	0.15	19980706	38.95665	88.78907	132.87753	6.60061	0.2442628	2.5650858	33	4	1989–1998	0.81	M-v	2	Williams	29663	1994 NW ₁
1994 PX	13.0	0.15	19980706	294.63184	192.70216	155.80119	13.17537	0.1497946	2.7883148	41	5	1989–1998	0.73	M-v	1	Williams	30092	1994 PX
1994 PH ₁	14.0	0.15	19980706	322.30451	160.79847	135.09652	11.98540	0.3107727	2.7435644	50	4	1985–1998	0.58	M-v	1	Williams	31965	1994 PH ₁
1994 PK ₁	14.0	0.15	19980706	303.93513	264.50758	69.88518	16.84334	0.3297229	2.7059675	45	3	1990–1998	0.63	M-v	3	Williams	31965	1994 PK ₁
1994 PZ ₁	13.5	0.15	19980706	233.62704	212.80018	260.98087	6.12257	0.0622061	2.3332017	27	4	1991–1998	0.65	M-v	2	Williams	27122	1994 PZ ₁
1994 PU ₂	16.0	0.15	19980706	319.70716	55.65467	317.26405	2.28060	0.1988052	2.5217585	21	3	1978–1998	0.66	M-v	4	Williams	27313	1994 PU ₂

1994 PE ₃	15.0	0.15	19980706	357.63284	101.36958	157.68937	12.41639	0.1476846	2.7790336	34	3	1993–1998	0.83	M-v	3	Williams	31965	1994 PE ₃
1994 PU ₄	15.0	0.15	19980706	354.60304	99.99014	138.70156	2.33895	0.0648859	2.9957351	44	2	1994–1998	0.76	M-v	5	Williams	31965	1994 PU ₄
1994 PK ₇	14.0	0.15	19980706	328.41561	228.68269	150.28860	6.47364	0.1263472	2.4443248	24	4	1979–1998	0.73	M-v	2	Williams	29138	1994 PK ₇
1994 PF ₉	13.5	0.15	19980706	145.39038	313.18408	143.50795	1.54127	0.1881214	3.1571949	19	3	1994–1998	0.54	M-v	4	Williams	27448	1994 PF ₉
1994 PQ ₁₁	13.5	0.15	19980706	92.61881	239.84763	311.48052	3.42201	0.0730683	2.7033541	22	3	1994–1998	0.82	M-v	3	Williams	26422	1994 PQ ₁₁
1994 PQ ₁₄	14.0	0.15	19980706	335.42991	50.34036	194.58279	4.00549	0.1052273	3.1061500	77	2	1994–1998	0.75	M-v	4	Williams	32052	1994 PQ ₁₄
1994 PV ₁₆	13.5	0.15	19980706	16.63954	278.32359	347.08179	3.18032	0.0517437	2.7187795	22	6	1981–1998	0.99	M-v	1	Williams	29663	1994 PV ₁₆
1994 PT ₁₉	13.5	0.15	19980706	278.97854	119.67232	183.40559	1.83478	0.1680806	3.1176463	54	3	1992–1998	0.70	M-v	4	Williams	32052	1994 PT ₁₉
1994 PW ₂₀	13.5	0.15	19980706	94.87772	204.13236	346.03226	3.92194	0.0239067	2.7425902	31	4	1992–1998	0.77	M-v	2	Williams	30688	1994 PW ₂₀
1994 PN ₂₁	13.0	0.15	19980706	182.91163	288.20979	145.07435	2.29376	0.1663850	3.0905337	35	6	1951–1998	0.85	M-v	1	Marsden	32052	1994 PN ₂₁
1994 PO ₂₅	14.5	0.15	19980706	331.37795	223.31942	51.29299	2.71973	0.0515960	2.9137566	28	3	1994–1998	0.75	M-v	4	Williams	32052	1994 PO ₂₅
1994 PY ₂₅	15.0	0.15	19980706	335.28215	212.95382	118.85538	1.32124	0.1061505	2.5830128	19	3	1994–1998	0.62	M-v	5	Williams	26759	1994 PY ₂₅
1994 PR ₂₇	13.5	0.15	19980706	141.30909	129.23765	10.41007	4.70015	0.0558374	2.7379754	48	5	1981–1998	0.69	M-v	2	Williams	29945	1994 PR ₂₇
1994 PW ₃₁	13.5	0.15	19980706	68.14464	78.37258	175.58763	7.82285	0.1663728	2.4484481	30	4	1990–1998	0.87	M-v	3	Williams	30472	1994 PW ₃₁
1994 PN ₃₆	14.5	0.15	19980706	144.64146	296.79621	154.67589	10.19233	0.0650091	3.0624360	21	2	1994–1998	0.49	M-v	4	Williams	31966	1994 PN ₃₆
1994 PD ₃₈	13.5	0.15	19980706	342.92142	71.75904	153.09837	7.57918	0.1613426	3.0966855	36	3	1992–1998	0.85	M-v	3	Williams	32052	1994 PD ₃₈
1994 PG ₃₉	14.0	0.15	19980706	317.13705	28.24972	220.85951	0.62787	0.1524632	3.1255173	24	2	1994–1998	0.87	M-v	5	Williams	31966	1994 PG ₃₉
1994 RQ	14.0	0.15	19980706	330.49063	342.49395	37.54494	1.81718	0.2156109	2.4886771	37	8	1980–1998	0.80	M-v	2	Williams	29945	1994 RQ
1994 RL ₁	14.0	0.15	19980706	351.04610	153.94189	188.39536	12.94079	0.2089077	2.5451430	25	4	1986–1998	0.73	M-v	3	Williams	28617	1994 RL ₁
1994 RU ₁	12.5	0.15	19980706	235.26584	194.56539	172.38805	16.98943	0.2377177	3.1578500	33	3	1994–1998	0.75	M-v	3	Williams	31966	1994 RU ₁
1994 SH ₃	14.0	0.15	19980706	254.40730	112.33203	209.84509	1.21830	0.1435366	3.3380160	31	4	1992–1998	0.53	M-v	1	Williams	32052	1994 SH ₃
1994 SF ₁₂	14.5	0.15	19980706	337.25161	236.30465	86.75074	1.29951	0.0804541	2.7433717	34	5	1992–1998	0.72	M-v	2	Williams	29945	1994 SF ₁₂
1994 TR ₁	13.5	0.15	19980706	359.41660	119.93932	205.97265	12.09644	0.3049084	2.5577155	23	4	1993–1998	0.92	M-v	3	Williams	30689	1994 TR ₁
1994 TX ₂	13.0	0.15	19980706	270.82512	205.91159	208.70912	10.42510	0.1013676	2.7424803	35	5	1988–1998	0.62	M-v	2	Williams	30900	1994 TX ₂
1994 UO	13.5	0.15	19980706	292.70416	238.75962	146.72556	2.75501	0.0871291	2.8947880	23	4	1989–1998	1.45	M-v	2	Marsden	30276	1994 UO
1994 UK ₁	13.0	0.15	19980706	354.12658	294.34455	9.31632	5.49426	0.2858777	2.7499984	25	5	1985–1998	0.72	M-v	1	Williams	30081	1994 UK ₁
1994 UN ₁	12.5	0.15	19980706	235.31167	155.83552	218.01400	9.96081	0.1062165	3.3570625	59	4	1988–1998	0.86	M-v	2	Williams	32052	1994 UN ₁
1994 UK ₅	14.0	0.15	19980706	258.72324	0.67776	53.64363	3.14292	0.1481091	2.8389907	27	6	1989–1998	0.77	M-v	1	Williams	29945	1994 UK ₅
1994 UJ ₁₁	13.0	0.15	19980706	28.04364	222.49521	78.77725	4.28742	0.0939882	2.6889325	39	5	1992–1998	0.76	M-v	1	Williams	30093	1994 UJ ₁₁
1994 UT ₁₁	12.0	0.15	19980706	231.28305	232.20669	231.59695	16.98181	0.0633928	2.7388990	20	3	1994–1998	0.79	M-v	3	Williams	31966	1994 UT ₁₁
1994 VT ₆	13.5	0.15	19980706	262.81933	328.69975	74.44282	3.06103	0.1219102	2.9261665	31	3	1994–1998	0.78	M-v	4	Williams	30472	1994 VT ₆
1994 WB ₁	15.0	0.15	19980706	82.35490	88.07457	69.79628	24.80808	0.1519524	1.8550413	68	3	1955–1998	0.65	M-v	1	Williams	31966	1994 WB ₁
1994 WQ ₃	13.0	0.15	19980706	334.23614	170.79223	168.53126	8.40755	0.1527304	2.9091373	39	4	1994–1998	0.71	M-v	2	Williams	32052	1994 WQ ₃
1994 YF	13.0	0.15	19980706	284.55481	265.07506	120.21127	2.38816	0.2146215	3.1014919	31	7	1972–1998	0.77	M-v	1	Williams	30292	1994 YF
1995 BW ₂	13.0	0.15	19980706	258.40252	81.82482	350.10046	7.09095	0.2315191	3.0713984	20	5	1977–1998	0.69	M-v	1	Williams	28617	1995 BW ₂
1995 DC ₂	7.0	0.15	19980706	247.59969	122.31925	154.18261	2.34665	0.0699912	43.8529963	48	4	1995–1998	0.57	M-v	5	Marsden	30093	1995 DC ₂
1995 DW ₂	8.0	0.15	19980706	9.22448	6.04194	178.24983	4.15222	0.2423910	24.8936982	70	4	1995–1998	0.56	M-v	3	Williams	29664	1995 DW ₂
1995 GA	16.0	0.15	19980706	304.30177	109.19005	137.04941	8.13436	0.1156876	2.2308006	27	2	1994–1998	0.53	M-v	4	Williams	32052	1995 GA
1995 GO ₇	12.0	0.15	19980706	230.20196	130.75195	44.94107	1.90433	0.1280851	3.1427301	19	6	1976–1997	0.78	M-v	2	Williams	30665	1995 GO ₇
1995 HM ₅	8.0	0.15	19980706	326.10720	61.15675	186.69154	4.82791	0.2499055	39.3043399	24	4	1995–1998	0.52	M-v	4	Marsden	30093	1995 HM ₅
1995 OA	14.0	0.15	19980706	204.14297	150.50771	275.03268	6.15651	0.0864760	2.3261768	58	3	1995–1998	0.66	M-v	2	Williams	29664	1995 OA
1995 OS ₁	14.5	0.15	19980706	182.34916	67.40932	338.94679	2.82971	0.0730789	2.4743517	35	2	1995–1998	0.53	M-v	5	Williams	31967	1995 OS ₁
1995 ON ₄	14.5	0.15	19980706	329.94174	104.61776	135.98178	2.77652	0.1116948	2.5654487	37	2	1995–1998	0.69	M-v	4	Williams	32052	1995 ON ₄
1995 OC ₈	15.5	0.15	19980706	319.55630	109.49665	193.17589	3.93153	0.1914478	2.2462941	49	2	1995–1998	0.70	M-v	4	Williams	31967	1995 OC ₈
1995 PK	14.5	0.15	19980706	272.17732	235.15511	132.33533	5.20561	0.1293436	2.2274044	45	4	1992–1998	0.74	M-v	3	Williams	32052	1995 PK
1995 QR	14.5	0.15	19980706	277.07399	278.57348	38.12348	2.72807	0.1775255	2.4387102	50	3	1994–1998	0.68	M-v	4	Williams	32052	1995 QR
1995 QS	15.0	0.15	19980706	346.07262	213.67916	59.23605	5.17978	0.1579317	2.2496718	44	2	1995–1998	0.60	M-v	3	Williams	31967	1995 QS
1995 QD ₂	15.5	0.15	19980706	292.04372	105.18535	289.82694	3.77787	0.1123862	2.1773350	52	3	1995–1998	0.51	M-v	2	Williams	29664	1995 QD ₂
1995 QE ₃	14.5	0.15	19980706	290.32242	11.60264	324.03827	1.74213	0.2295091	2.3731485	62	3	1995–1998	0.64	M-v	3	Williams	31968	1995 QE ₃
1995 QJ ₃	13.5	0.15	19980706	181.46667	184.16426	188.37462	13.36004	0.0717871	2.9384835	53	3	1995–1998	0.70	M-v	3	Williams	32052	1995 QJ ₃
1995 QT ₃	16.0	0.15	19980706	315.82095	329.95983	327.42396	2.94229	0.2403406	2.2975091	30	2	1995–1998	0.79	M-v	4	Williams	32052	1995 QT ₃
1995 QW ₃	15.0	0.15	19980706	290.86789	88.74469	245.59555	20.99907	0.1524312	2.3140470	36	3	1995–1998	0.60	M-v	2	Williams	32052	1995 QW ₃
1995 QP ₁₀	13.5	0.15	19980706	55.32945	327.40307	162.76721	13.37723	0.1176748	3.0987422	42	3	1987–1998	0.55	M-v	3	Williams	32052	1995 QP ₁₀

1995 RC	14.5	0.15	19980706	289.94028	58.64390	331.83726	5.52807	0.1674997	2.2093346	53	3	1995–1998	0.46	M-v	2	Marsden	29664	1995 RC
1995 SO	14.5	0.15	19980706	105.87826	285.01805	190.13162	10.11763	0.0925594	2.9938213	36	3	1993–1998	0.50	M-v	2	Williams	32052	1995 SO
1995 SU	14.5	0.15	19980706	52.01814	273.20150	318.39317	5.05653	0.0830125	2.3189461	43	4	1983–1998	0.80	M-v	1	Williams	29946	1995 SU
1995 SC ₂	14.5	0.15	19980706	232.99544	223.61814	161.34329	6.73108	0.1257297	2.4035466	63	3	1995–1998	0.59	M-v	3	Marsden	32052	1995 SC ₂
1995 SP ₂	15.5	0.15	19980706	288.06078	266.53212	81.79289	7.78779	0.1514578	2.3952821	47	3	1995–1998	0.53	M-v	3	Williams	32052	1995 SP ₂
1995 SP ₃	15.0	0.15	19980706	337.86732	67.03137	251.38431	5.38506	0.2011391	2.1924372	32	3	1982–1998	0.71	M-v	2	Williams	27937	1995 SP ₃
1995 SZ ₃	14.0	0.15	19980706	276.84171	170.22763	202.66136	6.12124	0.2397953	2.3459414	31	5	1959–1998	0.77	M-v	2	Williams	32053	1995 SZ ₃
1995 SD ₄	16.0	0.15	19980706	319.64581	142.51015	218.95645	3.93007	0.2263597	2.1528127	19	3	1979–1998	0.69	M-v	4	Williams	25966	1995 SD ₄
1995 ST ₄	13.5	0.15	19980706	270.94490	214.11054	153.26143	6.91571	0.1502447	2.3656217	36	4	1955–1998	0.64	M-v	1	Williams	32053	1995 ST ₄
1995 SS ₅	15.0	0.15	19980706	315.21988	91.88380	207.70340	13.39465	0.1654303	2.5609840	52	3	1991–1998	0.64	M-v	2	Williams	31968	1995 SS ₅
1995 SY ₁₄	16.0	0.15	19980706	324.47931	352.88895	282.01748	0.84671	0.0976323	2.4812432	20	3	1994–1998	0.55	M-v	3	Williams	31968	1995 SY ₁₄
1995 SU ₁₅	15.5	0.15	19980706	341.64521	39.44961	213.59020	0.73906	0.1012223	2.5114793	23	2	1995–1998	0.56	M-v	5	Williams	31969	1995 SU ₁₅
1995 SV ₁₆	14.5	0.15	19980706	57.46397	338.91940	171.14432	0.26941	0.0887937	2.8553000	47	2	1995–1998	0.66	M-v	6	Williams	31969	1995 SV ₁₆
1995 SD ₂₄	14.5	0.15	19980706	252.19900	161.47598	163.91503	5.11050	0.1052235	2.7533199	38	2	1995–1998	0.71	M-v	4	Williams	32053	1995 SD ₂₄
1995 SH ₂₆	15.0	0.15	19980706	303.68145	310.99820	354.22644	1.74817	0.1280518	2.5300876	31	3	1991–1998	0.70	M-v	3	Williams	31969	1995 SH ₂₆
1995 SR ₂₆	14.0	0.15	19980706	230.07775	144.82528	201.26896	1.70644	0.0712448	2.8791701	48	4	1985–1998	0.85	M-v	2	Williams	32053	1995 SR ₂₆
1995 SB ₂₇	15.0	0.15	19980706	11.47203	266.54727	14.77233	2.40707	0.1499852	2.2522977	23	4	1988–1998	0.51	M-v	1	Williams	28889	1995 SB ₂₇
1995 SR ₂₉	14.5	0.15	19980706	293.29396	267.59564	66.28657	2.26160	0.2010742	2.4230620	33	5	1991–1998	0.78	M-v	1	Williams	31969	1995 SR ₂₉
1995 SV ₄₃	13.5	0.15	19980706	172.17813	193.78871	202.38528	7.43839	0.1206181	3.0290295	28	2	1995–1998	0.76	M-v	4	Williams	32053	1995 SV ₄₃
1995 SK ₅₁	14.0	0.15	19980706	352.96585	208.88501	2.60876	2.16543	0.1109333	3.0342659	42	2	1995–1998	0.61	M-v	5	Williams	32053	1995 SK ₅₁
1995 SW ₅₂	14.5	0.15	19980706	324.85343	73.97020	248.09738	4.70435	0.1653351	2.2821091	15	4	1978–1998	0.71	M-v	2	Williams	29946	1995 SW ₅₂
1995 SV ₅₃	14.5	0.15	19980706	57.97681	279.52989	209.03838	1.34124	0.0666807	2.9478545	44	2	1995–1998	0.68	M-v	4	Williams	32053	1995 SV ₅₃
1995 SQ ₅₄	15.0	0.15	19980706	304.18357	257.45360	75.08289	4.09605	0.1915686	2.3433657	35	4	1988–1998	0.68	M-v	2	Williams	32053	1995 SQ ₅₄
1995 TD	15.0	0.15	19980706	328.32950	142.61236	186.73274	6.39023	0.1564241	2.2279468	48	4	1992–1998	0.50	M-v	2	Williams	30093	1995 TD
1995 TT	13.0	0.15	19980706	220.91284	323.55062	29.05646	10.62042	0.1140321	2.9890527	69	2	1995–1998	0.58	M-v	4	Williams	32053	1995 TT
1995 TX	13.5	0.15	19980706	98.12384	263.64421	304.91576	23.31913	0.1576146	2.3180195	35	3	1995–1998	0.57	M-v	3	Williams	29110	1995 TX
1995 TC ₈	14.5	0.15	19980706	305.23675	234.49665	116.89001	5.43067	0.1615312	2.2745893	17	4	1971–1998	0.77	M-v	2	Williams	30665	1995 TC ₈
1995 UK ₃	13.0	0.15	19980706	148.33445	212.66829	248.61870	14.35813	0.0985787	2.8637403	49	3	1995–1998	0.46	M-v	2	Williams	32053	1995 UK ₃
1995 UP ₃	14.0	0.15	19980706	314.93745	330.53867	7.98839	4.39748	0.1572853	2.3375345	15	4	1977–1998	0.55	M-v	2	Williams	25968	1995 UP ₃
1995 UR ₃	14.5	0.15	19980706	256.41133	191.33279	226.64315	5.71947	0.0976456	2.3244128	35	4	1988–1998	0.58	M-v	1	Williams	30472	1995 UR ₃
1995 UD ₄	14.5	0.15	19980706	324.18230	342.46348	28.56528	5.49143	0.1648481	2.1603776	25	3	1995–1998	0.58	M-v	4	Williams	30665	1995 UD ₄
1995 UN ₄	14.0	0.15	19980706	305.50738	95.46949	239.60622	5.41930	0.1662250	2.4711584	32	3	1987–1998	0.67	M-v	2	Williams	32053	1995 UN ₄
1995 UP ₄	13.0	0.15	19980706	269.16613	330.67381	63.10662	7.94534	0.1365425	2.4147638	42	6	1976–1998	0.65	M-v	1	Williams	29665	1995 UP ₄
1995 UH ₅	14.0	0.15	19980706	294.86908	288.43696	46.07417	5.55273	0.1227365	2.4496987	29	4	1991–1998	0.81	M-v	2	Williams	26192	1995 UH ₅
1995 UX ₅	14.0	0.15	19980706	207.11736	156.27921	297.34394	6.30646	0.0735253	2.3866691	23	6	1980–1998	0.50	M-v	1	Williams	30093	1995 UX ₅
1995 UC ₆	13.5	0.15	19980706	14.46090	335.52934	320.26332	6.48096	0.1790993	2.1901197	29	5	1972–1998	0.78	M-v	2	Williams	29665	1995 UC ₆
1995 UW ₆	14.0	0.15	19980706	118.18820	58.33114	29.90675	8.43534	0.0144178	3.0791989	63	3	1995–1998	0.76	M-v	3	Williams	32053	1995 UW ₆
1995 UA ₉	13.5	0.15	19980706	232.99168	321.90964	12.46230	4.37792	0.0804886	3.0685474	48	4	1984–1998	0.73	M-v	2	Williams	32053	1995 UA ₉
1995 UC ₉	14.5	0.15	19980706	100.69964	84.16113	40.91260	2.40949	0.0577907	2.9321682	43	4	1993–1998	0.66	M-v	1	Williams	31969	1995 UC ₉
1995 UE ₁₅	13.5	0.15	19980706	30.83107	307.95604	240.59291	4.10982	0.0922790	3.1287891	27	3	1992–1998	0.57	M-v	4	Williams	31969	1995 UE ₁₅
1995 UQ ₁₆	14.0	0.15	19980706	335.59369	200.86106	85.13325	4.83372	0.1658426	2.5802958	45	3	1995–1998	0.61	M-v	4	Williams	31970	1995 UQ ₁₆
1995 UV ₁₆	15.0	0.15	19980706	326.43954	211.89058	76.41595	5.96644	0.2091706	2.5949208	32	2	1995–1998	0.63	M-v	4	Williams	31970	1995 UV ₁₆
1995 UB ₂₁	15.0	0.15	19980706	354.16985	58.70371	208.61904	7.59480	0.1498849	2.4592574	37	3	1991–1998	0.48	M-v	3	Williams	31970	1995 UB ₂₁
1995 UK ₂₈	14.5	0.15	19980706	288.42678	294.02644	40.50558	5.70366	0.1425475	2.4454705	32	2	1995–1998	0.65	M-v	4	Williams	31970	1995 UK ₂₈
1995 UQ ₄₄	14.0	0.15	19980706	286.34786	303.64843	17.29142	12.98415	0.1688817	2.5775387	28	2	1995–1998	0.73	M-v	4	Williams	31971	1995 UQ ₄₄
1995 UX ₄₄	13.5	0.15	19980706	159.57625	47.61458	23.12534	1.91469	0.0855848	2.9524314	24	3	1995–1998	0.74	M-v	3	Williams	32053	1995 UX ₄₄
1995 UB ₄₅	14.5	0.15	19980706	308.29160	111.53385	269.07500	2.89714	0.1510313	2.2263862	24	5	1988–1998	0.66	M-v	2	Williams	30784	1995 UB ₄₅
1995 VG	12.5	0.15	19980706	177.63316	174.33729	282.78778	1.93661	0.0494153	2.7582680	27	5	1981–1998	0.57	M-v	1	Williams	29665	1995 VG
1995 VL	14.0	0.15	19980706	273.61044	284.96018	60.62015	12.60185	0.1718118	2.6372415	37	3	1978–1998	0.73	M-v	3	Williams	32053	1995 VL
1995 VS	14.0	0.15	19980706	310.08074	153.03340	218.57410	2.17590	0.1628532	2.2524991	24	8	1978–1998	0.63	M-v	1	Williams	30473	1995 VS
1995 VV	13.5	0.15	19980706	227.84640	324.36746	38.99618	11.29877	0.0487202	3.0039715	33	2	1995–1998	0.63	M-v	4	Williams	31971	1995 VV
1995 VT ₁	12.5	0.15	19980706	182.34555	151.02384	242.89793	8.80572	0.1176802	3.1746123	27	3	1978–1998	0.64	M-v	3	Williams	32053	1995 VT ₁
1995 VG ₁₃	14.5	0.15	19980706	272.34408	208.57541	113.70704	3.51292	0.0327929	2.8326544	21	2	1995–1998	0.69	M-v	5	Williams	31971	1995 VG ₁₃

1995 WF	15.5	0.15	19980706	261.93947	163.05682	246.45616	10.58760	0.2065650	2.3846947	50	3	1995–1998	0.50	M-v	3	Williams	29627	1995 WF
1995 WN	16.0	0.15	19980706	331.60385	257.67582	80.54640	4.65330	0.1584942	2.3251594	24	4	1991–1998	0.59	M-v	1	Williams	29946	1995 WN
1995 WO	15.0	0.15	19980706	308.09359	138.85178	198.11821	8.20204	0.2782267	2.3802622	44	4	1991–1998	0.66	M-v	1	Williams	31971	1995 WO
1995 WS	14.5	0.15	19980706	308.37480	102.44849	272.17743	3.86827	0.1688420	2.2951680	21	5	1981–1998	0.64	M-v	1	Williams	26407	1995 WS
1995 WY	12.5	0.15	19980706	131.27808	40.74547	70.74328	10.39681	0.0568844	3.0507336	51	2	1995–1998	0.63	M-v	4	Williams	31971	1995 WY
1995 WM ₂	13.5	0.15	19980706	179.32922	170.43668	228.65351	15.24577	0.2298312	2.9327192	39	3	1995–1998	0.62	M-v	2	Williams	31791	1995 WM ₂
1995 WV ₂	14.0	0.15	19980706	2.83312	106.00089	213.53515	2.81855	0.1679285	2.2729731	21	4	1991–1998	0.46	M-v	1	Williams	31588	1995 WV ₂
1995 WW ₂	13.0	0.15	19980706	205.60038	166.80555	219.28393	8.15660	0.1695329	3.0602797	27	3	1984–1998	0.64	M-v	4	Williams	31971	1995 WW ₂
1995 WL ₄	15.0	0.15	19980706	231.06867	306.26809	137.44353	3.30496	0.1517117	2.4650134	21	3	1995–1998	0.78	M-v	4	Williams	29627	1995 WL ₄
1995 WM ₄	14.0	0.15	19980706	299.34029	236.29709	100.26265	4.26742	0.1576237	2.5885265	24	2	1995–1998	0.94	M-v	4	Williams	31972	1995 WM ₄
1995 WJ ₅	13.0	0.15	19980706	19.60648	15.98439	262.94625	8.53130	0.0803683	2.5813901	44	3	1990–1998	0.61	M-v	3	Williams	32054	1995 WJ ₅
1995 WN ₅	13.0	0.15	19980706	212.15498	4.28405	67.20366	6.12405	0.0326441	2.7408805	34	7	1974–1998	0.68	M-v	1	Williams	29139	1995 WN ₅
1995 WF ₆	14.5	0.15	19980706	302.54243	231.37526	118.73935	1.65562	0.1379809	2.4366403	51	4	1994–1998	0.60	M-v	1	Marsden	29665	1995 WF ₆
1995 WZ ₆	13.0	0.15	19980706	204.56183	338.78659	67.76630	11.15952	0.0932200	3.0007065	42	3	1995–1998	0.53	M-v	3	Williams	32054	1995 WZ ₆
1995 WO ₈	12.0	0.15	19980706	58.53122	58.07559	145.56528	14.28767	0.2374153	3.1647323	34	5	1952–1998	0.63	M-v	1	Williams	29946	1995 WO ₈
1995 WX ₈	13.5	0.15	19980706	210.96262	279.53712	78.36922	2.22886	0.1808906	3.1760159	27	3	1983–1998	0.70	M-v	4	Williams	32054	1995 WX ₈
1995 WT ₁₅	14.0	0.15	19980706	208.08199	350.74783	27.26808	2.20465	0.0850888	2.8843767	21	3	1995–1998	0.56	M-v	5	Williams	31972	1995 WT ₁₅
1995 WO ₄₂	13.0	0.15	19980706	183.48103	342.18497	45.12017	18.48093	0.1264734	3.1076153	38	3	1995–1998	0.68	M-v	3	Williams	32054	1995 WO ₄₂
1995 XJ ₁	12.0	0.15	19980706	210.07652	133.38988	270.46010	8.74395	0.0695108	3.0266219	31	4	1989–1998	0.72	M-v	2	Williams	32054	1995 XJ ₁
1995 XL ₁	13.5	0.15	19980706	349.47066	43.40741	283.36895	5.34774	0.1371073	2.4061532	28	4	1987–1998	0.98	M-v	2	Williams	29665	1995 XL ₁
1995 YB	14.0	0.15	19980706	294.04206	239.38073	96.96943	13.05499	0.2363553	2.6497300	33	2	1995–1998	0.56	M-v	4	Williams	31972	1995 YB
1995 YM	12.0	0.15	19980706	79.43015	104.18403	102.63520	17.28002	0.1803988	3.1260186	35	4	1980–1998	0.49	M-v	1	Williams	30473	1995 YM
1995 YP	13.0	0.15	19980706	18.48386	158.07392	113.04487	3.20924	0.0111497	2.8683057	32	3	1982–1998	0.80	M-v	4	Williams	29665	1995 YP
1995 YB ₁	13.0	0.15	19980706	82.09897	79.35073	121.09886	5.84369	0.0939165	3.1176782	23	4	1980–1998	0.65	M-v	1	Williams	30666	1995 YB ₁
1995 YY ₇	13.5	0.15	19980706	68.51145	23.79796	232.11141	3.40906	0.0702350	2.3017371	26	7	1949–1998	0.66	M-v	1	Williams	29665	1995 YY ₇
1996 AE	14.5	0.15	19980706	286.66973	166.05176	239.80584	5.14410	0.1350588	2.3730236	76	4	1989–1998	0.55	M-v	1	Marsden	30093	1996 AE
1996 AU	13.5	0.15	19980706	330.39661	223.02984	121.16820	16.86165	0.1472425	2.6848226	16	4	1985–1998	0.61	M-v	2	Williams	29946	1996 AU
1996 AB ₁	13.5	0.15	19980706	205.77048	339.07438	115.10275	3.26460	0.0404241	2.8612168	31	6	1980–1998	0.85	M-v	1	Williams	30292	1996 AB ₁
1996 AF ₁	13.0	0.15	19980706	252.28368	293.06473	126.03632	8.36043	0.2850827	2.5525829	23	5	1951–1998	0.67	M-v	2	Williams	26761	1996 AF ₁
1996 AO ₁	15.0	0.15	19980706	301.45931	326.37996	69.54064	3.91874	0.1932272	2.3924314	66	3	1996–1998	0.68	M-v	4	Marsden	30093	1996 AO ₁
1996 AD ₂	13.5	0.15	19980706	259.64109	278.00105	94.29209	12.01021	0.1326711	2.9844036	76	3	1996–1998	0.60	M-v	3	Williams	32054	1996 AD ₂
1996 AY ₃	12.0	0.15	19980706	223.39642	258.38018	138.27919	17.66673	0.2689662	3.1771371	51	3	1996–1998	0.54	M-v	3	Williams	32054	1996 AY ₃
1996 BB	12.5	0.15	19980706	340.66396	214.15632	119.70993	10.20143	0.1599204	2.7824712	22	4	1980–1998	0.67	M-v	2	Williams	30457	1996 BB
1996 BO ₂	13.0	0.15	19980706	141.65828	188.60624	337.30739	3.66006	0.0352517	3.0776868	44	5	1977–1998	0.60	M-v	2	Williams	29139	1996 BO ₂
1996 BQ ₂	12.0	0.15	19980706	208.06789	290.84584	139.07205	15.15734	0.0684135	3.4062647	28	5	1991–1998	0.75	M-v	1	Williams	30901	1996 BQ ₂
1996 BN ₆	14.5	0.15	19980706	339.90047	239.72034	73.58472	4.02373	0.1669022	3.0039966	29	5	1993–1998	0.67	M-v	1	Williams	29666	1996 BN ₆
1996 CG ₁	12.5	0.15	19980706	82.13471	197.31401	31.98865	5.81116	0.0097169	3.0847864	29	7	1975–1998	0.75	M-v	1	Williams	30473	1996 CG ₁
1996 DV	14.0	0.15	19980706	101.34731	64.53990	154.22786	11.83602	0.0409718	3.1691484	37	3	1996–1998	0.63	M-v	3	Williams	30083	1996 DV
1996 DW ₂	12.5	0.15	19980706	315.01850	234.85083	143.28166	17.59787	0.1846984	2.7083369	23	4	1989–1998	0.55	M-v	1	Williams	31009	1996 DW ₂
1996 GE ₁₉	10.5	0.15	19980706	11.51125	64.03675	213.22191	30.80430	0.0720278	5.2666903	49	3	1996–1998	0.74	M-v	3	Williams	30293	1996 GE ₁₉
1996 KV ₁	7.5	0.15	19980706	336.14484	193.48855	92.63423	8.07992	0.1106830	45.2292962	20	2	1996–1998	0.27	M-v	5	Williams	31973	1996 KV ₁
1996 OM ₂	14.5	0.15	19980706	95.37107	126.70761	260.73089	7.93792	0.2240770	2.7369450	28	3	1994–1998	0.69	M-v	2	Williams	32054	1996 OM ₂
1996 RO ₄	15.5	0.15	19980706	102.62973	343.62691	114.35012	1.63351	0.2088153	2.3374884	32	2	1996–1998	0.84	M-v	4	Williams	32054	1996 RO ₄
1996 RG ₅	14.5	0.15	19980706	154.39809	273.96814	124.04153	8.61132	0.1965173	2.2766997	28	2	1996–1998	0.60	M-v	4	Williams	31973	1996 RG ₅
1996 SA ₁	15.5	0.15	19980706	114.72022	87.24482	11.81958	9.15847	0.1007118	2.2165605	66	2	1996–1998	0.64	M-v	4	Williams	32054	1996 SA ₁
1996 SU ₄	15.0	0.15	19980706	58.33274	122.65187	20.26689	6.72475	0.0779080	2.3920535	53	3	1992–1998	0.58	M-v	3	Williams	32054	1996 SU ₄
1996 SH ₆	14.5	0.15	19980706	14.28623	355.40664	195.17757	7.94679	0.0641129	2.2964240	52	2	1996–1998	0.66	M-v	4	Williams	32054	1996 SH ₆
1996 TQ	16.0	0.15	19980706	127.99117	357.01730	86.91799	3.06874	0.1799015	2.3458866	20	2	1996–1998	0.46	M-v	4	Williams	31730	1996 TQ
1996 TC ₁₀	14.5	0.15	19980706	92.29242	109.88606	22.26957	7.10302	0.0979953	2.2206285	39	3	1988–1998	0.77	M-v	3	Williams	31973	1996 TC ₁₀
1996 TL ₁₀	14.5	0.15	19980706	195.69053	44.87062	320.80741	4.77266	0.1818723	2.2557655	47	4	1971–1998	0.84	M-v	2	Williams	32054	1996 TL ₁₀
1996 TS ₁₀	15.0	0.15	19980706	179.44569	356.90168	38.83186	5.67359	0.1417688	2.2020583	48	2	1996–1998	0.79	M-v	4	Williams	32054	1996 TS ₁₀
1996 TG ₁₃	15.0	0.15	19980706	98.55300	121.73042	342.28085	2.15129	0.1552842	2.4626332	40	2	1996–1998	0.87	M-v	4	Williams	32054	1996 TG ₁₃
1996 TD ₁₅	13.0	0.15	19980706	139.27138	258.94605	200.81854	21.87496	0.2069229	2.3024077	25	3	1989–1998	0.57	M-v	3	Williams	31974	1996 TD ₁₅

1996 TF ₁₈	16.5	0.15	19980706	45.28097	150.35369	25.91993	5.99829	0.0910254	2.2890549	32	2	1996–1998	0.70	M-v	4	Williams	32055	1996 TF ₁₈
1996 TS ₁₈	15.5	0.15	19980706	56.67958	144.27085	17.07940	1.47660	0.0884918	2.3468447	43	4	1987–1998	0.76	M-v	2	Williams	32055	1996 TS ₁₈
1996 TS ₂₅	16.0	0.15	19980706	42.90927	143.82098	39.13760	6.92163	0.1240298	2.2771065	30	2	1996–1998	0.43	M-v	4	Williams	31974	1996 TS ₂₅
1996 TL ₂₉	14.5	0.15	19980706	155.89950	196.17320	214.33204	4.17952	0.1939023	2.3920613	50	4	1985–1998	0.80	M-v	3	Williams	32055	1996 TL ₂₉
1996 TM ₃₆	14.5	0.15	19980706	225.99455	292.95588	346.18382	12.49642	0.2135473	2.4447933	13	2	1995–1996	0.15	M-v	4	Williams	31974	1996 TM ₃₆
1996 TL ₆₆	5.0	0.15	19980706	358.70401	184.34995	217.76341	23.93714	0.5876204	84.9654678	122	3	1996–1998	0.50	M-v	4	Marsden	31421	1996 TL ₆₆
1996 UM	15.0	0.15	19980706	221.94118	200.56288	190.56201	21.97842	0.0828989	1.9475879	28	3	1985–1998	0.57	M-v	3	Williams	32055	1996 UM
1996 UB ₁	15.0	0.15	19980706	193.07032	354.67800	45.44681	6.01383	0.1393661	2.1825539	37	2	1996–1998	0.66	M-v	4	Williams	31974	1996 UB ₁
1996 UH ₅	14.0	0.15	19980706	133.94101	199.34026	214.76587	13.99467	0.1707566	2.5268590	26	2	1996–1998	0.57	M-v	4	Williams	31975	1996 UH ₅
1996 VW	15.0	0.15	19980706	160.52540	199.91766	220.70497	3.48034	0.1214301	2.2461865	33	2	1996–1998	0.57	M-v	4	Williams	32055	1996 VW
1996 VB ₁	15.0	0.15	19980706	141.03736	210.69190	229.44295	5.85270	0.0734566	2.3051893	39	3	1991–1998	0.78	M-v	3	Williams	31975	1996 VB ₁
1996 VF ₁	16.0	0.15	19980706	133.30652	40.72470	31.24263	3.78877	0.1548578	2.4068719	49	2	1996–1998	0.63	M-v	4	Williams	32055	1996 VF ₁
1996 VD ₂	14.0	0.15	19980706	131.66659	16.56355	59.33082	9.78441	0.1399151	2.5463400	31	2	1996–1998	0.74	M-v	4	Williams	32055	1996 VD ₂
1996 VE ₂	14.5	0.15	19980706	108.97052	42.60148	62.02804	12.79445	0.1433055	2.5566662	36	2	1996–1998	0.76	M-v	4	Williams	31975	1996 VE ₂
1996 VF ₃	14.0	0.15	19980706	139.70806	33.22036	44.94771	8.90720	0.2207890	2.3909011	71	3	1981–1998	0.56	M-v	2	Williams	31975	1996 VF ₃
1996 VL ₃	14.0	0.15	19980706	167.56951	134.89292	246.44565	2.61158	0.1002830	2.6511147	38	3	1987–1998	0.76	M-v	4	Williams	32055	1996 VL ₃
1996 VH ₄	13.5	0.15	19980706	54.65050	93.60152	77.53842	13.70248	0.1242447	2.6891936	59	2	1996–1998	0.57	M-v	3	Williams	31975	1996 VH ₄
1996 VK ₄	14.5	0.15	19980706	57.25010	277.26164	237.55025	3.56986	0.1854466	2.6795696	33	3	1991–1998	0.61	M-v	3	Williams	31975	1996 VK ₄
1996 VT ₄	14.0	0.15	19980706	117.12468	216.57780	271.14794	4.46276	0.0549594	2.2566874	42	3	1994–1998	0.60	M-v	3	Williams	32055	1996 VT ₄
1996 VT ₅	14.0	0.15	19980706	175.24928	326.06027	89.92673	7.56966	0.1000768	2.3016189	53	3	1989–1998	0.77	M-v	3	Williams	32055	1996 VT ₅
1996 VF ₈	14.0	0.15	19980706	130.07654	33.45270	33.43129	13.76056	0.1605704	2.6026067	32	2	1996–1998	0.62	M-v	3	Williams	32055	1996 VF ₈
1996 VY ₈	14.5	0.15	19980706	172.27210	334.85281	66.10969	5.37126	0.1440687	2.3340827	39	3	1971–1998	0.84	M-v	3	Williams	31976	1996 VY ₈
1996 VG ₁₁	15.0	0.15	19980706	51.72318	185.92425	339.28914	6.70753	0.1461241	2.3110637	33	2	1996–1998	0.55	M-v	4	Williams	32055	1996 VG ₁₁
1996 VV ₁₈	16.0	0.15	19980706	314.85060	231.52901	29.71652	2.28286	0.1169534	2.2836689	20	2	1996–1998	0.60	M-v	5	Williams	31976	1996 VV ₁₈
1996 VX ₂₉	14.5	0.15	19980706	91.88233	80.28387	60.77500	6.18649	0.0360414	2.1778487	28	2	1996–1998	0.67	M-v	4	Williams	31976	1996 VX ₂₉
1996 VX ₃₀	15.0	0.15	19980706	83.10038	80.53717	46.70325	9.84285	0.1932260	2.5406794	37	3	1992–1998	0.54	M-v	2	Williams	31977	1996 VX ₃₀
1996 WC	14.5	0.15	19980706	132.51949	42.83326	36.88489	4.67274	0.2519985	2.6172106	37	3	1993–1998	0.62	M-v	3	Williams	31977	1996 WC
1996 WS ₁	14.5	0.15	19980706	117.01507	194.69181	263.72298	4.21470	0.0470916	2.5577570	31	2	1996–1998	0.81	M-v	4	Williams	31977	1996 WS ₁
1996 WU ₁	13.5	0.15	19980706	80.68908	13.91330	90.55470	10.41935	0.0523544	3.0847430	28	2	1996–1998	0.57	M-v	3	Williams	31977	1996 WU ₁
1996 XY	13.5	0.15	19980706	320.56735	158.48877	83.35477	10.70086	0.0567084	2.7767846	37	3	1989–1998	0.73	M-v	4	Williams	32056	1996 XY
1996 XL ₁	14.5	0.15	19980706	183.46708	337.83986	88.02913	7.64894	0.0751676	2.3266581	36	2	1996–1998	0.65	M-v	4	Williams	31978	1996 XL ₁
1996 XP ₁	15.0	0.15	19980706	144.47725	206.86346	245.02857	5.86027	0.1971119	2.3983201	32	4	1981–1998	0.69	M-v	2	Williams	31112	1996 XP ₁
1996 XE ₂	14.0	0.15	19980706	95.59641	50.95568	75.27115	7.35017	0.0586382	2.3811667	76	3	1985–1998	0.67	M-v	2	Williams	32056	1996 XE ₂
1996 XX ₂	14.0	0.15	19980706	164.56014	27.68577	23.04231	2.34596	0.1418137	2.5292369	39	2	1996–1998	0.71	M-v	5	Williams	32056	1996 XX ₂
1996 XZ ₂	13.5	0.15	19980706	44.38196	73.20974	99.32969	14.79632	0.1992210	3.1882136	25	2	1996–1998	0.46	M-v	3	Williams	31978	1996 XZ ₂
1996 XL ₅	13.5	0.15	19980706	169.21485	309.00185	93.34108	13.97037	0.1575719	2.6227456	28	2	1996–1998	0.68	M-v	4	Williams	31978	1996 XL ₅
1996 XS ₅	13.5	0.15	19980706	74.40722	32.25961	97.62079	6.04528	0.1149342	3.1046371	36	3	1992–1998	0.71	M-v	3	Williams	32056	1996 XS ₅
1996 XA ₆	12.0	0.15	19980706	209.09180	44.33669	299.50455	6.65619	0.1383419	2.9689684	13	3	1990–1998	0.68	M-v	4	Williams	28871	1996 XA ₆
1996 XB ₆	14.5	0.15	19980706	97.64507	59.60926	85.00428	13.47157	0.0779845	2.5309668	27	2	1996–1998	0.59	M-v	3	Williams	31978	1996 XB ₆
1996 XH ₆	13.5	0.15	19980706	183.61370	244.47133	109.84602	3.20541	0.1072876	2.9014909	25	2	1996–1998	0.67	M-v	4	Williams	32056	1996 XH ₆
1996 XK ₁₂	15.0	0.15	19980706	12.19135	121.23696	99.55148	13.87182	0.0935604	2.9674611	27	2	1996–1998	0.77	M-v	4	Williams	31978	1996 XK ₁₂
1996 XM ₁₃	14.0	0.15	19980706	293.46762	193.53857	79.30184	3.47025	0.0617068	2.6523032	37	2	1996–1998	0.73	M-v	5	Williams	32056	1996 XM ₁₃
1996 XF ₁₄	15.0	0.15	19980706	358.64606	76.46934	204.07309	1.73632	0.2176011	2.3282041	26	3	1995–1998	0.43	M-v	4	Williams	29118	1996 XF ₁₄
1996 XT ₁₄	16.5	0.15	19980706	292.25167	265.45290	83.56187	24.74140	0.0938472	1.9029477	72	2	1996–1998	0.41	M-v	3	Williams	31979	1996 XT ₁₄
1996 XJ ₁₅	14.5	0.15	19980706	291.33863	210.44846	97.34340	6.49101	0.1743118	2.4300939	38	3	1991–1998	0.59	M-v	4	Williams	32056	1996 XJ ₁₅
1996 XU ₁₈	13.0	0.15	19980706	100.72322	334.75931	123.72562	2.43160	0.1490676	3.1665501	71	3	1995–1998	0.47	M-v	3	Williams	32056	1996 XU ₁₈
1996 XW ₁₈	14.5	0.15	19980706	324.16909	192.19212	115.44725	7.77437	0.1309826	2.2955695	72	3	1995–1998	0.46	M-v	3	Williams	32056	1996 XW ₁₈
1996 XY ₁₈	14.5	0.15	19980706	143.03825	210.15723	231.36683	2.89366	0.1666910	2.4455679	39	2	1996–1998	0.69	M-v	4	Williams	31979	1996 XY ₁₈
1996 XF ₁₉	14.5	0.15	19980706	212.43809	143.02414	242.45338	4.11425	0.1510035	2.3026832	28	3	1992–1998	0.69	M-v	4	Williams	31979	1996 XF ₁₉
1996 XH ₁₉	14.0	0.15	19980706	33.74832	110.95826	98.23678	15.81699	0.1513656	2.6285490	46	2	1996–1998	0.51	M-v	3	Williams	31979	1996 XH ₁₉
1996 XQ ₁₉	14.0	0.15	19980706	153.21434	139.76956	255.09719	2.40410	0.0843245	2.7874873	46	3	1993–1998	0.86	M-v	4	Williams	32056	1996 XQ ₁₉
1996 XX ₁₉	15.0	0.15	19980706	250.59751	251.02401	102.29999	4.01938	0.1608294	2.2396756	31	3	1992–1998	0.64	M-v	3	Williams	31793	1996 XX ₁₉
1996 XU ₂₅	13.5	0.15	19980706	155.34515	171.81077	219.09685	1.81459	0.0612189	2.8923391	41	3	1981–1998	0.69	M-v	4	Williams	32056	1996 XU ₂₅

1996 XY ₂₈	14.5	0.15	19980706	67.57569	92.00997	66.25519	1.77410	0.1142090	2.4538829	49	3	1991–1998	0.68	M-v	2	Williams	31980	1996 XY ₂₈
1996 XK ₂₉	14.0	0.15	19980706	155.65295	0.28485	65.30133	9.26145	0.1478982	2.3644291	34	3	1985–1998	0.74	M-v	3	Williams	31980	1996 XK ₂₉
1996 XJ ₃₁	13.5	0.15	19980706	100.34279	20.85092	107.74882	10.29390	0.0643149	2.7552694	33	2	1996–1998	0.54	M-v	4	Williams	31980	1996 XJ ₃₁
1996 XL ₃₁	14.5	0.15	19980706	59.44469	73.42867	140.44599	3.99379	0.1062294	2.3296105	28	4	1983–1998	0.67	M-v	3	Williams	28875	1996 XL ₃₁
1996 XD ₃₂	14.0	0.15	19980706	88.11194	78.55823	73.41845	15.06169	0.1060068	2.6598028	35	2	1996–1998	0.70	M-v	3	Williams	31980	1996 XD ₃₂
1996 XQ ₃₂	14.0	0.15	19980706	138.66987	247.96359	221.55468	3.98568	0.0979556	2.2477036	34	5	1974–1998	0.65	M-v	2	Williams	32056	1996 XQ ₃₂
1996 YF	14.0	0.15	19980706	184.29919	357.89940	77.94979	5.72380	0.1211153	2.2567796	28	5	1980–1998	0.74	M-v	2	Williams	32056	1996 YF
1996 YG	14.0	0.15	19980706	71.33701	176.32560	331.72345	4.53262	0.1037325	3.0040892	30	3	1992–1998	0.66	M-v	3	Williams	31981	1996 YG
1996 YU	14.0	0.15	19980706	167.28505	281.67907	130.00533	4.52933	0.0926392	2.7904648	30	4	1991–1998	0.82	M-v	1	Williams	32056	1996 YU
1996 YY	13.5	0.15	19980706	23.56192	318.62303	287.27447	10.22430	0.2586027	2.5502016	33	4	1986–1998	0.70	M-v	3	Williams	29320	1996 YY
1996 YA ₁	14.0	0.15	19980706	150.71409	326.61869	101.65851	3.45184	0.0207272	2.9156769	29	2	1996–1998	0.84	M-v	5	Williams	31981	1996 YA ₁
1996 YG ₁	15.0	0.15	19980706	347.55859	189.04246	77.22088	12.85257	0.1192967	2.4845099	85	2	1996–1998	0.58	M-v	3	Williams	32056	1996 YG ₁
1996 YH ₁	15.0	0.15	19980706	321.08143	150.80771	127.69587	7.27449	0.1134641	2.5285927	59	3	1991–1998	0.47	M-v	3	Williams	32056	1996 YH ₁
1996 YO ₁	14.5	0.15	19980706	59.43293	299.17522	274.09639	1.54100	0.1194206	2.4210495	23	3	1982–1998	0.40	M-v	3	Williams	29141	1996 YO ₁
1996 YC ₂	14.5	0.15	19980706	175.23617	86.75921	301.80830	6.38550	0.1659286	2.2829701	31	3	1994–1998	0.79	M-v	4	Williams	32056	1996 YC ₂
1996 YD ₂	12.5	0.15	19980706	91.87399	110.45668	4.28033	12.21680	0.1061962	3.0320468	63	3	1972–1998	0.64	M-v	2	Williams	32056	1996 YD ₂
1996 YL ₂	14.5	0.15	19980706	40.12485	94.66813	97.11063	7.14321	0.0643710	2.4020537	48	2	1996–1998	0.59	M-v	4	Williams	31981	1996 YL ₂
1996 YY ₂	13.0	0.15	19980706	168.88080	302.29765	75.41392	2.33129	0.1801383	3.0993195	53	4	1992–1998	0.88	M-v	2	Williams	32057	1996 YY ₂
1996 YH ₃	11.5	0.15	19980706	166.63979	261.39141	64.68304	16.93822	0.0928226	3.2144367	54	4	1979–1998	0.53	M-v	2	Williams	32057	1996 YH ₃
1997 AF	13.5	0.15	19980706	187.94689	281.24061	99.16909	7.51587	0.3098750	2.5553894	26	2	1997–1998	0.55	M-v	4	Williams	31981	1997 AF
1997 AP	14.5	0.15	19980706	300.86989	30.67692	294.03098	2.64472	0.1674078	2.2874074	39	3	1994–1998	0.56	M-v	4	Williams	31981	1997 AP
1997 AR	15.0	0.15	19980706	19.36845	323.36909	292.63238	2.08752	0.1396878	2.4097562	36	5	1987–1998	0.73	M-v	1	Williams	29320	1997 AR
1997 AS	14.5	0.15	19980706	336.44826	174.74887	114.29097	5.68385	0.1916851	2.4469967	49	2	1997–1998	0.67	M-v	4	Williams	31982	1997 AS
1997 AT	13.0	0.15	19980706	233.38885	250.01521	110.07381	8.56107	0.2357437	2.4537819	34	3	1980–1998	0.58	M-v	3	Williams	31982	1997 AT
1997 AC ₁	14.5	0.15	19980706	314.36804	260.69427	41.32200	2.51921	0.0814722	2.4740616	36	3	1994–1998	0.63	M-v	4	Williams	31982	1997 AC ₁
1997 AD ₁	14.5	0.15	19980706	186.79361	294.60018	118.98699	3.97727	0.1660934	2.4768743	34	2	1997–1998	0.80	M-v	5	Williams	32057	1997 AD ₁
1997 AJ ₁	14.5	0.15	19980706	111.64697	188.31319	333.86035	3.19715	0.1060586	2.3245474	16	4	1958–1998	0.40	M-v	2	Williams	31113	1997 AJ ₁
1997 AZ ₁	13.0	0.15	19980706	137.49032	59.15169	4.42959	5.90770	0.1081203	3.1962098	60	3	1995–1998	0.78	M-v	3	Williams	32057	1997 AZ ₁
1997 AO ₂	13.0	0.15	19980706	114.85717	13.59456	92.60756	11.80549	0.0721431	2.9777217	39	3	1980–1998	0.64	M-v	3	Williams	32057	1997 AO ₂
1997 AW ₂	13.5	0.15	19980706	78.03708	120.06452	32.76079	4.63911	0.1718038	3.0187820	30	4	1992–1998	0.56	M-v	1	Williams	31982	1997 AW ₂
1997 AG ₃	13.5	0.15	19980706	276.91448	185.20261	111.78197	3.47741	0.0815008	3.0882627	34	2	1996–1998	0.59	M-v	4	Williams	32057	1997 AG ₃
1997 AK ₄	13.0	0.15	19980706	126.57985	168.37302	279.77365	2.49335	0.1918536	3.0029570	24	4	1971–1998	0.65	M-v	1	Williams	31794	1997 AK ₄
1997 AM ₄	14.0	0.15	19980706	343.68231	143.89839	133.03043	13.82050	0.1495354	2.6779131	37	2	1997–1998	0.61	M-v	4	Williams	32057	1997 AM ₄
1997 AF ₅	15.0	0.15	19980706	293.26558	234.24463	97.12088	7.56427	0.1603192	2.2798123	45	3	1994–1998	0.77	M-v	4	Williams	31982	1997 AF ₅
1997 AM ₅	14.0	0.15	19980706	129.31039	131.96262	18.80156	3.60242	0.1416403	2.3323881	23	3	1983–1998	0.45	M-v	3	Marsden	31422	1997 AM ₅
1997 AQ ₅	13.0	0.15	19980706	79.85300	97.98008	63.04693	6.62791	0.0252256	2.8324293	34	2	1997–1998	0.63	M-v	3	Williams	31983	1997 AQ ₅
1997 AW ₅	13.5	0.15	19980706	70.75884	43.55220	114.27481	2.40370	0.1108432	3.1307429	35	3	1992–1998	0.66	M-v	4	Williams	31983	1997 AW ₅
1997 AQ ₆	14.5	0.15	19980706	203.65757	7.51911	68.29431	24.37950	0.0300186	1.8251304	32	2	1997–1998	0.66	M-v	3	Williams	32057	1997 AQ ₆
1997 AX ₆	13.5	0.15	19980706	143.39140	292.21690	141.03872	14.51513	0.0642379	3.1450102	25	2	1997–1998	0.71	M-v	4	Williams	31983	1997 AX ₆
1997 AC ₇	13.5	0.15	19980706	108.60114	2.55239	136.47972	12.56175	0.0778565	2.7057900	34	2	1997–1998	0.58	M-v	4	Williams	31983	1997 AC ₇
1997 AJ ₇	15.5	0.15	19980706	108.91782	264.11688	275.86170	1.30385	0.1496194	2.3558610	19	3	1995–1998	0.50	M-v	4	Williams	29667	1997 AJ ₇
1997 AK ₇	14.0	0.15	19980706	341.19794	155.64405	133.09116	14.30506	0.1729956	2.5937935	51	3	1976–1998	0.65	M-v	3	Williams	32057	1997 AK ₇
1997 AL ₇	14.0	0.15	19980706	20.06948	108.98309	149.54270	4.24412	0.0834781	2.3842875	31	3	1991–1998	0.52	M-v	4	Williams	29667	1997 AL ₇
1997 AP ₁₂	14.5	0.15	19980706	88.20411	211.90993	292.23576	11.64759	0.0719730	2.7694730	17	3	1994–1998	0.59	M-v	3	Williams	32057	1997 AP ₁₂
1997 AS ₁₂	14.0	0.15	19980706	47.29513	126.74950	107.66835	9.56007	0.1747931	2.4414364	39	3	1987–1998	0.67	M-v	3	Williams	31984	1997 AS ₁₂
1997 AK ₁₃	12.5	0.15	19980706	81.08917	51.82864	92.49932	13.44731	0.1645287	3.1572828	39	2	1997–1998	0.63	M-v	3	Williams	31984	1997 AK ₁₃
1997 AS ₁₆	13.5	0.15	19980706	79.16296	87.89608	47.96445	2.45101	0.0345338	3.0451164	51	3	1992–1998	0.67	M-v	3	Williams	32057	1997 AS ₁₆
1997 AX ₁₇	14.5	0.15	19980706	306.47290	297.05817	54.17886	3.31494	0.0426569	2.1256094	18	4	1977–1998	0.53	M-v	2	Williams	29947	1997 AX ₁₇
1997 AA ₁₈	12.5	0.15	19980706	169.97111	305.51657	109.61231	11.11511	0.0851329	3.0382242	29	2	1997–1998	0.66	M-v	4	Williams	31984	1997 AA ₁₈
1997 AG ₂₁	13.5	0.15	19980706	168.87032	210.74477	220.58075	1.12421	0.1556638	2.4838906	38	5	1972–1998	0.89	M-v	2	Williams	31984	1997 AG ₂₁
1997 AM ₂₁	14.0	0.15	19980706	135.20614	345.04367	114.30659	10.18304	0.1102889	2.7672727	33	2	1997–1998	0.48	M-v	3	Williams	31984	1997 AM ₂₁
1997 AZ ₂₁	13.5	0.15	19980706	341.02868	242.66783	19.06822	1.04434	0.1294232	3.1146458	59	2	1997–1998	0.61	M-v	5	Williams	31985	1997 AZ ₂₁
1997 AQ ₂₂	13.5	0.15	19980706	45.20494	86.29776	120.95465	8.53278	0.1604281	2.7776166	37	3	1993–1998	0.62	M-v	3	Williams	32057	1997 AQ ₂₂

1997 BG	15.0	0.15	19980706	356.27273	190.15281	132.07523	32.39902	0.1617368	1.9931599	63	2	1997-1998	0.40	M-v	2	Marsden	31985	1997 BG
1997 BO ₁	13.0	0.15	19980706	211.15044	313.45982	59.62427	2.40234	0.0819025	2.9708616	29	2	1997-1998	0.70	M-v	5	Williams	31985	1997 BO ₁
1997 BR ₁	12.5	0.15	19980706	68.40760	55.97759	127.40320	10.86655	0.2625909	3.0900314	26	5	1970-1998	0.73	M-v	2	Williams	30094	1997 BR ₁
1997 BB ₂	14.0	0.15	19980706	2.55333	295.30314	1.90516	3.13846	0.1328639	2.1573953	36	7	1976-1998	0.76	M-v	2	Williams	31422	1997 BB ₂
1997 BF ₃	15.0	0.15	19980706	217.15190	273.29676	129.73397	5.48628	0.2210896	2.3133612	32	3	1985-1998	0.57	M-v	3	Williams	31985	1997 BF ₃
1997 BN ₃	13.5	0.15	19980706	148.23370	45.13018	44.80067	2.59913	0.0622849	3.0166285	32	4	1978-1998	0.67	M-v	1	Williams	31985	1997 BN ₃
1997 BV ₄	13.5	0.15	19980706	57.20273	136.58786	353.53952	18.22389	0.2010127	3.1417927	35	3	1995-1998	0.54	M-v	3	Williams	32057	1997 BV ₄
1997 BY ₄	14.0	0.15	19980706	222.17908	309.21732	69.43390	9.92471	0.1544729	2.3389060	46	3	1985-1998	0.59	M-v	3	Williams	31986	1997 BY ₄
1997 BU ₅	15.0	0.15	19980706	68.82471	275.04337	324.37347	0.67000	0.1421586	2.2888317	34	3	1978-1998	0.50	M-v	2	Marsden	29667	1997 BU ₅
1997 BS ₆	14.5	0.15	19980706	176.87056	344.33694	126.86235	7.71330	0.1118329	2.2309511	25	3	1987-1998	0.37	M-v	3	Williams	29320	1997 BS ₆
1997 BF ₇	13.5	0.15	19980706	130.03497	120.09912	336.51749	0.72118	0.0704385	3.0293999	32	3	1992-1998	0.61	M-v	5	Williams	32057	1997 BF ₇
1997 BG ₈	14.5	0.15	19980706	57.88381	284.78964	325.73220	3.32903	0.0919270	2.1589470	69	4	1994-1998	0.66	M-v	1	Marsden	29947	1997 BG ₈
1997 BU ₈	15.0	0.15	19980706	266.89202	193.07586	155.73341	1.70777	0.0260264	2.6332247	20	2	1997-1998	0.72	M-v	4	Williams	31986	1997 BU ₈
1997 BV ₈	15.5	0.15	19980706	310.61897	194.35084	140.46724	6.03798	0.1896248	2.2153749	26	2	1997-1998	0.73	M-v	5	Williams	31986	1997 BV ₈
1997 BC ₉	15.0	0.15	19980706	337.82970	186.99603	140.73850	4.23885	0.2340785	2.2309949	43	5	1978-1998	0.78	M-v	3	Marsden	32057	1997 BC ₉
1997 BD ₉	13.5	0.15	19980706	53.28964	83.33736	113.04689	2.54523	0.1285217	3.2112147	29	3	1986-1998	0.92	M-v	4	Williams	32057	1997 BD ₉
1997 CB	14.5	0.15	19980706	306.31655	191.29744	156.59264	11.34350	0.2793239	2.3480722	46	2	1997-1998	0.47	M-v	3	Williams	32057	1997 CB
1997 CR	13.5	0.15	19980706	273.73860	209.35343	137.72473	13.45047	0.1739412	2.7021693	26	3	1990-1998	0.55	M-v	3	Williams	31986	1997 CR
1997 CW	14.0	0.15	19980706	112.56698	144.20530	41.05506	4.21213	0.1115269	2.3327835	19	3	1990-1998	0.62	M-v	4	Williams	30094	1997 CW
1997 CC ₁	13.0	0.15	19980706	21.28803	130.66065	143.01227	7.58537	0.2513906	2.5571238	19	4	1981-1998	0.60	M-v	2	Williams	29639	1997 CC ₁
1997 CG ₁	14.0	0.15	19980706	208.54608	311.78124	95.84646	6.16793	0.1430210	2.5870980	18	2	1997-1998	0.55	M-v	5	Williams	31986	1997 CG ₁
1997 CR ₁	14.0	0.15	19980706	179.05746	269.96898	137.01603	3.25162	0.0717191	2.9232981	53	3	1992-1998	0.49	M-v	2	Williams	32057	1997 CR ₁
1997 CV ₁	15.0	0.15	19980706	329.65734	197.77199	110.51660	2.62872	0.1581250	2.1313071	70	3	1992-1998	0.57	M-v	3	Williams	32057	1997 CV ₁
1997 CA ₃	13.5	0.15	19980706	164.00912	319.56525	100.36872	3.59388	0.1777192	3.1586386	26	3	1995-1998	0.77	M-v	4	Williams	32057	1997 CA ₃
1997 CF ₃	15.0	0.15	19980706	66.68342	56.80097	162.56079	5.61261	0.0899673	2.3609414	28	4	1990-1998	0.54	M-v	1	Williams	32057	1997 CF ₃
1997 CH ₄	14.5	0.15	19980706	31.31410	194.92485	90.16665	2.17839	0.0985923	2.2031166	22	5	1971-1998	0.75	M-v	2	Williams	29640	1997 CH ₄
1997 CC ₇	13.5	0.15	19980706	288.91512	180.61796	125.36883	10.11943	0.0074742	3.0551719	42	2	1997-1998	0.62	M-v	4	Williams	31987	1997 CC ₇
1997 CQ ₁₁	14.0	0.15	19980706	131.57782	126.12954	334.25084	1.33879	0.0297071	2.8702943	21	2	1997-1998	0.64	M-v	6	Williams	31987	1997 CQ ₁₁
1997 CB ₁₃	15.0	0.15	19980706	323.96317	189.47359	129.14075	4.06192	0.1520080	2.1780900	32	3	1976-1998	0.44	M-v	4	Williams	32058	1997 CB ₁₃
1997 CK ₁₃	12.5	0.15	19980706	46.48999	120.61755	101.16824	2.89284	0.1189723	3.1025743	47	3	1986-1998	0.58	M-v	3	Williams	32058	1997 CK ₁₃
1997 CN ₁₃	14.5	0.15	19980706	341.27039	163.37614	135.46789	7.81621	0.1268624	2.3213661	53	3	1977-1998	0.47	M-v	3	Williams	32058	1997 CN ₁₃
1997 CP ₁₃	15.0	0.15	19980706	113.05875	201.15371	321.80046	1.29254	0.0774018	2.4317050	60	5	1978-1998	0.77	M-v	1	Williams	29948	1997 CP ₁₃
1997 CZ ₁₄	16.0	0.15	19980706	248.21550	335.16981	36.30474	2.72814	0.2328337	2.2741204	19	3	1992-1998	0.27	M-v	4	Williams	29321	1997 CZ ₁₄
1997 CM ₁₉	14.0	0.15	19980706	357.08471	218.03241	81.30875	13.52717	0.1655956	2.6816059	20	3	1990-1998	0.33	M-v	2	Marsden	32058	1997 CM ₁₉
1997 CZ ₁₉	14.0	0.15	19980706	281.92516	250.30529	122.04113	3.82414	0.0806578	2.2984838	20	4	1990-1998	0.59	M-v	2	Williams	29641	1997 CZ ₁₉
1997 CA ₂₀	13.0	0.15	19980706	124.23419	337.20262	145.04399	10.24131	0.0545952	3.1641439	36	4	1988-1998	0.72	M-v	2	Williams	32058	1997 CA ₂₀
1997 CC ₂₀	14.5	0.15	19980706	52.10087	102.25311	128.41598	4.07806	0.1227467	2.7142154	24	4	1972-1998	0.57	M-v	1	Williams	30671	1997 CC ₂₀
1997 CE ₂₀	14.5	0.15	19980706	276.01079	256.20259	104.19797	5.38633	0.1409939	2.5628344	36	3	1995-1998	0.65	M-v	4	Williams	32058	1997 CE ₂₀
1997 CT ₂₁	16.0	0.15	19980706	30.71491	173.50059	92.25542	4.35691	0.1574049	2.4448740	34	5	1993-1998	0.37	M-v	1	Williams	29667	1997 CT ₂₁
1997 CF ₂₂	14.0	0.15	19980706	291.28913	173.37308	158.95226	5.70259	0.0298627	2.7897689	57	2	1997-1998	0.54	M-v	3	Williams	32058	1997 CF ₂₂
1997 CK ₂₂	14.0	0.15	19980706	132.26939	335.63895	148.44532	13.68296	0.1144878	2.6933060	44	2	1997-1998	0.42	M-v	3	Marsden	32058	1997 CK ₂₂
1997 CX ₂₇	13.0	0.15	19980706	163.42497	272.52721	136.65427	5.75915	0.1627933	3.1210285	32	3	1993-1998	0.68	M-v	5	Williams	31987	1997 CX ₂₇
1997 CC ₂₉	14.0	0.15	19980706	89.42809	87.44227	63.96830	0.10081	0.1019117	3.1580337	35	4	1992-1998	0.69	M-v	2	Williams	31987	1997 CC ₂₉
1997 DC	14.5	0.15	19980706	72.83002	86.11662	158.58196	2.53706	0.1663632	2.3923591	31	3	1993-1998	0.57	M-v	3	Williams	30473	1997 DC
1997 EL	12.5	0.15	19980706	254.58595	215.46173	148.49875	10.95912	0.1206439	3.0021742	50	2	1997-1998	0.50	M-v	4	Williams	31987	1997 EL
1997 EU ₂	14.5	0.15	19980706	158.64878	35.43434	102.46852	3.00157	0.1467156	2.3933603	23	4	1982-1998	0.65	M-v	2	Williams	29929	1997 EU ₂
1997 EK ₆	14.0	0.15	19980706	253.65066	277.57060	85.47845	15.56384	0.1691619	2.5944025	45	2	1997-1998	0.57	M-v	4	Williams	31988	1997 EK ₆
1997 EQ ₁₇	12.5	0.15	19980706	68.95196	23.38321	165.30271	24.27273	0.1415974	3.1656237	24	3	1992-1998	0.66	M-v	3	Williams	32058	1997 EQ ₁₇
1997 EY ₂₀	14.5	0.15	19980706	72.23632	28.50055	196.68498	2.09130	0.1263974	2.4365970	21	3	1995-1998	0.44	M-v	3	Williams	29929	1997 EY ₂₀
1997 EQ ₂₅	13.5	0.15	19980706	330.66816	108.23607	176.59427	12.24113	0.1032953	3.3510271	37	3	1993-1998	0.72	M-v	4	Williams	32058	1997 EQ ₂₅
1997 EX ₂₅	15.0	0.15	19980706	164.24741	359.85941	135.10973	2.79641	0.1609003	2.3485925	24	3	1995-1998	0.55	M-v	4	Williams	29929	1997 EX ₂₅
1997 FC	12.5	0.15	19980706	43.79387	92.10106	129.42028	11.83972	0.0579625	2.9950708	42	3	1996-1998	0.70	M-v	3	Williams	32058	1997 FC
1997 FU	13.0	0.15	19980706	210.93007	6.50176	48.24082	13.99504	0.1386218	2.5912129	47	4	1981-1998	0.84	M-v	3	Williams	32058	1997 FU

1997 FB ₂	14.0	0.15	19980706	328.44204	229.27791	120.85242	8.85375	0.2026586	2.5376436	21	4	1978–1998	0.62	M-v	3	Williams	29647	1997 FB ₂
1997 FQ ₄	13.0	0.15	19980706	25.99053	8.19676	251.66250	3.95301	0.1006090	3.1558113	32	3	1995–1998	0.62	M-v	3	Williams	30293	1997 FQ ₄
1997 GO ₁	14.5	0.15	19980706	290.34151	73.47365	307.48327	1.97169	0.1934409	2.4269377	49	5	1972–1998	0.69	M-v	2	Williams	30766	1997 GO ₁
1997 GO ₆	14.0	0.15	19980706	107.80391	130.83425	51.76415	0.12066	0.1153565	3.1044643	39	6	1978–1998	0.63	M-v	1	Williams	29948	1997 GO ₆
1997 GY ₇	14.5	0.15	19980706	192.38138	15.47415	95.80740	1.61098	0.1197699	2.6777265	34	4	1977–1998	0.62	M-v	2	Williams	30473	1997 GY ₇
1997 GA ₁₄	15.0	0.15	19980706	335.86211	63.89442	287.13544	1.60474	0.1999015	2.4285152	21	3	1994–1998	0.76	M-v	6	Williams	30767	1997 GA ₁₄
1997 GO ₂₄	11.0	0.15	19980706	320.07700	87.79639	226.08895	14.45602	0.1273412	5.1722006	42	4	1989–1998	0.65	M-v	1	Williams	32058	1997 GO ₂₄
1997 GX ₂₄	13.0	0.15	19980706	96.34888	66.58499	118.33659	2.73097	0.0933498	3.1660907	30	3	1991–1998	0.79	M-v	5	Marsden	30085	1997 GX ₂₄
1997 GH ₂₇	14.5	0.15	19980706	178.61400	90.43553	20.61118	3.07191	0.1236268	2.4760896	23	4	1989–1998	0.46	M-v	1	Marsden	29648	1997 GH ₂₇
1997 GQ ₂₇	12.5	0.15	19980706	299.67040	270.21804	113.15823	14.12880	0.1890333	2.5924724	34	4	1990–1998	0.63	M-v	2	Williams	32058	1997 GQ ₂₇
1997 HO ₂	14.0	0.15	19980706	327.79193	174.74884	180.83110	1.76529	0.0975034	2.9275612	41	4	1982–1998	0.54	M-v	1	Marsden	30293	1997 HO ₂
1997 HV ₈	14.5	0.15	19980706	116.71116	108.98988	64.71693	1.82716	0.1009350	3.0948182	36	3	1994–1998	0.53	M-v	4	Williams	30463	1997 HV ₈
1997 HE ₁₄	13.0	0.15	19980706	272.24633	56.80908	313.81939	1.23473	0.0894080	2.9109389	21	7	1974–1998	0.75	M-v	2	Williams	31010	1997 HE ₁₄
1997 JA ₈	14.5	0.15	19980706	307.11794	208.49587	194.90026	2.07176	0.1345306	2.3398690	24	3	1993–1998	0.86	M-v	5	Marsden	30474	1997 JA ₈
1997 JE ₁₅	14.0	0.15	19980706	359.24420	176.69146	145.02870	2.80219	0.0502443	2.9005018	23	3	1996–1998	0.68	M-v	3	Williams	30474	1997 JE ₁₅
1997 KR ₃	12.5	0.15	19980706	296.96513	280.36612	109.93937	7.25077	0.2173591	3.1203104	29	6	1984–1998	0.73	M-v	1	Williams	30474	1997 KR ₃
1997 NU	13.0	0.15	19980706	114.42872	81.88783	122.11168	13.51797	0.1160942	2.6725760	30	2	1997–1998	0.50	M-v	4	Williams	31988	1997 NU
1997 PE ₆	13.0	0.15	19980706	22.49101	232.67703	121.81978	12.41513	0.1304742	3.0474715	25	4	1980–1998	0.71	M-v	2	Williams	31250	1997 PE ₆
1997 ST ₂₃	16.5	0.15	19980706	98.00231	331.65643	12.23582	2.24935	0.0790841	2.6949840	21	2	1995–1997	0.37	M-v	4	Williams	31988	1997 ST ₂₃
1997 TG ₆	16.5	0.15	19970929	353.54454	223.96459	156.79412	5.52768	0.0291523	2.7720292	10	1	7 days	0.34		D	Williams		1997 TG ₆
1997 UF ₉	16.5	0.15	19980706	33.88457	157.75534	37.28204	25.87949	0.6042456	1.4423925	150	2	1997–1998	0.56	M-v	3	Williams	31796	1997 UF ₉
1997 US ₉	17.5	0.15	19980706	55.25676	357.18424	212.31136	20.01492	0.2818423	1.0524087	142	2	1997–1998	0.57	M-v	3	Williams	31590	1997 US ₉
1997 WS ₂₂	17.0	0.15	19980706	314.76580	196.95233	59.29487	23.98251	0.1206903	1.2696835	95	1	207 days	0.51	M-v	4	Marsden	31591	1997 WS ₂₂
1997 WR ₃₁	14.0	0.15	19980706	30.18148	288.18919	168.03007	1.32106	0.1487766	2.4047901	39	3	1980–1998	0.64	M-v	2	Williams	31554	1997 WR ₃₁
1997 WC ₃₅	13.5	0.15	19980706	312.43067	48.69840	107.03661	3.43552	0.0215787	2.9254479	22	1	89 days	0.70	M-v	6	Williams		1997 WC ₃₅
1997 XY ₃	13.5	0.15	19980706	107.37728	322.04797	136.63218	5.19967	0.0300351	2.7962487	32	1	139 days	0.48	M-v	5	Williams	32058	1997 XY ₃
1997 XZ ₄	16.0	0.15	19980706	127.86607	303.35656	119.70252	0.66249	0.0386850	2.1922238	18	1	88 days	0.57	M-v	7	Williams	32058	1997 XZ ₄
1997 XR ₈	15.0	0.15	19980706	78.77177	336.59805	87.26168	2.27185	0.1665596	3.1350368	17	1	61 days	0.42	M-v	6	Williams	32058	1997 XR ₈
1997 XA ₉	14.0	0.15	19980706	117.60623	309.47730	128.83364	2.99188	0.0667177	2.9009297	51	3	1990–1998	0.58	M-v	3	Williams	32058	1997 XA ₉
1997 XD ₉	14.5	0.15	19980706	29.81665	36.36728	144.38720	9.91692	0.2103059	2.7602224	45	3	1984–1998	0.79	M-v	2	Williams	32058	1997 XD ₉
1997 XH ₁₁	12.5	0.15	19980706	44.60534	78.46680	68.26052	11.19508	0.0986001	2.6439847	25	1	127 days	0.47	M-v	4	Williams	31796	1997 XH ₁₁
1997 YA ₄	15.0	0.15	19980706	161.26875	38.81471	314.10075	5.38806	0.1876886	2.2046997	22	2	1993–1998	0.64	M-v	5	Williams	31284	1997 YA ₄
1997 YP ₈	12.5	0.15	19980706	294.20841	116.98023	107.18452	13.15946	0.1267565	3.1734548	26	1	114 days	0.49	M-v	5	Williams		1997 YP ₈
1997 YV ₁₃	13.5	0.15	19980706	80.04198	131.71832	266.81530	4.98144	0.3871976	2.5978350	26	1	145 days	0.62	M-v	4	Williams	32059	1997 YV ₁₃
1998 AZ ₅	13.5	0.15	19980706	176.05113	14.94959	340.55201	4.82722	0.1270914	3.1606758	18	2	1993–1998	0.72	M-v	4	Williams	31989	1998 AZ ₅
1998 AF ₆	15.5	0.15	19980706	38.61804	12.20305	155.47228	7.17262	0.1295439	2.3330457	29	1	101 days	0.60	M-v	4	Williams	32059	1998 AF ₆
1998 AY ₆	14.0	0.15	19980706	56.63367	13.37946	64.96483	2.28311	0.1763982	2.9748365	18	1	115 days	0.71	M-v	6	Williams		1998 AY ₆
1998 AU ₉	12.5	0.15	19980706	335.10012	239.28971	23.73054	0.90193	0.1180757	3.0982732	45	4	1981–1998	0.59	M-v	2	Williams	31989	1998 AU ₉
1998 AV ₉	15.0	0.15	19980706	75.76903	209.59704	312.17267	0.51025	0.0655954	2.1720869	36	1	138 days	0.45	M-v	5	Williams	32059	1998 AV ₉
1998 BT ₁	15.0	0.15	19980706	111.32378	50.78732	357.87825	4.25268	0.1296575	2.1588109	31	4	1984–1998	0.61	M-v	2	Williams	32059	1998 BT ₁
1998 BE ₂	12.5	0.15	19980706	301.60106	66.77930	150.44137	1.82647	0.1262772	3.1843609	41	4	1976–1998	0.55	M-v	1	Williams	31989	1998 BE ₂
1998 BB ₇	15.0	0.15	19980706	337.61345	229.55684	345.49227	6.16411	0.0762217	2.3969154	38	3	1994–1998	0.54	M-v	4	Williams	32059	1998 BB ₇
1998 BP ₇	15.0	0.15	19980706	75.41355	275.55577	160.42916	1.66210	0.0975143	3.0291177	34	3	1993–1998	0.54	M-v	1	Williams	31989	1998 BP ₇
1998 BZ ₇	17.5	0.15	19980706	29.20801	102.79878	112.51659	6.48141	0.5552471	2.0393777	238	1	189 days	0.47	M-v	3	Williams	31797	1998 BZ ₇
1998 BB ₁₀	20.5	0.15	19980706	164.76549	259.04362	124.45836	11.53774	0.4249900	1.2721499	102	1	52 days	0.42	M-v	6	Williams		1998 BB ₁₀
1998 BM ₁₀	16.5	0.15	19980706	27.72096	44.80301	122.97331	24.15918	0.3706284	2.4164772	54	1	101 days	0.50	M-v	4	Williams	31798	1998 BM ₁₀
1998 BX ₁₂	14.5	0.15	19980706	331.52263	103.79867	102.60399	3.68399	0.1288145	2.4234829	27	2	1992–1998	0.44	M-v	5	Williams	31990	1998 BX ₁₂
1998 BX ₂₄	15.0	0.15	19980706	359.82322	44.87042	149.73179	5.47007	0.2073268	2.5704780	36	3	1994–1998	0.65	M-v	4	Williams	32059	1998 BX ₂₄
1998 BY ₂₄	14.0	0.15	19980706	252.76917	1.96310	279.05186	1.21571	0.0155415	2.8440950	33	3	1994–1998	0.52	M-v	3	Williams	32059	1998 BY ₂₄
1998 BH ₂₅	14.5	0.15	19980706	340.23435	140.82121	69.46634	2.88391	0.0749363	2.4433976	36	4	1983–1998	0.68	M-v	2	Williams	32059	1998 BH ₂₅
1998 BE ₂₆	14.0	0.15	19980706	137.40014	243.87440	173.19244	10.54338	0.1081064	2.9793644	40	3	1975–1998	0.69	M-v	3	Williams	32059	1998 BE ₂₆
1998 BJ ₂₆	16.0	0.15	19980706	69.16778	107.89993	26.24757	1.65450	0.1275911	2.3935313	36	1	82 days	0.68	M-v	5	Williams	32059	1998 BJ ₂₆
1998 BK ₂₆	15.5	0.15	19980706	314.64935	120.56106	159.93552	5.82585	0.1537699	2.2280777	40	1	92 days	0.64	M-v	5	Williams	32059	1998 BK ₂₆

1998 BB ₄₂	13.5	0.15	19980706	111.91351	34.12103	14.62553	6.70359	0.1307624	2.6025515	48	5	1981–1998	0.74	M-v	2	Williams	32059	1998 BB ₄₂
1998 CS ₁	17.5	0.15	19980706	53.33439	97.14651	111.20850	7.79861	0.5784057	1.4932380	63	1	166 days	0.65	M-v	4	Williams		1998 CS ₁
1998 CZ ₁	14.0	0.15	19980706	356.43248	137.63862	95.01725	13.39711	0.1151907	2.6050336	54	2	1994–1998	0.59	M-v	3	Williams	32059	1998 CZ ₁
1998 CF ₂	15.5	0.15	19980706	172.72723	64.80455	304.77070	6.34093	0.0840685	2.3128412	39	2	1996–1998	0.69	M-v	4	Williams	32059	1998 CF ₂
1998 CR ₂	12.5	0.15	19980706	187.55395	186.28619	165.71800	10.20234	0.0966127	3.0565527	45	3	1993–1998	0.59	M-v	3	Williams	32059	1998 CR ₂
1998 CE ₃	14.0	0.15	19980706	120.87019	69.16875	340.71505	9.22904	0.0916869	2.9772610	18	2	1997–1998	0.56	M-v	4	Williams	31990	1998 CE ₃
1998 CS ₃	15.0	0.15	19980706	100.26875	282.20168	152.76047	5.06480	0.1732821	2.2928339	28	4	1991–1998	0.77	M-v	2	Williams	32059	1998 CS ₃
1998 DL ₁	13.5	0.15	19980706	94.06940	251.87976	180.88936	12.69544	0.1605039	2.4316713	42	4	1981–1998	0.71	M-v	2	Williams	32059	1998 DL ₁
1998 DJ ₇	14.5	0.15	19980706	41.44012	30.15503	127.14880	3.05259	0.0107578	2.8684857	53	3	1990–1998	0.74	M-v	4	Williams	32060	1998 DJ ₇
1998 DF ₉	16.0	0.15	19980706	29.47201	109.33650	69.72822	5.00330	0.0640658	2.1830622	27	2	1995–1998	0.64	M-v	4	Williams	32060	1998 DF ₉
1998 DP ₉	13.5	0.15	19980706	43.22169	70.41873	79.37749	11.43412	0.0557161	2.9798118	29	3	1993–1998	0.50	M-v	3	Williams	31990	1998 DP ₉
1998 DS ₉	13.5	0.15	19980706	307.53009	144.17245	158.75565	24.32783	0.1934474	2.3635011	52	1	122 days	0.42	M-v	4	Williams	32060	1998 DS ₉
1998 DT ₉	15.5	0.15	19980706	243.46112	345.98416	345.03435	2.03558	0.1184128	2.1311794	46	4	1990–1998	0.61	M-v	2	Williams	32060	1998 DT ₉
1998 DU ₉	18.5	0.15	19980706	41.01780	277.82672	250.36277	4.93400	0.3378017	2.0588332	33	1	56 days	0.61	M-v	5	Williams	31595	1998 DU ₉
1998 DV ₉	18.0	0.15	19980706	56.43524	0.59733	130.51583	8.68856	0.4340147	1.7455041	110	1	154 days	0.59	M-v	4	Marsden	32060	1998 DV ₉
1998 DH ₁₀	13.0	0.15	19980706	163.75201	195.96580	178.59513	9.41921	0.1399934	3.0525783	17	3	1969–1998	0.66	M-v	4	Williams	31990	1998 DH ₁₀
1998 DJ ₁₀	13.5	0.15	19980706	79.63692	106.45931	348.75725	2.02304	0.1932530	2.8984664	53	4	1986–1998	0.59	M-v	2	Williams	32060	1998 DJ ₁₀
1998 DV ₁₁	15.0	0.15	19980706	4.98999	36.26708	166.48545	4.92585	0.1809275	2.6823026	49	3	1994–1998	0.55	M-v	3	Williams	31990	1998 DV ₁₁
1998 DZ ₁₂	14.0	0.15	19980706	75.43075	109.35167	357.90137	7.37528	0.1541593	2.5719204	69	2	1992–1998	0.55	M-v	4	Williams	32060	1998 DZ ₁₂
1998 DQ ₁₃	13.5	0.15	19980706	34.72781	56.92496	107.86956	2.48369	0.1136224	3.0374731	56	3	1980–1998	0.57	M-v	4	Williams	32060	1998 DQ ₁₃
1998 DU ₁₃	16.5	0.15	19980706	71.75037	133.38723	3.84967	7.00388	0.0491730	2.3371946	44	2	1960–1998	0.87	M-v	5	Williams	32060	1998 DU ₁₃
1998 DZ ₁₃	16.0	0.15	19980706	310.18588	183.74892	103.17780	1.59165	0.1850362	2.2845031	39	3	1981–1998	0.76	M-v	3	Williams	32060	1998 DZ ₁₃
1998 DB ₁₄	14.5	0.15	19980308	301.68488	250.36839	19.51753	12.99180	0.1315585	2.6797442	29	1	54 days	0.62			Williams		1998 DB ₁₄
1998 DF ₁₄	15.0	0.15	19980706	28.21845	87.60841	96.94291	1.57787	0.2706696	3.2381185	33	3	1992–1998	0.69	M-v	4	Williams	31990	1998 DF ₁₄
1998 DE ₁₆	16.0	0.15	19980706	321.41529	110.36411	142.45843	3.82729	0.1185119	2.2715808	30	2	1995–1998	0.78	M-v	5	Williams	32060	1998 DE ₁₆
1998 DX ₁₇	14.0	0.15	19980706	179.25728	307.03042	73.69202	2.92590	0.0565243	2.6891469	35	2	1996–1998	0.64	M-v	5	Williams	32060	1998 DX ₁₇
1998 DF ₂₀	14.0	0.15	19980706	134.24433	240.41284	169.23658	13.10415	0.1731195	2.6656151	75	1	79 days	0.65	M-v	5	Williams	32060	1998 DF ₂₀
1998 DS ₂₀	15.0	0.15	19980706	343.33636	54.37164	175.62826	15.52406	0.1474619	3.1902536	33	3	1992–1998	0.83	M-v	3	Williams	32060	1998 DS ₂₀
1998 DU ₂₀	15.0	0.15	19980706	85.41547	205.39132	164.74803	2.75027	0.2417294	2.3279180	23	1	128 days	0.63	M-v	4	Williams		1998 DU ₂₀
1998 DN ₂₇	15.0	0.15	19980706	185.58236	207.43511	157.95665	4.61156	0.1051555	2.3794014	21	4	1985–1998	0.89	M-v	2	Williams	31991	1998 DN ₂₇
1998 DS ₂₉	12.5	0.15	19980308	254.64949	82.09468	169.39758	9.39510	0.0335856	3.1151520	20	1	28 days	0.76			Williams		1998 DS ₂₉
1998 DA ₃₃	15.0	0.15	19980706	12.90397	203.50955	5.97768	4.64799	0.0668131	2.6603901	39	2	1995–1998	0.69	M-v	4	Williams	32060	1998 DA ₃₃
1998 DT ₃₃	15.5	0.15	19980706	58.58337	341.56110	157.46671	5.80695	0.0593358	2.3894010	41	4	1992–1998	0.80	M-v	2	Williams	32060	1998 DT ₃₃
1998 DU ₃₃	14.5	0.15	19980706	71.32834	71.18320	46.53199	2.10694	0.1329433	2.4026472	38	3	1994–1998	0.70	M-v	4	Williams	32060	1998 DU ₃₃
1998 DX ₃₃	13.5	0.15	19980706	299.43023	214.34041	41.78956	2.55324	0.0184147	2.8563522	39	3	1994–1998	0.49	M-v	3	Williams	32060	1998 DX ₃₃
1998 DY ₃₃	14.0	0.15	19980706	90.27105	301.91342	129.94316	4.02380	0.3012633	2.5964231	35	4	1981–1998	0.90	M-v	1	Williams	31991	1998 DY ₃₃
1998 DA ₃₄	14.5	0.15	19980706	349.51236	207.13572	4.86309	5.18041	0.0315039	2.4909499	40	3	1982–1998	0.63	M-v	4	Williams	32060	1998 DA ₃₄
1998 DB ₃₄	15.0	0.15	19980706	340.28207	103.37495	150.20387	4.77037	0.2936128	2.3644874	46	2	1995–1998	0.66	M-v	4	Williams	32060	1998 DB ₃₄
1998 DE ₃₄	13.5	0.15	19980706	43.21615	138.97189	2.30593	1.00266	0.1581901	3.0483724	44	3	1993–1998	0.73	M-v	3	Williams	32060	1998 DE ₃₄
1998 DF ₃₄	13.5	0.15	19980706	213.71551	199.87597	148.81384	6.37698	0.1696299	2.3559805	32	3	1992–1998	0.67	M-v	4	Williams	32060	1998 DF ₃₄
1998 DH ₃₄	11.5	0.15	19980706	251.02697	222.15252	76.30972	3.21275	0.0485029	3.9519751	34	1	61 days	0.88	M-v	6	Williams	32060	1998 DH ₃₄
1998 DN ₃₄	13.0	0.15	19980706	20.73572	67.20956	102.28827	3.52351	0.0691988	3.2129678	39	3	1989–1998	0.67	M-v	4	Williams	32060	1998 DN ₃₄
1998 DV ₃₄	14.5	0.15	19980706	331.92611	73.68447	155.14644	3.62045	0.0389088	2.7484823	45	4	1992–1998	0.73	M-v	1	Williams	32061	1998 DV ₃₄
1998 DH ₃₅	14.5	0.15	19980706	39.79035	160.60581	356.80692	13.74383	0.0912201	2.5748568	37	1	61 days	0.51	M-v	4	Williams	32061	1998 DH ₃₅
1998 DB ₃₆	14.0	0.15	19980706	285.46075	288.38192	7.24111	11.47519	0.2169300	2.3395465	35	2	1991–1998	0.76	M-v	4	Williams	31991	1998 DB ₃₆
1998 ED	14.0	0.15	19980706	281.85568	266.64704	33.23766	13.44171	0.1849910	2.5549882	26	1	62 days	0.43	M-v	4	Williams	32061	1998 ED
1998 EP ₁	15.5	0.15	19980706	82.90478	282.02013	190.99344	2.78912	0.0827696	2.2628842	43	4	1991–1998	0.55	M-v	1	Williams	32061	1998 EP ₁
1998 ER ₁	16.0	0.15	19980328	296.78707	89.81494	175.55125	1.27206	0.0651070	2.2583539	33	1	51 days	0.80			Williams		1998 ER ₁
1998 EU ₁	16.0	0.15	19980328	37.32406	134.33201	11.63784	2.53547	0.1484328	2.4366573	24	1	51 days	0.79			Williams		1998 EU ₁
1998 EV ₁	14.5	0.15	19980328	224.37430	318.67804	23.83750	2.28415	0.1361280	2.7232111	19	1	51 days	0.94			Williams		1998 EV ₁
1998 EB ₂	13.5	0.15	19980308	172.63058	347.84900	33.21099	2.23325	0.0761528	2.9085682	40	1	49 days	1.21		D	Williams		1998 EB ₂
1998 EC ₂	15.5	0.15	19980328	181.80887	349.77746	25.85902	3.48545	0.1144626	2.3470869	19	1	51 days	0.68			Williams		1998 EC ₂
1998 EF ₂	14.0	0.15	19980706	266.04684	151.17578	167.06613	2.56392	0.0434702	2.9137497	39	2	1996–1998	0.59	M-v	4	Williams	32061	1998 EF ₂

1998 EL ₂	15.0	0.15	19980706	295.05137	156.60543	157.15015	2.70116	0.1897507	2.2813110	34	1	75 days	0.76	M-v	5	Williams	32061	1998 EL ₂
1998 EP ₂	15.5	0.15	19980706	43.31153	173.36321	2.33472	2.30316	0.1537596	2.4391013	50	1	75 days	0.66	M-v	4	Williams	32061	1998 EP ₂
1998 EW ₂	14.5	0.15	19980706	299.73538	277.92247	19.45559	9.90582	0.0881349	2.5573528	31	1	75 days	0.58	M-v	5	Williams	32061	1998 EW ₂
1998 EC ₃	16.5	0.15	19980706	359.45635	128.36580	128.38145	8.36470	0.5130085	2.1311395	262	1	143 days	0.61	M-v	3	Williams	32061	1998 EC ₃
1998 ED ₃	14.5	0.15	19980706	77.89897	29.89601	103.53371	7.04489	0.0841780	2.4798660	41	1	75 days	0.45	M-v	4	Williams	32061	1998 ED ₃
1998 ER ₃	15.5	0.15	19980706	40.32432	147.90723	25.11428	2.30338	0.1453239	2.4189027	67	3	1977–1998	0.69	M-v	3	Williams	32061	1998 ER ₃
1998 ES ₃	13.5	0.15	19980706	356.69791	194.60057	21.05743	13.62864	0.1023727	2.6104608	45	1	76 days	0.51	M-v	4	Williams	32061	1998 ES ₃
1998 EL ₅	15.0	0.15	19980706	113.59711	337.26451	127.73133	7.15630	0.0672955	2.3750858	36	2	1994–1998	0.80	M-v	5	Williams	31991	1998 EL ₅
1998 EP ₆	14.5	0.15	19980706	27.08515	215.19042	325.05486	2.01993	0.1034224	2.1886861	47	6	1943–1998	0.61	M-v	2	Williams	32061	1998 EP ₆
1998 ER ₆	15.5	0.15	19980706	26.36649	200.86078	336.95340	4.08686	0.0829503	2.2957009	44	3	1977–1998	0.64	M-v	4	Williams	32061	1998 ER ₆
1998 EX ₆	14.0	0.15	19980706	335.23077	166.69299	76.76320	3.05351	0.1690887	2.4269483	70	5	1953–1998	0.63	M-v	3	Williams	32061	1998 EX ₆
1998 EV ₈	14.0	0.15	19980706	352.00792	209.81043	41.61735	35.67971	0.1525797	2.7900888	61	1	89 days	0.53	M-v	4	Williams	32061	1998 EV ₈
1998 EX ₈	14.5	0.15	19980706	56.75216	99.31556	38.24467	11.41413	0.2121419	2.6798770	28	1	76 days	0.58	M-v	4	Williams	32061	1998 EX ₈
1998 EA ₉	14.5	0.15	19980706	331.91940	157.99732	111.76203	9.03058	0.2350936	2.5661420	49	1	81 days	0.56	M-v	4	Williams	32061	1998 EA ₉
1998 EE ₁₀	14.5	0.15	19980706	296.57932	268.89036	22.71400	4.51292	0.1510173	2.2635349	46	2	1981–1998	0.59	M-v	5	Williams	32061	1998 EE ₁₀
1998 EQ ₁₀	15.0	0.15	19980706	253.46887	249.28124	70.23314	4.44533	0.1810885	2.2965064	30	2	1995–1998	0.75	M-v	6	Williams	32061	1998 EQ ₁₀
1998 EP ₁₁	14.0	0.15	19980706	348.58294	218.46591	7.55372	13.42161	0.1802896	2.4774034	44	2	1996–1998	0.76	M-v	3	Williams	32061	1998 EP ₁₁
1998 EW ₁₁	12.5	0.15	19980706	210.78780	209.17399	132.59281	8.61556	0.0650494	3.1617966	41	2	1993–1998	0.95	M-v	4	Williams	32061	1998 EW ₁₁
1998 EF ₁₂	15.0	0.15	19980706	41.42500	122.18247	36.95002	4.93451	0.1558264	2.2934075	43	2	1977–1998	0.65	M-v	3	Williams	32062	1998 EF ₁₂
1998 EK ₁₂	13.5	0.15	19980706	214.77014	315.07279	27.45308	10.39643	0.0943745	2.7038947	40	3	1969–1998	0.92	M-v	3	Williams	32062	1998 EK ₁₂
1998 EU ₁₂	15.0	0.15	19980706	313.50969	253.08766	18.41293	6.26647	0.1724807	2.2926654	31	1	64 days	0.64	M-v	5	Williams	32062	1998 EU ₁₂
1998 EZ ₁₂	14.0	0.15	19980706	305.18246	250.74295	12.90676	9.37465	0.0956187	2.7567349	35	1	60 days	0.60	M-v	5	Williams	32062	1998 EZ ₁₂
1998 EA ₁₃	13.5	0.15	19980706	264.95365	213.90513	88.66151	2.29002	0.1393665	3.2399757	30	4	1992–1998	0.82	M-v	1	Williams	32062	1998 EA ₁₃
1998 ER ₁₃	13.5	0.15	19980706	190.30844	204.88721	159.87128	10.63036	0.0846060	3.0533451	37	2	1990–1998	0.87	M-v	4	Williams	31991	1998 ER ₁₃
1998 EV ₁₃	15.5	0.15	19980706	29.67787	137.72967	39.58167	3.27037	0.1461110	2.3199987	30	1	108 days	0.65	M-v	4	Williams	32062	1998 EV ₁₃
1998 EG ₁₄	15.0	0.15	19980706	97.98697	317.60415	121.64568	3.30921	0.2690114	2.2417482	44	3	1963–1998	0.63	M-v	4	Williams	32062	1998 EG ₁₄
1998 ER ₁₄	15.0	0.15	19980706	275.70401	217.14291	93.60386	4.69714	0.1809721	2.1553188	28	1	63 days	0.62	M-v	5	Williams	32062	1998 ER ₁₄
1998 FJ	15.5	0.15	19980706	315.32176	3.09655	277.96035	1.17150	0.1468644	2.1535334	63	1	61 days	0.45	M-v	5	Williams	32062	1998 FJ
1998 FO	14.0	0.15	19980706	76.51768	99.20748	17.85710	8.10321	0.1345512	2.7232205	55	3	1971–1998	0.65	M-v	4	Williams	31992	1998 FO
1998 FK ₁	16.0	0.15	19980706	46.10453	183.34351	345.35649	5.04883	0.0813466	2.2301757	63	1	61 days	0.52	M-v	4	Williams	32062	1998 FK ₁
1998 FD ₂	15.0	0.15	19980706	21.46228	40.37330	141.47896	3.71144	0.0456790	2.5387675	48	1	83 days	0.70	M-v	4	Williams	32062	1998 FD ₂
1998 FP ₂	16.5	0.15	19980328	268.67392	104.70000	184.70106	23.77102	0.0851359	1.7976317	17	1	30 days	0.66			Williams		1998 FP ₂
1998 FQ ₂	14.5	0.15	19980706	297.89765	279.54758	23.72548	3.88719	0.1918180	2.2782594	78	4	1961–1998	0.67	M-v	2	Williams	32062	1998 FQ ₂
1998 FX ₂	18.5	0.15	19980706	27.79392	17.02030	181.25646	9.99391	0.4943021	2.1489916	517	1	120 days	0.54	M-v	3	Williams	32062	1998 FX ₂
1998 FB ₃	14.5	0.15	19980706	309.19031	191.84177	105.42610	4.09589	0.1497241	2.6016557	52	3	1995–1998	0.56	M-v	4	Williams	32062	1998 FB ₃
1998 FC ₃	15.5	0.15	19980706	41.49873	117.74784	62.85133	4.84674	0.1958361	2.3572291	32	2	1994–1998	0.53	M-v	4	Williams	32062	1998 FC ₃
1998 FD ₃	15.0	0.15	19980706	162.21743	273.06235	148.94377	5.00012	0.1329187	2.2984232	47	4	1989–1998	0.74	M-v	3	Williams	32062	1998 FD ₃
1998 FE ₃	14.5	0.15	19980706	136.07901	349.26416	93.51571	4.74123	0.1078799	2.6467124	32	1	70 days	0.65	M-v	5	Williams	32062	1998 FE ₃
1998 FF ₄	15.0	0.15	19980706	84.30043	28.79615	122.40446	7.13210	0.0593506	2.3210436	24	1	67 days	0.59	M-v	5	Williams	32062	1998 FF ₄
1998 FG ₄	15.0	0.15	19980706	277.46233	229.67353	115.17150	8.10063	0.1853899	2.3475538	12	1	65 days	0.49	M-v	6	Williams		1998 FG ₄
1998 FP ₄	15.0	0.15	19980308	94.96421	247.80356	191.19422	21.18372	0.0595088	2.6577966	36	1	12 days	1.07			Williams		1998 FP ₄
1998 FT ₄	15.0	0.15	19980328	26.61384	163.86720	351.04518	7.47206	0.0969956	2.7944757	47	1	31 days	0.99			Williams		1998 FT ₄
1998 FU ₄	16.5	0.15	19980328	327.39161	31.17322	199.75363	7.30880	0.1557045	2.5716541	39	1	31 days	1.43			Williams		1998 FU ₄
1998 FM ₅	16.0	0.15	19980706	40.87389	311.44665	177.07915	11.50543	0.5546213	2.2652377	381	1	83 days	0.56	M-v	4	Marsden	32062	1998 FM ₅
1998 FN ₅	15.0	0.15	19980706	49.72688	259.08667	263.29111	11.62094	0.1126114	2.6387555	28	1	84 days	0.44	M-v	4	Williams		1998 FN ₅
1998 FO ₈	12.5	0.15	19980706	352.68630	208.22907	14.68247	16.68984	0.1864873	3.1609873	59	1	90 days	0.66	M-v	4	Williams		1998 FO ₈
1998 FT ₈	14.5	0.15	19980706	347.49983	211.77847	21.72702	11.13643	0.1431306	2.6841051	60	4	1973–1998	0.60	M-v	2	Williams	31992	1998 FT ₈
1998 FV ₈	15.5	0.15	19980706	333.69730	184.91985	81.87859	2.38231	0.1590596	2.4005323	35	2	1994–1998	0.69	M-v	6	Williams	32063	1998 FV ₈
1998 FW ₉	16.0	0.15	19980706	334.03750	62.41447	194.87485	12.68996	0.1804070	2.3218674	48	2	1991–1998	0.92	M-v	4	Williams	32063	1998 FW ₉
1998 FA ₁₀	14.5	0.15	19980706	86.08354	121.73417	355.23786	15.80172	0.0459545	2.6710749	45	1	79 days	0.76	M-v	5	Williams	32063	1998 FA ₁₀
1998 FB ₁₀	14.5	0.15	19980706	309.39765	73.42363	208.33372	6.28196	0.1934055	2.5732779	50	3	1991–1998	0.64	M-v	4	Williams	32063	1998 FB ₁₀
1998 FC ₁₀	16.5	0.15	19980328	324.95085	334.37280	257.67743	2.37311	0.1496227	2.5505140	22	1	8 days	1.43			Williams		1998 FC ₁₀
1998 FD ₁₀	16.0	0.15	19980328	17.82812	167.10348	355.00699	12.52808	0.1398219	2.5452792	34	1	30 days	1.48			Williams		1998 FD ₁₀

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1998 FF ₁₀	15.5	0.15	19980328	341.68629	5.97473	204.52179	5.19050	0.1444485	2.2393402	46	1	59 days	0.76		Williams		1998 FF ₁₀
1998 FG ₁₀	14.5	0.15	19980706	82.34459	188.05313	292.00971	2.34677	0.0435821	2.7952814	42	2	1994–1998	0.63	M-v	5	Williams	31992 1998 FG ₁₀
1998 FJ ₁₀	15.5	0.15	19980328	295.25972	11.90643	259.24780	2.16581	0.1808810	2.5261546	38	1	30 days	0.85			Williams	1998 FJ ₁₀
1998 FP ₁₀	15.5	0.15	19980308	296.60201	271.02535	357.26221	12.10255	0.2072832	2.6651910	26	1	10 days	1.01			Williams	1998 FP ₁₀
1998 FQ ₁₀	14.0	0.15	19980328	148.82519	197.54202	190.85821	25.46577	0.1841448	3.1318232	21	1	8 days	1.59		E	Williams	1998 FQ ₁₀
1998 FR ₁₀	12.5	0.15	19980328	311.60837	260.34836	349.86984	7.66053	0.1520386	3.9412668	52	1	43 days	0.59			Williams	1998 FR ₁₀
1998 FT ₁₀	16.5	0.15	19980328	289.39024	283.55030	355.38580	6.46623	0.1825548	2.3037869	20	1	7 days	1.34			Williams	1998 FT ₁₀
1998 FU ₁₀	14.0	0.15	19980706	289.46872	297.44323	357.38237	8.65459	0.1371712	2.7828335	51	2	1990–1998	0.62	M-v	4	Williams	32063 1998 FU ₁₀
1998 FV ₁₀	15.0	0.15	19980328	238.17081	41.18550	277.41761	1.42908	0.1020116	2.3130608	40	1	31 days	0.90			Williams	1998 FV ₁₀
1998 FW ₁₀	17.0	0.15	19980328	53.90831	147.26328	334.23596	2.34795	0.1201998	2.2475204	20	1	7 days	1.40		E	Williams	1998 FW ₁₀
1998 FX ₁₀	14.0	0.15	19980328	134.48438	59.93621	352.33002	5.25018	0.0173091	2.7439227	38	1	31 days	0.74			Williams	1998 FX ₁₀
1998 FB ₁₁	14.5	0.15	19980706	17.13439	63.07771	161.78041	6.50372	0.1212959	2.7325575	30	1	95 days	0.63	M-v	4	Williams	1998 FB ₁₁
1998 FC ₁₁	16.0	0.15	19980706	18.73725	169.44765	53.78754	14.02141	0.2181565	2.5501163	24	1	60 days	0.82	M-v	4	Williams	1998 FC ₁₁
1998 FG ₁₁	13.5	0.15	19980706	286.08409	274.02538	34.38648	15.08471	0.1147410	2.5909343	49	3	1987–1998	0.68	M-v	3	Williams	32063 1998 FG ₁₁
1998 FH ₁₁	15.0	0.15	19980706	359.85935	97.48263	130.03221	8.77482	0.1284590	2.3459948	35	4	1987–1998	0.61	M-v	2	Williams	32063 1998 FH ₁₁
1998 FO ₁₁	14.0	0.15	19980706	15.58455	18.98245	179.51548	12.98068	0.0513830	2.6201932	56	1	62 days	0.42	M-v	5	Williams	32063 1998 FO ₁₁
1998 FP ₁₁	14.5	0.15	19980706	23.83859	25.88993	168.23443	5.96945	0.1143697	2.4002153	57	2	1983–1998	0.53	M-v	4	Williams	32063 1998 FP ₁₁
1998 FR ₁₁	16.0	0.15	19980706	349.77566	157.77517	130.41860	6.58843	0.7100088	2.8007007	58	1	85 days	0.63	M-v	4	Williams	32063 1998 FR ₁₁
1998 FS ₁₁	19.5	0.15	19980706	25.59157	166.44007	25.60895	4.37974	0.4170195	2.3157426	62	1	39 days	0.55	M-v	5	Williams	32063 1998 FS ₁₁
1998 FY ₁₁	13.5	0.15	19980706	334.99044	86.73183	159.61658	8.34548	0.1508033	2.6504936	50	3	1982–1998	0.61	M-v	4	Williams	32063 1998 FY ₁₁
1998 FC ₁₂	15.0	0.15	19980328	259.31161	148.82204	157.73349	4.40413	0.2459130	2.0849297	23	1	30 days	0.53			Williams	1998 FC ₁₂
1998 FT ₁₂	14.0	0.15	19980308	25.28572	308.23214	106.51570	8.55280	0.2300946	2.4383205	10	1	7 days	0.69			Williams	1998 FT ₁₂
1998 FT ₁₃	13.0	0.15	19980706	144.79661	347.33124	42.10970	10.35299	0.1053257	3.0132407	27	2	1990–1998	0.58	M-v	4	Williams	31992 1998 FT ₁₃
1998 FY ₁₃	13.0	0.15	19980706	9.04629	6.46082	181.92320	10.55216	0.0479664	2.9972680	45	2	1993–1998	0.74	M-v	4	Williams	32063 1998 FY ₁₃
1998 FL ₁₄	16.5	0.15	19980308	350.69992	223.07854	329.16895	4.57469	0.2171552	2.5807343	32	1	9 days	1.32			Williams	1998 FL ₁₄
1998 FM ₁₄	16.5	0.15	19980328	356.48782	236.28971	314.81334	3.26231	0.2491824	2.6337986	37	1	30 days	0.89			Williams	1998 FM ₁₄
1998 FQ ₁₄	15.0	0.15	19980706	318.36804	76.29241	206.81660	6.89352	0.2869692	2.6824945	47	3	1990–1998	0.69	M-v	4	Williams	31992 1998 FQ ₁₄
1998 FR ₁₄	15.5	0.15	19980328	320.77567	297.22633	292.07619	2.60784	0.0501320	2.7602333	32	1	30 days	0.97			Williams	1998 FR ₁₄
1998 FS ₁₄	14.5	0.15	19980328	288.96347	275.68941	350.94059	9.89315	0.0817309	3.0113850	40	1	29 days	1.30			Williams	1998 FS ₁₄
1998 FT ₁₄	15.5	0.15	19980328	31.12571	164.38520	348.32734	6.95074	0.0428762	2.3134497	46	1	30 days	0.97			Williams	1998 FT ₁₄
1998 FU ₁₄	14.5	0.15	19980308	185.78502	151.53747	207.77796	7.10641	0.2035237	2.5295064	31	1	9 days	1.03			Williams	1998 FU ₁₄
1998 FV ₁₄	14.5	0.15	19980328	307.45964	57.23127	199.77807	10.33543	0.1698608	3.1466926	46	1	31 days	1.21			Williams	1998 FV ₁₄
1998 FW ₁₄	15.0	0.15	19980328	265.37252	88.69404	205.19620	6.23730	0.1074740	2.3575972	43	1	31 days	0.94			Williams	1998 FW ₁₄
1998 FX ₁₄	14.5	0.15	19980706	29.81400	186.57001	347.76819	5.65780	0.0896288	3.0596075	36	1	68 days	0.81	M-v	5	Williams	32063 1998 FX ₁₄
1998 FY ₁₄	14.0	0.15	19980706	313.50995	285.35198	0.84666	13.23975	0.2506934	2.6696394	60	1	145 days	0.61	M-v	4	Williams	32063 1998 FY ₁₄
1998 FD ₁₅	14.5	0.15	19980706	348.59187	24.17829	215.51546	2.30396	0.1657945	2.3062060	54	4	1977–1998	0.68	M-v	3	Williams	32063 1998 FD ₁₅
1998 FH ₁₅	13.5	0.15	19980706	237.05557	346.19748	354.14615	12.01733	0.1079187	2.7440514	45	2	1990–1998	0.58	M-v	4	Williams	32063 1998 FH ₁₅
1998 FK ₁₅	15.5	0.15	19980706	27.50824	14.09927	171.19411	5.71786	0.1591728	2.3927405	43	1	69 days	0.45	M-v	4	Williams	32063 1998 FK ₁₅
1998 FO ₁₅	15.0	0.15	19980706	58.89721	147.22604	359.01094	2.45201	0.1185101	2.4213701	59	1	98 days	0.57	M-v	4	Williams	32063 1998 FO ₁₅
1998 FR ₁₅	14.5	0.15	19980328	89.52414	236.06758	199.63858	12.93489	0.1767346	3.0715278	21	1	4 days	1.80		E	Williams	1998 FR ₁₅
1998 FS ₁₅	15.0	0.15	19980328	288.15372	79.22897	196.81222	13.74493	0.1602447	2.6048828	24	1	9 days	0.63			Williams	1998 FS ₁₅
1998 FW ₁₅	15.0	0.15	19980706	17.81437	141.25894	59.69179	10.45336	0.1667677	2.3854950	28	1	83 days	0.58	M-v	4	Williams	32064 1998 FW ₁₅
1998 FZ ₁₅	14.0	0.15	19980706	195.11858	202.44707	213.64263	21.56205	0.0727745	2.5715036	41	3	1991–1998	0.74	M-v	3	Williams	31992 1998 FZ ₁₅
1998 FA ₁₆	16.0	0.15	19980706	346.72285	117.70703	157.27669	5.33163	0.1450483	2.3452491	29	1	95 days	0.60	M-v	4	Williams	1998 FA ₁₆
1998 FH ₁₆	13.5	0.15	19980706	44.28121	6.94152	139.67119	1.71396	0.1032084	3.1358506	58	1	68 days	0.63	M-v	5	Williams	32064 1998 FH ₁₆
1998 FV ₂₀	14.5	0.15	19980706	118.49502	323.31694	94.27250	2.38646	0.1784009	2.4223323	29	3	1989–1998	0.69	M-v	4	Williams	32064 1998 FV ₂₀
1998 FH ₂₃	14.5	0.15	19980706	220.03508	223.57105	114.18986	3.08295	0.0600769	2.4343944	31	2	1996–1998	0.61	M-v	4	Williams	32064 1998 FH ₂₃
1998 FQ ₂₃	16.0	0.15	19980706	58.73680	49.86983	80.72727	2.44662	0.1359088	2.4328045	21	2	1992–1998	0.77	M-v	5	Williams	31993 1998 FQ ₂₃
1998 FK ₂₆	15.0	0.15	19980706	65.18635	343.45462	147.78494	4.40856	0.0804612	2.2888529	32	1	62 days	0.55	M-v	5	Williams	32064 1998 FK ₂₆
1998 FP ₂₆	14.5	0.15	19980706	183.09649	4.64367	5.23603	7.77656	0.1857106	2.2845953	25	2	1958–1998	0.88	M-v	6	Williams	32064 1998 FP ₂₆
1998 FT ₂₆	15.0	0.15	19980706	352.44357	208.70977	359.68272	13.94835	0.0981865	2.7318502	29	3	1971–1998	0.81	M-v	5	Williams	32064 1998 FT ₂₆
1998 FM ₂₇	13.0	0.15	19980706	95.84772	205.02333	236.80651	3.12812	0.1197778	3.0532934	32	3	1980–1998	0.62	M-v	5	Williams	32064 1998 FM ₂₇
1998 FQ ₂₇	14.5	0.15	19980308	298.21931	306.35944	312.47233	4.15239	0.2341803	2.5549054	19	1	12 days	0.45			Williams	1998 FQ ₂₇

1998 FX ₂₇	15.5	0.15	19980706	47.11895	210.49357	306.72044	1.99032	0.0620480	2.2027597	28	2	1960–1998	0.64	M-v	5	Williams	32064	1998 FX ₂₇
1998 FY ₂₇	14.0	0.15	19980706	48.84459	200.25490	297.02433	2.64382	0.1091995	3.0243820	37	3	1977–1998	0.82	M-v	5	Williams	32064	1998 FY ₂₇
1998 FA ₂₈	14.0	0.15	19980308	282.42289	303.72812	310.57364	3.15083	0.0566473	2.8024049	20	1	12 days	0.82			Williams		1998 FA ₂₈
1998 FF ₂₈	14.5	0.15	19980706	195.40612	181.98867	180.86124	6.00399	0.2234914	2.2399553	24	2	1986–1998	0.89	M-v	5	Williams	31993	1998 FF ₂₈
1998 FB ₂₉	13.5	0.15	19980308	177.03963	170.39235	182.69664	2.06211	0.0681324	2.8500416	20	1	12 days	0.70			Williams		1998 FB ₂₉
1998 FG ₂₉	14.5	0.15	19980308	233.56225	312.50806	353.00872	10.02197	0.0947767	2.5745023	26	1	33 days	0.92			Williams		1998 FG ₂₉
1998 FO ₂₉	14.0	0.15	19980328	70.49931	99.59233	347.67412	11.94134	0.1562726	2.5456349	24	1	29 days	0.74			Williams		1998 FO ₂₉
1998 FR ₂₉	15.5	0.15	19980308	319.24754	233.44901	340.67843	7.72412	0.0352262	2.3516105	18	1	12 days	0.88			Williams		1998 FR ₂₉
1998 FW ₂₉	14.5	0.15	19980706	128.35002	97.70096	327.96672	6.50941	0.0863473	2.3657962	34	3	1978–1998	0.68	M-v	3	Williams	32064	1998 FW ₂₉
1998 FZ ₂₉	15.0	0.15	19980706	327.59888	46.16384	211.38397	4.88930	0.1631663	2.2350063	37	2	1995–1998	0.54	M-v	4	Williams	32064	1998 FZ ₂₉
1998 FB ₃₀	14.5	0.15	19980308	114.60887	198.69680	206.42412	6.13678	0.1243979	2.3872727	23	1	38 days	0.75			Williams		1998 FB ₃₀
1998 FE ₃₀	13.5	0.15	19980706	292.96371	341.04261	290.46581	2.79056	0.0615726	2.7866271	29	2	1993–1998	0.60	M-v	5	Williams	31993	1998 FE ₃₀
1998 FG ₃₀	14.5	0.15	19980308	253.15088	330.66449	331.23457	4.33954	0.2396483	2.3970211	18	1	12 days	1.00			Williams		1998 FG ₃₀
1998 FH ₃₀	13.5	0.15	19980308	81.32132	254.44464	185.43379	10.92273	0.0910270	2.9667644	24	1	28 days	0.67			Williams		1998 FH ₃₀
1998 FJ ₃₀	16.0	0.15	19980308	352.67970	275.43448	265.70309	1.44822	0.1579873	2.3550635	18	1	12 days	0.80			Williams		1998 FJ ₃₀
1998 FN ₃₀	13.5	0.15	19980328	262.49250	297.87659	347.18361	10.81930	0.1146574	3.0636196	17	1	29 days	0.72			Williams		1998 FN ₃₀
1998 FP ₃₀	14.0	0.15	19980328	304.55779	72.46984	178.98134	15.88980	0.1868184	2.9301772	31	1	30 days	0.80		D	Williams		1998 FP ₃₀
1998 FR ₃₀	14.5	0.15	19980328	255.46473	91.09334	209.28492	1.92032	0.1873082	2.4082575	26	1	30 days	0.80			Williams		1998 FR ₃₀
1998 FB ₃₂	15.0	0.15	19980308	89.67986	233.04076	199.32118	5.59165	0.0985137	2.4130958	22	1	12 days	0.81			Williams		1998 FB ₃₂
1998 FE ₃₂	15.5	0.15	19980308	9.22303	321.38317	198.56273	6.66934	0.1558915	2.4037094	42	1	54 days	1.02			Williams		1998 FE ₃₂
1998 FH ₃₂	14.5	0.15	19980308	123.84867	202.60508	198.10275	6.29474	0.1071073	2.2806372	19	1	12 days	0.85			Williams		1998 FH ₃₂
1998 FN ₃₂	14.5	0.15	19980706	358.62056	219.23237	350.75314	14.27424	0.1214208	2.6503317	42	2	1995–1998	0.56	M-v	4	Williams	31993	1998 FN ₃₂
1998 FA ₃₃	15.0	0.15	19980706	326.65082	96.77132	160.93389	2.85313	0.1736573	2.3981967	75	3	1973–1998	0.80	M-v	4	Williams	31993	1998 FA ₃₃
1998 FD ₃₃	14.0	0.15	19980706	270.08451	157.91464	135.75189	2.18432	0.0492788	2.7600003	45	2	1977–1998	0.82	M-v	5	Williams	31993	1998 FD ₃₃
1998 FW ₃₃	14.0	0.15	19980328	227.00236	135.02809	189.82904	3.72982	0.1901185	2.4664187	19	1	30 days	0.91			Williams		1998 FW ₃₃
1998 FK ₃₄	14.0	0.15	19980328	77.59509	106.61145	342.84857	9.03871	0.1083425	2.7518467	21	1	30 days	0.84			Williams		1998 FK ₃₄
1998 FN ₃₄	15.0	0.15	19980328	37.49444	268.69842	214.28320	3.45842	0.2251599	2.7462486	26	1	30 days	0.76			Williams		1998 FN ₃₄
1998 FS ₃₄	14.5	0.15	19980706	29.76477	228.44253	295.79191	3.04018	0.1351489	3.1494099	33	2	1995–1998	0.88	M-v	4	Williams	32064	1998 FS ₃₄
1998 FT ₃₄	14.5	0.15	19980328	318.94862	31.65679	198.17936	6.01279	0.0970648	2.4867097	22	1	29 days	0.71			Williams		1998 FT ₃₄
1998 FV ₃₄	14.5	0.15	19980328	111.57537	226.41520	191.49254	5.48778	0.1088048	2.4784588	30	1	30 days	1.15			Williams		1998 FV ₃₄
1998 FW ₃₄	14.5	0.15	19980308	117.42433	215.97347	195.21638	3.20698	0.0739159	2.3285596	40	1	52 days	0.59			Williams		1998 FW ₃₄
1998 FB ₃₅	15.5	0.15	19980328	355.95982	8.20301	178.86316	3.15947	0.1799743	2.4271586	28	1	30 days	0.81			Williams		1998 FB ₃₅
1998 FD ₃₅	14.0	0.15	19980328	329.41520	38.99178	181.79351	2.42222	0.1487094	3.0570509	25	1	30 days	0.60			Williams		1998 FD ₃₅
1998 FH ₃₅	15.5	0.15	19980308	82.16966	257.87984	181.58230	3.50762	0.1185602	2.3050624	18	1	9 days	1.21			Williams		1998 FH ₃₅
1998 FK ₃₅	15.5	0.15	19980308	58.49335	106.91941	350.15227	2.23124	0.1804444	2.3499235	23	1	12 days	0.89			Williams		1998 FK ₃₅
1998 FL ₃₆	13.5	0.15	19980706	290.30061	118.96936	165.21147	6.75080	0.1139254	2.7568831	37	5	1986–1998	0.49	M-v	1	Williams	31994	1998 FL ₃₆
1998 FZ ₃₈	15.5	0.15	19980308	321.34373	13.03594	200.27114	4.75034	0.0585425	2.4412945	19	1	33 days	1.07			Williams		1998 FZ ₃₈
1998 FT ₃₉	14.0	0.15	19980706	337.65346	238.12919	346.55969	5.21560	0.1124675	3.2134550	42	3	1960–1998	0.86	M-v	4	Williams	32064	1998 FT ₃₉
1998 FA ₄₀	15.5	0.15	19980308	304.35341	267.61225	328.13452	3.46419	0.0690677	2.2073985	15	1	12 days	0.59			Williams		1998 FA ₄₀
1998 FG ₄₀	15.0	0.15	19980706	37.41250	165.48443	359.30036	1.13991	0.1157859	2.4250869	37	2	1994–1998	0.61	M-v	4	Williams	32064	1998 FG ₄₀
1998 FN ₄₀	14.5	0.15	19980308	161.18399	63.55205	306.37249	3.00626	0.1237747	2.3154417	19	1	12 days	0.85			Williams		1998 FN ₄₀
1998 FP ₄₀	15.0	0.15	19980328	267.69529	334.43052	317.72547	4.06465	0.1759090	2.2328495	36	1	30 days	0.73			Williams		1998 FP ₄₀
1998 FR ₄₀	15.5	0.15	19980308	341.77270	213.79228	341.86424	3.29358	0.0621828	2.2881261	23	1	12 days	0.98			Williams		1998 FR ₄₀
1998 FT ₄₀	15.0	0.15	19980308	332.73022	34.30187	173.88588	2.59767	0.1053280	2.7736273	21	1	9 days	1.12		E	Williams		1998 FT ₄₀
1998 FV ₄₀	15.5	0.15	19980706	347.52798	177.91489	53.49792	1.99847	0.1394072	2.4020137	41	3	1992–1998	0.53	M-v	4	Williams	31994	1998 FV ₄₀
1998 FA ₄₁	16.5	0.15	19980328	349.89839	15.27794	178.35069	4.64632	0.0864386	2.2933314	24	1	30 days	0.81			Williams		1998 FA ₄₁
1998 FB ₄₁	16.5	0.15	19980308	313.98645	72.49105	178.01150	4.69683	0.2854523	2.3235456	26	1	31 days	0.61			Williams		1998 FB ₄₁
1998 FE ₄₁	16.0	0.15	19980308	72.17888	286.13592	172.19203	3.27011	0.0465137	2.1937058	18	1	9 days	0.77			Williams		1998 FE ₄₁
1998 FG ₄₁	15.0	0.15	19980308	42.27025	300.34956	172.30110	4.01030	0.2211205	2.6079155	23	1	31 days	0.38			Williams		1998 FG ₄₁
1998 FJ ₄₁	14.5	0.15	19980328	142.46334	207.09409	184.16068	6.03329	0.1268821	2.2235884	33	1	30 days	0.89			Williams		1998 FJ ₄₁
1998 FM ₄₁	15.0	0.15	19980328	71.78275	200.57322	254.43264	0.75407	0.1328107	2.5604458	32	1	30 days	0.92			Williams		1998 FM ₄₁
1998 FN ₄₁	15.5	0.15	19980308	277.38025	286.61213	357.38849	2.31133	0.2177795	2.3907542	28	1	12 days	0.77			Williams		1998 FN ₄₁
1998 FP ₄₁	14.0	0.15	19980328	136.01566	64.36357	333.24729	1.54257	0.1105354	2.5964636	35	1	30 days	0.78			Williams		1998 FP ₄₁

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1998 FR ₄₁	14.0	0.15	19980328	178.80987	173.86612	186.34694	11.39301	0.2196246	2.4810037	20	1	30 days	0.92		Williams	1998 FR ₄₁
1998 FX ₄₁	15.0	0.15	19980328	311.47714	39.44557	198.91368	4.01841	0.0940183	2.6156549	22	1	30 days	0.81		Williams	1998 FX ₄₁
1998 FY ₄₁	15.0	0.15	19980328	221.52018	352.06914	339.54366	5.24080	0.1883603	2.2749114	23	1	30 days	0.97		Williams	1998 FY ₄₁
1998 FZ ₄₁	15.5	0.15	19980328	339.39491	332.22234	239.05916	1.64744	0.1669123	2.3512461	37	1	30 days	0.77		Williams	1998 FZ ₄₁
1998 FB ₄₂	13.5	0.15	19980308	231.90990	138.08791	187.61158	15.75102	0.2821066	2.6380058	40	1	52 days	0.65		Williams	1998 FB ₄₂
1998 FC ₄₂	13.5	0.15	19980328	296.11731	95.49834	186.14181	21.09936	0.3226672	3.2160876	37	1	30 days	0.59		Williams	1998 FC ₄₂
1998 FD ₄₂	16.0	0.15	19980328	348.35149	226.74340	333.44207	4.23646	0.1888555	2.3765739	34	1	30 days	0.93		Williams	1998 FD ₄₂
1998 FH ₄₂	15.0	0.15	19980706	300.54063	304.58113	342.69012	9.04451	0.1782969	2.4611632	45	4	1971–1998	0.84	M-v 2	Williams	32064 1998 FH ₄₂
1998 FL ₄₂	14.5	0.15	19980308	330.61210	25.21785	195.78088	8.04163	0.2088706	3.1031419	31	1	51 days	0.98		Williams	1998 FL ₄₂
1998 FP ₄₂	15.0	0.15	19980328	37.46692	295.04581	196.12944	6.55664	0.1701890	2.4276054	35	1	30 days	0.63		Williams	1998 FP ₄₂
1998 FQ ₄₂	15.5	0.15	19980328	59.76803	147.91095	327.33285	3.10947	0.0771255	2.2225956	25	1	30 days	0.93		Williams	1998 FQ ₄₂
1998 FS ₄₂	14.0	0.15	19980328	60.18513	216.81375	246.32034	1.69615	0.1723103	3.1891187	34	1	30 days	1.20		Williams	1998 FS ₄₂
1998 FU ₄₂	14.0	0.15	19980328	159.61721	171.92551	204.34228	3.73662	0.1718478	2.2017009	35	1	30 days	1.01		Williams	1998 FU ₄₂
1998 FY ₄₂	15.0	0.15	19980308	11.30305	276.35892	244.96305	0.85732	0.1208350	2.4116515	38	1	52 days	0.61		Williams	1998 FY ₄₂
1998 FA ₄₃	14.0	0.15	19980706	314.61989	25.78401	233.47068	1.11205	0.1181492	2.9732433	22	2	1993–1998	1.15	M-v 5	Williams	32064 1998 FA ₄₃
1998 FB ₄₃	15.5	0.15	19980308	33.82731	148.56742	345.18727	4.33786	0.1196718	2.3690406	20	1	9 days	0.99		Williams	1998 FB ₄₃
1998 FC ₄₃	14.0	0.15	19980328	41.47620	137.88696	349.09770	5.46252	0.1566149	3.0894150	34	1	30 days	0.72		Williams	1998 FC ₄₃
1998 FD ₄₃	16.0	0.15	19980328	330.08155	29.19467	192.37300	2.64837	0.1318643	2.3933931	30	1	30 days	0.69		Williams	1998 FD ₄₃
1998 FE ₄₃	14.0	0.15	19980328	163.41055	188.34799	185.49477	13.15735	0.1803697	2.5650350	27	1	30 days	0.69		Williams	1998 FE ₄₃
1998 FG ₄₃	14.5	0.15	19980328	319.95207	53.15898	183.63416	15.60218	0.1629071	2.7629996	34	1	56 days	0.54		Williams	1998 FG ₄₃
1998 FJ ₄₃	15.5	0.15	19980328	66.01394	280.67442	191.94378	4.51858	0.0415936	2.2844842	29	1	30 days	0.73		Williams	1998 FJ ₄₃
1998 FK ₄₃	15.0	0.15	19980308	17.20803	314.57151	198.16023	2.02219	0.1735608	2.8721389	40	1	56 days	0.74		Williams	1998 FK ₄₃
1998 FL ₄₃	15.0	0.15	19980308	152.01716	26.69045	355.53730	5.27451	0.0702892	2.3097284	33	1	51 days	0.76		Williams	1998 FL ₄₃
1998 FM ₄₃	14.5	0.15	19980328	109.38817	240.77138	186.62075	9.91624	0.0546344	3.0305686	22	1	30 days	1.17		Williams	1998 FM ₄₃
1998 FN ₄₃	15.0	0.15	19980308	193.86136	352.16964	356.63195	6.75157	0.1900480	2.2118940	23	1	12 days	0.91		Williams	1998 FN ₄₃
1998 FP ₄₃	16.5	0.15	19980328	309.14682	59.81979	187.43036	2.56130	0.1393846	2.2169178	29	1	30 days	1.03		Williams	1998 FP ₄₃
1998 FU ₄₃	16.5	0.15	19980308	337.52325	218.55044	349.59092	1.36228	0.1703448	2.6483167	20	1	9 days	2.08		E Williams	1998 FU ₄₃
1998 FV ₄₃	14.0	0.15	19980706	307.41207	260.21067	359.48832	9.63911	0.0512771	2.9730885	33	2	1993–1998	0.70	M-v 5	Williams	32064 1998 FV ₄₃
1998 FW ₄₃	14.0	0.15	19980328	76.94233	275.85090	181.68233	9.88129	0.0679695	2.9621011	25	1	30 days	0.80		Williams	1998 FW ₄₃
1998 FC ₄₄	14.5	0.15	19980328	288.98187	265.78596	4.58365	7.31076	0.1580462	2.7360858	29	1	30 days	0.70		Williams	1998 FC ₄₄
1998 FD ₄₄	14.5	0.15	19980308	356.68131	9.91201	170.97309	1.57787	0.0498558	2.8803051	20	1	9 days	0.73		Williams	1998 FD ₄₄
1998 FK ₄₄	14.0	0.15	19980328	280.34057	285.90289	7.07541	4.27316	0.2744581	2.9037069	25	1	30 days	1.04		Williams	1998 FK ₄₄
1998 FL ₄₄	14.5	0.15	19980706	309.28077	269.88171	3.33239	13.49933	0.1564202	2.6175089	37	2	1995–1998	0.51	M-v 4	Williams	32064 1998 FL ₄₄
1998 FM ₄₄	16.0	0.15	19980328	314.85128	223.79792	18.99404	2.07803	0.1649591	2.3372464	25	1	30 days	0.78		Williams	1998 FM ₄₄
1998 FD ₄₆	16.5	0.15	19980308	300.31010	227.54431	14.94501	4.29756	0.0631242	2.1528956	26	1	27 days	1.17		Williams	1998 FD ₄₆
1998 FK ₄₆	15.5	0.15	19980308	333.62913	195.71193	13.75072	2.49687	0.1209453	2.2207663	28	1	51 days	0.40		Williams	1998 FK ₄₆
1998 FV ₄₆	16.0	0.15	19980308	353.70775	348.48906	197.00929	2.14251	0.1414230	2.4569465	38	1	51 days	0.75		Williams	1998 FV ₄₆
1998 FW ₄₆	16.5	0.15	19980328	47.95084	299.74535	187.16183	3.80297	0.0964678	2.2595905	39	1	30 days	0.98		Williams	1998 FW ₄₆
1998 FY ₄₆	16.5	0.15	19980308	30.24970	147.95612	354.87992	3.95621	0.0741148	2.4166790	19	1	9 days	1.69		E Williams	1998 FY ₄₆
1998 FZ ₄₆	16.0	0.15	19980328	284.72699	280.75444	352.72537	3.96863	0.1255248	2.1668109	35	1	30 days	0.75		Williams	1998 FZ ₄₆
1998 FA ₄₇	17.0	0.15	19980328	345.23736	20.80756	183.53148	2.08718	0.1553652	2.3114654	25	1	30 days	1.20		Williams	1998 FA ₄₇
1998 FB ₄₇	15.5	0.15	19980308	339.63133	19.43451	183.95094	4.48282	0.1099875	2.6765812	20	1	9 days	1.21		E Williams	1998 FB ₄₇
1998 FD ₄₇	14.5	0.15	19980328	349.68903	204.95796	353.45916	11.15667	0.1879474	3.1470769	32	1	30 days	0.67		Williams	1998 FD ₄₇
1998 FE ₄₇	15.5	0.15	19980706	3.61621	219.46912	355.02189	12.83901	0.2224572	2.6360902	38	1	80 days	0.52	M-v 4	Williams	1998 FE ₄₇
1998 FG ₄₇	16.5	0.15	19980308	30.35959	153.67242	346.98346	5.07595	0.0881829	2.2212821	18	1	9 days	1.37		Williams	1998 FG ₄₇
1998 FH ₄₇	15.5	0.15	19980308	96.65818	140.00186	285.08527	1.12692	0.1476385	2.3628839	20	1	9 days	0.89		Williams	1998 FH ₄₇
1998 FL ₄₇	16.0	0.15	19980328	297.29861	312.64537	315.99448	2.02114	0.2000099	2.3447093	34	1	30 days	0.95		Williams	1998 FL ₄₇
1998 FM ₄₇	15.5	0.15	19980308	93.61628	81.81764	350.93519	7.04879	0.1055276	2.4120084	24	1	12 days	1.22		Williams	1998 FM ₄₇
1998 FN ₄₇	15.0	0.15	19980308	358.53498	189.73707	351.26030	8.62338	0.0904617	3.2029812	17	1	9 days	1.30		Williams	1998 FN ₄₇
1998 FO ₄₇	14.0	0.15	19980328	200.96183	58.34658	286.92898	1.62221	0.0822202	2.6499137	44	1	35 days	0.68		Williams	1998 FO ₄₇
1998 FP ₄₇	15.0	0.15	19980308	210.45598	345.64912	349.56895	6.35144	0.1261991	2.5543266	19	1	9 days	1.36		Williams	1998 FP ₄₇
1998 FQ ₄₇	16.0	0.15	19980308	30.67900	289.97280	215.12775	3.69498	0.0076327	2.1937450	17	1	9 days	1.07		E Williams	1998 FQ ₄₇
1998 FT ₄₇	16.5	0.15	19980308	1.01693	260.20130	274.42257	1.93492	0.1423557	2.3667524	18	1	9 days	1.12		Williams	1998 FT ₄₇

1998 FW ₄₇	15.5	0.15	19980308	60.35515	228.15573	224.27634	3.75117	0.2193692	2.3410090	19	1	9 days	0.80		Williams		1998 FW ₄₇
1998 FX ₄₇	14.5	0.15	19980706	273.15115	110.43552	203.59992	5.73138	0.1945590	2.4261384	38	2	1991–1998	0.65	M-v 4	Williams	31994	1998 FX ₄₇
1998 FB ₄₈	14.0	0.15	19980328	68.93704	124.94168	337.16841	4.88658	0.1122926	2.6739854	35	1	40 days	0.86		Williams		1998 FB ₄₈
1998 FF ₄₈	15.0	0.15	19980308	340.52353	2.54840	199.56994	8.46707	0.1150550	2.5590628	38	1	51 days	0.78		Williams		1998 FF ₄₈
1998 FK ₄₈	15.5	0.15	19980328	43.41857	279.42007	209.66205	4.82791	0.1352495	2.2531347	30	1	30 days	0.94		Williams		1998 FK ₄₈
1998 FO ₄₈	14.5	0.15	19980706	17.57138	243.86114	309.11675	3.29482	0.0881411	2.5354035	49	1	66 days	0.69	M-v 5	Williams	32065	1998 FO ₄₈
1998 FP ₄₈	16.0	0.15	19980328	316.97893	30.21593	216.07396	4.10250	0.1978306	2.3883584	34	1	30 days	1.37		Williams		1998 FP ₄₈
1998 FR ₄₈	15.5	0.15	19980308	183.79496	99.87421	257.29132	2.12282	0.1639362	2.1690699	19	1	9 days	1.39		Williams		1998 FR ₄₈
1998 FX ₄₈	14.0	0.15	19980328	75.29772	241.34154	210.12204	4.56686	0.1529053	3.1139796	32	1	30 days	0.93		Williams		1998 FX ₄₈
1998 FY ₄₈	14.5	0.15	19980328	157.30968	144.07082	238.39884	2.58978	0.1168000	2.7266640	23	1	30 days	1.10		Williams		1998 FY ₄₈
1998 FC ₄₉	15.0	0.15	19980328	342.88995	213.81220	353.67993	8.10652	0.1575013	2.7386688	35	1	30 days	0.70		Williams		1998 FC ₄₉
1998 FE ₄₉	15.0	0.15	19980328	274.76620	100.81803	190.71672	7.77318	0.1959349	2.3951638	23	1	35 days	0.53		Williams		1998 FE ₄₉
1998 FF ₄₉	16.0	0.15	19980328	36.96003	164.08599	329.74553	2.04734	0.1693617	2.3577355	30	1	30 days	1.01		Williams		1998 FF ₄₉
1998 FG ₄₉	15.0	0.15	19980308	256.25666	300.62485	358.63963	13.56444	0.1421994	2.8143058	20	1	12 days	0.99		Williams		1998 FG ₄₉
1998 FJ ₄₉	15.0	0.15	19980308	344.64308	13.07962	185.52164	9.74477	0.1397420	2.4673078	27	1	9 days	1.03	E	Williams		1998 FJ ₄₉
1998 FM ₄₉	14.5	0.15	19980308	269.81435	103.45704	186.41854	11.70630	0.1740216	2.5359819	20	1	9 days	0.56		Williams		1998 FM ₄₉
1998 FN ₄₉	13.5	0.15	19980328	145.91952	206.70294	188.40154	11.98897	0.0629569	2.9734599	31	1	35 days	0.45		Williams		1998 FN ₄₉
1998 FU ₄₉	15.0	0.15	19980308	346.33400	193.64143	1.00733	5.90686	0.0443410	2.8625714	23	1	12 days	1.13	E	Williams		1998 FU ₄₉
1998 FX ₄₉	17.0	0.15	19980706	354.53190	235.41973	354.04450	1.23727	0.0972419	2.1333924	24	1	61 days	0.73	M-v 6	Williams		1998 FX ₄₉
1998 FY ₄₉	16.0	0.15	19980308	39.64935	130.98317	2.55808	6.61248	0.0728629	2.4003116	38	1	54 days	1.04		Williams		1998 FY ₄₉
1998 FZ ₄₉	14.5	0.15	19980328	100.18844	69.52070	4.37190	7.12989	0.0974203	2.3564712	36	1	35 days	0.56		Williams		1998 FZ ₄₉
1998 FK ₅₁	14.0	0.15	19980706	13.57834	177.54681	11.17860	15.80360	0.1320241	3.0664771	44	2	1995–1998	0.57	M-v 3	Williams	32065	1998 FK ₅₁
1998 FL ₅₁	14.0	0.15	19980328	73.75842	340.05378	108.87241	2.75549	0.1754616	3.0976779	34	1	31 days	0.78		Williams		1998 FL ₅₁
1998 FT ₅₁	15.5	0.15	19980706	109.37532	322.49837	134.10994	3.93120	0.0781499	2.2018736	31	3	1995–1998	0.78	M-v 2	Williams	31994	1998 FT ₅₁
1998 FT ₅₂	15.5	0.15	19980308	353.83156	184.81201	3.66971	7.14902	0.1910786	2.8253507	28	1	12 days	0.58		Williams		1998 FT ₅₂
1998 FA ₅₃	13.5	0.15	19980706	98.91785	82.27968	4.90875	5.27135	0.1470565	3.2034121	62	3	1992–1998	0.65	M-v 2	Williams	31994	1998 FA ₅₃
1998 FE ₅₃	15.0	0.15	19980328	326.89081	240.13876	342.28128	3.27234	0.0625915	2.5372480	32	1	30 days	1.08		Williams		1998 FE ₅₃
1998 FG ₅₃	14.5	0.15	19980706	300.15205	297.98676	339.58114	3.70753	0.0367589	2.3031139	47	3	1978–1998	0.60	M-v 4	Williams	32065	1998 FG ₅₃
1998 FH ₅₃	15.0	0.15	19980328	22.19070	320.17367	198.07431	4.52003	0.0986867	2.7125929	29	1	30 days	1.09		Williams		1998 FH ₅₃
1998 FJ ₅₃	16.5	0.15	19980328	325.93765	34.69693	193.95388	6.32910	0.1216662	2.2483899	27	1	30 days	1.00		Williams		1998 FJ ₅₃
1998 FM ₅₃	15.5	0.15	19980308	103.22506	236.23374	192.72641	6.54867	0.0737906	2.3106828	24	1	12 days	0.83		Williams		1998 FM ₅₃
1998 FN ₅₃	15.0	0.15	19980308	124.85921	183.97927	223.43760	3.05021	0.0855347	2.1472245	37	1	54 days	0.86		Williams		1998 FN ₅₃
1998 FP ₅₃	15.5	0.15	19980706	75.03782	279.69795	197.30693	6.52571	0.2325535	2.2403291	37	2	1993–1998	0.54	M-v 4	Williams	31994	1998 FP ₅₃
1998 FQ ₅₃	15.5	0.15	19980308	79.62313	134.68493	319.38777	2.42164	0.0587559	2.3474935	38	1	46 days	1.37		Williams		1998 FQ ₅₃
1998 FT ₅₃	13.0	0.15	19980706	230.10924	356.99955	348.97254	12.13139	0.1751692	2.6418370	54	4	1961–1998	0.64	M-v 2	Williams	32065	1998 FT ₅₃
1998 FU ₅₃	13.5	0.15	19980328	140.27695	63.31430	334.33324	6.98323	0.1191396	3.2051245	31	1	30 days	1.55		Williams		1998 FU ₅₃
1998 FW ₅₃	15.5	0.15	19980328	308.02572	336.03855	274.87555	2.31747	0.1236674	2.4199042	41	1	30 days	1.00		Williams		1998 FW ₅₃
1998 FZ ₅₃	14.5	0.15	19980706	189.67001	156.13329	223.81864	5.01989	0.1886107	2.2956430	44	4	1975–1998	0.74	M-v 3	Williams	31995	1998 FZ ₅₃
1998 FA ₅₄	15.5	0.15	19980328	335.54556	323.94730	256.92895	2.03239	0.1568211	2.3576678	43	1	31 days	0.50		Williams		1998 FA ₅₄
1998 FB ₅₄	14.0	0.15	19980328	359.54171	239.35629	308.50305	2.20943	0.0321349	2.6424049	49	1	43 days	0.57		Williams		1998 FB ₅₄
1998 FD ₅₄	14.0	0.15	19980328	46.35498	299.92724	192.89001	10.06502	0.0811737	2.9799256	41	1	47 days	0.62		Williams		1998 FD ₅₄
1998 FE ₅₄	15.5	0.15	19980328	69.21547	274.66460	192.05898	9.06013	0.0934779	2.3621127	37	1	31 days	0.69		Williams		1998 FE ₅₄
1998 FH ₅₄	15.0	0.15	19980308	218.35481	132.85265	194.83294	5.79815	0.0687245	2.6262604	23	1	12 days	0.94		Williams		1998 FH ₅₄
1998 FJ ₅₄	15.0	0.15	19980328	143.63951	39.58315	354.73769	6.89676	0.1295631	2.3053001	32	1	30 days	0.84		Williams		1998 FJ ₅₄
1998 FL ₅₄	14.5	0.15	19980328	87.17054	153.92755	298.43024	1.02790	0.0556335	2.7703998	31	1	30 days	0.92		Williams		1998 FL ₅₄
1998 FP ₅₄	15.5	0.15	19980328	36.76200	310.41740	184.55804	11.75160	0.1769620	2.7977096	25	1	31 days	1.24		Williams		1998 FP ₅₄
1998 FS ₅₄	16.0	0.15	19980328	88.77901	86.79028	3.05392	6.01626	0.0682200	2.3382030	24	1	30 days	0.94		Williams		1998 FS ₅₄
1998 FT ₅₄	14.0	0.15	19980328	55.20023	289.44225	184.73407	16.15868	0.1634396	2.7592236	35	1	43 days	0.49		Williams		1998 FT ₅₄
1998 FU ₅₄	15.5	0.15	19980328	74.43141	279.85662	181.53866	7.61002	0.0953686	2.2866641	32	1	31 days	0.97		Williams		1998 FU ₅₄
1998 FX ₅₄	14.0	0.15	19980706	223.17159	262.16970	81.55382	1.00974	0.0465379	3.0095921	57	4	1992–1998	0.65	M-v 1	Williams	31995	1998 FX ₅₄
1998 FY ₅₄	14.5	0.15	19980706	15.28710	113.45525	77.30092	0.73502	0.0240117	2.9309173	27	2	1993–1998	0.72	M-v 4	Williams	31995	1998 FY ₅₄
1998 FC ₅₅	16.5	0.15	19980328	301.51130	139.24121	120.43654	0.64897	0.1372215	2.2251356	28	1	31 days	1.21		Williams		1998 FC ₅₅
1998 FR ₅₅	14.0	0.15	19980706	111.72758	268.20572	169.07006	12.95363	0.1352099	3.0875942	31	1	79 days	0.89	M-v 5	Williams	32065	1998 FR ₅₅

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1998 FA ₅₆	14.0	0.15	19980706	354.14009	47.22945	171.01834	14.82745	0.0387794	2.5549013	31	3	1979–1998	0.45	M-v	3	Williams	31995	1998 FA ₅₆
1998 FG ₅₆	14.5	0.15	19980706	288.99164	143.06405	160.54045	7.79209	0.1998193	2.5615037	33	1	79 days	0.76	M-v	5	Williams	32065	1998 FG ₅₆
1998 FJ ₅₆	13.5	0.15	19980706	274.24322	251.35710	42.45154	4.30495	0.0093502	2.8042145	46	4	1981–1998	0.60	M-v	1	Williams	32065	1998 FJ ₅₆
1998 FR ₅₆	14.0	0.15	19980706	163.12809	216.89010	180.21691	18.50620	0.1678806	2.5907394	36	2	1977–1998	0.60	M-v	5	Williams	31995	1998 FR ₅₆
1998 FV ₅₆	14.0	0.15	19980706	226.14775	332.53547	20.20370	5.39226	0.2312838	2.5451461	29	3	1971–1998	0.72	M-v	4	Williams	31995	1998 FV ₅₆
1998 FE ₅₇	14.5	0.15	19980328	88.67496	281.25285	176.23095	2.16308	0.0137465	2.8821732	28	1	31 days	1.04			Williams		1998 FE ₅₇
1998 FF ₅₇	15.5	0.15	19980706	319.64967	102.96116	171.69724	1.91255	0.1547556	2.2474439	35	2	1971–1998	0.57	M-v	5	Williams	31996	1998 FF ₅₇
1998 FJ ₅₇	14.0	0.15	19980328	167.94714	8.70270	8.89515	16.06308	0.1140519	2.6268974	41	1	31 days	0.64			Williams		1998 FJ ₅₇
1998 FK ₅₇	15.5	0.15	19980706	22.54933	190.26268	357.66760	3.63963	0.1555824	2.6048455	50	1	80 days	0.60	M-v	4	Williams	32065	1998 FK ₅₇
1998 FL ₅₇	16.5	0.15	19980328	287.80374	301.59635	342.78504	0.58713	0.2190742	2.1763359	25	1	31 days	1.00		D	Williams		1998 FL ₅₇
1998 FM ₅₇	15.0	0.15	19980328	281.97379	298.26921	350.40915	3.61680	0.2003138	2.3148826	28	1	31 days	0.48			Williams		1998 FM ₅₇
1998 FO ₅₇	16.0	0.15	19980706	37.79389	182.24907	353.79250	7.22512	0.1822591	2.2267462	44	1	79 days	0.50	M-v	4	Williams	32065	1998 FO ₅₇
1998 FP ₅₇	14.0	0.15	19980328	34.91511	312.17318	193.50596	13.64333	0.1039997	3.1424944	34	1	31 days	0.99			Williams		1998 FP ₅₇
1998 FR ₅₇	13.0	0.15	19980706	198.99843	43.85105	322.93745	3.89116	0.1157495	3.2383704	49	4	1989–1998	0.70	M-v	2	Williams	32065	1998 FR ₅₇
1998 FS ₅₇	14.5	0.15	19980328	269.89160	322.62824	350.58666	8.49329	0.3136748	2.5850989	26	1	30 days	1.20			Williams		1998 FS ₅₇
1998 FT ₅₇	14.5	0.15	19980328	247.64751	105.50708	208.63126	7.13268	0.1306285	2.3837259	33	1	31 days	1.06			Williams		1998 FT ₅₇
1998 FU ₅₇	14.5	0.15	19980328	346.79137	4.54272	200.34382	8.73936	0.0890672	2.8004068	34	1	31 days	0.67			Williams		1998 FU ₅₇
1998 FW ₅₇	15.5	0.15	19980328	0.56692	282.12888	266.25466	1.53584	0.1354639	2.4543048	38	1	31 days	0.81			Williams		1998 FW ₅₇
1998 FX ₅₇	15.0	0.15	19980328	253.83851	110.81128	205.38726	4.49476	0.2169311	2.1548440	35	1	31 days	1.03			Williams		1998 FX ₅₇
1998 FY ₅₇	14.0	0.15	19980328	255.08357	304.09959	357.72343	8.51892	0.0723378	2.9942583	33	1	31 days	1.50			Williams		1998 FY ₅₇
1998 FZ ₅₇	16.0	0.15	19980328	71.65882	128.69225	331.65773	2.01719	0.1473122	2.2404902	33	1	31 days	1.40			Williams		1998 FZ ₅₇
1998 FB ₅₈	14.0	0.15	19980328	90.82119	255.31633	188.65399	25.02375	0.1174722	3.1773755	23	1	31 days	0.80			Williams		1998 FB ₅₈
1998 FC ₅₈	15.0	0.15	19980328	274.01162	302.92453	350.86914	2.12158	0.1745643	2.4384342	29	1	31 days	0.94			Williams		1998 FC ₅₈
1998 FD ₅₈	15.0	0.15	19980328	61.07164	172.84155	302.40523	1.00852	0.1116693	2.4186915	35	1	31 days	0.60			Williams		1998 FD ₅₈
1998 FE ₅₈	15.5	0.15	19980328	109.83651	72.03633	352.13707	2.57769	0.1405312	2.2976363	31	1	31 days	1.66			Williams		1998 FE ₅₈
1998 FF ₅₈	16.0	0.15	19980328	45.74468	255.72636	221.32407	1.28011	0.2542951	2.5606000	28	1	31 days	0.98			Williams		1998 FF ₅₈
1998 FG ₅₈	14.5	0.15	19980328	247.35582	312.42891	0.93321	7.11974	0.1205933	2.3580868	34	1	31 days	0.72			Williams		1998 FG ₅₈
1998 FH ₅₈	14.5	0.15	19980706	7.47592	194.76466	6.48814	0.46713	0.1147337	3.1070806	42	2	1995–1998	0.57	M-v	5	Williams	31996	1998 FH ₅₈
1998 FK ₅₈	13.5	0.15	19980706	38.54824	162.25422	5.63004	9.03603	0.0264474	2.9983124	47	1	65 days	0.51	M-v	5	Williams	32066	1998 FK ₅₈
1998 FL ₅₈	15.5	0.15	19980706	140.16676	203.32502	218.54775	0.23469	0.1570308	2.2320911	37	2	1979–1998	0.71	M-v	5	Williams	31996	1998 FL ₅₈
1998 FM ₅₈	16.5	0.15	19980308	354.12446	177.14273	11.68319	2.36226	0.1292539	2.4226009	23	1	12 days	1.13			Williams		1998 FM ₅₈
1998 FQ ₅₈	15.0	0.15	19980328	314.78351	80.19670	169.79500	2.24966	0.1713101	2.5295851	29	1	31 days	0.92			Williams		1998 FQ ₅₈
1998 FY ₅₈	16.0	0.15	19980706	22.85694	171.40482	17.30840	7.35610	0.1629651	2.5691968	35	2	1996–1998	0.56	M-v	4	Williams	31996	1998 FY ₅₈
1998 FA ₅₉	15.0	0.15	19980706	220.17679	281.63559	74.81759	2.48100	0.1448060	2.4467480	46	3	1984–1998	0.73	M-v	4	Williams	32066	1998 FA ₅₉
1998 FC ₅₉	14.5	0.15	19980706	265.87115	156.32451	169.54518	7.12841	0.1789690	2.2583586	53	4	1989–1998	0.69	M-v	2	Williams	32066	1998 FC ₅₉
1998 FT ₅₉	15.5	0.15	19980706	357.79073	52.92668	168.84846	6.86521	0.0689211	2.3573506	37	3	1992–1998	0.67	M-v	4	Williams	32066	1998 FT ₅₉
1998 FH ₆₀	15.5	0.15	19980308	139.08992	223.51237	172.65622	3.22185	0.1319960	2.2060728	19	1	9 days	1.24		E	Williams		1998 FH ₆₀
1998 FK ₆₀	16.0	0.15	19980328	301.93144	238.58817	20.54573	4.34211	0.1164445	2.2926395	29	1	31 days	1.39			Williams		1998 FK ₆₀
1998 FP ₆₀	15.5	0.15	19980706	50.75832	134.74516	19.01161	4.33077	0.1774143	2.4413265	41	1	87 days	0.62	M-v	5	Williams	32066	1998 FP ₆₀
1998 FQ ₆₀	14.0	0.15	19980706	102.56343	87.42721	357.81493	0.84074	0.1663340	3.1100723	33	2	1995–1998	0.72	M-v	5	Williams	31996	1998 FQ ₆₀
1998 FS ₆₀	16.0	0.15	19980328	357.67200	10.95259	180.49232	1.15622	0.1264141	2.3936927	37	1	31 days	0.65			Williams		1998 FS ₆₀
1998 FT ₆₀	15.5	0.15	19980328	39.16106	322.51647	183.21051	6.04551	0.0475805	2.3487369	25	1	31 days	0.99			Williams		1998 FT ₆₀
1998 FU ₆₀	15.0	0.15	19980706	29.59455	357.47084	180.54754	3.95559	0.1773957	2.6922216	38	2	1960–1998	0.57	M-v	4	Williams	31997	1998 FU ₆₀
1998 FV ₆₀	15.0	0.15	19980706	340.12874	235.28699	9.14136	6.06278	0.0794105	2.2762320	49	3	1991–1998	0.49	M-v	3	Williams	31997	1998 FV ₆₀
1998 FW ₆₀	15.5	0.15	19980328	307.52359	69.27097	186.98875	6.33559	0.1459793	2.6026610	26	1	33 days	1.55			Williams		1998 FW ₆₀
1998 FX ₆₀	14.5	0.15	19980328	267.63160	279.94347	9.58486	3.75882	0.0671959	2.7941384	34	1	31 days	1.03			Williams		1998 FX ₆₀
1998 FY ₆₀	14.5	0.15	19980328	346.97985	197.85879	5.49495	14.61794	0.0541061	2.5382553	39	1	31 days	0.68			Williams		1998 FY ₆₀
1998 FD ₆₁	15.0	0.15	19980328	324.44736	47.74478	185.99865	4.87469	0.1218893	2.1707999	43	1	55 days	1.08			Williams		1998 FD ₆₁
1998 FG ₆₁	15.5	0.15	19980308	200.55845	77.09186	270.59232	1.29494	0.1057154	2.1711130	23	1	12 days	0.82			Williams		1998 FG ₆₁
1998 FH ₆₁	15.0	0.15	19980328	325.94107	34.64883	196.37264	4.53457	0.1023914	2.5269060	37	1	43 days	0.62			Williams		1998 FH ₆₁
1998 FJ ₆₁	14.5	0.15	19980328	76.80173	107.40761	345.67633	1.73921	0.1711986	2.3926154	36	1	31 days	0.49			Williams		1998 FJ ₆₁
1998 FK ₆₁	16.5	0.15	19980328	344.15064	306.08591	264.15132	0.52120	0.1323466	2.4160830	27	1	31 days	1.44			Williams		1998 FK ₆₁
1998 FM ₆₁	16.0	0.15	19980308	301.18998	264.61351	0.64017	4.41601	0.2078897	2.3670217	36	1	47 days	0.97			Williams		1998 FM ₆₁

1998 FN ₆₁	15.0	0.15	19980308	16.75661	330.13534	191.11532	23.44687	0.1357676	2.5631702	43	1	54 days	0.73		Williams	1998 FN ₆₁
1998 FP ₆₁	15.0	0.15	19980328	267.85081	97.47595	199.07560	6.71609	0.1303109	2.2766672	34	1	31 days	0.70		Williams	1998 FP ₆₁
1998 FQ ₆₁	16.5	0.15	19980328	347.05261	214.91619	353.71766	5.48524	0.1852928	2.2987573	33	1	31 days	0.93		Williams	1998 FQ ₆₁
1998 FR ₆₁	14.5	0.15	19980328	312.41459	306.24873	302.09902	1.47122	0.1143402	2.6050123	35	1	31 days	0.80		Williams	1998 FR ₆₁
1998 FT ₆₁	15.0	0.15	19980706	337.04020	2.67437	254.83439	1.47151	0.1809275	2.4057504	45	3	1991–1998	0.63	M-v 3	Williams	1998 FT ₆₁
1998 FU ₆₁	15.5	0.15	19980328	339.11515	332.84186	242.81819	1.52444	0.1023118	2.2817324	39	1	33 days	0.77		Williams	1998 FU ₆₁
1998 FV ₆₁	14.0	0.15	19980328	216.16670	339.52275	2.93509	13.96728	0.1175088	2.6921372	37	1	31 days	1.23		Williams	1998 FV ₆₁
1998 FA ₆₂	16.0	0.15	19980328	286.57115	308.66191	332.21759	4.09937	0.1505754	2.1653703	37	1	31 days	0.88		Williams	1998 FA ₆₂
1998 FC ₆₂	15.5	0.15	19980328	315.06555	43.33467	204.78712	9.46398	0.1374401	2.4265621	34	1	33 days	0.88		Williams	1998 FC ₆₂
1998 FD ₆₂	15.0	0.15	19980328	287.63105	284.36749	349.06180	6.22752	0.0947491	2.3480330	48	1	43 days	0.69		Williams	1998 FD ₆₂
1998 FE ₆₂	13.5	0.15	19980308	139.96354	36.37097	0.18791	14.32559	0.1787295	2.5529429	42	1	52 days	0.73		Williams	1998 FE ₆₂
1998 FF ₆₂	14.0	0.15	19980706	316.88335	266.19403	357.53943	10.85877	0.0686432	2.7077194	49	2	1980–1998	0.51	M-v 4	Williams	1998 FF ₆₂
1998 FG ₆₂	14.0	0.15	19980328	26.20263	224.28559	286.41380	2.55191	0.2177452	3.2904422	36	1	39 days	0.74		Williams	1998 FG ₆₂
1998 FJ ₆₂	14.5	0.15	19980328	63.59649	246.76797	201.49340	10.13256	0.3384326	2.7631354	31	1	33 days	1.20		Williams	1998 FJ ₆₂
1998 FL ₆₂	14.5	0.15	19980328	214.33363	121.20599	219.20121	4.72280	0.0522878	2.3600186	34	1	33 days	1.11		Williams	1998 FL ₆₂
1998 FM ₆₂	13.0	0.15	19980328	187.99302	166.54762	199.54542	17.39551	0.1451700	2.7756059	38	1	42 days	0.76		Williams	1998 FM ₆₂
1998 FO ₆₂	13.5	0.15	19980706	189.66476	169.72909	211.24896	5.04318	0.1199582	2.8028761	48	3	1979–1998	0.69	M-v 4	Williams	1998 FO ₆₂
1998 FU ₆₂	14.0	0.15	19980706	180.67965	79.90678	309.58570	1.47857	0.0704596	2.7661986	39	3	1977–1998	0.85	M-v 4	Williams	1998 FU ₆₂
1998 FY ₆₂	14.0	0.15	19980706	131.94976	248.41166	187.91868	13.90416	0.0564426	2.5597545	53	1	78 days	0.56	M-v 4	Williams	1998 FY ₆₂
1998 FZ ₆₂	13.5	0.15	19980706	167.44557	207.63632	188.16610	14.11582	0.1864498	2.6415062	51	3	1974–1998	0.77	M-v 4	Williams	1998 FZ ₆₂
1998 FA ₆₃	16.0	0.15	19980328	11.38633	169.28286	6.72219	5.45001	0.1002479	2.3265811	35	1	33 days	0.89		Williams	1998 FA ₆₃
1998 FB ₆₃	13.5	0.15	19980328	116.76948	226.96696	188.12571	16.82141	0.2137398	2.9336990	33	1	33 days	0.75		Williams	1998 FB ₆₃
1998 FC ₆₃	13.5	0.15	19980706	0.88209	37.52717	172.35003	1.29333	0.1000204	3.2190712	66	4	1978–1998	0.70	M-v 2	Williams	1998 FC ₆₃
1998 FD ₆₃	14.5	0.15	19980328	342.41973	202.36215	10.55266	16.24220	0.1336691	3.2046187	33	1	31 days	0.90		Williams	1998 FD ₆₃
1998 FE ₆₃	15.5	0.15	19980328	332.78221	213.02169	11.51240	12.70491	0.1254932	2.7023420	28	1	30 days	1.16		Williams	1998 FE ₆₃
1998 FG ₆₃	14.0	0.15	19980706	5.09356	62.33281	142.37959	2.16012	0.0480620	3.0967025	39	2	1995–1998	0.56	M-v 4	Williams	1998 FG ₆₃
1998 FH ₆₃	13.5	0.15	19980706	142.38737	283.78809	138.83045	2.65833	0.0632225	2.8526867	66	4	1983–1998	0.63	M-v 1	Williams	1998 FH ₆₃
1998 FJ ₆₃	13.5	0.15	19980308	235.88312	270.76876	57.48029	2.33054	0.1956560	2.9659376	17	1	9 days	1.09	E	Williams	1998 FJ ₆₃
1998 FK ₆₃	15.0	0.15	19980706	335.38398	210.97158	46.21989	2.85359	0.1645560	2.4333199	61	4	1991–1998	0.61	M-v 2	Williams	1998 FK ₆₃
1998 FL ₆₃	15.0	0.15	19980706	127.85731	298.45402	139.43786	3.38599	0.0745701	2.5431700	37	2	1996–1998	0.84	M-v 5	Williams	1998 FL ₆₃
1998 FR ₆₃	15.5	0.15	19980706	86.05021	327.23829	142.91421	3.46605	0.1767986	2.4163606	34	2	1994–1998	0.78	M-v 5	Williams	1998 FR ₆₃
1998 FX ₆₃	15.5	0.15	19980328	341.07420	143.97878	69.56907	3.40767	0.1261059	2.4122220	41	1	33 days	0.80		Williams	1998 FX ₆₃
1998 FM ₆₄	14.0	0.15	19980706	326.29136	100.02142	156.68888	1.20372	0.1398496	3.1039813	40	3	1982–1998	0.66	M-v 4	Williams	1998 FM ₆₄
1998 FN ₆₄	16.0	0.15	19980328	33.61564	136.31005	14.52493	6.83454	0.0830495	2.3050432	26	1	33 days	0.78		Williams	1998 FN ₆₄
1998 FO ₆₄	15.5	0.15	19980328	354.66602	13.33759	183.77025	12.64424	0.0889890	2.6385814	28	1	33 days	0.89		Williams	1998 FO ₆₄
1998 FP ₆₄	14.0	0.15	19980328	257.85474	140.81293	183.16436	13.31673	0.3122912	2.5714501	40	1	33 days	0.93		Williams	1998 FP ₆₄
1998 FQ ₆₄	14.5	0.15	19980706	287.36565	288.91782	15.72420	6.45498	0.1235496	2.3209008	52	2	1991–1998	0.59	M-v 4	Williams	1998 FQ ₆₄
1998 FS ₆₄	16.0	0.15	19980328	354.54216	16.01743	182.24124	2.28114	0.1765867	2.2906812	32	1	42 days	0.67		Williams	1998 FS ₆₄
1998 FW ₆₄	13.5	0.15	19980328	265.71299	287.86551	12.02340	17.06598	0.1170310	3.1784849	41	1	33 days	0.93		Williams	1998 FW ₆₄
1998 FX ₆₄	14.0	0.15	19980706	180.97009	21.04699	10.77987	5.38307	0.1102943	2.4611250	49	3	1982–1998	0.61	M-v 4	Williams	1998 FX ₆₄
1998 FA ₆₅	14.5	0.15	19980706	212.18997	167.59418	200.05487	4.69509	0.1226576	2.4520625	35	4	1971–1998	0.80	M-v 3	Williams	1998 FA ₆₅
1998 FG ₆₅	15.0	0.15	19980706	342.94251	55.87785	196.24308	9.30544	0.2152327	2.6278640	66	3	1989–1998	0.64	M-v 3	Williams	1998 FG ₆₅
1998 FH ₆₅	15.0	0.15	19980706	327.45226	46.31339	221.10679	1.74511	0.1292335	2.2801388	74	3	1991–1998	0.58	M-v 5	Williams	1998 FH ₆₅
1998 FI ₆₅	14.0	0.15	19980706	315.90021	64.17045	212.45450	7.65423	0.1609232	2.7358255	37	2	1990–1998	0.60	M-v 4	Williams	1998 FI ₆₅
1998 FT ₆₅	15.0	0.15	19980706	316.25202	287.98712	355.52053	6.28253	0.1513106	2.2096084	59	2	1992–1998	0.63	M-v 4	Williams	1998 FT ₆₅
1998 FY ₆₅	14.5	0.15	19980706	86.82889	201.43598	280.87564	1.48915	0.0771826	2.5777594	73	2	1996–1998	0.63	M-v 4	Williams	1998 FY ₆₅
1998 FC ₆₆	14.0	0.15	19980706	285.36049	121.59692	196.72031	10.32632	0.2219956	2.3578586	79	3	1973–1998	0.56	M-v 3	Williams	1998 FC ₆₆
1998 FL ₆₆	14.5	0.15	19980706	314.42974	268.05179	20.05501	0.77597	0.1967911	2.3303005	56	3	1977–1998	0.62	M-v 4	Williams	1998 FL ₆₆
1998 FO ₆₆	15.0	0.15	19980706	147.47375	254.75220	167.15864	1.67734	0.1177741	2.2736125	46	3	1986–1998	0.76	M-v 3	Williams	1998 FO ₆₆
1998 FY ₆₆	14.0	0.15	19980706	190.13361	216.71166	169.45084	7.93832	0.0611308	2.4464500	42	2	1994–1998	0.50	M-v 4	Williams	1998 FY ₆₆
1998 FF ₆₇	15.5	0.15	19980706	342.40924	119.41126	129.82531	3.30906	0.1512029	2.4001818	58	3	1994–1998	0.48	M-v 2	Williams	1998 FF ₆₇
1998 FV ₆₇	13.5	0.15	19980706	338.39200	106.83187	146.16507	3.96836	0.2102061	3.0437091	59	3	1989–1998	0.61	M-v 3	Williams	1998 FV ₆₇
1998 FY ₆₇	13.0	0.15	19980706	311.56495	85.41988	180.99202	8.76441	0.1017304	3.9669319	42	4	1989–1998	0.79	M-v 1	Williams	1998 FY ₆₇

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1998 FD ₆₈	14.0	0.15	19980706	351.30039	111.56009	114.39333	0.81460	0.0759074	3.0048901	38	3	1992–1998	0.78	M-v	5	Williams	31999	1998 FD ₆₈
1998 FF ₆₈	14.0	0.15	19980706	14.05880	272.65905	286.70780	0.03816	0.1161670	3.1072741	73	5	1992–1998	0.60	M-v	1	Williams	32068	1998 FF ₆₈
1998 FO ₆₈	14.5	0.15	19980706	310.00715	328.38703	326.71727	1.85214	0.2100861	2.4050938	78	4	1991–1998	0.73	M-v	1	Williams	32068	1998 FO ₆₈
1998 FR ₆₈	13.5	0.15	19980328	164.98348	174.95943	212.79608	8.07567	0.1046597	2.9216863	30	1	33 days	1.17			Williams		1998 FR ₆₈
1998 FS ₆₈	14.5	0.15	19980706	310.06977	36.21064	250.15095	3.13322	0.1142098	2.2589231	66	2	1994–1998	0.60	M-v	5	Williams	32068	1998 FS ₆₈
1998 FX ₆₈	12.0	0.15	19980706	283.32576	96.06761	207.61943	12.97145	0.1519228	3.9626256	52	1	74 days	0.69	M-v	5	Williams	32068	1998 FX ₆₈
1998 FZ ₆₈	14.5	0.15	19980706	312.05699	81.73891	199.32037	9.45896	0.1286864	2.5869581	71	3	1991–1998	0.65	M-v	2	Williams	32068	1998 FZ ₆₈
1998 FC ₆₉	14.5	0.15	19980706	109.99359	95.79518	357.42087	3.16993	0.1377269	2.6290060	44	2	1997–1998	0.69	M-v	4	Williams	32068	1998 FC ₆₉
1998 FD ₆₉	14.5	0.15	19980706	108.26263	108.31138	344.96682	2.07859	0.1795498	2.3776721	43	3	1994–1998	0.58	M-v	3	Williams	32068	1998 FD ₆₉
1998 FE ₆₉	14.5	0.15	19980706	352.72277	235.68032	359.72103	1.87437	0.1018045	2.4116868	55	3	1953–1998	0.56	M-v	4	Williams	32068	1998 FE ₆₉
1998 FF ₆₉	15.5	0.15	19980328	34.49813	325.33972	185.40474	0.96085	0.1268105	2.3879498	39	1	51 days	0.60			Williams		1998 FF ₆₉
1998 FG ₆₉	13.0	0.15	19980706	256.44887	133.11118	196.57657	10.22126	0.1081685	2.9902456	57	1	63 days	0.66	M-v	5	Williams	32068	1998 FG ₆₉
1998 FH ₆₉	13.5	0.15	19980706	17.50408	148.00404	47.52865	0.82161	0.1160455	3.1164654	38	1	66 days	0.70	M-v	5	Marsden		1998 FH ₆₉
1998 FO ₆₉	15.0	0.15	19980706	66.46465	336.97051	162.72138	3.52126	0.1475717	2.4126866	56	3	1977–1998	0.66	M-v	3	Williams	31999	1998 FO ₆₉
1998 FX ₆₉	14.5	0.15	19980706	317.86066	145.73669	133.77169	3.95595	0.1617992	2.4604266	63	3	1991–1998	0.62	M-v	2	Williams	32068	1998 FX ₆₉
1998 FF ₇₀	13.5	0.15	19980706	47.71538	28.24412	136.26613	4.90537	0.0136291	3.0996805	61	5	1990–1998	0.76	M-v	1	Williams	32068	1998 FF ₇₀
1998 FJ ₇₀	14.0	0.15	19980706	162.23627	292.34021	116.76611	2.65479	0.0981238	2.6387632	67	3	1987–1998	0.72	M-v	4	Williams	32068	1998 FJ ₇₀
1998 FM ₇₀	14.5	0.15	19980706	280.40807	271.50813	50.11687	2.66072	0.2106153	2.4115510	44	2	1969–1998	0.72	M-v	4	Williams	32068	1998 FM ₇₀
1998 FN ₇₀	15.0	0.15	19980706	271.38773	292.61585	30.94217	6.52089	0.1514430	2.4139112	44	2	1984–1998	0.71	M-v	5	Williams	31999	1998 FN ₇₀
1998 FO ₇₀	15.0	0.15	19980706	127.28748	279.29230	164.02629	3.72503	0.1026363	2.3233300	44	4	1978–1998	0.80	M-v	2	Williams	32068	1998 FO ₇₀
1998 FP ₇₀	14.0	0.15	19980706	21.72626	106.27674	79.72960	1.71310	0.2457058	3.3013405	61	3	1993–1998	0.74	M-v	4	Williams	32068	1998 FP ₇₀
1998 FR ₇₀	15.5	0.15	19980706	68.97740	115.80455	22.66764	6.89884	0.1468368	2.3991758	58	2	1996–1998	0.66	M-v	4	Williams	32068	1998 FR ₇₀
1998 FT ₇₀	15.0	0.15	19980706	352.60898	210.45413	32.72199	3.53189	0.2368744	2.6358485	53	3	1981–1998	0.57	M-v	2	Williams	32068	1998 FT ₇₀
1998 FW ₇₀	15.5	0.15	19980328	327.16519	223.84764	17.56356	6.99365	0.1896848	2.3548500	39	1	33 days	0.77			Williams		1998 FW ₇₀
1998 FZ ₇₀	14.0	0.15	19980706	351.01214	223.48389	15.15410	14.59476	0.1430592	2.6189932	60	3	1981–1998	0.60	M-v	3	Williams	32068	1998 FZ ₇₀
1998 FD ₇₁	14.5	0.15	19980706	89.64375	122.26625	349.70896	1.94645	0.1778115	2.4768643	50	5	1982–1998	0.70	M-v	2	Williams	32068	1998 FD ₇₁
1998 FG ₇₁	15.5	0.15	19980706	14.73784	219.00514	354.54780	6.16169	0.1287746	2.2616116	48	1	160 days	0.57	M-v	4	Williams	32068	1998 FG ₇₁
1998 FH ₇₁	13.0	0.15	19980706	294.40251	83.17193	208.55483	9.87389	0.0790572	3.0020706	48	3	1990–1998	0.71	M-v	3	Williams	32068	1998 FH ₇₁
1998 FJ ₇₁	13.5	0.15	19980328	124.23414	57.34919	10.41941	9.72573	0.0703761	3.0052470	29	1	33 days	1.26			Williams		1998 FJ ₇₁
1998 FL ₇₁	14.5	0.15	19980706	78.31333	136.87695	0.54213	5.76365	0.0839893	2.3753364	47	2	1992–1998	0.66	M-v	4	Williams	32068	1998 FL ₇₁
1998 FN ₇₁	15.0	0.15	19980706	27.85375	177.83403	16.21335	9.27719	0.1559257	2.4145968	57	3	1973–1998	0.80	M-v	3	Williams	31999	1998 FN ₇₁
1998 FU ₇₁	16.0	0.15	19980308	294.57275	277.70163	337.39005	2.45632	0.1109126	2.3903604	22	1	12 days	1.16			Williams		1998 FU ₇₁
1998 FV ₇₁	14.5	0.15	19980328	268.07709	303.76495	340.95216	3.84842	0.0788386	2.6953183	32	1	30 days	1.05			Williams		1998 FV ₇₁
1998 FY ₇₁	15.5	0.15	19980706	156.80730	49.39697	2.17141	5.32498	0.0853037	2.1816502	42	2	1993–1998	0.71	M-v	4	Williams	31999	1998 FY ₇₁
1998 FZ ₇₁	15.0	0.15	19980308	282.32433	315.39372	323.95345	2.00607	0.1760469	2.3890760	23	1	12 days	0.93			Williams		1998 FZ ₇₁
1998 FC ₇₂	15.5	0.15	19980328	352.46886	329.13165	229.51122	3.38104	0.1435326	2.7923090	36	1	31 days	1.21			Williams		1998 FC ₇₂
1998 FG ₇₂	14.0	0.15	19980328	66.11157	137.10910	344.91399	2.49812	0.0331928	2.6599998	29	1	33 days	0.61			Williams		1998 FG ₇₂
1998 FO ₇₂	14.0	0.15	19980706	352.13156	211.66760	13.61368	5.72810	0.0679848	2.9009360	66	3	1993–1998	0.64	M-v	4	Williams	32069	1998 FO ₇₂
1998 FP ₇₂	15.5	0.15	19980706	42.70873	195.68818	339.69711	2.39770	0.1147642	2.2752019	52	3	1991–1998	0.68	M-v	4	Williams	32069	1998 FP ₇₂
1998 FQ ₇₂	14.5	0.15	19980706	245.11334	317.42400	30.82545	3.26409	0.1956018	2.4416276	45	2	1980–1998	0.83	M-v	5	Williams	31999	1998 FQ ₇₂
1998 FD ₇₃	15.0	0.15	19980706	5.98853	132.30594	94.22687	4.05595	0.2616464	3.0224066	35	1	63 days	0.37	M-v	4	Williams	32069	1998 FD ₇₃
1998 FP ₇₃	14.0	0.15	19980706	93.98704	341.38014	119.78611	3.84123	0.1350256	3.0567643	72	3	1992–1998	0.56	M-v	3	Williams	32069	1998 FP ₇₃
1998 FY ₇₃	13.0	0.15	19980706	199.07029	11.21423	4.30530	10.01929	0.1085369	3.0172333	54	2	1979–1998	0.62	M-v	4	Williams	32000	1998 FY ₇₃
1998 FZ ₇₃	14.5	0.15	19980706	343.52236	5.93908	247.56175	1.42416	0.1703678	2.4161607	51	3	1991–1998	0.65	M-v	3	Williams	32069	1998 FZ ₇₃
1998 FA ₇₄	15.0	0.15	19980706	77.04127	115.89962	25.20145	6.52589	0.0682564	2.2342705	54	3	1976–1998	0.65	M-v	3	Williams	32069	1998 FA ₇₄
1998 FD ₇₄	15.0	0.15	19980706	31.61753	120.94076	66.45481	3.49877	0.1446103	2.2055167	65	3	1985–1998	0.69	M-v	3	Williams	32069	1998 FD ₇₄
1998 FO ₇₄	14.5	0.15	19980706	340.69951	51.92150	159.57727	9.51401	0.0808633	2.7574697	48	1	74 days	0.59	M-v	5	Williams	32069	1998 FO ₇₄
1998 FV ₇₄	13.0	0.15	19980308	208.67034	154.55699	199.49951	10.15297	0.1529435	3.0477456	27	1	12 days	0.88			Williams		1998 FV ₇₄
1998 FZ ₇₄	13.0	0.15	19980706	129.08763	63.23903	16.76940	10.13115	0.0868406	2.9744949	45	2	1980–1998	0.63	M-v	5	Williams	32069	1998 FZ ₇₄
1998 FA ₇₅	16.0	0.15	19980328	317.63124	234.18105	18.47552	0.94975	0.1606660	2.2578901	31	1	31 days	0.75			Williams		1998 FA ₇₅
1998 FB ₇₅	13.0	0.15	19980706	112.91510	53.25850	32.20177	0.47074	0.1703317	3.1757600	54	5	1926–1998	0.76	M-v	2	Williams	32000	1998 FB ₇₅
1998 FC ₇₅	14.0	0.15	19980706	323.35210	71.95527	198.05404	8.74938	0.1240651	2.7574356	45	3	1991–1998	0.55	M-v	3	Williams	32069	1998 FC ₇₅
1998 FF ₇₅	14.0	0.15	19980706	178.27893	15.71646	25.77245	7.31629	0.1056393	2.3567052	51	2	1992–1998	0.65	M-v	4	Williams	32069	1998 FF ₇₅

1998 FH ₇₅	14.5	0.15	19980706	201.00290	220.17831	165.34289	2.09833	0.1279469	2.1719847	38	3	1983–1998	0.90	M-v	5	Williams	32000	1998 FH ₇₅
1998 FN ₇₅	14.0	0.15	19980706	151.21547	38.46031	22.98749	15.57928	0.1127855	2.6043005	52	3	1979–1998	0.59	M-v	3	Williams	32000	1998 FN ₇₅
1998 FO ₇₅	13.0	0.15	19980706	161.55886	216.95914	191.48782	13.58026	0.1337057	3.1534060	44	2	1995–1998	0.70	M-v	4	Williams	32069	1998 FO ₇₅
1998 FN ₇₇	14.0	0.15	19980706	266.15747	199.20997	136.66712	5.25011	0.2125139	2.1860679	40	5	1978–1998	0.70	M-v	2	Williams	32069	1998 FN ₇₇
1998 FJ ₇₈	15.0	0.15	19980706	182.77474	303.04599	92.83318	4.18017	0.1588344	2.2062773	31	3	1986–1998	0.81	M-v	5	Williams	32070	1998 FJ ₇₈
1998 FL ₇₈	14.5	0.15	19980706	326.21833	159.40109	105.27911	3.42236	0.0488061	2.1848282	36	1	163 days	0.57	M-v	5	Williams	32070	1998 FL ₇₈
1998 FP ₇₉	14.0	0.15	19980706	243.94632	289.44234	59.06220	6.80012	0.1069026	2.4575963	26	1	65 days	0.63	M-v	4	Williams	32070	1998 FP ₇₉
1998 FT ₇₉	14.5	0.15	19980706	309.58666	117.00786	178.88905	12.80659	0.1422437	2.6062501	32	1	82 days	0.72	M-v	5	Williams	32070	1998 FT ₇₉
1998 FU ₇₉	15.5	0.15	19980706	146.46168	4.40486	64.25860	4.41898	0.0963265	2.1816046	37	2	1993–1998	0.71	M-v	5	Williams	32070	1998 FU ₇₉
1998 FB ₈₀	14.5	0.15	19980706	83.83138	2.90597	101.32780	4.12855	0.1609102	2.7412078	27	3	1973–1998	0.88	M-v	5	Williams	32001	1998 FB ₈₀
1998 FH ₈₂	14.0	0.15	19980706	88.97952	48.05816	32.48547	12.64596	0.1556855	2.6986268	22	1	67 days	0.48	M-v	6	Williams	32070	1998 FH ₈₂
1998 FW ₈₄	13.0	0.15	19980308	57.36499	73.08844	25.49424	15.12166	0.0647871	3.1249357	21	1	23 days	0.53			D Williams		1998 FW ₈₄
1998 FZ ₈₆	14.5	0.15	19980308	58.55291	69.61007	35.82202	10.15280	0.0223992	2.2392735	24	1	53 days	0.80			Williams		1998 FZ ₈₆
1998 FG ₈₈	13.5	0.15	19980706	169.58943	219.94860	156.07230	14.21906	0.2148340	2.5706174	26	3	1975–1998	0.60	M-v	3	Williams	32001	1998 FG ₈₈
1998 FU ₉₀	14.0	0.15	19980706	351.80916	197.02282	24.94927	8.15882	0.1835043	2.5806888	31	1	85 days	0.61	M-v	5	Williams		1998 FU ₉₀
1998 FA ₉₁	13.5	0.15	19980706	89.44391	6.30383	89.35228	6.54344	0.0828375	2.9776233	26	2	1993–1998	0.83	M-v	5	Williams	32001	1998 FA ₉₁
1998 FP ₉₃	15.5	0.15	19980706	330.64830	139.27921	111.11686	9.37368	0.1442075	2.3211100	22	2	1996–1998	0.42	M-v	4	Williams	32001	1998 FP ₉₃
1998 FF ₉₇	14.0	0.15	19980706	359.48172	319.23876	254.55441	4.22338	0.1608794	2.5570079	39	3	1995–1998	0.72	M-v	4	Williams	32001	1998 FF ₉₇
1998 FW ₁₀₂	14.5	0.15	19980706	16.42228	306.71238	254.54010	5.11491	0.0910950	2.2662737	35	1	107 days	0.64	M-v	4	Williams		1998 FW ₁₀₂
1998 FJ ₁₀₃	14.5	0.15	19980706	302.86293	75.97003	215.72812	7.89356	0.2017736	2.4442395	24	2	1995–1998	0.55	M-v	4	Williams	32002	1998 FJ ₁₀₃
1998 FO ₁₀₄	14.0	0.15	19980706	52.75824	288.79604	220.34161	11.88656	0.1811590	2.4164598	29	1	79 days	0.60	M-v	4	Williams		1998 FO ₁₀₄
1998 FL ₁₀₅	13.5	0.15	19980706	355.44498	283.14357	301.11768	5.07920	0.0828392	2.4045972	43	5	1983–1998	0.69	M-v	2	Williams	32071	1998 FL ₁₀₅
1998 FW ₁₀₅	15.5	0.15	19980308	351.46699	203.75259	352.06594	10.79022	0.2146225	3.1341198	24	1	12 days	1.68			Williams		1998 FW ₁₀₅
1998 FE ₁₀₆	16.0	0.15	19980328	12.88285	190.51945	344.39350	6.76387	0.0464088	2.2629330	31	1	23 days	0.78			Williams		1998 FE ₁₀₆
1998 FK ₁₀₆	15.0	0.15	19980706	319.62520	45.20730	226.32992	6.91484	0.1265394	2.3325051	32	2	1991–1998	0.70	M-v	5	Williams	32071	1998 FK ₁₀₆
1998 FP ₁₀₆	15.5	0.15	19980706	20.44786	308.66546	246.34992	4.44908	0.1681939	2.5537892	36	2	1996–1998	0.61	M-v	4	Williams	32071	1998 FP ₁₀₆
1998 FB ₁₀₉	14.0	0.15	19980706	100.44407	133.72463	331.24667	5.47433	0.0823715	2.5494403	46	3	1979–1998	0.48	M-v	3	Williams	32072	1998 FB ₁₀₉
1998 FQ ₁₀₉	15.0	0.15	19980706	356.84762	323.12055	259.47756	5.23859	0.1082351	2.6878953	25	3	1992–1998	0.74	M-v	5	Williams	32002	1998 FQ ₁₀₉
1998 FP ₁₁₁	14.5	0.15	19980706	62.19756	285.90980	213.25782	21.83412	0.2752434	2.3649338	36	2	1978–1998	0.59	M-v	4	Williams	32072	1998 FP ₁₁₁
1998 FX ₁₁₁	12.5	0.15	19980706	91.14784	233.04692	248.30052	9.32881	0.0600200	2.9943027	36	3	1990–1998	0.54	M-v	2	Williams	32002	1998 FX ₁₁₁
1998 FE ₁₁₂	13.0	0.15	19980706	167.42728	177.08521	230.47451	13.85109	0.0505122	2.5647520	30	1	88 days	0.62	M-v	5	Williams		1998 FE ₁₁₂
1998 FJ ₁₁₂	12.0	0.15	19980706	154.22251	161.37471	249.66783	9.06993	0.0987714	3.0142640	34	3	1964–1998	0.67	M-v	4	Williams	32003	1998 FJ ₁₁₂
1998 FR ₁₁₃	15.0	0.15	19980706	325.96582	18.16693	248.58843	6.19083	0.1102505	2.3404844	28	2	1978–1998	0.62	M-v	5	Williams	32003	1998 FR ₁₁₃
1998 FW ₁₁₃	13.5	0.15	19980706	345.81553	289.37260	319.83453	4.77567	0.1672741	2.3052898	32	4	1978–1998	0.51	M-v	1	Williams	31767	1998 FW ₁₁₃
1998 FY ₁₁₃	13.0	0.15	19980706	204.58384	117.68231	251.35654	6.41327	0.0964330	3.0768809	35	3	1992–1998	0.68	M-v	4	Williams	32003	1998 FY ₁₁₃
1998 FA ₁₁₄	14.0	0.15	19980706	2.87395	318.91048	262.44572	5.49434	0.1361369	2.5686560	30	1	79 days	0.53	M-v	4	Williams		1998 FA ₁₁₄
1998 FE ₁₁₅	14.0	0.15	19980706	15.15689	345.04112	225.05293	11.27992	0.1363164	2.6695746	38	1	85 days	0.53	M-v	4	Williams	32072	1998 FE ₁₁₅
1998 FT ₁₁₅	13.5	0.15	19980706	353.73117	290.09609	303.20259	4.22724	0.1888378	2.8579414	50	4	1983–1998	0.66	M-v	3	Williams	31767	1998 FT ₁₁₅
1998 FK ₁₁₆	15.0	0.15	19980706	17.39338	342.82216	214.10797	7.75335	0.1204271	2.7195274	24	2	1971–1998	0.85	M-v	4	Williams	32003	1998 FK ₁₁₆
1998 FN ₁₁₆	14.5	0.15	19980328	201.05995	125.22589	230.59064	5.05047	0.1428663	2.3850545	30	1	25 days	0.89			Williams		1998 FN ₁₁₆
1998 FE ₁₁₇	14.5	0.15	19980706	160.56092	90.86601	322.25148	4.06463	0.1186217	2.3124439	53	4	1987–1998	0.69	M-v	1	Williams	32072	1998 FE ₁₁₇
1998 FH ₁₁₇	14.5	0.15	19980706	337.84832	308.46600	302.03758	3.98963	0.0835305	2.5796732	35	2	1991–1998	0.84	M-v	5	Williams	32072	1998 FH ₁₁₇
1998 FR ₁₁₇	12.5	0.15	19980706	121.28434	219.33091	237.43791	9.02513	0.0736294	3.0027603	55	4	1982–1998	0.66	M-v	3	Williams	32004	1998 FR ₁₁₇
1998 FU ₁₁₇	14.0	0.15	19980706	220.46505	34.24661	335.46991	4.70431	0.0819314	2.7320985	39	5	1977–1998	0.85	M-v	2	Williams	32004	1998 FU ₁₁₇
1998 FY ₁₁₇	15.0	0.15	19980706	298.75213	37.57062	270.51440	3.80892	0.1714583	2.3083865	43	3	1991–1998	0.79	M-v	4	Williams	32073	1998 FY ₁₁₇
1998 FC ₁₁₈	14.5	0.15	19980706	216.09921	136.50844	240.33222	6.12954	0.1748936	2.2548194	31	3	1986–1998	0.87	M-v	4	Williams	32004	1998 FC ₁₁₈
1998 FE ₁₁₈	13.0	0.15	19980706	32.31593	326.78026	223.61218	9.15043	0.0558569	2.7650735	58	3	1991–1998	0.58	M-v	3	Williams	32004	1998 FE ₁₁₈
1998 FG ₁₁₈	12.5	0.15	19980706	38.18321	241.44168	296.92317	3.97048	0.0546945	3.0409967	37	2	1971–1998	0.54	M-v	5	Williams	32073	1998 FG ₁₁₈
1998 FH ₁₁₈	14.0	0.15	19980706	184.49707	50.94194	345.84533	5.72345	0.1302964	2.4286272	52	2	1988–1998	0.73	M-v	4	Williams	32073	1998 FH ₁₁₈
1998 FP ₁₁₈	14.0	0.15	19980706	67.21389	194.19937	310.88866	3.93738	0.0562584	2.8443933	35	2	1995–1998	0.70	M-v	4	Williams	32073	1998 FP ₁₁₈
1998 FS ₁₁₈	14.0	0.15	19980706	298.75873	313.01709	0.54212	12.36711	0.2842963	2.6718181	40	3	1977–1998	0.85	M-v	4	Williams	32004	1998 FS ₁₁₈
1998 FY ₁₁₉	13.0	0.15	19980706	153.89148	51.07150	340.43068	10.04285	0.1015348	2.9884481	30	5	1977–1998	1.02	M-v	3	Williams	32005	1998 FY ₁₁₉
1998 FZ ₁₁₉	13.5	0.15	19980706	286.01056	348.49581	291.23114	3.61277	0.0781146	2.8140164	32	2	1995–1998	0.50	M-v	4	Williams	32005	1998 FZ ₁₁₉

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1998 FA ₁₂₀	13.5	0.15	19980706	255.86865	113.18250	193.91688	9.90002	0.0928798	3.0156639	22	2	1993–1998	0.71	M-v	5	Williams	32005	1998 FA ₁₂₀
1998 FF ₁₂₀	15.0	0.15	19980328	42.52068	128.87587	358.85277	13.16494	0.1208308	2.5502107	28	1	30 days	1.06			Williams		1998 FF ₁₂₀
1998 FO ₁₂₀	15.0	0.15	19980308	21.66841	146.29817	355.74414	11.83525	0.1383428	2.6571828	22	1	33 days	0.60			Williams		1998 FO ₁₂₀
1998 FG ₁₂₁	15.5	0.15	19980328	299.41391	288.16520	340.83564	3.81736	0.2031211	2.4287890	29	1	30 days	0.95			Williams		1998 FG ₁₂₁
1998 FL ₁₂₁	15.0	0.15	19980706	287.30868	147.74464	144.05045	1.55795	0.0802324	2.6053598	44	3	1994–1998	0.74	M-v	3	Williams	32005	1998 FL ₁₂₁
1998 FM ₁₂₁	14.5	0.15	19980706	248.56463	97.56421	243.84325	3.86262	0.2186278	2.3990863	32	2	1969–1998	0.89	M-v	5	Williams	32005	1998 FM ₁₂₁
1998 FO ₁₂₁	15.0	0.15	19980706	350.70259	74.65140	155.30268	2.28363	0.1075248	2.5494305	35	2	1995–1998	0.60	M-v	5	Williams	32005	1998 FO ₁₂₁
1998 FR ₁₂₁	15.5	0.15	19980328	83.19342	212.44521	250.39805	2.22995	0.0449841	2.3509610	41	1	33 days	0.95			Williams		1998 FR ₁₂₁
1998 FS ₁₂₁	15.0	0.15	19980706	18.34916	230.63600	333.77432	2.59909	0.0021783	2.1284607	67	5	1962–1998	0.51	M-v	3	Williams	32073	1998 FS ₁₂₁
1998 FZ ₁₂₁	13.5	0.15	19980706	237.96678	170.77176	166.42987	10.29469	0.0923622	2.9919973	44	1	79 days	0.65	M-v	4	Williams	32073	1998 FZ ₁₂₁
1998 FC ₁₂₂	14.0	0.15	19980706	117.57019	296.16473	137.67697	4.84981	0.2048832	2.6167708	44	2	1989–1998	0.83	M-v	5	Williams	32073	1998 FC ₁₂₂
1998 FE ₁₂₂	15.5	0.15	19980328	300.71498	242.26327	14.32045	6.15981	0.0636224	2.4665503	26	1	33 days	1.15			Williams		1998 FE ₁₂₂
1998 FK ₁₂₃	15.0	0.15	19980328	48.30011	285.41550	195.03444	11.15136	0.1521584	2.6709365	23	1	30 days	0.92			Williams		1998 FK ₁₂₃
1998 FP ₁₂₃	13.5	0.15	19980308	102.51837	69.52925	353.07908	3.36912	0.2156409	3.0792727	21	1	12 days	1.17			Williams		1998 FP ₁₂₃
1998 FX ₁₂₃	15.0	0.15	19980706	113.91895	49.39752	2.15268	22.52258	0.2809881	2.3620454	22	2	1989–1998	0.84	M-v	5	Williams	32006	1998 FX ₁₂₃
1998 FR ₁₂₄	13.5	0.15	19980706	242.73499	192.67109	149.77357	2.54887	0.0807310	2.8332747	45	3	1991–1998	0.79	M-v	4	Williams	32073	1998 FR ₁₂₄
1998 FE ₁₂₅	14.5	0.15	19980706	346.59494	74.67323	169.49456	11.60269	0.1470044	2.6289452	36	2	1989–1998	0.78	M-v	4	Williams	32006	1998 FE ₁₂₅
1998 FL ₁₂₅	13.5	0.15	19980706	350.56334	26.46786	202.25834	13.45247	0.0963133	2.5796349	45	3	1991–1998	0.79	M-v	3	Williams	32073	1998 FL ₁₂₅
1998 FZ ₁₂₅	13.5	0.15	19980706	271.10132	25.97809	278.18043	6.72062	0.0431610	3.2282014	34	4	1994–1998	0.76	M-v	2	Williams	32006	1998 FZ ₁₂₅
1998 FK ₁₂₆	14.5	0.15	19980706	174.06232	177.72342	231.73068	2.85665	0.1418942	2.1835678	69	4	1988–1998	0.65	M-v	2	Williams	32006	1998 FK ₁₂₆
1998 FL ₁₂₆	14.0	0.15	19980328	305.78588	65.36127	189.74161	18.30859	0.1706961	3.1215044	27	1	28 days	1.01			Williams		1998 FL ₁₂₆
1998 FM ₁₂₆	15.0	0.15	19980706	10.66844	1.10850	189.99884	4.38596	0.1585921	2.2326136	31	2	1996–1998	0.50	M-v	3	Williams	32073	1998 FM ₁₂₆
1998 FN ₁₂₆	15.0	0.15	19980706	309.47940	0.93130	292.79295	2.72694	0.1592569	2.1566167	67	1	90 days	0.58	M-v	5	Williams		1998 FN ₁₂₆
1998 FD ₁₃₀	14.5	0.15	19980328	238.26336	118.95047	197.28676	12.23544	0.1575249	2.7005352	27	1	28 days	0.96			Williams		1998 FD ₁₃₀
1998 FS ₁₃₀	14.5	0.15	19980308	143.31377	217.74295	171.90036	2.97993	0.1638950	2.4903971	24	1	7 days	0.91		E	Williams		1998 FS ₁₃₀
1998 FU ₁₃₀	15.5	0.15	19980328	303.77201	80.57696	173.14069	2.86058	0.1048162	2.6202816	27	1	31 days	1.00			Williams		1998 FU ₁₃₀
1998 FX ₁₃₂	15.5	0.15	19980308	280.28883	288.38977	354.67701	25.03493	0.2440174	2.3050784	17	1	12 days	0.74			Williams		1998 FX ₁₃₂
1998 FQ ₁₃₃	15.0	0.15	19980328	213.97258	9.00834	327.36940	4.13746	0.1722995	2.3002321	19	1	30 days	0.81			Williams		1998 FQ ₁₃₃
1998 FU ₁₃₃	15.0	0.15	19980328	287.01932	95.83853	183.41211	12.41903	0.1754717	2.6855930	25	1	31 days	0.97			Williams		1998 FU ₁₃₃
1998 FW ₁₃₃	17.0	0.15	19980328	16.76774	138.67420	25.22286	1.15466	0.1474868	2.3357704	37	1	31 days	1.22			Williams		1998 FW ₁₃₃
1998 FX ₁₃₃	15.5	0.15	19980706	351.72150	81.80852	148.33228	1.04321	0.2379535	3.0248960	35	1	80 days	0.80	M-v	5	Williams		1998 FX ₁₃₃
1998 FD ₁₃₄	15.5	0.15	19980328	80.46828	267.58116	193.50677	2.03915	0.1344076	2.4006805	20	1	33 days	0.93			Williams		1998 FD ₁₃₄
1998 FT ₁₃₄	13.5	0.15	19980308	74.05028	85.84474	349.01746	5.28968	0.2042589	3.2164384	15	1	12 days	1.20		E	Williams		1998 FT ₁₃₄
1998 FX ₁₃₄	18.5	0.15	19980706	6.40973	253.21959	350.13017	5.24567	0.4281268	2.2620070	39	1	30 days	0.80	M-v	6	Williams		1998 FX ₁₃₄
1998 FA ₁₃₅	15.0	0.15	19980308	232.62911	348.62910	328.47705	3.92788	0.0855974	2.7058579	17	1	9 days	1.45			Williams		1998 FA ₁₃₅
1998 FM ₁₃₅	13.5	0.15	19980308	209.78912	117.50039	223.23375	4.14015	0.1021422	3.1951645	22	1	10 days	1.12			Williams		1998 FM ₁₃₅
1998 GA	14.5	0.15	19980706	65.76771	101.99438	29.13554	4.07217	0.1344901	2.4263239	44	2	1992–1998	0.54	M-v	4	Williams	32074	1998 GA
1998 GK	15.5	0.15	19980706	357.03806	211.78061	33.90718	24.78065	0.1582622	1.9328855	40	2	1980–1998	0.63	M-v	3	Williams	32007	1998 GK
1998 GZ	15.5	0.15	19980706	11.09732	173.44207	32.07755	6.58482	0.0555972	2.2743172	37	2	1996–1998	0.61	M-v	4	Williams	32074	1998 GZ
1998 GA ₁	15.5	0.15	19980706	36.72333	106.71012	68.68450	2.69207	0.0846191	2.5178468	46	1	62 days	0.70	M-v	4	Williams	32074	1998 GA ₁
1998 GJ ₁	14.5	0.15	19980706	216.97351	229.88382	131.81145	4.90861	0.0769039	2.3614464	53	1	145 days	0.53	M-v	4	Williams	32074	1998 GJ ₁
1998 GK ₁	13.5	0.15	19980706	293.77434	331.68925	332.01910	8.28450	0.1798997	2.5718476	45	2	1970–1998	0.52	M-v	4	Williams	31771	1998 GK ₁
1998 GL ₁	14.0	0.15	19980706	96.81339	102.15012	26.57014	16.05483	0.0567810	2.5549299	47	1	108 days	0.48	M-v	4	Williams		1998 GL ₁
1998 GM ₁	14.0	0.15	19980706	196.17792	139.52975	198.00718	4.89878	0.0144777	2.4904306	25	3	1992–1998	0.46	M-v	3	Williams	32074	1998 GM ₁
1998 GO ₁	15.0	0.15	19980706	24.08706	72.82056	146.71951	8.77105	0.1419072	2.2979743	51	1	72 days	0.34	M-v	3	Williams		1998 GO ₁
1998 GM ₆	13.5	0.15	19980706	82.10217	27.94799	101.90403	12.34266	0.0055808	2.7121519	33	4	1980–1998	0.76	M-v	2	Williams	32007	1998 GM ₆
1998 GT ₆	13.5	0.15	19980706	24.42120	80.26267	105.50362	14.62294	0.2140027	2.6235201	29	1	80 days	0.57	M-v	4	Williams		1998 GT ₆
1998 GE ₇	13.5	0.15	19980706	320.24946	177.21020	90.97849	14.90188	0.1418285	2.6125970	29	1	81 days	0.52	M-v	4	Williams		1998 GE ₇
1998 GN ₇	12.5	0.15	19980706	232.19869	222.55539	131.24578	13.85440	0.1902125	2.6413294	47	4	1950–1998	0.66	M-v	2	Williams	32074	1998 GN ₇
1998 GR ₇	13.0	0.15	19980706	136.83905	329.44392	91.80779	14.09291	0.1993346	2.7383593	31	1	81 days	0.68	M-v	5	Williams		1998 GR ₇
1998 GT ₈	13.5	0.15	19980706	258.87258	255.48535	69.30286	21.27050	0.0520830	2.4253068	29	1	80 days	0.77	M-v	4	Williams		1998 GT ₈
1998 GD ₉	13.5	0.15	19980706	305.49887	152.28864	147.82564	14.23585	0.1781028	2.5319688	38	1	101 days	0.61	M-v	4	Williams	32074	1998 GD ₉
1998 GE ₉	13.5	0.15	19980706	327.22197	118.30370	150.95186	15.18429	0.1157558	2.6288704	35	1	105 days	0.62	M-v	4	Williams	32074	1998 GE ₉

1998 GK ₁₀	14.0	0.15	19980706	69.74421	282.08499	228.06358	9.93698	0.1338789	3.0666538	42	2	1982–1998	0.72	M-v	4	Williams	32007	1998 GK ₁₀
1998 HA	15.0	0.15	19980706	21.22233	160.10908	47.82601	15.04925	0.0929678	2.5712137	34	1	69 days	0.58	M-v	4	Williams	32074	1998 HA
1998 HK ₁	19.5	0.15	19980706	12.19899	24.15439	213.85976	7.94073	0.4264709	2.1579378	125	1	118 days	0.63	M-v	4	Marsden	32075	1998 HK ₁
1998 HL ₁	19.0	0.15	19980706	266.98430	148.40550	213.64486	20.04460	0.1871827	1.2461336	58	1	100 days	0.70	M-v	4	Marsden	32075	1998 HL ₁
1998 HG ₃	15.5	0.15	19980507	279.31062	164.31811	168.16281	6.71696	0.2278176	2.2006569	37	1	38 days	0.56			Williams		1998 HG ₃
1998 HK ₃	17.5	0.15	19980706	328.92254	267.47302	27.29072	24.70350	0.2997671	1.8280154	48	1	58 days	0.67	M-v	5	Williams		1998 HK ₃
1998 HM ₃	18.5	0.15	19980706	284.48704	136.96251	210.87314	39.33747	0.0621770	1.2466468	121	1	72 days	0.56	M-v	6	Williams	32075	1998 HM ₃
1998 HV ₄	14.0	0.15	19980706	350.75711	211.47301	29.80673	2.04397	0.0561205	2.9103003	44	4	1990–1998	0.60	M-v	2	Williams	32007	1998 HV ₄
1998 HU ₆	15.5	0.15	19980706	299.03412	244.36876	87.41480	6.47076	0.1932008	2.3962777	25	1	66 days	0.62	M-v	5	Williams		1998 HU ₆
1998 HW ₆	13.0	0.15	19980706	180.94697	337.60367	71.82804	14.25892	0.0236378	2.8164588	48	2	1996–1998	0.56	M-v	4	Williams	32075	1998 HW ₆
1998 HY ₆	15.0	0.15	19980527	18.83000	132.90901	52.84348	5.82973	0.1191398	2.3791114	30	1	57 days	0.59			Nakano		1998 HY ₆
1998 HR ₇	14.5	0.15	19980706	345.99406	72.84981	209.39071	29.90993	0.3346703	2.7525524	28	1	82 days	0.60	M-v	4	Williams		1998 HR ₇
1998 HU ₇	15.5	0.15	19980328	340.77547	203.10254	24.28704	5.99948	0.1982222	2.5444222	33	1	53 days	0.73			Williams		1998 HU ₇
1998 HZ ₇	17.0	0.15	19980706	11.54318	358.08085	214.60195	23.16060	0.4372098	3.2409727	87	1	56 days	0.62	M-v	4	Williams	32076	1998 HZ ₇
1998 HH ₈	16.0	0.15	19980507	2.44446	161.61497	55.87845	5.54085	0.0797802	2.3051417	47	1	37 days	0.76			Williams		1998 HH ₈
1998 HJ ₉	13.0	0.15	19980706	233.14916	207.28442	167.16358	12.69791	0.1610803	3.0270949	36	3	1971–1998	0.73	M-v	3	Williams	32007	1998 HJ ₉
1998 HM ₁₁	14.5	0.15	19980706	37.07782	88.96172	107.29275	7.87149	0.1695128	2.2868272	38	3	1932–1998	0.70	M-v	4	Williams	32008	1998 HM ₁₁
1998 HT ₁₃	15.0	0.15	19980328	273.15036	311.13635	341.11284	6.12980	0.1155440	2.5365113	36	1	33 days	1.24			Williams		1998 HT ₁₃
1998 HW ₁₃	14.0	0.15	19980308	265.28601	311.10403	347.82460	13.27158	0.2357952	2.6591523	32	1	51 days	0.63			Williams		1998 HW ₁₃
1998 HB ₁₄	14.0	0.15	19980706	54.70787	87.48611	86.02421	11.62918	0.0981094	2.3406026	43	2	1996–1998	0.47	M-v	4	Williams	32008	1998 HB ₁₄
1998 HJ ₁₄	13.5	0.15	19980706	316.32035	149.57491	122.90659	11.80073	0.0932759	3.0644593	47	2	1996–1998	0.54	M-v	4	Williams	32008	1998 HJ ₁₄
1998 HH ₁₅	13.5	0.15	19980507	26.03361	134.48678	67.74096	10.85817	0.0089053	3.0792442	16	1	34 days	0.62			Williams		1998 HH ₁₅
1998 HG ₁₇	14.5	0.15	19980328	130.15814	176.37407	217.11778	5.52178	0.1934149	2.2826300	20	1	30 days	0.74			Williams		1998 HG ₁₇
1998 HK ₁₇	13.5	0.15	19980308	184.61324	111.72751	242.25036	3.41227	0.0825658	2.7996350	30	1	52 days	0.97			Williams		1998 HK ₁₇
1998 HN ₁₇	15.5	0.15	19980328	2.23935	238.67530	304.22535	3.20120	0.1567825	2.3184652	28	1	22 days	1.11			Williams		1998 HN ₁₇
1998 HW ₁₇	14.5	0.15	19980706	209.88343	63.70436	310.30119	3.60721	0.1614997	2.2165515	48	5	1986–1998	0.79	M-v	2	Williams	32008	1998 HW ₁₇
1998 HF ₁₈	15.0	0.15	19980328	44.17274	273.57124	228.22004	5.26379	0.0863446	2.5518716	27	1	24 days	1.18			Williams		1998 HF ₁₈
1998 HQ ₁₈	15.0	0.15	19980706	326.47630	34.19715	223.79172	4.78007	0.0585380	2.4324480	43	2	1995–1998	0.74	M-v	4	Williams	32077	1998 HQ ₁₈
1998 HR ₁₈	16.0	0.15	19980706	334.50033	276.76071	350.18164	4.40001	0.2113052	2.3918508	55	3	1994–1998	0.81	M-v	3	Williams	32077	1998 HR ₁₈
1998 HV ₁₈	14.5	0.15	19980328	41.29342	256.72619	242.87417	3.87004	0.1028068	2.5324832	39	1	35 days	0.71			Williams		1998 HV ₁₈
1998 HF ₁₉	14.5	0.15	19980328	46.94549	278.50626	197.48469	11.92671	0.1855148	3.0212215	38	1	25 days	1.43			Williams		1998 HF ₁₉
1998 HH ₁₉	15.0	0.15	19980328	178.15964	126.08962	242.00238	3.25140	0.1509298	2.2282704	25	1	30 days	1.35			Williams		1998 HH ₁₉
1998 HO ₁₉	16.0	0.15	19980328	4.51540	225.13512	317.07159	1.98167	0.1867492	2.6340124	31	1	31 days	1.23			Williams		1998 HO ₁₉
1998 HP ₁₉	14.5	0.15	19980328	258.36346	306.28949	2.99993	11.06534	0.1631740	2.5818656	37	1	44 days	1.20		D	Williams		1998 HP ₁₉
1998 HR ₁₉	15.5	0.15	19980328	281.88200	279.15084	359.32970	6.82005	0.1103188	2.3480057	35	1	29 days	1.06			Williams		1998 HR ₁₉
1998 HV ₁₉	16.0	0.15	19980706	144.07674	60.43478	4.90406	4.10753	0.0624753	2.1713918	36	1	78 days	0.70	M-v	5	Williams		1998 HV ₁₉
1998 HC ₂₀	15.0	0.15	19980706	248.26583	333.86552	27.73732	2.23959	0.1784222	2.1524069	44	1	67 days	0.69	M-v	5	Marsden		1998 HC ₂₀
1998 HE ₂₀	13.0	0.15	19980706	243.60745	195.39923	176.80786	2.21586	0.1062229	2.9047657	40	2	1992–1998	0.73	M-v	5	Williams	32008	1998 HE ₂₀
1998 HF ₂₀	14.5	0.15	19980706	327.00184	97.15089	193.53210	2.76156	0.1057590	2.6041053	42	4	1978–1998	0.52	M-v	1	Williams	32009	1998 HF ₂₀
1998 HH ₂₀	15.5	0.15	19980706	5.60319	16.15314	199.18332	14.88434	0.1269779	2.4584111	36	1	60 days	0.52	M-v	5	Williams	32077	1998 HH ₂₀
1998 HJ ₂₀	15.0	0.15	19980328	216.04638	122.87436	212.86201	1.92614	0.0261950	2.5600717	24	1	31 days	0.83			Williams		1998 HJ ₂₀
1998 HK ₂₀	15.5	0.15	19980328	278.85886	95.36380	197.79718	3.98119	0.1896630	2.2951512	30	1	33 days	0.68			Williams		1998 HK ₂₀
1998 HE ₂₁	15.5	0.15	19980328	307.06077	75.79797	179.65799	4.09906	0.1236048	2.2976831	38	1	59 days	0.83			Williams		1998 HE ₂₁
1998 HG ₂₁	14.5	0.15	19980328	127.06490	15.40380	35.83921	3.26356	0.1523668	2.5967427	26	1	33 days	1.30			Williams		1998 HG ₂₁
1998 HH ₂₁	16.5	0.15	19980328	344.16643	152.30562	59.48802	1.48583	0.1541849	2.3776903	27	1	33 days	0.86			Williams		1998 HH ₂₁
1998 HK ₂₁	16.0	0.15	19980328	2.88767	343.92577	202.40950	2.12305	0.1320134	2.4076776	36	1	33 days	1.10			Williams		1998 HK ₂₁
1998 HM ₂₁	16.0	0.15	19980328	5.70436	173.86249	8.73505	2.53804	0.1381730	2.3625014	29	1	50 days	0.75			Williams		1998 HM ₂₁
1998 HN ₂₁	15.5	0.15	19980328	216.75612	136.03687	201.37112	4.93985	0.0502927	2.1811686	17	1	25 days	1.01			Williams		1998 HN ₂₁
1998 HP ₂₁	14.5	0.15	19980328	40.92139	292.39694	200.53663	15.32120	0.1793933	3.1006761	23	1	25 days	1.12			Williams		1998 HP ₂₁
1998 HQ ₂₁	16.0	0.15	19980328	21.89476	205.97379	314.78950	1.58858	0.1499644	2.4186720	21	1	25 days	1.34			Williams		1998 HQ ₂₁
1998 HA ₂₂	15.5	0.15	19980328	308.30698	43.49569	221.68459	4.58732	0.2088663	2.5464973	40	1	40 days	1.15			Williams		1998 HA ₂₂
1998 HB ₂₂	16.0	0.15	19980417	342.43949	10.28700	213.45966	6.62798	0.1640894	2.2225986	27	1	48 days	0.63			Williams		1998 HB ₂₂
1998 HE ₂₂	14.0	0.15	19980328	284.23887	76.01221	197.03910	2.72252	0.0515578	2.7957060	33	1	33 days	0.95			Williams		1998 HE ₂₂

1998 HF ₂₂	15.5	0.15	19980328	49.12551	107.57177	30.88623	0.65212	0.0422931	2.5226136	18	1	25 days	0.97		Williams		1998 HF ₂₂
1998 HQ ₂₂	16.0	0.15	19980706	227.64609	281.49381	71.86556	3.22151	0.0446283	2.3005724	28	4	1975–1998	0.67	M-v	2	Williams	32009 1998 HQ ₂₂
1998 HG ₂₃	16.0	0.15	19980706	217.37873	289.22217	77.25154	2.60437	0.0455777	2.1300314	36	2	1996–1998	0.80	M-v	4	Williams	32009 1998 HG ₂₃
1998 HQ ₂₃	15.0	0.15	19980706	328.56328	61.09102	229.99149	22.25817	0.1097662	2.4087212	35	1	60 days	0.67	M-v	5	Marsden	1998 HQ ₂₃
1998 HR ₂₃	16.0	0.15	19980706	25.51512	1.78592	217.48389	1.58354	0.1534596	2.4563008	38	1	63 days	0.84	M-v	5	Marsden	1998 HR ₂₃
1998 HS ₂₃	15.0	0.15	19980706	178.52542	321.42240	108.73046	0.69550	0.0725769	2.2787940	29	2	1992–1998	0.59	M-v	5	Marsden	32077 1998 HS ₂₃
1998 HT ₂₃	15.0	0.15	19980706	277.89901	312.90484	3.81502	12.73356	0.1863535	2.5482911	28	2	1991–1998	0.72	M-v	4	Williams	32009 1998 HT ₂₃
1998 HD ₂₄	17.0	0.15	19980417	122.41510	266.42589	189.52372	6.25064	0.0512146	2.2874101	12	1	9 days	0.35			Williams	1998 HD ₂₄
1998 HG ₂₄	15.5	0.15	19980507	330.39609	78.08902	186.07852	3.78835	0.1125221	2.1684381	43	1	54 days	0.55			Williams	1998 HG ₂₄
1998 HP ₂₄	13.0	0.15	19980706	292.04056	260.65976	66.71524	17.75371	0.1881363	3.1890953	57	1	66 days	0.54	M-v	5	Williams	1998 HP ₂₄
1998 HQ ₂₄	14.5	0.15	19980706	28.31158	321.26434	236.85318	3.88780	0.1397715	2.7880965	38	2	1988–1998	0.63	M-v	4	Williams	32009 1998 HQ ₂₄
1998 HS ₂₄	14.5	0.15	19980706	78.27176	351.74147	137.44263	12.06216	0.0474060	2.9919450	23	2	1992–1998	0.64	M-v	5	Williams	32009 1998 HS ₂₄
1998 HF ₂₅	16.0	0.15	19980328	312.81827	129.79889	130.35670	2.92498	0.2202827	2.7524363	19	1	30 days	0.79			Williams	1998 HF ₂₅
1998 HG ₂₆	15.0	0.15	19980507	244.66511	233.56938	127.58347	3.74095	0.2009664	2.3600304	21	1	34 days	0.92			Williams	1998 HG ₂₆
1998 HM ₂₆	14.5	0.15	19980706	275.57187	169.31701	177.17243	5.31421	0.1676587	2.5473996	32	3	1994–1998	0.55	M-v	3	Williams	32010 1998 HM ₂₆
1998 HN ₂₆	16.0	0.15	19980507	40.86540	81.29639	91.24385	4.62067	0.1736495	2.3579286	21	1	34 days	0.75			Williams	1998 HN ₂₆
1998 HO ₂₇	13.5	0.15	19980706	258.79578	256.96658	98.42188	6.10209	0.0770687	2.3786922	34	1	90 days	0.46	M-v	4	Williams	1998 HO ₂₇
1998 HJ ₂₈	14.5	0.15	19980328	139.88975	52.58756	346.30526	4.05553	0.2282089	2.3846438	23	1	39 days	1.04			Williams	1998 HJ ₂₈
1998 HF ₂₉	14.5	0.15	19980328	72.79513	211.69549	254.39705	3.33007	0.1533710	2.6208947	26	1	31 days	0.80			Williams	1998 HF ₂₉
1998 HN ₂₉	16.0	0.15	19980328	19.99877	156.89712	13.94864	7.42670	0.0433474	2.3231089	16	1	24 days	1.00			Williams	1998 HN ₂₉
1998 HP ₂₉	15.5	0.15	19980328	249.60202	122.86593	197.48360	3.47233	0.1709360	2.2273237	25	1	33 days	0.83			Williams	1998 HP ₂₉
1998 HB ₃₀	15.0	0.15	19980706	211.16180	302.18099	69.74130	3.48506	0.1609071	2.2111455	46	4	1994–1998	0.79	M-v	2	Williams	32010 1998 HB ₃₀
1998 HL ₃₀	15.0	0.15	19980706	81.22909	65.67809	64.09460	5.43459	0.1120695	2.2537989	39	1	134 days	0.64	M-v	5	Williams	32078 1998 HL ₃₀
1998 HQ ₃₁	15.0	0.15	19980328	276.10613	357.90839	306.39468	3.27972	0.2671498	2.6479973	27	1	41 days	0.75			Williams	1998 HQ ₃₁
1998 HY ₃₁	15.5	0.15	19980706	322.44836	32.63300	242.36817	2.60890	0.1256063	2.2320337	87	2	1997–1998	0.66	M-v	4	Williams	32078 1998 HY ₃₁
1998 HZ ₃₁	14.0	0.15	19980706	12.14077	332.22429	239.68585	6.22787	0.0737350	2.3550662	43	3	1978–1998	0.55	M-v	3	Williams	32010 1998 HZ ₃₁
1998 HD ₃₂	14.5	0.15	19980328	221.83579	125.30875	221.76084	4.15811	0.1938345	2.2796472	26	1	28 days	0.77			Williams	1998 HD ₃₂
1998 HE ₃₂	15.0	0.15	19980417	290.21614	52.94574	238.86516	1.68792	0.1788988	2.2266803	31	1	52 days	0.54			Williams	1998 HE ₃₂
1998 HJ ₃₂	14.0	0.15	19980417	202.82331	159.64641	203.89370	13.04933	0.1987683	2.5304183	28	1	55 days	0.75			Williams	1998 HJ ₃₂
1998 HO ₃₂	13.5	0.15	19980706	77.17932	283.97742	195.78685	16.69091	0.1473997	3.1362184	55	3	1990–1998	0.77	M-v	3	Williams	32078 1998 HO ₃₂
1998 HV ₃₂	14.0	0.15	19980328	50.81613	283.99627	202.16918	25.66332	0.1834640	3.0931311	23	1	28 days	0.75			Williams	1998 HV ₃₂
1998 HX ₃₂	13.0	0.15	19980706	207.26342	167.97281	200.45865	5.29150	0.1024857	3.1682512	49	3	1978–1998	0.71	M-v	4	Williams	32010 1998 HX ₃₂
1998 HZ ₃₂	16.0	0.15	19980328	12.75304	309.13811	228.20432	1.75647	0.1466503	2.3363402	24	1	28 days	0.75			Williams	1998 HZ ₃₂
1998 HA ₃₃	15.0	0.15	19980328	305.61474	49.42079	209.45359	5.70600	0.0887884	2.3821605	26	1	29 days	0.72			Williams	1998 HA ₃₃
1998 HB ₃₃	15.5	0.15	19980328	319.42665	33.20839	210.58118	3.97359	0.0928323	2.3715468	17	1	24 days	0.85			Williams	1998 HB ₃₃
1998 HC ₃₃	14.0	0.15	19980328	62.14734	100.17801	19.52667	14.51579	0.1389095	3.1798590	18	1	29 days	0.97			Williams	1998 HC ₃₃
1998 HK ₃₃	15.0	0.15	19980706	278.76815	318.96717	1.00409	6.38099	0.1395261	2.3306514	23	2	1981–1998	0.82	M-v	5	Williams	32011 1998 HK ₃₃
1998 HN ₃₃	13.5	0.15	19980328	86.17323	104.36703	4.78297	10.51765	0.0234504	3.0576285	25	1	31 days	0.89			Williams	1998 HN ₃₃
1998 HX ₃₃	15.0	0.15	19980328	290.29255	67.40660	208.72800	13.64632	0.0851746	2.5392636	21	1	28 days	0.85			Williams	1998 HX ₃₃
1998 HY ₃₃	15.5	0.15	19980706	342.99144	53.49864	211.67756	8.65122	0.2493797	2.3482259	31	1	67 days	0.53	M-v	5	Williams	32078 1998 HY ₃₃
1998 HB ₃₄	13.5	0.15	19980417	160.04031	195.32647	201.80224	10.72456	0.1108310	2.9944059	29	1	57 days	0.74			Williams	1998 HB ₃₄
1998 HH ₃₄	15.0	0.15	19980328	58.04942	266.72951	193.23409	7.87849	0.3310726	2.6819106	17	1	24 days	0.99			Williams	1998 HH ₃₄
1998 HK ₃₄	15.5	0.15	19980706	36.70699	117.02405	61.89181	2.89548	0.1564719	2.4337429	41	2	1994–1998	0.62	M-v	4	Williams	32011 1998 HK ₃₄
1998 HS ₃₄	15.0	0.15	19980706	70.19417	42.04301	101.62671	3.17875	0.0763670	2.4364731	49	3	1990–1998	0.61	M-v	3	Williams	32011 1998 HS ₃₄
1998 HO ₃₅	14.5	0.15	19980706	339.85383	115.77618	137.49248	3.37298	0.1188580	2.3539361	51	4	1989–1998	0.72	M-v	2	Williams	32011 1998 HO ₃₅
1998 HR ₃₅	13.5	0.15	19980706	285.19468	166.21547	128.37548	3.12250	0.0286351	2.8689247	47	3	1990–1998	0.66	M-v	3	Williams	32011 1998 HR ₃₅
1998 HK ₃₆	14.5	0.15	19980706	265.24819	287.38850	50.16324	4.03036	0.2063565	2.2864096	41	3	1978–1998	0.79	M-v	4	Williams	32012 1998 HK ₃₆
1998 HX ₃₆	14.0	0.15	19980706	289.84999	109.99254	204.64652	7.04860	0.2228816	2.7879135	32	3	1976–1998	0.70	M-v	4	Williams	32012 1998 HX ₃₆
1998 HC ₃₇	14.0	0.15	19980706	286.94927	358.59503	323.45186	1.57809	0.2212108	2.3765284	54	4	1984–1998	0.64	M-v	2	Williams	32012 1998 HC ₃₇
1998 HH ₃₇	15.5	0.15	19980328	357.86380	263.51791	296.57269	1.29109	0.1500594	2.3979421	25	1	28 days	0.72			Williams	1998 HH ₃₇
1998 HS ₃₇	14.0	0.15	19980417	67.56814	229.30118	263.20271	2.40788	0.0328458	2.7589629	35	1	52 days	0.60			Williams	1998 HS ₃₇
1998 HX ₃₇	14.0	0.15	19980328	95.03170	78.09649	10.33111	13.94895	0.1503091	2.6187195	25	1	28 days	0.73			Williams	1998 HX ₃₇
1998 HA ₃₈	15.0	0.15	19980328	59.73052	132.10343	359.47543	6.38444	0.0777780	2.4492014	23	1	28 days	0.65			Williams	1998 HA ₃₈

1998 HB ₃₈	15.0	0.15	19980706	338.46977	331.70312	295.00783	2.46086	0.2276017	2.5726258	44	2	1978–1998	0.62	M-v	5	Williams	32012	1998 HB ₃₈
1998 HE ₃₈	14.5	0.15	19980706	317.10899	52.70260	234.84073	3.65831	0.1548773	2.2999060	41	1	85 days	0.53	M-v	5	Williams		1998 HE ₃₈
1998 HP ₃₈	14.0	0.15	19980328	98.30479	67.60085	21.58627	18.68994	0.1112313	3.0528902	23	1	24 days	1.26			Williams		1998 HP ₃₈
1998 HR ₃₈	14.5	0.15	19980417	219.55899	142.88614	209.84067	6.29073	0.1342035	2.3021754	30	1	52 days	0.87			Williams		1998 HR ₃₈
1998 HW ₃₈	14.0	0.15	19980706	315.40987	19.42737	249.40055	0.83675	0.0489076	2.9488056	57	4	1979–1998	0.70	M-v	2	Williams	32012	1998 HW ₃₈
1998 HZ ₃₈	14.5	0.15	19980417	286.80294	80.02687	208.33381	13.44655	0.0965413	2.5876319	32	1	52 days	0.84			Williams		1998 HZ ₃₈
1998 HA ₃₉	15.0	0.15	19980328	99.74666	232.22763	213.73828	4.77919	0.1230158	2.2393395	22	1	28 days	0.79			Williams		1998 HA ₃₉
1998 HH ₃₉	15.5	0.15	19980328	8.56004	341.29170	204.68763	4.49612	0.1424719	2.4323549	25	1	28 days	0.77			Williams		1998 HH ₃₉
1998 HL ₃₉	13.5	0.15	19980417	157.47438	197.38872	201.59018	17.22971	0.2106046	2.7523483	23	1	56 days	0.59			Williams		1998 HL ₃₉
1998 HP ₃₉	14.5	0.15	19980328	19.81617	337.78442	199.81764	6.50262	0.0552327	2.7980038	18	1	24 days	0.90			Williams		1998 HP ₃₉
1998 HU ₃₉	14.0	0.15	19980706	304.07217	99.19737	179.03978	2.11855	0.0119609	2.7298669	41	2	1991–1998	0.87	M-v	5	Williams	32012	1998 HU ₃₉
1998 HV ₃₉	13.5	0.15	19980706	89.13121	75.63573	50.58326	3.01522	0.0350501	2.9070922	44	3	1993–1998	0.62	M-v	3	Williams	32013	1998 HV ₃₉
1998 HD ₄₀	14.5	0.15	19980706	17.83338	168.29540	35.32575	8.99329	0.1581969	2.6740969	41	1	64 days	0.53	M-v	4	Williams	32079	1998 HD ₄₀
1998 HJ ₄₁	18.0	0.15	19980706	310.93219	120.09383	211.93008	38.87728	0.1248630	1.3633643	88	1	83 days	0.60	M-v	5	Williams	32079	1998 HJ ₄₁
1998 HS ₄₂	14.5	0.15	19980706	346.83868	106.16084	155.05148	8.34815	0.2699995	2.7786758	45	2	1994–1998	0.60	M-v	4	Williams	32013	1998 HS ₄₂
1998 HT ₄₂	14.5	0.15	19980706	322.17248	101.02095	181.60145	4.01426	0.0418105	2.3083177	39	3	1984–1998	0.52	M-v	4	Williams	32013	1998 HT ₄₂
1998 HE ₄₃	14.5	0.15	19980706	293.37703	164.05492	163.02322	4.95544	0.1375144	2.4377778	37	3	1971–1998	0.67	M-v	4	Williams	32013	1998 HE ₄₃
1998 HH ₄₃	15.5	0.15	19980706	344.66570	157.23141	118.65809	6.03787	0.2380159	2.3414109	40	1	136 days	0.59	M-v	4	Williams	32079	1998 HH ₄₃
1998 HK ₄₃	16.0	0.15	19980706	352.80834	78.48061	182.89600	6.32832	0.2855786	2.2554790	37	1	84 days	0.72	M-v	4	Williams		1998 HK ₄₃
1998 HO ₄₃	14.5	0.15	19980706	300.87441	117.74713	180.75971	6.59493	0.1234065	2.3413957	38	1	75 days	0.52	M-v	4	Williams	32079	1998 HO ₄₃
1998 HW ₄₄	14.5	0.15	19980328	219.30362	330.80490	17.85850	3.04453	0.1093931	2.4478730	21	1	28 days	0.96			Williams		1998 HW ₄₄
1998 HX ₄₅	13.5	0.15	19980417	211.92794	327.58688	31.40040	2.59543	0.1059502	2.7608534	29	1	52 days	0.75			Williams		1998 HX ₄₅
1998 HZ ₄₅	14.0	0.15	19980328	56.64947	84.51993	41.38187	1.20137	0.1804602	3.1887797	27	1	28 days	1.12			Williams		1998 HZ ₄₅
1998 HN ₄₉	15.5	0.15	19980507	344.40300	35.39368	215.79322	3.45827	0.1147397	2.3032557	52	1	55 days	0.60			Williams		1998 HN ₄₉
1998 HO ₄₉	15.0	0.15	19980706	40.10856	61.73866	137.00409	7.01666	0.0868905	2.4099064	31	1	66 days	0.62	M-v	4	Williams		1998 HO ₄₉
1998 HT ₅₀	14.5	0.15	19980706	81.37457	110.79641	18.86406	13.19148	0.1295420	2.6968733	38	1	62 days	0.62	M-v	5	Williams	32080	1998 HT ₅₀
1998 HU ₅₀	15.5	0.15	19980328	304.80777	20.38803	251.39505	3.12607	0.1835811	2.3028865	25	1	36 days	0.77		D	Williams		1998 HU ₅₀
1998 HV ₅₀	14.0	0.15	19980706	269.14012	54.10092	273.87600	2.90196	0.1078468	2.3686795	51	4	1981–1998	0.65	M-v	2	Williams	32014	1998 HV ₅₀
1998 HB ₅₁	14.0	0.15	19980706	182.97681	357.07831	65.54451	3.22522	0.0907117	2.6066618	26	4	1987–1998	0.69	M-v	3	Williams	32014	1998 HB ₅₁
1998 HG ₅₁	14.0	0.15	19980706	165.47463	214.21679	213.97745	11.26220	0.1223633	2.5345635	42	4	1989–1998	0.60	M-v	2	Williams	32014	1998 HG ₅₁
1998 HL ₅₁	15.5	0.15	19980706	32.17928	130.01771	71.54940	3.92089	0.1509600	2.2642596	47	2	1996–1998	0.71	M-v	4	Williams	32014	1998 HL ₅₁
1998 HS ₅₁	14.5	0.15	19980706	320.36690	240.77418	47.03445	7.05720	0.1319297	2.2619496	24	1	66 days	0.51	M-v	5	Marsden		1998 HS ₅₁
1998 HK ₅₂	14.0	0.15	19980706	35.36315	132.23332	64.83880	10.71843	0.1712702	3.1398709	52	1	88 days	0.52	M-v	4	Williams		1998 HK ₅₂
1998 HL ₅₂	13.5	0.15	19980706	344.76243	198.33372	62.49664	14.43088	0.0191559	2.5742186	46	1	91 days	0.61	M-v	4	Williams		1998 HL ₅₂
1998 HM ₅₂	14.0	0.15	19980706	310.24698	235.89625	85.55621	6.12590	0.2155355	2.2768357	68	4	1982–1998	0.64	M-v	2	Williams	32014	1998 HM ₅₂
1998 HP ₅₂	15.5	0.15	19980706	357.34824	131.40550	123.09061	2.26524	0.2032249	2.2833654	32	1	85 days	0.56	M-v	4	Williams		1998 HP ₅₂
1998 HA ₅₃	13.5	0.15	19980328	181.29747	8.72516	11.23582	16.17257	0.1500746	2.5386657	24	1	28 days	0.73			Williams		1998 HA ₅₃
1998 HG ₅₃	14.5	0.15	19980417	289.26432	68.99130	229.60196	2.43588	0.2022725	2.3657872	41	1	52 days	0.77			Williams		1998 HG ₅₃
1998 HU ₅₄	14.0	0.15	19980328	237.54601	305.18046	22.55431	12.07472	0.0489623	2.6336526	21	1	28 days	0.75			Williams		1998 HU ₅₄
1998 HT ₅₄	13.5	0.15	19980417	74.53277	104.35270	13.66034	13.05002	0.1247879	2.5619879	29	1	52 days	0.50			Williams		1998 HT ₅₄
1998 HH ₅₅	15.0	0.15	19980417	327.73411	31.20069	222.66046	1.44679	0.1927118	2.3645423	38	1	52 days	0.54			Williams		1998 HH ₅₅
1998 HB ₅₇	13.0	0.15	19980328	231.26333	131.82316	203.38980	6.88548	0.0437921	3.0207142	24	1	28 days	0.69			Williams		1998 HB ₅₇
1998 HD ₅₇	14.0	0.15	19980328	71.27156	271.39633	206.25825	11.30854	0.1204524	2.7037283	25	1	28 days	0.63			Williams		1998 HD ₅₇
1998 HR ₆₀	16.0	0.15	19980328	343.72424	209.27652	16.15234	7.92329	0.2256202	2.4192874	30	1	28 days	0.50			Williams		1998 HR ₆₀
1998 HZ ₆₀	14.5	0.15	19980328	91.25985	73.86201	22.01883	12.61529	0.1515880	2.7039708	24	1	50 days	0.79			Williams		1998 HZ ₆₀
1998 HA ₆₁	13.0	0.15	19980328	144.03193	33.13193	24.75860	16.83766	0.0482138	3.1240403	18	1	24 days	0.67			Williams		1998 HA ₆₁
1998 HR ₆₃	14.0	0.15	19980417	246.31459	243.33355	87.52684	4.36648	0.0960911	2.7822221	19	1	56 days	0.53			Williams		1998 HR ₆₃
1998 HN ₆₈	14.0	0.15	19980706	317.96497	5.23733	272.57197	3.27375	0.1108490	3.2072441	32	2	1997–1998	0.61	M-v	4	Williams	32015	1998 HN ₆₈
1998 HQ ₇₁	14.0	0.15	19980417	190.85940	328.09761	50.72999	11.01736	0.0374278	3.0288546	12	1	3 days	1.21		E	Williams		1998 HQ ₇₁
1998 HU ₇₁	15.5	0.15	19980417	47.85371	91.88758	46.80016	12.52905	0.2104691	2.3803215	13	1	3 days	0.35			Williams		1998 HU ₇₁
1998 HA ₇₅	14.0	0.15	19980706	209.16620	216.18173	168.49924	2.18437	0.0758667	2.3071103	33	4	1978–1998	0.47	M-v	2	Williams	32015	1998 HA ₇₅
1998 HL ₇₉	15.7	0.15	19980417	74.32098	249.73615	244.03135	4.70650	0.0312481	2.2007307	21	1	8 days	0.50			Nakano		1998 HL ₇₉
1998 HA ₈₀	16.5	0.15	19980706	68.79891	139.93502	15.69923	4.16570	0.1115037	2.2886562	21	2	1996–1998	0.61	M-v	4	Williams	32015	1998 HA ₈₀

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1998 HJ ₈₀	14.0	0.15	19980706	333.61580	236.41475	23.63552	5.54720	0.0851539	3.2261586	39	2	1994–1998	0.52	M-v	4	Williams	32015	1998 HJ ₈₀
1998 HE ₈₄	13.0	0.15	19980507	264.59192	135.43329	194.90573	13.21839	0.1676431	3.2363529	23	1	32 days	0.81			Williams		1998 HE ₈₄
1998 HR ₈₄	14.5	0.15	19980417	308.77971	68.78070	202.26963	14.46689	0.0689303	2.6168329	29	1	57 days	0.70			Williams		1998 HR ₈₄
1998 HA ₈₆	15.0	0.15	19980417	1.45701	242.96603	327.69469	0.84632	0.1314791	2.8831566	11	1	3 days	0.67		E	Williams		1998 HA ₈₆
1998 HF ₈₇	14.0	0.15	19980706	207.48097	144.51967	237.60714	6.02514	0.0270096	3.0604160	34	2	1995–1998	0.54	M-v	4	Williams	32016	1998 HF ₈₇
1998 HH ₈₈	15.5	0.15	19980706	339.72221	49.09829	225.88272	5.72285	0.2011433	2.2844795	34	2	1978–1998	0.52	M-v	5	Williams	32016	1998 HH ₈₈
1998 HX ₈₈	13.5	0.15	19980507	306.21313	248.50850	36.22379	1.65787	0.1222566	3.2515674	27	1	32 days	1.00			Williams		1998 HX ₈₈
1998 HF ₈₉	17.0	0.15	19980417	359.56468	166.76399	46.42504	3.13502	0.1211444	2.2791706	12	1	2 days	1.04		E	Williams		1998 HF ₈₉
1998 HA ₉₁	14.0	0.15	19980706	148.67604	297.04928	134.02161	5.22670	0.1990171	2.3951019	42	3	1986–1998	0.71	M-v	4	Williams	32016	1998 HA ₉₁
1998 HR ₉₂	14.5	0.15	19980507	43.09949	315.69211	212.95475	9.84425	0.0955335	2.6681204	26	1	32 days	0.87			Williams		1998 HR ₉₂
1998 HL ₉₃	15.0	0.15	19980507	304.10964	46.76546	248.66882	3.42577	0.1728752	2.2503452	28	1	32 days	0.66			Williams		1998 HL ₉₃
1998 HV ₉₃	13.5	0.15	19980706	347.04917	271.83334	336.18370	3.28992	0.0506933	3.0757478	41	3	1992–1998	0.77	M-v	4	Williams	32017	1998 HV ₉₃
1998 HZ ₉₃	15.0	0.15	19980507	34.04255	147.72177	26.97796	13.04095	0.1709198	2.7298708	23	1	36 days	0.82			Williams		1998 HZ ₉₃
1998 HB ₉₄	14.5	0.15	19980507	358.31326	359.11481	225.02265	12.58380	0.1328400	2.5558353	33	1	33 days	0.52			Williams		1998 HB ₉₄
1998 HU ₉₄	13.0	0.15	19980706	278.39185	306.06471	21.68059	1.06469	0.1319061	3.2292897	45	6	1982–1998	0.69	M-v	1	Williams	32017	1998 HU ₉₄
1998 HT ₉₅	14.0	0.15	19980706	321.67565	182.44328	110.04625	3.67836	0.1747945	2.4558685	52	3	1991–1998	0.60	M-v	4	Williams	32018	1998 HT ₉₅
1998 HT ₉₇	14.0	0.15	19980706	64.95483	142.98353	19.55016	7.32174	0.0642660	3.0399486	31	3	1992–1998	0.83	M-v	4	Williams	32018	1998 HT ₉₇
1998 HV ₉₇	14.0	0.15	19980706	284.77560	23.71581	316.79177	3.89525	0.2652775	2.6082520	25	2	1997–1998	0.81	M-v	5	Williams	32019	1998 HV ₉₇
1998 HC ₉₈	15.5	0.15	19980706	333.53811	286.90923	3.12787	5.16602	0.2162453	2.1550265	41	3	1989–1998	0.63	M-v	4	Williams	32019	1998 HC ₉₈
1998 HN ₉₈	14.0	0.15	19980706	89.52913	97.45350	33.43267	5.50181	0.1448436	2.6266828	35	3	1981–1998	0.90	M-v	4	Williams	32019	1998 HN ₉₈
1998 HF ₉₉	15.0	0.15	19980706	310.10853	102.78258	188.03367	5.37772	0.0270922	2.3869709	44	3	1977–1998	0.92	M-v	4	Williams	32019	1998 HF ₉₉
1998 HZ ₉₉	14.5	0.15	19980706	14.12361	71.82216	150.75821	5.43723	0.0543174	2.5599034	42	4	1977–1998	0.55	M-v	2	Williams	32020	1998 HZ ₉₉
1998 HJ ₁₀₀	14.0	0.15	19980706	95.18837	296.74044	191.77208	8.91215	0.1083414	2.7777175	48	2	1991–1998	0.54	M-v	4	Williams	32020	1998 HJ ₁₀₀
1998 HM ₁₀₀	14.0	0.15	19980706	137.23459	342.58407	112.72976	3.19587	0.0257309	2.8813985	38	2	1997–1998	0.69	M-v	5	Williams	32020	1998 HM ₁₀₀
1998 HF ₁₀₁	15.0	0.15	19980706	323.03306	181.20223	122.24276	3.91087	0.2612725	2.3278860	40	4	1991–1998	0.59	M-v	1	Williams	32021	1998 HF ₁₀₁
1998 HJ ₁₀₁	15.5	0.15	19980706	305.63859	138.09882	182.61142	3.22210	0.2418151	2.3675396	38	3	1984–1998	0.72	M-v	4	Williams	32021	1998 HJ ₁₀₁
1998 HR ₁₀₁	13.5	0.15	19980507	4.18029	125.24021	72.79615	24.75659	0.2207401	3.1859866	27	1	54 days	0.96			Williams		1998 HR ₁₀₁
1998 HU ₁₀₁	17.0	0.15	19980706	7.91496	4.65994	240.36019	6.42639	0.2078124	2.2981199	39	1	68 days	0.55	M-v	4	Williams		1998 HU ₁₀₁
1998 HX ₁₀₁	14.0	0.15	19980507	345.49076	196.24747	50.76269	12.90734	0.0547197	3.1245154	19	1	54 days	0.79			Williams		1998 HX ₁₀₁
1998 HA ₁₀₂	13.5	0.15	19980507	155.53825	20.85591	51.17584	14.80106	0.0879154	3.1737459	14	1	53 days	1.06			Williams		1998 HA ₁₀₂
1998 HE ₁₀₂	13.5	0.15	19980507	86.37699	156.87981	346.08405	1.43560	0.0196520	2.8521784	30	1	52 days	1.29			Williams		1998 HE ₁₀₂
1998 HF ₁₀₂	15.5	0.15	19980706	6.45768	329.91420	276.03727	1.69185	0.1196788	2.1467365	27	1	63 days	0.69	M-v	5	Williams		1998 HF ₁₀₂
1998 HJ ₁₀₂	15.5	0.15	19980507	317.04984	243.03519	44.81733	6.48582	0.1594466	2.2780703	32	1	55 days	1.04			Williams		1998 HJ ₁₀₂
1998 HL ₁₀₂	14.0	0.15	19980507	339.53525	206.83209	53.51893	11.30120	0.1691887	3.1716072	34	1	57 days	1.30			Williams		1998 HL ₁₀₂
1998 HB ₁₀₃	15.0	0.15	19980507	52.26648	129.57084	46.00853	7.23706	0.0422329	2.3200199	22	1	29 days	0.79			Williams		1998 HB ₁₀₃
1998 HE ₁₀₃	15.5	0.15	19980507	331.66058	230.28308	41.79475	6.65072	0.1812308	2.2024713	25	1	54 days	1.06			Williams		1998 HE ₁₀₃
1998 HS ₁₀₆	15.0	0.15	19980706	345.26768	145.40130	107.11929	8.64212	0.1480134	2.3733681	35	1	85 days	0.66	M-v	4	Williams		1998 HS ₁₀₆
1998 HE ₁₀₈	14.5	0.15	19980417	308.50929	151.96054	117.68194	7.67435	0.1105764	3.1330100	14	1	3 days	0.94		E	Williams		1998 HE ₁₀₈
1998 HU ₁₀₈	17.0	0.15	19980706	0.90284	195.10193	63.54770	9.31277	0.5060065	2.7532769	136	1	82 days	0.56	M-v	4	Williams	32083	1998 HU ₁₀₈
1998 HB ₁₁₃	13.0	0.15	19980706	23.92964	126.13561	71.08496	12.52451	0.1190109	3.1199681	33	1	85 days	0.67	M-v	4	Williams	32083	1998 HB ₁₁₃
1998 HH ₁₁₄	14.5	0.15	19980706	328.79915	140.66258	132.73847	6.77951	0.0958352	2.3386047	37	2	1991–1998	0.63	M-v	5	Williams	32021	1998 HH ₁₁₄
1998 HM ₁₁₄	13.0	0.15	19980706	274.26256	226.43512	93.30172	10.86711	0.0749121	3.0588466	26	1	65 days	0.63	M-v	5	Williams		1998 HM ₁₁₄
1998 HQ ₁₁₄	14.0	0.15	19980706	350.67701	149.30064	89.73687	12.41338	0.0995486	3.0557238	32	1	65 days	0.70	M-v	4	Williams		1998 HQ ₁₁₄
1998 HX ₁₁₄	15.0	0.15	19980507	335.04888	96.30391	154.42024	12.43137	0.1607622	2.5599753	20	1	35 days	0.74			Williams		1998 HX ₁₁₄
1998 HY ₁₁₄	13.5	0.15	19980706	12.39569	66.42257	147.46514	13.18752	0.2349680	3.0639407	30	1	85 days	0.68	M-v	4	Williams		1998 HY ₁₁₄
1998 HZ ₁₁₄	14.5	0.15	19980706	335.06621	144.58094	123.79879	11.17977	0.1344247	2.3924299	32	1	85 days	0.70	M-v	5	Williams		1998 HZ ₁₁₄
1998 HJ ₁₁₅	13.5	0.15	19980507	229.15521	195.43263	161.01118	14.47615	0.1192050	2.5958640	19	1	35 days	0.86			Williams		1998 HJ ₁₁₅
1998 HS ₁₁₅	13.0	0.15	19980507	203.38628	273.43093	101.75095	11.92203	0.0969543	3.1062038	19	1	35 days	0.76			Williams		1998 HS ₁₁₅
1998 HA ₁₁₆	14.0	0.15	19980507	80.28764	310.93513	170.58099	11.38902	0.1354691	2.4521945	20	1	35 days	0.57			Williams		1998 HA ₁₁₆
1998 HH ₁₁₆	15.0	0.15	19980507	319.99018	102.07902	180.33060	11.34218	0.2537496	2.5629495	19	1	35 days	0.74			Williams		1998 HH ₁₁₆
1998 HO ₁₁₆	14.0	0.15	19980507	77.91299	304.99141	185.45050	13.46470	0.0834921	2.5616827	20	1	35 days	0.75			Williams		1998 HO ₁₁₆
1998 HK ₁₁₇	15.5	0.15	19980507	321.99916	185.51007	79.66724	7.34215	0.1024808	2.2528885	24	1	32 days	0.74			Williams		1998 HK ₁₁₇
1998 HQ ₁₁₇	16.0	0.15	19980706	3.09478	106.46013	133.63037	5.19439	0.1374675	2.1922224	45	1	87 days	0.64	M-v	4	Williams	32083	1998 HQ ₁₁₇

1998 HZ ₁₁₇	14.0	0.15	19980507	58.61356	350.77663	150.87934	8.08557	0.1730583	2.5428146	29	1	37 days	0.65	Williams	1998 HZ ₁₁₇
1998 HB ₁₁₈	14.0	0.15	19980507	273.95719	196.94081	120.45819	10.28143	0.1266900	2.7215557	17	1	35 days	0.95	Williams	1998 HB ₁₁₈
1998 HC ₁₁₈	14.0	0.15	19980507	273.72964	169.93782	137.97934	10.30679	0.0413348	2.5975876	20	1	35 days	0.67	Williams	1998 HC ₁₁₈
1998 HG ₁₁₈	14.0	0.15	19980507	300.12928	204.42779	79.26921	15.96957	0.0761663	2.6845358	17	1	35 days	0.96	Williams	1998 HG ₁₁₈
1998 HJ ₁₁₈	14.0	0.15	19980507	5.95961	49.48619	161.42442	14.27076	0.0927962	2.6847816	20	1	35 days	0.80	Williams	1998 HJ ₁₁₈
1998 HK ₁₁₈	13.5	0.15	19980507	342.70454	149.93219	86.55917	16.25225	0.0980626	3.1416216	20	1	35 days	0.80	Williams	1998 HK ₁₁₈
1998 HQ ₁₁₈	13.0	0.15	19980507	79.89598	345.29964	132.63103	16.06351	0.1513771	3.0407546	19	1	35 days	0.56	Williams	1998 HQ ₁₁₈
1998 HS ₁₁₈	15.0	0.15	19980507	359.29336	64.80397	154.80677	14.30748	0.1955857	2.7822434	18	1	35 days	1.10	Williams	1998 HS ₁₁₈
1998 HH ₁₁₉	14.0	0.15	19980507	30.73794	42.99872	134.36731	8.12852	0.1589589	2.9245155	20	1	35 days	0.74	Williams	1998 HH ₁₁₉
1998 HN ₁₁₉	14.0	0.15	19980507	301.28506	112.05191	185.30729	11.55943	0.1650498	2.6390170	18	1	32 days	0.70	Williams	1998 HN ₁₁₉
1998 HW ₁₁₉	14.5	0.15	19980507	64.12032	17.81536	130.90561	7.32012	0.0706683	2.4000619	18	1	32 days	0.60	Williams	1998 HW ₁₁₉
1998 HF ₁₂₀	13.5	0.15	19980507	91.18211	353.18464	118.90864	13.53672	0.1235808	2.6151333	20	1	35 days	0.58	Williams	1998 HF ₁₂₀
1998 HL ₁₂₀	13.5	0.15	19980706	17.03091	82.63283	133.61040	13.84422	0.1410154	2.5612617	48	3	1977–1998	0.61	M-v 3 Williams	32022 1998 HL ₁₂₀
1998 HE ₁₂₁	13.0	0.15	19980706	185.09100	320.76703	85.17682	11.73725	0.0824380	3.0038311	38	3	1990–1998	0.64	M-v 4 Williams	32022 1998 HE ₁₂₁
1998 HG ₁₂₁	14.0	0.15	19980706	270.17705	207.49346	135.06226	6.14600	0.1461158	2.3968103	51	4	1984–1998	0.62	M-v 1 Williams	32022 1998 HG ₁₂₁
1998 HJ ₁₂₁	14.0	0.15	19980706	298.19038	119.98753	185.46882	11.01004	0.0905315	3.0462622	54	4	1971–1998	0.71	M-v 1 Williams	32022 1998 HJ ₁₂₁
1998 HM ₁₂₁	14.5	0.15	19980706	316.35155	166.95250	121.75531	5.77286	0.0846184	2.7322736	33	2	1997–1998	0.68	M-v 5 Williams	32022 1998 HM ₁₂₁
1998 HF ₁₂₂	13.5	0.15	19980507	354.30164	80.16901	149.59035	13.15019	0.1482949	3.1194636	21	1	56 days	0.50	Williams	1998 HF ₁₂₂
1998 HV ₁₂₂	13.0	0.15	19980507	244.93116	261.36811	96.66806	10.25705	0.2093929	3.1199711	15	1	32 days	0.68	Williams	1998 HV ₁₂₂
1998 HH ₁₂₃	13.5	0.15	19980706	213.95963	207.37518	181.59698	11.82194	0.0845369	2.6010654	30	3	1974–1998	1.04	M-v 5 Williams	32023 1998 HH ₁₂₃
1998 HD ₁₂₄	14.5	0.15	19980507	304.53315	209.54859	101.61371	9.31080	0.2807496	2.3087612	27	1	40 days	0.55	Williams	1998 HD ₁₂₄
1998 HJ ₁₂₄	15.5	0.15	19980706	7.81826	63.67071	177.74093	7.99757	0.2623423	2.3546942	22	1	66 days	0.41	M-v 5 Williams	1998 HJ ₁₂₄
1998 HK ₁₂₄	14.5	0.15	19980706	232.42191	250.68155	127.00606	6.20758	0.1188066	2.2140511	21	2	1984–1998	0.64	M-v 6 Williams	32023 1998 HK ₁₂₄
1998 HO ₁₂₄	14.5	0.15	19980706	112.32264	321.46918	155.80394	6.09318	0.1200864	2.4103320	27	1	66 days	0.53	M-v 5 Williams	1998 HO ₁₂₄
1998 HS ₁₂₄	15.7	0.15	19980507	359.61454	91.24859	137.08680	5.40085	0.1602141	2.2387563	37	1	40 days	0.42	Nakano	1998 HS ₁₂₄
1998 HS ₁₂₄	16.0	0.15	19980507	359.61343	91.25019	137.08673	5.40083	0.1602135	2.2387481	34	1	40 days	0.43	Williams	1998 HS ₁₂₄
1998 HX ₁₂₄	15.0	0.15	19980507	354.67677	70.35649	161.65787	11.87858	0.0594271	2.4470303	17	1	56 days	0.51	Williams	1998 HX ₁₂₄
1998 HG ₁₂₅	14.5	0.15	19980507	309.94725	117.11481	177.46926	14.57375	0.1694138	2.6044320	20	1	56 days	0.50	Williams	1998 HG ₁₂₅
1998 HH ₁₂₅	15.5	0.15	19980706	33.09310	57.07708	152.37609	8.37321	0.0681457	2.2190700	22	1	73 days	0.63	M-v 4 Williams	32083 1998 HH ₁₂₅
1998 HO ₁₂₅	15.0	0.15	19980507	318.00683	145.64314	134.42099	6.27707	0.1111912	2.3834484	17	1	34 days	0.51	Williams	1998 HO ₁₂₅
1998 HT ₁₂₅	14.5	0.15	19980706	40.21300	71.75067	125.76931	4.50290	0.1435131	2.3417838	37	4	1976–1998	0.68	M-v 2 Williams	32023 1998 HT ₁₂₅
1998 HU ₁₂₅	13.0	0.15	19980507	239.30451	273.97773	87.03271	11.37771	0.1217822	2.9751634	27	1	54 days	0.84	Williams	1998 HU ₁₂₅
1998 HL ₁₂₆	15.5	0.15	19980507	34.14030	305.71833	225.25515	21.51271	0.3002328	2.4276643	30	1	59 days	0.63	Williams	1998 HL ₁₂₆
1998 HF ₁₂₇	16.0	0.15	19980328	80.15819	242.03865	216.67372	6.33855	0.1187839	2.3086578	23	1	34 days	1.06	Williams	1998 HF ₁₂₇
1998 HJ ₁₂₇	14.5	0.15	19980328	341.79601	8.37097	192.23386	14.97482	0.0761781	2.6461053	27	1	26 days	0.76	Williams	1998 HJ ₁₂₇
1998 HN ₁₂₇	14.0	0.15	19980328	210.50314	127.52512	223.22587	3.82547	0.1082958	2.7415080	18	1	24 days	1.23	Williams	1998 HN ₁₂₇
1998 HT ₁₂₇	15.5	0.15	19980328	65.87303	93.63414	19.55111	2.70117	0.1336712	2.4278800	24	1	31 days	0.85	Williams	1998 HT ₁₂₇
1998 HX ₁₂₇	15.0	0.15	19980328	292.46793	278.94689	0.44129	4.67995	0.1366564	2.7468150	18	1	28 days	0.74	Williams	1998 HX ₁₂₇
1998 HZ ₁₂₇	14.0	0.15	19980706	331.62029	51.94835	200.90508	0.96026	0.1257485	3.1928748	32	3	1988–1998	0.71	M-v 4 Williams	32023 1998 HZ ₁₂₇
1998 HC ₁₂₉	15.5	0.15	19980328	11.38644	197.56959	339.54238	6.13947	0.0469231	2.3256542	24	1	23 days	0.70	Williams	1998 HC ₁₂₉
1998 HD ₁₂₉	14.5	0.15	19980328	254.09161	315.03711	356.18574	12.75801	0.1689260	2.5333481	20	1	23 days	0.77	Williams	1998 HD ₁₂₉
1998 HH ₁₂₉	15.5	0.15	19980328	78.26230	106.14151	356.17177	6.06846	0.0866550	2.4402782	24	1	40 days	1.20	Williams	1998 HH ₁₂₉
1998 HJ ₁₂₉	16.5	0.15	19980328	344.97705	348.11384	224.83982	3.22888	0.2235600	2.5831698	20	1	23 days	1.31	Williams	1998 HJ ₁₂₉
1998 HK ₁₂₉	14.0	0.15	19980328	194.60980	353.90374	4.38491	14.16024	0.1390354	2.6827681	28	1	29 days	1.10	Williams	1998 HK ₁₂₉
1998 HL ₁₂₉	14.5	0.15	19980328	103.16465	76.25393	347.81500	7.36129	0.2352407	2.5296903	28	1	31 days	1.18	Williams	1998 HL ₁₂₉
1998 HN ₁₂₉	15.0	0.15	19980328	10.59879	327.30809	206.08357	7.70396	0.1591952	2.8000153	27	1	29 days	1.00	Williams	1998 HN ₁₂₉
1998 HO ₁₂₉	14.5	0.15	19980328	169.98304	138.79336	235.67320	2.11651	0.2446828	2.3554311	29	1	31 days	1.26	Williams	1998 HO ₁₂₉
1998 HR ₁₂₉	15.0	0.15	19980328	139.50413	210.84420	195.95765	21.53070	0.0291515	2.6557217	23	1	23 days	1.37	Williams	1998 HR ₁₂₉
1998 HT ₁₂₉	14.5	0.15	19980706	64.36762	297.19740	194.38186	9.13347	0.0952406	3.0753571	38	2	1971–1998	0.87	M-v 5 Williams	32023 1998 HT ₁₂₉
1998 HV ₁₂₉	16.5	0.15	19980706	48.19458	144.44195	14.55418	2.31761	0.1728287	2.3077823	37	1	79 days	0.56	M-v 5 Williams	1998 HV ₁₂₉
1998 HY ₁₂₉	16.0	0.15	19980328	316.41324	68.77014	176.68094	1.29104	0.1453882	2.3913941	22	1	29 days	0.79	Williams	1998 HY ₁₂₉
1998 HA ₁₃₀	15.0	0.15	19980328	12.75462	336.99670	192.47067	12.28965	0.1547358	2.8000525	34	1	31 days	0.96	Williams	1998 HA ₁₃₀
1998 HD ₁₃₀	14.5	0.15	19980328	132.29953	213.35390	189.53714	17.49529	0.1368839	2.8378617	31	1	29 days	1.27	Williams	1998 HD ₁₃₀

1998 HH ₁₃₀	14.5	0.15	19980328	320.54082	43.37853	187.27930	11.69640	0.0354605	2.9971537	34	1	31 days	1.32		Williams		1998 HH ₁₃₀
1998 HP ₁₃₀	16.0	0.15	19980328	303.08052	80.66691	185.67109	5.43532	0.2003609	2.4198712	24	1	31 days	0.77		Williams		1998 HP ₁₃₀
1998 HA ₁₃₃	13.0	0.15	19980706	161.72375	197.74237	206.31107	16.23013	0.0921098	3.1280764	50	2	1995–1998	0.67	M-v	4	Williams	32024 1998 HA ₁₃₃
1998 HQ ₁₃₆	16.5	0.15	19980706	38.96688	147.69518	29.17310	6.04029	0.1128534	2.3845172	25	2	1992–1998	0.82	M-v	4	Williams	32024 1998 HQ ₁₃₆
1998 HR ₁₃₆	15.5	0.15	19980706	350.58301	61.84342	174.08444	3.58168	0.1167120	2.4864833	27	3	1979–1998	0.67	M-v	3	Williams	32024 1998 HR ₁₃₆
1998 HV ₁₃₇	15.0	0.15	19980706	259.79454	334.21400	2.29095	6.81827	0.1247617	2.3514804	29	2	1994–1998	0.73	M-v	5	Williams	32024 1998 HV ₁₃₇
1998 HP ₁₃₉	15.0	0.15	19980417	354.26128	232.80175	340.45548	3.63315	0.0769694	2.1964185	29	1	52 days	0.66			Williams	1998 HP ₁₃₉
1998 HG ₁₄₂	16.9	0.15	19980417	327.33240	39.23234	221.29010	6.19978	0.2461521	2.2980927	12	1	3 days	0.90		E	Nakano	1998 HG ₁₄₂
1998 HE ₁₄₄	15.5	0.15	19980507	355.66819	99.18646	126.15428	6.22437	0.1616341	2.3454768	20	1	37 days	0.76			Williams	1998 HE ₁₄₄
1998 HC ₁₄₆	14.0	0.15	19980706	352.11589	136.01499	106.42339	7.19893	0.0628385	3.1992330	27	2	1997–1998	0.84	M-v	5	Williams	32024 1998 HC ₁₄₆
1998 HJ ₁₄₆	15.0	0.15	19980507	46.79823	121.51215	43.44993	10.87439	0.1280058	2.3473513	31	1	33 days	0.56			Williams	1998 HJ ₁₄₆
1998 HX ₁₄₆	14.5	0.15	19980507	6.20589	105.12224	105.13283	11.81180	0.1479895	2.7012881	25	1	40 days	0.67			Williams	1998 HX ₁₄₆
1998 HT ₁₄₇	14.5	0.15	19980706	327.91072	105.60256	184.07100	14.13589	0.1929319	2.6734444	27	1	70 days	0.61	M-v	4	Williams	32085 1998 HT ₁₄₇
1998 HY ₁₄₇	16.0	0.15	19980507	345.51618	204.91035	45.55098	1.58401	0.1227433	2.1454084	32	1	52 days	0.96			Williams	1998 HY ₁₄₇
1998 HZ ₁₄₇	15.5	0.15	19980706	359.09087	198.28424	58.93995	0.91603	0.1826517	2.3618107	34	3	1977–1998	0.66	M-v	4	Williams	32025 1998 HZ ₁₄₇
1998 HA ₁₄₈	14.5	0.15	19980706	124.42758	238.36206	239.81676	3.54159	0.0814962	2.1742839	23	1	82 days	0.57	M-v	5	Williams	1998 HA ₁₄₈
1998 HE ₁₄₈	14.5	0.15	19980507	338.73901	54.66991	210.61141	2.71582	0.2047667	2.6100442	36	1	52 days	1.15			Williams	1998 HE ₁₄₈
1998 HH ₁₄₈	16.0	0.15	19980706	5.49058	243.47106	5.31877	0.96114	0.1686093	2.3413092	27	2	1995–1998	0.71	M-v	4	Williams	32025 1998 HH ₁₄₈
1998 HK ₁₄₈	15.5	0.15	19980706	1.47299	191.76243	62.79691	3.66273	0.1628947	2.3024897	29	2	1991–1998	0.84	M-v	5	Williams	32025 1998 HK ₁₄₈
1998 HN ₁₄₈	14.0	0.15	19980507	312.27674	120.98561	169.35605	2.01152	0.0830435	2.9341580	18	1	29 days	1.04			Williams	1998 HN ₁₄₈
1998 HO ₁₄₈	15.5	0.15	19980706	328.15553	263.27194	31.02181	2.29927	0.1041939	2.1373717	33	2	1983–1998	0.63	M-v	5	Williams	32026 1998 HO ₁₄₈
1998 HP ₁₄₈	14.5	0.15	19980507	346.73101	198.05707	54.30185	19.12530	0.1207565	3.1365636	17	1	29 days	0.77			Williams	1998 HP ₁₄₈
1998 HU ₁₄₈	15.0	0.15	19980507	325.89140	49.36646	240.40221	3.05603	0.2534204	2.5568478	26	1	54 days	0.90			Williams	1998 HU ₁₄₈
1998 HY ₁₄₈	13.5	0.15	19980706	0.54180	193.74957	56.92169	15.01863	0.0756855	2.5966522	38	1	78 days	0.73	M-v	4	Williams	1998 HY ₁₄₈
1998 HD ₁₄₉	15.0	0.15	19980706	358.51874	25.47821	229.49967	1.33507	0.0876038	2.5281314	9	1	63 days	0.40	M-v	7	Williams	1998 HD ₁₄₉
1998 HF ₁₄₉	15.0	0.15	19980507	339.69788	22.80329	239.40810	11.61630	0.1745918	2.5767008	24	1	30 days	0.80			Williams	1998 HF ₁₄₉
1998 HL ₁₄₉	14.5	0.15	19980706	34.51879	177.38010	31.59871	5.79939	0.1222947	2.5499721	23	1	79 days	0.73	M-v	4	Williams	1998 HL ₁₄₉
1998 HO ₁₄₉	17.0	0.15	19980507	336.99421	284.66765	343.38997	2.92640	0.2008748	2.1533146	14	1	29 days	0.85			Williams	1998 HO ₁₄₉
1998 HQ ₁₄₉	15.0	0.15	19980507	359.87338	332.94289	262.61259	6.66067	0.1005006	2.5419836	23	1	52 days	0.95			Williams	1998 HQ ₁₄₉
1998 HR ₁₄₉	16.0	0.15	19980706	10.29059	230.39323	9.64606	2.72042	0.0393142	2.5967400	27	3	1995–1998	0.66	M-v	4	Williams	32026 1998 HR ₁₄₉
1998 HT ₁₄₉	14.5	0.15	19980507	304.02122	264.22409	43.73254	9.42356	0.1494527	2.7736100	31	1	54 days	0.55			Williams	1998 HT ₁₄₉
1998 HU ₁₄₉	15.0	0.15	19980706	327.32310	282.50392	20.61086	3.31573	0.1790902	2.2723807	32	4	1994–1998	0.83	M-v	2	Williams	32026 1998 HU ₁₄₉
1998 HW ₁₄₉	14.5	0.15	19980507	6.20353	205.48823	22.31228	5.96916	0.1079849	2.3011687	20	1	52 days	0.94			Williams	1998 HW ₁₄₉
1998 HS ₁₅₀	16.0	0.15	19980507	332.27129	190.19124	85.48211	5.69643	0.2499747	2.5716957	26	1	34 days	0.79		D	Williams	1998 HS ₁₅₀
1998 JA	13.0	0.15	19980706	348.08828	124.76068	144.48192	8.06131	0.1401239	3.0849207	58	4	1976–1998	0.59	M-v	3	Williams	32027 1998 JA
1998 JE	14.5	0.15	19980706	259.31581	238.03145	99.93031	3.80006	0.0908512	2.3199672	25	1	67 days	0.54	M-v	5	Williams	32085 1998 JE
1998 JR	14.5	0.15	19980706	291.06187	14.91681	297.12125	3.66035	0.1089052	2.8155868	25	3	1993–1998	0.53	M-v	5	Williams	32027 1998 JR
1998 JU	16.0	0.15	19980706	71.29143	146.91813	4.16770	2.06051	0.1330804	2.3099183	31	2	1994–1998	0.68	M-v	5	Williams	32027 1998 JU
1998 JW	14.5	0.15	19980706	313.17199	66.78899	220.21871	11.69562	0.0839616	2.7189868	47	2	1995–1998	0.66	M-v	4	Williams	32027 1998 JW
1998 JQ ₁	15.5	0.15	19980706	27.24993	355.41047	217.17562	9.71561	0.0962527	2.3126595	28	1	62 days	0.47	M-v	5	Williams	32086 1998 JQ ₁
1998 JU ₁	14.0	0.15	19980507	56.63553	274.06607	209.02658	20.98713	0.3977833	2.3514636	18	1	24 days	0.49			Williams	1998 JU ₁
1998 JV ₁	13.0	0.15	19980706	350.39811	127.04439	122.43637	7.39167	0.0897158	3.1691650	51	2	1997–1998	0.68	M-v	4	Williams	32028 1998 JV ₁
1998 JY ₁	13.5	0.15	19980507	217.67081	79.04790	303.55673	6.08910	0.1221912	2.6352786	15	1	23 days	0.77			Williams	1998 JY ₁
1998 JB ₂	14.5	0.15	19980507	296.10254	245.43658	81.17042	5.54025	0.1012047	2.3869135	39	1	52 days	0.69			Williams	1998 JB ₂
1998 JC ₂	14.5	0.15	19980706	348.90548	155.25718	101.09813	3.24570	0.0145556	2.8645504	46	4	1992–1998	0.66	M-v	1	Williams	32028 1998 JC ₂
1998 JD ₂	15.5	0.15	19980706	339.86909	96.49061	186.93330	4.60741	0.1840320	2.2892304	42	3	1988–1998	0.56	M-v	2	Williams	32028 1998 JD ₂
1998 JE ₂	15.0	0.15	19980706	47.16155	50.47289	140.32928	3.11271	0.1336327	2.4114615	37	3	1991–1998	0.51	M-v	4	Williams	32028 1998 JE ₂
1998 JF ₂	15.0	0.15	19980527	210.47270	288.64578	104.03723	4.72247	0.1297388	2.1985943	28	1	57 days	0.73			Williams	1998 JF ₂
1998 JO ₂	15.0	0.15	19980706	68.02478	87.57534	81.25747	9.62089	0.0643425	2.2878802	39	2	1996–1998	0.44	M-v	3	Williams	32028 1998 JO ₂
1998 JP ₂	15.0	0.15	19980507	296.62648	215.35503	93.23846	8.87867	0.1682305	2.2694741	40	1	54 days	0.72			Williams	1998 JP ₂
1998 JS ₂	15.5	0.15	19980706	55.40083	76.64264	92.78836	7.76636	0.2009859	2.4169964	32	1	85 days	0.43	M-v	4	Williams	1998 JS ₂
1998 JW ₂	15.0	0.15	19980507	340.09761	132.36987	121.45235	6.12699	0.1142071	2.3071783	28	1	40 days	0.61			Williams	1998 JW ₂
1998 JX ₂	13.0	0.15	19980706	300.29181	144.66633	166.31538	10.25236	0.0882473	2.9879533	30	3	1992–1998	0.76	M-v	5	Williams	32029 1998 JX ₂

1998 JA ₃	14.5	0.15	19980706	93.59386	48.96342	96.15106	8.21540	0.0693532	2.3624752	24	1	64 days	0.69	M-v	5	Williams	1998 JA ₃
1998 JD ₃	14.0	0.15	19980507	320.43295	210.19724	74.00296	14.32324	0.1548866	2.6504352	29	1	48 days	0.91			Williams	1998 JD ₃
1998 JE ₃	14.5	0.15	19980706	325.19835	109.49245	184.01088	7.17130	0.1339193	2.3595815	50	4	1988–1998	0.63	M-v	2	Williams	32029 1998 JE ₃
1998 JK ₃	13.5	0.15	19980706	281.52896	214.73885	123.27407	6.33841	0.1577261	3.1227419	26	1	82 days	0.65	M-v	5	Williams	1998 JK ₃
1998 JS ₃	15.0	0.15	19980527	88.08753	351.45110	149.39695	5.84248	0.1161402	3.1188636	19	1	55 days	0.54			Williams	1998 JS ₃
1998 JA ₄	16.5	0.15	19980527	307.59023	225.57641	93.18259	8.17646	0.2173641	2.2611729	19	1	42 days	1.11			Williams	1998 JA ₄
1998 JB ₄	14.0	0.15	19980706	7.74342	25.95904	212.06129	12.23882	0.1314753	2.6998346	39	3	1990–1998	0.61	M-v	3	Williams	32029 1998 JB ₄
1998 JC ₄	13.0	0.15	19980706	170.02930	217.06700	214.06656	8.94904	0.0843076	3.0637125	49	2	1992–1998	0.51	M-v	4	Williams	32029 1998 JC ₄
1998 JE ₄	14.5	0.15	19980507	337.38029	21.93976	235.61789	12.98023	0.1588862	2.7174006	33	1	54 days	0.79			Williams	1998 JE ₄
1998 JF ₄	15.0	0.15	19980706	91.22796	24.50444	111.08391	4.33756	0.1536155	2.6186817	25	1	60 days	0.49	M-v	5	Williams	1998 JF ₄
1998 JG ₄	16.5	0.15	19980527	357.40499	49.15762	192.84577	2.44169	0.1505011	2.3970169	26	1	33 days	0.62			Williams	1998 JG ₄
1998 JH ₄	15.5	0.15	19980527	307.19163	208.17914	85.69201	3.74099	0.0442166	2.6923097	32	1	38 days	0.77			Williams	1998 JH ₄
1998 JJ ₄	15.5	0.15	19980706	306.22233	116.16794	223.52097	9.80864	0.3297116	2.4310150	29	1	68 days	0.66	M-v	5	Williams	1998 JJ ₄
1998 JL ₄	17.0	0.15	19980706	10.00348	65.74475	173.61583	3.94372	0.1521708	2.2948918	20	1	60 days	0.56	M-v	5	Williams	1998 JL ₄
1998 KA	14.0	0.15	19980507	40.62380	300.01633	239.50437	3.65247	0.1189402	3.1473711	39	1	56 days	0.67			Williams	1998 KA
1998 KB	15.5	0.15	19980616	294.98343	129.30309	194.75758	0.99142	0.1306396	2.5410648	18	1	59 days	0.39			Marsden	1998 KB
1998 KC	16.0	0.15	19980507	21.65354	107.59644	67.98563	23.15052	0.2701428	2.4134520	19	1	56 days	0.70			Williams	1998 KC
1998 KK	12.5	0.15	19980706	107.60831	227.95984	245.34920	5.19362	0.1483300	3.0951973	29	2	1990–1998	0.66	M-v	5	Williams	32030 1998 KK
1998 KL	14.5	0.15	19980706	180.51932	242.98126	180.08377	5.44247	0.1612462	2.2942364	32	2	1992–1998	0.59	M-v	5	Williams	32030 1998 KL
1998 KN	15.5	0.15	19980706	324.97668	206.51845	106.81162	2.84219	0.2512332	2.3326733	58	3	1995–1998	0.48	M-v	4	Williams	32030 1998 KN
1998 KU	15.0	0.15	19980527	354.38990	155.43669	96.60597	8.08097	0.0808922	2.3056308	25	1	15 days	0.74			Nakano	1998 KU
1998 KW	16.0	0.15	19980507	311.49506	241.91053	78.55924	14.48309	0.3256379	2.9054584	13	1	17 days	0.62			Williams	1998 KW
1998 KX	15.0	0.15	19980616	76.55365	51.30169	115.08579	7.53957	0.1151048	2.5451430	21	1	55 days	0.59			Marsden	1998 KX
1998 KE ₁	13.0	0.15	19980706	293.95231	257.27740	55.79246	11.93021	0.0755151	3.0518780	24	1	69 days	0.55	M-v	5	Williams	1998 KE ₁
1998 KJ ₁	15.5	0.15	19980706	15.84778	350.91699	236.18877	1.09890	0.1525803	2.6093506	34	2	1995–1998	0.56	M-v	5	Williams	32030 1998 KJ ₁
1998 KK ₁	15.0	0.15	19980706	270.37919	306.17193	47.33881	3.42284	0.1778562	2.2880553	28	3	1978–1998	0.72	M-v	4	Williams	32030 1998 KK ₁
1998 KR ₁	13.0	0.15	19980507	288.01074	270.80814	51.32037	13.24419	0.2020579	2.6960856	39	1	57 days	0.72			Williams	1998 KR ₁
1998 KS ₁	15.0	0.15	19980706	303.61260	83.95426	233.72071	4.70966	0.1708949	2.2270884	42	2	1992–1998	0.54	M-v	4	Williams	32030 1998 KS ₁
1998 KU ₁	14.5	0.15	19980507	326.81120	41.00767	230.54790	8.69854	0.1958374	2.6458568	36	1	32 days	0.89			Williams	1998 KU ₁
1998 KK ₂	14.0	0.15	19980527	296.25044	254.61022	80.67827	14.72187	0.2819170	2.4582379	35	1	55 days	0.70			Williams	1998 KK ₂
1998 KL ₂	15.0	0.15	19980527	329.62908	220.13865	73.89418	13.82775	0.2818044	2.5802471	34	1	40 days	0.74			Williams	1998 KL ₂
1998 KU ₂	17.0	0.15	19980706	343.05562	119.13512	206.67861	4.88839	0.5537578	2.2498706	198	1	92 days	0.49	M-v	4	Williams	32087 1998 KU ₂
1998 KV ₂	17.5	0.15	19980706	116.60304	50.35547	66.91170	13.04399	0.3323661	1.5936324	38	1	38 days	0.63	M-v	6	Williams	1998 KV ₂
1998 KD ₃	21.0	0.15	19980527	11.30939	323.87456	241.75751	29.21342	0.5107245	2.0455677	162	1	28 days	0.63			Williams	1998 KD ₃
1998 KE ₃	15.5	0.15	19980706	35.44571	130.35559	63.03299	47.88462	0.2537856	2.0491121	155	1	78 days	0.66	M-v	4	Williams	1998 KE ₃
1998 KF ₃	19.0	0.15	19980706	31.24599	332.42259	226.71201	27.09294	0.4211103	2.1274622	71	1	65 days	0.61	M-v	5	Williams	1998 KF ₃
1998 KM ₃	19.5	0.15	19980527	322.91617	84.97382	263.55318	4.70609	0.6180864	1.6897407	21	1	24 days	0.73			Marsden	1998 KM ₃
1998 KP ₃	15.5	0.15	19980706	300.43887	104.82582	228.83398	5.81389	0.1364341	2.3562469	28	2	1995–1998	0.53	M-v	4	Williams	32031 1998 KP ₃
1998 KS ₃	14.0	0.15	19980507	175.09607	201.16014	213.35598	6.86380	0.1693827	2.1372413	18	1	2 days	0.53			E Williams	1998 KS ₃
1998 KX ₃	13.5	0.15	19980706	130.13892	326.81365	137.38411	4.06386	0.0882778	3.0975327	39	3	1994–1998	0.58	M-v	4	Williams	32031 1998 KX ₃
1998 KA ₄	15.5	0.15	19980706	334.96062	207.47653	80.73257	7.96409	0.1565025	2.2439017	42	1	72 days	0.59	M-v	5	Williams	1998 KA ₄
1998 KM ₄	15.5	0.15	19980527	2.94673	143.61984	93.77334	5.16674	0.1287938	2.2740702	29	1	55 days	0.68			Williams	1998 KM ₄
1998 KN ₄	14.5	0.15	19980527	348.48501	173.60005	84.07087	10.97032	0.1750217	2.6633892	30	1	38 days	0.71			Williams	1998 KN ₄
1998 KO ₄	14.0	0.15	19980527	328.92335	150.13393	131.33535	3.85096	0.1272000	2.5913477	33	1	56 days	0.80			Williams	1998 KO ₄
1998 KQ ₄	14.5	0.15	19980616	332.16090	122.84892	166.17645	4.16372	0.1688112	2.2559515	37	1	55 days	0.62			Williams	1998 KQ ₄
1998 KS ₄	14.0	0.15	19980527	238.61756	294.99489	79.26780	7.98493	0.1230275	2.4458420	39	1	56 days	0.94			Williams	1998 KS ₄
1998 KT ₄	14.0	0.15	19980507	308.58208	234.61141	81.18071	8.49319	0.2498540	3.2138323	19	1	2 days	0.46			E Williams	1998 KT ₄
1998 KU ₄	14.5	0.15	19980527	271.62663	272.64372	75.32401	7.73124	0.1506840	2.2900714	41	1	57 days	0.99			Williams	1998 KU ₄
1998 KB ₅	16.0	0.15	19980706	341.87415	31.31210	253.13854	4.99014	0.1486779	2.1700193	41	2	1991–1998	0.60	M-v	4	Williams	32031 1998 KB ₅
1998 KC ₅	13.0	0.15	19980706	241.18140	243.25406	137.74704	2.74623	0.1264599	2.9309511	47	5	1974–1998	0.53	M-v	3	Williams	32031 1998 KC ₅
1998 KE ₅	13.0	0.15	19980706	312.19677	184.26884	176.16179	14.76325	0.2125425	3.1409924	30	2	1993–1998	0.59	M-v	3	Marsden	32032 1998 KE ₅
1998 KP ₅	13.0	0.15	19980527	187.45797	270.34355	151.04520	15.58594	0.1838193	3.1667048	16	1	32 days	0.43			Williams	1998 KP ₅
1998 KN ₆	15.0	0.15	19980527	346.30114	183.58866	82.87443	30.80602	0.1382521	2.5530730	22	1	40 days	1.09			Williams	1998 KN ₆

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1998 KP ₆	14.0	0.15	19980507	321.60577	66.07159	212.05078	7.28970	0.0817400	2.7306996	30	1	55 days	0.89		Williams	1998 KP ₆
1998 KU ₆	16.0	0.15	19980527	338.17029	77.55048	196.21217	5.44523	0.1813742	2.1523066	31	1	57 days	0.95		Williams	1998 KU ₆
1998 KX ₆	15.5	0.15	19980706	300.43199	204.05216	131.86825	2.95035	0.1908517	2.2563866	35	2	1997–1998	0.69	M-v 5	Williams	1998 KX ₆
1998 KY ₆	16.0	0.15	19980706	15.05820	7.08703	226.56520	10.46966	0.2129664	2.4518046	22	1	62 days	0.99	M-v 5	Williams	1998 KY ₆
1998 KA ₇	16.0	0.15	19980527	356.78193	16.54620	230.35326	10.82384	0.2068702	2.6703926	21	1	31 days	0.70		Williams	1998 KA ₇
1998 KC ₇	15.5	0.15	19980527	331.62992	207.32505	74.78282	12.89185	0.1839559	2.6728832	22	1	41 days	0.71		Williams	1998 KC ₇
1998 KM ₇	14.0	0.15	19980507	3.25048	152.10175	75.43512	13.14620	0.1004079	3.1465647	23	1	42 days	0.89		Williams	1998 KM ₇
1998 KR ₇	13.5	0.15	19980527	63.23286	82.90501	79.54034	15.34218	0.1316687	2.7938717	26	1	27 days	0.58		Williams	1998 KR ₇
1998 KT ₇	16.5	0.15	19980507	319.71068	235.26535	64.87361	11.04133	0.2806197	2.4982765	15	1	2 days	0.85		E Williams	1998 KT ₇
1998 KV ₇	14.0	0.15	19980706	327.18912	134.72322	149.84532	2.91798	0.0478965	2.9636230	27	2	1992–1998	0.70	M-v 5	Williams	1998 KV ₇
1998 KX ₇	14.0	0.15	19980507	96.40184	58.42178	67.96068	22.90601	0.1203465	2.9025945	16	1	2 days	0.58		E Williams	1998 KX ₇
1998 KZ ₇	13.0	0.15	19980527	286.53575	255.04043	74.63784	17.12175	0.1250751	3.1614515	24	1	27 days	0.94		Williams	1998 KZ ₇
1998 KN ₈	14.0	0.15	19980527	35.35471	123.90857	75.20487	22.68978	0.0767677	3.1262533	22	1	24 days	1.01		Williams	1998 KN ₈
1998 KR ₈	14.5	0.15	19980616	16.76999	94.97787	130.69196	7.33381	0.1457178	2.4378029	27	1	53 days	0.45		Williams	1998 KR ₈
1998 KS ₈	16.0	0.15	19980507	47.41208	30.63555	142.90734	6.97280	0.1276147	2.2349947	16	1	3 days	1.23		Williams	1998 KS ₈
1998 KT ₈	14.0	0.15	19980527	330.87602	163.35049	117.79999	9.13921	0.1889612	2.7993895	26	1	54 days	0.44		Williams	1998 KT ₈
1998 KU ₈	15.5	0.15	19980507	52.48462	14.12028	155.35958	7.16502	0.1270741	2.4851184	15	1	3 days	0.85		E Williams	1998 KU ₈
1998 KX ₈	15.0	0.15	19980527	3.32057	105.08393	129.98341	8.89570	0.1821618	2.7511252	22	1	54 days	0.56		Williams	1998 KX ₈
1998 KY ₈	14.5	0.15	19980527	353.46689	99.16397	151.32497	7.96481	0.1656649	2.3126473	27	1	56 days	0.47		Williams	1998 KY ₈
1998 KZ ₈	13.0	0.15	19980706	190.11129	322.17265	96.54203	15.90918	0.0704486	2.5500962	27	2	1975–1998	0.50	M-v 3	Williams	1998 KZ ₈
1998 KD ₉	14.5	0.15	19980507	38.85885	19.70823	158.06177	12.24774	0.1525704	2.6413466	12	1	48 days	0.35		Williams	1998 KD ₉
1998 KH ₉	18.5	0.15	19980706	2.66860	184.97433	82.81563	17.65579	0.4573380	2.2047778	148	1	45 days	0.53	M-v 5	Williams	1998 KH ₉
1998 KJ ₉	19.5	0.15	19980706	346.54532	259.70526	98.90133	10.95115	0.6409366	1.4511061	154	1	14 days	0.56	M-v 7	Williams	1998 KJ ₉
1998 KK ₉	15.5	0.15	19980706	330.37785	196.61685	100.42761	3.50493	0.1418513	2.3239736	52	1	61 days	0.54	M-v 5	Marsden	1998 KK ₉
1998 KM ₉	15.5	0.15	19980616	133.92115	339.30822	137.17531	7.54394	0.0772700	2.3733587	18	1	51 days	0.48		Marsden	1998 KM ₉
1998 KN ₉	13.5	0.15	19980616	24.27807	31.00979	227.56598	16.14523	0.0692846	2.5688813	21	1	52 days	0.60		Marsden	1998 KN ₉
1998 KU ₁₀	15.5	0.15	19980527	255.17162	217.72265	132.38849	10.92316	0.0966110	3.1124089	11	1	32 days	0.19		Williams	1998 KU ₁₀
1998 KE ₁₁	14.5	0.15	19980527	332.46789	124.98334	153.78100	14.45101	0.1010938	3.1331804	16	1	27 days	1.16		Williams	1998 KE ₁₁
1998 KT ₁₁	16.0	0.15	19980527	261.70709	202.08062	141.14001	10.14782	0.0757188	2.5237722	12	1	34 days	0.33		Williams	1998 KT ₁₁
1998 KY ₁₁	14.5	0.15	19980527	52.74697	7.73711	183.14299	15.85580	0.0464881	3.1844214	11	1	30 days	0.14		Williams	1998 KY ₁₁
1998 KK ₁₆	17.5	0.15	19980706	2.21641	191.92408	59.58151	10.57326	0.4184010	2.8291801	17	1	30 days	0.78	M-v 6	Williams	1998 KK ₁₆
1998 KH ₁₇	16.0	0.15	19980706	357.93869	71.23936	220.38994	22.39242	0.4276697	2.3417966	168	1	64 days	0.53	M-v 5	Williams	1998 KH ₁₇
1998 KK ₁₇	16.5	0.15	19980706	74.06799	333.88068	141.48144	11.14798	0.5246889	1.4256802	126	1	52 days	0.53	M-v 6	Williams	1998 KK ₁₇
1998 KL ₂₂	15.5	0.15	19980507	34.83438	42.80110	139.43372	2.23311	0.1411540	2.2379539	28	1	36 days	0.64		Williams	1998 KL ₂₂
1998 KM ₂₂	15.5	0.15	19980507	314.21506	107.49152	184.67549	3.47146	0.1866865	2.6395062	24	1	32 days	1.12		Williams	1998 KM ₂₂
1998 KR ₂₃	15.5	0.15	19980417	63.15647	27.00754	118.14952	5.06877	0.1310363	2.3268158	19	1	59 days	0.71		Williams	1998 KR ₂₃
1998 KN ₂₄	12.0	0.15	19980706	276.23427	287.81859	45.74137	16.30097	0.0728225	3.2084557	50	4	1980–1998	0.59	M-v 3	Williams	1998 KN ₂₄
1998 KK ₂₆	15.0	0.15	19980527	32.52066	317.26643	282.02508	12.27818	0.1441509	2.6098636	24	1	36 days	0.90		Marsden	1998 KK ₂₆
1998 KT ₂₆	13.0	0.15	19980527	127.36688	350.54773	115.83239	20.55537	0.1325385	3.2117749	17	1	10 days	0.68		Williams	1998 KT ₂₆
1998 KW ₂₆	15.0	0.15	19980616	328.49184	236.97089	74.28347	13.33859	0.2852025	2.5655253	42	1	56 days	0.88		Williams	1998 KW ₂₆
1998 KZ ₂₆	15.5	0.15	19980706	274.86685	304.62157	43.76759	9.56394	0.1331435	2.5583939	19	1	61 days	0.67	M-v 6	Williams	1998 KZ ₂₆
1998 KH ₂₇	15.0	0.15	19980507	248.47974	191.08086	167.26821	3.44273	0.1567689	2.1545897	33	1	48 days	1.07		Williams	1998 KH ₂₇
1998 KF ₂₈	15.0	0.15	19980616	333.14953	356.90021	287.68375	5.38320	0.1680731	2.2771952	24	1	52 days	0.72		Williams	1998 KF ₂₈
1998 KO ₂₈	15.0	0.15	19980527	306.84394	217.48977	78.94468	4.97258	0.0645543	2.7058558	12	1	31 days	0.94		Williams	1998 KO ₂₈
1998 KD ₂₉	14.5	0.15	19980527	122.32164	33.25240	70.70310	14.59395	0.1175881	2.5406039	25	1	43 days	0.87		Williams	1998 KD ₂₉
1998 KR ₂₉	12.5	0.15	19980527	198.63766	270.29308	132.26720	6.47896	0.0775493	2.7609151	24	1	44 days	0.78		Williams	1998 KR ₂₉
1998 KU ₂₉	13.5	0.15	19980527	15.71031	125.37596	92.15670	8.45693	0.1083113	3.9707839	15	1	31 days	0.96		Williams	1998 KU ₂₉
1998 KH ₃₀	15.0	0.15	19980616	57.71906	258.61681	282.73664	7.18997	0.0833299	2.3075160	27	1	52 days	0.56		Williams	1998 KH ₃₀
1998 KL ₃₀	15.0	0.15	19980616	321.61208	8.29035	292.83679	5.00146	0.1584970	2.2503366	21	1	52 days	0.66		Williams	1998 KL ₃₀
1998 KP ₃₀	15.0	0.15	19980507	58.47807	108.41138	52.25761	21.24520	0.1676186	3.2083193	16	1	5 days	0.69		Williams	1998 KP ₃₀
1998 KT ₃₀	16.5	0.15	19980527	23.56635	166.56262	46.68761	4.27860	0.0819176	2.5005615	16	1	12 days	0.74		Williams	1998 KT ₃₀
1998 KW ₃₀	14.5	0.15	19980527	262.31049	291.74622	62.81382	9.99444	0.1616253	2.9832885	14	1	34 days	0.93		Williams	1998 KW ₃₀
1998 KX ₃₀	16.0	0.15	19980527	49.79034	307.86078	232.52033	2.80845	0.1108243	2.3085435	11	1	30 days	0.54		Williams	1998 KX ₃₀

1998 KM ₃₁	14.0	0.15	19980527	313.24694	202.79576	88.30376	11.52299	0.0521133	2.9829976	22	1	38 days	0.62	Williams	1998 KM ₃₁
1998 KN ₃₁	16.0	0.15	19980527	16.66100	118.23007	98.34144	7.34589	0.1892294	2.6332494	16	1	30 days	0.64	Williams	1998 KN ₃₁
1998 KV ₃₁	13.5	0.15	19980527	312.56542	221.17828	68.51697	13.53475	0.0303908	2.8686791	19	1	36 days	0.96	Williams	1998 KV ₃₁
1998 KC ₃₂	14.5	0.15	19980527	143.40115	9.51926	78.47109	3.52984	0.1559318	2.4316428	18	1	41 days	0.83	Williams	1998 KC ₃₂
1998 KE ₃₂	16.0	0.15	19980527	320.34979	233.98014	68.18157	4.47755	0.2328291	2.6761187	13	1	34 days	0.45	Williams	1998 KE ₃₂
1998 KH ₃₂	15.0	0.15	19980527	282.56372	101.48747	238.95831	1.96804	0.1928530	2.5338103	16	1	36 days	0.96	Williams	1998 KH ₃₂
1998 KO ₃₂	16.0	0.15	19980527	333.61516	163.57506	126.26316	3.82404	0.3064362	2.7795727	14	1	30 days	0.80	Williams	1998 KO ₃₂
1998 KV ₃₂	14.5	0.15	19980616	329.66188	31.41486	262.01363	6.28550	0.1853183	2.3540016	24	1	50 days	0.52	Williams	1998 KV ₃₂
1998 KJ ₃₃	16.0	0.15	19980527	289.99741	78.94098	252.09017	4.88449	0.1626216	2.3200039	18	1	34 days	0.66	Williams	1998 KJ ₃₃
1998 KR ₃₃	17.0	0.15	19980527	39.93816	125.75320	65.89887	2.60753	0.1308858	2.1883808	15	1	12 days	0.82	Williams	1998 KR ₃₃
1998 KU ₃₃	14.5	0.15	19980527	268.93404	258.63561	94.38153	1.80819	0.1822896	2.7551268	15	1	36 days	0.82	Williams	1998 KU ₃₃
1998 KV ₃₃	15.0	0.15	19980527	347.93171	159.82329	99.92882	0.82504	0.1835489	3.0992062	14	1	34 days	0.53	Williams	1998 KV ₃₃
1998 KZ ₃₃	15.0	0.15	19980527	276.11927	283.60698	67.06297	13.65227	0.2228064	2.5999462	15	1	34 days	0.66	Williams	1998 KZ ₃₃
1998 KF ₃₄	16.0	0.15	19980706	36.15486	28.47797	177.50871	4.75687	0.1506514	2.6088772	16	1	63 days	0.47	M-v Williams	1998 KF ₃₄
1998 KG ₃₄	15.5	0.15	19980507	9.70935	5.06954	219.20375	11.93547	0.1220216	2.7147261	10	1	4 days	0.77	Williams	1998 KG ₃₄
1998 KH ₃₄	15.5	0.15	19980706	21.56796	94.65569	134.35960	4.85852	0.1187837	2.3072410	25	1	81 days	0.64	M-v Williams	32089 1998 KH ₃₄
1998 KO ₃₄	15.0	0.15	19980527	54.67519	79.08458	88.84598	12.00618	0.1741700	2.6510905	21	1	38 days	0.48	Williams	1998 KO ₃₄
1998 KW ₃₄	15.5	0.15	19980706	335.67492	108.13100	183.15260	5.08706	0.1861301	2.5448729	29	3	1995–1998	0.67	M-v Williams	32033 1998 KW ₃₄
1998 KX ₃₄	16.0	0.15	19980527	353.10428	44.66672	206.55032	7.27655	0.0914264	2.2956658	18	1	42 days	0.87	Williams	1998 KX ₃₄
1998 KY ₃₄	15.0	0.15	19980527	299.64903	142.45232	169.70682	4.32873	0.0914761	2.7997674	14	1	38 days	0.54	Williams	1998 KY ₃₄
1998 KF ₃₅	13.5	0.15	19980527	275.45330	272.14323	72.00097	7.02027	0.1533808	2.4477860	33	1	44 days	0.60	Williams	1998 KF ₃₅
1998 KG ₃₅	15.0	0.15	19980527	284.77317	264.13586	76.14953	5.64995	0.1964170	2.5157770	15	1	40 days	0.76	Williams	1998 KG ₃₅
1998 KQ ₃₅	15.0	0.15	19980527	307.27377	64.88486	241.62265	5.78372	0.1117064	2.3787603	25	1	41 days	0.98	Williams	1998 KQ ₃₅
1998 KA ₃₆	14.0	0.15	19980527	85.18740	254.97060	244.44818	10.99101	0.1644302	2.5919963	24	1	41 days	0.87	Williams	1998 KA ₃₆
1998 KE ₃₇	15.5	0.15	19980527	349.25215	40.86543	216.61781	3.57683	0.1180610	2.2028235	16	1	38 days	0.85	Williams	1998 KE ₃₇
1998 KP ₃₇	15.5	0.15	19980507	94.04207	333.48166	163.05658	5.04210	0.0684922	2.5681940	12	1	4 days	0.81	Williams	1998 KP ₃₇
1998 KD ₃₈	13.0	0.15	19980527	266.98411	284.17350	78.06495	14.74150	0.2302608	2.8944948	16	1	38 days	0.61	Williams	1998 KD ₃₈
1998 KG ₃₈	13.5	0.15	19980706	267.34003	182.74325	173.71233	2.87928	0.0995291	2.7890741	19	2	1985–1998	0.88	M-v Williams	32033 1998 KG ₃₈
1998 KQ ₃₈	15.0	0.15	19980527	51.66817	154.51674	25.34096	2.54113	0.1390783	2.3616188	22	1	36 days	1.28	Williams	1998 KQ ₃₈
1998 KZ ₃₈	13.5	0.15	19980527	343.09237	5.51506	262.02873	13.26885	0.1391296	2.5728049	21	1	41 days	0.56	Williams	1998 KZ ₃₈
1998 KJ ₃₉	16.5	0.15	19980527	323.50210	233.03612	66.66457	6.60654	0.2086393	2.3637558	22	1	27 days	0.51	Williams	1998 KJ ₃₉
1998 KQ ₃₉	15.0	0.15	19980527	315.28297	238.52923	85.48703	5.43628	0.3268972	2.5975183	25	1	38 days	0.78	Williams	1998 KQ ₃₉
1998 KS ₃₉	14.0	0.15	19980706	170.47469	279.23915	162.84888	2.33606	0.0331258	2.8325497	21	3	1996–1998	0.63	M-v Williams	32033 1998 KS ₃₉
1998 KF ₄₀	13.5	0.15	19980527	98.08823	268.27912	226.12057	12.55422	0.1196220	2.6101103	18	1	35 days	0.55	Williams	1998 KF ₄₀
1998 KN ₄₀	17.5	0.15	19980507	331.76129	184.33258	96.16407	7.10318	0.2182622	2.2605390	11	1	2 days	0.77	Williams	1998 KN ₄₀
1998 KE ₄₁	14.0	0.15	19980706	49.66867	312.44866	242.32846	17.02740	0.1105467	3.0771865	21	2	1995–1998	0.65	M-v Williams	32033 1998 KE ₄₁
1998 KK ₄₂	13.0	0.15	19980527	246.28551	130.44944	217.70410	23.08745	0.0046167	3.1164742	15	1	11 days	0.45	Williams	1998 KK ₄₂
1998 KO ₄₂	15.0	0.15	19980706	0.54752	172.80735	73.42935	13.90070	0.1913899	2.5383218	39	1	74 days	0.65	M-v Williams	1998 KO ₄₂
1998 KR ₄₂	14.0	0.15	19980706	64.24554	350.05377	190.18647	12.96052	0.0999257	2.7237103	38	2	1977–1998	0.89	M-v Williams	32033 1998 KR ₄₂
1998 KR ₄₃	14.5	0.15	19980527	353.73533	177.45062	70.85580	25.03183	0.1427798	2.3339057	29	1	35 days	0.50	Williams	1998 KR ₄₃
1998 KH ₄₄	13.0	0.15	19980527	329.64646	48.61442	245.11075	11.71467	0.2066988	2.9320364	18	1	33 days	0.46	Williams	1998 KH ₄₄
1998 KW ₄₄	13.0	0.15	19980527	56.35283	315.58717	224.40965	13.28990	0.1195358	3.1910553	18	1	33 days	0.85	Williams	1998 KW ₄₄
1998 KL ₄₅	13.5	0.15	19980527	0.76785	4.22466	243.54008	9.08357	0.0759741	2.9959852	15	1	11 days	0.68	Marsden	1998 KL ₄₅
1998 KN ₄₅	13.5	0.15	19980527	0.38525	171.43341	77.56304	2.10193	0.0981441	3.2170700	18	1	33 days	0.97	Williams	1998 KN ₄₅
1998 KP ₄₅	13.0	0.15	19980527	173.61905	183.50465	250.22738	23.34699	0.2375338	2.9975247	15	1	11 days	1.10	E Marsden	1998 KP ₄₅
1998 KQ ₄₅	14.5	0.15	19980527	1.79715	180.04693	66.67784	3.44982	0.0638169	2.3543936	15	1	11 days	0.89	E Marsden	1998 KQ ₄₅
1998 KS ₄₅	14.0	0.15	19980527	39.26407	138.77498	51.10259	3.28208	0.2368160	3.0459590	19	1	35 days	1.04	Williams	1998 KS ₄₅
1998 KT ₄₅	16.0	0.15	19980527	326.58765	241.42448	63.34323	4.86561	0.2586025	2.3470891	24	1	40 days	0.80	Williams	1998 KT ₄₅
1998 KU ₄₅	14.5	0.15	19980527	289.62555	90.95710	248.51731	15.35770	0.1697462	2.6412390	20	1	11 days	0.96	Marsden	1998 KU ₄₅
1998 KW ₄₅	16.0	0.15	19980527	46.12537	112.39935	83.28818	6.92526	0.0735863	2.2387455	20	1	12 days	1.13	Marsden	1998 KW ₄₅
1998 KX ₄₅	16.0	0.15	19980527	320.70314	181.63376	121.20660	2.85368	0.1781320	2.2838084	12	1	10 days	0.81	Marsden	1998 KX ₄₅
1998 KY ₄₅	16.0	0.15	19980527	327.71202	208.32643	92.09982	6.15715	0.2474708	2.5177681	11	1	10 days	1.04	E Marsden	1998 KY ₄₅
1998 KD ₄₆	12.5	0.15	19980527	16.28465	124.61253	105.94618	8.18348	0.0753147	3.9659702	17	1	35 days	0.73	Williams	1998 KD ₄₆

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1998 KL ₄₆	15.5	0.15	19980616	342.21370	172.37715	113.48975	6.22421	0.2294680	2.3800157	25	1	55 days	0.56		Williams		1998 KL ₄₆
1998 KM ₄₆	14.5	0.15	19980706	185.94695	243.50683	190.81577	6.16324	0.0765708	2.2913216	24	3	1992–1998	0.78	M-v 4	Williams	32033	1998 KM ₄₆
1998 KO ₄₆	14.5	0.15	19980527	353.12712	133.24509	124.24836	5.55402	0.0572358	2.6003238	18	1	35 days	0.80		Williams		1998 KO ₄₆
1998 KU ₄₆	15.0	0.15	19980527	114.97983	276.12255	215.68430	5.05326	0.0307769	2.1797762	17	1	35 days	0.76		Williams		1998 KU ₄₆
1998 KV ₄₆	15.5	0.15	19980527	5.41222	10.21436	231.28293	3.73100	0.1847341	2.3211592	21	1	35 days	0.70		Williams		1998 KV ₄₆
1998 KX ₄₆	15.0	0.15	19980527	41.50936	329.06552	227.92064	1.40053	0.1361234	2.3323446	27	1	41 days	0.87		Williams		1998 KX ₄₆
1998 KY ₄₆	15.5	0.15	19980527	344.56682	196.29230	73.70168	2.96965	0.1354416	2.2976062	26	1	35 days	0.85		Williams		1998 KY ₄₆
1998 KD ₄₇	15.5	0.15	19980527	344.30929	42.36913	228.77496	3.80804	0.1429436	2.2133109	15	1	11 days	0.76		Marsden		1998 KD ₄₇
1998 KE ₄₇	15.5	0.15	19980527	353.44831	30.47953	228.65269	3.23422	0.1402336	2.2945062	27	1	35 days	0.79		Williams		1998 KE ₄₇
1998 KF ₄₇	13.0	0.15	19980527	354.84388	135.80441	123.20510	2.46622	0.1528392	3.2160945	23	1	35 days	0.76		Williams		1998 KF ₄₇
1998 KH ₄₇	13.0	0.15	19980527	70.18913	300.56670	236.30364	12.30265	0.0431604	3.0545443	23	1	35 days	1.02		Williams		1998 KH ₄₇
1998 KJ ₄₇	14.5	0.15	19980527	10.90866	29.62245	206.96932	4.26840	0.1267653	2.6124817	19	1	35 days	0.75		Williams		1998 KJ ₄₇
1998 KK ₄₇	15.5	0.15	19980527	346.04323	179.10899	90.49773	7.48170	0.1700885	2.2759584	20	1	41 days	0.70		Williams		1998 KK ₄₇
1998 KL ₄₇	14.5	0.15	19980527	75.86256	66.88289	95.74509	13.73083	0.1010405	2.5709465	16	1	35 days	0.83		Williams		1998 KL ₄₇
1998 KM ₄₇	12.0	0.15	19980527	240.68681	146.94152	231.77292	20.87514	0.0662436	3.2304968	19	1	34 days	0.84		Williams		1998 KM ₄₇
1998 KT ₄₇	13.5	0.15	19980527	4.57863	163.65868	82.80374	18.67131	0.0705251	3.1839676	17	1	33 days	1.21		Williams		1998 KT ₄₇
1998 KU ₄₇	12.0	0.15	19980527	202.75141	186.13004	228.39829	9.26000	0.0963972	2.9875082	18	1	35 days	0.52		Williams		1998 KU ₄₇
1998 KX ₄₇	14.0	0.15	19980527	54.07731	121.94632	71.34715	8.71670	0.0530482	2.3646600	19	1	35 days	0.87		Williams		1998 KX ₄₇
1998 KY ₄₇	15.0	0.15	19980527	344.99988	137.60062	132.90478	4.68651	0.1260890	2.2300729	25	1	35 days	0.64		Williams		1998 KY ₄₇
1998 KA ₄₈	15.5	0.15	19980527	322.36417	206.95408	103.25643	7.66138	0.2332148	2.2932545	19	1	35 days	0.81		Williams		1998 KA ₄₈
1998 KB ₄₈	14.5	0.15	19980527	320.74592	167.76626	130.73844	3.65812	0.0844987	2.3432857	18	1	35 days	0.84		Williams		1998 KB ₄₈
1998 KC ₄₈	15.0	0.15	19980527	4.63393	169.87002	76.19441	16.26598	0.1640416	2.4023730	15	1	35 days	0.90		Williams		1998 KC ₄₈
1998 KD ₄₈	14.5	0.15	19980527	22.70345	140.60490	85.03781	13.51238	0.1096925	2.6229616	16	1	35 days	0.85		Williams		1998 KD ₄₈
1998 KE ₄₈	15.0	0.15	19980527	2.29697	124.79691	125.94196	2.92842	0.0952304	2.2674615	19	1	35 days	0.78		Williams		1998 KE ₄₈
1998 KH ₄₈	16.0	0.15	19980527	347.50431	166.55809	102.60531	5.67907	0.2242897	2.2224523	17	1	35 days	0.71		Williams		1998 KH ₄₈
1998 KL ₄₈	15.0	0.15	19980527	268.06227	244.27760	116.58421	7.03759	0.1454148	2.2743535	18	1	35 days	0.84		Williams		1998 KL ₄₈
1998 KQ ₄₈	14.5	0.15	19980527	30.25795	53.88434	160.04077	4.01335	0.1464277	2.5618722	19	1	35 days	1.11		Williams		1998 KQ ₄₈
1998 KS ₄₈	14.0	0.15	19980527	320.88705	196.77978	115.86507	6.77756	0.2188486	2.6322768	20	1	35 days	0.76		Williams		1998 KS ₄₈
1998 KT ₄₈	14.0	0.15	19980527	293.69362	244.62098	100.92189	13.81662	0.1976400	2.6401475	18	1	35 days	1.03		Williams		1998 KT ₄₈
1998 KV ₄₈	13.0	0.15	19980706	7.18798	134.51765	98.68117	13.00297	0.1405487	3.1666157	25	1	65 days	0.69	M-v 4	Williams		1998 KV ₄₈
1998 KW ₄₈	14.0	0.15	19980706	25.73763	124.89689	90.50615	12.54944	0.1394978	2.6792474	31	1	72 days	0.62	M-v 4	Williams		1998 KW ₄₈
1998 KX ₄₈	12.5	0.15	19980706	347.29931	142.46872	116.55457	10.91458	0.0509282	3.0089687	37	3	1992–1998	0.64	M-v 3	Williams	32034	1998 KX ₄₈
1998 KF ₄₉	14.5	0.15	19980706	45.19020	80.71645	116.83433	7.19092	0.0802102	2.7103533	36	2	1994–1998	0.78	M-v 5	Williams	32034	1998 KF ₄₉
1998 KS ₄₉	14.5	0.15	19980527	353.69553	87.86114	160.26073	14.88708	0.1156148	2.6198601	27	1	26 days	0.92		Williams		1998 KS ₄₉
1998 KA ₅₀	14.0	0.15	19980527	338.23993	187.31065	90.74013	14.55267	0.2521288	3.0806597	27	1	39 days	0.75		Williams		1998 KA ₅₀
1998 KD ₅₀	13.0	0.15	19980527	291.83709	132.84556	184.57052	11.42618	0.0684936	3.3741122	24	1	36 days	0.97		Williams		1998 KD ₅₀
1998 KH ₅₀	14.0	0.15	19980527	278.10634	191.34620	134.67353	11.61847	0.0294504	3.1113307	19	1	36 days	0.77		Williams		1998 KH ₅₀
1998 KR ₅₀	14.0	0.15	19980527	327.18364	177.98821	105.88018	15.49474	0.1485150	2.7015664	24	1	36 days	0.58		Williams		1998 KR ₅₀
1998 KT ₅₀	13.0	0.15	19980527	167.61246	270.71663	162.12245	13.10750	0.0628324	3.1576733	19	1	27 days	0.99		Williams		1998 KT ₅₀
1998 KV ₅₀	15.0	0.15	19980527	335.13420	82.06267	194.24857	13.02400	0.1512519	2.6046301	16	1	23 days	0.51		Williams		1998 KV ₅₀
1998 KW ₅₀	15.0	0.15	19980527	14.01671	76.75021	148.15409	9.07971	0.1121485	2.5586402	15	1	34 days	0.45		Williams		1998 KW ₅₀
1998 KB ₅₁	14.0	0.15	19980706	13.87566	59.77163	179.00802	8.51744	0.1067999	2.5162668	43	5	1982–1998	0.62	M-v 4	Williams	32034	1998 KB ₅₁
1998 KD ₅₁	13.0	0.15	19980706	10.48416	110.81357	130.34755	8.78466	0.1475334	2.7125251	41	3	1966–1998	0.53	M-v 3	Williams	32034	1998 KD ₅₁
1998 KE ₅₁	14.5	0.15	19980527	25.59290	7.36704	205.62413	12.95523	0.1055615	2.6985708	24	1	34 days	0.76		Williams		1998 KE ₅₁
1998 KF ₅₁	14.0	0.15	19980527	84.69329	292.15292	214.21904	14.85879	0.1171654	2.5307471	19	1	27 days	0.84		Williams		1998 KF ₅₁
1998 KN ₅₁	14.0	0.15	19980527	269.96755	224.30717	123.29766	11.54336	0.1241586	2.9797237	18	1	27 days	1.01		Williams		1998 KN ₅₁
1998 KQ ₅₁	13.5	0.15	19980706	165.97575	278.14025	163.84263	11.16560	0.0896199	2.9848024	36	2	1997–1998	0.70	M-v 5	Williams	32034	1998 KQ ₅₁
1998 KS ₅₁	14.5	0.15	19980706	315.19066	139.50126	178.71735	10.96857	0.1879891	2.5435569	29	2	1978–1998	0.70	M-v 5	Williams	32034	1998 KS ₅₁
1998 KT ₅₁	14.5	0.15	19980527	26.44767	40.87957	170.49583	11.17187	0.0893368	2.6995326	19	1	34 days	0.63		Williams		1998 KT ₅₁
1998 KU ₅₁	13.5	0.15	19980706	316.73724	168.13376	134.07040	11.71556	0.0977871	3.0181352	26	2	1993–1998	0.73	M-v 4	Williams	32034	1998 KU ₅₁
1998 KW ₅₁	13.5	0.15	19980616	228.67240	266.32100	123.47572	13.68357	0.1693165	2.5763294	27	1	53 days	0.75		Williams		1998 KW ₅₁
1998 KX ₅₁	15.5	0.15	19980527	29.01178	43.67830	156.17093	10.17303	0.2031240	2.3489703	25	1	27 days	1.05		Williams		1998 KX ₅₁
1998 KL ₅₂	14.0	0.15	19980527	343.98950	56.47178	209.55165	12.26981	0.1117828	2.7973827	21	1	34 days	0.66		Williams		1998 KL ₅₂

1998 KE ₅₃	15.0	0.15	19980527	324.50754	191.73985	105.79489	15.43603	0.2132970	2.7176463	18	1	27 days	0.89		Williams	1998 KE ₅₃
1998 KF ₅₃	14.0	0.15	19980527	15.74729	83.08998	140.41410	11.17073	0.1434423	2.6594150	26	1	51 days	0.55		Williams	1998 KF ₅₃
1998 KG ₅₃	15.0	0.15	19980527	339.67690	87.19877	185.84919	14.84988	0.1506996	2.6565748	24	1	33 days	0.94		Williams	1998 KG ₅₃
1998 KP ₅₃	14.5	0.15	19980706	3.51493	118.81777	132.42700	10.81369	0.1643936	3.1593817	23	3	1977–1998	0.86	M-v 3	Williams	1998 KP ₅₃
1998 KS ₅₃	14.0	0.15	19980527	323.40299	159.27570	134.23086	9.88934	0.1300769	2.7786338	18	1	27 days	0.60		Williams	1998 KS ₅₃
1998 KY ₅₃	13.5	0.15	19980527	317.35854	185.12429	109.34536	11.07828	0.0568520	3.0320388	17	1	32 days	0.95		Williams	1998 KY ₅₃
1998 KA ₅₄	13.5	0.15	19980527	69.45850	322.15254	210.89263	13.91536	0.0580039	2.5595388	18	1	33 days	0.74		Williams	1998 KA ₅₄
1998 KE ₅₄	14.0	0.15	19980706	338.26238	141.24043	148.21317	16.10041	0.1609793	2.6021549	21	1	74 days	0.45	M-v 4	Williams	1998 KE ₅₄
1998 KF ₅₄	13.0	0.15	19980706	331.49349	169.27576	121.02164	16.43549	0.1140194	3.3198006	22	1	64 days	0.62	M-v 5	Williams	1998 KF ₅₄
1998 KH ₅₄	14.0	0.15	19980706	354.60259	118.87299	151.29759	9.26555	0.1707392	2.4479096	20	1	64 days	0.53	M-v 4	Williams	1998 KH ₅₄
1998 KM ₅₄	15.5	0.15	19980706	23.40067	115.09115	115.40076	10.88464	0.1253089	2.5802508	22	2	1997–1998	0.71	M-v 4	Williams	1998 KM ₅₄
1998 KP ₅₄	13.5	0.15	19980527	295.17353	232.99281	97.68482	13.87890	0.1525057	2.7756658	27	1	39 days	0.83		Williams	1998 KP ₅₄
1998 KR ₅₄	14.0	0.15	19980706	235.03707	288.63407	104.49340	14.04157	0.1208795	2.3968638	26	2	1982–1998	0.96	M-v 5	Williams	1998 KR ₅₄
1998 KS ₅₄	14.0	0.15	19980527	37.66083	51.66020	155.08011	7.63030	0.0772945	2.5687754	21	1	39 days	0.75		Williams	1998 KS ₅₄
1998 KU ₅₄	16.0	0.15	19980527	334.20857	122.91134	166.13046	10.62965	0.2277034	2.4168663	20	1	32 days	0.84		Williams	1998 KU ₅₄
1998 KV ₅₄	12.5	0.15	19980527	36.90996	76.50572	124.62226	23.12889	0.1098995	3.1190764	32	1	38 days	0.98		Williams	1998 KV ₅₄
1998 KX ₅₄	13.5	0.15	19980706	61.92501	79.85384	103.88255	23.37248	0.0865247	3.1747592	19	1	61 days	0.80	M-v 5	Williams	1998 KX ₅₄
1998 KD ₅₅	15.5	0.15	19980527	8.51383	93.98622	141.73891	5.58816	0.2309474	2.5542302	27	1	34 days	1.01		Williams	1998 KD ₅₅
1998 KE ₅₅	16.0	0.15	19980527	17.71837	69.36907	156.46962	6.55526	0.1671684	2.4424245	17	1	33 days	0.91		Williams	1998 KE ₅₅
1998 KF ₅₅	14.0	0.15	19980527	333.04297	81.28810	214.09169	15.43853	0.2172245	3.1516203	17	1	33 days	0.85		Williams	1998 KF ₅₅
1998 KH ₅₅	13.0	0.15	19980706	336.62460	152.70757	131.73370	16.93091	0.0657182	3.0346665	21	1	64 days	0.55	M-v 5	Williams	1998 KH ₅₅
1998 KK ₅₅	13.5	0.15	19980527	189.24848	242.16890	182.57477	9.58197	0.0314129	2.7391263	15	1	33 days	0.64		Williams	1998 KK ₅₅
1998 KL ₅₅	13.5	0.15	19980706	332.64493	90.66437	201.53373	9.12133	0.0681160	3.0579492	20	1	65 days	0.56	M-v 5	Williams	1998 KL ₅₅
1998 KN ₅₅	14.5	0.15	19980706	160.73322	278.56706	177.30470	9.04649	0.1354491	2.7927995	18	1	62 days	0.75	M-v 6	Williams	1998 KN ₅₅
1998 KR ₅₅	15.0	0.15	19980616	347.92669	113.01155	160.25829	9.22940	0.0394243	2.9714514	19	1	56 days	0.66		Williams	1998 KR ₅₅
1998 KT ₅₅	14.5	0.15	19980527	323.07416	218.21678	91.43694	17.55956	0.2320947	2.6585892	18	1	34 days	0.68		Williams	1998 KT ₅₅
1998 KV ₅₅	15.0	0.15	19980527	307.76327	190.23480	134.99007	5.89291	0.1897164	2.2708575	19	1	34 days	0.94		Williams	1998 KV ₅₅
1998 KX ₅₅	15.0	0.15	19980527	0.18493	49.74152	204.17467	9.24129	0.1405563	2.4041976	22	1	33 days	0.52		Williams	1998 KX ₅₅
1998 KC ₅₆	14.0	0.15	19980527	168.13401	273.56905	172.58069	12.30172	0.1329774	2.3469393	16	1	27 days	0.90		Williams	1998 KC ₅₆
1998 KG ₅₆	15.0	0.15	19980527	94.63048	19.47029	123.66688	24.35385	0.0550497	1.9710537	15	1	27 days	0.63		Williams	1998 KG ₅₆
1998 KH ₅₆	15.5	0.15	19980527	17.00391	106.14342	114.99827	25.76466	0.1570771	1.9210907	30	1	27 days	0.79		Williams	1998 KH ₅₆
1998 KJ ₅₆	15.0	0.15	19980527	256.92204	167.07152	197.64321	20.85324	0.0760788	1.9151796	17	1	31 days	0.83		Williams	1998 KJ ₅₆
1998 KK ₅₆	16.5	0.15	19980706	10.79390	127.18287	106.37851	25.68900	0.5143284	3.1637040	125	1	45 days	0.46	M-v 4	Williams	1998 KK ₅₆
1998 KN ₅₆	13.5	0.15	19980706	279.07974	335.40861	353.12430	3.61819	0.1265474	3.0106883	23	2	1992–1998	0.85	M-v 5	Williams	1998 KN ₅₆
1998 KE ₅₈	15.5	0.15	19980527	330.82946	163.27536	142.31886	10.66770	0.2269678	2.7302619	22	1	28 days	0.65		Williams	1998 KE ₅₈
1998 KG ₅₈	14.6	0.15	19980527	319.64722	125.21419	170.80177	14.55237	0.1238625	2.5527093	32	1	33 days	0.83		Nakano	1998 KG ₅₈
1998 KH ₅₈	15.0	0.15	19980507	325.15803	242.41307	36.44783	17.09716	0.1954477	3.1327879	25	1	37 days	0.77		Williams	1998 KH ₅₈
1998 KJ ₅₈	16.0	0.15	19980527	147.73212	212.32420	237.87558	4.97223	0.0714425	2.2796713	17	1	38 days	0.55		Williams	1998 KJ ₅₈
1998 KK ₅₈	16.5	0.15	19980527	347.24784	257.78516	357.98814	1.70643	0.0817806	2.8706107	7	1	11 days	0.29		Williams	1998 KK ₅₈
1998 KN ₅₈	15.5	0.15	19980507	14.35596	144.57390	61.86099	17.45686	0.1971650	2.6734241	30	1	35 days	0.89		Williams	1998 KN ₅₈
1998 KR ₆₁	15.5	0.15	19980527	359.88595	121.80505	128.31935	11.86362	0.2788327	2.2990590	30	1	52 days	0.59		Williams	1998 KR ₆₁
1998 KS ₆₁	15.5	0.15	19980527	12.10483	17.63408	217.35882	12.31376	0.2029670	2.5741027	17	1	33 days	0.72		Williams	1998 KS ₆₁
1998 KY ₆₁	7.5	0.15	19980527	0.06297	180.71388	122.89780	2.02161	0.0000000	46.1019689	42	1	42 days	0.41	E	Marsden	1998 KY ₆₁
1998 KG ₆₂	6.5	0.15	19980527	0.06529	326.17515	337.31861	0.77939	0.0000000	45.0046390	41	1	42 days	0.34	E	Marsden	1998 KG ₆₂
1998 KN ₆₃	14.0	0.15	19980527	276.05850	252.18157	84.18838	13.43739	0.1175653	2.7487851	15	1	38 days	0.68		Williams	1998 KN ₆₃
1998 KU ₆₄	16.0	0.15	19980527	18.72388	355.23770	224.98749	7.67693	0.1608479	2.2149451	16	1	40 days	0.85		Williams	1998 KU ₆₄
1998 KA ₆₅	15.0	0.15	19980527	307.84250	305.25338	11.28926	3.67798	0.1965260	2.1838284	18	1	27 days	0.83		Williams	1998 KA ₆₅
1998 KL ₆₅	15.0	0.15	19980527	345.25714	228.35534	44.83886	2.92659	0.1838372	2.4171952	15	1	35 days	1.15		Williams	1998 KL ₆₅
1998 KN ₆₅	15.0	0.15	19980527	329.88699	194.48030	99.15776	1.99831	0.1489646	2.2992570	17	1	35 days	0.67		Williams	1998 KN ₆₅
1998 KR ₆₅	7.0	0.15	19980507	52.19168	143.66590	100.00330	1.09659	0.0759907	45.6735741	31	1	10 days	0.06	E	Williams	1998 KR ₆₅
1998 KS ₆₅	7.5	0.15	19980507	309.46363	257.41819	102.76599	1.18999	0.0695868	44.1119649	42	1	10 days	0.07	E	Williams	1998 KS ₆₅
1998 KY ₆₅	13.0	0.15	19980527	24.12147	9.53903	201.59393	30.71868	0.2020191	3.1230807	19	1	28 days	0.37		Williams	1998 KY ₆₅
1998 LB	14.5	0.15	19980527	344.30218	94.48315	172.46055	15.05272	0.1077058	2.5574466	22	1	30 days	0.72		Williams	1998 LB

1998 LC	14.0	0.15	19980527	309.53013	181.43910	157.38771	14.35596	0.2832401	2.5882960	17	1	22 days	0.89		Williams	1998 LC
1998 LD	20.5	0.15	19980706	30.79876	347.64689	247.28462	22.50414	0.1733639	1.4426837	99	1	53 days	0.47	M-v 5	Williams	1998 LD
1998 LE	20.5	0.15	19980706	346.65240	132.50519	237.90593	9.13727	0.6996930	1.5180281	74	1	6 days	0.50	M-v 8	Williams	1998 LE
1998 LA ₂	14.5	0.15	19980527	26.03856	346.13590	234.26331	5.23604	0.0734799	2.2286960	20	1	35 days	0.63		Williams	1998 LA ₂
1998 LF ₂	15.5	0.15	19980527	355.03965	106.02269	157.74951	7.09840	0.1429044	2.3529868	15	1	24 days	0.45		Williams	1998 LF ₂
1998 LL ₂	13.0	0.15	19980527	76.07964	38.21195	141.09270	10.97236	0.0465059	2.9901415	19	1	24 days	0.98		Williams	1998 LL ₂
1998 LP ₂	15.0	0.15	19980527	329.24460	74.07105	223.92171	13.44108	0.1077855	2.5254757	15	1	24 days	1.18		Williams	1998 LP ₂
1998 LR ₂	16.5	0.15	19980527	328.16860	167.43912	137.85662	6.02781	0.2142244	2.2672026	13	1	25 days	0.68		Williams	1998 LR ₂
1998 LV ₂	13.0	0.15	19980527	189.48043	218.85579	217.87682	15.41876	0.1005785	3.1309940	18	1	24 days	1.07		Williams	1998 LV ₂
1998 LX ₂	15.5	0.15	19980527	355.59686	113.15416	152.01370	8.12850	0.1715007	2.5630268	14	1	24 days	0.77		Williams	1998 LX ₂
1998 LB ₃	14.0	0.15	19980527	213.45853	219.66858	197.47944	9.37016	0.1136662	2.6944674	15	1	21 days	2.17		Williams	1998 LB ₃
1998 LF ₃	13.5	0.15	19980527	83.57983	40.33763	103.49984	29.92972	0.1900561	2.5996501	18	1	30 days	0.83		Williams	1998 LF ₃
1998 MC	15.0	0.15	19980616	51.21510	156.26340	49.25056	6.11448	0.0951521	2.5849349	12	1	15 days	0.20		Williams	1998 MC
1998 MD	15.5	0.15	19980616	311.62234	67.31774	288.54637	5.46133	0.2620110	2.4782021	19	1	10 days	0.79		Williams	1998 MD
1998 ME	16.0	0.15	19980616	90.61129	280.03364	223.66646	13.95343	0.0846675	3.0719538	12	1	14 days	0.51		Williams	1998 ME
1998 MG	15.5	0.15	19980616	325.76942	48.35709	294.19827	9.97760	0.1740823	3.0591327	12	1	13 days	0.27		Williams	1998 MG
1998 MJ	14.5	0.15	19980616	213.60735	122.85773	322.44485	0.71655	0.0176547	2.7325926	9	1	6 days	0.33	E	Williams	1998 MJ
1998 ML	13.5	0.15	19980616	222.50526	339.04510	113.56851	3.50199	0.1971259	3.1692953	9	1	6 days	0.14	E	Williams	1998 ML
1998 MM	17.5	0.15	19980616	340.00704	219.45763	104.72342	3.40580	0.2574643	2.4392952	9	1	6 days	0.28		Williams	1998 MM
1998 MN	17.5	0.15	19980616	325.49852	55.34873	294.11942	23.54162	0.2647569	2.4743676	9	1	2 days	0.36		Williams	1998 MN
1998 MP	15.0	0.15	19980616	341.45947	197.53069	85.57733	13.37823	0.1293707	3.0934201	21	1	9 days	0.62		Williams	1998 MP
1998 MQ	16.5	0.15	19980706	315.79487	138.54531	221.27191	24.21192	0.4081844	1.7830130	119	1	63 days	0.49	M-v 4	Williams	1998 MQ
1998 MR	18.5	0.15	19980616	336.34211	41.73866	285.87920	3.42320	0.2573464	2.3122329	12	1	14 days	0.33		Williams	1998 MR
1998 MX	14.0	0.15	19980527	295.02266	236.59833	86.76890	14.20221	0.1940093	2.5476648	23	1	53 days	0.67		Williams	1998 MX
1998 MZ	19.5	0.15	19980616	40.90854	41.16264	120.27849	0.13477	0.5779639	1.3537278	96	1	23 days	0.70		Williams	1998 MZ
1998 MA ₁	15.0	0.15	19980616	126.78736	234.11607	243.19262	25.03439	0.2959818	2.5180304	18	1	2 days	0.40		Williams	1998 MA ₁
1998 MB ₁	15.0	0.15	19980616	150.02258	206.98193	240.39903	3.35928	0.1919779	2.2855551	9	1	7 days	0.24	E	Williams	1998 MB ₁
1998 MG ₁	15.0	0.15	19980616	320.76161	117.93090	173.48826	4.15046	0.0924072	2.8218777	9	1	13 days	0.28		Williams	1998 MG ₁
1998 MM ₁	15.5	0.15	19980616	53.89754	333.33430	207.43003	6.55639	0.1137801	2.7409906	12	1	13 days	0.96		Williams	1998 MM ₁
1998 MO ₁	16.0	0.15	19980616	126.14875	285.16540	183.23204	4.89777	0.1187027	2.7693916	9	1	13 days	0.20		Williams	1998 MO ₁
1998 MT ₁	17.0	0.15	19980616	46.23182	93.91294	99.73452	7.20782	0.0641356	2.5633219	9	1	13 days	0.72		Williams	1998 MT ₁
1998 MY ₁	14.0	0.15	19980616	114.28587	260.25077	231.45900	11.25476	0.1037849	2.6447850	14	1	26 days	0.34		Marsden	1998 MY ₁
1998 MZ ₁	15.5	0.15	19980706	17.89487	168.32011	92.89583	9.14885	0.3009483	2.7599884	18	1	33 days	0.32		Marsden	1998 MZ ₁
1998 MA ₂	14.0	0.15	19980616	349.11544	200.01270	97.08108	5.15081	0.1800466	3.0726099	13	1	8 days	0.65		Williams	1998 MA ₂
1998 ME ₂	14.5	0.15	19980616	90.21734	339.38962	148.57935	13.53435	0.1323915	1.9445426	8	1	2 days	0.87	E	Williams	1998 ME ₂
1998 MG ₂	17.5	0.15	19980616	18.23271	103.78071	149.13932	5.40895	0.2176229	2.3457553	9	1	28 days	0.12		Williams	1998 MG ₂
1998 MM ₂	16.5	0.15	19980616	209.99622	241.57584	203.93885	4.69402	0.1146764	2.4159136	9	1	7 days	0.18		Williams	1998 MM ₂
1998 MN ₂	16.0	0.15	19980616	265.71200	158.78748	243.00033	7.27853	0.1713613	2.7072283	9	1	2 days	0.13		Williams	1998 MN ₂
1998 MO ₂	16.5	0.15	19980616	262.98793	211.64183	204.29346	5.10973	0.2970084	2.4206961	9	1	2 days	0.10		Williams	1998 MO ₂
1998 MP ₂	15.5	0.15	19980616	20.76992	6.58592	261.89570	10.55899	0.0261491	3.0264825	15	1	7 days	0.35		Marsden	1998 MP ₂
1998 MQ ₂	15.0	0.15	19980616	29.96763	25.80525	227.51636	5.65591	0.1062875	3.2011427	13	1	6 days	0.81	E	Williams	1998 MQ ₂
1998 MR ₂	15.5	0.15	19980706	317.65862	240.70373	106.75402	27.97075	0.4645195	2.6122371	35	1	37 days	0.64	M-v 6	Williams	1998 MR ₂
1998 MS ₂	20.5	0.15	19980706	23.24388	320.03403	268.57024	19.22018	0.4026946	1.7327405	95	1	38 days	0.63	M-v 6	Marsden	1998 MS ₂
1998 MU ₂	17.5	0.15	19980616	11.00421	358.60808	232.06320	12.21585	0.1896941	2.5763959	8	1	7 days	0.24		Williams	1998 MU ₂
1998 MW ₂	16.0	0.15	19980616	332.06497	78.16252	210.11781	6.02740	0.1630633	2.4857395	9	1	13 days	0.18		Williams	1998 MW ₂
1998 MA ₃	16.5	0.15	19980616	257.78009	263.60001	101.11939	7.23911	0.1565573	2.3299801	9	1	13 days	0.21		Williams	1998 MA ₃
1998 MC ₃	15.5	0.15	19980616	97.75803	311.43650	174.76954	5.00880	0.2124513	2.5683509	8	1	13 days	0.15		Williams	1998 MC ₃
1998 ME ₃	19.0	0.15	19980706	355.51994	165.20565	129.67272	5.99372	0.4837352	2.1763882	153	1	69 days	0.61	M-v 4	Williams	1998 ME ₃
1998 MF ₃	16.0	0.15	19980616	107.89189	169.98986	359.97130	3.03797	0.0670860	2.1527861	11	1	17 days	0.38		Williams	1998 MF ₃
1998 MG ₃	16.0	0.15	19980616	10.81227	145.79368	98.41508	3.28595	0.1984840	2.3205836	23	1	5 days	0.74		Williams	1998 MG ₃
1998 MQ ₃	15.5	0.15	19980616	64.18566	31.81665	133.72815	5.12757	0.1241722	3.0626438	9	1	12 days	0.23		Williams	1998 MQ ₃
1998 MY ₃	16.5	0.15	19980616	159.87352	201.47469	290.12897	1.07453	0.0572549	2.2283892	11	1	13 days	0.24		Williams	1998 MY ₃
1998 MB ₄	15.5	0.15	19980616	313.48038	243.39649	117.06923	11.37403	0.1595179	3.0866585	9	1	15 days	0.24		Williams	1998 MB ₄

1998 MH ₄	15.5	0.15	19980616	338.32007	210.16683	106.61446	26.53725	0.1882996	2.3070536	11	1	3 days	0.33		Williams	1998 MH ₄
1998 ML ₄	12.5	0.15	19980706	296.84911	176.32610	143.30035	24.50950	0.0954321	3.2389308	23	1	62 days	0.61	M-v 5	Marsden	1998 ML ₄
1998 MM ₄	16.0	0.15	19980616	3.89436	96.43965	167.77221	11.14542	0.2518131	2.5706424	14	1	6 days	1.13		Williams	1998 MM ₄
1998 MN ₄	14.0	0.15	19980616	70.18237	45.25551	137.02241	21.55029	0.1680420	2.8679920	15	1	6 days	1.47		Williams	1998 MN ₄
1998 MQ ₄	18.0	0.15	19980616	330.10353	57.71964	285.33253	4.26961	0.2973651	2.5912691	12	1	13 days	0.68		Williams	1998 MQ ₄
1998 MR ₄	15.5	0.15	19980616	314.31929	61.36044	299.25281	16.00437	0.1774332	3.1741788	9	1	13 days	0.18		Williams	1998 MR ₄
1998 MZ ₄	14.5	0.15	19980616	24.11926	52.79964	171.37611	12.06775	0.1313987	2.5335263	14	1	6 days	0.43		Williams	1998 MZ ₄
1998 MA ₅	16.0	0.15	19980616	289.87668	81.16663	293.02854	4.26493	0.0789277	2.6383066	9	1	11 days	0.12		Williams	1998 MA ₅
1998 MB ₅	15.0	0.15	19980616	358.08493	159.05844	140.86283	0.53115	0.0317817	3.0302477	9	1	11 days	0.23	E	Williams	1998 MB ₅
1998 MF ₅	14.5	0.15	19980616	284.80415	83.73431	305.10401	6.29197	0.1178118	3.0259853	9	1	11 days	0.16		Williams	1998 MF ₅
1998 MK ₅	13.0	0.15	19980616	291.31753	264.98121	119.02184	13.82787	0.1846157	2.6284778	20	1	58 days	0.89		Williams	1998 MK ₅
1998 MO ₅	14.5	0.15	19980706	319.89792	211.71141	112.76837	24.46252	0.2259858	2.3660065	18	1	37 days	0.48		Williams	1998 MO ₅
1998 MV ₅	24.0	0.15	19980706	43.74112	313.43993	269.56039	21.15007	0.1846188	1.2042047	27	1	9 days	0.58	M-v 7	Williams	1998 MV ₅
1998 MW ₅	19.0	0.15	19980616	131.08305	26.82817	80.55855	6.58173	0.3767189	1.0241756	26	1	8 days	0.81		Williams	1998 MW ₅
1998 MX ₅	18.0	0.15	19980706	352.35427	55.69194	266.63889	9.70820	0.6118225	2.9177686	144	1	40 days	0.54	M-v 5	Williams	1998 MX ₅
1998 MA ₆	15.5	0.15	19980616	306.32114	63.59794	246.48845	10.44370	0.1309257	3.1273209	9	1	7 days	0.38		Williams	1998 MA ₆
1998 MH ₆	18.0	0.15	19980616	12.81982	346.46200	288.45901	6.22474	0.1141342	2.3630254	9	1	12 days	0.16		Williams	1998 MH ₆
1998 MJ ₆	17.5	0.15	19980706	308.27198	70.81813	298.21590	5.27089	0.1647604	2.3145671	14	1	37 days	0.67		Williams	1998 MJ ₆
1998 MQ ₆	16.0	0.15	19980616	296.71581	79.72702	290.77157	5.84704	0.1042817	2.7835434	11	1	25 days	0.12		Williams	1998 MQ ₆
1998 MS ₆	15.5	0.15	19980706	90.30296	270.28174	299.15307	11.66591	0.0347162	3.2074531	12	1	36 days	0.29		Williams	1998 MS ₆
1998 MW ₆	15.5	0.15	19980616	71.34218	10.98463	150.25546	15.83307	0.1845526	3.1829836	8	1	5 days	0.35		Williams	1998 MW ₆
1998 MB ₇	15.5	0.15	19980616	253.33129	291.54428	125.68010	6.03476	0.1596414	2.3026410	9	1	10 days	0.18		Williams	1998 MB ₇
1998 MD ₇	15.0	0.15	19980616	311.50302	75.52600	275.00165	3.35780	0.1115787	2.2923494	9	1	4 days	0.21	E	Williams	1998 MD ₇
1998 MH ₇	15.5	0.15	19980706	333.40814	47.92473	286.98590	3.20616	0.0918471	3.2453708	15	1	36 days	0.70		Williams	1998 MH ₇
1998 MM ₇	15.0	0.15	19980616	320.81756	242.07255	99.09204	12.54559	0.2586297	2.3782736	17	1	16 days	0.63		Williams	1998 MM ₇
1998 MN ₇	14.5	0.15	19980616	301.65087	350.04659	26.04373	0.66205	0.3021160	3.2834433	11	1	11 days	0.36		Williams	1998 MN ₇
1998 MO ₇	15.0	0.15	19980616	255.30775	90.24752	309.36471	14.24594	0.0972781	2.4183608	9	1	11 days	0.28		Williams	1998 MO ₇
1998 MP ₇	15.0	0.15	19980706	345.88167	87.07569	224.83356	5.20892	0.1683771	2.4446721	23	1	32 days	0.74		Williams	1998 MP ₇
1998 MQ ₇	16.5	0.15	19980616	320.91318	90.60570	222.81408	14.07170	0.1500786	2.5383489	14	1	7 days	0.61		Williams	1998 MQ ₇
1998 MS ₇	17.0	0.15	19980616	249.17193	246.70701	135.78414	14.05828	0.0979129	3.1758992	9	1	6 days	0.10		Williams	1998 MS ₇
1998 MX ₇	14.0	0.15	19980616	359.06784	147.08819	156.88354	15.23507	0.2851345	2.7902830	14	1	11 days	0.67		Williams	1998 MX ₇
1998 MA ₈	12.0	0.15	19980616	1.63152	50.97661	253.03125	15.82257	0.0962891	2.8884289	10	1	11 days	0.84		Williams	1998 MA ₈
1998 MQ ₈	15.0	0.15	19980527	345.32653	75.12521	195.57078	6.05595	0.1068933	2.2765509	17	1	34 days	0.64		Williams	1998 MQ ₈
1998 MZ ₈	14.5	0.15	19980706	4.24784	82.98208	174.08957	8.78153	0.0797876	3.0591114	16	1	35 days	0.56		Williams	1998 MZ ₈
1998 MD ₉	13.0	0.15	19980527	233.63001	240.52602	154.95218	13.30946	0.1646932	2.6921372	19	1	32 days	0.87		Williams	1998 MD ₉
1998 MH ₉	15.5	0.15	19980616	355.71785	102.07938	165.83236	5.32891	0.1774267	2.3867124	14	1	7 days	0.87		Williams	1998 MH ₉
1998 ML ₉	15.5	0.15	19980616	304.37891	174.43843	156.25281	7.06929	0.1311382	2.2976680	12	1	11 days	0.83		Williams	1998 ML ₉
1998 MY ₉	13.5	0.15	19980616	252.31233	157.48806	229.65651	17.23506	0.1404001	2.7790827	12	1	8 days	0.81		Williams	1998 MY ₉
1998 MR ₁₃	14.5	0.15	19980616	344.76304	26.28390	265.99555	13.97056	0.2043506	2.4580167	14	1	8 days	0.96		Williams	1998 MR ₁₃
1998 MV ₁₃	14.0	0.15	19980706	229.24936	132.62177	289.63261	21.23870	0.0899413	2.5902144	15	1	22 days	0.37		Williams	1998 MV ₁₃
1998 MW ₁₃	15.5	0.15	19980616	289.06299	66.71713	310.33019	5.00405	0.2346714	2.4021079	12	1	16 days	0.33		Williams	1998 MW ₁₃
1998 MY ₁₃	16.5	0.15	19980616	291.52240	104.34712	264.94451	10.57447	0.0926682	2.6770428	9	1	17 days	0.15		Williams	1998 MY ₁₃
1998 MZ ₁₃	14.0	0.15	19980616	313.21280	85.28285	267.23380	10.31253	0.1467808	3.0490458	10	1	7 days	0.74		Williams	1998 MZ ₁₃
1998 MA ₁₄	15.0	0.15	19980616	249.79612	277.50848	144.11819	8.54068	0.2426130	2.3285715	13	1	6 days	1.05		Marsden	1998 MA ₁₄
1998 MG ₁₄	16.5	0.15	19980616	348.06370	152.42092	124.46399	15.60165	0.0977576	2.6163708	14	1	8 days	0.67		Williams	1998 MG ₁₄
1998 MJ ₁₄	10.5	0.15	19980616	177.33957	257.46653	279.56757	19.09597	0.1767014	2.5207873	8	1	4 days	0.74	E	Williams	1998 MJ ₁₄
1998 ML ₁₄	17.5	0.15	19980706	342.67835	18.94685	339.70417	2.43861	0.6179275	2.4235753	130	1	39 days	0.39	M-v 5	Williams	1998 ML ₁₄
1998 MM ₁₄	18.5	0.15	19980616	346.34644	40.93797	262.71524	4.43747	0.3396298	2.2096554	18	1	3 days	0.62		Williams	1998 MM ₁₄
1998 MN ₁₄	18.0	0.15	19980706	20.45848	350.23141	259.09883	19.46560	0.2239039	1.5540629	121	1	36 days	0.51	M-v 5	Williams	1998 MN ₁₄
1998 MA ₁₅	16.0	0.15	19980616	275.67071	294.47668	70.52850	12.40989	0.3070060	2.5825059	9	1	11 days	0.91		Williams	1998 MA ₁₅
1998 ML ₁₅	16.0	0.15	19980616	90.24257	72.83946	79.92175	4.60199	0.0353292	2.5080919	9	1	12 days	0.10		Williams	1998 ML ₁₅
1998 MR ₁₅	14.5	0.15	19980527	270.17928	184.86792	176.78818	14.29824	0.1975551	2.5790689	12	1	40 days	0.98		Williams	1998 MR ₁₅
1998 MS ₁₅	16.5	0.15	19980616	306.16868	62.54149	243.73895	3.64594	0.0590779	2.7242309	9	1	6 days	0.26	E	Williams	1998 MS ₁₅

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1998 MT ₁₅	17.0	0.15	19980616	317.60972	58.55276	262.97153	1.37430	0.3156507	2.7537975	7	1	6 days	0.26	Williams	1998 MT ₁₅
1998 MV ₁₅	17.0	0.15	19980616	351.17120	357.14709	308.70829	7.54688	0.1414983	2.5374811	12	1	7 days	0.24	Williams	1998 MV ₁₅
1998 MW ₁₅	14.5	0.15	19980706	351.92257	194.33630	118.11664	26.55776	0.2626470	3.0108383	20	1	30 days	0.25	Williams	1998 MW ₁₅
1998 MX ₁₅	13.5	0.15	19980616	160.72579	16.80124	116.79490	14.39635	0.1194013	2.6105141	9	1	16 days	0.51	Williams	1998 MX ₁₅
1998 MZ ₁₅	16.5	0.15	19980616	202.25563	169.38641	236.39669	5.27710	0.0522825	2.6214840	9	1	12 days	0.35	Williams	1998 MZ ₁₅
1998 MA ₁₆	16.5	0.15	19980616	280.76903	113.67569	236.72678	4.10409	0.2028801	2.3988937	9	1	12 days	0.20	Williams	1998 MA ₁₆
1998 ME ₁₆	15.0	0.15	19980616	160.47813	219.02619	221.41514	3.21121	0.1695694	2.5195886	9	1	11 days	0.88	E Williams	1998 ME ₁₆
1998 ML ₁₆	16.0	0.15	19980616	94.61224	214.05941	336.89844	1.04377	0.1161127	3.1568736	8	1	6 days	0.23	E Williams	1998 ML ₁₆
1998 MM ₁₆	18.0	0.15	19980616	321.07862	243.21598	108.51197	4.56881	0.2529782	2.3866552	9	1	6 days	0.22	Williams	1998 MM ₁₆
1998 MR ₁₆	16.0	0.15	19980616	44.24623	297.69850	307.35048	8.39468	0.1016173	3.2203445	9	1	6 days	0.25	E Williams	1998 MR ₁₆
1998 MS ₁₆	16.5	0.15	19980616	334.88615	242.40666	90.35057	1.88015	0.2113692	2.9361556	9	1	6 days	0.17	Williams	1998 MS ₁₆
1998 MT ₁₆	16.0	0.15	19980616	337.82708	350.63091	340.93310	1.06267	0.2410959	3.1830788	9	1	6 days	0.10	E Williams	1998 MT ₁₆
1998 MU ₁₆	17.5	0.15	19980616	320.34916	241.18500	107.03888	4.22767	0.1776864	2.5506169	9	1	6 days	0.17	Williams	1998 MU ₁₆
1998 MW ₁₆	16.0	0.15	19980616	262.41101	348.24383	65.52870	1.08405	0.1601385	2.8691436	9	1	6 days	0.20	E Williams	1998 MW ₁₆
1998 MC ₁₇	14.5	0.15	19980616	165.97141	84.68361	47.96659	1.23413	0.1854730	3.2321749	9	1	6 days	0.20	E Williams	1998 MC ₁₇
1998 MD ₁₇	16.5	0.15	19980616	128.13906	212.80558	307.26733	10.42850	0.1290386	2.6343904	9	1	6 days	0.16	E Williams	1998 MD ₁₇
1998 MF ₁₇	17.5	0.15	19980616	314.19409	42.62702	307.45560	6.49951	0.1218007	2.3372367	9	1	6 days	0.15	Williams	1998 MF ₁₇
1998 MG ₁₇	16.5	0.15	19980706	325.76197	45.67725	304.95227	10.43014	0.1952833	2.7245556	12	1	30 days	0.23	Williams	1998 MG ₁₇
1998 MO ₁₇	17.0	0.15	19980706	116.13636	39.14092	134.22670	2.92657	0.1538776	2.6904728	10	1	31 days	0.19	Williams	1998 MO ₁₇
1998 MQ ₁₇	14.0	0.15	19980706	282.76490	105.06232	282.15012	6.58666	0.1186651	3.1179781	10	1	18 days	0.24	Marsden	1998 MQ ₁₇
1998 MR ₁₇	16.0	0.15	19980706	6.55833	347.76759	281.91972	15.60964	0.4808366	2.7011736	151	1	35 days	0.51	M-v 5 Williams	1998 MR ₁₇
1998 MS ₁₈	15.5	0.15	19980527	354.66417	97.28760	163.13760	9.70474	0.0639007	2.6672846	18	1	35 days	0.73	Williams	1998 MS ₁₈
1998 MU ₁₈	15.5	0.15	19980616	317.51444	153.16295	153.82847	10.44589	0.0650762	2.8936403	10	1	2 days	0.92	E Williams	1998 MU ₁₈
1998 MZ ₁₉	14.5	0.15	19980616	312.56808	65.93922	252.26242	9.85936	0.1528714	2.7822952	12	1	8 days	0.83	Williams	1998 MZ ₁₉
1998 MP ₂₂	14.5	0.15	19980616	333.57222	226.32265	81.92854	6.91508	0.2417366	2.1712085	13	1	6 days	0.75	E Williams	1998 MP ₂₂
1998 ML ₂₄	17.5	0.15	19980616	342.94903	218.01509	98.26599	6.94440	0.2919173	2.1792096	19	1	5 days	0.52	Williams	1998 ML ₂₄
1998 MQ ₂₄	16.5	0.15	19980706	310.60858	43.05317	304.67423	5.83936	0.1420789	2.3715737	11	1	26 days	0.40	Williams	1998 MQ ₂₄
1998 MR ₂₄	19.0	0.15	19980706	357.12995	54.30165	245.40250	6.08680	0.4458403	1.9595397	84	1	34 days	0.47	M-v 6 Marsden	1998 MR ₂₄
1998 MS ₂₄	13.5	0.15	19980706	5.35057	137.61549	145.41832	15.25222	0.3342617	2.6102765	19	1	29 days	0.31	Williams	1998 MS ₂₄
1998 MT ₂₄	15.0	0.15	19980706	34.40089	253.64088	310.12314	34.04196	0.6505305	2.4174461	99	1	35 days	0.52	M-v 4 Marsden	1998 MT ₂₄
1998 MH ₂₇	14.5	0.15	19980706	0.80142	183.55619	100.72760	6.49768	0.1791413	2.3294654	21	1	23 days	0.66	Williams	1998 MH ₂₇
1998 MV ₂₇	13.5	0.15	19980616	321.91586	45.96357	286.81743	12.55554	0.1810420	2.5687785	16	1	9 days	0.49	Williams	1998 MV ₂₇
1998 MK ₂₈	15.0	0.15	19980706	342.11667	51.41089	261.40834	1.71726	0.1766908	2.3973946	17	1	32 days	0.88	Williams	1998 MK ₂₈
1998 MS ₂₈	14.0	0.15	19980706	322.86394	82.68134	264.19669	10.76368	0.2442747	2.7614840	17	1	32 days	0.71	Williams	1998 MS ₂₈
1998 MC ₂₉	14.5	0.15	19980706	3.29302	24.68337	257.92057	3.74238	0.2297747	2.5886929	24	1	32 days	0.83	Williams	1998 MC ₂₉
1998 ME ₂₉	15.0	0.15	19980706	27.31699	98.91169	149.57662	0.98794	0.1769526	2.1499899	23	1	32 days	0.98	Williams	1998 ME ₂₉
1998 MG ₂₉	15.0	0.15	19980616	329.92581	242.82153	89.53392	6.13844	0.2766123	2.6447710	11	1	4 days	0.67	Marsden	1998 MG ₂₉
1998 MK ₂₉	15.0	0.15	19980616	3.36415	191.50178	84.07228	6.91314	0.1770386	2.5095443	10	1	4 days	0.77	Marsden	1998 MK ₂₉
1998 MM ₂₉	15.0	0.15	19980616	73.91822	104.38679	92.15660	13.57714	0.1199357	2.6538712	17	1	11 days	0.75	Williams	1998 MM ₂₉
1998 MP ₂₉	13.5	0.15	19980616	6.23830	209.45467	68.14913	3.00798	0.0644375	2.8646229	16	1	7 days	0.57	Marsden	1998 MP ₂₉
1998 MQ ₂₉	15.0	0.15	19980616	26.58685	223.82995	12.47962	0.58361	0.2511601	2.4815302	18	1	4 days	1.27	E Marsden	1998 MQ ₂₉
1998 MR ₂₉	14.5	0.15	19980616	28.06126	144.94139	108.95462	15.22823	0.0524017	2.6456486	12	1	3 days	0.65	Marsden	1998 MR ₂₉
1998 MS ₂₉	13.5	0.15	19980706	29.31607	133.64890	119.26278	6.44470	0.1163241	3.1574961	23	1	32 days	1.42	Williams	1998 MS ₂₉
1998 MU ₂₉	14.0	0.15	19980616	7.98097	124.36608	151.49082	2.45437	0.0950626	2.9899677	13	1	3 days	1.15	E Marsden	1998 MU ₂₉
1998 MY ₂₉	12.0	0.15	19980706	55.97985	311.02597	272.83679	13.67858	0.1050844	2.8545487	18	1	32 days	0.64	Williams	1998 MY ₂₉
1998 MG ₃₀	15.0	0.15	19980616	0.60489	196.73521	83.05493	7.97091	0.1373468	2.4070872	9	1	4 days	1.07	Marsden	1998 MG ₃₀
1998 MJ ₃₀	18.5	0.15	19980616	346.46885	11.14569	296.46669	6.77769	0.2958594	2.2111028	11	1	3 days	0.49	Williams	1998 MJ ₃₀
1998 MK ₃₀	15.5	0.15	19980706	339.32678	154.67005	203.67595	5.40982	0.4337199	2.4611200	100	1	45 days	0.51	M-v 7 Marsden	1998 MK ₃₀
1998 ML ₃₀	15.0	0.15	19980616	227.63329	253.24770	157.44070	12.44989	0.2194976	2.8924882	10	1	3 days	0.37	Williams	1998 ML ₃₀
1998 MF ₃₁	15.0	0.15	19980616	28.09548	114.96099	119.23837	5.22420	0.2729984	2.7196215	15	1	3 days	1.19	Marsden	1998 MF ₃₁
1998 MG ₃₁	16.0	0.15	19980616	12.18166	137.01012	121.36765	3.24871	0.2382828	2.1934161	16	1	3 days	0.77	E Marsden	1998 MG ₃₁
1998 MH ₃₁	15.5	0.15	19980616	319.73196	239.83491	108.31987	11.63551	0.2716790	2.3734186	16	1	3 days	0.94	E Marsden	1998 MH ₃₁
1998 MJ ₃₁	13.0	0.15	19980616	0.40648	175.30953	111.08854	19.84549	0.0638560	3.0501800	15	1	3 days	0.95	E Marsden	1998 MJ ₃₁

1998 MK ₃₁	15.0	0.15	19980616	0.16759	175.61917	107.60807	2.99353	0.1874346	2.6546268	14	1	3 days	1.19	Marsden	1998 MK ₃₁
1998 ML ₃₁	15.5	0.15	19980616	328.39877	224.82755	106.14511	6.75104	0.2357216	2.2722406	16	1	3 days	1.10	Marsden	1998 ML ₃₁
1998 MM ₃₁	15.0	0.15	19980616	39.75231	309.73426	284.51120	1.66835	0.1122974	2.2658050	16	1	3 days	1.15	E Marsden	1998 MM ₃₁
1998 MN ₃₁	15.5	0.15	19980616	23.91381	318.80668	291.04950	7.02992	0.1633382	2.4150263	14	1	3 days	1.25	Marsden	1998 MN ₃₁
1998 MO ₃₁	16.0	0.15	19980616	8.80539	181.27108	82.68468	1.65122	0.2547586	2.3622097	21	1	7 days	1.07	Marsden	1998 MO ₃₁
1998 MP ₃₁	15.5	0.15	19980616	357.64220	352.22947	291.04449	4.85321	0.2215530	2.2817261	14	1	3 days	1.49	E Marsden	1998 MP ₃₁
1998 MS ₃₁	13.5	0.15	19980616	329.64629	241.33778	79.92190	4.80800	0.1082787	2.7470062	15	1	7 days	0.59	Marsden	1998 MS ₃₁
1998 MU ₃₁	10.5	0.15	19980616	299.53282	261.12993	103.57632	25.95499	0.1250360	5.2031308	15	1	7 days	0.98	E Marsden	1998 MU ₃₁
1998 MV ₃₁	15.0	0.15	19980616	10.17367	170.87843	95.52134	12.34363	0.1721711	2.3439994	16	1	7 days	0.83	Marsden	1998 MV ₃₁
1998 MA ₃₂	13.0	0.15	19980616	52.44579	154.90404	66.22104	6.20298	0.1380430	3.1773820	11	1	4 days	0.78	Marsden	1998 MA ₃₂
1998 MB ₃₂	13.5	0.15	19980616	89.96005	94.82820	95.73635	15.38668	0.0489636	2.5598258	14	1	7 days	1.04	Marsden	1998 MB ₃₂
1998 MD ₃₂	14.5	0.15	19980616	48.29034	258.17498	323.76250	2.87106	0.1326833	2.2583581	15	1	7 days	1.17	Marsden	1998 MD ₃₂
1998 ME ₃₂	15.0	0.15	19980616	10.28942	304.11530	322.57717	2.70994	0.2068515	2.5860382	15	1	7 days	0.74	E Marsden	1998 ME ₃₂
1998 MF ₃₂	13.5	0.15	19980616	60.74489	122.86816	97.92332	9.55873	0.0524179	2.7819491	15	1	9 days	0.68	E Marsden	1998 MF ₃₂
1998 MG ₃₂	14.5	0.15	19980616	353.13587	329.79662	323.49871	3.01679	0.1471205	2.5876716	14	1	7 days	0.85	E Marsden	1998 MG ₃₂
1998 MH ₃₂	14.0	0.15	19980616	297.86407	263.67197	102.84111	12.33015	0.1735086	2.5473640	15	1	7 days	0.47	Marsden	1998 MH ₃₂
1998 MJ ₃₂	15.5	0.15	19980616	6.64558	343.21959	289.35946	11.35912	0.1822467	2.3873272	11	1	9 days	0.64	Williams	1998 MJ ₃₂
1998 MQ ₃₂	15.0	0.15	19980616	325.68463	55.68502	279.34883	12.41936	0.2024651	2.6352496	25	1	37 days	1.28	Williams	1998 MQ ₃₂
1998 MR ₃₂	13.5	0.15	19980616	232.17085	195.47608	227.33396	1.98363	0.0677297	2.9868953	15	1	3 days	1.47	E Marsden	1998 MR ₃₂
1998 MW ₃₂	15.5	0.15	19980706	58.16056	308.71824	254.51348	5.46619	0.2622392	2.3789180	15	1	29 days	0.75	Williams	1998 MW ₃₂
1998 MA ₃₃	14.5	0.15	19980616	279.62733	264.07901	127.77527	16.22980	0.2083283	2.4805254	13	1	3 days	0.85	E Marsden	1998 MA ₃₃
1998 MB ₃₃	13.5	0.15	19980616	95.00700	64.41140	129.16229	14.79575	0.0131735	3.1983558	15	1	3 days	1.98	E Marsden	1998 MB ₃₃
1998 MC ₃₃	16.0	0.15	19980616	337.38668	69.47225	246.10039	4.31453	0.2014429	2.2347690	16	1	3 days	0.92	Marsden	1998 MC ₃₃
1998 MD ₃₃	13.5	0.15	19980616	271.79569	267.48158	131.11586	9.48414	0.1851578	3.0292718	15	1	3 days	1.00	E Marsden	1998 MD ₃₃
1998 ME ₃₃	16.0	0.15	19980616	13.85615	83.77948	172.65929	2.58456	0.2871459	2.5407066	14	1	3 days	1.01	E Marsden	1998 ME ₃₃
1998 MO ₃₃	15.5	0.15	19980616	325.80447	236.70556	102.92223	7.09414	0.2651027	2.3608393	11	1	9 days	0.46	Williams	1998 MO ₃₃
1998 MR ₃₃	14.0	0.15	19980706	7.53366	184.22349	96.71153	5.86746	0.1905963	3.1261578	15	1	30 days	0.55	Williams	1998 MR ₃₃
1998 MS ₃₃	15.5	0.15	19980616	326.12604	230.16183	98.66333	9.04794	0.1419635	2.3699215	13	1	48 days	0.80	Williams	1998 MS ₃₃
1998 MU ₃₃	14.5	0.15	19980616	344.60060	357.90842	305.24848	4.30610	0.0532755	2.4188160	12	1	9 days	0.57	E Williams	1998 MU ₃₃
1998 MB ₃₄	15.0	0.15	19980616	291.03128	292.71349	84.78271	7.38038	0.1984841	2.4320616	10	1	9 days	0.45	Williams	1998 MB ₃₄
1998 MC ₃₄	15.5	0.15	19980616	17.65345	199.94391	61.98114	3.58524	0.0935062	2.1811468	11	1	9 days	0.71	Williams	1998 MC ₃₄
1998 ME ₃₄	15.5	0.15	19980616	356.36442	196.53034	91.38351	6.54815	0.1882080	2.3053498	11	1	9 days	0.65	Williams	1998 ME ₃₄
1998 MH ₃₄	15.5	0.15	19980616	299.07322	268.54170	97.39337	5.44741	0.1781457	2.1921716	18	1	48 days	0.85	Williams	1998 MH ₃₄
1998 MM ₃₄	13.5	0.15	19980616	196.67514	167.24799	291.57971	14.78797	0.1429145	2.7662039	11	1	3 days	1.41	E Williams	1998 MM ₃₄
1998 MN ₃₄	14.5	0.15	19980616	292.64797	116.39279	268.79460	7.56019	0.2619237	2.4222861	15	1	3 days	0.72	Marsden	1998 MN ₃₄
1998 MO ₃₄	14.0	0.15	19980616	303.65233	228.46014	139.24530	7.96234	0.2178245	2.6375158	16	1	3 days	0.90	E Marsden	1998 MO ₃₄
1998 MS ₃₄	14.5	0.15	19980616	21.63978	98.20308	156.56900	7.12590	0.2217974	3.0299613	12	1	3 days	0.72	E Williams	1998 MS ₃₄
1998 MU ₃₄	14.5	0.15	19980706	94.48419	51.57112	134.58308	13.65576	0.1334827	2.7074803	11	1	26 days	0.76	Williams	1998 MU ₃₄
1998 MV ₃₄	15.5	0.15	19980616	48.66412	79.71174	145.99686	6.09700	0.1291762	2.3424742	16	1	3 days	0.89	E Marsden	1998 MV ₃₄
1998 MW ₃₄	14.5	0.15	19980616	7.53444	75.39375	202.50261	3.60004	0.0706682	2.2620552	14	1	3 days	0.57	Marsden	1998 MW ₃₄
1998 MZ ₃₄	13.5	0.15	19980616	337.22884	197.77716	124.26399	17.69076	0.1592989	3.2369698	16	1	3 days	0.79	E Marsden	1998 MZ ₃₄
1998 MA ₃₅	14.5	0.15	19980616	40.69334	84.28124	142.40935	5.03168	0.2092870	2.5165323	15	1	3 days	0.92	E Marsden	1998 MA ₃₅
1998 MB ₃₅	15.0	0.15	19980616	328.34023	203.39215	124.63663	7.75748	0.1420880	2.4218259	17	1	22 days	0.87	Williams	1998 MB ₃₅
1998 MD ₃₅	14.5	0.15	19980706	341.93099	111.76585	211.33898	1.75737	0.2198650	3.0453969	18	1	26 days	0.71	Williams	1998 MD ₃₅
1998 MJ ₃₅	14.5	0.15	19980706	349.33571	21.06856	287.64682	10.75839	0.1638604	2.5472994	15	1	27 days	0.60	Williams	1998 MJ ₃₅
1998 MN ₃₅	15.0	0.15	19980706	355.10292	193.51554	105.82956	2.76053	0.0529718	2.3082256	15	1	26 days	0.51	Williams	1998 MN ₃₅
1998 MQ ₃₅	16.0	0.15	19980616	5.23862	182.89334	91.18850	6.26051	0.2131308	2.2671746	13	1	22 days	0.52	Williams	1998 MQ ₃₅
1998 MX ₃₅	13.0	0.15	19980616	285.43181	99.06651	296.68282	10.25708	0.2877708	3.1458110	14	1	7 days	0.90	E Marsden	1998 MX ₃₅
1998 MY ₃₅	14.0	0.15	19980616	238.92641	288.43946	125.98180	7.19922	0.0655427	2.6517393	13	1	3 days	0.97	E Marsden	1998 MY ₃₅
1998 MA ₃₆	17.0	0.15	19980706	334.77146	248.00513	83.22318	6.19842	0.2381382	2.2782529	24	1	30 days	0.67	Williams	1998 MA ₃₆
1998 MC ₃₆	14.0	0.15	19980616	292.05336	252.92040	137.85788	11.08637	0.2797993	2.8964616	18	1	3 days	0.72	Williams	1998 MC ₃₆
1998 MF ₃₆	15.5	0.15	19980616	352.83083	208.16425	86.41191	7.23970	0.1351384	2.3971918	11	1	9 days	0.74	Williams	1998 MF ₃₆
1998 MJ ₃₇	14.5	0.15	19980616	326.69552	225.28570	111.96182	15.37477	0.2101861	2.7131172	11	1	9 days	0.32	Williams	1998 MJ ₃₇

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1998 MU ₃₇	16.0	0.15	19980616	10.91639	181.39004	95.42633	5.53205	0.0771804	2.3337351	9	1	22 days	0.62	Williams	1998 MU ₃₇
1998 MY ₃₇	16.0	0.15	19980616	5.60625	143.31643	115.69723	16.54224	0.1795127	2.5877308	9	1	4 days	1.23	Williams	1998 MY ₃₇
1998 MC ₃₈	16.0	0.15	19980616	341.79186	173.35798	146.75780	8.79251	0.2382319	2.2154151	12	1	28 days	0.33	Williams	1998 MC ₃₈
1998 ML ₃₈	13.5	0.15	19980616	259.88103	127.64500	283.02959	16.92515	0.1920626	2.9901712	11	1	3 days	1.35	E Williams	1998 ML ₃₈
1998 MS ₃₈	14.5	0.15	19980616	14.95122	120.14784	147.87893	5.81767	0.1300366	2.8834265	15	1	3 days	1.34	E Williams	1998 MS ₃₈
1998 MT ₃₈	15.0	0.15	19980616	41.18054	332.25902	265.78435	5.44515	0.0851343	2.4157989	10	1	3 days	0.61	Williams	1998 MT ₃₈
1998 MZ ₃₈	14.0	0.15	19980616	280.72773	114.15303	285.60247	19.39082	0.2690538	2.7859526	10	1	3 days	1.10	E Williams	1998 MZ ₃₈
1998 MJ ₃₉	15.5	0.15	19980616	281.90357	113.77719	271.79090	5.43645	0.1899469	2.1770577	10	1	3 days	0.85	E Williams	1998 MJ ₃₉
1998 MM ₃₉	14.0	0.15	19980616	277.42028	276.17735	124.32982	13.84589	0.2485230	2.7853772	10	1	3 days	0.76	E Williams	1998 MM ₃₉
1998 MO ₃₉	14.5	0.15	19980616	332.13369	201.02014	126.33803	11.81931	0.1946438	2.7079460	15	1	3 days	1.42	E Williams	1998 MO ₃₉
1998 MA ₄₀	15.5	0.15	19980616	22.72385	98.47661	153.29040	5.58289	0.2040358	2.6056028	14	1	8 days	1.01	E Williams	1998 MA ₄₀
1998 ME ₄₀	15.5	0.15	19980616	40.86164	99.14578	130.69158	4.29947	0.1721591	2.3793862	10	1	3 days	0.70	Williams	1998 ME ₄₀
1998 MG ₄₀	15.0	0.15	19980616	0.65670	121.17348	163.14838	4.44681	0.1417866	2.3322424	10	1	3 days	0.58	E Williams	1998 MG ₄₀
1998 MJ ₄₀	15.5	0.15	19980616	347.48423	170.10275	133.43830	4.97750	0.1976318	2.4500545	11	1	3 days	1.22	E Williams	1998 MJ ₄₀
1998 MK ₄₀	16.0	0.15	19980706	328.59499	135.93991	210.33662	2.50840	0.2775416	2.3373818	14	1	24 days	0.80	Williams	1998 MK ₄₀
1998 MM ₄₀	16.0	0.15	19980616	8.61703	33.97234	231.53786	2.05767	0.2821480	2.3526553	11	1	3 days	1.12	E Williams	1998 MM ₄₀
1998 MQ ₄₀	17.0	0.15	19980706	355.72579	64.66483	235.89104	3.63334	0.2387714	2.6876184	15	1	28 days	0.49	Williams	1998 MQ ₄₀
1998 MS ₄₀	14.0	0.15	19980616	301.04704	280.21653	84.34895	2.85810	0.1926746	2.9097704	10	1	5 days	1.44	E Williams	1998 MS ₄₀
1998 MU ₄₀	14.0	0.15	19980616	218.07176	118.49372	315.50528	6.84209	0.1381043	2.2421263	11	1	7 days	0.58	Williams	1998 MU ₄₀
1998 MW ₄₀	11.0	0.15	19980616	308.59171	54.75140	307.58289	12.48229	0.2170573	5.0525917	10	1	5 days	0.65	E Williams	1998 MW ₄₀
1998 MX ₄₀	14.5	0.15	19980616	322.51852	250.89132	92.25087	9.21458	0.2521689	2.8296026	10	1	7 days	0.47	Williams	1998 MX ₄₀
1998 MF ₄₁	16.5	0.15	19980616	348.18258	3.59948	293.08387	8.11967	0.2002093	2.2149882	11	1	7 days	1.15	Williams	1998 MF ₄₁
1998 MG ₄₁	15.0	0.15	19980616	325.72202	30.45033	299.41094	10.71096	0.1673046	2.6240993	10	1	7 days	1.05	E Williams	1998 MG ₄₁
1998 MH ₄₁	14.5	0.15	19980616	350.10579	210.11316	87.58115	7.40560	0.2139701	2.6917531	11	1	7 days	0.39	Williams	1998 MH ₄₁
1998 MJ ₄₁	15.0	0.15	19980616	245.69686	304.87227	100.99954	23.43164	0.0955558	1.9289191	13	1	7 days	0.75	Williams	1998 MJ ₄₁
1998 MM ₄₁	14.5	0.15	19980616	311.06183	35.96113	314.92484	5.16393	0.1916924	2.4474168	15	1	7 days	1.02	E Williams	1998 MM ₄₁
1998 MN ₄₁	15.5	0.15	19980616	12.13406	191.13342	72.06337	3.37583	0.1860972	2.3872576	10	1	7 days	0.63	Williams	1998 MN ₄₁
1998 MO ₄₁	15.0	0.15	19980616	311.21336	33.39912	305.86855	4.03685	0.0882585	2.2039904	11	1	7 days	0.44	E Williams	1998 MO ₄₁
1998 MP ₄₁	14.5	0.15	19980616	280.81754	91.59235	303.42980	7.33726	0.2707040	2.4545382	10	1	5 days	0.58	E Williams	1998 MP ₄₁
1998 MZ ₄₁	15.0	0.15	19980616	296.17815	260.75668	83.35380	14.97894	0.1302625	2.5807132	7	1	9 days	0.48	Williams	1998 MZ ₄₁
1998 MA ₄₂	16.0	0.15	19980616	317.31766	59.27610	282.90369	4.28526	0.3260190	2.2906039	7	1	9 days	0.21	Williams	1998 MA ₄₂
1998 MJ ₄₂	16.0	0.15	19980616	19.08750	141.87355	105.27424	3.22679	0.2408512	2.2967544	10	1	3 days	0.69	E Williams	1998 MJ ₄₂
1998 MN ₄₂	14.5	0.15	19980616	325.01511	49.21801	283.20507	18.09325	0.1689734	2.8384180	10	1	3 days	0.41	Williams	1998 MN ₄₂
1998 MP ₄₂	15.0	0.15	19980616	325.15777	227.80902	108.29742	8.93748	0.2299368	2.6103226	10	1	3 days	0.71	E Williams	1998 MP ₄₂
1998 MT ₄₂	12.5	0.15	19980616	263.91747	301.23298	106.24810	11.01123	0.2271110	3.0748948	11	1	3 days	0.56	E Williams	1998 MT ₄₂
1998 MV ₄₂	14.5	0.15	19980616	210.74449	164.87826	275.96977	3.93882	0.1354203	2.2550655	11	1	3 days	1.12	E Williams	1998 MV ₄₂
1998 ME ₄₃	15.5	0.15	19980616	302.80142	79.99398	283.90159	2.60877	0.2233366	2.2792451	10	1	3 days	0.57	Williams	1998 ME ₄₃
1998 MH ₄₃	16.0	0.15	19980616	317.03680	153.27538	193.41014	1.62071	0.2374021	2.2033364	10	1	3 days	0.50	E Williams	1998 MH ₄₃
1998 MQ ₄₃	14.0	0.15	19980616	290.45816	120.59339	263.91881	3.22816	0.2458004	2.8043706	9	1	3 days	0.81	E Williams	1998 MQ ₄₃
1998 MX ₄₃	14.5	0.15	19980616	277.29727	169.27552	230.56557	2.36443	0.2750796	2.4056275	15	1	3 days	1.04	E Williams	1998 MX ₄₃
1998 MZ ₄₃	14.5	0.15	19980616	337.96303	211.08440	106.30773	7.10131	0.1989975	2.8184378	9	1	3 days	0.57	E Williams	1998 MZ ₄₃
1998 MA ₄₄	17.0	0.15	19980616	4.46060	164.23364	106.71521	2.99977	0.2240995	2.1089876	10	1	3 days	0.65	Williams	1998 MA ₄₄
1998 MC ₄₄	15.5	0.15	19980616	334.39928	51.81927	277.25653	7.54057	0.2834820	2.7917092	14	1	11 days	0.90	Williams	1998 MC ₄₄
1998 MG ₄₄	16.0	0.15	19980616	16.32528	330.46632	286.19403	7.43576	0.2116061	2.4243399	10	1	3 days	1.33	E Williams	1998 MG ₄₄
1998 NA	12.5	0.15	19980706	333.68651	38.09135	334.08363	9.18208	0.1762984	2.5718431	16	1	26 days	0.77	Williams	1998 NA
1998 ND	15.0	0.15	19980616	335.30215	79.08346	276.84236	22.49193	0.3383550	2.2909627	30	1	18 days	0.78	Williams	1998 ND
1998 NF	16.0	0.15	19980616	333.90416	233.24466	73.07895	2.45371	0.2198853	2.3353666	6	1	4 days	0.39	Williams	1998 NF
1998 NH	14.5	0.15	19980706	259.91474	282.15050	125.17292	11.53903	0.1053783	2.7601819	7	1	9 days	0.18	Marsden	1998 NH
1998 NP	15.5	0.15	19980706	18.93162	329.16880	291.50052	12.27811	0.1359706	2.6077942	7	1	14 days	0.30	Williams	1998 NP
1998 NR	16.5	0.15	19980706	356.99987	186.69655	103.76244	11.56523	0.2340938	2.4455834	11	1	21 days	0.83	Williams	1998 NR
1998 NU	16.0	0.15	19980706	104.18698	218.21084	299.38606	2.94861	0.4960792	2.3295568	27	1	25 days	0.61	Williams	1998 NU
1998 NV	15.0	0.15	19980706	243.59229	284.49268	108.01291	8.89086	0.3172507	2.7589553	7	1	9 days	0.19	Williams	1998 NV
1998 OB	16.0	0.15	19980706	300.28858	161.22862	172.64337	8.98189	0.0971717	3.0426931	12	1	7 days	0.19	Williams	1998 OB

1998 OH	16.5	0.15	19980726	63.96372	321.50714	220.86963	24.49812	0.4062951	1.5411596	39	1	12 days	0.44	Williams	1998 OH
1998 OK	14.5	0.15	19980706	31.41547	87.55706	186.33247	6.60480	0.0936887	2.3925005	31	1	42 days	0.46	Williams	1998 OK
1998 OO	15.0	0.15	19980706	29.55883	29.72891	232.35930	4.32462	0.0892538	3.1756780	15	1	11 days	0.21	Williams	1998 OO
1998 OP	16.0	0.15	19980706	4.30422	124.52880	162.03801	3.78242	0.1821919	2.1646105	9	1	4 days	0.10	Williams	1998 OP
1998 OS	16.0	0.15	19980706	165.82167	226.37502	264.95360	6.06211	0.0703622	2.7606545	18	1	11 days	0.34	Williams	1998 OS
1998 OU	17.0	0.15	19980706	289.25878	202.92608	197.12147	3.12142	0.2746871	2.3786896	9	1	7 days	0.12	Williams	1998 OU
1998 OW	16.5	0.15	19980706	253.03502	152.90020	270.70672	6.07712	0.1701881	2.5715916	12	1	7 days	0.47	Williams	1998 OW
1998 OX	15.5	0.15	19980706	248.62116	137.94863	282.83450	10.04453	0.0861633	3.0915770	9	1	10 days	0.10	Williams	1998 OX
1998 OY	15.5	0.15	19980706	279.81627	107.23517	281.22891	8.99436	0.0699802	2.9603684	15	1	11 days	0.12	Williams	1998 OY
1998 OZ	16.0	0.15	19980706	268.86863	156.55075	257.33973	4.07647	0.2132721	2.4275746	9	1	4 days	0.08	Williams	1998 OZ
1998 OA ₁	14.0	0.15	19980706	358.86375	34.48711	281.70153	7.97001	0.1219878	3.0451568	16	1	10 days	0.51	Williams	1998 OA ₁
1998 OC ₁	16.0	0.15	19980706	346.59326	158.19030	166.94624	6.98001	0.1298530	2.2169323	17	1	11 days	0.56	Williams	1998 OC ₁
1998 OD ₁	14.5	0.15	19980706	329.26248	85.01841	265.53445	5.41214	0.1436114	2.3863582	22	1	33 days	0.49	Williams	1998 OD ₁
1998 OE ₁	14.5	0.15	19980706	341.78414	43.56808	298.43413	15.47834	0.2254770	3.0022915	17	1	11 days	0.68	Williams	1998 OE ₁
1998 OJ ₁	14.0	0.15	19980726	343.11724	93.00475	243.55956	12.00335	0.1950322	2.5869252	8	1	8 days	0.36	Williams	1998 OJ ₁
1998 OK ₁	19.5	0.15	19980706	287.23948	298.66741	109.85162	13.87096	0.4228143	1.3445685	20	1	2 days	0.40	Williams	1998 OK ₁
1998 OM ₁	15.0	0.15	19980706	280.95211	199.16996	184.81398	10.11651	0.0179173	2.9712147	6	1	3 days	0.18	E Williams	1998 OM ₁
1998 ON ₁	14.5	0.15	19980706	320.80802	162.22554	198.23145	7.67559	0.2294048	2.7426979	10	1	3 days	0.14	Williams	1998 ON ₁
1998 OO ₁	17.0	0.15	19980706	319.56414	164.96579	202.27186	7.35171	0.2756591	2.7014583	8	1	3 days	0.25	Williams	1998 OO ₁
1998 OP ₁	17.5	0.15	19980706	12.80814	115.99358	160.39183	10.92994	0.2502328	2.6400460	7	1	3 days	0.24	Williams	1998 OP ₁
1998 OS ₁	17.0	0.15	19980706	21.52136	334.37995	299.64671	4.34195	0.1501874	2.3371428	6	1	2 days	0.24	Marsden	1998 OS ₁
1998 OT ₁	15.5	0.15	19980726	342.60523	28.97955	303.27723	6.47344	0.1132904	2.2615193	10	1	8 days	0.09	Marsden	1998 OT ₁
1998 OU ₁	15.5	0.15	19980706	332.88127	207.84006	126.86635	24.50026	0.0453706	1.7994853	7	1	2 days	0.14	Williams	1998 OU ₁
1998 OV ₁	14.0	0.15	19980726	179.83688	356.51377	127.09826	7.95517	0.1829627	2.7514880	11	1	6 days	0.61	E Williams	1998 OV ₁
1998 OH ₂	15.0	0.15	19980726	207.43338	334.52981	151.72292	1.85021	0.0570062	2.2128488	8	1	7 days	0.30	E Marsden	1998 OH ₂
1998 OJ ₂	15.0	0.15	19980726	359.74682	179.98692	151.19010	6.00836	0.0182295	2.3586850	8	1	7 days	0.20	E Marsden	1998 OJ ₂
1998 OL ₂	16.5	0.15	19980726	6.81924	352.26254	306.29879	8.48680	0.2695217	2.7917448	10	1	6 days	0.21	Marsden	1998 OL ₂
1998 OM ₂	14.5	0.15	19980706	243.36236	165.15056	274.29360	1.95547	0.1902086	3.1204759	9	1	11 days	0.17	Williams	1998 OM ₂
1998 OR ₂	16.5	0.15	19980726	41.16175	173.37840	27.82406	5.86469	0.5657499	2.3606726	18	1	5 days	0.44	Williams	1998 OR ₂
1998 OY ₂	15.5	0.15	19980706	279.48466	106.57884	290.16192	14.57007	0.1347268	3.1286386	9	1	10 days	0.12	Williams	1998 OY ₂
1998 OO ₃	16.5	0.15	19980726	351.62665	90.07925	223.96624	2.90951	0.1286779	2.3732032	15	1	10 days	0.23	Williams	1998 OO ₃
1998 OQ ₃	18.0	0.15	19980726	348.62269	43.96764	273.30671	5.25795	0.0682836	2.4081851	9	1	6 days	0.17	Williams	1998 OQ ₃
1998 OT ₃	17.0	0.15	19980726	335.46921	62.97611	280.18768	5.34322	0.1723724	2.2434659	9	1	4 days	0.13	Williams	1998 OT ₃
1998 OV ₃	17.0	0.15	19980726	244.73174	174.61911	257.59076	3.54730	0.0694656	2.2819599	9	1	4 days	0.21	Williams	1998 OV ₃
1998 OW ₃	17.5	0.15	19980726	348.05839	109.34175	218.70870	2.52297	0.1975551	2.7334647	9	1	4 days	0.20	Williams	1998 OW ₃
1998 OY ₃	16.5	0.15	19980726	322.82092	101.77566	253.41964	3.25438	0.0849831	2.7776839	9	1	9 days	0.17	Williams	1998 OY ₃
1998 OA ₄	16.5	0.15	19980726	18.87232	74.59195	216.14215	2.59675	0.0562978	2.6920184	9	1	9 days	0.20	Williams	1998 OA ₄
1998 OB ₄	17.0	0.15	19980726	225.79421	246.31915	204.06170	2.46075	0.0625251	2.2131703	9	1	9 days	0.06	Williams	1998 OB ₄
1998 OD ₄	17.5	0.15	19980726	346.33898	80.11469	250.60181	2.15951	0.1884108	2.3640994	9	1	9 days	0.13	Williams	1998 OD ₄
1998 OF ₄	16.0	0.15	19980726	308.05873	247.71603	139.47108	5.96259	0.2326277	2.3531043	8	1	5 days	0.19	Marsden	1998 OF ₄
1998 OG ₄	16.5	0.15	19980726	310.03903	202.74258	174.47633	3.80823	0.1774618	2.3354064	9	1	6 days	0.12	Williams	1998 OG ₄
1998 OH ₄	17.0	0.15	19980726	349.20563	169.93113	154.12941	6.16445	0.1434134	2.3740718	9	1	6 days	0.13	Williams	1998 OH ₄
1998 OP ₄	24.0	0.15	19980706	356.35828	167.24189	126.92597	13.32823	0.5362953	2.2589728	21	1	4 days	0.54	M-v 7 Marsden	1998 OP ₄
1998 OQ ₄	16.0	0.15	19980726	37.18332	358.37260	264.68917	1.92765	0.1559607	2.2794517	9	1	4 days	0.11	Marsden	1998 OQ ₄
1998 OR ₄	16.0	0.15	19980706	5.72400	165.00011	122.45603	16.10798	0.1618895	2.6279486	23	1	30 days	0.51	Williams	1998 OR ₄
1998 OS ₄	19.0	0.15	19980726	354.73323	31.13491	297.49370	10.77135	0.4806606	2.7137175	28	1	8 days	0.48	Marsden	1998 OS ₄
1998 OX ₄	21.5	0.15	19980726	306.95706	116.53932	300.30024	4.57940	0.4907946	1.5920206	16	1	8 days	0.50	Marsden	1998 OX ₄
1998 OY ₄	14.5	0.15	19980726	278.26854	198.46206	231.03376	8.10837	0.2052627	2.5542744	8	1	7 days	0.26	Williams	1998 OY ₄
1998 OZ ₄	14.5	0.15	19980726	357.61665	119.01843	209.38438	9.73855	0.0589627	3.1644297	5	1	5 days	0.05	E Williams	1998 OZ ₄
1998 OW ₅	13.0	0.15	19980726	132.17251	40.22514	142.63373	14.19221	0.0926268	3.2009337	9	1	5 days	0.30	E Marsden	1998 OW ₅
1998 OE ₆	14.5	0.15	19980726	341.99407	42.19382	295.19538	4.87012	0.2257248	2.3964472	18	1	3 days	0.71	Williams	1998 OE ₆
2049 P-L	15.5	0.15	19980706	103.07001	141.91258	325.80153	3.65192	0.0837640	2.3432042	50	2	1960–1998	0.80	M-v 5 Williams	32091 2049 P-L
2098 P-L	13.0	0.15	19980706	319.52655	158.31996	192.07004	11.95730	0.2652970	2.6274889	39	5	1960–1998	0.70	M-v 1 Williams	30696 2098 P-L

2102 P-L	15.5	0.15	19980706	333.77426	324.89575	336.02588	3.92770	0.1869871	2.3046733	20	3	1960-1998	0.73	M-v	3	Williams	32035	2102 P-L
2103 P-L	14.0	0.15	19980706	47.83942	353.41117	218.37945	3.02274	0.1392853	2.6561158	41	8	1960-1998	0.99	M-v	2	Williams	29668	2103 P-L
2221 P-L	17.0	0.15	19980706	310.30636	72.63221	236.79215	3.57663	0.1229498	2.1811373	21	3	1960-1998	0.75	M-v	4	Marsden	32091	2221 P-L
2581 P-L	15.0	0.15	19980706	262.36609	259.86506	95.86710	3.16407	0.0736838	2.8862657	26	3	1960-1998	0.80	M-v	5	Williams	26414	2581 P-L
2592 P-L	14.5	0.15	19980706	39.50345	73.78096	176.68873	5.25585	0.0867851	2.4567425	24	4	1960-1998	0.72	M-v	2	Williams	29668	2592 P-L
2611 P-L	13.0	0.15	19980706	303.85733	125.78801	179.69736	5.47267	0.0793815	3.1680517	48	3	1960-1998	0.58	M-v	4	Williams	32035	2611 P-L
2614 P-L	16.0	0.15	19980706	318.74180	165.92576	184.37884	3.21784	0.1493459	2.6305061	19	4	1960-1998	0.44	M-v	2	Williams	29948	2614 P-L
2728 P-L	14.5	0.15	19980706	38.25736	148.59225	13.70478	10.84367	0.0739175	2.9335836	32	3	1960-1998	0.66	M-v	4	Williams	32036	2728 P-L
4024 P-L	13.5	0.15	19980706	298.93244	52.82282	286.36507	2.97307	0.1382481	2.6453261	17	4	1960-1998	0.74	M-v	2	Williams	23531	4024 P-L
4035 P-L	13.5	0.15	19980706	301.18050	35.79013	280.11354	3.60008	0.1385438	3.1557713	40	3	1960-1998	0.75	M-v	4	Williams	32091	4035 P-L
4053 P-L	14.5	0.15	19980706	316.76133	60.70920	214.87773	6.35196	0.1102371	2.4815163	92	3	1960-1998	0.66	M-v	3	Williams	32091	4053 P-L
4543 P-L	15.5	0.15	19980706	338.75621	295.54578	16.28209	2.43393	0.1594759	2.1681235	19	3	1960-1998	0.68	M-v	4	Williams	28880	4543 P-L
4584 P-L	15.0	0.15	19980706	178.93968	218.73354	166.76986	5.88403	0.2114771	2.3427927	36	2	1960-1998	0.82	M-v	4	Williams	32091	4584 P-L
4603 P-L	13.0	0.15	19980706	163.01652	353.80305	81.96022	3.04115	0.1996873	3.1935973	23	5	1960-1998	0.65	M-v	1	Williams	29141	4603 P-L
4643 P-L	13.0	0.15	19980706	56.03141	51.88309	182.22134	19.44389	0.1916326	3.1304541	32	4	1960-1998	0.61	M-v	1	Williams	30088	4643 P-L
4647 P-L	15.5	0.15	19980706	348.18301	76.41148	194.59099	1.51125	0.1233490	2.1780331	28	2	1960-1998	0.63	M-v	5	Williams	32036	4647 P-L
4695 P-L	15.5	0.15	19980706	33.66393	182.38828	3.85048	6.28563	0.0404518	2.3325652	54	3	1960-1998	0.67	M-v	4	Williams	32091	4695 P-L
4896 P-L	14.0	0.15	19980706	323.57331	237.90909	114.44404	2.59599	0.1821805	3.1040495	41	5	1960-1998	0.71	M-v	2	Williams	30914	4896 P-L
6044 P-L	13.0	0.15	19980706	323.57755	303.63755	317.57557	1.29533	0.0241147	2.9043126	46	3	1960-1998	0.69	M-v	5	Williams	32091	6044 P-L
6539 P-L	14.0	0.15	19980706	304.81533	118.76238	170.47704	7.77827	0.0670470	2.6680009	27	2	1960-1998	0.56	M-v	4	Williams	32036	6539 P-L
6585 P-L	14.0	0.15	19980706	318.08589	208.18726	148.19185	2.42739	0.1337322	3.1062144	27	3	1960-1998	0.75	M-v	4	Williams	30095	6585 P-L
6606 P-L	15.0	0.15	19980706	98.18183	105.36342	29.04209	6.64565	0.0434510	2.3278709	31	2	1960-1998	0.70	M-v	5	Williams	32036	6606 P-L
6626 P-L	15.5	0.15	19980706	67.16856	219.81927	1.74186	2.58157	0.0615350	2.3022956	19	5	1960-1998	0.65	M-v	1	Williams	29321	6626 P-L
6636 P-L	13.5	0.15	19980706	95.63666	47.62278	116.40821	3.76560	0.0181198	2.8800516	21	5	1960-1998	0.88	M-v	1	Williams	29321	6636 P-L
6833 P-L	14.5	0.15	19980706	3.27753	216.72220	352.66680	1.87141	0.0833320	2.9107022	34	4	1960-1998	0.68	M-v	3	Williams	32092	6833 P-L
9058 P-L	13.5	0.15	19980706	336.54800	85.54944	266.28308	3.19521	0.1714559	3.0929910	28	5	1960-1998	0.60	M-v	1	Williams	31608	9058 P-L
9565 P-L	15.0	0.15	19980706	297.53417	207.92142	138.96110	4.39528	0.1430510	2.3035902	27	5	1960-1998	0.69	M-v	1	Williams	29668	9565 P-L
1145 T-1	15.5	0.15	19980706	54.31504	191.77756	316.29857	3.64971	0.1296904	2.4595100	52	2	1971-1998	0.67	M-v	5	Williams	32092	1145 T-1
1166 T-1	14.0	0.15	19980706	47.55321	155.15064	0.85332	10.73187	0.0892474	3.0711435	49	3	1971-1998	0.85	M-v	4	Williams	32092	1166 T-1
1171 T-1	14.5	0.15	19980706	347.65297	137.86872	200.03898	7.26342	0.1839482	2.3944781	34	7	1971-1998	0.82	M-v	1	Williams	29948	1171 T-1
2114 T-1	14.5	0.15	19980706	62.57737	347.89324	178.46089	14.12062	0.1169234	2.7016700	36	2	1971-1998	0.71	M-v	4	Williams	32092	2114 T-1
2120 T-1	15.5	0.15	19980706	45.62194	97.86810	135.92313	2.76701	0.1238778	2.4209643	35	4	1971-1998	1.04	M-v	2	Marsden	29142	2120 T-1
2151 T-1	14.0	0.15	19980706	323.20376	232.88953	156.96319	6.05546	0.1869140	2.3641952	32	6	1955-1998	0.70	M-v	2	Williams	28620	2151 T-1
2168 T-1	14.0	0.15	19980706	275.67741	176.82768	182.63848	11.78014	0.1284683	2.4180225	36	4	1971-1998	0.91	M-v	3	Williams	32092	2168 T-1
2208 T-1	15.0	0.15	19980706	349.25037	232.40706	14.73220	8.47295	0.1888160	2.4537362	69	2	1971-1998	0.72	M-v	4	Williams	32092	2208 T-1
2301 T-1	14.5	0.15	19980706	177.90002	357.04338	22.28257	6.17331	0.1828378	2.2556920	33	2	1971-1998	0.82	M-v	5	Williams	32092	2301 T-1
3033 T-1	14.0	0.15	19980706	310.67970	301.79866	6.32059	6.37756	0.1394959	2.4374150	31	3	1971-1998	0.78	M-v	4	Williams	32036	3033 T-1
3051 T-1	13.5	0.15	19980706	2.26036	111.97497	189.19956	10.95079	0.2050508	2.9950446	22	4	1955-1998	1.03	M-v	3	Williams	30696	3051 T-1
3074 T-1	15.0	0.15	19980706	288.30297	159.13622	359.67308	5.34937	0.1319767	3.2004894	21	3	1971-1997	0.86	M-v	4	Williams	32092	3074 T-1
3105 T-1	14.5	0.15	19980706	72.07902	233.00963	326.02906	1.97854	0.1124739	2.4243005	35	6	1971-1998	0.69	M-v	1	Williams	26192	3105 T-1
3174 T-1	13.5	0.15	19980706	21.10062	315.09372	0.88258	9.59728	0.0735168	2.3878963	22	4	1971-1998	0.70	M-v	2	Williams	22087	3174 T-1
3249 T-1	14.0	0.15	19980706	155.75386	47.24850	352.58990	4.88597	0.1067724	2.4675155	34	3	1971-1998	0.78	M-v	4	Williams	29129	3249 T-1
4111 T-1	14.5	0.15	19980706	338.16461	185.26049	46.56564	4.55520	0.1005922	3.0827412	39	2	1971-1998	0.83	M-v	5	Williams	32092	4111 T-1
4221 T-1	14.0	0.15	19980706	25.97322	22.68502	167.94104	4.64456	0.0930292	3.0672590	50	3	1971-1998	0.81	M-v	4	Williams	32092	4221 T-1
4265 T-1	15.5	0.15	19980706	101.87790	8.23816	99.85700	2.50606	0.1053981	2.2469863	59	2	1971-1998	0.73	M-v	5	Williams	32092	4265 T-1
1142 T-2	14.5	0.15	19980706	38.71987	271.80885	274.76074	1.34107	0.1513368	2.4107354	49	3	1973-1998	0.76	M-v	4	Williams	32092	1142 T-2
1150 T-2	15.5	0.15	19980706	321.74237	259.40283	44.85699	1.21975	0.1970748	2.3712097	34	2	1973-1998	1.06	M-v	6	Williams	32036	1150 T-2
1158 T-2	16.0	0.15	19980706	205.96562	188.68679	224.15187	1.68386	0.2050644	2.3982308	24	4	1973-1998	0.92	M-v	3	Williams	20831	1158 T-2
1197 T-2	16.0	0.15	19980706	7.80724	63.22901	214.28566	1.75287	0.2071642	2.3563095	27	3	1973-1998	1.02	M-v	4	Williams	24236	1197 T-2
1244 T-2	15.0	0.15	19980706	130.95570	264.59220	190.30071	14.24283	0.0925542	2.6988355	22	2	1973-1998	0.81	M-v	6	Williams	32037	1244 T-2
1251 T-2	13.5	0.15	19980706	128.48416	313.01737	152.31888	1.24030	0.1656369	3.0739341	83	3	1973-1998	0.83	M-v	4	Williams	32092	1251 T-2
1324 T-2	14.0	0.15	19980706	19.31084	248.75249	19.99055	4.91419	0.1282968	2.3606263	43	7	1954-1998	0.91	M-v	1	Williams	31436	1324 T-2
1331 T-2	14.5	0.15	19980706	219.84926	71.25595	267.03262	1.63037	0.0824091	2.7125039	33	4	1951-1998	0.84	M-v	2	Williams	32092	1331 T-2

1607 T-2	15.0	0.15	19980706	284.97199	42.55925	344.89451	7.45246	0.1263686	2.3564941	23	4	1973–1998	0.73	M-v	2	Williams	21978	1607 T-2
2071 T-2	14.5	0.15	19980706	0.60173	116.46967	213.18670	3.05594	0.2692367	2.5900034	37	4	1973–1998	0.85	M-v	2	Williams	30797	2071 T-2
2137 T-2	16.0	0.15	19980706	337.09243	118.84689	214.54778	1.47841	0.1140828	2.1490390	32	5	1973–1998	1.04	M-v	2	Marsden	29669	2137 T-2
2145 T-2	14.0	0.15	19980706	259.84304	197.74466	188.31262	13.47487	0.1641938	2.6426226	36	6	1973–1998	0.87	M-v	2	Williams	29669	2145 T-2
2180 T-2	13.0	0.15	19980706	70.39680	107.36713	7.14903	8.52944	0.0464253	3.1262463	41	4	1973–1998	0.82	M-v	2	Williams	32037	2180 T-2
2187 T-2	15.0	0.15	19980706	84.60807	146.73363	341.67990	2.09424	0.1550126	2.4327364	30	2	1973–1998	0.96	M-v	6	Williams	32037	2187 T-2
2189 T-2	14.0	0.15	19980706	26.36583	357.58137	275.65591	1.13938	0.1167504	2.6182495	38	4	1973–1998	0.92	M-v	2	Williams	29949	2189 T-2
2261 T-2	14.5	0.15	19980706	156.62945	70.52322	349.84679	2.11031	0.1676505	2.4288511	26	3	1973–1998	0.99	M-v	5	Williams	32037	2261 T-2
2276 T-2	14.5	0.15	19980706	7.81122	246.85077	30.20747	2.39219	0.0634762	2.6352430	24	3	1973–1998	0.96	M-v	4	Williams	26416	2276 T-2
2287 T-2	14.5	0.15	19980706	168.09804	193.91337	174.69106	6.13038	0.0219342	2.7385100	41	3	1973–1998	0.89	M-v	4	Williams	31775	2287 T-2
3013 T-2	14.0	0.15	19980706	235.83295	260.73357	161.84893	4.38756	0.0708954	2.6295930	39	3	1973–1998	0.84	M-v	5	Williams	17836	3013 T-2
3067 T-2	15.0	0.15	19980706	63.95650	60.04846	132.40519	2.21032	0.0679253	2.1768058	44	5	1954–1998	1.09	M-v	2	Williams	32092	3067 T-2
3089 T-2	14.0	0.15	19980706	13.57236	84.15206	103.23017	2.79351	0.1033470	3.0906068	45	2	1973–1998	0.83	M-v	4	Williams	32093	3089 T-2
3193 T-2	13.5	0.15	19980706	173.37448	248.60527	150.44788	9.06408	0.0461744	3.0808240	25	3	1973–1998	0.95	M-v	4	Williams	32037	3193 T-2
3227 T-2	15.0	0.15	19980706	226.08293	320.25739	46.72712	6.72515	0.0578980	2.6814048	33	2	1973–1998	0.98	M-v	5	Williams	32037	3227 T-2
3237 T-2	14.5	0.15	19980706	68.43453	92.63493	21.86526	9.85725	0.2018622	3.1424795	38	3	1973–1998	0.97	M-v	3	Williams	32093	3237 T-2
3260 T-2	14.5	0.15	19980706	124.01287	329.02335	100.61383	4.34680	0.0507571	2.7224052	33	2	1973–1998	0.82	M-v	5	Williams	32093	3260 T-2
3289 T-2	13.0	0.15	19980706	180.66297	302.64346	169.29793	9.78162	0.0230583	2.9871770	41	7	1973–1998	0.94	M-v	1	Williams	29669	3289 T-2
3305 T-2	15.5	0.15	19980706	337.21231	201.54647	48.77329	3.21840	0.1416957	2.4004128	55	2	1973–1998	0.75	M-v	4	Williams	32093	3305 T-2
4062 T-2	14.5	0.15	19980706	56.15385	329.29301	181.04118	13.06361	0.1142097	2.7158713	60	2	1973–1998	0.76	M-v	5	Williams	32093	4062 T-2
4159 T-2	14.0	0.15	19980706	62.84785	67.02605	66.78337	1.87193	0.1716544	3.1237059	60	3	1973–1998	0.90	M-v	5	Williams	32093	4159 T-2
4210 T-2	14.5	0.15	19980706	68.65314	40.51381	145.59663	5.01948	0.1140048	2.6651967	31	5	1954–1998	0.96	M-v	2	Williams	32093	4210 T-2
4232 T-2	14.5	0.15	19980706	146.40899	328.33884	69.85160	3.97593	0.1733449	2.4475908	26	2	1973–1998	0.97	M-v	5	Williams	32038	4232 T-2
4262 T-2	15.5	0.15	19980706	30.24544	167.46798	78.01537	3.50687	0.1332973	2.1631131	33	5	1973–1998	0.90	M-v	2	Williams	24585	4262 T-2
5087 T-2	13.5	0.15	19980706	139.66321	174.19169	242.16595	10.28557	0.0845004	3.1110887	29	2	1973–1998	0.93	M-v	5	Williams	32093	5087 T-2
5200 T-2	13.0	0.15	19980706	103.64696	245.56607	301.90265	7.68467	0.0289582	2.9923822	32	4	1973–1998	0.79	M-v	1	Williams	29949	5200 T-2
5447 T-2	14.5	0.15	19980706	24.94009	334.24601	314.41897	8.42133	0.2317328	2.3406266	24	4	1973–1998	0.60	M-v	2	Williams	29669	5447 T-2
5485 T-2	14.0	0.15	19980706	206.90540	133.55039	298.69845	5.69493	0.0893455	2.3836935	19	6	1954–1998	0.75	M-v	2	Williams	25652	5485 T-2
1097 T-3	13.5	0.15	19980706	178.99335	158.18709	244.55365	8.23378	0.1384959	2.7486806	28	3	1977–1998	0.73	M-v	5	Williams	32093	1097 T-3
2266 T-3	14.5	0.15	19980706	202.91516	182.46141	206.78448	15.33930	0.0687239	2.7324681	29	2	1977–1998	0.92	M-v	5	Williams	32038	2266 T-3
3135 T-3	14.0	0.15	19980706	144.34341	262.76049	185.81945	3.42583	0.0602329	2.7391564	46	3	1977–1998	0.82	M-v	4	Williams	32038	3135 T-3
3150 T-3	14.5	0.15	19980706	172.17665	255.44776	126.79135	1.32574	0.0821375	2.7765644	40	3	1977–1998	0.85	M-v	4	Williams	32093	3150 T-3
3164 T-3	13.5	0.15	19980706	257.20651	190.02169	196.18084	12.97668	0.1119410	2.6779989	36	4	1977–1998	0.82	M-v	2	Williams	32093	3164 T-3
3197 T-3	13.0	0.15	19980706	284.44445	307.64903	71.02373	2.89217	0.1883700	3.1005351	26	5	1977–1998	1.07	M-v	2	Williams	30095	3197 T-3
3468 T-3	15.0	0.15	19980706	332.20372	192.94240	49.90265	2.03846	0.1415643	2.3992541	47	3	1977–1998	0.80	M-v	4	Williams	32093	3468 T-3
4074 T-3	15.0	0.15	19980706	43.95797	91.43341	96.03709	3.31139	0.0838709	2.3975227	39	4	1977–1998	0.83	M-v	2	Williams	32093	4074 T-3
4102 T-3	15.0	0.15	19980706	107.94182	41.52976	66.23311	4.14519	0.0622522	2.1609241	62	3	1977–1998	0.82	M-v	4	Williams	32093	4102 T-3
4181 T-3	15.5	0.15	19980706	329.08996	236.45667	102.68162	2.76134	0.2340275	2.3255820	39	3	1977–1998	0.77	M-v	4	Williams	21978	4181 T-3
5051 T-3	13.0	0.15	19980706	142.60338	1.30491	66.24341	10.45034	0.1401314	2.7678506	41	4	1973–1998	0.90	M-v	2	Williams	32038	5051 T-3
5090 T-3	14.5	0.15	19980706	50.11045	76.30751	81.17570	9.99274	0.0975159	2.7679763	21	2	1977–1998	0.77	M-v	5	Williams	32093	5090 T-3
5122 T-3	15.0	0.15	19980706	311.14803	192.61806	112.38831	6.94707	0.2474599	2.3566618	45	3	1977–1998	0.98	M-v	4	Williams	32093	5122 T-3

1997 TG₆ = 1997 SK₃₅ (G. V. Williams)1998 EB₂ = 1998 FE₇₅ (G. V. Williams)1998 FP₃₀ = 1998 HC₁₃ (G. V. Williams)1998 FL₅₇ = 1998 HE₁₃₀ (G. V. Williams)1998 FB₆₁ = 1998 HL₂₀ (G. V. Williams)1998 FW₈₄ = 1998 EP₂₁ (G. V. Williams)1998 HP₁₉ = 1998 HL₂₈ (G. V. Williams, *MPC* 32903)1998 HU₅₀ = 1998 HK₃₇ = 1998 HX₁₅₀ (G. V. Williams, *MPC* 32093)1998 HS₁₅₀ = 1998 KU₃ (G. V. Williams)

NEW NAMES OF MINOR PLANETS

(4843) Mégantic = 1990 DR₄

Discovered 1990 Feb. 28 by H. Debehogne at the European Southern Observatory.

Named for Mont Mégantic, the largest observatory in Québec. Founded in 1978, its mission is to promote research in astrophysics, to train students and to promote astronomy in the local culture. The observatory is jointly operated by the Université de Montréal and the Université Laval. Name proposed by the discoverer, following a suggestion by P. Bastien and Y. Dutil.

(4884) Bragaria = 1979 OK₁₅

Discovered 1979 July 21 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Luka Fedorovich Bragar' (b.1938), a senior lecturer on the staff of Tiraspol Pedagogical Institute (Moldova), known for his contribution to the rotational dynamics of minor planets and as a splendid educator and popularizer of astronomical knowledge.

(5014) Gorchakov = 1974 ST

Discovered 1974 Sept. 19 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Named in memory of Aleksandr Mikhailovich Gorchakov (1798–1883), an outstanding statesman and one of the eminent diplomats of the nineteenth century. He was Minister of Foreign Affairs of Russia from 1856 to 1882. Named on the occasion of the 200th anniversary of his birth.

(5219) Zemka = 1976 GU₃

Discovered 1976 Apr. 2 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Aleksandr Grigorjevich Zemka (b.1947), friend of the discoverer, electrotechnics engineer in Zaporozhje, both a prominent specialist and a good organizer who wins the respect of his colleagues and acquaintances. He provided valuable help to the discoverer in improving the 0.64-m telescope used for the Crimean NEA Survey.

(5246) Migliorini = 1979 OB

Discovered 1979 July 26 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in memory of Fabio Migliorini (1971–1997), a young researcher tragically killed in a mountain accident. Migliorini obtained important results relating to both dynamical and physical studies of minor planets. In particular, he investigated the various processes in the main belt responsible for replenishing the NEA population and was the first to point out the importance of Mars-crossing objects. He also made essential contributions to the physical study of minor planet families (among which are reconstruction of ejection velocity fields and assessment of the number of family interlopers). Name suggested by A. Cellino, D. Davis, M. Di Martino, P. Farinella, V. Zappalà and endorsed by many colleagues and friends in the research community on minor planets.

(5839) GOI = 1974 SJ₃

Discovered 1974 Sept. 21 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named for Gosudarstvennyj Opticheskij Institut, the State Optical Institute, and its first director, academician Dmitrij Sergeevich Rozhdestvenskij (1876–1940), an outstanding physicist-optician. The institute has undertaken important investigations in the field of physical and applied optics. The name is given on the occasion of the 80th anniversary of its founding (1918 Dec. 15).

(6087) Lupo = 1988 FK

Discovered 1988 Mar. 19 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

Named in honor of Bob Lupo. Wearing a black hat and a genial smile, Lupo typifies the Western cowboy of today's imagination. Born in Boston, he sought his fortune in the West, becoming a registered farrier and at one time taking part in team

roping in Colorado. Today he owns and manages a fine Western-style eatery, Horseman Lodge and Restaurant, in Flagstaff, Arizona, where he has served outstanding seafood (a heritage from Boston), steaks and barbecue to the many renowned visiting scientists and others who have entered his doors.

(6141) Durda = 1992 YC₃

Discovered 1992 Dec. 26 by Spacewatch at Kitt Peak.

Named in honor of Daniel D. Durda, who has studied the generation and evolution of dust from and the size distribution of minor planets. As a member of the Galileo imaging team, he has carried out fragmentation studies of minor planets and a detailed analysis of the formation of their satellites—in particular, of (243) Ida's moon Dactyl. An avid pilot, he is also a noted astronomical artist whose paintings are inspired by his scientific work.

(6161) Vojno-Yasenetsky = 1971 TY₂

Discovered 1971 Oct. 14 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Named in memory of Valentin Feliksovich Vojno-Yasenetsky (1877–1961), surgeon and bishop. As a physician, he practised in a number of district hospitals in central Russia, serving as head physician in the Tashkent urban hospital and as a professor at Central Asia University. In the early 1920s he took vows and was ordained as a bishop. During his life he published 55 scientific works on surgery and anatomy, winning the state prize in 1946. Although he was arrested many times and sent into exile for his views, when he died he had dignity as the archbishop of the Crimea and Simferopol.

(6232) Zubitskia = 1985 SJ₃

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

Named in honor of Danila Nikiforovich Zubitskij and Natalia Petrovna Zubitska, doctors and phyto-therapists in Kiev, who have developed original methods of treatment using herbal medicines. The authors of several books, they are well known in the Ukraine, and their methods and preparations are also being used in other countries. Natalia Petrovna, who has a broadcast program in Kiev about herbs and "people's medicine", has also published several books of poetry.

(6432) Temirkanov = 1975 TR₂

Discovered 1975 Oct. 3 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Yuriy Khatuevich Temirkanov (b.1938), an outstanding conductor. From 1976 to 1988 he was the conductor of the Kirov theater in Leningrad, where a number of splendid operas and ballets were produced under his leadership. Since 1988 Temirkanov has been the artistic director and orchestra conductor of the St. Petersburg Philharmonic Society. He is also a conductor of the London Royal Orchestra and a main invited conductor for the Dresden Philharmonic. Name suggested by the Union of Concert Workers of Russia and supported by the discoverer.

(6536) Vysochinska = 1977 NK

Discovered 1977 July 14 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Lyudmila Iosifovna Vysochinska, composer, pianist and music critic in Kiev and a public figure throughout Ukraine. She has written many songs based on the poetry of Ukrainian, Russian and Bulgarian poets. The founding director of the Ukraine's first Theater of Songs, she has research interests that include the connections between Ukrainian classical composers and writers.

(6574) Gvishiani = 1976 QE₁

Discovered 1976 Aug. 26 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Jermen Mikhailovich Gvishiani (b. 1928), known for his many works in philosophy, sociology and theory of management. He serves as president of the Foundation for Prospective Research and the Moscow Institute of Economics, Politics and Law. He is a member of the Russian Academy of Sciences, the Rome Club and many foreign academies, foundations and associations. His work promotes the use of foreign achievements in science, technology and culture in present-day Russia.

(6575) Slavov = 1978 PJ₂

Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Nikolaj Antonovich Slavov (b. 1926), Ukrainian river fleet engineer and sportsman. He helped lead the clean-up effort after the 1986 disaster at Chernobyl, where he had been working for several months. A national boxing champion, he is president of the Professional Boxing League of Ukraine. His interests extend to the arts, and he is president of the All-Ukrainian Foundation for the artist Leonid Bykov. He actively contributes to the development of culture and sport in Ukraine.

(6622) Matvienko = 1978 RG₁

Discovered 1978 Sept. 5 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Vladimir Pavlovich Matvienko (b. 1938), Ukrainian economist, author of many works on economics and banking and a member of the Ukrainian Academy of Ecological Sciences. He is also a poet, and some of his poetic works have been set to music.

(6635) Zuber = 1987 SH₃

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

Named in honor of Maria T. Zuber, American geophysicist whose research interests have taken her into theoretical modeling of geophysical processes and the relationships between gravity, topography and tectonic features in planetary lithospheres. She has contributed to various space missions, including Mars Observer, the Clementine mission, Mars Global Surveyor and the Near Earth Asteroid Rendezvous mission.

(6811) Kashcheev = 1976 QP

Discovered 1976 Aug. 26 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Boris Leonidovich Kashcheev (b. 1920), professor of radio-electronics at Kharkov Technical University, researcher in the physics and dynamics of meteors. In 1956 he founded the laboratory for the exploration of meteors by radio techniques. He was the chief designer of MARS, the first automatic meteor radio system in Ukraine. More than 20 million meteors were detected with this system during 1972–1978, and many thousands of meteor orbits were determined and studied. He was also chair of the Meteor Commission of the Soviet Geophysical Committee.

(6832) Kawabata = 1992 FP

Discovered 1992 Mar. 23 by K. Endate and K. Watanabe at Kitami.

Named in memory of Yasunari Kawabata (1899–1972), Japanese novelist and author of “Izu no Odoriko”. He was awarded the 1968 Nobel Prize in literature.

(6845) Mansurova = 1976 JG₂

Discovered 1976 May 2 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in memory of Kira Sergeevna Mansurova (1931–1990), an astronomer in Irkutsk known for her observations with the zenith telescope. She was director of the Astronomical Observatory of Irkutsk University for many years and lecturer of astronomy at the University and Pedagogical Institute in Irkutsk. An active popularizer of astronomy, she published a number of works on astrometry and methods of teaching astronomy.

(6867) Kuwano = 1992 FP₁

Discovered 1992 Mar. 28 by K. Endate and K. Watanabe at Kitami.

Named in memory of Yoshiyuki Kuwano (1931–1998), librarian and later director of Hita Municipal Tanso Memorial Library, Oita Prefecture. As an amateur astronomer, he discovered five novae (IV Cep, V3888 Sgr, V3889 Sgr, V2104 Oph, V4021 Sgr) and the peculiar variable PU Vul. An organizer and leader of local amateur astronomers, he actively popularized astronomy to the public through his frequent lectures and star parties. Name proposed by the discoverers following a suggestion by T. Funada, T. Sato and A. Fujii.

(6869) Funada = 1992 JP

Discovered 1992 May 2 by K. Endate and K. Watanabe at Kitami.

Named in honor of Takumi Funada (b. 1932), retired schoolmaster and science teacher who is currently director of Sekizaki Kaisei Kan (Sea and Star Museum) and honorary president of the Oita Astronomical Society. He has greatly contributed to amateur astronomy and has helped popularize astronomy to the public. Also well known as an astrophotographer, he has published several books on astronomy. Name proposed by the discoverers following a suggestion by T. Sato and A. Fujii.

(6873) Tasaka = 1993 HT₁

Discovered 1993 Apr. 21 by K. Endate and K. Watanabe at Kitami.

Named in honor of Ichiro Tasaka (b. 1929), Japanese farmer, Mars observer and astronomical optician. He has made hundreds of precision telescope mirrors currently being used both by observatories and amateur astronomers. He operates a tourist house that has an observatory. Its main telescope is a 0.73-m equatorial reflector, both the optical and mechanical parts of which were made by Tasaka himself. Name proposed by the discoverers following a suggestion by T. Sato and A. Fujii.

(6878) Isamu = 1994 TN₂

Discovered 1994 Oct. 2 by K. Endate and K. Watanabe at Kitami.

Named in honor of Isamu Hirabayashi (b. 1941), amateur astronomer who founded the Japan Lunar and Planetary Observers Network when he was a high-school student in 1959 and who has been its president ever since. This organization soon became one of the most active groups of lunar and planetary observers and theorists in Japan. He also served as director of the Jupiter-Saturn Section of the Oriental Astronomical Association from 1971 to 1989. Name proposed by the discoverers following a suggestion by T. Sato and A. Fujii.

(6905) Miyazaki = 1990 TW

Discovered 1990 Oct. 15 by K. Endate and K. Watanabe at Kitami.

Named in honor of Isao Miyazaki (b. 1961), amateur astronomer well known for his high-quality visual, photographic and CCD observations of the planets. He has been director of the Jupiter-Saturn Section of the Oriental Astronomical Association (OAA) since 1989. He is a winner of the I. Yamamoto Award (OAA), the W. H. Steavenson Award (British Astronomical Association) and the W. H. Haas

Award (Association of Lunar and Planetary Observers). Name proposed by the discoverers following a suggestion by T. Sato and A. Fujii.

(6908) Kunimoto = 1990 WB₃

Discovered 1990 Nov. 24 by K. Endate and K. Watanabe at Kitami.

Named in honor of Yoshihiro Kunimoto (b.1958), Japanese composer and synthesizer musician. He has written and played theme and background music for more than 60 planetarium shows at the Hiroshima Children's Museum. Name proposed by the discoverers following a suggestion by T. Sato and K. Kato.

(6913) Yukawa = 1991 UT₃

Discovered 1991 Oct. 31 by K. Endate and K. Watanabe at Kitami.

Named in memory of Hideki Yukawa (1907–1981), Japanese theoretical physicist who was awarded the 1949 Nobel Prize in physics. He predicted the existence of the π meson, which causes the nuclear force.

(6919) Tomonaga = 1993 HP

Discovered 1993 Apr. 16 by K. Endate and K. Watanabe at Kitami.

Named in memory of Shinichiro Tomonaga (1906–1979), Japanese theoretical physicist who was awarded the 1965 Nobel Prize in physics. He made great contributions to the field of quantum electrodynamics, especially in the renormalization theory to remove singularities.

(6920) Esaki = 1993 JE

Discovered 1993 May 14 by K. Endate and K. Watanabe at Kitami.

Named in honor of Leo Esaki (b.1925), Japanese experimental physicist who was awarded the 1973 Nobel Prize in physics. He devised the Esaki diode using the tunnel effect.

(6924) Fukui = 1993 TP

Discovered 1993 Oct. 8 by K. Endate and K. Watanabe at Kitami.

Named in memory of Kenichiro Fukui (1918–1997), Japanese chemist who was awarded the 1981 Nobel Prize in chemistry. He proposed the frontier orbital theory.

(6927) Tonegawa = 1994 TE₁

Discovered 1994 Oct. 2 by K. Endate and K. Watanabe at Kitami.

Named in honor of Susumu Tonegawa (b.1939), Japanese biologist who was awarded the 1987 Nobel Prize for medicine and physiology. He revealed the mechanism of genes that produce various antibodies.

(6931) Kenzaburo = 1994 VP₆

Discovered 1994 Nov. 4 by K. Endate and K. Watanabe at Kitami.

Named in honor of Kenzaburo Ohe (b.1935), Japanese writer who was awarded the 1994 Nobel Prize in literature. His important works include "Sexual human" and "Football on the first year of Man-en era".

(6941) Dalgarno = 1976 YA

Discovered 1976 Dec. 16 at the Harvard College Observatory's Agassiz Station.

Named in honor of Alexander Dalgarno (b.1928), on the occasion of his 70th birthday. Renowned for his seminal research on collisions and radiative processes involving atoms, molecules, ions and electrons, Dalgarno has led the exploration of atomic and molecular phenomena occurring in the interstellar medium, planetary and cometary atmospheres, supernova ejecta, the early universe and the terrestrial thermosphere. Due to his intellectual leadership, the Institute for Theoretical Atomic

and Molecular Physics was established at the Harvard-Smithsonian Center for Astrophysics. He served as director of the Institute for five years and as acting director of the Harvard College Observatory for three years.

(6964) Kunihiko = 1990 TL₁

Discovered 1990 Oct. 15 by K. Endate and K. Watanabe at Kitami.

Named in memory of Kunihiko Kodaira (1915–1997), Japanese mathematician who was awarded the Fields Medal in 1954. He contributed to the harmonic integral theory.

(6978) Hironaka = 1993 RD

Discovered 1993 Sept. 12 by K. Endate and K. Watanabe at Kitami.

Named in honor of Heisuke Hironaka (b.1931), Japanese mathematician who was awarded the Fields Medal in 1970. He proved the theorem of resolution of singularity.

(6979) Shigefumi = 1993 RH

Discovered 1993 Sept. 12 by K. Endate and K. Watanabe at Kitami.

Named in honor of Shigefumi Mori (b.1951), Japanese mathematician who was awarded the Fields Medal in 1990. He resolved Hartshorne's expectation.

(7003) Zoyamironova = 1976 SZ₉

Discovered 1976 Sept. 25 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of Zoya Sergeevna Mironova (b.1913), well-known surgeon and traumatologist. During World War II, she saved the lives and health of hundreds of wounded soldiers. Since 1952 she has worked at the Central Research Institute for Orthopedics and Traumatology in Moscow. During her long career, she has performed more than 10 000 surgical operations, many of them unique. Many world-famous sports figures and ballet dancers have benefited from her skill. She has received many honors, including recognition from the International Olympic Committee. Name suggested by a group of scientists and the Olympic Committee of Russia and supported by the discoverer.

(7008) Pavlov = 1985 QH₅

Discovered 1985 Aug. 23 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in memory of Nikolaj Nikiforovich Pavlov (1902–1985), professor at Leningrad University and head of the Pulkovo Observatory Time Service. He made a great contribution to the study of the earth's rotation and was the first to apply photoelectric, rather than visual, registration to meridian observations.

(7051) Sean = 1985 JY

Discovered 1985 May 13 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

Named for Sean Colin Woodard, oldest grandson of the discoverers.

(7164) Babadzhanov = 1984 ET

Discovered 1984 Mar. 6 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Pulat Babadzhanov (b.1930), director of the Institute of Astrophysics, Tajik Academy of Sciences, Dushanbe. Babadzhanov's research includes the photographic investigation of meteors, the physics and dynamics of meteors, the evolution of meteoroid streams and the association of comets and minor planets with meteor showers. He has served as rector of the Tajik State University, vice president of the Tajik Academy of Sciences and as president of IAU Commission 22.

(7166) Kennedy = 1985 TR

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

Named in memory of Malcolm Kennedy (1944–1997), tireless and popular secretary of the Astronomical Society of Glasgow. Born and raised in New Zealand, Kennedy became a civil engineer in Scotland. He was an energetic member of the Free Church in Cumbernauld, near Glasgow. As secretary of the ASG, he ensured that meetings ran smoothly, enlivening them with wordplay and puns.

(7225) Huntress = 1983 BH

Discovered 1983 Jan. 22 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Wesley T. Huntress, Jr. (b. 1942), planetary cosmochemist and highly regarded director of NASA space science programs during the 1990s. Gaining international recognition for pioneering studies of chemical evolution in interstellar clouds, comets and planetary atmospheres, Huntress was instrumental in developing the astrochemical research group at the Jet Propulsion Laboratory. During his six years as NASA Associate Administrator for Space Science, the rate at which science missions were launched increased dramatically, along with the public awareness of space science. The naming honors Huntress on his departure from NASA after an illustrious 29-year career with the agency. Name proposed by the discoverer following a suggestion by M. S. Allen, who prepared the citation.

(7231) Porco = 1985 TQ₁

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

Named in honor of Carolyn C. Porco (b. 1954), planetary scientist at the University of Arizona. A pioneer in the study of planetary ring systems, Porco has made important contributions to our knowledge of spokes in Saturn's rings, eccentric ring features in the systems of Saturn and Uranus and the azimuthal structure in the rings of Neptune. Through her contributions to the Voyager project and as the team leader for the Cassini imaging system, Porco has been a leader in spacecraft exploration of the outer solar system. In 1997, she originated the idea of sending a capsule containing ashes of E. M. Shoemaker to the moon aboard the Lunar Prospector spacecraft. Name endorsed by the Shoemaker family.

(7287) Yokokurayama = 1990 VN₂

Discovered 1990 Nov. 10 by T. Seki at Geisei.

Named for a mountain in Kochi prefecture that is a treasure house of rare plants. A museum was built on its summit in 1997.

(7289) Kamegamori = 1991 JU

Discovered 1991 May 5 by T. Seki at Geisei.

Named for a grassy mountain in the center of the mountainous region of Shikoku Island.

(7355) Bottke = 1995 HN₂

Discovered 1995 Apr. 25 by Spacewatch at Kitt Peak.

Named in honor of William F. Bottke, Jr., known for his research on the collisional and dynamical evolution of minor planets. He has also contributed to the study of the origin and evolution of NEAs, in particular by analyzing the formation of doublet craters found on the terrestrial planets.

(7463) Oukawamine = 1985 SB

Discovered 1985 Sept. 20 by T. Seki at Geisei.

Named for a high plateau at the boundary of Kochi and Ehime prefectures.

(7465) Munkanber = 1989 UA₃

Discovered 1989 Oct. 31 by B. G. W. Manning at Stakenbridge.

Named in honor of John Munger, Veikko Kanto and Richard Berry, the authors of *The CCD Cookbook*. By providing detailed instructions and software, they have made it possible for the amateur astronomer to construct and operate an efficient, low-cost CCD camera. The final imaging and astrometry of this minor planet was carried out with such a camera made by the discoverer.

(7516) Kranjc = 1987 MC

Discovered 1987 June 18 at the Osservatorio San Vittore.

Named in memory of Aldo Kranjc (1919–1994), Italian astronomer at the observatories in Naples, Milan and Bologna. He succeeded F. Zagar as director of Brera-Merate Observatory in 1971. His many activities and studies included general relativity and applications of electronic techniques to astronomy and spectroscopy. He was a pioneer in Italy on numerical electronic calculus. He wrote several programs and articles on orbit determination.

(7549) Woodard = 1980 TO₅

Discovered 1980 Oct. 9 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

Named for Adrian Russell Woodard, youngest grandson of the discoverers.

(7558) Yurlov = 1982 TB₂

Discovered 1982 Oct. 14 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in memory of Aleksandr Aleksandrovich Yurlov (1927–1963), Russian choir master and choral conductor. His innovative interpretations of sacred music defined his contribution to Russian art. He led what later became Yurlov's Chapel Choir from 1958 to 1963, performing compositions of Prokof'ev, Shostakovich and Sviridov. Name suggested by G. Sviridov (1915–1998) and supported by the discoverer.

(7586) Bismarck = 1991 RH₇

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

Named in memory of Prince Otto Eduard Leopold von Bismarck (1815–1898), Prussian prime minister and minister of foreign affairs and, from 1871, the so-called Great Chancellor of the German Reich. His name is closely connected with the unification of Germany and with his politics of a balance of power among the European states. Bismarck introduced a comprehensive collection of civil laws and promoted an extensive social welfare system which—in its essential parts—remains important even a century after his death. Name proposed by the first discoverer.

(7738) Heyman = 1981 WS₁

Discovered 1981 Nov. 24 at the Oak Ridge Observatory.

Named in honor of I. Michael Heyman (b. 1930), secretary and linchpin of the Smithsonian Institution's diverse and incomparably rich programs. Educator, legal scholar, civil rights champion, he has unfailingly supported research at the frontiers of astronomy.

(7741) Fedoseev = 1983 RR₄

Discovered 1983 Sept. 1 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in honor of Vladimir Ivanovich Fedoseev (b. 1932), outstanding Russian conductor. He has been artistic director of Tchaikovsky's symphony orchestra in Moscow since 1974. He is also a principal conductor of the Vienna Symphony Orchestra and guest conductor in Tokyo and in many other cities. Fedoseev promotes

the Russian classical music of Glinka, Mussorgsky, Rakhmaninov, Sviridov and others. Name suggested by G. Sviridov and supported by the discoverer.

(7749) Jackschmitt = 1988 JP

Discovered 1988 May 12 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

Named in honor of Harrison Schmitt (b. 1935), the last Apollo astronaut to walk on the moon and, as a planetary geologist, the only Apollo scientist. Schmitt later served as a member of the United States Senate from New Mexico.

(7829) Jaroff = 1992 WY₄

Discovered 1992 Nov. 21 by E. F. Helin at Palomar.

Named in honor of Leon Jaroff (b. 1927), science journalist with a long, distinctive association with *Time* magazine. Jaroff is internationally known for his well-researched, insightful articles and essays on scientific subjects combining factual reporting and intelligent commentary. He has won many awards and honors for his fine journalism. Through his writing, he has drawn attention to the issue of NEOs and the potentially catastrophic consequences for our civilization should a large comet or asteroid strike the earth.

(7852) Itsukushima = 7604 P-L

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Named for Itsukushima Island near Hiroshima City. Known as “one of the Scenic Trio of Japan”, the island is also called “Miyajima”, which means “Shrine Island”. The origin of the shrine is not known, but it goes back at least to the sixth century; in the twelfth century its building complex was much enlarged. The shrine and its giant torii gate stand in the sea at high tide. In 1996 the shrine was assigned “World Heritage” recognition by UNESCO. Name proposed by Takeshi Sato.

(7900) Portule = 1996 CV₈

Discovered 1996 Feb. 14 by U. Munari and M. Tombelli at Cima Ekar.

Named for the highest mountain peak in the Asiago tableland, near the Asiago Astrophysical Observatory. The wild mountain range is a trekking favorite for local astronomers.

(7924) Simbirsk = 1986 PW₄

Discovered 1986 Aug. 6 by N. S. Chernykh and L. I. Chernykh at the Crimean Astrophysical Observatory.

Named for the city of Simbirsk (Ul'yanovsk since 1924), a large industrial and cultural center on the Volga river. Founded in 1648, it is connected with many great events and people in Russian history.

(7995) Khvorostovsky = 1983 PX

Discovered 1983 Aug. 4 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in honor of the outstanding Russian baritone Dmitriy Aleksandrovich Khvorostovsky (b. 1962), a people's artist of Russia. His extensive opera and chamber repertoire includes both Russian and world music. The last composition of G. Sviridov, the poem ‘Petersburg’, is dedicated to him. Name proposed by G. Sviridov and supported by the discoverer.

(7996) Vedernikov = 1983 RX₃

Discovered 1983 Sept. 1 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in honor of brilliant Russian bass Aleksandr Filippovich Vedernikov (b. 1927), a people's artist of Russia. He was the first to perform such works of

G. Sviridov as “Passionate oratorio”, “Voice from the choir” and the solo part in “Pushkin's garland”. Name suggested by G. Sviridov and supported by the discoverer.

(8006) Tacchini = 1988 QU

Discovered 1988 Aug. 22 at Osservatorio San Vittore.

Named in memory of Pietro Tacchini (1838–1905), Italian astronomer. He was a pioneer, with Secchi, of astrophysics in Italy and cofounded the Società degli Spettroscopisti Italiani (1871), now the Italian Astronomical Society. Director of the Modena Observatory from 1859 to 1863, he moved to the Palermo Observatory in 1879. In 1902, he was called to Rome to become director of the Central Office of Meteorology and of the Astronomical Observatory of Collegio Romano. He also studied meteorology and seismology and founded the Società Sismologica Italiana (1895).

(8051) Pistoria = 1997 PP₄

Discovered 1997 Aug. 13 by L. Tesi and G. Cattani at San Marcello Pistoiese.

Named for the Italian city of Pistoria, situated about 30 km from Florence at the foot of the western slope of the Central Apennines between Tuscany and Aemilia. Pistoria is the ancient name of the settlement dating to its founding in the second century B.C. by the Romans.

(8081) Leopardi = 1988 DD

Discovered 1988 Feb. 17 at the Osservatorio San Vittore.

Named in memory of Giacomo Leopardi (1798–1837), Italian poet and prose writer famous for his collection of poems *I Canti* and the collection of prose *Operette Morali*. When he was only 15 years old he wrote an erudite history of astronomy, recently reprinted in Italy.

(8115) Sakabe = 1996 HB₂

Discovered 1996 Apr. 24 by R. H. McNaught and Y. Ikari at Moriyama.

Named in honor of Sanjirou Sakabe (b. 1923), an amateur astronomer who studied under the late Issei Yamamoto. Sakabe is the founder of the Dynic Astronomical Observatory, which contributes to the spread of astronomy in the surrounding area.

(8137) Kvíz = 1979 SJ

Discovered 1979 Sept. 19 at Kleť.

Named in memory of Zdeněk Kvíz (1932–1993), Czech astronomer. His early works dealt with meteor showers, although his main interest was in light curves of close binaries and eclipsing binaries. Beginning in 1968 he lived in Australia, working also in Switzerland. The Czech Astronomical Society prize for young astronomers bears his name. Name suggested by J. Tichá.

(8142) Zolotov = 1982 UR₆

Discovered 1982 Oct. 20 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in honor of Andrej Andreevich Zolotov (b. 1937), Russian screenwriter and art and music critic. He is the author of more than 30 documentary films about Russian musicians, composers and conductors. Name suggested by G. Sviridov and supported by the discoverer.

(8161) Newman = 1990 QP₃

Discovered 1990 Aug. 19 at the Oak Ridge Observatory.

Named in honor of Constance B. Newman (b. 1935), Smithsonian Institution undersecretary whose unwavering devotion to the principles of exemplary management and diversity has enabled the Smithsonian to flourish and the Astrophysical Observatory to thrive.

(8270) Winslow = 1989 JF

Discovered 1989 May 2 by E. F. Helin at Palomar.

Named in honor of John Seymour Winslow, a friend of the discoverer's husband, Ron, since grade school. John graduated from Caltech with a degree in physics and later returned for a master's degree in electrical engineering. He developed the equipment used to master the MCA video disc, and later became a partner in Optical Disc Corporation, a firm that provides mastering equipment for compact discs. This minor planet was presented on the occasion of the 45th reunion of John and Ron's Caltech Class of '53.

(8282) Delp = 1991 RR₄₀

Discovered 1991 Sept. 10 by F. Börngen at Tautenburg.

Named in memory of the German theologian Alfred Delp (1907–1945). Beginning in 1942, he was a member of the illegal "Kreisauer Kreis", a group of political conservatives who worked to eliminate the Nazi regime. With this group, Delp collaborated on a first draft of a Christian social order for his country. Following the 1944 attempt on the fascist leader's life, he was condemned to death and executed in February 1945.

(8311) Zhangdaning = 1996 TV₁

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

Named for Daning Zhang (b. 1944), physician and vice-president of Tianjin Traditional Chinese Medicine (TCM) Hospital, professor of Tianjin Medical University, guest professor of Taiwan Chinese Academic College, chairman of the International TCM Kidney Diseases Conference. As the founder of the kidney diseases practice of TCM, he has won many international awards. He has written more than 60 publications on kidney disease.

(8357) O'Connor = 1989 SC₁

Discovered 1989 Sept. 25 at the Oak Ridge Observatory.

Named in honor of J. Dennis O'Connor (b. 1942), internationally acknowledged biological scientist, provost and staunch proponent of research excellence at the Smithsonian Institution, and resolute champion of the programs of the Astrophysical Observatory.

(8380) Tooting = 1992 SW₁₇

Discovered 1992 Sept. 29 by H. E. Holt at Palomar.

Named for a suburb of London. Tooting's postal code is SW17. Name suggested by E. Bowell, who lived in Tooting for 13 years as a youngster.

(8448) Belyakina = 1976 UT₁

Discovered 1976 Oct. 26 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named in honor of Tamara Sergeevna Belyakina (b. 1934), astrophysicist and stellar photometrist who worked at the Crimean Astrophysical Observatory from 1955 to 1990. She is known for her multicolor photometric observations of symbiotic stars. She first discovered nonradial pulsations of red giants in such systems and proposed the interpretation of this phenomenon.

(8452) Clay = 1978 WB

Discovered 1978 Nov. 27 at the Harvard College Observatory's Agassiz Station.

Named in honor of Landon and Livinia Clay, steadfast friends of science and the arts, Harvard University and the Smithsonian Institution. They are in particular

enthusiastic and penetratingly knowledgeable supporters of astronomy, conservation biology and mathematics.

(8502) Bauhaus = 1990 TR₁₂

Discovered 1990 Oct. 14 by F. Börngen and L. D. Schmadel at Tautenburg.

Named for the school of design founded in 1919 by the German architect W. Gropius (1883–1969) in Weimar. The school's philosophy emphasized the unity of fine art and trade as the basis for artistic work. By incorporating engineering, the way was opened for industrial design. The Bauhaus moved to Dessau in 1925 and was closed by the Nazis for its "decadence" in 1932. Many Bauhaus masters emigrated to the United States. In 1937, the New Bauhaus was founded by L. Moholy-Nagy (1895–1946) in Chicago. Name proposed by the first discoverer.

(8557) Šaroun = 1995 OK

Discovered 1995 July 23 by L. Šarounová at Ondřejov.

Named in honor of the discoverer's father, Jaroslav Šaroun (b. 1943). A teacher at the Prague Academy of Musical Arts and a member of the Czech Philharmonic Orchestra, he is a pianist who is always in great demand as an accompanist for Czech and foreign singers. As a lover of astronomy, he influenced and supported his daughter in her desire to become an astronomer. This minor planet was discovered on the day after his birthday.

(8558) Hack = 1995 PC

Discovered 1995 Aug. 1 by L. Tesi and A. Boattini at San Marcello Pistoiese.

Named in honor of Margherita Hack (b. 1922), director of the Trieste Astronomical Observatory (1964–1987), director of the astronomy department of Trieste University (1985–1991 and 1996–1997) and a former president of IAU Commission 29. Although her studies have ranged from optics and solar physics to radioastronomy (galactic 21-cm emission), her main fields of research remain stellar spectroscopy, stellar atmospheres and observable effects of stellar evolution. Her present interests are the ultraviolet and optical spectroscopy of close interacting binaries, atmospheric eclipsing binaries and symbiotic stars.

(8616) Fogelquist = 1980 FY₄

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

Named in honor of Rune Fogelquist (b. 1924) for his inspiring activities in astronomy popularization within the Mariestad Astronomy Club, located near Lake Vänern in southern Sweden, and the building and running of the nearby Bifrost Observatory, the main instrument at which is a 0.60-m reflector. The observatory has about 1000 visitors annually. The naming commemorates the twentieth anniversary of the Mariestad Astronomy Club, celebrated in August 1998. Name proposed and citation prepared by H. Rickman.

(8709) Kadlu = 1994 JF₁

Discovered 1994 May 14 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

The Eskimo thunder-goddess was originally a little girl who played so noisily that her parents told her and her sisters to go outside to play. They did, and they invented a game in which Kadlu jumped on hollow ice, causing a thunderous sound. Transported to the sky, the goddess lived in a whale-bone house far in the west. Some legends say that Kadlu made thunder by rubbing dry sealskins together, or by singing.

(8716) Ginestra = 1995 SB₂

Discovered 1995 Sept. 23 by V. S. Casulli at Colleverde di Guidonia.

Named for a poem by Giacomo Leopardi (1798–1837), the great poet and philosopher from the Italian Romantic period. Full of astronomical references, his poetry expresses the great sense of bewilderment of post-Copernican man, faced with an infinite variety of worlds of which he is no longer the center, but only infinitesimal and marginal. Nevertheless, the “Ginestra” becomes the symbol of man/flower in the middle of the cosmos/desert, a cosmos sustained by rigid mechanistic laws, indifferent to every desire and human sentiment, existing only to perpetuate the cycle of production and universal destruction. Name suggested and citation prepared by M. Vicoli.

(8721) AMOS = 1996 AO₃

Discovered 1996 Jan. 14 by AMOS at Haleakala.

Named for the Air Force Maui Optical Station (AMOS), the research and development arm of the Maui Space Surveillance System at Haleakala on Maui, Hawaii. The AMOS project for observations of minor planets is the result of a collaboration between the Air Force Research Laboratory and Eleanor Helin's observing programs at the Jet Propulsion Laboratory. This collaboration began in 1993 and continues today. AMOS performs follow-up observations for several programs, primarily the highly successful JPL NEAT program.

(8725) Keiko = 1996 TG₅

Discovered 1996 Oct. 5 by H. Abe at Yatsuka.

Named in honor of Keiko Morinaga (b. 1969), a member of the Matsue Astronomy Club and the wife and observing partner of the discoverer.

EPIHEMERIDES

C/1998 K2 (LINEAR)				Elements MPC 32169					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 05		14 39.32	−51 19.9	1.942	2.344	100.2	25.2	13.6	
1998 08 15		14 36.78	−52 59.7	2.058	2.332	92.5	25.7	13.7	
1998 08 25		14 38.85	−54 43.4	2.172	2.325	85.7	25.7	13.8	
1998 09 04		14 45.23	−56 33.6	2.282	2.324	79.7	25.3	14.0	
1998 09 14		14 55.79	−58 31.1	2.385	2.329	74.6	24.6	14.1	
1998 09 24		15 10.69	−60 35.1	2.480	2.338	70.1	23.8	14.2	
1998 10 04		15 30.33	−62 43.7	2.568	2.353	66.4	22.9	14.3	
1998 10 14		15 55.39	−64 53.1	2.647	2.374	63.4	22.1	14.4	
1998 10 24		16 26.93	−66 57.5	2.719	2.399	61.0	21.3	14.5	
1998 11 03		17 06.04	−68 48.6	2.784	2.429	59.1	20.5	14.6	
1998 11 13		17 53.4	−70 14.9	2.845	2.464	57.8	19.9	14.7	
1998 11 23		18 48.5	−71 02.9	2.903	2.503	56.8	19.3	14.8	
1998 12 03		19 47.9	−71 00.8	2.959	2.546	56.2	18.8	14.9	
1998 12 13		20 46.8	−70 03.5	3.016	2.593	55.7	18.3	15.0	
1998 12 23		21 40.73	−68 15.0	3.075	2.643	55.3	17.8	15.2	
1999 01 02		22 27.54	−65 45.9	3.138	2.696	55.0	17.4	15.3	
1999 01 12		23 07.32	−62 48.1	3.205	2.753	54.5	16.9	15.4	
1999 01 22		23 41.14	−59 32.6	3.277	2.812	53.9	16.4	15.6	
1999 02 01		00 10.27	−56 08.5	3.354	2.874	53.1	15.9	15.7	
1999 02 11		00 35.79	−52 42.5	3.437	2.938	52.2	15.4	15.9	
1999 02 21		00 58.54	−49 19.8	3.523	3.003	51.2	14.9	16.0	
1999 03 03		01 19.15	−46 04.7	3.613	3.071	50.0	14.3	16.2	
1999 03 13		01 38.06	−42 59.9	3.704	3.140	48.9	13.8	16.3	
1999 03 23		01 55.61	−40 07.5	3.794	3.211	47.8	13.3	16.5	

1999 04 02	02 12.00	−37 29.0	3.883	3.283	46.9	12.8	16.6		
1999 04 12	02 27.41	−35 05.3	3.969	3.356	46.3	12.5	16.8		
1999 04 22	02 41.94	−32 56.8	4.048	3.430	46.2	12.2	16.9		
1999 05 02	02 55.65	−31 03.9	4.121	3.505	46.5	12.0	17.0		
1999 05 12	03 08.59	−29 26.3	4.186	3.581	47.4	12.0	17.1		
1999 05 22	03 20.76	−28 04.1	4.241	3.657	49.0	12.0	17.3		
1999 06 01	03 32.14	−26 56.9	4.286	3.734	51.1	12.2	17.4		
1999 06 11	03 42.70	−26 04.3	4.320	3.812	54.0	12.4	17.5		
1999 06 21	03 52.41	−25 25.9	4.343	3.890	57.4	12.7	17.6		
1999 07 01	04 01.17	−25 01.1	4.354	3.969	61.4	13.0	17.7		
1999 07 11	04 08.93	−24 49.1	4.355	4.047	65.9	13.3	17.8		
1999 07 21	04 15.56	−24 49.3	4.345	4.126	70.9	13.5	17.8		
1999 07 31	04 20.97	−25 00.7	4.328	4.206	76.4	13.6	17.9		
1999 08 10	04 25.04	−25 21.9	4.303	4.285	82.2	13.6	18.0		
1999 08 20	04 27.62	−25 51.4	4.274	4.365	88.4	13.4	18.1		
1999 08 30	04 28.61	−26 27.2	4.244	4.444	94.8	13.1	18.1		
1999 09 09	04 27.90	−27 06.6	4.215	4.524	101.5	12.6	18.2		
1999 09 19	04 25.42	−27 46.6	4.191	4.604	108.1	12.0	18.2		
1999 09 29	04 21.20	−28 23.6	4.176	4.684	114.7	11.2	18.3		
1999 10 09	04 15.33	−28 53.6	4.174	4.763	120.8	10.4	18.4		
1999 10 19	04 08.03	−29 12.6	4.189	4.843	126.1	9.6	18.5		
1999 10 29	03 59.67	−29 17.0	4.224	4.923	130.1	8.9	18.6		
1999 11 08	03 50.69	−29 04.5	4.282	5.002	132.3	8.4	18.6		
1999 11 18	03 41.61	−28 33.8	4.364	5.082	132.3	8.3	18.8		
1999 11 28	03 32.96	−27 45.2	4.471	5.161	130.1	8.4	18.9		

C/1998 M1 (LINEAR)

C/1998 M1 (LINEAR)				Elements MPC 32169					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 05		15 38.41	−20 02.0	2.814	3.223	104.6	17.7	15.3	
1998 08 15		15 46.11	−19 29.6	2.921	3.200	96.7	18.3	15.4	
1998 08 25		15 55.37	−19 05.0	3.031	3.180	89.1	18.5	15.4	
1998 09 04		16 06.05	−18 46.5	3.144	3.163	81.8	18.4	15.5	
1998 09 14		16 17.98	−18 32.2	3.257	3.148	74.9	18.0	15.5	
1998 09 24		16 31.02	−18 20.2	3.368	3.137	68.2	17.3	15.6	
1998 10 04		16 45.03	−18 08.9	3.476	3.128	61.7	16.4	15.7	
1998 10 14		16 59.86	−17 56.4	3.580	3.122	55.3	15.2	15.7	
1998 10 24		17 15.39	−17 41.4	3.678	3.119	49.2	14.0	15.8	
1998 11 03		17 31.48	−17 22.4	3.769	3.120	43.1	12.6	15.8	
1998 11 13		17 48.01	−16 58.3	3.854	3.123	37.2	11.0	15.9	
1998 11 23		18 04.85	−16 28.3	3.930	3.129	31.4	9.5	15.9	

1998 MR₂

1998 MR ₂				$a, e, i = 2.61, 0.46, 28$ Elements MPC 32337					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 08 05		15 41.43	−04 36.9	1.497	1.967	101.4	30.4	19.2	
1998 08 15		15 46.31	−07 57.5	1.551	1.912	94.1	31.9	19.2	
1998 08 25		15 54.39	−11 16.6	1.607	1.857	87.3	32.9	19.3	
1998 09 04		16 05.49	−14 31.4	1.662	1.803	80.9	33.5	19.3	
1998 09 14		16 19.45	−17 39.8	1.714	1.750	75.1	33.7	19.3	
1998 09 24		16 36.20	−20 39.7	1.763	1.699	69.7	33.6	19.3	
1998 10 04		16 55.71	−23 28.9	1.808	1.650	64.7	33.2	19.3	
1998 10 14		17 17.94	−26 04.6	1.847	1.604	60.1	32.6	19.2	

C/1998 M3 (Larsen)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements <i>MPC</i> 32169
1998 08 05		15 53.20	+02 14.4	5.469	5.768	102.1	9.9	17.8		
1998 08 15		15 50.62	+02 39.4	5.636	5.770	92.5	10.1	17.9		
1998 08 25		15 49.28	+02 58.7	5.805	5.773	83.2	10.0	17.9		
1998 09 04		15 49.10	+03 14.0	5.969	5.777	74.3	9.7	18.0		
1998 09 14		15 49.96	+03 26.6	6.124	5.782	65.6	9.1	18.1		
1998 09 24		15 51.75	+03 38.0	6.267	5.787	57.3	8.4	18.1		
1998 10 04		15 54.35	+03 49.6	6.394	5.794	49.5	7.5	18.2		
1998 10 14		15 57.63	+04 02.5	6.502	5.801	42.2	6.6	18.2		
1998 10 24		16 01.48	+04 17.9	6.589	5.810	35.7	5.7	18.2		
1998 11 03		16 05.77	+04 36.9	6.653	5.819	30.4	4.9	18.3		

1998 MQ

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements <i>MPC</i> 32337
$a, e, i = 1.78, 0.41, 24$									
1998 08 05		16 00.47	+23 46.0	0.725	1.311	96.4	50.2	18.3	
1998 08 15		16 07.61	+23 19.4	0.727	1.258	91.1	53.6	18.3	
1998 08 25		16 19.29	+22 31.9	0.719	1.208	86.9	56.7	18.2	
1998 09 04		16 35.40	+21 27.2	0.701	1.163	83.7	59.5	18.2	
1998 09 14		16 55.94	+20 05.5	0.672	1.124	81.5	62.2	18.1	
1998 09 24		17 21.28	+18 22.6	0.636	1.093	80.2	64.8	18.0	
1998 10 04		17 52.10	+16 11.8	0.592	1.070	80.0	67.0	17.9	
1998 10 14		18 29.32	+13 22.5	0.547	1.058	80.7	68.6	17.7	
1998 10 24		19 14.04	+09 43.1	0.506	1.056	82.5	69.1	17.6	
1998 11 03		20 06.72	+05 11.8	0.476	1.065	85.3	68.2	17.4	
1998 11 13		21 05.92	+00 09.3	0.466	1.084	88.6	65.9	17.3	
1998 11 23		22 07.81	-04 34.6	0.482	1.112	91.8	62.6	17.4	
1998 12 03		23 07.23	-08 08.2	0.524	1.149	94.1	58.9	17.5	
1998 12 13		00 00.40	-10 11.6	0.589	1.192	95.2	55.4	17.7	
1998 12 23		00 46.30	-10 55.0	0.672	1.240	95.1	52.2	18.0	
1999 01 02		01 25.68	-10 40.3	0.769	1.292	94.2	49.4	18.3	
1999 01 12		01 59.92	-09 47.6	0.875	1.347	92.7	46.8	18.6	
1999 01 22		02 30.40	-08 31.5	0.988	1.403	90.7	44.5	18.9	
1999 02 01		02 58.21	-07 03.0	1.108	1.461	88.3	42.4	19.2	
1999 02 11		03 24.13	-05 29.5	1.232	1.518	85.6	40.4	19.5	
1999 02 21		03 48.75	-03 56.4	1.359	1.575	82.7	38.5	19.7	
1999 03 03		04 12.46	-02 27.6	1.489	1.632	79.5	36.7	19.9	
1999 03 13		04 35.50	-01 06.2	1.622	1.688	76.2	34.9	20.1	
1999 03 23		04 58.06	+00 06.0	1.755	1.742	72.7	33.1	20.3	
1999 04 02		05 20.23	+01 07.3	1.889	1.795	69.2	31.4	20.5	
1999 04 12		05 42.06	+01 56.8	2.022	1.847	65.5	29.6	20.6	
1999 04 22		06 03.61	+02 34.1	2.154	1.896	61.7	27.8	20.8	

1998 MW₅

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements <i>MPC</i> 32338
$a, e, i = 1.02, 0.38, 7$									
1998 08 05		16 06.36	-27 06.6	0.668	1.410	112.2	41.8	20.5	
1998 08 15		16 16.43	-27 43.8	0.750	1.408	105.0	44.0	20.8	
1998 08 25		16 30.01	-28 20.6	0.831	1.400	98.5	45.6	21.1	
1998 09 04		16 46.47	-28 54.4	0.908	1.387	92.6	46.6	21.3	
1998 09 14		17 05.27	-29 22.6	0.981	1.368	87.0	47.2	21.4	
1998 09 24		17 26.13	-29 42.4	1.047	1.344	81.9	47.7	21.5	
1998 10 04		17 48.81	-29 51.3	1.105	1.314	77.0	47.9	21.6	
1998 10 14		18 13.06	-29 46.6	1.153	1.278	72.5	48.1	21.6	
1998 10 24		18 38.74	-29 25.8	1.191	1.236	68.2	48.4	21.7	

1998 11 03	19 05.70	-28 46.2	1.216	1.189	64.2	48.7	21.6
1998 11 13	19 33.76	-27 45.4	1.229	1.137	60.5	49.3	21.6

C/1998 M2 (LINEAR)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements <i>MPC</i> 32169
1998 08 05		17 28.29	+16 44.4	2.099	2.726	118.0	19.2	15.0		
1998 08 15		17 25.02	+17 56.0	2.207	2.725	110.0	20.4	15.1		
1998 08 25		17 24.49	+18 45.6	2.322	2.727	102.6	21.2	15.2		
1998 09 04		17 26.57	+19 19.8	2.440	2.734	95.9	21.5	15.3		
1998 09 14		17 31.03	+19 44.4	2.558	2.745	89.8	21.5	15.4		
1998 09 24		17 37.65	+20 03.8	2.674	2.759	84.2	21.2	15.5		
1998 10 04		17 46.20	+20 21.9	2.785	2.777	79.2	20.7	15.7		
1998 10 14		17 56.43	+20 41.8	2.892	2.799	74.7	20.1	15.8		
1998 10 24		18 08.17	+21 05.8	2.994	2.824	70.6	19.4	15.9		
1998 11 03		18 21.23	+21 36.0	3.090	2.853	67.0	18.7	16.0		
1998 11 13		18 35.44	+22 13.7	3.180	2.885	63.9	17.9	16.1		
1998 11 23		18 50.65	+23 00.1	3.266	2.921	61.1	17.2	16.2		
1998 12 03		19 06.71	+23 56.0	3.348	2.959	58.8	16.6	16.3		
1998 12 13		19 23.49	+25 01.6	3.425	3.000	56.7	15.9	16.4		
1998 12 23		19 40.87	+26 17.1	3.500	3.044	54.9	15.3	16.6		
1999 01 02		19 58.72	+27 42.3	3.573	3.090	53.4	14.8	16.7		
1999 01 12		20 16.94	+29 16.4	3.645	3.139	52.1	14.3	16.8		
1999 01 22		20 35.42	+30 58.8	3.715	3.190	51.0	13.9	16.9		
1999 02 01		20 54.06	+32 48.5	3.785	3.243	50.1	13.5	17.0		
1999 02 11		21 12.78	+34 44.2	3.855	3.297	49.3	13.1	17.1		
1999 02 21		21 31.51	+36 44.7	3.924	3.354	48.7	12.8	17.2		
1999 03 03		21 50.17	+38 48.7	3.992	3.412	48.2	12.5	17.3		
1999 03 13		22 08.70	+40 54.9	4.059	3.472	47.9	12.3	17.4		
1999 03 23		22 27.06	+43 02.2	4.124	3.533	47.8	12.1	17.6		
1999 04 02		22 45.18	+45 09.5	4.187	3.596	48.0	11.9	17.7		
1999 04 12		23 03.00	+47 15.8	4.245	3.659	48.5	11.8	17.8		
1999 04 22		23 20.47	+49 20.3	4.300	3.724	49.3	11.8	17.9		
1999 05 02		23 37.51	+51 22.3	4.349	3.789	50.6	11.9	18.0		
1999 05 12		23 54.04	+53 21.2	4.392	3.856	52.2	11.9	18.1		
1999 05 22		00 09.94	+55 16.6	4.428	3.923	54.2	12.1	18.2		
1999 06 01		00 25.09	+57 08.1	4.457	3.991	56.7	12.3	18.3		
1999 06 11		00 39.33	+58 55.3	4.478	4.060	59.6	12.5	18.3		
1999 06 21		00 52.44	+60 38.2	4.492	4.130	62.9	12.7	18.4		
1999 07 01		01 04.17	+62 16.1	4.498	4.200	66.6	12.8	18.5		
1999 07 11		01 14.22	+63 48.7	4.496	4.270	70.7	13.0	18.6		
1999 07 21		01 22.23	+65 15.5	4.488	4.341	75.2	13.1	18.6		
1999 07 31		01 27.80	+66 35.1	4.475	4.412	79.9	13.1	18.7		
1999 08 10		01 30.55	+67 46.3	4.457	4.484	85.0	13.0	18.8		
1999 08 20		01 30.09	+68 47.0	4.437	4.556	90.3	12.8	18.8		
1999 08 30		01 26.27	+69 34.2	4.417	4.628	95.7	12.5	18.9		
1999 09 09		01 19.2	+70 05.0	4.400	4.700	101.2	12.1	18.9		

1998 OH

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements <i>MPC</i> 32341
$a, e, i = 1.54, 0.41, 24$									
1998 08 05		17 51.63	+26 59.9	0.824	1.567	116.6	35.4	18.5	
1998 08 10		17 53.75	+25 05.6	0.869	1.594	115.6	35.0	18.6	
1998 08 15		17 56.67	+23 12.5	0.916	1.621	114.3	34.7	18.8	
1998 08 20		18 00.33	+21 21.8	0.964	1.648	112.9	34.5	18.9	
1998 08 25		18 04.67	+19 34.2	1.015	1.673	111.4	34.2	19.1	

1998 08 30	18 09.62	+17 50.5	1.067	1.698	109.7	34.1	19.2
1998 09 04	18 15.12	+16 11.5	1.121	1.723	107.8	33.9	19.3
1998 09 09	18 21.10	+14 37.4	1.177	1.746	105.9	33.7	19.5
1998 09 14	18 27.52	+13 08.5	1.234	1.770	103.9	33.5	19.6
1998 09 19	18 34.33	+11 45.1	1.293	1.792	101.7	33.3	19.7
1998 09 24	18 41.49	+10 27.3	1.354	1.814	99.6	33.1	19.8
1998 09 29	18 48.98	+09 15.2	1.415	1.835	97.3	32.8	20.0
1998 10 04	18 56.75	+08 09.0	1.478	1.856	95.0	32.5	20.1
1998 10 09	19 04.77	+07 08.5	1.542	1.876	92.6	32.1	20.2
1998 10 14	19 13.01	+06 13.7	1.607	1.895	90.2	31.8	20.3
1998 10 19	19 21.44	+05 24.5	1.673	1.913	87.8	31.3	20.4
1998 10 24	19 30.06	+04 40.8	1.739	1.931	85.3	30.9	20.5
1998 10 29	19 38.83	+04 02.5	1.805	1.948	82.8	30.4	20.5
1998 11 03	19 47.72	+03 29.4	1.872	1.965	80.3	29.8	20.6
1998 11 08	19 56.73	+03 01.5	1.939	1.981	77.7	29.3	20.7
1998 11 13	20 05.83	+02 38.4	2.006	1.996	75.2	28.6	20.8
1998 11 18	20 15.01	+02 20.1	2.072	2.011	72.6	28.0	20.8
1998 11 23	20 24.26	+02 06.4	2.138	2.025	70.0	27.3	20.9
1998 11 28	20 33.56	+01 57.0	2.203	2.038	67.3	26.5	21.0
1998 12 03	20 42.91	+01 51.8	2.268	2.051	64.7	25.8	21.0
1998 12 08	20 52.27	+01 50.6	2.331	2.063	62.1	25.0	21.1
1998 12 13	21 01.67	+01 53.2	2.393	2.074	59.4	24.1	21.1

1998 MN₁₄

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements	MPC	32338
1998 08 05	17 57.19	+20 00.6	0.447	1.307	121.9	41.2	18.4				
1998 08 15	18 07.55	+19 36.4	0.512	1.334	118.3	42.0	18.8				
1998 08 25	18 20.65	+18 33.7	0.579	1.363	115.2	42.2	19.1				
1998 09 04	18 36.16	+17 09.7	0.649	1.393	112.5	42.0	19.4				
1998 09 14	18 53.65	+15 36.5	0.723	1.423	109.8	41.7	19.7				
1998 09 24	19 12.80	+14 02.7	0.800	1.455	107.0	41.3	19.9				
1998 10 04	19 33.32	+12 35.1	0.882	1.487	104.2	40.7	20.2				
1998 10 14	19 54.89	+11 18.7	0.968	1.518	101.1	40.1	20.4				
1998 10 24	20 17.26	+10 16.5	1.059	1.549	97.9	39.5	20.6				
1998 11 03	20 40.22	+09 30.8	1.156	1.580	94.4	38.8	20.9				
1998 11 13	21 03.52	+09 02.3	1.256	1.610	90.8	37.9	21.1				
1998 11 28	21 38.80	+08 51.6	1.415	1.653	85.0	36.5	21.3				
1998 12 08	22 02.35	+09 04.4	1.526	1.680	80.9	35.4	21.5				
1998 12 18	22 25.81	+09 31.3	1.638	1.706	76.7	34.1	21.7				
1998 12 28	22 49.17	+10 10.6	1.752	1.731	72.4	32.8	21.8				
1999 01 07	23 12.37	+11 00.3	1.866	1.754	68.0	31.3	21.9				
1999 01 17	23 35.43	+11 58.2	1.980	1.776	63.6	29.7	22.0				

C/1998 M4 (LINEAR)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements	MPC	32169
1998 08 05	18 08.13	-17 28.4	2.747	3.577	139.2	10.7	17.2					
1998 08 15	17 51.59	-18 41.7	2.957	3.644	125.9	13.0	17.5					
1998 08 25	17 38.91	-19 42.6	3.194	3.713	113.3	14.5	17.7					
1998 09 04	17 29.76	-20 34.2	3.448	3.782	101.6	15.1	18.0					
1998 09 14	17 23.64	-21 19.1	3.710	3.853	90.5	15.1	18.2					
1998 09 24	17 20.05	-21 59.1	3.972	3.923	80.0	14.6	18.4					
1998 10 04	17 18.54	-22 35.5	4.228	3.995	69.8	13.6	18.6					
1998 10 14	17 18.70	-23 09.3	4.472	4.067	60.1	12.3	18.8					
1998 10 24	17 20.20	-23 41.0	4.701	4.140	50.5	10.7	19.0					

1998 11 03	17 22.72	-24 11.0	4.909	4.213	41.1	8.9	19.2
1998 11 13	17 26.03	-24 39.6	5.095	4.286	31.9	7.0	19.4

1998 OK₁

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements	MPC	32342
1998 08 05	18 17.13	-40 53.7	0.262	1.221	137.8	33.9	18.4				
1998 08 10	17 50.81	-44 53.6	0.255	1.187	127.7	42.5	18.6				
1998 08 15	17 22.46	-48 28.8	0.253	1.153	117.9	51.0	18.7				
1998 08 20	16 52.68	-51 33.7	0.252	1.118	108.6	59.1	18.9				
1998 08 25	16 21.91	-54 07.0	0.254	1.084	99.9	66.8	19.0				
1998 08 30	15 50.22	-56 09.7	0.256	1.049	91.7	74.2	19.2				
1998 09 04	15 17.33	-57 41.6	0.258	1.015	84.1	81.2	19.4				
1998 09 09	14 42.88	-58 39.0	0.260	0.982	76.9	88.1	19.6				
1998 09 14	14 06.99	-58 54.7	0.262	0.949	70.0	94.9	19.9				
1998 09 19	13 30.55	-58 19.6	0.265	0.918	63.5	101.5	20.1				
1998 09 24	12 55.31	-56 44.8	0.267	0.888	57.4	107.9	20.4				

1998 ME₃

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements	MPC	32337
1998 08 05	19 40.58	-22 00.1	0.129	1.137	160.8	17.1	15.7				
1998 08 10	20 12.34	-24 48.7	0.139	1.147	162.0	15.9	15.9				
1998 08 15	20 41.07	-26 42.8	0.153	1.159	161.8	15.8	16.1				
1998 08 20	21 05.96	-27 49.1	0.170	1.174	160.8	16.5	16.4				
1998 08 25	21 26.97	-28 17.7	0.191	1.191	159.3	17.4	16.7				
1998 08 30	21 44.49	-28 18.3	0.214	1.210	157.7	18.4	17.0				
1998 09 04	21 59.10	-27 58.5	0.240	1.231	156.0	19.5	17.3				
1998 09 09	22 11.35	-27 24.1	0.268	1.254	154.1	20.5	17.7				
1998 09 14	22 21.76	-26 39.3	0.300	1.279	152.1	21.6	18.0				
1998 09 19	22 30.80	-25 46.6	0.334	1.304	150.0	22.7	18.3				
1998 09 24	22 38.85	-24 47.9	0.370	1.331	147.7	23.8	18.6				
1998 09 29	22 46.23	-23 44.8	0.410	1.359	145.3	24.8	18.9				
1998 10 04	22 53.16	-22 38.5	0.453	1.388	142.7	25.9	19.2				
1998 10 09	22 59.79	-21 29.9	0.498	1.418	140.1	26.9	19.5				
1998 10 14	23 06.22	-20 19.6	0.547	1.448	137.4	27.8	19.7				
1998 10 19	23 12.56	-19 08.2	0.598	1.479	134.6	28.6	20.0				
1998 10 24	23 18.90	-17 56.0	0.652	1.510	131.8	29.4	20.3				
1998 10 29	23 25.28	-16 43.4	0.710	1.542	129.0	30.1	20.5				
1998 11 03	23 31.72	-15 30.6	0.770	1.574	126.1	30.6	20.7				
1998 11 08	23 38.23	-14 17.9	0.833	1.606	123.2	31.1	21.0				
1998 11 13	23 44.83	-13 05.5	0.898	1.638	120.3	31.5	21.2				
1998 11 18	23 51.52	-11 53.5	0.966	1.670	117.4	31.7	21.4				
1998 11 23	23 58.32	-10 42.0	1.037	1.702	114.4	31.9	21.6				
1998 11 28	00 05.22	-09 31.0	1.110	1.735	111.5	31.9	21.8				
1998 12 03	00 12.22	-08 20.7	1.185	1.767	108.6	31.9	22.0				

1998 MR₁₇

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements	MPC	32339
1998 08 05	20 03.59	+01 25.8	0.536	1.522	156.9	15.1	16.4				
1998 08 10	20 01.48	+02 29.7	0.565	1.541	153.7	17.0	16.6				
1998 08 15	20 00.20	+03 17.8	0.599	1.561	150.2	18.8	16.8				
1998 08 20	19 59.81	+03 52.1	0.636	1.583	146.8	20.5	17.0				
1998 08 25	20 00.33	+04 15.0	0.676	1.605	143.3	22.1	17.2				
1998 08 30	20 01.73	+04 28.7	0.720	1.628	140.0	23.5	17.5				
1998 09 04	20 03.98	+04 35.4	0.766	1.652	136.7	24.8	17.7				

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1998 09 09	20 07.01	+04 37.0	0.816	1.677	133.5	25.9	17.9
1998 09 14	20 10.75	+04 34.9	0.868	1.702	130.3	26.8	18.1
1998 09 19	20 15.13	+04 30.4	0.923	1.728	127.2	27.6	18.2
1998 09 24	20 20.11	+04 24.7	0.981	1.754	124.2	28.2	18.4
1998 09 29	20 25.62	+04 18.9	1.041	1.781	121.3	28.7	18.6
1998 10 04	20 31.60	+04 13.5	1.104	1.808	118.3	29.1	18.8
1998 10 09	20 37.97	+04 09.3	1.169	1.835	115.5	29.4	18.9
1998 10 14	20 44.70	+04 06.7	1.236	1.863	112.6	29.6	19.1
1998 10 19	20 51.74	+04 05.9	1.305	1.891	109.8	29.7	19.3
1998 10 24	20 59.05	+04 07.3	1.377	1.919	106.9	29.7	19.4
1998 10 29	21 06.60	+04 11.1	1.450	1.947	104.1	29.6	19.5
1998 11 03	21 14.34	+04 17.4	1.525	1.976	101.3	29.5	19.7
1998 11 08	21 22.24	+04 26.2	1.601	2.004	98.6	29.3	19.8
1998 11 13	21 30.28	+04 37.6	1.679	2.033	95.8	29.0	19.9
1998 11 18	21 38.43	+04 51.6	1.758	2.062	93.0	28.6	20.1
1998 11 23	21 46.68	+05 08.0	1.839	2.091	90.2	28.2	20.2
1998 11 28	21 55.00	+05 27.0	1.920	2.119	87.4	27.7	20.3
1998 12 03	22 03.38	+05 48.3	2.002	2.148	84.6	27.2	20.4
1998 12 08	22 11.80	+06 11.8	2.085	2.176	81.9	26.6	20.5
1998 12 13	22 20.26	+06 37.5	2.169	2.205	79.1	26.0	20.6
1998 12 18	22 28.74	+07 05.1	2.252	2.233	76.3	25.3	20.7
1998 12 23	22 37.23	+07 34.7	2.336	2.262	73.5	24.6	20.8
1998 12 28	22 45.73	+08 06.0	2.419	2.290	70.7	23.9	20.8
1999 01 02	22 54.22	+08 38.9	2.502	2.318	67.9	23.1	20.9
1999 01 07	23 02.71	+09 13.2	2.584	2.346	65.1	22.3	21.0
1999 01 12	23 11.18	+09 48.9	2.666	2.374	62.3	21.5	21.1

1998 MX ₅		$a, e, i = 2.92, 0.61, 10$			Elements <i>MPC</i> 32338		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	V
1998 08 05	20 15.54	+32 29.8	0.181	1.138	129.3	43.6	16.3
1998 08 10	20 34.50	+37 24.6	0.187	1.134	125.9	46.4	16.4
1998 08 15	20 54.80	+41 18.1	0.195	1.133	123.7	48.1	16.5
1998 08 20	21 15.83	+44 09.6	0.205	1.135	122.5	48.7	16.7
1998 08 25	21 36.91	+46 02.2	0.216	1.142	122.4	48.4	16.8
1998 08 30	21 57.36	+47 01.8	0.229	1.151	123.3	47.2	16.9
1998 09 04	22 16.60	+47 15.5	0.242	1.164	124.9	45.3	17.0
1998 09 09	22 34.20	+46 50.1	0.256	1.180	127.1	42.9	17.1
1998 09 14	22 49.93	+45 52.0	0.272	1.199	129.9	40.1	17.2
1998 09 19	23 03.79	+44 26.8	0.289	1.220	133.0	37.0	17.2
1998 09 24	23 15.98	+42 40.4	0.308	1.244	136.3	33.8	17.3
1998 09 29	23 26.74	+40 38.6	0.329	1.271	139.7	30.7	17.4
1998 10 04	23 36.32	+38 27.1	0.352	1.299	142.9	27.7	17.5
1998 10 09	23 44.97	+36 11.0	0.379	1.329	145.7	25.1	17.7
1998 10 14	23 52.88	+33 54.6	0.408	1.360	147.8	23.0	17.8
1998 10 19	00 00.26	+31 41.7	0.441	1.393	149.2	21.5	18.0
1998 10 24	00 07.31	+29 35.5	0.478	1.428	149.5	20.7	18.2
1998 10 29	00 14.15	+27 38.6	0.519	1.463	149.0	20.5	18.4
1998 11 03	00 20.88	+25 52.5	0.564	1.499	147.5	20.8	18.7
1998 11 08	00 27.57	+24 18.1	0.613	1.535	145.4	21.5	18.9
1998 11 13	00 34.24	+22 55.3	0.666	1.573	142.8	22.4	19.2
1998 11 18	00 40.95	+21 44.0	0.723	1.611	139.9	23.3	19.4
1998 11 23	00 47.74	+20 43.8	0.785	1.649	136.7	24.3	19.7
1998 11 28	00 54.61	+19 53.9	0.850	1.687	133.4	25.2	19.9

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1998 12 03	01 01.58	+19 13.5	0.918	1.726	130.0	26.0	20.2
1998 12 08	01 08.63	+18 41.6	0.991	1.765	126.6	26.6	20.4
1998 12 13	01 15.78	+18 17.4	1.066	1.804	123.1	27.2	20.6
1998 12 18	01 23.01	+17 59.9	1.145	1.843	119.7	27.6	20.9
1998 12 23	01 30.34	+17 48.4	1.227	1.881	116.3	28.0	21.1
1998 12 28	01 37.77	+17 42.2	1.311	1.920	112.9	28.2	21.3
1999 01 02	01 45.27	+17 40.5	1.398	1.959	109.5	28.2	21.4
1999 01 07	01 52.85	+17 42.6	1.487	1.998	106.1	28.2	21.6
1999 01 12	02 00.50	+17 48.0	1.578	2.036	102.8	28.1	21.8

C/1998 M6 (Montani)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 05	20 26.84	-15 13.1	4.990	5.996	171.9	1.4	18.3		
1998 08 15	20 18.05	-14 35.6	5.026	5.991	160.8	3.2	18.3		
1998 08 25	20 09.91	-13 57.9	5.095	5.987	149.4	4.9	18.3		
1998 09 04	20 02.76	-13 20.2	5.194	5.984	138.2	6.4	18.3		
1998 09 14	19 56.78	-12 42.6	5.319	5.982	127.3	7.7	18.4		
1998 09 24	19 52.12	-12 05.1	5.464	5.981	116.6	8.6	18.5		
1998 10 04	19 48.81	-11 27.6	5.624	5.980	106.2	9.2	18.5		
1998 10 14	19 46.82	-10 49.9	5.792	5.980	96.1	9.5	18.6		
1998 10 24	19 46.09	-10 11.5	5.964	5.982	86.3	9.6	18.6		
1998 11 03	19 46.50	-09 32.1	6.133	5.983	76.7	9.3	18.7		
1998 11 13	19 47.93	-08 51.1	6.296	5.986	67.4	8.8	18.8		
1998 11 23	19 50.24	-08 08.1	6.448	5.990	58.4	8.1	18.8		
1998 12 03	19 53.30	-07 22.5	6.585	5.994	49.6	7.2	18.9		
1998 12 13	19 56.95	-06 34.1	6.705	5.999	41.2	6.2	18.9		
1998 12 23	20 01.08	-05 42.3	6.804	6.005	33.3	5.2	18.9		

1998 ML ₁₄		$a, e, i = 2.42, 0.62, 2$			Elements <i>MPC</i> 32338		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	V
1998 08 05	20 34.15	-47 50.1	0.044	1.053	148.8	29.9	12.1
1998 08 10	01 41.54	-55 20.1	0.019	1.022	116.6	62.5	11.2
1998 08 15	05 50.94	+02 08.7	0.033	0.996	57.2	121.2	15.0
1998 08 20	06 29.07	+16 50.3	0.063	0.972	50.1	127.0	16.9
1998 08 25	06 44.62	+21 39.5	0.096	0.954	51.3	124.2	17.5
1998 08 30	06 54.58	+23 56.5	0.130	0.939	54.0	119.6	17.7
1998 09 04	07 02.75	+25 12.4	0.164	0.930	57.2	114.3	17.9
1998 09 09	07 10.38	+25 57.2	0.197	0.926	60.4	108.9	17.9
1998 09 14	07 17.90	+26 23.5	0.230	0.927	63.7	103.5	17.9
1998 09 19	07 25.34	+26 38.1	0.262	0.934	66.9	98.1	18.0
1998 09 24	07 32.61	+26 45.0	0.292	0.945	70.2	92.9	18.0
1998 09 29	07 39.59	+26 46.7	0.321	0.962	73.6	87.8	18.0
1998 10 04	07 46.12	+26 45.2	0.347	0.983	77.0	82.8	18.1
1998 10 09	07 52.04	+26 42.2	0.371	1.007	80.6	78.1	18.1
1998 10 14	07 57.18	+26 39.1	0.393	1.036	84.4	73.4	18.1
1998 10 19	08 01.32	+26 37.1	0.412	1.067	88.4	68.9	18.1
1998 10 24	08 04.29	+26 37.3	0.428	1.102	92.7	64.4	18.1
1998 10 29	08 05.92	+26 40.5	0.442	1.138	97.3	60.0	18.2
1998 11 03	08 06.10	+26 47.0	0.455	1.176	102.3	55.5	18.2
1998 11 08	08 04.69	+26 57.1	0.466	1.216	107.6	51.0	18.2
1998 11 13	08 01.60	+27 10.7	0.476	1.256	113.3	46.3	18.1
1998 11 18	07 56.76	+27 27.3	0.486	1.298	119.4	41.6	18.1
1998 11 23	07 50.17	+27 45.6	0.496	1.340	125.9	36.6	18.1
1998 11 28	07 41.97	+28 04.1	0.508	1.383	132.7	31.6	18.1

1998 12 03	07 32.40	+28 21.0	0.523	1.426	139.8	26.5	18.1
1998 12 08	07 21.80	+28 34.7	0.541	1.470	147.2	21.3	18.0
1998 12 13	07 10.58	+28 43.7	0.564	1.513	154.5	16.2	18.0
1998 12 18	06 59.22	+28 47.0	0.591	1.556	161.9	11.4	18.0
1998 12 23	06 48.21	+28 44.5	0.623	1.599	168.8	6.9	18.0
1998 12 28	06 37.99	+28 36.8	0.661	1.642	174.1	3.5	18.0
1999 01 02	06 28.91	+28 24.8	0.705	1.685	173.0	4.1	18.2
1999 01 07	06 21.15	+28 10.0	0.755	1.728	167.5	7.1	18.6
1999 01 12	06 14.80	+27 53.4	0.810	1.770	161.4	10.2	18.9
1999 01 17	06 09.91	+27 36.2	0.870	1.812	155.4	13.0	19.3
1999 01 22	06 06.42	+27 19.1	0.936	1.853	149.7	15.6	19.5
1999 01 27	06 04.25	+27 02.7	1.006	1.894	144.2	17.7	19.8
1999 02 01	06 03.30	+26 47.2	1.080	1.935	138.9	19.5	20.1
1999 02 06	06 03.43	+26 32.9	1.159	1.975	133.9	21.1	20.3
1999 02 11	06 04.52	+26 19.6	1.241	2.015	129.1	22.3	20.6
1999 02 16	06 06.47	+26 07.3	1.326	2.054	124.5	23.3	20.8
1999 02 21	06 09.17	+25 55.7	1.414	2.092	120.1	24.1	21.0
1999 02 26	06 12.55	+25 44.7	1.504	2.131	115.9	24.7	21.2
1999 03 03	06 16.50	+25 34.2	1.596	2.168	111.7	25.1	21.4
1999 03 08	06 20.94	+25 23.8	1.691	2.206	107.7	25.4	21.5
1999 03 13	06 25.82	+25 13.3	1.786	2.243	103.9	25.5	21.7
1999 03 18	06 31.08	+25 02.7	1.883	2.279	100.1	25.5	21.8
1999 03 23	06 36.67	+24 51.7	1.981	2.315	96.4	25.3	22.0

1998 OX₄		$a, e, i = 1.59, 0.49, 5$				Elements <i>MPC</i> 32342	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05		20 35.96	-15 23.2	0.381	1.394	174.1	4.3
1998 08 15		20 07.26	-14 45.3	0.324	1.319	158.2	16.6
1998 08 25		19 33.68	-13 38.4	0.284	1.243	140.6	31.0
1998 09 04		18 59.27	-11 55.0	0.255	1.166	122.8	46.6
1998 09 14		18 26.45	-09 35.1	0.233	1.091	105.2	62.9
1998 09 24		17 54.06	-06 37.1	0.212	1.017	87.8	80.2
1998 10 04		17 16.56	-02 51.1	0.191	0.950	69.3	99.9
1998 10 14		16 24.63	+01 44.9	0.174	0.891	48.1	123.5

1998 NU		$a, e, i = 2.33, 0.50, 3$				Elements <i>MPC</i> 32341	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05		20 40.61	-17 32.9	2.109	3.121	175.5	1.5
1998 08 10		20 35.42	-17 49.6	2.134	3.136	169.4	3.4
1998 08 15		20 30.48	-18 05.0	2.166	3.151	163.4	5.3
1998 08 20		20 25.90	-18 18.9	2.206	3.165	157.5	7.0
1998 08 25		20 21.77	-18 31.0	2.253	3.179	151.7	8.7
1998 08 30		20 18.15	-18 41.4	2.305	3.193	146.0	10.2
1998 09 04		20 15.09	-18 49.9	2.364	3.206	140.4	11.6
1998 09 09		20 12.62	-18 56.5	2.427	3.219	135.0	12.8
1998 09 14		20 10.75	-19 01.3	2.495	3.232	129.7	13.9
1998 09 19		20 09.48	-19 04.4	2.568	3.244	124.5	14.8
1998 09 24		20 08.81	-19 05.7	2.644	3.257	119.5	15.6
1998 09 29		20 08.72	-19 05.3	2.723	3.268	114.5	16.2
1998 10 04		20 09.19	-19 03.4	2.804	3.280	109.7	16.7
1998 10 09		20 10.19	-18 59.8	2.887	3.291	105.1	17.0
1998 10 14		20 11.68	-18 54.8	2.971	3.302	100.5	17.3
1998 10 19		20 13.63	-18 48.3	3.057	3.312	96.0	17.4
1998 10 24		20 16.02	-18 40.3	3.142	3.322	91.6	17.4

1998 OR₂		$a, e, i = 2.36, 0.57, 6$				Elements <i>MPC</i> 32342	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05		21 15.08	-27 50.3	1.015	2.020	168.7	5.7
1998 08 15		21 00.41	-28 08.6	1.099	2.091	163.6	7.9
1998 08 25		20 48.88	-28 02.6	1.207	2.160	153.6	12.0
1998 09 04		20 41.26	-27 37.9	1.337	2.228	143.2	15.7
1998 09 14		20 37.55	-27 00.1	1.484	2.294	133.3	18.6
1998 09 24		20 37.34	-26 13.8	1.646	2.358	123.9	20.7
1998 10 04		20 40.14	-25 21.5	1.821	2.420	115.0	22.0
1998 10 14		20 45.37	-24 24.9	2.004	2.481	106.7	22.7
1998 10 24		20 52.53	-23 24.7	2.193	2.540	98.6	22.8
1998 11 03		21 01.22	-22 21.2	2.385	2.598	90.9	22.4
1998 11 13		21 11.07	-21 14.6	2.578	2.654	83.4	21.7
1998 11 23		21 21.84	-20 04.9	2.769	2.708	76.1	20.7
1998 12 03		21 33.28	-18 52.3	2.956	2.760	69.0	19.5

1998 MT₂₄		$a, e, i = 2.42, 0.65, 34$				Elements <i>MPC</i> 32339	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05		21 54.76	+03 55.3	1.150	2.113	155.0	11.7
1998 08 15		21 34.27	+04 32.3	1.209	2.193	161.3	8.5
1998 08 25		21 16.15	+04 41.2	1.298	2.270	158.7	9.3
1998 09 04		21 01.76	+04 30.4	1.415	2.345	150.3	12.3
1998 09 14		20 51.56	+04 09.3	1.556	2.418	140.4	15.4
1998 09 24		20 45.42	+03 45.0	1.717	2.489	130.6	17.8
1998 10 04		20 42.91	+03 23.2	1.893	2.558	121.1	19.6
1998 10 14		20 43.45	+03 07.2	2.080	2.625	112.2	20.6
1998 10 24		20 46.50	+02 58.8	2.275	2.689	103.7	21.1
1998 11 03		20 51.57	+02 59.2	2.473	2.752	95.5	21.0
1998 11 13		20 58.24	+03 08.8	2.673	2.813	87.7	20.6
1998 11 23		21 06.19	+03 27.4	2.870	2.872	80.2	19.8
1998 12 03		21 15.13	+03 55.1	3.063	2.929	72.9	18.8
1998 12 13		21 24.83	+04 31.4	3.250	2.984	65.8	17.5

1998 OS₄		$a, e, i = 2.71, 0.48, 11$				Elements <i>MPC</i> 32342	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05		22 01.05	+01 38.9	0.428	1.416	155.9	17.0
1998 08 10		22 00.19	+04 02.6	0.421	1.412	157.8	15.8
1998 08 15		21 58.86	+06 17.7	0.417	1.410	158.9	15.0
1998 08 20		21 57.26	+08 20.8	0.417	1.409	159.1	14.9
1998 08 25		21 55.63	+10 09.4	0.421	1.411	158.4	15.3
1998 08 30		21 54.25	+11 42.0	0.428	1.414	157.1	16.2
1998 09 04		21 53.33	+12 58.2	0.439	1.419	155.2	17.4
1998 09 09		21 53.06	+13 58.3	0.452	1.425	152.9	18.8
1998 09 14		21 53.57	+14 43.4	0.469	1.433	150.5	20.2
1998 09 19		21 54.94	+15 15.2	0.489	1.443	148.0	21.7
1998 09 24		21 57.24	+15 35.7	0.513	1.455	145.4	23.0
1998 09 29		22 00.49	+15 47.1	0.539	1.468	142.9	24.3
1998 10 04		22 04.65	+15 51.6	0.567	1.482	140.4	25.5
1998 10 09		22 09.66	+15 51.3	0.599	1.498	137.8	26.6
1998 10 14		22 15.42	+15 47.6	0.634	1.515	135.3	27.6
1998 10 19		22 21.88	+15 42.1	0.671	1.533	132.8	28.5
1998 10 24		22 28.96	+15 36.1	0.711	1.553	130.3	29.2
1998 10 29		22 36.59	+15 30.6	0.754	1.573	127.8	29.9
1998 11 03		22 44.67	+15 26.5	0.800	1.595	125.4	30.5

1998 11 08	22 53.14	+15 24.2	0.849	1.617	122.9	31.0	21.0
1998 11 13	23 01.92	+15 24.2	0.901	1.641	120.3	31.4	21.2
1998 11 18	23 10.97	+15 26.6	0.955	1.664	117.8	31.7	21.4
1998 11 23	23 20.24	+15 31.8	1.012	1.689	115.3	31.9	21.5
1998 11 28	23 29.69	+15 39.7	1.072	1.714	112.7	32.1	21.7
1998 12 03	23 39.28	+15 50.3	1.134	1.740	110.2	32.1	21.8

C/1998 M5 (LINEAR)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements	MPC	32169
1998 08 05		22 28.20	+30 53.5	2.020	2.758	127.5	17.0	11.9				
1998 08 15		22 04.44	+34 28.3	1.894	2.670	130.9	16.7	11.7				
1998 08 25		21 35.18	+37 27.1	1.806	2.583	130.8	17.2	11.4				
1998 09 04		21 02.28	+39 28.6	1.758	2.497	126.9	18.9	11.2				
1998 09 14		20 28.93	+40 23.3	1.747	2.414	120.1	21.1	11.0				
1998 09 24		19 58.56	+40 17.7	1.765	2.333	111.9	23.5	10.9				
1998 10 04		19 33.47	+39 31.9	1.805	2.254	103.2	25.6	10.8				
1998 10 14		19 14.36	+38 28.3	1.857	2.179	94.7	27.1	10.7				
1998 10 24		19 00.87	+37 25.2	1.912	2.107	86.9	28.1	10.6				
1998 11 03		18 52.14	+36 35.5	1.963	2.040	80.0	28.6	10.6				
1998 11 13		18 47.23	+36 07.0	2.004	1.978	74.2	28.8	10.5				
1998 11 23		18 45.35	+36 04.8	2.031	1.922	69.5	28.8	10.4				
1998 12 03		18 45.83	+36 32.9	2.040	1.872	66.1	28.8	10.3				
1998 12 13		18 48.15	+37 34.4	2.030	1.830	64.1	29.0	10.2				
1998 12 23		18 51.94	+39 13.6	2.000	1.795	63.6	29.4	10.0				
1999 01 02		18 56.85	+41 35.5	1.952	1.769	64.6	30.1	9.9				
1999 01 12		19 02.68	+44 46.4	1.888	1.753	66.9	31.1	9.8				
1999 01 22		19 09.27	+48 54.4	1.812	1.746	70.3	32.1	9.7				
1999 02 01		19 16.45	+54 08.6	1.730	1.748	74.6	32.9	9.6				
1999 02 11		19 24.18	+60 37.3	1.651	1.761	79.4	33.4	9.5				
1999 02 21		19 32.43	+68 25.7	1.584	1.782	84.3	33.5	9.5				
1999 03 03		19 41.3	+77 28.7	1.541	1.813	88.6	33.1	9.5				
1999 03 13		19 55.5	+87 26.8	1.534	1.852	91.7	32.4	9.6				
1999 03 23		07 55.3	+82 13.2	1.568	1.898	92.8	31.6	9.8				
1999 04 02		08 05.6	+72 11.0	1.647	1.952	91.7	30.8	10.0				
1999 04 12		08 15.13	+62 57.7	1.768	2.011	88.6	29.9	10.3				
1999 04 22		08 24.59	+54 48.9	1.922	2.076	84.1	28.8	10.6				
1999 05 02		08 34.06	+47 46.8	2.103	2.146	78.7	27.4	10.9				
1999 05 12		08 43.51	+41 44.9	2.301	2.219	72.6	25.7	11.3				
1999 05 22		08 52.96	+36 33.6	2.509	2.296	66.3	23.8	11.6				
1999 06 01		09 02.37	+32 03.6	2.720	2.376	59.7	21.6	11.9				
1999 06 11		09 11.71	+28 06.1	2.931	2.459	53.1	19.3	12.2				
1999 06 21		09 20.95	+24 34.3	3.135	2.543	46.4	16.8	12.5				
1999 07 01		09 30.07	+21 22.7	3.331	2.630	39.7	14.3	12.8				
1999 07 11		09 39.02	+18 26.8	3.514	2.717	32.9	11.7	13.1				

1998 MK₃₀

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements	MPC	32339
1998 08 05		22 44.93	+06 28.4	0.525	1.475	144.9	23.3	16.0			
1998 08 15		22 51.80	+07 21.0	0.474	1.447	151.7	19.4	15.7			
1998 08 25		22 56.96	+07 30.1	0.435	1.425	158.8	14.9	15.3			
1998 09 04		23 01.06	+06 51.4	0.409	1.408	165.6	10.3	15.0			
1998 09 14		23 05.09	+05 30.2	0.396	1.398	169.4	7.6	14.8			
1998 09 24		23 10.15	+03 41.6	0.398	1.394	166.4	9.7	14.9			
1998 10 04		23 17.34	+01 49.0	0.415	1.396	159.5	14.5	15.1			

1998 10 14	23 27.10	+00 14.4	0.445	1.406	151.9	19.5	15.5
1998 10 24	23 39.41	-00 48.0	0.488	1.421	144.5	24.0	15.8
1998 11 03	23 53.96	-01 12.2	0.545	1.442	137.7	27.5	16.2
1998 11 13	00 10.19	-01 00.3	0.613	1.469	131.5	30.3	16.6
1998 11 23	00 27.64	-00 17.7	0.693	1.501	125.7	32.3	17.0
1998 12 03	00 45.95	+00 49.1	0.784	1.537	120.2	33.7	17.3
1998 12 13	01 04.82	+02 12.8	0.885	1.577	114.9	34.5	17.7
1998 12 23	01 24.07	+03 47.9	0.997	1.620	109.8	34.8	18.0
1999 01 02	01 43.63	+05 29.2	1.117	1.666	104.8	34.8	18.3
1999 01 12	02 03.37	+07 12.7	1.245	1.714	99.9	34.4	18.6
1999 01 22	02 23.30	+08 55.1	1.381	1.764	94.9	33.8	18.8
1999 02 01	02 43.38	+10 34.0	1.523	1.814	90.0	32.9	19.1
1999 02 11	03 03.57	+12 07.3	1.670	1.866	85.1	31.8	19.3
1999 02 21	03 23.86	+13 33.4	1.821	1.918	80.2	30.5	19.5
1999 03 03	03 44.23	+14 51.2	1.974	1.971	75.3	29.1	19.7
1999 03 13	04 04.63	+15 59.7	2.128	2.024	70.4	27.5	19.9
1999 03 23	04 25.03	+16 58.4	2.283	2.076	65.4	25.9	20.1
1999 04 02	04 45.40	+17 46.7	2.435	2.129	60.5	24.1	20.2

1997 US₉

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements	MPC	32314
1998 08 05		00 05.31	+66 03.3	0.418	1.097	89.9	67.7	18.2			
1998 08 15		23 43.63	+64 30.8	0.405	1.140	97.7	61.7	18.0			
1998 08 25		23 18.18	+61 30.4	0.386	1.180	106.5	55.2	17.8			
1998 09 04		22 53.17	+56 18.7	0.366	1.216	116.4	48.0	17.5			
1998 09 14		22 33.41	+48 32.1	0.352	1.248	126.6	40.3	17.3			
1998 09 24		22 21.40	+38 29.1	0.350	1.276	135.3	33.6	17.2			
1998 10 04		22 17.42	+27 27.8	0.366	1.299	139.0	30.3	17.2			
1998 10 14		22 20.08	+17 11.2	0.403	1.318	136.3	31.5	17.5			
1998 10 24		22 27.82	+08 47.2	0.457	1.333	129.5	35.2	17.9			
1998 11 03		22 39.36	+02 32.6	0.525	1.343	121.4	39.1	18.3			
1998 11 13		22 53.58	-01 47.9	0.602	1.348	113.5	42.3	18.7			
1998 11 23		23 09.78	-04 38.1	0.684	1.349	106.1	44.7	19.0			
1998 12 03		23 27.47	-06 19.7	0.768	1.345	99.4	46.3	19.3			
1998 12 13		23 46.25	-07 09.9	0.851	1.337	93.2	47.3	19.6			
1998 12 23		00 05.95	-07 21.4	0.930	1.324	87.5	47.9	19.8			
1999 01 02		00 26.46	-07 03.7	1.003	1.306	82.2	48.2	19.9			
1999 01 12		00 47.69	-06 24.0	1.070	1.284	77.3	48.3	20.0			
1999 01 22		01 09.68	-05 27.5	1.127	1.258	72.8	48.4	20.1			
1999 02 01		01 32.46	-04 18.5	1.173	1.227	68.7	48.4	20.1			
1999 02 11		01 56.10	-03 00.5	1.208	1.192	64.9	48.5	20.1			
1999 02 21		02 20.73	-01 35.9	1.231	1.154	61.5	48.9	20.1			

1991 DB

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	Elements	MPC	20820
1998 08 05		00 17.43	+01 12.3	1.158	1.953	127.9	24.2	21.4			
1998 08 15		00 12.04	-00 35.5	1.114	1.996	139.5	19.3	21.2			
1998 08 25		00 03.08	-02 49.1	1.088	2.036	151.9	13.5	21.0			
1998 09 04		23 51.43	-05 17.7	1.084	2.074	164.8	7.3	20.8			
1998 09 14		23 38.51	-07 45.9	1.107	2.111	174.9	2.4	20.6			
1998 09 24		23 25.99	-09 57.8	1.157	2.145	166.2	6.4	21.0			
1998 10 04		23 15.44	-11 41.7	1.234	2.177	153.9	11.7	21.4			
1998 10 14		23 07.87	-12 53.0	1.334	2.207	142.0	16.1	21.7			
1998 10 24		23 03.66	-13 32.5	1.452	2.235	131.0	19.6	22.0			

1998 MR ₂₄		$a, e, i = 1.96, 0.45, 6$				Elements <i>MPC</i> 32339		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05	00 24.81	+34 54.2	0.235	1.112	108.8	59.7	18.2	
1998 08 10	00 34.16	+35 19.3	0.245	1.125	111.1	57.2	18.3	
1998 08 15	00 41.29	+35 25.4	0.255	1.141	114.0	54.2	18.3	
1998 08 20	00 46.27	+35 13.4	0.265	1.158	117.5	50.8	18.3	
1998 08 25	00 49.21	+34 43.7	0.274	1.178	121.5	47.0	18.3	
1998 08 30	00 50.32	+33 56.6	0.284	1.199	126.0	43.0	18.3	
1998 09 04	00 49.85	+32 52.7	0.294	1.222	130.9	38.6	18.3	
1998 09 09	00 48.08	+31 32.9	0.306	1.246	136.1	34.1	18.3	
1998 09 14	00 45.31	+29 58.8	0.319	1.271	141.6	29.5	18.3	
1998 09 19	00 41.86	+28 12.3	0.334	1.298	147.2	24.8	18.3	
1998 09 24	00 38.13	+26 16.5	0.351	1.325	152.7	20.3	18.3	
1998 09 29	00 34.47	+24 15.7	0.372	1.353	157.7	16.3	18.4	
1998 10 04	00 31.19	+22 14.1	0.396	1.382	161.9	13.0	18.5	
1998 10 09	00 28.49	+20 15.9	0.424	1.412	164.2	11.1	18.6	
1998 10 14	00 26.50	+18 24.4	0.456	1.441	164.2	10.9	18.8	
1998 10 19	00 25.32	+16 42.1	0.492	1.472	161.9	12.1	19.0	
1998 10 24	00 25.00	+15 10.8	0.532	1.502	158.3	14.2	19.3	
1998 10 29	00 25.53	+13 51.5	0.576	1.532	154.0	16.5	19.6	
1998 11 03	00 26.89	+12 44.6	0.624	1.563	149.6	18.7	19.9	
1998 11 08	00 29.01	+11 49.5	0.676	1.594	145.1	20.8	20.2	
1998 11 13	00 31.81	+11 05.5	0.732	1.624	140.7	22.7	20.5	
1998 11 18	00 35.24	+10 31.9	0.791	1.655	136.4	24.3	20.7	
1998 11 23	00 39.25	+10 07.6	0.854	1.685	132.3	25.7	21.0	
1998 11 28	00 43.78	+09 51.8	0.920	1.715	128.2	26.9	21.2	
1998 12 03	00 48.77	+09 43.6	0.988	1.745	124.3	27.8	21.4	
1998 12 08	00 54.15	+09 41.8	1.059	1.775	120.5	28.6	21.6	
1998 12 13	00 59.89	+09 45.8	1.132	1.804	116.7	29.2	21.8	

1990 BA		$a, e, i = 1.74, 0.34, 2$				Elements <i>MPC</i> 29941		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05	00 40.17	+06 12.5	1.326	2.040	120.7	25.3	21.3	
1998 08 15	00 41.51	+06 39.9	1.201	2.007	129.8	22.8	21.0	
1998 08 25	00 39.42	+06 47.7	1.089	1.972	139.9	19.3	20.6	
1998 09 04	00 33.51	+06 32.5	0.991	1.936	150.9	14.7	20.2	
1998 09 14	00 23.79	+05 52.6	0.913	1.898	163.0	8.9	19.8	
1998 09 24	00 10.91	+04 49.4	0.856	1.858	175.1	2.7	19.3	
1998 10 04	23 56.47	+03 30.2	0.824	1.817	169.4	5.8	19.3	
1998 10 14	23 42.63	+02 07.6	0.816	1.774	156.1	13.2	19.6	
1998 10 24	23 31.50	+00 55.6	0.828	1.731	143.3	20.1	19.8	
1998 11 03	23 24.60	+00 05.3	0.857	1.686	131.4	26.2	20.0	
1998 11 13	23 22.51	-00 17.7	0.896	1.640	120.8	31.2	20.2	
1998 11 23	23 25.18	-00 12.2	0.942	1.594	111.4	35.2	20.3	
1998 12 03	23 32.24	+00 20.7	0.990	1.547	103.1	38.3	20.5	
1998 12 13	23 43.10	+01 18.4	1.037	1.501	95.9	40.7	20.6	
1998 12 23	23 57.31	+02 38.1	1.080	1.454	89.5	42.6	20.6	
1999 01 02	00 14.49	+04 17.0	1.119	1.409	83.9	43.9	20.7	
1999 01 12	00 34.32	+06 11.9	1.153	1.365	79.0	45.0	20.7	
1999 01 22	00 56.66	+08 19.8	1.180	1.323	74.7	45.9	20.7	
1999 02 01	01 21.42	+10 36.9	1.202	1.284	71.1	46.6	20.7	
1999 02 11	01 48.59	+12 58.7	1.218	1.248	68.0	47.2	20.7	
1999 02 21	02 18.22	+15 20.4	1.230	1.217	65.5	47.7	20.7	

1999 03 03	02 50.36	+17 35.9	1.239	1.191	63.5	48.1	20.7
1999 03 13	03 24.97	+19 38.3	1.246	1.172	61.9	48.4	20.6
1999 03 23	04 01.98	+21 20.2	1.253	1.159	60.8	48.6	20.6
1999 04 02	04 41.11	+22 34.0	1.262	1.153	60.0	48.6	20.6

1994 TF ₂		$a, e, i = 0.99, 0.28, 24$				Elements <i>MPC</i> 31420		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05	01 57.20	+23 14.0	0.658	1.274	96.9	52.2	20.5	
1998 08 10	02 07.37	+22 16.7	0.619	1.275	99.8	51.6	20.4	
1998 08 15	02 17.34	+21 01.6	0.580	1.274	102.8	50.8	20.2	
1998 08 20	02 27.08	+19 25.5	0.541	1.272	106.0	49.8	20.0	
1998 08 25	02 36.53	+17 24.2	0.502	1.269	109.4	48.7	19.8	
1998 08 30	02 45.62	+14 52.9	0.464	1.265	112.9	47.3	19.6	
1998 09 04	02 54.32	+11 46.3	0.428	1.259	116.6	45.8	19.4	
1998 09 09	03 02.55	+07 58.2	0.393	1.252	120.2	44.0	19.2	
1998 09 14	03 10.23	+03 22.4	0.362	1.244	123.8	42.2	18.9	
1998 09 19	03 17.22	-02 06.4	0.334	1.235	126.9	40.6	18.7	
1998 09 24	03 23.41	-08 29.7	0.311	1.224	129.3	39.4	18.5	
1998 09 29	03 28.66	-15 42.8	0.293	1.212	130.2	39.1	18.3	
1998 10 04	03 32.87	-23 32.2	0.281	1.199	129.4	40.2	18.2	
1998 10 09	03 35.88	-31 37.1	0.276	1.184	126.6	42.7	18.2	
1998 10 14	03 37.51	-39 32.9	0.276	1.168	122.2	46.2	18.3	
1998 10 19	03 37.53	-46 57.0	0.282	1.151	116.9	50.5	18.4	
1998 10 24	03 35.77	-53 34.3	0.291	1.133	111.2	54.9	18.6	
1998 10 29	03 32.08	-59 19.0	0.304	1.114	105.6	59.2	18.8	
1998 11 03	03 26.33	-64 12.6	0.318	1.094	100.2	63.2	19.0	
1998 11 08	03 18.28	-68 20.9	0.333	1.073	95.1	66.9	19.1	
1998 11 13	03 07.5	-71 51.0	0.347	1.051	90.3	70.4	19.3	
1998 11 18	02 53.5	-74 50.2	0.361	1.027	85.8	73.7	19.4	
1998 11 23	02 35.2	-77 25.3	0.373	1.004	81.6	76.8	19.5	
1998 11 28	02 10.3	-79 42.2	0.383	0.979	77.7	79.9	19.7	
1998 12 03	01 33.9	-81 44.3	0.390	0.954	73.9	83.0	19.8	
1998 12 08	00 35.6	-83 27.4	0.396	0.929	70.2	86.2	19.9	
1998 12 13	23 00.4	-84 30.2	0.399	0.903	66.5	89.6	19.9	
1998 12 18	21 00.1	-84 11.9	0.400	0.878	62.9	93.1	20.0	
1998 12 23	19 26.5	-82 16.8	0.399	0.853	59.4	96.9	20.1	

1989 UR		$a, e, i = 1.08, 0.36, 10$				Elements <i>MPC</i> 30756		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05	02 08.01	+27 07.6	0.984	1.452	93.2	44.2	21.0	
1998 08 10	02 16.85	+28 09.9	0.936	1.446	95.7	44.2	20.9	
1998 08 15	02 25.56	+29 10.3	0.888	1.439	98.2	44.2	20.7	
1998 08 20	02 34.08	+30 08.6	0.840	1.430	100.7	44.0	20.6	
1998 08 25	02 42.39	+31 04.5	0.791	1.421	103.4	43.8	20.4	
1998 08 30	02 50.44	+31 58.0	0.742	1.410	106.1	43.5	20.3	
1998 09 04	02 58.19	+32 48.7	0.694	1.397	109.0	43.0	20.1	
1998 09 09	03 05.60	+33 36.5	0.645	1.384	111.9	42.5	19.9	
1998 09 14	03 12.58	+34 21.1	0.598	1.369	114.9	41.8	19.7	
1998 09 19	03 19.04	+35 02.0	0.550	1.353	118.0	40.9	19.5	
1998 09 24	03 24.86	+35 38.3	0.504	1.336	121.3	39.9	19.2	
1998 09 29	03 29.91	+36 09.2	0.458	1.318	124.8	38.6	18.9	
1998 10 04	03 34.06	+36 33.4	0.413	1.298	128.5	37.1	18.6	
1998 10 09	03 37.14	+36 49.2	0.370	1.278	132.3	35.3	18.3	
1998 10 14	03 38.87	+36 54.0	0.328	1.256	136.5	33.1	18.0	

M.P.C. 32358

1998 AUG. 8

1998 10 19	03 38.93	+36 43.7	0.287	1.233	141.1	30.5	17.6
1998 10 24	03 36.92	+36 11.8	0.248	1.208	146.1	27.4	17.1
1998 10 29	03 32.37	+35 08.6	0.211	1.183	151.7	23.5	16.6
1998 11 03	03 24.62	+33 17.8	0.175	1.157	158.1	18.7	16.0
1998 11 08	03 12.66	+30 10.4	0.142	1.129	165.5	12.7	15.3
1998 11 13	02 54.86	+24 51.7	0.112	1.101	171.9	7.2	14.5
1998 11 18	02 28.64	+15 35.7	0.086	1.072	164.4	14.4	14.1
1998 11 23	01 49.76	-00 29.9	0.066	1.042	143.3	34.5	14.1
1998 11 28	00 51.45	-24 06.6	0.058	1.011	112.9	64.0	14.6
1998 12 03	23 27.08	-45 53.9	0.065	0.980	82.7	93.5	15.9
1998 12 08	21 44.93	-57 05.1	0.083	0.948	61.3	114.3	17.4
1998 12 13	20 14.43	-60 01.5	0.106	0.917	47.7	127.4	18.9
1998 12 18	19 11.33	-59 18.1	0.132	0.885	39.2	135.3	20.1
1998 12 23	18 30.89	-57 16.6	0.162	0.855	34.2	139.7	21.0
1998 12 28	18 05.54	-54 48.5	0.193	0.825	31.7	141.2	21.5
1999 01 02	17 50.42	-52 11.5	0.228	0.797	31.3	140.2	21.7

1993 ME₁ $a, e, i = 2.64, 0.49, 23$ Elements *MPC* 22700

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05		02 20.19	+34 07.1	2.731	2.886	88.3	20.6	21.0
1998 08 15		02 24.05	+34 57.6	2.641	2.931	96.3	20.1	20.9
1998 08 25		02 25.44	+35 37.6	2.552	2.976	104.8	19.2	20.9
1998 09 04		02 24.17	+36 04.1	2.467	3.019	113.8	17.8	20.8
1998 09 14		02 20.17	+36 14.0	2.391	3.061	123.3	15.9	20.7
1998 09 24		02 13.58	+36 03.6	2.329	3.102	133.1	13.7	20.6
1998 10 04		02 04.86	+35 29.9	2.286	3.143	142.9	11.1	20.5
1998 10 14		01 54.80	+34 31.8	2.266	3.182	152.0	8.5	20.4
1998 10 24		01 44.38	+33 11.0	2.274	3.220	158.3	6.5	20.3
1998 11 03		01 34.63	+31 33.0	2.312	3.257	158.9	6.3	20.4
1998 11 13		01 26.41	+29 45.7	2.379	3.293	153.2	7.8	20.5
1998 11 23		01 20.31	+27 57.6	2.474	3.327	144.4	10.0	20.7
1998 12 03		01 16.58	+26 16.3	2.595	3.361	134.6	12.1	20.9
1998 12 13		01 15.23	+24 47.3	2.737	3.394	124.6	13.8	21.1
1998 12 23		01 16.12	+23 33.4	2.895	3.426	114.7	15.1	21.3
1999 01 02		01 19.01	+22 35.8	3.065	3.456	105.2	15.9	21.5
1999 01 12		01 23.62	+21 53.8	3.242	3.486	96.1	16.3	21.6
1999 01 22		01 29.72	+21 26.3	3.421	3.514	87.2	16.2	21.8
1999 02 01		01 37.06	+21 11.5	3.600	3.542	78.7	15.8	21.9
1999 02 11		01 45.44	+21 07.4	3.774	3.568	70.5	15.1	22.0

1996 TR₆ $a, e, i = 1.59, 0.18, 22$ Elements *MPC* 28619

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05		02 27.35	+28 29.6	0.904	1.343	88.7	49.0	20.8
1998 08 10		02 39.99	+27 59.4	0.878	1.351	90.9	48.6	20.7
1998 08 15		02 52.07	+27 17.8	0.851	1.360	93.3	48.0	20.6
1998 08 20		03 03.50	+26 24.3	0.825	1.369	95.9	47.3	20.5
1998 08 25		03 14.18	+25 18.5	0.798	1.379	98.7	46.5	20.5
1998 08 30		03 24.02	+23 59.8	0.771	1.389	101.7	45.4	20.4
1998 09 04		03 32.94	+22 27.8	0.744	1.399	104.9	44.1	20.3
1998 09 09		03 40.84	+20 42.1	0.719	1.410	108.4	42.7	20.2
1998 09 14		03 47.64	+18 42.4	0.694	1.421	112.2	41.0	20.1
1998 09 19		03 53.21	+16 28.6	0.670	1.433	116.2	39.0	20.0
1998 09 24		03 57.47	+14 00.9	0.649	1.444	120.4	36.8	19.9
1998 09 29		04 00.36	+11 20.1	0.629	1.456	124.8	34.4	19.7

1998 10 04	04 01.84	+08 27.9	0.613	1.468	129.4	31.8	19.6
1998 10 09	04 01.88	+05 26.6	0.600	1.480	134.1	29.0	19.5
1998 10 14	04 00.49	+02 19.8	0.591	1.493	138.6	26.2	19.4
1998 10 19	03 57.73	-00 48.2	0.586	1.505	142.7	23.6	19.3
1998 10 24	03 53.75	-03 52.0	0.586	1.518	146.3	21.4	19.3
1998 10 29	03 48.74	-06 45.9	0.591	1.530	148.8	19.7	19.3
1998 11 03	03 42.99	-09 24.7	0.602	1.543	149.9	18.8	19.3
1998 11 08	03 36.79	-11 44.1	0.617	1.555	149.7	18.8	19.4
1998 11 13	03 30.45	-13 41.1	0.638	1.568	148.1	19.5	19.5
1998 11 18	03 24.29	-15 14.3	0.662	1.580	145.6	20.7	19.6
1998 11 23	03 18.61	-16 23.5	0.692	1.592	142.4	22.3	19.8
1998 11 28	03 13.64	-17 10.0	0.725	1.605	138.8	23.9	19.9
1998 12 03	03 09.56	-17 35.8	0.761	1.617	135.1	25.5	20.1
1998 12 08	03 06.45	-17 43.3	0.801	1.629	131.3	27.0	20.3
1998 12 13	03 04.37	-17 35.2	0.843	1.640	127.5	28.4	20.5
1998 12 18	03 03.32	-17 13.8	0.887	1.652	123.9	29.6	20.6
1998 12 23	03 03.28	-16 41.3	0.934	1.663	120.3	30.7	20.8
1998 12 28	03 04.22	-15 59.9	0.982	1.675	116.9	31.6	20.9
1999 01 02	03 06.06	-15 11.5	1.031	1.686	113.6	32.3	21.1
1999 01 07	03 08.72	-14 17.5	1.082	1.696	110.3	32.9	21.2
1999 01 12	03 12.15	-13 19.2	1.134	1.707	107.2	33.4	21.3
1999 01 17	03 16.28	-12 17.8	1.186	1.717	104.2	33.7	21.5
1999 01 22	03 21.06	-11 14.0	1.239	1.727	101.3	34.0	21.6
1999 01 27	03 26.42	-10 08.9	1.293	1.737	98.5	34.1	21.7
1999 02 01	03 32.32	-09 03.0	1.347	1.746	95.7	34.2	21.8
1999 02 06	03 38.70	-07 57.1	1.401	1.755	93.0	34.1	21.9
1999 02 11	03 45.51	-06 51.4	1.455	1.764	90.4	34.0	22.0

C/1998 K5 (LINEAR)

Elements *MPC* 32169

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 05		03 13.62	+36 44.8	0.458	1.016	77.1	76.8	15.4	
1998 08 15		03 33.01	+33 25.4	0.519	1.082	83.2	68.4	15.9	
1998 08 25		03 45.14	+30 32.3	0.571	1.167	90.7	60.0	16.5	
1998 09 04		03 50.65	+27 50.9	0.615	1.267	99.7	51.7	17.0	
1998 09 14		03 49.97	+25 12.0	0.654	1.376	110.1	43.3	17.5	
1998 09 24		03 43.63	+22 30.1	0.693	1.491	122.0	34.8	17.9	
1998 10 04		03 32.74	+19 44.9	0.740	1.610	134.9	26.1	18.4	
1998 10 14		03 19.06	+17 01.9	0.800	1.732	148.6	17.5	18.9	
1998 10 24		03 04.60	+14 30.8	0.881	1.854	162.4	9.4	19.4	
1998 11 03		02 51.34	+12 22.2	0.987	1.977	174.6	2.7	19.9	
1998 11 13		02 40.60	+10 42.8	1.118	2.099	169.6	4.9	20.5	
1998 11 23		02 33.00	+09 34.0	1.275	2.221	157.9	9.6	21.0	
1998 12 03		02 28.62	+08 53.7	1.455	2.342	146.7	13.4	21.5	
1998 12 13		02 27.18	+08 37.0	1.655	2.462	136.2	16.1	22.0	
1998 12 23		02 28.27	+08 39.1	1.873	2.581	126.4	17.9	22.5	

1989 NA

 $a, e, i = 2.65, 0.45, 14$ Elements *MPC* 29657

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05		03 39.56	+05 00.2	1.929	2.001	79.0	29.9	19.7
1998 08 15		03 51.94	+05 09.7	1.873	2.054	85.2	29.4	19.7
1998 08 25		04 02.02	+05 07.6	1.812	2.107	92.1	28.6	19.7
1998 09 04		04 09.47	+04 55.1	1.750	2.161	99.6	27.4	19.6
1998 09 14		04 14.01	+04 33.9	1.688	2.214	107.8	25.6	19.5
1998 09 24		04 15.34	+04 06.3	1.630	2.267	116.8	23.3	19.4

1998 10 04	04 13.29	+03 35.2	1.580	2.320	126.5	20.3	19.3
1998 10 14	04 07.91	+03 04.5	1.544	2.372	136.9	16.7	19.2
1998 10 24	03 59.52	+02 38.7	1.525	2.423	147.4	12.8	19.1
1998 11 03	03 48.93	+02 22.5	1.529	2.474	157.2	8.9	19.0
1998 11 13	03 37.28	+02 20.0	1.560	2.524	163.3	6.5	19.0
1998 11 23	03 25.83	+02 33.3	1.619	2.574	161.1	7.2	19.1
1998 12 03	03 15.81	+03 02.7	1.706	2.622	152.8	9.9	19.4
1998 12 13	03 08.03	+03 46.4	1.819	2.670	142.7	12.9	19.7
1998 12 23	03 02.92	+04 41.8	1.954	2.717	132.5	15.5	20.0
1999 01 02	03 00.57	+05 45.9	2.106	2.763	122.6	17.5	20.2
1999 01 12	03 00.83	+06 55.9	2.272	2.808	113.1	18.8	20.5
1999 01 22	03 03.42	+08 09.4	2.448	2.852	104.1	19.6	20.7
1999 02 01	03 08.06	+09 24.5	2.629	2.895	95.5	19.8	20.9
1999 02 11	03 14.42	+10 39.8	2.813	2.937	87.3	19.6	21.1
1999 02 21	03 22.26	+11 53.9	2.997	2.978	79.4	19.0	21.2
1999 03 03	03 31.32	+13 05.9	3.176	3.019	71.9	18.2	21.3
1999 03 13	03 41.40	+14 15.0	3.350	3.058	64.5	17.1	21.5

1985 UJ		$a, e, i = 2.63, 0.42, 9$				Elements <i>MPC</i> 25225		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05		03 49.14	+19 56.9	1.483	1.531	73.0	39.3	18.8
1998 08 10		04 02.94	+21 08.2	1.452	1.530	74.3	39.6	18.8
1998 08 15		04 16.72	+22 16.0	1.422	1.530	75.8	39.9	18.8
1998 08 20		04 30.44	+23 20.3	1.393	1.531	77.3	40.1	18.7
1998 08 25		04 44.04	+24 20.8	1.364	1.534	78.9	40.3	18.7
1998 08 30		04 57.48	+25 17.7	1.336	1.538	80.6	40.4	18.7
1998 09 04		05 10.71	+26 11.1	1.309	1.543	82.4	40.4	18.6
1998 09 09		05 23.67	+27 01.1	1.282	1.549	84.3	40.3	18.6
1998 09 14		05 36.30	+27 48.1	1.255	1.557	86.3	40.2	18.5
1998 09 19		05 48.53	+28 32.2	1.229	1.566	88.4	39.9	18.5
1998 09 24		06 00.29	+29 14.0	1.203	1.576	90.7	39.5	18.5
1998 09 29		06 11.51	+29 53.9	1.177	1.587	93.1	39.1	18.4
1998 10 04		06 22.10	+30 32.3	1.151	1.599	95.8	38.5	18.4
1998 10 09		06 32.01	+31 09.8	1.126	1.612	98.5	37.8	18.3
1998 10 14		06 41.15	+31 46.9	1.101	1.626	101.5	36.9	18.3
1998 10 19		06 49.41	+32 24.1	1.077	1.642	104.7	35.9	18.2
1998 10 24		06 56.72	+33 02.1	1.053	1.658	108.1	34.8	18.1
1998 10 29		07 02.97	+33 41.0	1.030	1.675	111.7	33.5	18.1
1998 11 03		07 08.09	+34 21.2	1.009	1.692	115.5	31.9	18.0
1998 11 08		07 11.99	+35 02.9	0.989	1.711	119.6	30.2	17.9
1998 11 13		07 14.58	+35 45.8	0.970	1.730	123.9	28.4	17.9
1998 11 18		07 15.78	+36 29.7	0.954	1.749	128.4	26.3	17.8
1998 11 23		07 15.56	+37 13.8	0.941	1.770	133.2	24.0	17.7
1998 11 28		07 13.90	+37 56.9	0.931	1.790	138.1	21.6	17.7
1998 12 03		07 10.88	+38 37.7	0.924	1.812	143.1	19.1	17.6
1998 12 08		07 06.60	+39 14.7	0.922	1.834	148.1	16.5	17.5
1998 12 13		07 01.22	+39 46.3	0.924	1.856	152.9	14.0	17.5
1998 12 18		06 54.99	+40 11.0	0.932	1.878	157.2	11.7	17.4
1998 12 23		06 48.23	+40 27.7	0.945	1.901	160.6	9.9	17.4
1998 12 28		06 41.30	+40 35.6	0.964	1.924	162.4	8.9	17.4
1999 01 02		06 34.56	+40 34.8	0.988	1.948	162.1	8.9	17.5
1999 01 07		06 28.30	+40 26.1	1.019	1.971	159.9	9.9	17.7
1999 01 12		06 22.78	+40 10.3	1.055	1.995	156.4	11.4	17.8

1999 01 17	06 18.20	+39 48.8	1.096	2.019	152.2	13.2	18.0
1999 01 22	06 14.69	+39 22.8	1.143	2.043	147.6	15.0	18.2
1999 01 27	06 12.31	+38 53.7	1.195	2.067	142.9	16.7	18.4
1999 02 01	06 11.06	+38 22.7	1.251	2.092	138.3	18.3	18.5
1999 02 06	06 10.87	+37 50.6	1.312	2.116	133.7	19.7	18.7
1999 02 11	06 11.70	+37 18.2	1.376	2.140	129.2	20.9	18.9
1999 02 16	06 13.47	+36 45.8	1.444	2.165	124.8	22.0	19.0
1999 02 21	06 16.10	+36 13.9	1.514	2.189	120.5	22.9	19.2
1999 02 26	06 19.49	+35 42.5	1.588	2.214	116.4	23.6	19.3
1999 03 03	06 23.57	+35 11.7	1.664	2.238	112.4	24.2	19.5
1999 03 08	06 28.24	+34 41.4	1.742	2.263	108.6	24.6	19.6
1999 03 13	06 33.44	+34 11.6	1.822	2.287	104.8	24.8	19.7
1999 03 18	06 39.10	+33 42.1	1.903	2.311	101.1	25.0	19.9
1999 03 23	06 45.17	+33 12.9	1.985	2.335	97.5	25.0	20.0
1999 03 28	06 51.58	+32 43.6	2.069	2.359	94.0	25.0	20.1
1999 04 02	06 58.28	+32 14.4	2.153	2.383	90.6	24.8	20.2
1999 04 07	07 05.23	+31 44.9	2.237	2.407	87.3	24.5	20.3
1999 04 12	07 12.39	+31 15.0	2.322	2.431	84.0	24.2	20.4
1999 04 17	07 19.73	+30 44.8	2.406	2.454	80.8	23.8	20.5
1999 04 22	07 27.22	+30 14.0	2.491	2.478	77.6	23.3	20.6
1999 04 27	07 34.82	+29 42.6	2.575	2.501	74.5	22.8	20.6
1999 05 02	07 42.52	+29 10.5	2.658	2.524	71.4	22.2	20.7
1999 05 07	07 50.28	+28 37.7	2.740	2.547	68.4	21.6	20.8
1999 05 12	07 58.09	+28 04.2	2.822	2.570	65.3	20.9	20.8
1999 05 17	08 05.94	+27 29.9	2.902	2.592	62.4	20.2	20.9
1999 05 22	08 13.81	+26 54.7	2.980	2.615	59.4	19.5	20.9

(8566) 1996 EN		$a, e, i = 1.51, 0.43, 38$				Elements MPC 31511		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05		04 06.59	+08 53.4	0.772	1.062	71.5	64.9	18.4
1998 08 10		04 19.90	+05 10.1	0.779	1.094	73.9	62.9	18.4
1998 08 15		04 32.43	+01 28.4	0.787	1.126	76.3	60.9	18.4
1998 08 20		04 44.14	-02 11.2	0.795	1.159	78.8	58.9	18.4
1998 08 25		04 54.98	-05 48.0	0.804	1.192	81.2	56.9	18.5
1998 08 30		05 04.91	-09 21.3	0.815	1.226	83.7	55.0	18.5
1998 09 04		05 13.89	-12 50.5	0.826	1.259	86.1	53.0	18.5
1998 09 09		05 21.87	-16 15.0	0.837	1.292	88.5	51.2	18.6
1998 09 14		05 28.82	-19 34.4	0.850	1.326	90.8	49.4	18.6
1998 09 19		05 34.66	-22 48.1	0.863	1.358	93.0	47.6	18.6
1998 09 24		05 39.32	-25 55.3	0.877	1.391	95.2	45.9	18.7
1998 09 29		05 42.71	-28 55.2	0.892	1.423	97.2	44.3	18.7
1998 10 04		05 44.79	-31 46.7	0.907	1.454	99.2	42.8	18.8
1998 10 09		05 45.47	-34 28.7	0.924	1.485	101.1	41.3	18.8
1998 10 14		05 44.69	-37 00.1	0.941	1.515	102.8	39.9	18.8
1998 10 19		05 42.39	-39 19.6	0.959	1.545	104.4	38.6	18.9
1998 10 24		05 38.54	-41 25.2	0.978	1.574	105.9	37.4	18.9
1998 10 29		05 33.16	-43 15.4	0.998	1.603	107.2	36.3	19.0
1998 11 03		05 26.37	-44 48.3	1.019	1.630	108.3	35.3	19.1
1998 11 08		05 18.32	-46 02.7	1.041	1.657	109.3	34.4	19.1
1998 11 13		05 09.24	-46 57.2	1.065	1.684	110.0	33.5	19.2
1998 11 18		04 59.45	-47 31.0	1.090	1.709	110.6	32.8	19.2
1998 11 23		04 49.31	-47 43.7	1.117	1.734	110.9	32.1	19.3
1998 11 28		04 39.24	-47 35.5	1.145	1.758	111.0	31.6	19.4

1998 12 03	04 29.61	-47 07.8	1.175	1.782	110.8	31.1	19.4
1998 12 08	04 20.72	-46 22.0	1.207	1.805	110.5	30.8	19.5
1998 12 13	04 12.82	-45 20.0	1.240	1.827	109.9	30.5	19.6
1998 12 18	04 06.06	-44 04.0	1.275	1.848	109.1	30.2	19.7
1998 12 23	04 00.53	-42 36.1	1.313	1.869	108.1	30.0	19.7
1998 12 28	03 56.27	-40 58.8	1.352	1.888	106.9	29.9	19.8
1999 01 02	03 53.23	-39 14.0	1.392	1.908	105.5	29.8	19.9
1999 01 07	03 51.36	-37 23.8	1.435	1.926	104.0	29.7	20.0
1999 01 12	03 50.56	-35 29.7	1.479	1.944	102.4	29.6	20.1
1999 01 17	03 50.77	-33 33.1	1.525	1.961	100.6	29.6	20.2
1999 01 22	03 51.88	-31 35.4	1.572	1.977	98.7	29.5	20.2
1999 01 27	03 53.83	-29 37.6	1.621	1.992	96.7	29.4	20.3
1999 02 01	03 56.52	-27 40.8	1.671	2.007	94.6	29.3	20.4
1999 02 06	03 59.87	-25 45.4	1.722	2.021	92.5	29.2	20.5
1999 02 11	04 03.83	-23 52.3	1.774	2.035	90.3	29.0	20.6
1999 02 16	04 08.32	-22 01.7	1.827	2.047	88.0	28.8	20.6
1999 02 21	04 13.31	-20 14.2	1.881	2.059	85.7	28.6	20.7
1999 02 26	04 18.74	-18 30.1	1.935	2.070	83.4	28.4	20.8
1999 03 03	04 24.57	-16 49.7	1.990	2.081	81.1	28.1	20.8
1999 03 08	04 30.75	-15 13.1	2.045	2.091	78.7	27.7	20.9
1999 03 13	04 37.26	-13 40.5	2.100	2.100	76.3	27.4	20.9
1999 03 18	04 44.07	-12 11.8	2.155	2.108	73.9	27.0	21.0
1999 03 23	04 51.16	-10 47.4	2.209	2.116	71.5	26.5	21.0
1999 03 28	04 58.49	-09 27.1	2.263	2.123	69.1	26.0	21.1
1999 04 02	05 06.04	-08 11.1	2.317	2.129	66.7	25.5	21.1
1999 04 07	05 13.79	-06 59.3	2.369	2.135	64.3	25.0	21.2
1999 04 12	05 21.73	-05 51.7	2.421	2.140	61.9	24.4	21.2

138P/Shoemaker-Levy 7					Elements <i>MPC</i> 32169				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 05		04 15.23	+30 37.4	1.859	1.708	65.4	32.7	19.8	21.9
1998 08 15		04 44.90	+31 59.1	1.788	1.700	68.4	33.6	19.7	21.8
1998 08 25		05 14.47	+32 57.9	1.719	1.697	71.6	34.4	19.6	21.7
1998 09 04		05 43.39	+33 33.9	1.653	1.700	75.1	35.0	19.5	21.7
1998 09 14		06 11.14	+33 48.4	1.589	1.709	78.8	35.3	19.5	21.6
1998 09 24		06 37.12	+33 44.2	1.526	1.722	83.1	35.3	19.5	21.5
1998 10 04		07 00.81	+33 24.8	1.464	1.741	87.8	35.0	19.4	21.5
1998 10 14		07 21.72	+32 54.6	1.403	1.764	93.1	34.4	19.4	21.4
1998 10 24		07 39.36	+32 18.1	1.343	1.792	99.1	33.2	19.4	21.3
1998 11 03		07 53.29	+31 39.5	1.284	1.825	105.8	31.5	19.5	21.2
1998 11 13		08 03.10	+31 02.2	1.229	1.860	113.5	29.2	19.5	21.1
1998 11 23		08 08.39	+30 28.6	1.180	1.900	122.2	26.1	19.5	20.9
1998 12 03		08 08.95	+29 58.7	1.139	1.942	131.9	22.2	19.6	20.8
1998 12 13		08 04.92	+29 30.6	1.112	1.987	142.7	17.5	19.7	20.6
1998 12 23		07 56.92	+29 00.6	1.103	2.034	154.2	12.2	19.8	20.5
1999 01 02		07 46.31	+28 24.5	1.116	2.084	165.9	6.6	20.0	20.3
1999 01 12		07 34.89	+27 40.2	1.154	2.135	174.0	2.7		20.2
1999 01 22		07 24.50	+26 48.5	1.218	2.187	166.5	6.0	20.5	20.6
1999 02 01		07 16.60	+25 52.6	1.307	2.240	155.3	10.6	20.8	21.0
1999 02 11		07 11.92	+24 56.4	1.420	2.295	144.4	14.5	21.2	21.4
1999 02 21		07 10.61	+24 02.1	1.552	2.350	134.1	17.6	21.5	21.7
1999 03 03		07 12.46	+23 10.7	1.700	2.406	124.6	19.8	21.9	22.1

1995 UO ₅		$a, e, i = 1.56, 0.64, 36$				Elements <i>MPC</i> 30901		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05	04 21.66	-69 41.7	0.848	1.422	99.2	44.8	19.1	
1998 08 10	04 02.2	-72 15.0	0.878	1.469	101.6	42.5	19.2	
1998 08 15	03 34.3	-74 32.1	0.910	1.515	103.9	40.5	19.3	
1998 08 20	02 55.6	-76 22.7	0.944	1.560	105.8	38.6	19.4	
1998 08 25	02 05.6	-77 32.9	0.981	1.604	107.3	37.0	19.5	
1998 08 30	01 08.8	-77 50.2	1.019	1.647	108.5	35.6	19.6	
1998 09 04	00 14.4	-77 11.8	1.061	1.688	109.3	34.3	19.7	
1998 09 09	23 29.8	-75 47.1	1.106	1.728	109.6	33.3	19.8	
1998 09 14	22 56.8	-73 50.7	1.154	1.767	109.6	32.4	19.9	
1998 09 19	22 33.8	-71 35.0	1.205	1.805	109.1	31.7	20.0	
1998 09 24	22 18.32	-69 09.0	1.260	1.841	108.3	31.1	20.2	
1998 09 29	22 08.23	-66 38.7	1.318	1.877	107.2	30.7	20.3	
1998 10 04	22 02.02	-64 07.6	1.379	1.911	105.7	30.3	20.4	
1998 10 09	21 58.62	-61 38.3	1.444	1.945	104.0	29.9	20.5	
1998 10 14	21 57.29	-59 11.9	1.511	1.977	102.1	29.6	20.7	
1998 10 19	21 57.52	-56 49.4	1.580	2.008	99.9	29.2	20.8	
1998 10 24	21 58.96	-54 31.2	1.652	2.039	97.6	28.9	20.9	
1998 10 29	22 01.35	-52 17.5	1.726	2.068	95.2	28.6	21.0	
1998 11 03	22 04.47	-50 08.4	1.802	2.096	92.6	28.2	21.1	
1998 11 08	22 08.19	-48 04.0	1.879	2.124	90.0	27.8	21.2	
1998 11 13	22 12.37	-46 03.9	1.958	2.150	87.2	27.4	21.3	
1998 11 18	22 16.95	-44 07.9	2.037	2.176	84.4	26.9	21.4	
1998 11 23	22 21.85	-42 15.9	2.117	2.201	81.6	26.4	21.5	
1998 11 28	22 27.03	-40 27.7	2.197	2.224	78.7	25.8	21.6	
1998 12 03	22 32.42	-38 43.0	2.277	2.247	75.7	25.2	21.7	
1998 12 08	22 37.99	-37 01.6	2.356	2.269	72.8	24.5	21.8	
1998 12 13	22 43.72	-35 23.2	2.436	2.290	69.8	23.8	21.8	
1998 12 18	22 49.57	-33 47.7	2.514	2.311	66.8	23.0	21.9	
1998 12 23	22 55.55	-32 14.9	2.590	2.330	63.8	22.3	22.0	

1994 VK ₈		$a, e, i = 42.90, 0.03, 1$				Elements <i>MPC</i> 30900		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05	04 23.26	+21 25.3	43.933	43.512	64.8	1.2	23.1	
1998 08 15	04 23.73	+21 26.4	43.774	43.511	74.3	1.3	23.1	
1998 08 25	04 24.04	+21 27.2	43.607	43.511	83.9	1.3	23.1	
1998 09 04	04 24.19	+21 27.5	43.437	43.510	93.5	1.3	23.1	
1998 09 14	04 24.18	+21 27.5	43.269	43.510	103.2	1.3	23.1	
1998 09 24	04 24.02	+21 27.2	43.107	43.509	113.0	1.2	23.0	
1998 10 04	04 23.69	+21 26.4	42.957	43.508	122.9	1.1	23.0	
1998 10 14	04 23.23	+21 25.4	42.823	43.508	132.9	1.0	23.0	
1998 10 24	04 22.64	+21 24.1	42.709	43.507	143.0	0.8	23.0	
1998 11 03	04 21.94	+21 22.5	42.620	43.507	153.1	0.6	23.0	
1998 11 13	04 21.17	+21 20.7	42.557	43.506	163.3	0.4	22.9	
1998 11 23	04 20.34	+21 18.8	42.524	43.506	173.6	0.1	22.9	
1998 12 03	04 19.49	+21 16.8	42.522	43.505	176.1	0.1	22.9	
1998 12 13	04 18.66	+21 14.9	42.550	43.504	165.7	0.3	22.9	
1998 12 23	04 17.87	+21 13.0	42.608	43.504	155.4	0.5	22.9	
1999 01 02	04 17.16	+21 11.4	42.694	43.503	145.0	0.7	23.0	
1999 01 12	04 16.55	+21 09.9	42.806	43.503	134.7	0.9	23.0	
1999 01 22	04 16.06	+21 08.8	42.939	43.502	124.4	1.1	23.0	
1999 02 01	04 15.72	+21 08.1	43.090	43.502	114.1	1.2	23.0	

1999 02 11	04 15.54	+21 07.7	43.253	43.501	103.9	1.3	23.1
1999 02 21	04 15.52	+21 07.7	43.423	43.500	93.8	1.3	23.1
1999 03 03	04 15.67	+21 08.2	43.595	43.500	83.8	1.3	23.1
1999 03 13	04 15.99	+21 09.1	43.765	43.499	73.9	1.3	23.1
1999 03 23	04 16.46	+21 10.3	43.926	43.499	64.0	1.2	23.1
1999 04 02	04 17.07	+21 11.9	44.074	43.498	54.3	1.1	23.1
1999 04 12	04 17.81	+21 13.8	44.205	43.498	44.6	0.9	23.1
1999 04 22	04 18.66	+21 15.9	44.316	43.497	35.0	0.8	23.1

1995 YY ₃		$a, e, i = 39.47, 0.22, 0$				Elements <i>MPC</i> 27920	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05	04 38.03	+21 52.9	31.233	30.760	61.4	1.7	23.6
1998 08 15	04 38.83	+21 54.4	31.079	30.761	70.8	1.8	23.6
1998 08 25	04 39.42	+21 55.5	30.917	30.762	80.3	1.9	23.6
1998 09 04	04 39.79	+21 56.2	30.749	30.763	89.8	1.9	23.6
1998 09 14	04 39.93	+21 56.4	30.581	30.764	99.5	1.8	23.6
1998 09 24	04 39.85	+21 56.2	30.418	30.765	109.3	1.8	23.6
1998 10 04	04 39.53	+21 55.5	30.265	30.766	119.2	1.6	23.6
1998 10 14	04 39.01	+21 54.5	30.126	30.767	129.2	1.4	23.5
1998 10 24	04 38.29	+21 53.1	30.007	30.768	139.3	1.2	23.5
1998 11 03	04 37.41	+21 51.3	29.910	30.769	149.5	0.9	23.5
1998 11 13	04 36.40	+21 49.3	29.839	30.770	159.8	0.6	23.4
1998 11 23	04 35.30	+21 47.1	29.797	30.771	170.1	0.3	23.4
1998 12 03	04 34.16	+21 44.8	29.786	30.772	179.5	0.0	23.3
1998 12 13	04 33.02	+21 42.5	29.805	30.773	169.1	0.3	23.4
1998 12 23	04 31.93	+21 40.3	29.855	30.774	158.7	0.7	23.4
1999 01 02	04 30.94	+21 38.2	29.934	30.775	148.2	1.0	23.5
1999 01 12	04 30.08	+21 36.5	30.040	30.776	137.8	1.2	23.5
1999 01 22	04 29.39	+21 35.1	30.168	30.777	127.5	1.5	23.5
1999 02 01	04 28.91	+21 34.1	30.315	30.778	117.2	1.6	23.6
1999 02 11	04 28.65	+21 33.6	30.476	30.779	107.0	1.8	23.6
1999 02 21	04 28.61	+21 33.7	30.645	30.780	96.9	1.8	23.6
1999 03 03	04 28.82	+21 34.2	30.819	30.781	86.9	1.8	23.6
1999 03 13	04 29.26	+21 35.3	30.990	30.782	77.0	1.8	23.6
1999 03 23	04 29.92	+21 36.8	31.156	30.783	67.2	1.7	23.6
1999 04 02	04 30.79	+21 38.7	31.309	30.784	57.5	1.6	23.6
1999 04 12	04 31.85	+21 41.0	31.448	30.785	47.9	1.4	23.6
1999 04 22	04 33.07	+21 43.7	31.567	30.787	38.4	1.2	23.6

1992 RN ₁		$a, e, i = 3.18, 0.51, 6$				Elements <i>MPC</i> 21115	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05	04 41.40	+16 54.0	2.020	1.774	61.4	30.1	19.1
1998 08 15	05 02.63	+17 12.7	1.982	1.820	65.9	30.5	19.1
1998 08 25	05 22.12	+17 18.8	1.939	1.869	70.8	30.7	19.1
1998 09 04	05 39.63	+17 14.3	1.891	1.920	76.3	30.7	19.1
1998 09 14	05 54.95	+17 01.8	1.838	1.973	82.3	30.3	19.1
1998 09 24	06 07.80	+16 43.5	1.781	2.027	88.9	29.7	19.1
1998 10 04	06 17.87	+16 22.0	1.722	2.083	96.2	28.5	19.0
1998 10 14	06 24.91	+16 00.0	1.662	2.139	104.3	26.9	19.0
1998 10 24	06 28.62	+15 40.0	1.604	2.196	113.2	24.6	18.9
1998 11 03	06 28.78	+15 24.4	1.554	2.253	123.0	21.7	18.8
1998 11 13	06 25.39	+15 15.1	1.514	2.311	133.7	18.0	18.7
1998 11 23	06 18.71	+15 13.2	1.490	2.369	145.1	13.8	18.5
1998 12 03	06 09.42	+15 18.9	1.488	2.426	156.9	9.2	18.4

1998 12 13	05 58.62	+15 31.7	1.512	2.484	168.1	4.7	18.3
1998 12 23	05 47.62	+15 50.5	1.564	2.541	171.5	3.3	18.3
1999 01 02	05 37.77	+16 13.9	1.644	2.598	162.1	6.7	18.7
1999 01 12	05 30.04	+16 40.9	1.752	2.654	150.8	10.4	19.0
1999 01 22	05 24.99	+17 10.4	1.883	2.710	139.7	13.6	19.3
1999 02 01	05 22.81	+17 41.4	2.035	2.765	129.2	16.0	19.6
1999 02 11	05 23.37	+18 12.8	2.202	2.820	119.3	17.8	19.9
1999 02 21	05 26.40	+18 43.7	2.381	2.874	110.0	18.9	20.1
1999 03 03	05 31.59	+19 13.0	2.567	2.927	101.3	19.4	20.4
1999 03 13	05 38.57	+19 39.7	2.759	2.980	93.0	19.5	20.6
1999 03 23	05 47.06	+20 03.2	2.951	3.032	85.0	19.1	20.7
1999 04 02	05 56.77	+20 22.7	3.142	3.083	77.4	18.4	20.9
1999 04 12	06 07.45	+20 37.7	3.330	3.134	70.1	17.5	21.0
1999 04 22	06 18.91	+20 47.8	3.512	3.184	63.0	16.3	21.1

1992 SK		$a, e, i = 1.25, 0.32, 15$				Elements <i>MPC</i> 28615	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05	05 21.96	+31 38.2	2.080	1.645	51.1	28.7	20.9
1998 08 15	05 47.55	+32 48.8	2.004	1.651	55.2	30.2	20.9
1998 08 25	06 13.34	+33 47.7	1.921	1.654	59.4	31.7	20.9
1998 09 04	06 39.24	+34 35.7	1.832	1.653	63.6	33.1	20.8
1998 09 14	07 05.19	+35 13.9	1.737	1.649	68.0	34.5	20.7
1998 09 24	07 31.13	+35 43.6	1.636	1.641	72.4	35.7	20.6
1998 10 04	07 56.94	+36 06.5	1.532	1.630	76.9	36.7	20.5
1998 10 14	08 22.59	+36 24.4	1.425	1.615	81.5	37.7	20.3
1998 10 24	08 47.99	+36 40.0	1.316	1.597	86.2	38.4	20.2
1998 11 03	09 13.06	+36 55.9	1.206	1.575	91.0	39.0	19.9
1998 11 13	09 37.77	+37 15.3	1.097	1.549	95.8	39.5	19.7
1998 11 23	10 02.03	+37 42.0	0.989	1.521	100.6	39.7	19.5
1998 12 03	10 25.75	+38 19.9	0.884	1.489	105.4	39.7	19.2
1998 12 13	10 48.87	+39 13.2	0.782	1.453	110.1	39.5	18.8
1998 12 23	11 11.17	+40 27.1	0.685	1.414	114.7	39.2	18.5
1999 01 02	11 32.43	+42 06.0	0.593	1.373	119.0	38.8	18.1
1999 01 12	11 52.37	+44 14.5	0.507	1.328	122.6	38.6	17.7
1999 01 22	12 10.43	+46 58.1	0.428	1.280	125.5	38.8	17.2
1999 02 01	12 25.89	+50 20.7	0.354	1.231	126.9	39.8	16.8
1999 02 11	12 37.77	+54 31.1	0.285	1.179	126.6	42.2	16.3
1999 02 21	12 43.88	+59 49.2	0.221	1.127	123.8	46.8	15.8

1999 02 26	12 43.46	+63 08.0	0.190	1.100	121.1	50.4	15.5
1999 03 03	12 38.85	+67 12.4	0.160	1.074	117.3	55.1	15.2
1999 03 08	12 24.7	+72 33.6	0.131	1.048	111.7	61.7	14.9
1999 03 13	11 30.1	+80 01.2	0.103	1.022	103.2	71.2	14.6
1999 03 18	04 43.8	+83 01.1	0.078	0.997	89.2	86.3	14.5
1999 03 23	02 12.64	+61 44.1	0.060	0.973	65.4	111.4	15.1
1999 03 28	01 44.50	+29 07.9	0.057	0.950	32.4	145.7	18.4
1999 04 02	01 32.16	+02 03.8	0.072	0.929	12.4	166.6	25.3

1995 WY ₂		$a, e, i = 46.51, 0.13, 2$				Elements <i>MPC</i> 30784	
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ
1998 08 05	05 26.82	+23 17.8	48.102	47.457	50.0	0.9	23.9
1998 08 15	05 27.45	+23 18.4	47.960	47.454	59.5	1.1	23.9
1998 08 25	05 27.95	+23 18.8	47.804	47.451	69.0	1.1	23.9
1998 09 04	05 28.31	+23 19.2	47.637	47.448	78.6	1.2	23.9

1998 09 14	05 28.53	+23 19.4	47.465	47.445	88.2	1.2	23.9
1998 09 24	05 28.60	+23 19.5	47.292	47.442	98.0	1.2	23.9
1998 10 04	05 28.51	+23 19.5	47.123	47.439	107.8	1.2	23.9
1998 10 14	05 28.27	+23 19.4	46.963	47.435	117.7	1.1	23.9
1998 10 24	05 27.90	+23 19.2	46.817	47.432	127.8	0.9	23.9
1998 11 03	05 27.39	+23 18.9	46.689	47.429	137.9	0.8	23.9
1998 11 13	05 26.77	+23 18.5	46.584	47.426	148.0	0.6	23.8
1998 11 23	05 26.07	+23 18.0	46.504	47.423	158.3	0.4	23.8
1998 12 03	05 25.30	+23 17.4	46.453	47.420	168.6	0.2	23.8
1998 12 13	05 24.51	+23 16.8	46.433	47.417	178.9	0.0	23.7
1998 12 23	05 23.70	+23 16.2	46.443	47.414	170.7	0.2	23.8
1999 01 02	05 22.93	+23 15.5	46.484	47.411	160.3	0.4	23.8
1999 01 12	05 22.21	+23 14.9	46.554	47.408	150.0	0.6	23.8
1999 01 22	05 21.58	+23 14.4	46.650	47.405	139.7	0.8	23.9
1999 02 01	05 21.05	+23 13.9	46.771	47.402	129.4	0.9	23.9
1999 02 11	05 20.65	+23 13.6	46.910	47.399	119.2	1.0	23.9
1999 02 21	05 20.40	+23 13.4	47.065	47.396	109.0	1.1	23.9
1999 03 03	05 20.30	+23 13.3	47.229	47.392	98.9	1.2	23.9
1999 03 13	05 20.35	+23 13.4	47.398	47.389	88.9	1.2	23.9
1999 03 23	05 20.56	+23 13.6	47.566	47.386	79.0	1.2	23.9
1999 04 02	05 20.92	+23 14.0	47.729	47.383	69.2	1.1	23.9
1999 04 12	05 21.42	+23 14.5	47.881	47.380	59.5	1.0	23.9
1999 04 22	05 22.05	+23 15.1	48.019	47.377	49.8	0.9	23.9
1999 05 02	05 22.79	+23 15.8	48.138	47.374	40.3	0.8	23.9
1999 05 12	05 23.62	+23 16.6	48.236	47.371	30.8	0.6	23.9

1997 TU ₉		$a, e, i = 2.71, 0.43, 5$				Elements <i>MPC</i> 31145		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 05	05 48.82	+20 55.4	3.437	2.814	45.1	14.8	19.8	
1998 08 15	06 04.27	+20 46.5	3.293	2.771	51.1	16.5	19.7	
1998 08 25	06 19.49	+20 30.9	3.140	2.727	57.1	18.1	19.6	
1998 09 04	06 34.33	+20 08.5	2.980	2.682	63.3	19.6	19.5	
1998 09 14	06 48.69	+19 39.6	2.813	2.637	69.6	21.0	19.4	
1998 09 24	07 02.42	+19 04.9	2.643	2.591	76.0	22.1	19.2	
1998 10 04	07 15.32	+18 24.9	2.469	2.544	82.7	23.0	19.1	
1998 10 14	07 27.20	+17 40.5	2.294	2.496	89.7	23.6	18.9	
1998 10 24	07 37.82	+16 52.8	2.120	2.449	97.0	23.8	18.7	
1998 11 03	07 46.87	+16 03.2	1.949	2.400	104.6	23.6	18.5	
1998 11 13	07 54.03	+15 13.6	1.784	2.351	112.7	22.8	18.2	
1998 11 23	07 58.89	+14 25.9	1.628	2.302	121.4	21.5	17.9	
1998 12 03	08 01.05	+13 42.7	1.482	2.253	130.8	19.4	17.6	
1998 12 13	08 00.15	+13 06.6	1.351	2.204	140.8	16.4	17.3	
1998 12 23	07 55.94	+12 40.5	1.239	2.154	151.4	12.6	16.9	
1999 01 02	07 48.58	+12 26.6	1.147	2.105	162.3	8.2	16.5	
1999 01 12	07 38.73	+12 26.1	1.080	2.056	170.6	4.5	16.1	
1999 01 22	07 27.65	+12 38.5	1.038	2.008	166.6	6.5	16.1	
1999 02 01	07 17.11	+13 01.7	1.020	1.961	155.6	12.0	16.2	
1999 02 11	07 08.84	+13 32.2	1.025	1.914	144.1	17.6	16.4	
1999 02 21	07 04.17	+14 06.3	1.047	1.869	133.2	22.7	16.5	
1999 03 03	07 03.85	+14 40.1	1.083	1.825	123.2	27.0	16.7	
1999 03 13	07 07.97	+15 10.2	1.127	1.783	114.3	30.5	16.8	
1999 03 23	07 16.33	+15 33.2	1.176	1.744	106.4	33.2	17.0	
1999 04 02	07 28.50	+15 46.3	1.228	1.707	99.5	35.3	17.1	

1999 04 12	07 43.96	+15 46.8	1.281	1.673	93.4	36.7	17.1
1999 04 22	08 02.25	+15 32.5	1.334	1.642	88.0	37.7	17.2
1999 05 02	08 22.87	+15 01.5	1.386	1.615	83.3	38.3	17.3
1999 05 12	08 45.37	+14 12.8	1.438	1.593	79.1	38.5	17.3
1999 05 22	09 09.37	+13 05.9	1.489	1.575	75.4	38.4	17.4
1999 06 01	09 34.51	+11 40.9	1.541	1.562	72.0	38.1	17.4
1999 06 11	10 00.46	+09 59.1	1.594	1.554	69.0	37.6	17.5
1999 06 21	10 27.00	+08 02.1	1.649	1.551	66.3	36.9	17.5
1999 07 01	10 53.89	+05 52.2	1.707	1.553	63.8	36.0	17.6
1999 07 11	11 20.98	+03 32.5	1.768	1.561	61.4	34.9	17.6
1999 07 21	11 48.17	+01 06.0	1.833	1.573	59.0	33.6	17.7
1999 07 31	12 15.36	−01 23.9	1.903	1.591	56.7	32.2	17.8
1999 08 10	12 42.51	−03 53.9	1.978	1.613	54.3	30.7	17.8
1999 08 20	13 09.61	−06 20.7	2.057	1.639	51.9	29.1	17.9
1999 08 30	13 36.62	−08 41.6	2.141	1.669	49.4	27.3	18.0
1999 09 09	14 03.53	−10 53.9	2.229	1.703	46.7	25.5	18.1
1999 09 19	14 30.35	−12 55.4	2.320	1.740	43.8	23.6	18.1
1999 09 29	14 57.03	−14 44.5	2.413	1.779	40.7	21.6	18.2
1999 10 09	15 23.54	−16 19.7	2.509	1.821	37.5	19.5	18.3
1999 10 19	15 49.85	−17 40.1	2.604	1.864	34.0	17.4	18.3
1999 10 29	16 15.87	−18 45.1	2.699	1.909	30.4	15.3	18.4

59P/Kearns-Kwee

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 15	23 23.67	+03 13.2	2.720	3.622	148.5	8.4	17.6	22.5	
1998 08 25	23 18.12	+03 06.5	2.616	3.578	158.9	5.8	17.4	22.3	
1998 09 04	23 11.48	+02 50.0	2.539	3.533	168.6	3.2	17.2	22.1	
1998 09 14	23 04.29	+02 25.7	2.491	3.489	171.8	2.4	17.1	22.0	
1998 09 24	22 57.16	+01 56.4	2.471	3.445	163.5	4.7	17.0	22.1	
1998 10 04	22 50.76	+01 25.8	2.480	3.401	152.8	7.7	16.9	22.2	
1998 10 14	22 45.66	+00 57.6	2.514	3.356	142.0	10.5	16.9	22.3	
1998 10 24	22 42.28	+00 35.3	2.570	3.312	131.4	13.0	16.9	22.4	
1998 11 03	22 40.91	+00 21.4	2.643	3.268	121.2	15.1	16.8	22.5	

1994 SE

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 15	05 19.17	+21 39.3	1.993	1.752	61.5	30.5	20.0	
1998 08 25	05 39.44	+22 23.5	1.950	1.801	66.4	30.9	20.1	
1998 09 04	05 58.03	+22 59.2	1.900	1.851	71.8	31.2	20.1	
1998 09 14	06 14.73	+23 29.1	1.843	1.901	77.6	31.1	20.1	
1998 09 24	06 29.26	+23 56.1	1.781	1.952	84.1	30.8	20.0	
1998 10 04	06 41.29	+24 23.3	1.713	2.002	91.2	30.0	20.0	
1998 10 14	06 50.47	+24 53.6	1.644	2.052	99.0	28.7	19.9	
1998 10 24	06 56.38	+25 29.7	1.574	2.102	107.7	26.8	19.8	
1998 11 03	06 58.59	+26 13.1	1.509	2.151	117.2	24.2	19.7	
1998 11 13	06 56.79	+27 04.1	1.451	2.200	127.6	20.9	19.5	
1998 11 23	06 50.82	+28 00.4	1.408	2.248	139.0	16.7	19.4	
1998 12 03	06 41.01	+28 57.1	1.383	2.296	151.1	12.0	19.2	
1998 12 13	06 28.28	+29 47.4	1.382	2.342	163.3	6.9	19.1	
1998 12 23	06 14.14	+30 25.0	1.409	2.388	172.7	3.0	18.9	
1999 01 02	06 00.48	+30 47.1	1.464	2.432	166.8	5.3	19.2	
1999 01 12	05 48.92	+30 55.0	1.548	2.476	155.2	9.6	19.5	
1999 01 22	05 40.56	+30 52.5	1.657	2.518	143.6	13.4	19.9	
1999 02 01	05 35.85	+30 44.4	1.788	2.560	132.6	16.4	20.2	

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1999 02 11	05 34.72	+30 34.3	1.934	2.600	122.4	18.7	20.5
1999 02 21	05 36.82	+30 24.2	2.093	2.639	112.9	20.2	20.7
1999 03 03	05 41.71	+30 14.6	2.260	2.678	103.9	21.1	20.9
1999 03 13	05 48.91	+30 05.4	2.432	2.715	95.6	21.4	21.1
1999 03 23	05 58.02	+29 55.9	2.605	2.751	87.7	21.2	21.3
1999 04 02	06 08.66	+29 45.2	2.777	2.786	80.1	20.7	21.5
1999 04 12	06 20.51	+29 32.6	2.946	2.819	72.9	19.9	21.6
1999 04 22	06 33.33	+29 17.1	3.109	2.852	66.0	18.8	21.7

1998 FL ₃		$a, e, i = 1.26, 0.25, 26$				Elements MPC 32062		
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V
1998 08 25		14 41.0	+75 50.3	0.224	0.973	73.8	93.4	22.0
1998 08 30		14 56.8	+78 46.2	0.186	0.983	76.5	92.9	21.6
1998 09 04		15 38.0	+82 59.6	0.148	0.995	80.5	91.1	21.1
1998 09 09		21 27	+86 46.4	0.110	1.008	87.5	86.3	20.2
1998 09 14		01 17.4	+73 23.1	0.075	1.023	101.1	74.8	19.0
1998 09 19		01 46.25	+39 37.5	0.052	1.039	130.3	47.6	17.4
1998 09 24		01 55.22	-05 37.0	0.059	1.056	151.3	27.1	17.2
1998 09 29		01 58.36	-29 32.1	0.090	1.073	140.6	36.4	18.4
1998 10 04		01 58.99	-39 55.9	0.129	1.091	132.2	42.8	19.4
1998 10 09		01 58.37	-45 02.6	0.170	1.110	127.0	45.9	20.1
1998 10 14		01 57.07	-47 44.4	0.213	1.129	123.5	47.4	20.7
1998 10 19		01 55.53	-49 06.9	0.255	1.148	120.9	48.1	21.1
1998 10 24		01 54.10	-49 40.0	0.298	1.168	118.7	48.3	21.5
1998 10 29		01 53.03	-49 39.2	0.341	1.188	116.9	48.3	21.9
1998 11 03		01 52.48	-49 14.0	0.384	1.207	115.2	48.0	22.1

60P/Tsuchinshan 2		Elements MPC 27081							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 25	04 56.58	+28 08.9	2.483	2.439	75.7	23.7	19.3	22.5	
1998 09 04	05 13.66	+28 35.0	2.316	2.387	81.5	24.7	19.0	22.4	
1998 09 14	05 30.31	+28 53.8	2.151	2.335	87.5	25.5	18.7	22.2	
1998 09 24	05 46.26	+29 05.6	1.987	2.284	93.8	26.0	18.4	22.0	
1998 10 04	06 01.23	+29 10.6	1.828	2.234	100.3	26.1	18.0	21.7	
1998 10 14	06 14.88	+29 09.4	1.673	2.186	107.1	25.9	17.7	21.5	
1998 10 24	06 26.80	+29 02.6	1.526	2.138	114.4	25.1	17.4	21.2	
1998 11 03	06 36.49	+28 50.7	1.389	2.093	122.2	23.7	17.0	20.9	
1998 11 13	06 43.50	+28 34.2	1.262	2.049	130.6	21.5	16.7	20.6	
1998 11 23	06 47.31	+28 12.8	1.149	2.007	139.8	18.5	16.3	20.3	
1998 12 03	06 47.60	+27 45.5	1.053	1.968	149.7	14.6	16.0	19.9	
1998 12 13	06 44.44	+27 10.3	0.975	1.931	160.5	9.8	15.7	19.5	
1998 12 23	06 38.39	+26 25.2	0.919	1.898	171.7	4.3	15.5	19.1	
1999 01 02	06 30.81	+25 29.3	0.886	1.867	175.3	2.5	15.3	18.9	
1999 01 12	06 23.52	+24 24.9	0.875	1.841	164.0	8.5	15.2	19.1	
1999 01 22	06 18.34	+23 16.7	0.887	1.818	152.7	14.4	15.1	19.4	
1999 02 01	06 16.67	+22 09.9	0.917	1.800	142.2	19.6	15.1	19.6	
1999 02 11	06 19.12	+21 08.3	0.963	1.785	132.6	24.0	15.2	19.8	
1999 02 21	06 25.71	+20 12.6	1.022	1.776	124.1	27.5	15.3	20.0	
1999 03 03	06 36.09	+19 21.3	1.091	1.771	116.5	30.1	15.4	20.2	
1999 03 13	06 49.65	+18 31.7	1.168	1.771	109.8	31.9	15.6	20.4	
1999 03 23	07 05.79	+17 40.7	1.252	1.776	103.7	33.0	15.7	20.6	
1999 04 02	07 23.95	+16 45.3	1.342	1.785	98.3	33.6	15.9	20.8	
1999 04 12	07 43.55	+15 43.6	1.437	1.799	93.3	33.8	16.1	21.0	
1999 04 22	08 04.17	+14 34.1	1.538	1.817	88.7	33.6	16.3	21.1	

1999 05 02	08 25.43	+13 16.0	1.643	1.840	84.3	33.0	16.6	21.3
1999 05 12	08 47.00	+11 49.6	1.752	1.866	80.1	32.2	16.8	21.4
1999 05 22	09 08.68	+10 15.1	1.866	1.897	76.1	31.2	17.0	21.6
1999 06 01	09 30.27	+08 33.5	1.983	1.930	72.1	30.0	17.3	21.7
1999 06 11	09 51.65	+06 45.9	2.103	1.966	68.2	28.6	17.5	21.8
1999 06 21	10 12.76	+04 53.4	2.226	2.006	64.3	27.2	17.8	22.0
1999 07 01	10 33.54	+02 57.2	2.351	2.047	60.3	25.6	18.0	22.1
1999 07 11	10 53.98	+00 58.7	2.477	2.091	56.3	23.9	18.3	22.2
1999 07 21	11 14.08	-01 01.1	2.603	2.137	52.2	22.1	18.5	22.3
1999 07 31	11 33.85	-03 01.1	2.728	2.184	48.0	20.2	18.8	22.4
1999 08 10	11 53.32	-05 00.2	2.852	2.233	43.8	18.3	19.0	22.5
1999 08 20	12 12.53	-06 57.6	2.973	2.283	39.4	16.3	19.2	22.5

9P/Tempel 1		Elements MPC 29881							
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
1998 08 25	07 54.38	+26 19.3	4.582	3.816	36.5	9.1			21.3
1998 09 04	08 05.83	+26 02.3	4.446	3.778	43.5	10.6			21.3
1998 09 14	08 16.88	+25 45.6	4.296	3.740	50.6	12.0			21.3
1998 09 24	08 27.42	+25 30.2	4.133	3.701	58.0	13.3			21.2
1998 10 04	08 37.32	+25 17.2	3.960	3.660	65.5	14.4			21.1
1998 10 14	08 46.44	+25 07.8	3.777	3.619	73.3	15.3			21.0
1998 10 24	08 54.62	+25 03.4	3.589	3.578	81.4	16.0			20.9
1998 11 03	09 01.65	+25 05.6	3.397	3.535	89.8	16.3			20.8
1998 11 13	09 07.32	+25 16.0	3.205	3.491	98.5	16.3			20.6
1998 11 23	09 11.36	+25 36.2	3.016	3.447	107.7	15.8			20.4
1998 12 03	09 13.51	+26 07.1	2.835	3.402	117.3	14.9			20.3
1998 12 13	09 13.51	+26 49.4	2.666	3.356	127.4	13.5			20.0
1998 12 23	09 11.09	+27 42.5	2.513	3.309	137.9	11.5			19.8
1999 01 02	09 06.17	+28 44.1	2.381	3.261	148.6	9.0			19.6
1999 01 12	08 58.83	+29 49.9	2.275	3.213	158.9	6.3			19.3
1999 01 22	08 49.46	+30 54.3	2.198	3.163	166.5	4.2			19.1
1999 02 01	08 38.82	+31 50.4	2.151	3.113	164.9	4.7			19.0
1999 02 11	08 27.95	+32 33.1	2.134	3.062	155.9	7.6			19.1
1999 02 21	08 17.97	+32 58.9	2.146	3.010	145.0	10.8	19.1		19.2
1999 03 03	08 09.92	+33 07.5	2.181	2.957	134.1	13.9	19.0		19.3
1999 03 13	08 04.48	+33 00.8	2.235	2.904	123.5	16.6	18.8		19.4
1999 03 23	08 02.00	+32 41.4	2.303	2.850	113.4	18.7	18.7		19.5
1999 04 02	08 02.53	+32 12.0	2.380	2.795	104.0	20.3	18.5		19.6
1999 04 12	08 05.91	+31 34.5	2.460	2.739	95.2	21.4	18.4		19.7
1999 04 22	08 11.88	+30 50.1	2.541	2.683	87.0	22.0	18.2		19.7
1999 05 02	08 20.14	+29 59.3	2.619	2.626	79.3	22.2	18.1		19.8
1999 05 12	08 30.35	+29 02.0	2.691	2.569	72.2	22.0	17.9		19.8
1999 05 22	08 42.28	+27 58.0	2.756	2.511	65.5	21.5	17.7		19.7
1999 06 01	08 55.65	+26 46.9	2.812	2.452	59.2	20.8	17.5		19.7
1999 06 11	09 10.25	+25 28.1	2.859	2.394	53.2	19.9	17.3		19.7
1999 06 21	09 25.93	+24 01.1	2.896	2.335	47.6	18.8	17.0		19.6
1999 07 01	09 42.53	+22 25.6	2.922	2.275	42.3	17.5	16.8		19.5
1999 07 11	09 59.94	+20 41.1	2.938	2.216	37.3	16.1	16.5		19.4
1999 07 21	10 18.09	+18 47.5	2.943	2.157	32.6	14.7	16.2		19.3

1994 CK ₁		$a, e, i = 1.90, 0.63, 5$				Elements MPC 32233			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	V	
1998 08 25	08 55.53	+19 31.9	0.337	0.706	20.9	149.3		22.7	
1998 09 04	08 36.52	+22 47.3	0.442	0.700	35.8	122.5		20.0	

1998 09 14	08 38.54	+23 32.7	0.556	0.731	45.3	102.0	19.3
1998 09 24	08 51.43	+23 04.1	0.663	0.792	52.0	86.7	19.1
1998 10 04	09 08.13	+22 01.3	0.753	0.875	57.8	75.5	19.2
1998 10 14	09 24.93	+20 46.4	0.821	0.969	63.5	67.2	19.4
1998 10 24	09 39.96	+19 32.5	0.868	1.069	69.7	60.8	19.5
1998 11 03	09 52.20	+18 28.2	0.895	1.171	76.5	55.5	19.6
1998 11 13	10 01.04	+17 39.7	0.904	1.272	84.3	50.7	19.7
1998 11 23	10 05.84	+17 11.8	0.900	1.372	93.1	46.0	19.7
1998 12 03	10 05.91	+17 08.5	0.887	1.469	103.1	40.8	19.7
1998 12 13	10 00.67	+17 31.6	0.871	1.562	114.5	35.0	19.6

74P/Smirnova-Chernykh

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements	MPC	31662
1998 09 04	03 57.75	+16 52.0	4.057	4.355	100.5	13.2	17.6	22.5				
1998 09 14	03 59.71	+16 56.9	3.900	4.344	109.7	12.6	17.5	22.4				
1998 09 24	04 00.12	+16 57.7	3.752	4.332	119.3	11.7	17.4	22.3				
1998 10 04	03 58.91	+16 54.7	3.616	4.321	129.4	10.3	17.3	22.1				
1998 10 14	03 56.10	+16 48.0	3.498	4.309	139.9	8.6	17.2	22.0				
1998 10 24	03 51.79	+16 38.0	3.401	4.297	150.8	6.5	17.2	21.8				
1998 11 03	03 46.26	+16 25.6	3.331	4.286	162.0	4.1	17.1	21.6				
1998 11 13	03 39.89	+16 11.8	3.289	4.274	173.1	1.6	17.0	21.4				
1998 11 23	03 33.18	+15 57.9	3.279	4.262	173.6	1.5	17.0	21.4				
1998 12 03	03 26.68	+15 45.7	3.299	4.250	162.4	4.0	17.0	21.6				
1998 12 13	03 20.93	+15 36.9	3.349	4.238	151.0	6.5	17.0	21.8				
1998 12 23	03 16.34	+15 32.8	3.426	4.225	139.8	8.6	17.1	21.9				
1999 01 02	03 13.23	+15 34.6	3.525	4.213	128.9	10.5	17.1	22.0				
1999 01 12	03 11.77	+15 42.7	3.642	4.201	118.5	11.9	17.2	22.1				
1999 01 22	03 12.00	+15 57.2	3.773	4.189	108.4	12.9	17.2	22.3				
1999 02 01	03 13.89	+16 17.5	3.911	4.176	98.8	13.5	17.3	22.3				
1999 02 11	03 17.34	+16 43.1	4.053	4.164	89.6	13.7	17.3	22.4				
1999 02 21	03 22.23	+17 12.9	4.195	4.151	80.7	13.6	17.4	22.5				
1999 03 03	03 28.42	+17 46.1	4.332	4.139	72.2	13.2	17.4	22.5				

C/1997 BA₆ (Spacewatch)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements	MPC	31204
1998 09 14	09 40.34	-15 50.2	6.018	5.201	32.7	6.0		17.9				
1998 09 24	09 46.09	-17 29.4	5.895	5.139	37.8	6.9		17.9				
1998 10 04	09 51.53	-19 16.7	5.756	5.077	43.5	7.8		17.9				
1998 10 14	09 56.54	-21 12.3	5.603	5.016	49.7	8.7		17.8				
1998 10 24	10 00.96	-23 15.9	5.439	4.955	56.2	9.6		17.8				
1998 11 03	10 04.63	-25 27.5	5.265	4.895	63.0	10.4		17.7				
1998 11 13	10 07.36	-27 46.5	5.086	4.835	69.8	11.1		17.6				
1998 11 23	10 08.93	-30 12.1	4.905	4.776	76.8	11.6		17.6				
1998 12 03	10 09.09	-32 43.0	4.724	4.718	83.6	12.0		17.5				
1998 12 13	10 07.57	-35 17.2	4.548	4.659	90.3	12.2		17.4				
1998 12 23	10 04.06	-37 51.8	4.381	4.602	96.8	12.3		17.3				
1999 01 02	09 58.31	-40 22.7	4.225	4.545	102.8	12.2		17.1				
1999 01 12	09 50.12	-42 45.2	4.085	4.489	108.1	12.0		17.0				
1999 01 22	09 39.43	-44 53.3	3.964	4.434	112.5	11.8		16.9				
1999 02 01	09 26.44	-46 41.0	3.862	4.380	115.7	11.7		16.9				
1999 02 11	09 11.67	-48 03.1	3.782	4.326	117.5	11.7		16.8				
1999 02 21	08 55.96	-48 56.1	3.723	4.274	117.7	11.8		16.7				
1999 03 03	08 40.39	-49 19.6	3.685	4.222	116.6	12.1		16.7				
1999 03 13	08 26.01	-49 16.4	3.665	4.172	114.2	12.6		16.7				

1999 03 23	08 13.69	-48 51.8	3.662	4.123	110.8	13.1	16.7
1999 04 02	08 03.99	-48 12.7	3.671	4.074	106.8	13.6	16.7
1999 04 12	07 57.13	-47 26.2	3.690	4.027	102.5	14.1	16.7
1999 04 22	07 53.09	-46 38.6	3.716	3.982	98.0	14.5	16.7
1999 05 02	07 51.70	-45 55.7	3.744	3.937	93.6	14.8	16.7
1999 05 12	07 52.70	-45 21.4	3.773	3.894	89.3	15.0	16.7
1999 05 22	07 55.83	-44 59.0	3.800	3.853	85.4	15.2	16.7
1999 06 01	08 00.85	-44 50.9	3.824	3.813	81.8	15.3	16.7

OPPOSITION DATA

Planet	Opposition	α_{2000}	δ_{2000}	V	$\dot{\alpha}$	$\dot{\delta}$	ϕ_{MIN}	MPC
1994 PR ₂₇	1998 07 08.0	19 08.24	-29 49.1	17.4	-0.99	- 1.3	2.6/07.3	32308
1996 BN ₆	1998 07 08.1	19 08.71	-26 04.6	17.6	-0.88	- 3.0	1.4/07.7	32310
5124 T-3	1998 07 08.2	19 08.90	-23 06.3	16.8	-1.05	- 5.0	0.3/08.1	29321
1997 AF ₇	1998 07 08.2	19 09.06	-18 51.8	18.9	-1.01	- 2.8	1.3/08.6	29634
1989 YE ₆	1998 07 08.2	19 09.12	-16 04.6	17.5	-1.09	+ 1.1	2.7/08.7	25956
1996 YO ₁	1998 07 08.2	19 09.35	-21 54.6	16.9	-1.03	- 0.9	0.3/08.3	32312
(7763)	1998 07 08.3	19 09.47	-21 46.2	15.3	-0.91	- 3.6	0.3/08.4	30261
(7681)	1998 07 08.4	19 09.88	-34 53.2	17.0	-1.20	- 1.3	4.8/07.3	29907
(7754)	1998 07 08.4	19 10.18	-20 04.2	16.0	-0.88	- 1.4	0.8/08.7	30259
(9052)	1998 07 08.5	19 10.18	-25 00.0	16.3	-1.05	- 0.8	1.1/08.3	32185
(7547)	1998 07 08.5	19 10.49	-19 34.4	18.4	-0.89	- 2.0	1.0/08.9	29588
1992 UE ₆	1998 07 08.6	19 10.54	-31 37.8	16.6	-1.19	- 4.6	3.8/07.4	32228
1995 VZ ₆	1998 07 08.6	19 10.63	-19 50.0	19.6	-1.01	- 1.5	1.0/08.9	30784
3163 T-1	1998 07 08.6	19 10.65	-26 29.6	19.1	-0.58	- 0.9	0.8/08.2	19879
1990 HJ	1998 07 08.6	19 10.71	-27 49.5	17.2	-1.10	- 2.5	2.1/08.1	32301
1992 UN ₅	1998 07 08.6	19 10.77	-41 32.4	18.5	-0.81	- 2.6	4.1/06.0	30658
1981 EF ₃₅	1998 07 08.7	19 11.30	-17 39.7	19.0	-0.97	- 2.3	1.8/09.3	32299
4369 T-3	1998 07 08.8	19 11.36	-13 13.4	19.4	-0.52	- 1.4	1.8/09.9	25341
(7636)	1998 07 08.8	19 11.46	-37 37.2	16.6	-1.11	- 2.1	5.4/07.1	29895
3306 T-2	1998 07 08.8	19 11.74	-29 44.8	18.9	-1.21	- 2.9	3.2/08.0	24585
1998 MP ₂₄	1998 07 08.8	19 11.77	-23 22.8	17.8	-1.04	- 0.8	0.4/08.8	32286
1992 AL	1998 07 08.9	19 11.79	-10 08.9	17.0	-0.95	- 4.5	4.3/10.5	26926
(7717)	1998 07 09.0	19 12.17	-29 21.9	17.6	-1.11	- 0.6	2.3/08.4	30073
3159 T-2	1998 07 09.0	19 12.18	-05 12.5	17.6	-0.88	- 3.3	6.6/11.1	17653
1991 TS	1998 07 09.0	19 12.45	-17 37.9	16.8	-0.95	- 5.2	2.2/09.7	32225
1995 VJ ₂	1998 07 09.0	19 12.54	-38 19.1	17.5	-1.18	- 6.6	6.1/06.4	29626
1995 SO ₅₄	1998 07 09.1	19 13.03	-20 13.5	17.7	-1.08	- 3.4	0.9/09.4	29624
1994 XM	1998 07 09.2	19 13.07	-23 58.6	18.8	-0.84	- 1.6	0.5/09.0	27108
1992 WJ ₃	1998 07 09.3	19 13.49	-12 42.2	16.6	-0.99	- 3.2	4.3/10.5	32305
1996 VS ₁	1998 07 09.3	19 13.75	-57 31.1	17.4	-1.98	- 8.5	15.7/01.8	29666
1995 WC	1998 07 09.3	19 13.83	-12 50.2	17.6	-1.05	+ 0.3	4.3/10.1	30784
1993 FU ₁₁	1998 07 09.4	19 13.85	-20 20.1	16.3	-0.93	- 3.6	0.8/09.7	23523
1995 TD	1998 07 09.4	19 14.02	-09 12.1	16.8	-0.94	- 2.1	6.8/10.9	32309
1991 SB	1998 07 09.4	19 14.19	-18 21.0	17.0	-1.02	- 1.4	1.6/09.9	30449
1997 GY ₂₆	1998 07 09.4	19 14.25	-21 32.3	18.3	-0.84	- 1.8	0.3/09.6	30474
2276 T-2	1998 07 09.5	19 14.42	-26 19.4	17.5	-0.98	- 1.9	1.6/09.1	32344
1996 AR ₂	1998 07 09.5	19 14.55	-31 56.6	16.7	-1.13	+ 2.0	3.7/08.9	26749
1978 VL ₃	1998 07 09.6	19 14.69	-28 34.7	16.7	-1.04	- 3.4	3.2/08.8	32208
2649 P-L	1998 07 09.6	19 14.98	-04 44.8	17.2	-0.88	- 2.4	6.7/12.0	23680
1996 YY	1998 07 09.7	19 15.46	-22 16.6	15.0	-1.04	+ 6.5	0.0/09.8	32312

1990 TD ₁₂	1998 07 09.9	19 16.33 -19 43.3 18.8	-0.94 - 1.1	0.9/10.3	27711	1992 AE ₁	1998 07 12.9	19 28.29 -25 17.4 17.4	-0.92 - 4.3	1.0/12.4	32304
1995 VJ	1998 07 10.0	19 16.30 -26 35.0 18.9	-1.00 - 2.2	1.5/09.5	30473	(7510)	1998 07 13.0	19 28.64 -34 50.5 15.8	-1.13 - 0.3	6.6/11.6	29289
1982 VS ₂	1998 07 10.0	19 16.67 -22 19.5 16.7	-0.95 - 2.7	0.0/10.1	32216	1992 EO ₆	1998 07 13.1	19 28.89 -29 01.2 18.4	-1.02 - 3.0	2.5/12.1	29943
1980 RC	1998 07 10.2	19 17.34 -06 25.1 18.5	-0.99 - 3.1	6.2/12.1	30468	1997 GP ₃₅	1998 07 13.1	19 28.97 -14 46.6 18.9	-0.79 - 1.7	2.0/14.1	30085
1990 WK ₂	1998 07 10.2	19 17.37 -22 21.3 17.5	-1.00 + 1.5	0.0/10.3	32302	1991 CM	1998 07 13.1	19 29.16 -13 55.8 16.4	-0.80 - 7.3	2.7/14.7	32222
(9007)	1998 07 10.3	19 17.67 -12 24.0 17.0	-0.97 - 1.0	4.0/11.3	32175	(7634)	1998 07 13.2	19 29.31 -23 04.2 17.2	-0.85 - 2.7	0.4/13.0	30892
1997 FC ₅	1998 07 10.3	19 17.78 -13 02.7 17.6	-0.88 - 2.5	3.5/11.5	30672	1991 FM ₂	1998 07 13.2	19 29.33 +03 07.9 21.2	-0.71 - 2.8	5.8/17.3	30781
1991 RD ₄	1998 07 10.4	19 18.14 -13 13.6 16.6	-0.86 - 0.7	4.7/11.4	32303	1990 UB ₄	1998 07 13.2	19 29.51 -06 53.1 18.2	-0.85 - 2.5	5.0/15.3	32302
4780 P-L	1998 07 10.4	19 18.25 -14 54.3 19.0	-0.77 - 1.8	2.1/11.4	30474	1981 EB ₂₉	1998 07 13.3	19 29.84 -06 47.5 19.8	-0.91 - 3.0	5.5/15.6	26920
(9015)	1998 07 10.5	19 18.50 -25 44.5 16.7	-0.93 - 3.9	1.2/10.0	32177	1996 CL ₂	1998 07 13.3	19 29.94 -40 19.7 17.0	-1.00 - 1.1	5.4/10.9	29139
1988 VX ₂	1998 07 10.5	19 18.53 -02 12.2 15.8	-0.78 + 0.6	6.8/12.5	25528	1998 MY ₄₅	1998 07 13.3	19 30.14 -15 38.6 16.6	-0.90 + 0.4	3.2/14.0	32289
1988 BW	1998 07 10.6	19 18.90 -33 10.0 17.2	-1.10 + 1.1	3.7/09.8	30288	1986 QZ ₂	1998 07 13.4	19 30.34 -39 39.0 15.7	-1.12 - 0.4	8.1/11.4	32300
1997 CU ₅	1998 07 10.6	19 18.93 -17 46.2 18.5	-1.02 - 4.1	1.8/11.3	30786	1981 EB ₃₀	1998 07 13.4	19 30.45 -45 47.9 18.8	-1.33 + 3.3	10.8/11.5	26920
1982 VU ₂	1998 07 10.6	19 19.10 -42 26.1 15.5	-1.11 - 5.9	8.7/07.2	26418	1997 GL ₂₈	1998 07 13.4	19 30.48 +00 05.5 19.3	-0.74 - 0.9	6.1/16.6	32253
1994 PO ₁₆	1998 07 10.7	19 19.27 -26 23.9 17.1	-0.98 + 0.1	1.5/10.3	29620	1981 EW ₄₆	1998 07 13.7	19 31.34 -23 01.0 19.4	-0.87 - 1.9	0.4/13.5	26923
1997 GJ ₈	1998 07 10.7	19 19.43 -08 45.3 18.4	-0.79 - 0.6	4.0/12.2	32253	1995 WE ₂₇	1998 07 13.7	19 31.36 -25 39.3 16.8	-0.96 + 4.0	1.5/13.5	32241
(7475)	1998 07 10.7	19 19.58 -14 58.0 16.8	-1.02 - 3.5	2.9/11.7	29083	1997 AZ ₁₇	1998 07 13.7	19 31.36 -25 56.7 17.1	-1.10 - 3.0	1.7/13.1	32249
1993 FK ₂₅	1998 07 10.9	19 19.95 -19 04.9 17.4	-1.01 - 1.5	1.2/11.2	32306	1997 AW ₁₈	1998 07 13.7	19 31.72 -27 26.6 17.4	-1.16 - 0.1	2.4/13.2	32250
1981 EK ₃₅	1998 07 11.2	19 21.25 -21 57.6 17.7	-0.87 - 1.4	0.1/11.2	30287	1988 RQ ₄	1998 07 13.8	19 31.81 -20 06.4 17.4	-1.03 - 2.2	0.9/14.0	32218
1992 WO ₃	1998 07 11.4	19 22.30 +08 04.5 17.9	-0.98 + 0.7	10.2/14.3	27326	(9114)	1998 07 13.8	19 32.08 -21 37.5 17.3	-1.04 - 3.9	0.0/13.9	32199
1997 GP ₃₃	1998 07 11.4	19 22.32 -17 41.5 18.8	-0.91 - 2.0	1.6/12.0	29935	1998 MZ ₃₀	1998 07 13.9	19 32.16 -13 01.5 16.8	-0.90 - 5.2	3.4/15.4	32286
1981 EA ₃₂	1998 07 11.4	19 22.35 -09 38.3 19.4	-0.83 + 0.2	4.1/12.7	26921	2183 T-1	1998 07 13.9	19 32.53 -24 13.2 19.3	-1.05 - 2.8	0.9/13.6	27926
1981 EV ₉	1998 07 11.4	19 22.35 -21 45.9 19.0	-1.14 - 0.1	0.1/11.5	25536	1993 FD ₃₇	1998 07 13.9	19 32.61 -17 31.1 17.6	-0.95 - 2.6	1.5/14.6	32229
1990 EZ ₂	1998 07 11.4	19 22.41 -12 50.4 17.7	-0.73 - 1.7	2.5/12.7	27933	1993 EP	1998 07 14.0	19 32.54 -38 42.2 16.9	-1.19 + 0.8	6.2/12.4	29944
(7656)	1998 07 11.5	19 22.40 -24 17.5 17.0	-0.86 - 2.1	0.9/11.2	29901	4636 P-L	1998 07 14.0	19 32.69 -42 00.8 18.6	-1.01 - 1.1	6.0/11.3	22701
1991 RG ₇	1998 07 11.5	19 22.47 -19 17.9 17.8	-1.03 - 0.7	1.1/11.8	28316	1993 FT ₈	1998 07 14.0	19 32.70 -22 11.3 16.7	-1.02 - 3.5	0.2/14.0	32306
1991 EM	1998 07 11.5	19 22.56 -17 05.1 17.2	-0.96 + 5.3	1.8/11.7	32222	1995 SP	1998 07 14.0	19 32.94 -37 21.9 18.3	-1.26 - 2.2	6.3/11.9	29664
2574 P-L	1998 07 11.5	19 22.57 -53 30.8 18.8	-1.22 - 0.7	8.8/07.4	29141	1993 QO ₄	1998 07 14.0	19 32.97 -19 56.7 17.5	-0.85 - 2.4	0.7/14.3	32230
1986 QF ₃	1998 07 11.5	19 22.62 -20 39.9 17.2	-1.00 - 4.3	0.6/11.8	32217	1997 EO ₁₇	1998 07 14.0	19 33.00 -31 49.8 17.1	-1.16 - 5.5	4.5/12.3	32252
1994 VN	1998 07 11.5	19 22.63 -28 23.8 18.7	-0.84 - 1.7	1.7/10.8	28617	1997 CQ	1998 07 14.0	19 33.00 -14 45.3 17.4	-0.98 - 5.2	2.9/15.2	32251
1995 SQ ₁	1998 07 11.5	19 22.79 -39 28.0 18.5	-1.43 + 4.0	6.2/10.7	26176	1997 GO ₁	1998 07 14.1	19 32.97 -22 42.0 17.0	-1.06 - 1.4	0.4/14.0	32314
1995 WF	1998 07 11.6	19 22.92 -09 42.7 18.9	-1.04 + 1.4	4.9/12.5	32310	4854 T-1	1998 07 14.1	19 33.00 -38 22.8 17.5	-1.00 - 2.4	5.9/11.6	28620
(9088)	1998 07 11.6	19 23.24 -11 54.2 15.9	-0.86 + 0.6	5.8/12.6	32194	1993 FS ₂₄	1998 07 14.1	19 33.08 -28 22.7 17.9	-1.02 - 1.2	2.6/13.3	29137
1995 WX ₄	1998 07 11.8	19 23.75 -15 52.6 17.7	-1.02 - 1.2	2.5/12.5	30473	1981 EB ₃₁	1998 07 14.1	19 33.11 -14 02.2 19.1	-0.80 - 2.9	2.4/15.3	15704
(7572)	1998 07 11.8	19 23.77 -26 09.8 16.1	-1.19 - 0.7	1.8/11.4	29594	1979 MP ₁	1998 07 14.1	19 33.39 -19 07.8 17.2	-0.96 - 2.7	1.2/14.5	32298
1995 WO ₈	1998 07 11.9	19 24.11 -09 15.8 16.2	-0.80 - 5.6	4.3/14.2	32310	1995 UN ₈	1998 07 14.2	19 33.72 -36 34.5 16.1	-1.04 - 3.2	7.9/11.8	30666
1994 PH ₃₀	1998 07 11.9	19 24.23 -08 39.8 17.8	-0.85 - 2.4	4.4/13.8	30662	1998 KE ₅	1998 07 14.3	19 33.79 -00 54.5 17.0	-0.76 - 3.4	7.4/17.6	32332
4874 P-L	1998 07 11.9	19 24.24 -26 29.9 18.5	-0.99 - 2.7	1.7/11.4	29668	(8442)	1998 07 14.3	19 33.84 -24 25.8 18.4	-1.05 - 3.8	1.0/13.9	31374
1994 PN ₁	1998 07 12.0	19 24.51 -22 20.3 17.0	-0.96 - 8.5	0.1/12.0	32235	1995 YP	1998 07 14.3	19 33.96 -21 34.1 16.6	-0.88 - 3.1	0.0/14.4	32310
1995 UP ₄	1998 07 12.1	19 24.97 -31 48.6 16.1	-1.11 - 4.7	4.0/10.6	32309	1994 YG	1998 07 14.3	19 33.99 -23 04.3 19.2	-0.85 - 1.9	0.4/14.2	24915
1994 PW ₂₀	1998 07 12.1	19 25.00 -27 16.0 17.1	-0.97 - 1.1	1.9/11.5	32308	(7659)	1998 07 14.4	19 34.26 -03 50.3 16.5	-0.87 - 6.0	7.2/18.0	29901
(7527)	1998 07 12.2	19 25.61 -28 45.4 15.5	-1.14 + 0.9	3.4/11.7	32297	1981 EK ₂₆	1998 07 14.4	19 34.28 -17 32.6 17.0	-0.92 - 3.2	1.8/15.0	32298
1993 DT ₁	1998 07 12.2	19 25.61 -15 33.9 17.4	-0.86 - 2.1	3.1/13.1	32305	1988 SK ₂	1998 07 14.4	19 34.41 -20 09.8 18.5	-0.55 - 1.4	0.3/14.7	28613
1994 PU ₁₈	1998 07 12.2	19 25.69 -25 03.9 19.0	-0.96 - 1.7	1.2/11.9	29620	1993 FP ₂₆	1998 07 14.5	19 34.68 -23 25.9 19.0	-1.00 - 1.4	0.6/14.3	29918
1996 BE ₁	1998 07 12.3	19 25.81 -25 32.5 18.4	-0.90 - 2.9	1.1/11.8	30667	1988 RH ₁₃	1998 07 14.5	19 34.86 -39 51.5 17.4	-0.66 - 1.9	3.5/11.6	27324
(9115)	1998 07 12.5	19 26.49 -18 15.0 16.1	-1.02 + 0.6	1.7/13.0	32200	4624 P-L	1998 07 14.5	19 34.94 -18 15.6 18.9	-0.79 - 2.5	1.0/15.1	30095
1993 FN	1998 07 12.5	19 26.53 -37 48.4 19.4	-1.14 - 1.1	5.2/10.7	29944	(9012)	1998 07 14.6	19 35.05 -22 42.5 16.5	-1.00 - 0.1	0.4/14.5	32177
1994 PK ₁₄	1998 07 12.5	19 26.85 -27 46.9 18.8	-1.05 + 0.2	2.3/12.0	27448	1990 QE	1998 07 14.6	19 35.24 -31 02.0 16.0	-1.28 + 6.6	4.3/14.3	27728
1997 BS ₆	1998 07 12.5	19 26.94 -18 09.9 17.5	-1.06 - 5.4	1.5/13.2	32313	6012 P-L	1998 07 14.6	19 35.28 -17 58.7 19.5	-0.79 - 1.4	1.0/15.2	24585
1991 FF	1998 07 12.8	19 27.75 -42 12.1 17.9	-1.06 + 1.4	6.1/10.9	28614	(7769)	1998 07 14.7	19 35.39 -26 55.2 15.6	-1.01 - 6.3	2.4/13.7	30262
1990 YY	1998 07 12.9	19 28.07 -25 05.3 18.2	-0.53 - 1.3	0.6/12.4	30781	(9056)	1998 07 14.7	19 35.40 -17 35.8 16.7	-0.89 - 1.8	1.4/15.3	32186

1998 MC ₃₂	1998 07 14.7	19 35.70	-23 20.5	15.8	-1.08	+	3.9	0.9/14.7	32287
(9051)	1998 07 14.8	19 35.87	-24 12.1	15.9	-1.07	-	0.8	1.2/14.5	32185
1997 GH ₂₇	1998 07 14.8	19 36.08	-26 30.3	18.2	-1.04	-	2.2	1.8/14.2	32314
1988 VY ₂	1998 07 14.9	19 36.21	-35 34.1	15.7	-0.92	-	4.5	4.7/12.4	32301
4638 P-L	1998 07 14.9	19 36.37	-20 22.1	18.4	-0.93	-	2.9	0.5/15.1	29948
1995 YV ₂₂	1998 07 14.9	19 36.48	-20 11.4	19.2	-0.81	-	2.2	0.4/15.2	30473
1994 TO ₂	1998 07 14.9	19 36.62	-37 42.5	16.3	-1.06	-	3.0	6.4/12.3	29922
(7583)	1998 07 15.0	19 36.64	-13 45.0	16.3	-0.80	-	5.2	2.7/16.4	29597
(9037)	1998 07 15.1	19 37.08	-18 30.0	16.2	-0.92	-	4.5	1.3/15.6	32182
1997 GX ₁₈	1998 07 15.1	19 37.35	-20 22.9	19.9	-0.96	-	1.8	0.4/15.3	30094
1997 AR ₁	1998 07 15.2	19 37.54	-25 15.5	16.4	-0.97	-	4.1	1.8/14.6	32248
1980 FH ₅	1998 07 15.2	19 37.75	-40 28.8	17.3	-1.19	-	0.4	6.4/12.8	28882
1982 UE ₂	1998 07 15.4	19 38.33	-30 46.5	16.4	-1.15	-	4.7	4.9/13.8	32299
1981 EX ₄₀	1998 07 15.4	19 38.69	-35 13.8	19.4	-0.99	-	0.3	4.5/13.8	26922
(7853)	1998 07 15.6	19 39.01	-28 54.2	17.7	-0.92	-	1.2	2.2/14.6	30444
(9116)	1998 07 15.6	19 39.45	-14 41.1	18.3	-1.02	-	2.6	2.8/16.6	32200
1998 MT ₃₂	1998 07 15.7	19 39.42	-15 21.2	17.7	-1.02	-	0.9	2.9/16.5	32287
1996 HU ₁₀	1998 07 15.7	19 39.59	-22 10.4	17.6	-0.55	-	1.2	0.1/15.6	32244
1997 FQ ₄	1998 07 15.7	19 39.59	-17 20.1	16.9	-0.82	-	1.0	1.4/16.3	32314
2092 T-2	1998 07 15.7	19 39.67	-13 42.0	18.8	-0.90	-	2.9	2.7/16.9	26423
1997 EL ₁₁	1998 07 15.8	19 40.12	-44 35.1	16.5	-1.13	-	6.6	9.8/10.7	30094
1996 AL ₃	1998 07 15.9	19 40.22	-21 40.6	17.2	-0.85	-	2.8	0.1/15.9	32243
1991 PU ₁₆	1998 07 15.9	19 40.24	-27 48.2	16.1	-1.04	-	2.4	3.0/15.0	32303
1988 RP ₁₂	1998 07 15.9	19 40.63	-17 37.5	18.8	-0.53	-	1.6	0.7/16.6	28085
1981 EL ₁₆	1998 07 16.0	19 40.72	-31 33.1	17.2	-1.17	+	1.8	5.3/15.1	29608
(7937)	1998 07 16.0	19 40.81	-22 35.6	17.2	-0.97	-	1.8	0.4/15.9	30745
1997 GX ₂₄	1998 07 16.0	19 40.84	-21 04.1	17.3	-0.81	-	2.7	0.1/16.1	32314
1982 UR ₁₀	1998 07 16.0	19 40.85	-24 00.9	17.8	-0.86	-	2.0	0.8/15.7	32299
3289 T-2	1998 07 16.1	19 41.15	-09 17.9	17.4	-0.79	-	3.5	3.9/18.2	32344
1993 LF ₂	1998 07 16.2	19 41.52	-27 08.9	15.9	-0.91	-	7.1	2.4/15.0	32306
(9005)	1998 07 16.2	19 41.86	-18 23.5	16.0	-0.95	-	0.1	1.3/16.6	32175
1981 EO ₁₉	1998 07 16.3	19 42.30	-09 19.7	18.5	-0.79	-	2.8	3.8/18.3	29609
1197 T-2	1998 07 16.4	19 42.24	-17 33.4	17.3	-0.88	-	2.0	2.0/17.0	32343
(8988)	1998 07 16.4	19 42.28	-15 07.9	16.8	-0.76	-	2.2	2.2/17.4	32171
2120 T-1	1998 07 16.4	19 42.36	-19 25.8	17.8	-0.98	-	4.0	0.9/16.7	32343
3013 T-2	1998 07 16.4	19 42.63	-16 07.1	17.6	-0.91	-	3.3	1.9/17.3	32344
1964 VL ₁	1998 07 16.5	19 42.89	-27 47.9	17.5	-1.01	-	3.5	2.2/15.5	32297
1171 T-2	1998 07 16.6	19 43.11	-35 46.8	17.8	-1.00	-	0.5	5.3/14.7	31269
1994 PH ₂₂	1998 07 16.6	19 43.15	-18 18.1	18.2	-0.93	-	2.8	1.1/17.1	29945
(9087)	1998 07 16.6	19 43.17	-28 27.2	16.1	-1.04	+	0.9	3.8/15.8	32194
1992 EJ ₆	1998 07 16.6	19 43.48	-20 13.6	18.0	-0.89	-	4.4	0.4/16.9	32226
1987 RB ₁	1998 07 16.8	19 44.03	-19 05.3	17.2	-0.80	-	2.1	0.9/17.2	32300
(7632)	1998 07 16.8	19 44.10	-15 35.1	16.8	-1.07	-	2.1	2.4/17.6	29894
(7448)	1998 07 16.9	19 44.57	-03 08.9	17.4	-1.28	+	8.3	8.1/18.0	29076
1995 VA ₂	1998 07 17.0	19 44.83	-34 48.1	17.4	-1.07	-	4.5	5.2/14.6	31588
1053 T-2	1998 07 17.1	19 45.23	-19 48.1	17.6	-0.96	-	2.5	0.5/17.3	29949
1996 AR ₁	1998 07 17.1	19 45.55	-24 26.7	17.2	-0.91	+	0.3	1.0/16.8	32243
1989 SL ₁₂	1998 07 17.2	19 45.51	-21 34.5	18.4	-0.87	-	2.0	0.1/17.2	28884
1997 AM ₅	1998 07 17.2	19 45.56	-27 14.3	17.3	-1.11	-	2.4	2.3/16.4	32312
1995 SQ ₃	1998 07 17.2	19 45.74	-18 06.6	17.0	-1.07	-	0.4	1.2/17.6	32240
(9137)	1998 07 17.3	19 45.88	-16 01.3	17.4	-0.99	-	3.0	1.9/18.1	32205

1982 BJ ₁₃	1998 07 17.3	19 46.12	-22 14.2	16.2	-1.05	+	0.5	0.5/17.2	32216
1998 MP ₃₂	1998 07 17.3	19 46.15	-20 44.8	16.2	-0.94	-	7.0	0.2/17.4	32287
1995 TB	1998 07 17.5	19 46.85	-28 24.2	20.1	-1.12	-	2.1	2.7/16.5	29624
1997 GQ ₇	1998 07 17.5	19 47.10	-43 41.7	17.3	-1.13	-	4.0	7.5/13.1	30094
1996 AP	1998 07 17.6	19 47.24	-23 12.0	17.3	-0.97	-	7.8	0.8/17.2	32243
1995 WL ₁₃	1998 07 17.6	19 47.32	-18 45.3	17.1	-0.97	-	4.2	0.9/18.0	32241
1995 WY ₇	1998 07 17.6	19 47.35	-28 18.7	16.5	-1.18	-	1.5	3.5/16.6	32241
1995 UX ₂	1998 07 17.6	19 47.50	-39 53.4	17.3	-1.02	-	2.1	6.9/14.7	29946
1994 VT ₆	1998 07 17.7	19 47.75	-24 10.2	17.5	-0.89	-	2.9	1.0/17.3	32308
(9004)	1998 07 17.7	19 47.81	+10 58.1	16.7	-0.71	-	3.6	11.0/24.8	32175
1994 PQ ₁₁	1998 07 17.7	19 47.87	-22 43.0	17.0	-0.96	-	1.2	0.6/17.6	32308
1974 QF	1998 07 17.8	19 48.14	-18 10.1	16.8	-1.05	-	1.2	1.5/18.0	32297
(8335)	1998 07 17.9	19 48.57	-24 42.4	16.6	-1.10	-	0.7	1.8/17.5	32297
4181 T-3	1998 07 17.9	19 48.75	-22 24.0	16.7	-0.92	-	5.0	0.7/17.8	32344
1997 AR ₁₆	1998 07 18.0	19 48.80	-46 51.8	17.0	-1.20	+	0.8	8.4/14.9	30293
(9098)	1998 07 18.0	19 49.04	-25 43.8	17.3	-0.89	-	2.5	1.4/17.3	32196
3039 T-3	1998 07 18.1	19 49.33	-18 27.8	18.0	-0.92	-	3.4	1.0/18.6	26417
1995 YB ₁	1998 07 18.2	19 49.59	-20 11.6	17.1	-0.81	-	3.8	0.3/18.4	32310
1981 EG ₈	1998 07 18.2	19 49.83	-20 40.3	18.8	-1.01	-	0.7	0.2/18.3	26916
(7648)	1998 07 18.2	19 49.93	-25 52.9	17.0	-1.18	-	2.7	2.1/17.6	29899
1997 DL	1998 07 18.3	19 49.93	-25 25.4	19.4	-1.14	-	1.3	1.7/17.7	32251
1995 QV ₉	1998 07 18.4	19 50.33	-32 40.7	18.9	-1.16	-	0.2	5.5/16.9	31141
1994 PD ₂	1998 07 18.4	19 50.64	-36 35.1	16.6	-1.21	+	3.7	7.2/17.0	30783
1995 WV ₃	1998 07 18.6	19 51.16	-16 32.4	17.2	-0.92	+	1.4	1.3/19.1	32241
1994 SZ ₉	1998 07 18.6	19 51.33	-25 38.9	19.8	-0.93	-	2.4	1.8/17.9	29621
1993 OR ₉	1998 07 18.7	19 51.56	-18 49.5	17.8	-0.85	-	3.0	0.7/19.1	32306
(9006)	1998 07 18.7	19 51.69	-38 42.2	16.0	-1.11	-	7.2	7.1/14.6	32175
1995 SU	1998 07 18.7	19 51.71	-24 39.0	16.9	-1.11	0	0.0	1.7/18.3	32309
1994 PB ₁₄	1998 07 18.8	19 52.08	-14 04.2	17.4	-0.87	-	3.4	2.4/20.0	29663
(7534)	1998 07 18.8	19 52.11	-25 13.7	14.1	-0.73	-	8.7	2.4/17.8	32297
1993 EL	1998 07 18.8	19 52.20	-26 19.3	18.3	-1.04	-	8.4	2.0/17.7	32306
1990 UJ ₁	1998 07 18.9	19 52.36	-01 28.4	17.7	-0.88	-	0.6	6.7/21.6	29942
1997 BG ₁	1998 07 18.9	19 52.45	-15 23.8	17.8	-0.92	-	4.9	1.9/20.0	30473
1981 EN ₇	1998 07 18.9	19 52.75	-29 12.8	17.4	-0.97	+	0.3	2.9/17.9	32210
1987 YS ₁	1998 07 19.0	19 52.78	-09 52.9	17.4	-0.89	-	5.8	3.8/21.2	30288
1990 WS ₄	1998 07 19.0	19 52.81	-17 37.8	17.0	-0.89	-	3.3	1.2/19.6	32302
1997 GB ₂₃	1998 07 19.0	19 52.87	-26 10.5	19.4	-0.97	-	3.3	1.7/18.1	29934
4149 T-2	1998 07 19.0	19 53.21	-25 46.8	17.5	-1.08	-	4.3	2.5/18.2	32293
1995 VM	1998 07 19.1	19 53.12	-41 14.0	16.3	-1.11	-	5.6	8.1/15.0	26423
1997 FT ₁	1998 07 19.1	19 53.30	-21 26.1	17.8	-0.94	-	7.2	0.2/19.0	29647
1994 AJ ₃	1998 07 19.2	19 53.92	-16 46.0	19.1	-0.63	-	2.2	0.9/20.0	27456
1995 VG ₁₁	1998 07 19.2	19 53.94	-31 43.1	19.1	-1.02	-	3.9	3.7/17.4	26407
1996 BB ₁	1998 07 19.3	19 54.08	-15 17.5	17.8	-0.97	-	1.8	2.1/20.2	32243
1991 YV	1998 07 19.3	19 54.11	-23 29.0	16.8	-0.94	-	6.8	0.9/18.8	32304
1993 QQ ₄	1998 07 19.3	19 54.19	-18 52.2	17.6	-0.80	-	2.6	0.6/19.7	32307
1997 FB ₄	1998 07 19.5	19 54.88	-37 00.7	17.9	-0.99	-	1.5	5.8/16.9	30462
1981 EF ₄₅	1998 07 19.5	19 54.91	-23 46.6	18.7	-0.87	-	2.6	1.0/19.0	21968
(7570)	1998 07 19.5	19 55.14	-23 53.0	17.2	-1.03	-	2.3	1.1/19.1	29594
1991 VR ₁	1998 07 19.6	19 55.36	-24 00.8	16.8	-1.09	-	1.0	1.2/19.2	32304
1998 MT ₃₄	1998 07 19.7	19 56.00	-11 07.9	16.5	-1.00	-	0.9	4.7/21.2	32287
1989 GJ ₄	1998 07 19.8	19 56.21	-15 29.6	17.6	-0.95	-	2.1	1.9/20.7	32301

1994 PL ₃₄	1998 07 19.8	19 56.31	-15 48.1	18.6	-0.92	- 2.4	1.8/20.7	32237
5036 T-2	1998 07 19.8	19 56.31	-12 41.1	17.1	-0.94	- 0.1	3.0/21.0	26583
1997 JA	1998 07 19.9	19 56.38	-22 30.5	18.1	-0.82	- 2.7	0.5/19.6	32253
5200 T-2	1998 07 19.9	19 56.67	-21 45.6	17.0	-0.90	- 0.2	0.3/19.8	32344
1993 FW ₃₇	1998 07 19.9	19 56.79	-03 21.3	17.8	-0.87	- 4.3	6.3/23.5	32306
1993 PC ₅	1998 07 20.0	19 56.99	-07 42.2	17.2	-0.77	- 4.6	4.7/22.7	32307
1991 PA ₁₅	1998 07 20.1	19 57.33	-10 40.4	17.0	-0.92	- 3.2	4.9/21.8	32224
1998 MX ₃₄	1998 07 20.2	19 57.92	-10 29.0	17.2	-1.02	+ 4.0	4.5/21.2	32287
1996 AF ₄	1998 07 20.3	19 58.13	-11 24.5	19.2	-0.91	- 2.2	3.1/21.8	30093
1990 SN ₈	1998 07 20.3	19 58.35	-26 22.7	17.2	-0.97	- 3.4	2.1/19.4	29611
(7490)	1998 07 20.4	19 58.44	-22 58.5	18.9	-1.12	- 2.5	1.0/20.1	29088
1997 GR ₃₆	1998 07 20.5	19 58.77	-26 37.2	18.5	-0.99	- 3.9	2.0/19.4	30474
1971 FB	1998 07 20.5	19 58.90	+15 09.7	19.1	-0.90	- 4.7	11.4/29.2	22482
1997 AB ₇	1998 07 20.5	19 59.02	-21 27.7	17.7	-1.01	- 4.1	0.3/20.4	32248
4031 T-3	1998 07 20.5	19 59.10	-16 07.2	17.7	-0.97	- 4.7	2.1/21.4	32294
1988 RX ₁₂	1998 07 20.5	19 59.12	-05 37.9	17.0	-0.78	- 2.8	5.2/23.3	32300
1995 XY ₄	1998 07 20.5	19 59.18	-16 55.5	19.5	-0.91	- 4.0	1.3/21.3	30082
1981 EO ₄	1998 07 20.6	19 59.41	-19 25.0	18.0	-0.92	+ 1.0	0.4/20.8	32298
(7405)	1998 07 20.7	19 59.77	-29 38.9	15.1	-0.92	- 5.9	3.7/18.9	28827
1992 SS ₁₆	1998 07 20.7	19 59.89	-19 21.5	16.8	-1.07	- 3.1	0.6/21.0	32305
1998 MY ₃₄	1998 07 20.8	19 59.95	-14 46.1	17.1	-0.90	- 2.4	3.0/21.8	32287
4179 T-3	1998 07 20.8	20 00.12	-24 47.1	18.4	-0.55	- 1.9	0.8/20.0	23792
1997 GQ ₂₂	1998 07 20.8	20 00.17	-00 32.7	17.7	-0.76	- 1.1	6.9/24.2	31114
1981 ET ₃₅	1998 07 20.9	20 00.33	-06 42.4	19.7	-0.80	- 1.3	4.7/23.2	26921
1988 AX ₁	1998 07 20.9	20 00.45	-24 06.8	17.5	-1.05	+ 0.7	1.2/20.5	21971
1988 RY ₂	1998 07 20.9	20 00.49	-07 17.6	18.1	-0.77	- 3.1	4.5/23.4	32300
1993 FZ ₂₁	1998 07 21.0	20 01.07	-24 57.6	18.2	-1.00	- 2.3	1.6/20.3	29662
1991 WD	1998 07 21.1	20 01.14	-30 10.5	18.0	-0.98	- 5.4	3.0/19.1	30470
1997 FB ₅	1998 07 21.1	20 01.21	-24 28.5	17.9	-0.99	- 2.5	1.6/20.5	30690
1996 DQ ₁	1998 07 21.2	20 01.69	-28 22.0	18.6	-0.86	- 1.7	2.2/19.9	27113
1994 GB ₉	1998 07 21.2	20 01.75	-16 49.9	17.1	-1.03	- 3.8	1.6/21.9	32307
1990 VM ₂	1998 07 21.2	20 01.84	-22 31.2	17.1	-0.95	- 4.7	0.8/20.9	32222
1998 MZ ₃₇	1998 07 21.3	20 02.08	-23 36.5	17.0	-0.95	- 7.1	1.5/20.7	32288
1990 WW ₁	1998 07 21.3	20 02.35	-13 50.2	17.3	-0.88	- 4.9	2.5/22.7	32222
(8425)	1998 07 21.4	20 02.71	-16 35.5	16.2	-1.03	- 4.6	1.6/22.2	31371
1997 CR ₂₁	1998 07 21.4	20 02.77	-20 22.2	18.1	-1.01	- 3.8	0.0/21.5	29667
1995 YS ₂₁	1998 07 21.6	20 03.24	-21 59.3	16.0	-0.90	- 4.7	0.6/21.3	32243
1997 CC ₂₀	1998 07 21.6	20 03.30	-19 16.0	17.6	-0.89	- 4.4	0.4/21.9	32313
(7565)	1998 07 21.6	20 03.41	-24 53.1	17.8	-0.87	- 2.0	1.4/20.9	29592
1995 TA ₁	1998 07 21.6	20 03.42	-17 42.2	17.5	-0.99	- 3.4	1.1/22.1	32240
(7567)	1998 07 21.6	20 03.59	-28 02.9	16.8	-1.14	- 2.7	3.1/20.4	29593
1998 MR ₃₅	1998 07 21.7	20 03.52	-24 54.6	17.0	-0.89	- 3.0	1.6/20.9	32288
4021 T-3	1998 07 21.7	20 03.60	-25 30.4	18.9	-1.07	- 4.5	2.3/20.8	26417
1996 AX	1998 07 21.7	20 03.82	-22 21.3	18.0	-0.87	- 4.0	0.6/21.4	26748
1063 T-2	1998 07 21.8	20 03.91	-17 31.1	18.0	-1.01	- 3.1	1.0/22.3	30474
1997 BC ₉	1998 07 21.9	20 04.51	-16 34.6	15.8	-0.79	- 6.8	2.1/22.8	32313
1988 VG ₄	1998 07 22.0	20 05.13	-16 20.2	16.5	-0.82	- 1.1	1.2/22.7	24760
1984 UJ ₁	1998 07 22.2	20 05.80	-32 26.8	17.4	-1.17	- 3.7	5.6/19.9	30468
1983 TX	1998 07 22.2	20 05.85	-05 41.9	17.1	-0.77	- 3.0	4.5/25.0	27931
1994 PU ₂₆	1998 07 22.2	20 05.87	-20 06.2	17.4	-0.86	- 4.6	0.1/22.3	32236
1995 VG ₁₀	1998 07 22.3	20 05.90	-18 49.8	19.4	-0.99	- 3.3	0.6/22.6	30784

1997 BP ₃	1998 07 22.3	20 06.22	-16 21.1	16.9	-1.00	- 6.2	1.6/23.2	29947
1993 BL ₁₂	1998 07 22.3	20 06.31	-24 58.3	18.5	-1.05	- 4.1	1.7/21.5	26421
1994 SO ₅	1998 07 22.3	20 06.33	-19 57.7	18.3	-0.89	- 3.1	0.1/22.4	30472
1993 FE ₁₂	1998 07 22.3	20 06.36	-22 07.2	17.0	-1.00	- 4.2	0.7/22.0	26564
1983 AA	1998 07 22.4	20 06.78	-17 12.2	17.7	-1.24	+ 3.4	1.1/22.8	21969
1989 GN ₄	1998 07 22.5	20 06.91	-16 33.7	17.3	-0.94	- 2.0	1.5/23.2	32301
1994 PR ₁₄	1998 07 22.5	20 07.17	-13 49.6	20.0	-0.88	- 3.7	2.6/23.8	32236
1988 PX ₂	1998 07 22.7	20 07.66	-06 00.5	16.8	-0.77	- 3.8	4.7/25.6	23133
1997 EQ ₃₀	1998 07 22.7	20 07.70	-25 32.3	16.8	-0.93	- 7.1	2.0/21.5	32252
1997 AX ₁₇	1998 07 22.9	20 08.54	-26 12.1	16.5	-1.13	- 4.2	2.9/21.8	32312
1994 EA ₂	1998 07 23.0	20 08.93	-08 36.0	19.2	-1.04	- 4.6	4.2/25.3	26174
1981 KJ	1998 07 23.0	20 08.94	-44 35.3	16.4	-1.03	- 2.6	8.8/18.0	30893
1990 VC ₁₅	1998 07 23.0	20 08.98	-15 08.0	16.1	-0.88	- 3.4	1.8/24.0	32302
1992 EZ ₇	1998 07 23.0	20 09.02	-07 20.2	18.2	-0.87	- 5.1	4.3/25.7	29943
1981 EX ₃₃	1998 07 23.0	20 09.14	-21 53.6	18.6	-0.91	- 0.2	0.6/22.8	26921
1997 CF ₃	1998 07 23.1	20 09.12	-13 18.9	17.7	-0.96	- 5.4	2.9/24.5	32313
1997 AR ₁₇	1998 07 23.1	20 09.38	-17 49.8	17.7	-1.06	- 2.4	1.0/23.5	32249
2613 P-L	1998 07 23.2	20 09.90	-13 42.3	20.0	-0.79	- 2.8	2.0/24.5	32289
2184 T-1	1998 07 23.4	20 10.54	-11 49.6	19.3	-0.94	- 4.9	3.2/25.1	29650
2614 P-L	1998 07 23.4	20 10.55	-14 51.8	18.7	-0.89	- 3.5	2.2/24.4	32343
1998 OQ	1998 07 23.5	20 10.68	-13 55.0	19.9	-0.94	- 2.4	2.1/24.6	32289
1998 MV ₃₇	1998 07 23.6	20 11.19	-27 52.6	16.4	-0.96	-11.6	3.4/21.4	32288
1981 QN ₃	1998 07 23.6	20 11.26	-19 00.2	17.4	-0.80	- 3.2	0.4/23.8	32215
(7877)	1998 07 23.6	20 11.27	-29 13.9	18.3	-0.99	- 1.1	2.8/22.1	30638
1991 NP ₂	1998 07 23.6	20 11.32	-24 23.1	15.6	-1.08	+ 2.2	2.2/23.1	32303
2100 P-L	1998 07 23.6	20 11.50	+05 31.3	18.5	-0.77	- 4.1	9.1/29.7	30797
2072 P-L	1998 07 23.7	20 11.62	-28 55.2	19.5	-1.15	- 1.8	3.4/22.3	30094
1995 VU ₁	1998 07 23.7	20 11.72	-36 03.2	16.6	-1.02	- 5.2	5.4/20.3	30292
(9017)	1998 07 23.7	20 11.84	-19 57.4	15.9	-1.03	+ 0.2	0.0/23.8	32178
1988 VT ₁	1998 07 23.9	20 12.44	-05 11.9	17.8	-0.76	- 3.8	4.4/26.9	28884
1994 GM ₁	1998 07 23.9	20 12.44	-24 41.1	15.9	-0.97	- 6.0	2.3/22.9	32307
(7639)	1998 07 24.0	20 12.67	-19 24.2	18.1	-0.79	- 2.6	0.2/24.1	29896
2258 T-2	1998 07 24.0	20 12.72	-17 54.1	17.4	-0.91	- 3.7	0.8/24.4	30696
1993 BD ₄	1998 07 24.0	20 12.91	-14 06.2	16.5	-0.54	- 4.0	1.3/25.4	32305
1998 OR	1998 07 24.1	20 13.29	-13 57.5	18.9	-1.05	- 2.6	2.5/25.2	32289
1994 SF ₁₂	1998 07 24.1	20 13.49	-21 09.1	17.5	-0.90	- 3.3	0.5/23.9	32308
1995 YU	1998 07 24.2	20 13.55	-25 15.6	17.1	-0.98	- 6.7	2.5/23.0	32242
1991 EK ₄	1998 07 24.2	20 13.72	-14 50.3	17.1	-1.05	- 4.3	2.4/25.2	32223
1324 T-2	1998 07 24.2	20 13.73	-29 29.9	16.2	-1.06	- 2.1	4.5/22.6	32343
1991 VY ₁	1998 07 24.2	20 13.74	+04 14.6	16.0	-1.29	+14.8	12.5/23.0	32225
1994 UK ₅	1998 07 24.2	20 13.87	-24 24.0	18.0	-0.91	- 3.2	1.5/23.4	32308
1995 WQ ₇	1998 07 24.2	20 13.92	-21 14.7	16.9	-1.05	- 3.1	0.6/24.0	26411
1994 GL ₉	1998 07 24.3	20 13.95	-13 39.2	18.2	-1.03	- 3.1	2.7/25.5	32307
1991 UE ₁	1998 07 24.3	20 14.00	-21 59.4	17.5	-1.07	- 3.0	0.8/24.0	26562
6626 P-L	1998 07 24.3	20 14.26	-24 03.2	18.0	-1.08	- 2.5	1.8/23.7	32343
2592 P-L	1998 07 24.3	20 14.31	-12 03.3	17.2	-0.91	- 4.7	3.3/26.0	32343
1994 UK ₁	1998 07 24.4	20 14.40	-30 42.4	14.8	-0.85	- 0.5	5.5/22.5	32308
1981 EX ₈	1998 07 24.4	20 14.59	-18 59.1	17.1	-0.95	- 0.7	0.4/24.6	26916
1995 UX ₅	1998 07 24.4	20 14.65	-19 03.6	17.0	-1.06	- 0.7	0.3/24.6	32309
(7680)	1998 07 24.4	20 14.69	-04 53.0	16.4	-0.88	- 2.3	5.9/27.2	29907
1995 VP ₁	1998 07 24.5	20 14.68	-26 21.0	16.2	-1.02	- 7.6	3.2/23.0	29626

(9097)	1998 07 24.5	20 14.75	-19 36.9	17.3	-0.81	-	3.2	0.1/24.6	32196
1981 EF ₆	1998 07 24.5	20 14.78	-19 47.8	19.4	-0.88	-	0.6	0.0/24.5	26915
1264 T-2	1998 07 24.5	20 14.89	-22 48.8	17.7	-0.97	-	2.6	1.1/24.0	24578
1995 ST	1998 07 24.5	20 14.96	-28 40.6	16.4	-1.17	+	0.3	4.0/23.3	29946
1991 RH ₄₁	1998 07 24.5	20 15.02	-18 48.5	16.8	-0.99	-	4.4	0.4/24.8	29659
1988 BY ₂	1998 07 24.5	20 15.05	-28 02.1	17.2	-1.05	+	0.2	3.0/23.4	29655
1991 GB ₃	1998 07 24.6	20 15.13	-20 58.1	18.1	-0.80	-	2.5	0.3/24.4	32302
(9044)	1998 07 24.6	20 15.14	-22 07.8	15.6	-1.02	-	6.2	1.1/24.1	32184
1996 BU ₃	1998 07 24.6	20 15.37	-15 35.2	17.9	-0.75	-	7.0	1.2/25.7	32243
1996 AB ₁	1998 07 24.7	20 15.58	-20 21.9	17.4	-0.86	-	3.8	0.2/24.6	32310
2558 P-L	1998 07 24.7	20 15.66	-27 11.5	17.8	-0.86	-	2.4	2.2/23.3	27732
1994 PO	1998 07 24.7	20 15.72	-25 54.5	16.3	-1.11	+	1.5	2.4/24.0	29318
1981 EH ₃₁	1998 07 24.8	20 15.89	-09 17.2	20.0	-0.93	-	5.0	3.9/27.0	21967
(9117)	1998 07 24.8	20 16.20	-27 51.3	16.2	-1.03	-	5.8	2.8/23.1	32200
1995 YN ₁₁	1998 07 24.9	20 16.23	-16 00.1	18.4	-0.82	-	3.6	1.4/25.7	31545
1993 TX ₁₄	1998 07 24.9	20 16.28	-18 58.4	17.6	-0.81	-	3.1	0.3/25.1	27106
1997 EX ₄₅	1998 07 24.9	20 16.55	-20 48.8	17.0	-0.95	-	4.2	0.4/24.8	29646
1996 BY ₁	1998 07 24.9	20 16.64	-30 07.6	16.3	-1.04	-	0.3	4.1/23.3	29113
1997 ER ₂	1998 07 25.0	20 16.72	-27 03.8	16.3	-1.07	-	4.2	3.0/23.6	29643
1998 MF ₃₇	1998 07 25.0	20 16.77	-15 06.9	15.8	-0.77	-	9.7	1.9/26.3	32288
1989 WB ₃	1998 07 25.0	20 17.05	-32 47.2	17.1	-0.91	-	4.6	4.4/22.2	30076
1173 T-2	1998 07 25.0	20 17.11	-32 23.9	19.2	-0.96	-	1.3	4.1/22.8	22701
1995 WY ₄₁	1998 07 25.1	20 17.09	-16 56.0	17.0	-1.08	-	1.6	1.2/25.6	26582
1991 NB ₄	1998 07 25.1	20 17.11	-16 16.5	16.8	-1.06	-	1.9	1.4/25.7	32303
(7713)	1998 07 25.1	20 17.14	-17 12.5	18.4	-0.99	-	3.9	1.0/25.6	30072
(7357)	1998 07 25.1	20 17.25	-15 49.2	15.2	-0.90	-	6.1	2.0/26.0	32041
1995 SM ₃	1998 07 25.1	20 17.36	-28 58.5	18.4	-1.10	-	1.4	3.3/23.6	29664
(9076)	1998 07 25.1	20 17.40	-10 20.2	18.5	-0.97	-	5.6	3.8/27.2	32191
1997 ED ₈	1998 07 25.2	20 17.51	-24 51.8	19.4	-0.99	-	2.5	1.8/24.3	32252
1993 FL ₃₃	1998 07 25.2	20 17.65	-27 04.9	16.9	-1.05	-	4.1	3.1/23.7	23526
1993 FL ₁₉	1998 07 25.3	20 17.83	-07 06.8	17.9	-0.81	-	7.5	5.2/28.5	29300
1978 VD ₅	1998 07 25.4	20 18.65	-18 02.9	18.7	-0.79	-	2.8	0.5/25.8	27118
1996 EX ₁	1998 07 25.5	20 18.66	-00 36.3	18.0	-0.72	-	4.2	5.4/29.8	30689
1991 FH	1998 07 25.5	20 18.80	+08 04.1	18.2	-0.73	-	2.7	7.7/01.0	30654
1997 CF ₂₀	1998 07 25.5	20 19.04	-27 28.0	18.1	-1.12	-	1.4	3.1/24.3	29928
1997 GT ₃₇	1998 07 25.6	20 19.19	-15 29.4	17.5	-1.00	-	3.6	1.8/26.4	29936
1993 ES	1998 07 25.7	20 19.40	-37 23.4	16.3	-1.15	+	0.5	7.2/23.1	32306
1997 CM ₁₉	1998 07 25.9	20 20.49	-35 43.8	16.8	-0.93	-	8.4	6.9/21.6	32313
1997 CX ₁₃	1998 07 25.9	20 20.63	-20 02.7	18.8	-0.95	-	6.4	0.2/25.9	29321
1990 CE	1998 07 26.0	20 20.64	-13 56.4	18.6	-1.00	-	5.3	2.2/27.2	32221
1993 TB	1998 07 26.0	20 20.83	-21 05.5	17.1	-0.83	-	3.7	0.6/25.7	32231
(7609)	1998 07 26.0	20 20.91	-39 23.4	16.5	-1.08	-	1.7	6.7/22.3	29603
1993 SQ ₃	1998 07 26.1	20 21.11	-22 40.9	17.0	-0.83	-	3.1	1.0/25.5	32231
1997 GZ ₇	1998 07 26.2	20 21.81	-40 00.1	18.6	-0.96	-	2.9	6.4/21.8	30094
1980 FU	1998 07 26.3	20 21.80	-28 12.0	17.0	-1.16	-	0.1	4.0/25.0	29653
1995 UT ₄	1998 07 26.3	20 21.86	-40 05.6	17.3	-1.12	-	4.1	6.9/21.7	29946
1997 AQ ₄	1998 07 26.3	20 22.19	-21 17.7	17.6	-1.02	-	5.9	0.8/26.0	32248
(7855)	1998 07 26.4	20 22.23	-02 09.3	17.4	-0.83	-	5.3	5.9/30.5	30445
1985 CY ₁	1998 07 26.4	20 22.30	-09 32.8	20.1	-0.71	-	4.0	2.4/28.7	26924
1981 EO ₄₃	1998 07 26.4	20 22.43	-23 58.6	20.1	-0.87	-	2.0	1.5/25.6	26923
(7647)	1998 07 26.5	20 22.88	-21 28.7	17.4	-0.86	-	3.8	0.7/26.1	29899

1997 AW ₁₇	1998 07 26.7	20 23.37	-21 59.2	18.6	-1.02	-	4.0	1.0/26.2	32249
1995 XH ₃	1998 07 26.8	20 24.18	-12 56.8	20.3	-0.89	-	3.9	2.2/28.2	29924
5078 T-3	1998 07 26.9	20 24.28	-32 54.3	16.7	-0.88	-	4.4	4.5/23.8	30294
1973 AW ₃	1998 07 27.0	20 24.70	-29 22.7	16.1	-0.93	-	4.1	3.4/24.9	32297
1991 GM ₉	1998 07 27.1	20 24.92	-18 56.4	17.6	-0.78	-	3.1	0.1/27.2	30091
1997 HV ₈	1998 07 27.1	20 24.99	-21 36.2	19.0	-0.82	-	3.0	0.7/26.6	32314
1980 TA ₄	1998 07 27.1	20 25.05	-29 48.0	16.8	-1.10	-	2.6	4.1/25.1	26418
1991 GJ ₁₀	1998 07 27.1	20 25.38	-33 35.6	18.2	-0.88	-	2.8	4.3/24.2	30077
1991 TQ ₂	1998 07 27.2	20 25.67	-16 41.8	18.9	-1.02	-	2.7	0.9/27.7	32303
1993 FY ₄₃	1998 07 27.3	20 25.80	-22 35.5	17.0	-0.94	-	2.2	1.5/26.7	32306
1988 RO ₄	1998 07 27.3	20 25.90	-08 58.2	17.7	-0.77	-	5.2	3.3/29.7	32300
1997 BU ₂	1998 07 27.3	20 25.91	-20 25.1	18.9	-0.95	-	5.7	0.4/27.1	32250
(9009)	1998 07 27.3	20 26.01	-23 22.1	16.1	-1.00	-	4.9	2.0/26.5	32176
1988 SB ₂	1998 07 27.3	20 26.02	-22 04.7	15.9	-0.98	-	8.1	1.3/26.7	32219
1993 OK ₉	1998 07 27.3	20 26.13	-18 47.3	17.1	-0.84	-	3.9	0.1/27.5	32306
1997 BJ ₂	1998 07 27.4	20 26.31	-19 47.6	17.7	-0.97	-	7.3	0.3/27.3	32250
(7845)	1998 07 27.4	20 26.32	-20 52.5	17.9	-0.76	-	5.3	0.4/27.0	30443
1997 GT ₃₄	1998 07 27.4	20 26.43	-19 57.9	18.4	-0.83	-	3.1	0.3/27.3	32253
(7600)	1998 07 27.4	20 26.45	-05 13.6	17.3	-0.85	-	2.6	5.0/30.3	29601
(9046)	1998 07 27.7	20 27.56	-20 47.6	15.3	-1.20	+	5.6	0.9/28.0	32184
1988 SA ₃	1998 07 27.7	20 27.66	-39 07.7	20.0	-0.65	-	0.8	3.6/23.5	15561
1981 EQ ₃₉	1998 07 27.7	20 27.68	-18 30.6	19.4	-0.84	-	2.9	7.5/17.0	29910
1997 BO ₉	1998 07 27.7	20 27.72	-16 08.9	17.6	-1.00	-	5.7	1.2/28.4	30786
1991 TU ₅	1998 07 27.8	20 27.69	-22 45.5	19.2	-1.03	-	2.5	1.4/27.1	29915
1992 UH ₃	1998 07 27.8	20 27.95	-29 36.7	17.1	-1.20	-	2.7	4.6/25.8	32305
1989 WC ₃	1998 07 28.0	20 28.69	-14 25.7	17.0	-1.06	-	3.1	2.0/28.9	32301
1998 MK ₃₇	1998 07 28.1	20 28.92	-12 20.3	16.3	-0.95	+	0.5	3.1/29.2	32288
1991 GQ	1998 07 28.2	20 29.57	+03 51.0	17.5	-0.73	-	2.2	6.5/02.4	30895
1993 FP ₂₃	1998 07 28.4	20 30.39	-19 07.9	17.0	-1.02	-	2.8	0.1/28.4	26400
1995 US ₈	1998 07 28.4	20 30.51	-37 18.4	15.2	-1.06	-	6.7	8.0/23.8	29319
1997 GY ₇	1998 07 28.5	20 30.84	-20 09.8	18.4	-0.90	-	3.6	0.4/28.3	32314
1996 XZ ₂₆	1998 07 28.6	20 31.06	-23 14.0	18.8	-1.06	-	3.0	1.6/27.8	30786
1995 SA ₁	1998 07 28.8	20 31.65	+07 28.3	18.5	-1.08	+	2.2	9.5/01.8	26568
1979 MQ ₈	1998 07 28.8	20 31.79	-18 05.7	18.5	-0.97	-	5.1	0.3/29.0	32208
1997 AM ₇	1998 07 28.8	20 31.85	-21 20.3	18.3	-1.09	-	2.3	1.0/28.4	31144
1981 EZ ₂₆	1998 07 28.9	20 32.01	-17 10.0	18.8	-0.95	-	3.1	0.6/29.2	32211
1987 ST ₁₇	1998 07 28.9	20 32.17	-02 19.9	16.2	-0.92	-	1.8	7.4/01.1	32300
1994 RN ₇	1998 07 28.9	20 32.32	-22 06.0	18.9	-0.91	-	2.4	1.1/28.3	24233
1993 MZ	1998 07 28.9	20 32.32	-35 24.2	16.3	-1.15	+	2.3	7.3/26.4	29137
1993 NV	1998 07 29.0	20 32.42	-17 42.2	17.4	-0.86	-	3.0	0.4/29.2	32306
1998 MF ₂₄	1998 07 29.1	20 32.94	-18 18.8	19.2	-0.88	-	5.5	0.2/29.3	32286
1981 EO	1998 07 29.1	20 33.12	-41 29.0	17.1	-1.32	+	3.3	9.6/26.3	27302
(9030)	1998 07 29.3	20 33.67	-22 50.1	18.3	-0.54	-	2.2	0.8/28.4	32181
(7494)	1998 07 29.3	20 33.76	-13 21.2	16.2	-0.84	-	1.1	1.7/30.4	29088
(9055)	1998 07 29.4	20 33.96	-03 45.2	16.2	-0.68	-	4.4	7.2/02.2	32186
1607 T-2	1998 07 29.4	20 33.96	-27 39.6	17.7	-1.14	-	0.8	3.9/27.8	32343
1993 FM ₂₈	1998 07 29.4	20 34.16	-18 08.4	19.1	-0.98	-	3.0	0.2/29.6	32229
1981 RF ₂	1998 07 29.4	20 34.21	-00 03.0	16.0	-0.80	+	0.3	6.5/02.0	32299
1997 GO ₆	1998 07 29.5	20 34.37	-18 53.6	18.4	-0.80	-	2.9	0.1/29.5	32314
1988 SH ₂	1998 07 29.6	20 34.96	-24 04.1	15.5	-0.81	-	7.3	1.9/28.2	32300
(9132)	1998 07 29.6	20 35.09	-19 23.1	16.3	-0.80	-	3.9	0.3/29.5	32204

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1993 SK ₃	1998 07 29.6	20 35.12	-18 56.8	18.0	-0.79	- 2.4	0.1/29.6	30899
(7488)	1998 07 29.7	20 35.50	-08 21.5	16.8	-1.06	-21.4	4.6/02.3	29087
1997 EY ₄₅	1998 07 29.7	20 35.52	-22 20.2	17.6	-1.01	- 4.4	1.3/29.0	30094
(7825)	1998 07 29.9	20 35.90	+10 54.8	17.5	-0.92	- 4.2	10.5/05.6	30438
1997 AS ₁₂	1998 07 29.9	20 35.97	-24 16.9	16.5	-0.95	- 8.4	2.4/28.4	32312
1990 TW ₁₁	1998 07 29.9	20 36.04	-21 15.5	18.3	-1.00	- 2.9	1.0/29.4	32302
7082 P-L	1998 07 29.9	20 36.22	+22 26.3	18.0	-0.96	- 5.6	19.5/11.9	22087
1998 MN ₁₆	1998 07 29.9	20 36.22	-23 19.0	17.0	-0.92	-10.0	1.8/28.6	32285
1995 WJ ₅	1998 07 29.9	20 36.25	-07 44.5	16.0	-0.94	- 0.5	4.5/32.0	32310
(9065)	1998 07 29.9	20 36.34	-12 34.9	15.2	-0.77	- 8.9	2.7/31.7	32188
1991 PD ₁₀	1998 07 30.0	20 36.29	-24 19.9	16.5	-1.11	- 0.8	2.3/29.0	32224
6586 P-L	1998 07 30.0	20 36.32	-02 39.1	17.8	-0.74	- 8.0	7.1/03.5	17975
1991 UA	1998 07 30.0	20 36.35	-21 04.6	17.3	-0.72	- 2.2	0.7/29.5	32303
1981 EV ₂	1998 07 30.1	20 36.78	-06 00.2	17.6	-0.82	- 1.4	4.2/01.7	26915
(9089)	1998 07 30.1	20 36.93	-25 08.3	15.5	-0.93	- 7.5	2.9/28.5	32194
4896 P-L	1998 07 30.1	20 36.98	-19 28.8	17.3	-0.80	- 4.0	0.3/30.0	32343
(7693)	1998 07 30.2	20 37.19	-38 33.7	17.5	-1.07	- 4.4	6.5/25.4	30067
3482 T-3	1998 07 30.2	20 37.21	-18 48.6	19.6	-0.83	- 3.0	0.1/30.2	32294
1998 MT ₃₇	1998 07 30.2	20 37.46	-23 45.4	17.7	-0.94	- 3.8	2.0/29.1	32288
1997 EU ₂	1998 07 30.3	20 37.49	-20 33.0	18.0	-0.99	- 4.6	0.7/29.9	32313
1995 XP ₂	1998 07 30.3	20 37.70	-13 46.1	16.7	-1.02	- 3.8	2.2/31.3	32054
1955 UN ₁	1998 07 30.4	20 38.01	-42 09.7	15.8	-1.15	- 1.4	12.3/24.6	32297
1990 SY	1998 07 30.4	20 38.20	-25 33.4	15.2	-1.03	+ 2.0	3.3/29.4	30289
1995 SB ₂₇	1998 07 30.5	20 38.43	-23 18.9	16.5	-1.00	- 2.6	2.5/29.6	32309
1993 QF ₃	1998 07 30.5	20 38.45	-17 06.8	17.6	-0.77	- 3.4	0.4/30.9	32307
1996 XA ₁₂	1998 07 30.5	20 38.52	-26 57.4	15.5	-0.86	- 7.2	4.7/28.3	32246
1994 LS	1998 07 30.7	20 39.07	-21 09.6	17.4	-1.02	-14.4	1.1/29.9	25532
1994 GN	1998 07 30.7	20 39.31	-27 53.5	15.0	-0.99	- 5.6	4.6/28.5	28852
1998 MZ ₂₃	1998 07 30.8	20 39.43	-15 50.9	15.9	-1.01	- 0.7	1.1/31.3	32286
1990 VT ₆	1998 07 30.8	20 39.56	-13 54.7	17.7	-0.88	- 4.4	1.7/31.8	25649
1981 US ₂₂	1998 07 30.8	20 39.87	-28 27.2	16.7	-1.02	- 6.7	4.7/28.3	32299
1991 VY ₄	1998 07 30.9	20 39.82	-21 22.2	17.3	-0.98	- 4.9	1.1/30.2	30290
(7657)	1998 07 30.9	20 39.82	-22 49.2	17.0	-0.87	- 3.2	1.6/29.9	29901
1991 PQ ₁₆	1998 07 31.0	20 40.30	-09 25.5	16.9	-0.92	- 6.2	3.7/02.0	32224
1996 ED ₉	1998 07 31.1	20 40.66	-08 15.3	17.8	-0.72	- 6.5	3.2/02.8	31387
1995 WL ₄	1998 07 31.2	20 41.32	-17 23.5	18.4	-0.95	- 4.8	0.3/31.5	32310
1994 TA ₁	1998 07 31.3	20 41.6	-77 45.4	17.6	-3.56	+ 3.3	20.8/13.0	30454
1981 EZ ₃₂	1998 07 31.3	20 41.61	-04 42.2	18.9	-0.76	- 4.2	4.3/03.6	22271
1992 DD ₄	1998 07 31.3	20 41.82	-15 07.0	19.3	-0.86	- 4.5	1.1/01.1	31381
2239 T-3	1998 07 31.6	20 42.58	-20 17.6	17.9	-0.94	- 2.1	0.7/31.2	24405
6585 P-L	1998 07 31.6	20 42.64	-16 52.4	17.6	-0.79	- 3.9	0.5/31.9	32343
(7719)	1998 07 31.6	20 42.75	-15 51.8	17.9	-0.84	- 3.7	0.8/01.2	30073
1993 BP ₃	1998 07 31.6	20 42.93	-33 46.5	17.4	-1.38	+ 2.7	5.5/29.5	29661
1993 FX ₉	1998 07 31.7	20 42.96	-22 36.1	16.9	-0.96	- 4.5	1.6/30.7	32306
1990 RV ₃	1998 07 31.7	20 43.11	-23 25.9	16.5	-0.90	- 0.7	2.7/30.7	32301
1997 KR ₃	1998 07 31.7	20 43.17	-21 43.6	16.3	-0.82	- 5.5	1.2/30.9	32314
1991 LB	1998 07 31.8	20 43.43	-07 01.3	15.9	-0.87	- 2.8	5.9/03.2	32302
1993 FN ₂₈	1998 07 31.8	20 43.78	-21 30.4	18.8	-0.99	- 2.6	1.2/31.2	29662
1982 VN ₃	1998 07 31.9	20 43.74	-22 05.7	19.1	-0.97	- 4.9	1.5/31.0	24227
(7946)	1998 07 31.9	20 43.89	-07 18.2	16.8	-0.94	- 3.5	4.6/03.3	30746
1997 EX ₂₅	1998 07 31.9	20 43.98	-17 35.9	18.4	-0.99	- 4.8	0.2/01.1	32313

4587 P-L	1998 08 01.2	20 44.92	-13 23.9	15.8	-0.85	- 4.2	2.3/02.3	32290
1980 FR ₂	1998 08 01.2	20 45.03	-11 01.3	17.5	-0.91	- 4.7	2.6/02.9	28610
1990 FL	1998 08 01.2	20 45.15	+04 13.7	17.3	-0.89	-13.3	8.5/08.9	32301
1998 KD ₅	1998 08 01.2	20 45.24	-34 15.7	17.5	-0.91	- 3.1	5.6/28.4	32032
1993 SG ₅	1998 08 01.3	20 45.47	-17 43.1	18.5	-0.75	- 3.3	0.1/01.4	28888
1994 PY ₂₅	1998 08 01.4	20 45.96	-18 25.1	17.5	-0.90	- 4.2	0.2/01.4	32308
1995 YP ₁	1998 08 01.5	20 46.10	-11 38.2	17.2	-0.87	- 2.0	2.3/02.9	32242
(7707)	1998 08 01.6	20 46.56	-16 50.6	16.9	-0.86	- 9.5	0.4/02.0	30071
1995 UR ₃	1998 08 01.7	20 47.05	-07 37.9	17.4	-0.97	- 3.3	4.2/04.0	32309
1993 FV ₁₂	1998 08 01.8	20 47.18	-02 48.1	17.0	-0.74	-10.2	6.5/06.7	23523
1991 PJ ₃	1998 08 01.8	20 47.28	-23 25.7	17.6	-1.09	- 2.5	2.2/31.7	32303
1981 UD ₂	1998 08 01.9	20 47.64	+03 06.0	16.6	-0.86	- 1.8	7.9/06.4	32299
1981 EQ ₇	1998 08 01.9	20 47.87	-17 35.1	18.6	-0.89	- 0.6	8.0/22.0	26916
(7627)	1998 08 01.9	20 47.95	-24 12.5	16.6	-0.88	- 3.3	2.4/31.5	29893
1981 SE ₇	1998 08 01.9	20 47.96	-28 05.8	15.4	-0.92	- 4.9	4.1/30.4	20922
1986 QQ ₁	1998 08 02.0	20 48.44	-22 38.7	17.6	-1.01	- 3.7	1.9/01.0	32300
1998 OP ₂	1998 08 02.3	20 49.41	-16 22.6	16.8	-0.91	- 2.2	0.5/02.7	32289
(7821)	1998 08 02.6	20 50.33	-22 02.4	17.0	-0.86	- 3.6	1.4/01.6	30436
1997 BF ₁	1998 08 02.6	20 50.35	-17 53.5	19.3	-1.06	- 2.4	0.1/02.6	30690
6054 P-L	1998 08 02.6	20 50.71	-11 40.8	17.8	-0.79	- 3.5	2.1/04.1	30914
1997 AJ ₇	1998 08 02.7	20 50.90	-16 23.3	18.6	-1.01	- 3.7	0.5/03.0	32312
1997 GQ ₂₇	1998 08 02.9	20 51.45	-24 52.6	15.4	-0.90	-10.6	2.9/31.7	32314
1995 WD ₃₂	1998 08 02.9	20 51.49	-17 13.1	18.9	-0.80	- 4.1	0.1/03.0	30784
(7728)	1998 08 02.9	20 51.74	-21 07.0	15.7	-0.91	- 2.3	1.3/02.2	30252
1995 XS ₁	1998 08 03.0	20 52.13	-15 03.1	16.7	-1.00	- 3.8	1.1/03.6	30292
1979 MV ₈	1998 08 03.1	20 52.31	-13 54.2	18.3	-0.81	- 7.8	1.7/04.1	32298
5332 T-2	1998 08 03.1	20 52.36	-02 44.9	19.0	-0.79	- 2.3	4.6/06.5	20517
1995 SY ₂	1998 08 03.1	20 52.37	-18 32.6	16.0	-1.03	- 4.6	0.5/02.9	29664
1992 EX ₉	1998 08 03.2	20 52.62	-12 45.7	18.0	-0.91	- 4.5	1.7/04.3	30091
1994 WQ ₃	1998 08 03.2	20 52.74	-08 48.0	16.2	-0.75	- 6.2	3.4/05.6	32308
1988 RO ₂	1998 08 03.2	20 52.82	-19 53.9	17.2	-0.92	- 0.2	0.8/02.8	32300
1995 WF ₃	1998 08 03.2	20 52.85	-33 49.3	18.3	-0.99	- 4.0	4.8/30.3	30093
1989 EX	1998 08 03.2	20 52.99	-15 52.0	16.3	-0.88	- 8.2	0.6/03.7	31416
1995 WN	1998 08 03.3	20 53.21	-24 59.0	17.8	-0.93	- 6.1	3.6/01.4	32310
3051 T-1	1998 08 03.4	20 53.42	-01 13.0	16.6	-0.70	- 6.0	6.5/08.1	32343
1976 GG ₃	1998 08 03.4	20 53.42	-43 58.9	16.1	-1.11	- 1.8	11.2/28.1	32297
1992 EE ₁₄	1998 08 03.5	20 53.96	-12 08.2	18.8	-0.84	- 4.0	1.8/04.8	32304
1990 EU ₄	1998 08 03.5	20 53.99	-20 40.1	18.0	-1.06	- 2.6	1.3/02.9	29942
1987 HE	1998 08 03.6	20 54.16	+06 25.4	18.1	-0.91	-11.2	8.7/11.5	32300
1995 VL ₂	1998 08 03.6	20 54.18	-12 36.1	17.2	-0.99	- 2.7	2.0/04.6	29665
1981 EV ₁₈	1998 08 03.6	20 54.22	-11 01.0	18.4	-0.79	- 3.7	2.2/05.2	29940
1997 HS ₃	1998 08 03.7	20 54.86	-15 55.6	19.8	-0.81	- 4.2	0.5/04.1	30474
1994 FF	1998 08 03.7	20 54.91	-17 47.3	16.4	-0.99	- 7.4	0.2/03.7	32307
1993 FB ₁₀	1998 08 03.8	20 54.98	-18 49.7	15.0	-0.92	- 6.1	0.6/03.4	29662
1989 GD ₅	1998 08 03.8	20 55.03	-44 44.3	16.1	-1.16	- 1.5	11.5/28.1	32301
1981 EX ₄₂	1998 08 03.8	20 55.04	-22 03.1	19.9	-1.03	- 3.2	1.7/02.8	26922
1988 CK ₄	1998 08 03.8	20 55.09	-09 18.4	16.8	-1.00	+ 2.0	3.4/05.2	32300
1997 FG ₁	1998 08 03.8	20 55.14	-16 48.6	17.9	-0.94	- 6.9	0.2/04.0	32252
1995 RC	1998 08 03.8	20 55.36	-21 24.1	16.5	-1.15	- 1.1	1.9/03.1	32309
1994 PC ₃₉	1998 08 04.0	20 55.88	-14 13.7	16.9	-0.92	- 3.3	1.1/04.8	29663
1981 DO	1998 08 04.0	20 56.12	+06 16.7	18.1	-0.84	- 4.0	9.7/10.6	26914

(9024)	1998 08 04.0	20 56.16	-20 10.1	16.8	-1.00	- 5.4	1.4/03.4	32179
6242 P-L	1998 08 04.1	20 56.28	-07 56.8	17.5	-0.92	- 4.0	3.5/06.4	26423
1997 CK ₁	1998 08 04.1	20 56.31	-21 34.7	18.5	-0.95	- 5.0	1.5/03.1	32251
(7678)	1998 08 04.2	20 56.55	-25 24.0	17.6	-0.89	- 0.9	2.7/02.5	29906
1995 SD ₄	1998 08 04.2	20 56.89	-07 47.0	17.1	-0.89	- 3.1	5.2/06.4	32309
1988 TL ₁	1998 08 04.3	20 57.01	-07 52.2	16.4	-0.97	- 4.1	4.2/06.5	30780
1993 BZ ₁₂	1998 08 04.3	20 57.07	-18 16.8	17.1	-0.51	- 3.8	0.2/04.1	32228
1995 VP ₁₇	1998 08 04.4	20 57.55	-21 03.5	19.6	-0.98	- 4.0	1.5/03.6	29627
1997 GR ₄	1998 08 04.4	20 57.57	-20 21.2	20.1	-0.95	- 3.6	1.1/03.7	29647
1991 TH ₆	1998 08 04.5	20 57.63	-11 57.9	18.0	-0.94	- 3.0	2.5/05.7	32303
1983 AC ₁	1998 08 04.5	20 57.67	-19 11.0	17.0	-1.02	-13.4	0.7/03.9	30287
1981 EA ₁₆	1998 08 04.5	20 58.04	-22 18.1	16.4	-1.15	+ 0.2	2.5/03.7	29315
1993 FP ₄₀	1998 08 04.6	20 58.20	-21 30.9	19.7	-1.00	- 4.1	1.5/03.6	32230
1993 FP ₁₀	1998 08 04.6	20 58.27	-16 56.7	18.1	-0.96	- 5.3	0.1/04.7	32306
1991 PT ₉	1998 08 04.6	20 58.49	+10 54.5	15.4	-1.44	+14.1	15.0/06.0	32224
(7755)	1998 08 04.7	20 58.65	-19 35.1	16.4	-0.79	- 3.8	0.8/04.2	30259
1981 EV ₂₈	1998 08 04.7	20 58.65	-00 43.5	18.3	-0.76	- 3.9	5.9/09.0	29940
1996 AL	1998 08 04.8	20 59.07	-24 18.1	18.4	-0.81	- 6.4	2.0/02.9	30689
1991 TH ₂	1998 08 04.9	20 59.18	-14 43.4	15.9	-0.93	- 5.5	1.1/05.5	28886
(7485)	1998 08 04.9	20 59.36	-31 33.6	15.5	-0.91	- 7.2	5.1/31.7	29086
1994 PV ₇	1998 08 04.9	20 59.49	-17 45.3	18.6	-0.87	- 4.1	0.3/04.8	31239
(9133)	1998 08 04.9	20 59.57	+06 15.8	17.5	-0.80	- 3.3	9.8/11.0	32204
1995 SH ₃₂	1998 08 04.9	20 59.61	-19 46.2	18.3	-1.11	- 3.1	1.1/04.4	29109
(9018)	1998 08 04.9	20 59.62	-06 38.1	17.1	-0.97	- 2.9	4.6/07.4	32178
1995 YF	1998 08 05.0	20 59.73	-17 36.7	15.3	-0.82	- 6.3	0.3/04.9	32054
1995 BW ₂	1998 08 05.1	21 00.19	-23 44.4	17.6	-0.88	- 2.2	2.0/03.6	32308
1981 ER ₄	1998 08 05.2	21 00.38	-02 07.4	19.1	-0.77	- 3.6	4.5/09.0	26915
1996 BX	1998 08 05.3	21 00.73	-20 24.0	17.9	-0.84	- 4.2	1.1/04.5	29947
3276 T-2	1998 08 05.3	21 00.74	-18 19.4	18.3	-0.88	- 5.8	0.5/05.0	22088
(7665)	1998 08 05.4	21 01.22	-18 51.2	16.6	-0.83	- 4.6	0.7/04.9	29903
1997 JB ₁₃	1998 08 05.5	21 01.83	-16 36.2	18.4	-0.77	- 3.5	0.1/05.7	30788
1981 EN ₂₂	1998 08 05.6	21 01.84	-20 33.6	18.3	-0.99	- 2.5	1.4/04.8	31224
4165 T-2	1998 08 05.6	21 01.88	-11 55.6	17.9	-0.86	- 5.2	1.8/06.9	29949
1988 RD ₁	1998 08 05.6	21 02.12	-18 36.1	15.5	-0.92	- 0.2	0.6/05.3	29941
1997 AG ₈	1998 08 05.6	21 02.21	-12 49.3	16.6	-1.02	- 2.5	1.9/06.6	30786
(7683)	1998 08 05.7	21 02.25	-24 36.9	16.5	-1.04	- 6.8	3.1/03.7	29907
1982 UD ₄	1998 08 05.9	21 03.31	-19 58.4	17.0	-0.94	- 3.2	1.5/05.2	20812
1976 YG ₁	1998 08 06.0	21 03.59	-28 56.3	16.2	-1.02	- 4.3	4.8/03.1	32297
1995 VG ₂	1998 08 06.0	21 03.64	-32 48.9	15.6	-1.08	- 2.1	7.7/02.3	29305
1990 GN	1998 08 06.1	21 03.92	-18 49.1	18.2	-1.03	- 3.8	0.8/05.7	29913
1996 BG ₂	1998 08 06.1	21 03.95	-28 10.1	16.9	-1.19	+ 2.4	4.0/04.3	29947
1988 TO ₁	1998 08 06.1	21 03.96	-18 44.2	17.5	-0.84	- 4.2	0.6/05.6	29656
1991 VY	1998 08 06.1	21 03.98	-25 52.1	16.3	-1.00	- 5.1	3.5/03.8	26420
(7752)	1998 08 06.1	21 04.19	-12 21.2	15.0	-0.99	- 1.6	2.1/07.0	32041
1992 WX ₁	1998 08 06.2	21 04.18	-13 45.2	16.9	-1.06	- 2.5	1.4/06.8	26172
(9042)	1998 08 06.3	21 04.87	-14 29.5	16.0	-0.82	- 3.7	0.8/06.9	32183
(7590)	1998 08 06.4	21 05.18	-17 56.1	16.3	-1.00	- 7.2	0.5/06.1	29598
1995 YM	1998 08 06.5	21 05.31	-29 38.1	16.6	-0.82	- 6.8	3.9/02.8	32310
1989 YA ₄	1998 08 06.5	21 05.44	-16 12.0	17.6	-1.02	- 4.4	0.2/06.6	29941
1290 T-1	1998 08 06.5	21 05.67	-07 24.2	18.3	-0.92	- 5.3	3.5/08.9	30797
1990 SF ₅	1998 08 06.6	21 05.89	-13 48.8	17.6	-0.85	- 6.0	1.2/07.4	29658

(9043)	1998 08 06.6	21 06.02	-16 40.5	15.6	-0.84	- 2.0	0.0/06.7	32184
1981 EA ₃₈	1998 08 06.7	21 06.13	-18 08.7	20.1	-0.87	- 1.7	0.5/06.4	30780
3119 T-1	1998 08 06.7	21 06.50	-14 15.0	18.3	-0.97	- 4.0	0.9/07.3	26415
1995 BQ	1998 08 06.8	21 06.71	-16 44.8	17.7	-0.78	- 3.7	6.4/18.0	28855
1997 CK ₂₆	1998 08 06.9	21 07.15	-27 24.1	18.0	-1.03	- 4.8	4.3/04.2	29667
1997 EE ₂₃	1998 08 07.0	21 07.61	-24 04.2	16.7	-0.98	- 6.8	2.9/05.0	30085
1997 BB ₂	1998 08 07.1	21 07.60	-21 48.3	15.4	-1.03	- 2.1	2.8/05.9	32313
1988 VN ₇	1998 08 07.2	21 08.10	-31 33.6	17.5	-1.08	- 6.1	6.7/03.0	29941
1994 PJ ₁	1998 08 07.3	21 08.36	-13 08.7	17.4	-0.79	-11.9	1.4/08.4	32235
4643 P-L	1998 08 07.3	21 08.38	+05 03.3	17.4	-0.71	- 7.4	6.7/14.4	32343
(7699)	1998 08 07.3	21 08.61	-11 27.8	17.4	-0.93	- 5.9	1.8/08.6	30069
1990 TW ₁₂	1998 08 07.3	21 08.76	-38 59.1	17.5	-1.09	- 3.3	7.8/01.3	30654
1982 WA	1998 08 07.4	21 08.85	-01 14.0	17.8	-0.89	- 2.2	4.9/10.9	30075
(9064)	1998 08 07.4	21 08.88	-19 53.9	16.7	-0.92	- 7.9	1.4/06.4	32188
1996 AU	1998 08 07.4	21 09.03	-23 18.5	16.2	-0.80	-12.6	2.7/05.1	32310
1990 QP ₈	1998 08 07.4	21 09.17	-16 47.0	18.0	-0.93	- 3.8	0.1/07.4	23974
1997 ER ₄₀	1998 08 07.5	21 09.40	+00 53.1	19.0	-0.78	- 7.8	6.3/12.9	30786
1266 T-2	1998 08 07.6	21 09.64	-24 05.3	17.0	-1.08	- 1.3	3.4/06.0	29949
1996 AU ₆	1998 08 07.6	21 09.82	-21 40.9	18.1	-0.89	- 4.3	1.9/06.3	29925
(9092)	1998 08 07.7	21 10.20	-21 21.3	15.9	-0.78	- 6.7	1.6/06.3	32195
1997 FB ₂	1998 08 07.7	21 10.32	-20 33.2	16.0	-0.80	- 9.9	1.9/06.4	32314
1981 UZ ₂₄	1998 08 07.8	21 10.41	-33 42.9	16.6	-1.05	- 3.5	8.3/03.4	20630
1997 AE ₁₈	1998 08 07.8	21 10.74	-14 16.9	16.2	-1.10	- 0.3	1.0/08.3	29635
1978 VD ₃	1998 08 07.9	21 10.95	-15 56.1	18.2	-0.91	- 3.5	0.1/08.0	32208
4118 T-3	1998 08 07.9	21 11.02	-03 32.5	17.4	-0.71	- 6.3	4.3/11.7	30294
1991 RX ₁	1998 08 08.0	21 11.49	-25 01.7	17.4	-1.13	- 2.8	3.3/06.1	26925
1990 DD ₂	1998 08 08.1	21 11.54	-12 01.5	17.0	-0.96	- 5.8	1.8/09.2	23684
1995 SS ₅₃	1998 08 08.1	21 11.58	-22 53.2	18.2	-1.10	- 4.4	2.8/06.5	30292
1991 PT ₁	1998 08 08.1	21 11.75	-10 58.3	17.0	-0.96	- 5.7	2.2/09.5	29942
1994 UO	1998 08 08.2	21 12.05	-15 18.3	17.0	-0.81	- 4.6	0.3/08.5	32308
2189 T-2	1998 08 08.3	21 12.38	-14 48.5	16.7	-0.89	- 3.6	0.5/08.7	32344
2124 T-2	1998 08 08.6	21 13.60	-14 28.3	17.5	-0.98	- 3.4	0.7/09.0	19690
(7613)	1998 08 08.6	21 13.66	-15 26.9	18.2	-0.73	- 3.7	0.2/08.8	29604
1981 EO ₂	1998 08 08.6	21 13.69	-02 54.2	18.2	-0.78	- 3.0	4.3/12.1	26914
1981 EG ₄₆	1998 08 08.7	21 13.89	-20 01.9	19.0	-1.01	- 2.2	1.6/07.9	32214
1991 FN ₂	1998 08 08.8	21 14.34	-13 53.2	18.0	-0.77	- 4.4	0.6/09.4	32047
1995 WG ₅	1998 08 08.9	21 14.52	-07 06.9	17.2	-0.92	- 5.3	3.4/11.2	29946
(7478)	1998 08 08.9	21 14.90	-17 14.6	17.4	-0.82	- 5.0	0.5/08.6	32297
1996 BO ₂	1998 08 09.0	21 15.16	-18 00.2	17.3	-0.81	- 2.7	0.6/08.6	32310
1991 GH ₁₁	1998 08 09.0	21 15.18	-15 27.7	19.0	-0.75	- 3.9	0.1/09.2	29135
1993 FY ₄₁	1998 08 09.1	21 15.53	-18 45.3	18.2	-0.99	- 4.0	1.1/08.5	29944
3310 T-2	1998 08 09.3	21 16.02	-18 02.0	17.8	-0.96	- 5.6	0.9/08.7	30467
1997 EB ₁	1998 08 09.3	21 16.13	-08 22.4	18.0	-0.99	- 1.9	3.3/11.0	32058
1981 EB ₄₃	1998 08 09.3	21 16.17	-18 41.9	18.9	-0.95	- 3.6	1.1/08.6	29653
1981 DX ₂	1998 08 09.3	21 16.25	-06 15.9	18.9	-0.81	- 2.3	3.0/11.7	26755
1989 YG ₅	1998 08 09.3	21 16.35	-31 30.2	17.1	-0.81	- 5.1	4.3/04.9	29941
1997 CA ₁	1998 08 09.3	21 16.38	-17 33.7	16.7	-1.10	- 0.4	0.8/09.0	29667
1995 WS ₂	1998 08 09.4	21 16.44	-30 48.7	16.4	-1.07	- 4.7	7.3/05.3	29946
1995 UL ₈	1998 08 09.4	21 16.67	-20 42.5	18.8	-1.03	- 4.5	1.8/08.2	30473
1981 EE ₁₆	1998 08 09.4	21 16.71	-11 22.0	19.8	-0.94	- 3.7	1.6/10.6	30779
1995 WS	1998 08 09.4	21 16.82	-10 05.0	16.4	-0.99	- 2.2	2.7/10.8	32310

3123 T-3	1998 08 09.5	21 17.00	-06 09.9	18.1	-0.73	-	4.9	3.0/12.3	24238
1995 VQ ₁₂	1998 08 09.5	21 17.00	-02 47.5	18.0	-0.93	-	5.8	5.7/13.0	29946
1997 CX ₁₉	1998 08 09.5	21 17.07	-21 31.2	18.3	-1.07	-	3.2	2.1/08.2	29948
(7579)	1998 08 09.6	21 17.56	-16 16.1	15.2	-1.47	+	4.4	0.2/09.6	29596
1997 GM ₁₃	1998 08 09.7	21 17.63	+08 20.7	18.5	-0.77	-	6.6	8.1/17.6	30767
1994 WS ₁	1998 08 09.8	21 17.91	-07 25.9	17.5	-0.83	-	1.8	2.5/11.8	24574
1993 QD ₃	1998 08 09.8	21 18.18	-09 21.7	18.0	-0.73	-	5.8	1.9/11.7	30291
1994 PM ₂₁	1998 08 09.8	21 18.29	-11 15.9	17.1	-0.80	-	8.5	2.0/11.2	30783
1990 QT ₄	1998 08 09.9	21 18.29	-35 22.0	16.6	-1.19	+	0.1	7.4/05.6	30289
1977 TD ₁	1998 08 09.9	21 18.30	+04 42.5	17.0	-0.82	-	4.8	7.7/15.6	32297
1995 WL ₅	1998 08 09.9	21 18.48	-03 20.2	17.3	-0.96	-	1.6	5.7/12.7	26582
(9000)	1998 08 09.9	21 18.59	-00 30.1	14.9	-0.78	-	3.8	8.2/14.3	32174
1995 UR	1998 08 09.9	21 18.65	+02 09.4	17.5	-1.27	+	4.1	6.9/12.5	30784
1981 EL ₁₈	1998 08 09.9	21 18.67	-09 59.0	18.0	-0.90	-	4.9	2.2/11.5	26578
1995 VS	1998 08 10.0	21 18.85	-11 05.7	15.7	-0.95	-	4.5	2.2/11.2	32309
1977 EL ₁	1998 08 10.1	21 19.04	-21 07.8	17.8	-1.09	-	3.4	2.1/08.8	31414
1995 WV ₇	1998 08 10.1	21 19.27	-31 57.5	16.4	-0.99	-	5.5	5.6/05.5	26582
1993 SM ₃	1998 08 10.1	21 19.46	-15 32.0	16.6	-0.79	-	4.3	0.0/10.2	24763
(7767)	1998 08 10.5	21 20.61	-21 45.5	16.5	-1.06	-	1.5	2.8/09.1	30262
1996 BJ ₄	1998 08 10.5	21 20.80	-30 10.3	15.5	-0.80	-10.9		6.3/05.4	27450
1980 EF	1998 08 10.5	21 20.94	-28 26.5	17.6	-1.20	-	1.1	5.2/07.9	18804
1986 UH ₃	1998 08 10.5	21 21.00	-15 23.2	16.7	-0.93	-	3.9	0.0/10.6	32300
1994 PT ₁₄	1998 08 10.6	21 21.15	-12 05.9	16.9	-0.86	-	5.6	1.2/11.6	29945
1994 QA ₁	1998 08 10.6	21 21.16	-14 05.6	18.5	-0.88	-	5.2	0.5/11.0	30760
1992 DZ ₅	1998 08 10.7	21 21.47	-14 33.0	18.9	-0.88	-	5.1	0.3/11.0	30687
1994 UZ ₁	1998 08 10.7	21 21.50	-36 03.3	17.0	-0.95	-	3.6	6.4/05.0	24750
2095 P-L	1998 08 10.7	21 21.74	-16 20.2	19.1	-0.92	-	3.4	0.3/10.6	24764
1995 UB ₉	1998 08 11.0	21 22.61	-25 53.8	14.5	-0.92	-	4.5	5.4/08.2	29665
2137 T-2	1998 08 11.1	21 22.81	-12 08.8	17.4	-0.95	-	4.8	1.6/11.9	32344
1996 BB	1998 08 11.2	21 23.31	-21 05.0	15.3	-0.77	-	8.9	2.3/09.4	32310
1997 GK ₂₃	1998 08 11.2	21 23.34	-13 14.2	18.2	-0.80	-	4.4	0.7/11.8	30094
1996 YF ₁	1998 08 11.3	21 23.94	-27 17.3	21.9	-1.06	-	5.3	3.8/08.2	29667
1994 SP ₉	1998 08 11.3	21 23.98	-00 03.7	19.2	-0.77	-	6.8	4.9/16.1	30080
1989 YA ₅	1998 08 11.4	21 24.00	-04 59.9	17.5	-0.85	-	0.1	2.9/13.7	32301
1997 AO ₇	1998 08 11.4	21 24.03	-12 49.0	16.1	-0.90	-	8.2	1.2/12.1	32249
1993 UE ₁	1998 08 11.4	21 24.20	-39 21.6	17.5	-0.94	-	3.1	8.3/04.3	29944
2076 T-2	1998 08 11.4	21 24.21	-11 13.6	18.0	-0.99	-	6.4	1.8/12.6	31436
1993 PJ ₇	1998 08 11.4	21 24.28	-16 09.4	16.7	-0.82	-	3.1	0.3/11.2	28616
1998 MZ ₇	1998 08 11.4	21 24.33	+10 48.5	15.5	-0.74	+	0.4	11.1/18.2	32285
1997 AD ₁₃	1998 08 11.4	21 24.37	-29 26.6	16.4	-0.97	-	6.9	5.3/07.4	29141
1998 OJ	1998 08 11.5	21 24.32	-07 32.2	17.8	-1.00	-	4.6	3.4/13.5	32289
1993 FS ₁₂	1998 08 11.5	21 24.66	-17 18.0	18.6	-0.97	-	5.9	0.8/11.0	30080
(7776)	1998 08 11.6	21 24.78	-11 41.1	14.3	-1.12	+	3.1	1.8/12.0	30264
4263 T-2	1998 08 11.6	21 25.14	-18 39.2	18.3	-1.00	-	6.0	1.4/10.7	23681
(7706)	1998 08 11.7	21 25.15	-19 47.3	17.3	-1.01	-	4.5	1.7/10.5	30070
1983 RB ₄	1998 08 11.7	21 25.16	-21 35.6	16.2	-0.90	-	4.4	3.1/10.0	30468
3854 T-3	1998 08 11.7	21 25.28	-15 15.9	18.1	-0.76	-	4.1	0.0/11.7	25085
1981 EP ₃₆	1998 08 11.8	21 25.48	-01 07.9	18.7	-0.80	-	2.5	5.0/15.4	26921
1994 TX ₂	1998 08 11.8	21 25.75	+00 49.2	16.8	-0.80	-	4.9	5.5/16.4	32308
(7396)	1998 08 11.9	21 26.21	-13 14.9	16.6	-0.81	-	4.3	0.6/12.5	28825
1994 JF	1998 08 12.0	21 26.42	-11 37.5	17.2	-0.96	-	6.5	1.4/13.0	29301

(7645)	1998 08 12.1	21 26.74	-14 25.1	17.6	-0.98	-	4.6	0.2/12.3	29898
3336 T-2	1998 08 12.1	21 26.80	-12 00.9	17.0	-0.90	-	7.5	1.4/13.0	25540
(8982)	1998 08 12.1	21 26.84	-05 11.0	15.4	-0.82	-	6.9	4.6/15.1	32170
1995 XD	1998 08 12.1	21 26.89	-27 28.6	17.2	-1.00	-	5.2	4.8/08.7	31588
1981 ED ₁₂	1998 08 12.1	21 26.90	+01 29.7	18.2	-0.84	-	6.1	5.8/17.1	30779
1981 EU ₃	1998 08 12.2	21 27.13	+00 29.3	19.4	-0.88	-	4.4	5.4/16.5	26915
1990 QS ₃	1998 08 12.3	21 27.42	-11 39.4	16.7	-0.73	-	8.0	1.6/13.4	26757
1997 CW	1998 08 12.3	21 27.69	-22 22.5	17.1	-1.04	-	4.2	2.9/10.5	32313
1997 BN ₁	1998 08 12.4	21 27.96	-14 53.5	16.7	-1.11	-	2.0	0.0/12.5	30293
1994 PX ₂₂	1998 08 12.7	21 28.94	-15 16.5	19.1	-0.87	-	5.2	0.1/12.6	27448
(9016)	1998 08 12.8	21 29.55	+19 43.2	16.2	-1.42	+14.2		16.0/12.8	32177
1995 UB ₈	1998 08 12.9	21 30.06	-21 46.6	17.0	-1.02	-	5.2	2.7/11.1	26570
1997 JE ₁₀	1998 08 13.0	21 30.09	-30 26.6	17.1	-0.85	-	4.7	4.7/08.5	30903
1981 EC ₅	1998 08 13.1	21 30.59	-05 15.6	18.1	-1.03	-	1.9	4.5/15.3	26915
6063 P-L	1998 08 13.2	21 30.75	-14 09.7	16.5	-0.98	-	2.3	0.3/13.3	28892
1994 PU ₂₉	1998 08 13.2	21 31.02	-05 54.8	17.4	-0.81	-	9.0	3.5/16.0	27937
1978 UY ₄	1998 08 13.2	21 31.12	-08 05.5	17.8	-0.96	-	4.6	3.2/15.0	30090
1995 WH ₇	1998 08 13.3	21 31.12	-14 40.1	16.9	-0.94	-	5.9	0.0/13.3	30093
1978 XW	1998 08 13.4	21 31.80	-16 11.5	17.8	-0.77	-	4.1	0.4/13.0	27118
2190 P-L	1998 08 13.4	21 31.82	-08 29.1	20.0	-0.72	-	3.9	1.6/15.2	27116
1990 WQ ₂	1998 08 13.5	21 31.88	-04 10.2	17.3	-0.84	-	4.6	3.6/16.4	27934
1995 YC ₈	1998 08 13.7	21 32.90	-10 11.4	18.5	-0.88	-	4.7	2.2/15.0	30784
1981 DR ₁	1998 08 13.7	21 32.99	+07 58.3	17.6	-0.83	-	5.2	9.0/20.9	26914
1990 QA ₈	1998 08 13.7	21 33.06	-13 38.2	17.1	-0.80	-	6.5	0.4/14.1	21974
2085 T-2	1998 08 13.8	21 33.04	-18 06.3	18.0	-0.92	-	3.2	1.2/12.9	24764
1986 RA ₅	1998 08 13.8	21 33.10	-17 55.9	14.7	-0.74	-	9.0	1.6/12.7	27727
1981 EL ₇	1998 08 13.8	21 33.36	+03 20.4	18.9	-0.87	-	6.2	6.7/19.1	26916
(7658)	1998 08 13.8	21 33.38	-14 35.8	16.8	-0.97	-	4.0	0.0/13.9	29901
1993 FB ₁₉	1998 08 13.9	21 33.80	-13 47.7	17.3	-0.89	-	7.5	0.3/14.2	23523
1993 VU ₇	1998 08 14.0	21 33.81	-23 36.1	17.1	-0.77	-14.2		3.3/10.6	23342
1987 SC ₆	1998 08 14.0	21 34.14	-13 43.3	15.8	-0.75	-	4.2	0.3/14.3	32300
1996 DD ₁	1998 08 14.1	21 34.27	-29 28.0	19.0	-0.88	-10.6		4.9/09.0	30093
1997 GA ₃₇	1998 08 14.1	21 34.54	-05 02.9	17.6	-0.96	-	5.8	4.0/16.8	30788
1997 CT ₂₁	1998 08 14.2	21 34.89	-20 45.2	18.3	-0.91	-	5.9	2.8/12.5	32313
1978 SE ₅	1998 08 14.3	21 35.20	-00 13.8	16.6	-0.82	-	6.0	5.5/18.6	32298
1991 GH ₅	1998 08 14.3	21 35.20	-07 41.2	17.9	-0.73	-	4.2	2.2/16.3	32302
1984 UD ₃	1998 08 14.3	21 35.23	-03 11.5	16.6	-0.90	-	5.7	4.8/17.5	32299
1997 EY ₂₀	1998 08 14.6	21 36.02	-11 13.1	17.4	-0.93	-	5.3	1.2/15.5	32313
1994 NB	1998 08 14.6	21 36.03	-24 43.0	16.2	-0.98	-15.9		4.1/10.9	26422
(7696)	1998 08 14.6	21 36.10	-16 55.3	17.2	-0.85	-	5.3	0.9/13.9	30068
1992 DH ₃	1998 08 14.6	21 36.16	-17 41.7	18.8	-0.92	-	2.2	1.2/13.8	30471
1997 GE ₈	1998 08 14.6	21 36.28	-13 39.9	18.9	-0.94	-	4.6	0.2/14.8	30473
1996 CG ₁	1998 08 14.7	21 36.53	-22 56.5	16.8	-0.83	-	3.2	2.7/12.4	32310
(7646)	1998 08 14.7	21 36.54	-10 15.9	16.8	-0.80	-10.6		1.5/16.1	29898
1993 FB ₂₂	1998 08 14.7	21 36.61	-15 45.4	18.6	-0.99	-	4.5	0.6/14.4	29137
(9038)	1998 08 14.8	21 36.74	-15 43.4	15.3	-0.75	-12.7		0.6/14.3	32182
1993 FR ₁₁	1998 08 14.8	21 36.92	-01 18.2	15.5	-0.71	-11.7		5.4/19.5	32306
1995 VF	1998 08 14.8	21 36.95	-02 14.6	16.7	-0.94	-	2.7	5.6/17.8	32241
1994 VR	1998 08 14.8	21 37.14	-34 30.2	17.2	-0.97	-	3.3	8.0/08.9	24585
1991 RT ₅	1998 08 14.9	21 37.12	-28 52.6	16.2	-1.04	-	2.6	6.8/11.0	27120
1997 AJ ₄	1998 08 14.9	21 37.15	-06 14.6	16.5	-1.05	-	2.9	3.5/17.0	32248

1995 BQ ₂	1998 08 15.0	21 37.92 +21 46.7 19.5	-0.73 - 2.8	9.2/26.6	25431
2268 T-3	1998 08 15.1	21 37.96 +01 56.9 17.6	-0.75 - 3.9	5.3/19.8	30914
1992 YG ₂	1998 08 15.1	21 38.06 -11 42.8 16.7	-1.04 - 2.6	1.2/15.7	26172
1993 FR ₃₅	1998 08 15.1	21 38.07 -12 22.2 18.4	-0.92 - 5.7	0.6/15.6	29919
(7515)	1998 08 15.2	21 38.36 -13 54.8 16.2	-0.95 - 4.8	0.1/15.3	32297
1989 SD	1998 08 15.2	21 38.49 -18 49.3 15.9	-1.04 - 4.5	2.4/14.0	22081
1994 PN ₁₄	1998 08 15.2	21 38.52 -15 26.6 17.2	-0.99 - 0.9	0.6/15.0	31239
1981 ED ₆	1998 08 15.2	21 38.62 +10 16.1 18.0	-0.70 - 6.7	11.5/24.5	18417
1981 EH ₄₅	1998 08 15.3	21 38.76 -09 13.5 19.9	-0.96 - 2.8	1.8/16.5	26923
1980 FF ₃	1998 08 15.3	21 38.78 -20 09.7 18.2	-0.99 - 1.8	2.4/13.9	29940
1068 T-3	1998 08 15.3	21 38.80 -37 18.7 17.9	-0.99 - 0.6	5.9/09.3	27928
1997 EQ ₁₁	1998 08 15.4	21 39.15 +08 00.0 18.9	-0.69 - 8.4	6.1/23.3	30085
1992 AR ₁	1998 08 15.4	21 39.33 -08 20.3 17.8	-0.88 - 3.0	1.7/17.0	32304
1991 TB	1998 08 15.5	21 39.68 -28 33.7 17.5	-1.12 - 3.3	6.5/11.7	30782
1997 EV ₃₂	1998 08 15.7	21 40.31 -09 24.1 18.1	-0.88 - 7.3	1.7/17.1	29948
1994 PH ₉	1998 08 15.9	21 41.10 -11 41.9 16.8	-0.86 - 4.8	0.9/16.6	24748
1105 T-2	1998 08 16.1	21 41.79 -11 00.6 18.0	-0.86 - 5.0	0.9/16.9	30293
1996 KA ₃	1998 08 16.1	21 41.88 -16 33.5 16.2	-0.72 - 7.5	0.9/15.3	30293
2553 P-L	1998 08 16.1	21 41.89 -14 18.6 17.1	-0.79 - 3.8	0.2/16.0	30474
1991 RA ₆	1998 08 16.1	21 41.97 -26 04.1 15.7	-0.92 - 3.6	6.1/12.8	26420
1980 FH ₄	1998 08 16.1	21 42.00 -12 35.7 17.1	-0.97 - 5.5	11.1/06.0	23969
1997 EA ₃	1998 08 16.2	21 42.17 -19 05.0 16.1	-0.97 - 7.3	2.2/14.7	30293
1996 EJ ₁₄	1998 08 16.2	21 42.31 -26 37.2 17.9	-1.02 + 0.8	4.5/13.4	29666
1988 TR ₂	1998 08 16.2	21 42.42 -36 30.8 17.6	-1.02 - 2.3	6.9/09.7	29941
1981 EW ₂₅	1998 08 16.3	21 42.50 -26 17.0 21.1	-1.09 - 1.9	4.2/13.2	26919
1996 CK ₁	1998 08 16.4	21 43.04 -21 03.8 18.1	-0.91 - 3.7	2.4/14.5	27123
1990 WA ₅	1998 08 16.4	21 43.08 -17 55.5 16.5	-0.83 - 6.3	1.5/15.2	29942
2666 P-L	1998 08 16.4	21 43.16 -09 25.2 18.6	-0.85 - 7.2	1.9/17.0	24241
1997 JT ₁₆	1998 08 16.8	21 44.36 -26 18.4 16.8	-0.79 - 6.6	4.3/12.7	30087
1995 WZ ₄	1998 08 16.8	21 44.61 -17 21.4 18.0	-0.94 - 5.7	1.3/15.8	30093
1997 EQ ₄₀	1998 08 16.8	21 44.64 -11 20.7 17.4	-0.81 - 9.6	0.8/17.6	29948
1993 FR ₁₂	1998 08 16.9	21 44.66 -17 40.8 17.2	-0.93 - 5.5	1.4/15.7	26173
1987 SQ	1998 08 17.1	21 45.44 -13 39.4 16.2	-0.80 - 2.8	0.0/17.1	32300
1981 EB ₈	1998 08 17.1	21 45.60 -12 26.5 18.5	-1.03 - 1.9	0.4/17.4	26916
1990 DL ₃	1998 08 17.2	21 45.84 -21 03.4 14.7	-1.07 + 0.8	3.8/15.6	29657
1994 RL ₇	1998 08 17.2	21 45.93 -13 25.0 18.4	-0.84 - 3.9	0.0/17.3	26744
1997 JP ₁₅	1998 08 17.4	21 46.64 -12 26.3 16.8	-0.99 - 6.0	0.4/17.7	30474
(9068)	1998 08 17.4	21 46.72 +09 13.4 15.2	-1.72 +14.4	13.0/18.3	32189
1990 GE	1998 08 17.4	21 46.76 -19 42.2 18.3	-1.07 - 2.9	2.4/15.9	29657
1992 ED ₁	1998 08 17.6	21 47.25 +09 26.6 16.3	-0.87 - 3.0	8.2/24.0	32304
1985 PT	1998 08 17.6	21 47.40 -15 24.2 15.6	-0.69 -12.7	0.9/16.9	32299
1997 JT ₁₁	1998 08 17.6	21 47.61 -12 33.5 17.5	-0.75 - 4.4	0.2/17.9	30474
1984 UR	1998 08 17.7	21 47.65 -29 03.2 15.4	-0.99 - 3.9	7.6/13.1	28840
1994 PL ₃₂	1998 08 17.7	21 47.93 -07 33.5 18.3	-0.89 - 4.9	2.1/19.4	26759
1997 GN ₈	1998 08 17.7	21 47.98 -21 21.7 17.6	-0.81 - 3.0	2.8/15.5	30474
1993 FB ₃₂	1998 08 17.8	21 48.10 -11 22.5 15.8	-0.88 - 6.8	0.8/18.4	24108
3254 T-1	1998 08 17.8	21 48.15 -02 51.6 19.0	-0.81 - 6.6	3.4/21.0	26416
1988 RV ₁₁	1998 08 18.0	21 48.76 -11 04.2 17.3	-0.93 - 7.0	1.0/18.7	29941
4093 T-3	1998 08 18.0	21 49.04 -26 13.3 18.6	-1.05 - 4.2	5.2/14.5	26186
(7698)	1998 08 18.2	21 49.84 -15 11.0 18.9	-0.93 - 5.8	0.7/17.7	30069
1994 PD ₃₄	1998 08 18.3	21 50.26 -10 38.8 18.4	-0.86 - 5.0	1.0/19.1	29620

4161 P-L	1998 08 18.5	21 50.72 -15 44.1 18.0	-0.93 - 2.7	0.9/17.8	25336
1041 T-2	1998 08 18.6	21 51.13 -11 13.7 16.7	-0.78 - 4.9	0.7/19.2	30095
1991 UF ₁	1998 08 18.6	21 51.20 -18 16.9 17.3	-0.96 - 6.5	2.3/17.1	29943
1984 WL	1998 08 18.6	21 51.24 +30 19.5 18.8	-1.10 + 2.1	16.4/28.8	27305
1981 EU ₄	1998 08 18.7	21 51.37 +00 42.4 16.4	-0.80 - 2.8	4.6/22.6	27303
1997 AU ₉	1998 08 18.7	21 51.55 -12 23.5 16.7	-0.95 - 7.3	0.2/18.9	29123
1981 EG ₆	1998 08 18.7	21 51.63 -08 02.9 22.2	-0.78 - 3.1	1.3/20.1	30779
1990 SG ₁₂	1998 08 18.8	21 51.93 -05 31.4 17.2	-0.82 - 5.2	3.3/21.0	32302
4593 P-L	1998 08 18.8	21 52.07 -11 35.2 16.9	-0.80 - 5.1	0.5/19.3	30293
1997 AN ₄	1998 08 18.9	21 52.08 -11 43.6 16.7	-1.00 - 4.9	0.5/19.2	29320
4274 P-L	1998 08 18.9	21 52.34 -10 08.1 18.4	-0.99 - 4.5	1.1/19.7	29668
1997 CC ₁	1998 08 19.0	21 52.64 -13 38.4 14.8	-0.77 - 9.8	0.3/18.8	32313
1993 FH ₂₀	1998 08 19.0	21 52.70 -10 39.1 16.7	-0.97 - 4.2	1.0/19.7	27915
1996 CK ₂	1998 08 19.0	21 52.84 -27 10.3 16.7	-0.89 - 1.9	4.2/15.2	30292
1990 QB ₁₉	1998 08 19.0	21 52.84 -11 26.4 15.7	-0.80 - 1.2	0.7/19.5	32301
1993 FO ₂₇	1998 08 19.0	21 52.87 -08 03.1 18.4	-0.94 - 4.8	1.7/20.4	26759
1996 DJ ₁	1998 08 19.1	21 53.10 -11 38.4 17.4	-0.81 - 4.0	0.4/19.5	30293
1994 VW ₂	1998 08 19.2	21 53.34 -22 06.5 16.5	-0.89 - 6.2	4.0/16.3	30276
1989 GL ₄	1998 08 19.2	21 53.40 +06 29.4 17.5	-0.82 - 7.4	7.0/25.8	30288
1997 GB	1998 08 19.2	21 53.56 -23 09.8 18.4	-1.04 - 3.7	3.9/16.5	30787
1994 RJ	1998 08 19.5	21 54.28 -06 48.5 18.2	-0.83 - 5.2	2.6/21.3	29945
3212 T-1	1998 08 19.5	21 54.61 -17 31.0 16.4	-1.08 - 3.9	2.1/18.3	30696
(7633)	1998 08 19.6	21 55.03 -00 33.5 15.4	-0.72 - 6.6	5.6/23.7	29895
1991 FH ₂	1998 08 19.6	21 55.05 -11 50.8 18.3	-0.78 - 4.0	0.2/19.9	30289
1991 PO ₁₁	1998 08 19.7	21 55.30 -04 20.6 16.1	-0.83 - 8.2	3.7/22.5	32303
1994 PT ₃₁	1998 08 19.7	21 55.32 -07 00.0 17.7	-0.86 - 5.4	2.1/21.4	32237
1977 DL ₂	1998 08 19.7	21 55.38 -13 33.5 18.3	-0.90 - 6.9	0.3/19.5	30445
1994 PX ₉	1998 08 19.8	21 55.61 -14 34.8 17.7	-0.88 - 4.1	0.8/19.3	31239
1981 EG ₁₆	1998 08 19.8	21 55.82 -19 41.9 17.3	-1.10 - 0.1	2.7/18.3	29093
1993 HF	1998 08 19.9	21 56.14 +04 03.1 16.8	-0.88 - 4.5	5.7/25.0	29662
1990 FV ₁	1998 08 19.9	21 56.31 -55 32.0 19.3	-2.09 + 1.8	17.6/09.2	29297
1993 FA ₃₃	1998 08 20.0	21 56.39 -12 14.0 17.5	-0.86 - 6.5	0.1/20.2	26903
1997 HO ₂	1998 08 20.1	21 56.61 -10 51.7 17.3	-0.78 - 4.8	0.6/20.6	32314
1990 SC ₈	1998 08 20.2	21 57.01 -12 15.0 17.4	-0.75 - 9.5	0.1/20.3	24389
1205 T-1	1998 08 20.3	21 57.48 -16 44.6 17.5	-1.10 - 2.2	2.0/19.3	29321
(7819)	1998 08 20.3	21 57.69 -17 21.1 16.6	-0.92 - 4.0	2.0/19.0	30436
1995 XL ₁	1998 08 20.4	21 57.64 -04 34.0 15.6	-0.93 - 2.1	3.6/22.5	32310
5022 T-3	1998 08 20.4	21 57.68 -13 26.6 18.1	-0.72 - 6.8	0.3/20.1	30474
1991 PX ₁₇	1998 08 20.6	21 58.68 -19 57.9 15.2	-1.07 - 1.3	3.4/18.8	30290
1981 EN ₅	1998 08 20.6	21 58.80 -03 34.0 18.6	-0.90 - 4.5	3.1/23.2	26558
1978 RD ₁₀	1998 08 20.8	21 59.48 -11 02.4 17.0	-0.79 - 5.0	0.4/21.3	30090
9578 P-L	1998 08 20.9	21 59.89 -17 47.6 17.0	-0.81 - 3.0	1.6/19.4	30914
1990 CD	1998 08 21.0	22 00.21 -04 57.9 15.3	-1.02 - 3.2	3.1/23.0	26168
1981 EN ₃	1998 08 21.2	22 00.64 +04 19.9 20.3	-0.84 - 6.2	5.1/26.5	26165
1989 SW ₂	1998 08 21.3	22 01.04 -20 18.5 17.1	-0.83 - 4.9	2.6/18.9	30289
1992 LQ	1998 08 21.3	22 01.22 -29 44.4 16.6	-0.84 - 4.8	5.8/15.8	25441
1991 GT ₅	1998 08 21.7	22 02.83 -11 39.1 17.9	-0.75 - 4.3	6.9/11.0	27934
1997 GX ₁₆	1998 08 21.8	22 03.03 -26 24.7 19.5	-1.02 - 1.6	4.9/18.1	30767
1979 MU ₄	1998 08 21.9	22 03.60 -11 46.2 17.8	-0.90 - 6.3	10.1/11.0	30778
1996 AE	1998 08 22.0	22 03.57 -01 58.9 17.1	-0.92 - 4.7	4.2/24.8	32310
1995 WW ₄₂	1998 08 22.0	22 03.69 -22 22.3 17.7	-1.02 - 5.9	4.3/18.9	30082

1998 AUG. 8

M.P.C. 32373

1986 TT₁₁ 1998 08 22.0 22 03.88 -30 13.9 15.9 -1.17 + 3.3 8.5/18.2 30685
 (9050) 1998 08 22.0 22 03.92 +03 38.4 16.3 -0.98 - 1.9 6.4/26.2 32185
 1934 JP 1998 08 22.0 22 03.93 -12 20.1 19.1 -0.96 - 5.7 0.2/22.0 25437
 1992 DU₅ 1998 08 22.1 22 04.24 -12 01.8 16.1 -0.75 -11.0 0.1/22.1 32304
 1995 TX 1998 08 22.1 22 04.34 +08 40.5 17.0 -1.24 + 2.1 7.9/27.0 32309
 1993 FR₁₃ 1998 08 22.3 22 04.98 -22 33.1 18.4 -1.01 - 4.7 4.0/19.2 30092
 1993 FJ₃₂ 1998 08 22.4 22 05.05 -06 14.5 17.7 -0.92 - 3.7 2.1/24.0 26759
 1987 SJ₃ 1998 08 22.4 22 05.57 -56 41.8 16.3 -2.28 +10.5 22.9/14.2 32300
 1988 XJ₁ 1998 08 22.5 22 05.43 -32 03.6 17.1 -0.83 - 4.5 6.1/15.9 30686
 1995 WU₁ 1998 08 22.6 22 05.93 -31 47.8 15.8 -1.08 - 3.3 7.4/16.8 29924
 1989 BA 1998 08 22.6 22 05.95 -23 04.4 17.2 -1.23 + 0.1 3.7/20.1 29656
 (7790) 1998 08 22.6 22 06.00 -21 52.4 18.2 -0.77 - 4.5 2.8/19.5 30268
 1994 PW₃₈ 1998 08 22.7 22 06.19 -10 45.6 18.3 -0.84 - 5.1 0.4/23.0 32237
 1991 NQ₆ 1998 08 22.7 22 06.50 -03 22.6 16.1 -0.96 - 2.6 4.0/25.0 28298
 1996 DW₂ 1998 08 22.8 22 06.60 -14 57.8 15.1 -0.72 -13.9 1.3/21.5 32310
 1995 QD₂ 1998 08 22.8 22 06.70 -06 26.5 17.4 -1.03 - 3.4 2.4/24.2 32308
 1997 GJ 1998 08 22.9 22 07.08 -14 58.1 17.8 -0.92 - 4.7 1.2/22.0 30691
 9058 P-L 1998 08 22.9 22 07.14 -06 32.0 16.8 -0.77 - 3.6 1.9/24.5 32343
 1994 PB₃₆ 1998 08 22.9 22 07.15 -09 43.4 18.1 -0.90 - 4.9 0.7/23.5 24570
 1992 FA₂ 1998 08 23.0 22 07.36 -21 47.1 16.2 -0.87 - 5.0 3.5/19.9 30091
 1993 BU₇ 1998 08 23.0 22 07.49 -07 10.8 17.7 -0.92 - 5.8 1.8/24.4 32305
 (7689) 1998 08 23.0 22 07.49 -09 36.7 17.4 -0.81 - 4.6 0.7/23.6 29909
 (9095) 1998 08 23.0 22 07.57 -06 34.1 15.3 -0.89 - 3.1 2.6/24.4 32195
 1990 WP₄ 1998 08 23.0 22 07.68 -25 51.4 16.6 -0.86 - 5.6 4.7/18.6 30289
 1990 UG₃ 1998 08 23.1 22 07.79 -23 39.0 16.4 -1.01 - 5.6 4.8/19.4 29658
 1981 EP₂₁ 1998 08 23.1 22 07.94 -23 03.4 18.6 -1.14 + 1.4 5.1/20.7 26919
 1983 EV 1998 08 23.1 22 07.98 -15 28.3 17.1 -0.87 - 3.9 1.2/22.0 30287
 4606 P-L 1998 08 23.2 22 08.08 -15 32.1 16.8 -0.98 - 5.0 1.7/22.1 29141
 1997 EQ₁₆ 1998 08 23.2 22 08.12 -03 39.6 19.2 -0.79 - 8.1 2.8/25.9 29929
 1995 UB₄₅ 1998 08 23.2 22 08.38 -05 54.2 16.2 -0.96 - 4.0 2.7/24.8 32309
 1971 UR 1998 08 23.3 22 08.50 -20 18.0 17.3 -0.78 - 3.7 2.5/20.7 30647
 1994 PC₁₅ 1998 08 23.3 22 08.52 -07 31.3 17.6 -0.80 -10.7 1.4/24.7 29663
 1990 QO₈ 1998 08 23.3 22 08.77 -16 09.7 17.8 -1.07 - 0.9 1.7/22.2 24912
 1170 T-2 1998 08 23.4 22 09.04 -00 07.8 18.6 -0.80 - 7.8 3.9/27.0 19329
 1981 EA₃₇ 1998 08 23.6 22 09.72 -14 27.5 20.0 -0.99 - 2.7 1.1/22.8 26921
 1994 WR₂ 1998 08 23.6 22 09.74 -27 35.6 16.1 -0.90 - 5.4 6.4/18.3 30901
 1985 PS 1998 08 23.7 22 10.03 -11 27.6 15.4 -0.57 -11.6 0.1/23.7 32299
 1997 DT 1998 08 23.7 22 10.04 -13 38.2 17.6 -0.95 - 7.0 0.9/23.0 30094
 1993 TM₁₆ 1998 08 23.7 22 10.18 -14 57.1 16.8 -0.75 - 4.4 1.1/22.7 30900
 (9083) 1998 08 23.8 22 10.21 +13 13.6 14.9 -0.94 + 0.1 10.2/30.3 32193
 1990 TS₄ 1998 08 23.8 22 10.54 -24 00.8 16.0 -0.86 - 7.1 4.6/19.6 32302
 5104 T-2 1998 08 23.9 22 10.57 +00 57.8 18.9 -0.78 - 3.8 3.9/27.6 22701
 1990 UK 1998 08 24.0 22 11.06 -39 10.2 17.1 -1.08 - 2.7 10.4/15.0 30091
 1995 UU₁₄ 1998 08 24.0 22 11.17 -10 15.1 19.3 -0.95 - 4.8 0.3/24.3 30784
 1969 TM₁ 1998 08 24.1 22 11.73 -24 54.1 16.7 -1.04 - 3.8 5.8/20.2 29939
 1994 RZ 1998 08 24.2 22 11.84 -12 11.7 17.3 -0.92 - 3.3 0.5/24.0 26927
 1990 RO₇ 1998 08 24.2 22 11.84 -10 01.0 17.3 -0.84 - 6.3 0.4/24.6 24761
 2579 P-L 1998 08 24.2 22 11.95 -24 32.9 17.2 -1.12 - 2.0 5.8/20.9 18130
 1994 PU₂ 1998 08 24.2 22 12.02 -10 00.6 17.9 -0.90 - 3.3 0.5/24.6 32307
 1991 XU 1998 08 24.2 22 12.03 +02 59.1 16.6 -0.92 - 2.3 4.7/28.2 32304
 1994 SF₉ 1998 08 24.3 22 12.07 -09 12.2 19.6 -0.83 - 5.7 0.7/24.9 26744

1991 OW 1998 08 24.3 22 12.10 -01 45.8 17.2 -1.01 - 3.4 4.3/27.0 32303
 1981 EG₂₇ 1998 08 24.3 22 12.27 -10 04.1 19.0 -0.80 - 3.8 0.3/24.7 32299
 (7642) 1998 08 24.3 22 12.36 -16 33.9 16.8 -1.04 - 4.3 2.3/22.8 29897
 1994 UT₁ 1998 08 24.4 22 12.41 -37 39.1 16.8 -1.05 - 2.1 10.5/15.9 30093
 1995 BD 1998 08 24.5 22 13.09 -24 02.1 16.6 -0.73 - 5.0 3.8/20.3 30455
 1981 ER₁₆ 1998 08 24.6 22 13.37 -15 04.9 19.3 -1.06 - 0.9 1.5/23.7 26918
 (7700) 1998 08 24.7 22 13.66 -15 59.1 17.4 -0.87 - 4.6 1.6/23.2 30069
 1997 GB₈ 1998 08 24.7 22 13.78 -10 34.2 20.4 -0.87 - 5.2 0.1/24.9 30094
 1979 EL 1998 08 24.9 22 14.56 -32 34.8 15.5 -0.92 - 7.4 7.8/17.2 22073
 1991 YC 1998 08 25.0 22 14.60 -25 52.5 18.0 -0.88 - 7.2 4.5/20.0 30091
 1997 CB₂₇ 1998 08 25.0 22 14.70 -20 16.6 20.0 -1.00 - 3.9 3.1/22.4 29642
 1997 FD 1998 08 25.0 22 14.89 -09 22.9 18.9 -0.91 - 7.8 0.6/25.5 29948
 1981 EY₂₇ 1998 08 25.1 22 14.99 -25 34.9 16.3 -1.11 + 2.4 6.9/21.9 29132
 1992 CH 1998 08 25.1 22 15.32 -03 00.2 17.4 -0.96 - 1.4 2.6/27.2 30290
 1992 CD₃ 1998 08 25.1 22 15.37 -10 02.9 16.4 -0.76 -10.3 0.3/25.5 29943
 4172 T-1 1998 08 25.2 22 15.53 -11 56.6 18.1 -0.92 - 6.0 0.5/24.9 26185
 1994 VY₂ 1998 08 25.2 22 15.71 -00 54.6 17.2 -0.95 - 4.0 3.8/28.0 27108
 1993 TS₁ 1998 08 25.4 22 16.23 +04 36.8 16.6 -0.67 - 7.2 4.9/30.9 32307
 1976 DC 1998 08 25.4 22 16.35 +00 28.5 19.7 -1.14 - 0.9 3.6/28.2 29092
 1997 JE₁₅ 1998 08 25.5 22 16.65 -11 16.6 17.5 -0.78 - 5.5 0.2/25.4 32314
 1102 T-2 1998 08 25.6 22 17.14 -08 44.6 18.2 -0.78 - 4.9 0.6/26.3 30095
 1988 CN₄ 1998 08 25.7 22 17.19 -02 25.8 17.9 -0.86 - 5.5 2.7/28.2 27324
 1991 GU₄ 1998 08 25.7 22 17.58 -20 56.4 18.2 -0.84 - 2.7 3.0/22.8 27934
 1991 DU 1998 08 25.8 22 17.62 -13 54.3 16.7 -0.83 - 4.2 1.1/24.8 29658
 1996 BH₄ 1998 08 25.8 22 17.80 -32 43.7 16.3 -0.72 -11.5 9.6/16.5 27450
 (7685) 1998 08 25.8 22 17.89 -04 00.0 16.5 -0.93 - 7.1 2.5/27.9 29908
 (7838) 1998 08 25.8 22 17.89 +15 07.3 17.8 -0.67 - 7.0 7.7/04.6 30441
 (7324) 1998 08 25.9 22 18.09 -10 44.2 17.3 -1.10 - 1.6 0.1/25.9 28568
 1981 EY₁₇ 1998 08 25.9 22 18.14 -09 22.4 16.6 -0.90 - 6.2 0.5/26.3 30287
 3180 T-2 1998 08 26.0 22 18.51 -13 47.6 17.4 -0.78 - 5.2 1.0/25.0 30914
 2839 P-L 1998 08 26.1 22 18.84 -12 43.0 18.4 -0.90 - 3.9 0.8/25.5 30797
 1990 UU₃ 1998 08 26.3 22 19.38 +02 19.8 16.3 -0.73 -10.1 5.0/31.1 32302
 1992 OF₉ 1998 08 26.3 22 19.76 -13 34.2 16.4 -0.74 - 4.7 1.0/25.4 30079
 (7742) 1998 08 26.5 22 20.23 -13 36.9 17.2 -0.82 - 6.1 1.1/25.5 30255
 (7443) 1998 08 26.6 22 20.80 -10 59.8 16.4 -0.80 - 4.1 0.2/26.5 28836
 1978 VW₆ 1998 08 26.7 22 20.88 +13 08.6 18.0 -0.86 - 3.7 8.8/03.0 26913
 1992 DY₇ 1998 08 26.8 22 21.51 -15 24.8 18.0 -0.85 - 4.9 1.8/25.3 30471
 1996 DV 1998 08 26.8 22 21.56 -09 59.7 18.3 -0.68 - 7.2 7.0/16.0 32310
 1991 FZ₂ 1998 08 26.9 22 21.95 -06 27.3 17.8 -0.72 - 5.9 1.1/28.2 32302
 1994 PS₃₂ 1998 08 27.0 22 22.18 -05 07.7 17.3 -0.91 - 2.5 2.2/28.5 24902
 1991 OO 1998 08 27.1 22 22.37 -02 18.3 15.8 -0.78 - 5.2 4.0/29.6 32303
 1989 YB₆ 1998 08 27.3 22 23.32 -20 44.2 18.4 -0.71 - 6.0 2.6/23.8 26757
 1992 WH₈ 1998 08 27.4 22 23.77 -11 06.6 15.8 -0.96 - 4.7 0.5/27.2 32305
 6523 P-L 1998 08 27.5 22 24.13 -28 34.8 16.1 -1.11 + 2.0 8.3/23.1 31023
 1978 UN₅ 1998 08 27.6 22 24.13 -17 15.3 16.0 -0.89 - 0.4 3.7/25.7 29939
 6103 P-L 1998 08 27.6 22 24.33 -13 52.9 18.4 -0.83 - 3.2 1.3/26.5 22966
 (7679) 1998 08 27.6 22 24.54 -04 24.6 17.0 -0.80 - 9.2 1.8/29.6 29906
 1996 GO₁₃ 1998 08 27.9 22 25.43 -10 56.0 19.8 -0.88 - 7.0 0.4/27.6 27317
 1981 ED₃₅ 1998 08 27.9 22 25.50 -11 08.8 18.6 -0.97 - 5.0 0.5/27.6 26578
 1996 AO₁ 1998 08 28.1 22 26.26 -17 46.2 17.2 -0.94 - 5.7 3.5/25.7 32310
 1994 UT₁₁ 1998 08 28.2 22 26.43 +16 39.5 16.2 -0.79 - 5.0 8.5/06.5 32308

1981 DV ₂	1998 08 28.4	22 27.19 +13 44.9	18.7 -0.85 -11.5	9.0/06.1	27302
1997 AH ₅	1998 08 28.4	22 27.25 -09 41.9	16.4 -1.03 - 5.0	0.0/28.4	29634
1997 GA ₁₄	1998 08 28.4	22 27.30 -07 01.2	16.5 -0.84 - 3.9	1.3/29.3	32314
1993 TB ₂₃	1998 08 28.5	22 27.78 -08 57.8	16.7 -0.73 - 5.1	0.2/28.8	31538
1990 YA	1998 08 28.6	22 28.15 -00 34.1	15.5 -0.85 - 3.3	4.2/31.3	32302
1994 EH ₂	1998 08 28.6	22 28.15 -18 41.3	17.0 -0.87 - 6.5	4.5/25.8	29619
1992 ED ₁₁	1998 08 28.6	22 28.20 -13 43.1	16.7 -0.98 - 1.9	1.5/27.6	25650
4121 P-L	1998 08 28.7	22 28.43 +00 29.4	16.6 -0.70 - 6.6	3.5/32.0	28620
1996 AT ₇	1998 08 28.7	22 28.51 -21 19.5	15.1 -0.81 - 7.1	4.5/24.8	27938
1997 BG ₈	1998 08 28.7	22 28.56 -08 24.2	16.5 -1.06 - 4.0	0.5/29.1	32313
1001 T-2	1998 08 28.8	22 28.56 -08 05.6	17.5 -0.77 - 5.1	0.5/29.3	28620
4321 T-1	1998 08 28.8	22 28.88 -13 39.2	18.1 -0.87 - 4.9	1.3/27.6	25652
1994 WE ₂	1998 08 28.9	22 28.86 -24 20.8	15.1 -0.78 - 7.2	6.1/23.6	28591
(7666)	1998 08 29.0	22 29.32 -14 47.2	16.1 -0.86 - 3.2	2.3/27.5	29903
1995 XD ₁	1998 08 29.0	22 29.33 -15 49.4	17.9 -0.95 - 5.4	2.3/27.1	30456
1991 RZ ₁	1998 08 29.1	22 29.73 +11 02.9	16.6 -0.77 -18.0	8.0/07.1	32303
1995 YY ₁₀	1998 08 29.1	22 29.83 -25 28.5	17.8 -0.83 -10.1	5.8/23.2	27719
1989 CB ₆	1998 08 29.2	22 30.03 -12 01.8	18.3 -0.93 - 6.0	0.9/28.4	23514
1995 XW	1998 08 29.5	22 31.05 -37 21.6	17.6 -1.04 - 1.8	10.5/20.8	29305
1990 SV ₁₃	1998 08 29.6	22 31.43 -13 38.8	16.9 -0.94 - 3.5	1.7/28.3	29942
1993 FB ₁	1998 08 29.6	22 31.64 -24 14.8	16.6 -0.95 - 4.4	5.3/25.1	30471
(7643)	1998 08 29.6	22 31.67 -20 13.8	17.3 -1.04 - 4.6	4.4/26.4	29897
1993 TA ₂₄	1998 08 29.7	22 31.80 -12 35.8	16.9 -0.74 - 4.6	1.0/28.6	23125
1981 QK ₃	1998 08 29.8	22 32.44 -12 59.7	16.7 -1.06 + 0.8	1.6/29.0	26578
1995 US ₄	1998 08 29.8	22 32.47 -24 07.9	15.9 -0.90 - 2.6	7.8/25.4	26423
1981 ED ₂₄	1998 08 29.9	22 32.75 -06 18.8	18.9 -0.72 - 7.4	0.9/30.9	30287
1995 YC ₅	1998 08 30.0	22 33.05 -15 30.2	16.7 -0.89 - 5.7	3.1/28.1	29629
1995 BG ₁	1998 08 30.1	22 33.25 -11 55.5	16.5 -0.78 - 4.5	0.9/29.2	27327
(7672)	1998 08 30.1	22 33.49 -19 14.5	18.1 -1.08 - 3.0	4.4/27.3	29905
1991 UF ₃	1998 08 30.3	22 34.40 -30 47.7	17.2 -1.12 - 3.1	7.8/23.7	30470
1992 HH ₁	1998 08 30.4	22 34.39 -03 39.6	17.1 -0.79 - 5.5	1.8/01.1	24762
1991 PM ₁₃	1998 08 30.4	22 34.44 -12 13.0	15.2 -1.02 - 2.5	1.5/29.6	29614
1990 RR ₇	1998 08 30.4	22 34.56 -07 29.0	16.1 -0.80 - 8.4	0.6/31.0	29942
(7649)	1998 08 30.5	22 34.81 -11 59.9	16.8 -0.83 - 7.5	1.1/29.5	29899
1997 CA ₂₂	1998 08 30.5	22 35.10 -08 57.1	16.9 -0.98 - 6.6	0.0/30.6	29928
(7654)	1998 08 30.6	22 35.23 -15 28.7	16.3 -0.95 - 4.9	3.0/28.6	29900
1997 GZ ₃₂	1998 08 30.6	22 35.24 -07 15.9	18.2 -0.84 - 4.7	0.5/31.2	30767
1994 UW ₁	1998 08 30.6	22 35.26 +23 25.7	19.4 -0.81 -12.2	11.8/12.7	25084
1979 MX ₁	1998 08 30.7	22 35.49 -03 27.0	18.4 -0.82 - 4.4	1.8/01.4	30753
1997 LN	1998 08 30.7	22 35.82 -07 28.5	17.3 -0.76 - 7.1	0.5/31.3	30293
1997 LJ ₃	1998 08 30.8	22 35.87 -10 03.5	17.5 -0.81 - 6.1	0.4/30.4	30474
2224 T-2	1998 08 30.8	22 36.16 -12 33.1	17.0 -0.80 - 4.3	1.3/29.7	28892
7633 P-L	1998 08 30.9	22 36.16 -13 01.3	17.0 -0.79 - 5.5	1.5/29.5	29668
6217 P-L	1998 08 30.9	22 36.50 +05 42.3	19.5 -0.68 - 7.0	3.9/05.2	15905
1988 TT	1998 08 30.9	22 36.57 -17 52.1	16.2 -0.91 - 1.1	3.2/28.5	29656
1987 SV ₁₂	1998 08 31.0	22 36.67 -13 15.6	16.0 -0.74 - 4.5	1.7/29.6	30090
3424 T-3	1998 08 31.0	22 36.93 -09 05.9	18.5 -0.83 - 6.0	0.1/31.0	30095
1990 WO ₄	1998 08 31.1	22 36.96 -03 37.0	19.7 -0.82 - 5.8	1.6/01.8	27934
1982 XQ ₁	1998 08 31.1	22 37.18 -09 05.0	17.0 -0.72 - 4.7	0.1/31.1	29654
1989 CV ₁	1998 08 31.1	22 37.23 -16 52.5	17.8 -0.95 - 6.8	3.0/28.5	31582
1981 EJ ₁₃	1998 08 31.2	22 37.28 -04 15.5	18.3 -0.98 - 2.7	1.6/01.4	26917

1992 YN ₂	1998 08 31.3	22 37.66 -12 39.4	18.3 -0.97 - 5.8	1.4/30.1	29917
1996 CZ	1998 08 31.3	22 37.73 -02 04.1	19.3 -0.83 - 5.8	2.0/02.4	30473
1981 EB ₃₆	1998 08 31.4	22 38.14 -10 15.2	19.4 -0.93 - 4.8	0.6/31.0	21967
(7342)	1998 08 31.4	22 38.20 -07 28.3	16.5 -0.76 - 8.8	0.4/31.9	28573
1976 DA ₁	1998 08 31.5	22 38.66 -11 57.6	18.0 -0.93 - 7.4	1.3/30.5	29652
1993 XD ₁	1998 08 31.5	22 38.73 -06 51.1	16.2 -0.74 - 4.9	0.6/32.0	27456
(7671)	1998 08 31.6	22 38.74 -10 20.9	16.9 -1.01 - 5.5	0.8/31.1	29904
1992 PL ₂	1998 08 31.6	22 38.81 +15 13.0	17.0 -0.83 - 0.8	6.6/07.9	32305
(7847)	1998 08 31.6	22 38.98 -13 02.6	17.7 -0.72 - 5.7	1.3/30.2	30443
1981 EY ₁₂	1998 08 31.8	22 39.65 +02 21.8	18.2 -0.87 - 6.8	3.7/04.4	26917
1982 SM ₇	1998 08 31.9	22 39.91 -11 14.5	16.5 -0.77 - 4.0	0.9/31.1	27931
1995 BJ ₁	1998 09 01.0	22 40.15 -11 25.5	17.4 -0.71 - 4.5	0.8/31.0	30689
1988 CF	1998 09 01.1	22 40.76 -11 08.7	18.0 -0.90 - 4.0	0.8/31.3	19677
1978 PX ₃	1998 09 01.1	22 40.80 -01 33.1	15.9 -0.91 + 0.3	3.8/02.9	25972
1997 EO ₃₂	1998 09 01.2	22 41.01 -08 15.0	18.3 -0.84 - 5.6	0.0/01.3	29645
1981 EL ₁₁	1998 09 01.3	22 41.33 -00 02.6	20.8 -1.00 - 5.6	3.3/03.8	26917
1997 EJ ₂₆	1998 09 01.4	22 41.66 -11 32.9	19.7 -1.01 - 2.6	1.3/31.5	30786
1994 PT ₁₆	1998 09 01.4	22 41.97 -04 19.1	18.6 -0.88 - 5.1	1.5/02.7	29921
1989 TZ ₁₅	1998 09 01.5	22 42.10 -12 16.5	16.1 -0.92 - 2.1	1.4/31.4	29134
(7660)	1998 09 01.5	22 42.26 +01 30.9	15.8 -0.87 -24.3	4.2/05.7	29902
1995 UE	1998 09 01.6	22 42.76 -09 13.7	16.6 -1.06 - 3.3	0.4/01.4	29946
1978 VO ₈	1998 09 01.7	22 43.10 -10 57.4	17.8 -0.73 - 4.7	0.8/31.9	30287
4026 P-L	1998 09 01.8	22 43.17 -17 20.1	16.9 -1.06 - 0.3	3.4/30.5	24241
1997 EW ₄₇	1998 09 01.8	22 43.30 +01 02.3	16.7 -0.76 - 7.8	3.2/05.1	30766
1987 SS ₉	1998 09 01.8	22 43.44 -11 12.3	16.7 -0.75 - 5.2	1.0/31.9	29655
1997 GR ₅	1998 09 01.9	22 43.80 -14 58.1	18.4 -0.93 - 6.7	2.5/30.8	30094
1993 DW	1998 09 02.0	22 43.98 -02 19.7	16.9 -0.93 - 6.2	2.2/03.8	24108
1997 EK ₁₅	1998 09 02.0	22 44.03 -13 44.7	20.8 -0.99 - 2.6	1.9/31.5	29929
1996 EW ₁	1998 09 02.1	22 44.20 -07 35.8	16.5 -0.78 - 4.1	0.1/02.3	30901
1997 EB ₄₂	1998 09 02.1	22 44.36 -04 28.6	17.9 -0.98 - 5.2	1.5/03.2	30094
1291 T-1	1998 09 02.3	22 44.87 +03 46.0	19.5 -0.78 - 7.9	3.7/06.5	31268
1991 RB ₄	1998 09 02.3	22 44.90 -08 05.4	17.5 -0.99 - 3.8	0.1/02.3	26758
1997 EB	1998 09 02.3	22 45.12 -12 38.7	16.4 -0.90 - 6.4	1.8/31.9	29642
4065 P-L	1998 09 02.4	22 45.54 -03 50.6	17.4 -0.90 - 3.4	2.0/03.7	25075
1994 GF	1998 09 02.5	22 45.68 -13 25.4	17.1 -0.98 - 6.9	2.3/31.8	29663
1997 GX ₅	1998 09 02.5	22 45.86 -10 51.3	19.5 -0.91 - 5.8	1.0/01.6	29931
1991 RA ₁₀	1998 09 02.5	22 45.94 +02 39.8	16.7 -0.92 - 4.8	4.5/06.0	20152
1979 QW ₃	1998 09 02.5	22 45.99 -07 45.9	18.0 -0.92 - 6.0	0.0/02.6	29939
1981 EC ₁₇	1998 09 02.6	22 45.97 -05 10.6	19.0 -1.04 - 4.4	1.1/03.4	26918
1997 GR ₂₀	1998 09 02.6	22 46.18 -09 36.2	18.1 -0.86 - 4.6	0.8/02.1	30474
1981 DU ₁	1998 09 02.6	22 46.24 +10 54.2	17.5 -0.77 - 5.0	6.3/09.0	25438
2657 P-L	1998 09 03.0	22 47.48 -13 04.3	18.7 -0.95 - 4.5	2.0/01.4	30681
1990 QE ₇	1998 09 03.1	22 47.89 -08 44.5	17.3 -0.87 - 6.1	0.4/02.8	29657
(7675)	1998 09 03.1	22 47.93 -13 57.2	18.1 -0.96 - 4.4	2.2/01.3	29905
1980 VZ ₂	1998 09 03.1	22 48.00 +00 48.7	16.8 -0.80 - 3.7	4.3/05.8	32298
6670 P-L	1998 09 03.1	22 48.15 -10 58.0	18.9 -0.89 - 4.2	1.1/02.2	26929
1981 DM ₂	1998 09 03.1	22 48.18 -01 17.5	17.7 -0.88 - 1.5	2.2/05.0	26914
1995 UC ₆	1998 09 03.3	22 48.49 -02 05.3	14.9 -1.06 - 0.9	2.8/04.7	32309
1975 NC	1998 09 03.3	22 48.56 +02 09.1	16.4 -0.84 - 4.5	3.5/06.4	27725
1996 CO ₇	1998 09 03.4	22 48.83 -12 40.5	17.0 -0.81 - 4.7	1.8/01.8	30667
1997 EW ₄₅	1998 09 03.4	22 49.01 -17 45.8	18.0 -0.89 - 5.9	3.3/31.1	30293

1252 T-2	1998 09 03.4	22 49.10	-09 35.6	19.0	-0.87	- 4.2	0.8/02.8	26577
1986 TG ₁	1998 09 03.4	22 49.11	-17 56.6	16.2	-1.15	+ 2.2	4.5/01.1	24239
1986 EK ₁	1998 09 03.4	22 49.20	-28 56.6	16.9	-1.34	+ 0.5	7.5/29.0	26578
1978 RX ₁	1998 09 03.5	22 49.20	-11 15.6	15.5	-0.73	- 8.7	1.9/02.1	32297
1994 ST ₁₂	1998 09 03.6	22 49.62	-13 05.3	16.4	-0.89	- 3.4	2.4/01.9	29945
(7735)	1998 09 03.6	22 49.69	+07 38.0	15.2	-0.76	- 5.7	6.0/08.9	30253
3063 T-2	1998 09 03.6	22 49.97	-21 13.6	18.2	-1.07	- 0.8	4.9/31.0	26416
1994 PL ₂₃	1998 09 03.8	22 50.27	-09 10.1	17.8	-0.90	- 5.2	0.6/03.2	29921
1993 OQ ₅	1998 09 03.8	22 50.35	+01 14.9	16.4	-0.83	- 2.1	3.7/06.4	25216
1990 SR ₆	1998 09 03.8	22 50.46	-11 41.2	16.3	-0.86	- 5.2	1.8/02.5	30091
1989 BV ₁	1998 09 03.8	22 50.61	-07 07.2	17.4	-0.93	- 5.0	0.1/04.0	30090
6335 P-L	1998 09 03.9	22 50.63	-06 54.5	17.7	-0.74	- 4.8	0.1/04.0	26912
1996 AO ₂	1998 09 04.0	22 51.13	-09 15.8	16.3	-0.93	- 5.2	0.8/03.4	26761
1991 XC	1998 09 04.1	22 51.65	-22 45.0	17.5	-1.32	+ 0.3	5.7/31.3	27325
4177 T-1	1998 09 04.1	22 51.75	-14 20.3	16.5	-1.06	- 3.9	3.3/02.1	28892
1997 BU ₅	1998 09 04.2	22 51.94	-06 51.0	17.4	-0.98	- 5.6	0.2/04.4	32313
1996 CT ₈	1998 09 04.2	22 52.05	-17 23.7	17.5	-0.78	-10.3	3.5/31.4	31387
(7841)	1998 09 04.3	22 52.41	+04 30.7	16.5	-0.80	- 5.2	4.3/08.2	30442
1993 TU ₁₅	1998 09 04.4	22 52.86	-05 54.5	17.8	-0.74	- 4.8	0.4/04.9	31537
1994 VD ₂	1998 09 04.5	22 52.93	-23 03.0	16.8	-0.92	- 4.3	6.0/30.3	27568
1993 BO ₃	1998 09 04.5	22 53.08	-15 42.0	16.7	-0.98	- 6.5	3.5/01.8	30091
1171 T-1	1998 09 04.6	22 53.37	+02 31.7	16.3	-0.71	- 9.6	4.4/08.3	32343
1988 RL ₉	1998 09 04.6	22 53.40	-04 22.5	15.3	-1.04	- 2.5	1.3/05.4	29133
(7796)	1998 09 04.6	22 53.53	-25 32.7	18.0	-0.86	- 5.8	5.6/29.3	30269
1996 CV ₇	1998 09 04.9	22 54.36	-12 42.0	16.7	-0.70	- 8.2	1.9/02.9	30901
1989 CX	1998 09 04.9	22 54.56	+06 26.2	16.9	-1.28	+ 2.0	5.0/07.8	26559
1995 CE ₁	1998 09 04.9	22 54.61	-07 43.4	18.6	-0.77	- 3.3	0.2/04.7	25084
1982 QO	1998 09 05.0	22 55.01	-07 19.0	16.5	-0.68	- 8.2	0.1/04.9	29940
1988 XT ₁	1998 09 05.0	22 55.03	-35 56.3	16.3	-1.06	- 1.2	10.2/26.1	27306
1997 GD ₂₄	1998 09 05.2	22 55.37	-01 21.3	18.8	-0.85	- 7.5	1.9/07.1	30767
(7788)	1998 09 05.2	22 55.42	-14 42.1	17.3	-0.72	- 6.9	2.7/02.5	30267
1995 WU	1998 09 05.2	22 55.54	+02 28.9	17.3	-0.94	- 5.0	3.2/08.1	30292
1994 UQ ₁₁	1998 09 05.3	22 55.82	-12 17.9	16.7	-0.87	- 3.8	1.8/03.6	27456
(7765)	1998 09 05.3	22 55.84	+07 40.5	15.5	-0.83	- 3.8	5.8/10.0	30261
1995 UP ₈	1998 09 05.3	22 55.87	-08 26.0	16.3	-1.00	- 3.5	0.7/04.9	29665
1988 VN ₃	1998 09 05.4	22 56.12	+01 33.4	17.2	-0.92	- 6.6	3.4/08.1	29941
1083 T-2	1998 09 05.4	22 56.28	-08 18.3	18.3	-0.89	- 4.6	0.5/05.0	27457
1991 AA ₁	1998 09 05.4	22 56.33	-15 03.0	16.3	-0.82	- 5.4	3.0/02.7	30289
1995 LC	1998 09 05.5	22 56.54	-55 41.2	19.3	-1.50	- 0.9	21.5/17.0	25963
1996 HF ₁₈	1998 09 05.6	22 56.77	-02 05.6	17.7	-0.72	- 4.8	1.3/07.1	27720
1993 HA ₆	1998 09 05.7	22 57.55	-16 20.7	17.6	-0.94	- 4.0	3.4/02.9	29944
1981 EW ₁₅	1998 09 05.9	22 57.86	-06 42.2	20.3	-0.82	- 3.0	6.4/17.0	26918
1991 PJ ₇	1998 09 05.9	22 58.13	-05 24.9	16.3	-1.00	- 0.9	0.6/06.3	29659
1991 RS ₈	1998 09 06.0	22 58.67	-09 22.0	16.3	-1.08	- 1.5	1.2/05.4	31101
(7771)	1998 09 06.1	22 58.87	-04 50.0	16.7	-0.80	- 6.7	0.6/06.7	30263
1996 BM ₁₇	1998 09 06.2	22 59.20	-14 10.1	17.9	-0.93	- 4.6	2.7/03.9	27450
6745 P-L	1998 09 06.2	22 59.21	-07 44.8	18.0	-0.73	- 5.0	0.4/05.8	27328
1993 FV ₃₁	1998 09 06.3	22 59.64	-11 20.9	17.2	-0.89	- 6.2	1.8/04.8	30897
1997 CC ₂₂	1998 09 06.4	22 59.70	-08 30.1	18.2	-1.03	- 4.3	0.8/05.8	29928
1997 FZ ₁	1998 09 06.4	22 59.87	-06 39.1	18.3	-0.92	- 5.6	0.1/06.4	30473
1996 AG ₅	1998 09 06.4	23 00.07	-10 37.1	19.7	-0.88	- 4.6	1.5/05.2	26750

1979 MA ₇	1998 09 06.5	23 00.20	-00 47.7	18.6	-0.80	- 5.3	1.9/08.4	30779
1979 OZ ₉	1998 09 06.5	23 00.21	-04 48.2	19.1	-0.86	-10.0	0.8/07.1	27553
1995 WL ₄₂	1998 09 06.8	23 01.11	-07 02.5	18.8	-0.77	- 5.0	0.2/06.6	27110
1991 VN ₉	1998 09 06.8	23 01.14	-00 07.8	19.2	-0.85	- 7.6	2.2/08.9	29915
(7722)	1998 09 06.8	23 01.22	-13 29.4	17.6	-1.02	- 3.3	2.7/04.8	30074
1978 CK	1998 09 06.9	23 01.49	+15 02.5	16.8	-0.88	- 0.2	6.2/13.2	25536
1997 FT ₃	1998 09 07.0	23 02.20	-00 15.3	18.6	-0.91	- 7.1	2.2/09.0	30787
1997 GE ₁₇	1998 09 07.0	23 02.26	-08 40.4	18.1	-1.05	- 3.8	1.0/06.4	30788
2796 P-L	1998 09 07.2	23 02.57	-08 41.9	17.9	-0.78	- 7.1	1.1/06.3	15902
1996 AH ₉	1998 09 07.2	23 02.60	-03 42.4	19.1	-0.80	- 5.2	0.7/08.0	26750
1993 SA ₆	1998 09 07.2	23 02.78	-06 43.4	17.4	-0.74	- 5.0	0.2/07.1	29137
1986 XT	1998 09 07.4	23 03.33	-07 31.9	15.1	-0.82	- 1.6	0.8/07.0	30894
1997 JU ₃	1998 09 07.4	23 03.54	-19 57.5	19.4	-0.86	- 3.8	4.2/03.1	32253
1987 UV ₁	1998 09 07.5	23 03.68	-04 59.7	15.8	-0.89	- 4.2	0.5/07.8	30469
1992 EE ₃₂	1998 09 07.5	23 03.93	-02 41.5	18.6	-0.82	- 6.2	1.0/08.7	26758
1994 JU	1998 09 07.6	23 04.12	+01 51.4	17.3	-0.87	- 9.1	3.3/11.0	23791
(9021)	1998 09 07.6	23 04.19	+06 40.8	14.8	-1.06	+ 1.6	5.6/11.0	32179
3465 T-3	1998 09 07.8	23 04.88	-18 33.2	18.1	-0.90	- 1.1	4.5/04.2	32294
4845 P-L	1998 09 07.9	23 05.26	-03 49.2	17.4	-0.68	- 8.0	0.6/08.7	23245
1997 NU	1998 09 08.0	23 05.48	-20 13.6	17.1	-0.81	- 7.5	4.5/02.9	32314
(7777)	1998 09 08.0	23 05.67	-00 13.3	17.1	-0.91	- 6.8	2.1/09.9	30264
1269 T-2	1998 09 08.1	23 05.79	-04 36.4	17.9	-0.78	- 4.7	0.4/08.5	27124
1988 RG ₉	1998 09 08.1	23 06.10	-10 22.3	16.7	-0.89	- 7.4	2.1/06.6	29656
2066 T-1	1998 09 08.2	23 06.46	-08 48.9	16.0	-0.89	- 7.8	1.4/07.2	32319
(7640)	1998 09 08.2	23 06.51	-09 11.8	15.7	-0.84	- 9.6	1.6/07.1	29897
1990 TN ₃	1998 09 08.3	23 06.71	-38 42.8	16.0	-1.80	+ 8.3	17.1/02.0	21974
1993 FS ₁₀	1998 09 08.3	23 06.73	-03 57.3	15.9	-0.78	- 9.2	0.7/09.0	29918
9523 P-L	1998 09 08.3	23 06.80	-10 31.3	18.6	-1.04	- 3.7	1.8/07.0	29668
1980 FS ₃	1998 09 08.5	23 07.31	-07 54.2	17.1	-0.86	- 1.7	0.8/07.9	29653
1990 VN ₁	1998 09 08.6	23 07.60	-20 07.6	16.1	-0.94	- 3.1	5.6/04.1	27728
1981 DR	1998 09 08.6	23 07.72	+07 13.2	18.5	-0.85	- 2.2	4.2/12.5	26914
4032 T-3	1998 09 08.6	23 07.98	-15 23.8	16.6	-0.93	- 4.2	4.6/05.6	22495
1994 VU ₆	1998 09 08.7	23 08.17	+12 11.7	15.4	-0.63	-10.6	7.5/16.1	32238
1997 ED ₂₃	1998 09 08.8	23 08.40	-06 31.4	18.9	-0.92	- 4.7	0.3/08.5	30473
1993 BS ₃	1998 09 08.8	23 08.71	+04 15.1	16.9	-0.99	- 4.2	3.6/11.8	30092
1989 AK	1998 09 09.0	23 09.22	-12 16.6	17.2	-0.79	- 5.3	2.1/06.7	23789
1995 UV ₄	1998 09 09.0	23 09.24	-26 56.3	15.9	-1.04	- 2.5	8.2/02.7	29319
1990 SB ₁	1998 09 09.0	23 09.33	-05 39.2	16.6	-0.99	- 1.8	0.1/09.0	29658
1995 CF	1998 09 09.0	23 09.37	-13 40.5	16.7	-0.73	- 5.7	2.6/06.2	24906
1990 WN ₂	1998 09 09.1	23 09.37	-30 14.3	16.9	-0.93	- 4.8	8.4/31.2	27325
1993 TP ₂₆	1998 09 09.2	23 10.14	-08 49.2	18.3	-0.71	- 5.0	0.9/08.1	29662
1997 CH ₄	1998 09 09.2	23 10.16	-09 46.5	16.5	-0.96	- 6.1	2.0/07.9	32313
(7542)	1998 09 09.3	23 10.15	-05 32.4	17.0	-0.91	- 8.4	0.1/09.2	29587
1987 SD ₄	1998 09 09.3	23 10.39	+08 57.1	15.2	-0.91	- 2.0	7.0/13.8	32300
1987 BZ ₁	1998 09 09.3	23 10.41	-15 41.0	16.8	-0.76	-10.5	3.7/05.4	32300
1986 QH ₃	1998 09 09.4	23 10.59	-12 51.3	16.8	-0.83	- 7.6	2.9/06.8	29940
1993 TP ₁₅	1998 09 09.4	23 10.60	-07 41.8	17.6	-0.75	- 5.3	0.8/08.6	30900
(7637)	1998 09 09.4	23 10.72	-08 12.7	17.4	-0.82	- 7.1	0.9/08.5	29896
1992 WP ₅	1998 09 09.5	23 11.10	-11 12.6	15.4	-0.96	- 6.7	2.5/07.6	32305
1989 SP ₂	1998 09 09.6	23 11.45	-10 36.1	17.5	-0.78	- 6.4	1.8/07.8	30272
1981 WL ₂	1998 09 09.8	23 12.19	-62 21.8	17.8	-2.46	+10.9	28.8/22.0	30780

1995 XN ₁	1998 09 09.8	23 12.31 -29 54.4 16.2	-0.96 - 3.3	8.8/01.9	30901	1981 EB ₂₅	1998 09 14.3	23 28.37 -00 44.1 16.2	-0.63 -10.9	1.0/15.4	32298
3517 T-3	1998 09 10.1	23 13.14 -07 53.5 16.8	-0.86 - 4.7	1.1/09.2	24410	1996 FU ₁₃	1998 09 14.3	23 28.42 -23 10.9 16.0	-0.73 - 1.9	6.0/07.8	30293
1994 VJ ₁	1998 09 10.1	23 13.14 -16 39.3 16.8	-0.82 - 5.0	4.2/06.3	30292	1231 T-2	1998 09 14.3	23 28.42 -04 23.5 17.7	-0.79 - 4.4	0.3/14.1	24115
1989 GR ₃	1998 09 10.3	23 13.91 +02 33.0 16.6	-0.89 - 6.0	3.0/12.9	17443	6106 P-L	1998 09 14.4	23 28.49 -01 14.9 17.8	-0.87 - 4.4	0.8/15.1	27123
1036 T-3	1998 09 10.4	23 14.19 -01 16.6 17.7	-0.83 - 2.7	1.1/11.5	24910	1995 BC	1998 09 14.4	23 28.63 -07 55.2 16.9	-0.76 - 5.6	1.6/12.9	29664
1991 TW ₈	1998 09 10.7	23 15.50 -10 15.9 18.6	-1.01 - 4.0	2.1/09.2	26420	1991 PQ ₅	1998 09 14.5	23 29.05 -09 58.0 16.9	-0.83 - 9.4	2.9/12.2	25529
1992 EX ₇	1998 09 10.8	23 15.59 -02 53.1 20.8	-0.88 - 4.2	0.6/11.4	25639	1994 PE ₃₉	1998 09 14.6	23 29.26 -04 51.2 17.3	-0.82 - 8.7	0.6/14.1	32237
1988 CH ₃	1998 09 10.8	23 15.87 +14 28.5 17.6	-0.92 - 3.2	6.3/17.1	27932	1994 GA ₁	1998 09 14.6	23 29.47 -13 43.9 15.9	-0.94 - 5.3	4.8/11.4	32307
(9002)	1998 09 10.9	23 15.84 -13 43.2 15.9	-0.75 - 9.0	3.5/07.6	32174	1988 TG ₅	1998 09 14.7	23 29.56 +01 28.2 15.5	-0.84 - 7.4	2.3/16.4	32300
1994 RE ₁₁	1998 09 10.9	23 16.16 -01 53.1 17.4	-0.22 -22.4	1.3/12.4	24914	1997 CZ ₂₁	1998 09 14.7	23 29.68 -04 59.4 18.2	-1.06 - 5.2	0.7/14.2	29928
1181 T-1	1998 09 10.9	23 16.27 -02 27.9 17.3	-0.78 - 4.1	0.7/11.7	30293	1997 AW	1998 09 14.8	23 29.97 -03 47.9 18.4	-0.95 - 5.6	0.2/14.7	30084
2208 P-L	1998 09 11.0	23 16.38 +02 10.8 19.0	-0.86 - 6.3	2.6/13.3	28319	4012 T-3	1998 09 14.8	23 30.04 -17 30.9 17.5	-0.85 - 2.3	4.7/10.4	29315
1993 TX ₂₆	1998 09 11.1	23 16.63 -00 14.6 18.1	-0.68 - 8.2	1.5/12.8	31788	1997 GZ ₆	1998 09 15.1	23 31.06 -08 07.7 19.2	-0.96 - 5.2	1.8/13.6	29931
1981 EL ₄₅	1998 09 11.1	23 16.86 +04 34.2 19.2	-0.88 - 5.5	3.1/14.2	26923	4064 T-3	1998 09 15.1	23 31.33 -03 23.4 17.5	-0.67 - 8.7	0.1/15.1	27565
4197 T-3	1998 09 11.1	23 16.97 -13 29.4 17.3	-0.86 - 4.7	3.5/08.3	30095	1992 EC ₁	1998 09 15.2	23 31.34 +08 43.0 19.5	-0.78 -10.8	3.3/19.7	20342
1989 HA	1998 09 11.2	23 16.96 -15 36.6 16.1	-0.77 -10.9	4.0/07.0	32219	1980 GB	1998 09 15.3	23 31.93 -16 54.5 17.3	-0.95 - 6.7	5.1/10.7	29940
1991 RU ₇	1998 09 11.2	23 17.25 -02 03.0 17.0	-0.77 -10.7	1.2/12.2	30091	1991 XO ₂	1998 09 15.4	23 32.07 +04 01.2 16.6	-0.87 - 7.2	3.1/17.8	28316
2168 T-2	1998 09 11.3	23 17.35 -03 10.2 17.3	-0.76 - 5.5	0.5/11.8	22432	3058 T-1	1998 09 15.4	23 32.27 -03 00.9 15.4	-1.05 - 0.1	0.0/15.5	32291
1990 HL ₁	1998 09 11.3	23 17.52 +30 34.1 18.3	-0.96 - 8.0	11.8/26.8	26579	4214 T-1	1998 09 15.5	23 32.43 -05 15.8 18.7	-0.82 - 6.7	0.7/14.7	27123
1993 TX ₂₃	1998 09 11.4	23 18.01 -11 06.1 17.2	-0.76 - 5.0	2.2/09.3	30275	1996 BN	1998 09 15.5	23 32.46 -07 55.2 16.8	-0.91 - 6.1	2.1/13.9	26928
1979 DF	1998 09 11.4	23 18.04 -23 25.4 17.2	-0.96 - 2.4	5.6/05.7	18105	1995 WD ₂	1998 09 15.5	23 32.73 +00 14.9 17.7	-0.93 - 6.6	1.2/16.6	26760
2158 P-L	1998 09 11.5	23 18.07 +02 04.8 18.0	-0.84 - 7.7	2.5/13.8	30285	1992 PU ₁	1998 09 15.6	23 32.91 -03 07.7 17.8	-0.71 - 5.6	0.1/15.6	27445
1980 TT ₃	1998 09 11.5	23 18.43 -07 51.5 16.2	-1.04 - 1.9	1.5/10.7	28611	1996 DO ₁	1998 09 15.6	23 32.91 +11 59.6 16.5	-0.80 - 3.6	4.4/20.7	30457
6608 P-L	1998 09 11.7	23 18.80 -09 45.5 18.2	-0.99 - 2.6	2.3/10.2	28620	1981 EB ₁₇	1998 09 15.7	23 33.09 -01 29.5 17.7	-0.92 - 4.5	0.5/16.1	29940
1990 UA ₂	1998 09 11.7	23 18.83 -11 58.9 17.4	-0.78 - 7.2	3.4/09.0	30091	1990 EO	1998 09 15.8	23 33.65 +08 00.9 16.2	-0.92 - 7.1	4.3/19.6	26579
1997 GO ₁₈	1998 09 11.8	23 19.33 +02 08.5 18.4	-0.75 -10.7	2.4/14.3	30788	1994 YC ₁	1998 09 15.8	23 33.67 -03 28.2 18.1	-0.73 - 4.7	0.2/15.6	30472
1985 RD ₃	1998 09 11.9	23 19.82 -08 29.9 16.7	-0.91 - 7.1	1.9/10.6	26578	1991 AF ₂	1998 09 15.9	23 33.85 +01 33.0 18.0	-0.75 -10.6	1.6/17.6	27308
2040 T-2	1998 09 12.0	23 20.14 -00 30.0 17.9	-0.72 - 7.0	1.2/13.4	26929	1990 RJ ₅	1998 09 15.9	23 33.93 +02 14.8 17.1	-0.89 - 5.5	1.9/17.6	28297
1981 EJ ₁₄	1998 09 12.1	23 20.22 +01 22.3 20.0	-0.94 - 3.8	2.0/13.8	26917	1981 EF ₄₇	1998 09 16.0	23 34.20 -04 07.3 19.5	-0.80 - 4.2	0.4/15.6	18421
1991 PJ ₁₅	1998 09 12.1	23 20.22 -09 05.4 16.6	-0.90 - 6.8	2.1/10.5	32303	6077 P-L	1998 09 16.0	23 34.20 -01 52.2 17.8	-0.77 - 3.9	0.3/16.3	22966
6634 P-L	1998 09 12.1	23 20.47 -10 01.2 18.0	-0.75 - 4.7	1.7/10.2	23130	3024 P-L	1998 09 16.1	23 34.64 +13 37.8 18.0	-0.88 - 3.9	4.9/21.5	28319
7072 P-L	1998 09 12.2	23 20.64 +14 24.7 17.9	-0.91 -17.5	7.6/19.9	22087	2199 T-2	1998 09 16.2	23 35.15 -01 53.4 19.3	-0.82 - 6.6	0.3/16.5	32292
1997 CK ₂₀	1998 09 12.3	23 21.02 -07 55.1 16.9	-1.06 - 4.4	1.6/11.2	29948	1991 UR ₁	1998 09 16.2	23 35.16 -05 42.1 16.6	-0.93 - 5.2	1.3/15.3	30449
1993 FH ₁₆	1998 09 12.5	23 21.95 -09 09.7 17.9	-0.91 - 6.3	1.8/10.9	30451	4255 T-1	1998 09 16.2	23 35.22 -03 36.4 19.9	-0.89 - 7.0	0.3/16.0	29938
1981 EH ₆	1998 09 12.6	23 22.09 +02 05.1 20.5	-0.78 - 4.8	1.6/14.7	26915	3149 T-3	1998 09 16.3	23 35.26 -02 38.4 18.0	-0.93 - 7.0	0.0/16.3	23786
1993 OS ₁₀	1998 09 13.0	23 23.75 +02 57.0 17.1	-0.83 - 4.9	2.4/15.3	23676	1995 YY ₅	1998 09 16.3	23 35.39 -11 40.1 17.0	-0.87 - 5.6	4.4/13.4	32242
1978 RC ₉	1998 09 13.2	23 24.52 -01 55.0 16.9	-1.00 - 2.9	0.9/13.8	29315	1993 TD ₂₈	1998 09 16.5	23 36.09 -02 34.2 17.3	-0.72 - 6.0	0.0/16.5	24112
6130 P-L	1998 09 13.3	23 24.55 -00 59.1 17.8	-0.86 - 7.1	1.0/14.3	30095	1995 BJ	1998 09 16.5	23 36.15 +10 21.9 17.7	-0.82 - 2.8	4.1/20.7	30663
1196 T-2	1998 09 13.3	23 24.60 -05 43.8 18.3	-0.92 - 3.8	0.7/12.8	29938	(7667)	1998 09 16.6	23 36.33 -11 04.8 15.6	-0.69 - 8.6	2.8/13.4	29904
2566 P-L	1998 09 13.3	23 24.63 -02 30.8 17.9	-0.89 - 6.7	0.5/13.8	14626	1981 ET ₂₇	1998 09 16.6	23 36.44 -02 54.4 18.4	-0.75 - 5.6	0.1/16.5	27908
1981 EQ ₁₄	1998 09 13.4	23 25.13 +04 36.2 17.2	-0.97 - 1.3	3.8/15.8	29132	1996 DL ₁	1998 09 16.6	23 36.52 +02 17.3 19.1	-0.91 - 4.4	1.6/18.2	30784
1978 RL ₇	1998 09 13.7	23 26.12 -02 16.5 17.0	-0.77 - 5.2	0.5/14.2	28882	1978 SE ₁	1998 09 16.6	23 36.62 -18 32.3 16.2	-0.83 - 4.5	7.2/11.2	32298
1991 RK ₁₅	1998 09 13.7	23 26.27 -06 22.8 15.5	-0.99 - 1.7	1.3/13.0	32303	1990 TB ₄	1998 09 16.7	23 36.82 -00 22.0 17.5	-0.86 - 5.4	0.7/17.4	31005
1994 TS ₃	1998 09 13.8	23 26.52 -25 21.5 15.1	-1.07 + 2.3	9.6/08.1	30093	1990 SZ	1998 09 16.7	23 36.99 +00 08.4 16.0	-1.06 - 0.5	1.1/17.5	26925
1995 WV ₂	1998 09 13.9	23 26.78 +00 40.5 15.5	-0.83 - 7.5	2.0/15.4	32310	1991 UP ₃	1998 09 16.8	23 37.08 -09 24.1 16.9	-0.90 - 6.1	3.1/14.5	26926
1991 EM ₁	1998 09 13.9	23 26.83 -05 15.4 16.2	-0.67 - 9.3	0.6/13.3	32302	5447 T-2	1998 09 16.8	23 37.43 +09 36.9 16.6	-1.07 - 2.4	5.5/21.0	32344
1995 YY ₇	1998 09 13.9	23 26.96 +02 07.1 16.2	-0.92 - 6.9	2.3/16.0	32310	1991 VM ₄	1998 09 16.9	23 37.46 -05 52.8 16.7	-0.96 - 4.5	1.5/15.9	30091
1988 UV	1998 09 14.2	23 27.95 +06 14.6 17.4	-0.86 - 9.0	4.1/17.7	30469	1981 EC ₂₂	1998 09 16.9	23 37.54 -02 23.3 18.2	-0.97 - 7.2	0.0/17.0	30649
(7594)	1998 09 14.2	23 27.99 -09 10.8 16.1	-0.92 - 6.5	2.1/12.4	29599	1997 CO ₂₆	1998 09 16.9	23 37.70 -01 50.5 18.5	-0.97 - 6.1	0.2/17.2	29928
1988 BY ₃	1998 09 14.3	23 28.19 -04 54.1 17.2	-0.82 - 8.3	0.5/13.8	29941	2175 P-L	1998 09 17.0	23 37.85 -02 13.4 17.5	-0.91 - 3.8	0.1/17.1	30914
1979 MM ₂	1998 09 14.3	23 28.24 +07 45.9 18.6	-0.89 - 5.7	4.6/18.1	30778	1996 AR	1998 09 17.0	23 38.04 -09 25.8 19.3	-0.93 - 6.1	2.5/14.8	30784